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Grenof Water Technologies

Project Halogen Environmental Management Plan (DRAFT)

November 2025

PLANS AND DOCUMENTS
referred to in the
SDA APPROVAL

Queensland Government

SDA approval: AP2025/015

Document History and Status

Revision	Date	Prepared by	Reviewed by	Client Reviewer
Rev 0	11/11/2025	Cathee Miller	Patrice Brown	Jason Brooks
Rev 1	12/11/2025	Cathee Miller	Patrice Brown	
Name of Project:		Project Halogen		
Client:		Grenof Water Technologies		
Client Operations Manager:		Scott Barnes		
Name of Document:		Project Halogen - DRAFT Environmental Management Plan		
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CQG Project Number:		25054		

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Glossary

Acronym	Meaning
ACCC	Australian Competition and Consumer Commission
ACH Act	*Aboriginal Cultural Heritage Act 2003 (Qld)*
APZ	Asset Protection Zones
AQP	Appropriately qualified person – means a person/s who has professional qualifications, training, skills and experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods or literature.
ASS	Acid sulfate soils
Biosecurity Act	*Biosecurity Act 2014 (Qld)*
CER	Clean Energy Regulator
CG	Coordinator-General
Cl_2	Chlorine
CQG	CQ Environmental Pty Ltd trading as CQG Consulting
DCCEEW	Administering authority: Department of Climate Change, Energy, the Environment and Water
Development Scheme	GSDA Development Scheme May 2022
DA	Development application
DETSI	Department of Environment, Tourism, Science, and Innovation
DPI	Department of Primary Industries
DSDIP	Department of State Development, Infrastructure and Planning
EA	Environmental authority
EDQ	Economic Development Queensland
EMP	Environmental Management Plan (DRAFT)
EMS	Environmental management system
EP Act	*Environmental Protection Act 1994 (Qld)*
EP Reg	*Environmental Protection Regulation 2019 (Qld)*

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Acronym	Meaning
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)*
EPP	Environmental protection policy
ERA	Environmentally relevant activity
ERP	GWT Emergency Response Plan
ESCP	Erosion and Sediment Control Plan
ESG	Environmental, social and governance
Fisheries Act	*Fisheries Act 1994 (Qld)*
FNBGGGTB	First Nations Bailai, Gurang, Gooreng Gooreng, and Taribelang Bunda
FSC	Fauna spotter catcher
GBR	Great Barrier Reef
GED	General environmental duty
GHG	Greenhouse gas
Grenof	Grenof Pty Ltd (ABN 17 166 936 894)
GSDA	Gladstone State Development Area
GWT	Grenof Water Technologies Pty Ltd (ABN 21 600 860 231)
HCl	Hydrogen chloride (gaseous) / hydrochloric acid (in solution)
km	Kilometres
KRA	Key result area
LGA	Local government area
m	Metres
mAHD	Metres with respect to Australian Height Datum
MCU	Material change of use
MEDQ	Minister for Economic Development Queensland
MHF	Major hazard facility
ML	Mining lease
MNES	Matters national environmental significance

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Acronym	Meaning
MSES	Matters of state environmental significance
MTSC	Material Transport and Services Corridor (Precinct)
NaOCl	Sodium hypochlorite
NaOH	Caustic soda
NC Act	*Nature Conservation Act 1992 (Qld)*
NGER	National Greenhouse and Energy Reporting
NGER Act	*National Greenhouse and Energy Reporting Act 2007 (Cwlth)*
OCG	Office of the Coordinator-General
OIR	Office of Industrial Relations
OPW	Operational works
PHWG	Project Halogen Working Group
Planning Act	*Planning Act 2016* (Qld)
Planning Report	CQG (2025) Grenof Water Technologies Pty Ltd: Planning Report for MCU and RaL within the GSDA (Ref: 25054, Rev 1, 12 November 2025)
Planning Scheme	*Gladstone Region Planning Scheme: Our Place Our Plan (Version 2)*
QIC	Queensland Investment Corporation (ABN 95 942 373 762)
Qld	Queensland
RaL	Reconfiguring a Lot
RPEQ	Registered Professional Engineer of Queensland
RTAY	Rio Tinto Australia Yarwun
SDA	State Development Area
SDPWO Act	*State Development and Public Works Organisation Act 1971 (Qld)*
SMP	Species management program
SWMP	Stormwater management plan
SQP	Suitably qualified person under section 564 of the EP Act
t	Tonnes

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Acronym	Meaning
The Site	Part of lots: Lot 1 on SP200899 and Lot 1 on MPH32292
tpa / tpd	Tonnes per annum / tonnes per day
VM Act	*Vegetation Management Act 1999 (Qld)*
Water Act	*Water Act 2000 (Qld)*
WHSMP	GWT Workplace Health and Safety Management Plan
WHS Reg	*Work Health and Safety Regulation 2011 (Qld)*
WONS	Weeds of national significance
WSAA	Water Services Association of Australia
WWBW	Waterway barrier works

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1 Introduction

1.1 Background

Grenof Water Technologies Pty Ltd (GWT) is a 50:50 venture between Grenof Pty Ltd (Grenof) and the Queensland Investment Corporation (QIC). GWT has been established to develop a chlor-alkali facility in the Gladstone State Development Area (GSDA) (Project Halogen). Grenof will operate the facility.

The driver for Project Halogen is the sovereign risk associated with chemicals vital for Australia's industrial, economic and public health sectors as follows:

- Chlorine (Cl_2):
  - no viable substitute for potable water disinfection;
  - single domestic producer with aging infrastructure, otherwise imported; and
  - current domestic stockpiles estimated to last in the order of four weeks only.
- Caustic soda (NaOH):
  - essential industrial chemical; and
  - total reliance on foreign supply.

Both products are currently imported into Gladstone for industrial use.

The criticality of the Proposal to the Queensland Government is evidenced through the QIC investment and the formation of the Project Halogen Working Group (PHWG); including representatives from the Department of State Development, Infrastructure and Planning (DSDIP), Office of the Coordinator-General (OCG), Office of Industrial Relations (OIR) and Economic Development Queensland (EDQ). The Commonwealth Government, through the Australian Competition and Consumer Commission (ACCC), granted authorisation to Water Services Association of Australia (WSAA) members to the enhance the resilience of Australia's gaseous Cl_2 supply chain. The ACCC determination (AA1000657, valid until 14 June 2029) includes an authorisation to enable collective negotiation with suppliers of chlor-alkali products to construct a new gaseous Cl_2 bottling and drumming facility in Australia, including collective negotiation of supply contracts.

The Proposal will require a major hazard facility (MHF) licence as it will exceed the threshold for Cl_2 storage in Schedule 15 of the *Work Health and Safety Regulation 2011 (Qld)* (WHS Reg). The GSDA has been identified as a suitable location for the facility by the Coordinator-General (CG) given its identified purpose and buffer to sensitive land uses. EDQ has been assisting GWT with identifying an appropriate location within their GSDA landholdings, with a portion of Lot 1 on SP200899 and Lot 1 on MPH32292 (the Site, refer to **Figure 1.1**) recommended given its proximity to suitable transport routes and customers.

A development application (DA) for a material change of use (MCU) for a special industry and reconfiguring a lot (RaL) under the GSDA Development Scheme (CG 2022) (Development Scheme) will need to be approved by the CG prior to commencement of site works for the development. Operational works (OPW) for the clearing of regulated regrowth vegetation can be undertaken as a State Development Area (SDA) self-assessable development, where associated with a MCU and / or RaL authorised by an SDA approval.

An environmental authority (EA) for environmentally relevant activity (ERA) 7(6d) Chemical manufacturing: manufacturing, in a year, more than 100,000 tonnes (t) of inorganic chemicals prescribed under Schedule 2 of the *Environmental Protection Regulation 2019 (Qld)* (EP Reg) will be required prior to commencement of operations. This approval will be sought in parallel with, but can only be granted after, the SDA approval for a MCU.

Project Halogen will manufacture the following chemicals triggering the ERA (project capacities listed are based on a 100% chemical basis at plant capacity):

- NaOH – approximately 100 tonnes per day (tpd), diluted to 50% concentration (i.e. approximately 200 tpd), for direct delivery to Rio Tinto Australia Yarwun (RTAY) and used in sodium hypochlorite (NaOCl) generation process;
- Liquefied Cl_2 gas – approximately 90 tpd, for delivery to water authorities and used in the hydrochloric acid (HCl) generation process; and
- Derivative products manufactured using the abovementioned primary chemicals as inputs:

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- NaOCl – approximately 40 tpd, diluted to a 12.5% concentration (i.e., approximately 320 tpd), for delivery to water authorities and other industrial customers; and
- HCl – approximately 40 tpd, diluted to a 33% concentration (i.e., approximately 120 tpd), for delivery to various industrial and mining applications.

1.2 Location

GWT has secured rights to land within the GSDA across portions Lot 1 on MPH32292 and Lot 1 on SP200899 owned by the Minister for Economic Development Queensland (MEDQ) (refer to **Figure 1.1** and **Figure 1.2**).

The Site is located within the Materials Transportation and Services Corridor (MTSC) Precinct of the Development Scheme prepared under the SDPWO Act.

The nearest sensitive residential receptors are identified in **Figure 1.3**, with the nearest sensitive environmental receptors identified in **Figure 1.4** (regulated vegetation) and **Figure 1.5** (essential habitat and waterways).

1.3 Purpose of this Document

This DRAFT Environmental Management Plan (EMP) has been prepared by CQG Consulting (CQG) as a supporting document to the Planning Report for a MCU and RaL (Planning Report), and the EA submission, for the Proposal.

The document outlines how the Proposal will be managed in order to address the general environmental duty (GED) under section 319 of the *Environmental Protection Act 1994 (Qld)* (EP Act) (refer to **Table 3.1**) and to address a common condition (DES 2019) for an EA for prescribed ERAs as follows:

> *The activity must be undertaken in accordance with written procedures that:*
> *a) identify potential risks to the environment from the activity during routine operations and emergencies; and*
> *b) establish and maintain control measures that minimise the potential for environmental harm; and*
> *c) ensure plant, equipment and measures are maintained in a proper and effective condition; and*
> *d) ensure plant, equipment and measures are operated in a proper and effective manner; and*
> *e) ensure that staff are trained and aware of their obligations under the Environmental Protection Act 1994; and*
> *f) ensure that reviews of environmental performance are undertaken at least annually.*

This DRAFT EMP will initially be updated on receipt of relevant approvals (refer to **Section 3**). Thereafter, the EMP will be reviewed annually and updated on an as needs basis as outlined at **Section 6**.

The EMP does not cover requirements under the MHF licence, or safety and emergency legislation more broadly. Management strategies relating to these aspects will be captured elsewhere, including but not limited to, the Proposal's Work Health and Safety Management Plan (WHSMP) and an Emergency Response Plan (ERP).

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Fisherman's Landing

Boat Creek

Gladstone Mount Larcom Road

Rio Tinto - Alumina Refinery

Yarwun

Gladstone

Dawson Highway

Fishermans Road

Landing Road

Legend

- Project Area
- North Coast Rail Line
- Boat Creek

Roads

- Highway
- Major Road

Gladstone SDA Precinct

- Port Related Industry Precinct
- Environmental Management Precinct
- High Impact Industry Precinct
- Industry Investigation Precinct
- Materials Transportation and Services Corridor Precinct
- Medium Impact Industry Precinct

N

Scale 1:40,000 (A3)

0 600 1,200 1,800

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 1.1

Project Halogen

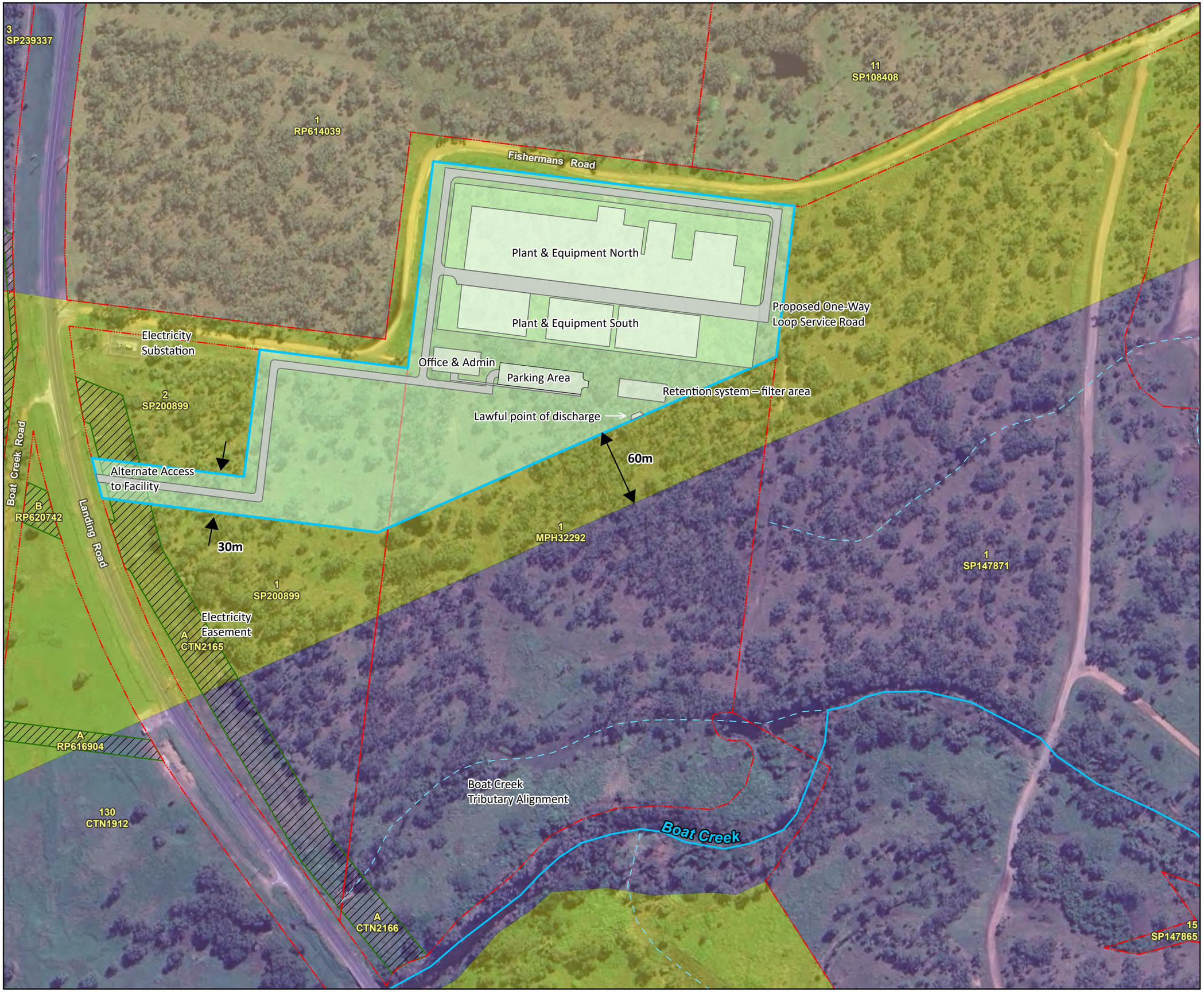
Project Location

CQG Consulting

180 Quay Street, Rockhampton Q 4700
PO Box 8384, Allenstown 4700
Ph: +61 7 4922 9252 Fax: +61 7 4922 0195

Project No: 25054
Map No: 25054-06
Revision: RevA
7 November 2025

Layer Credits- © OpenStreetMap (and) contributors, CC-BY-SA; QSpatial; CQG



Legend

- Project Area
- Easement
- Lot Type Parcel
- Named Waterways
- Unnamed waterways

Gladstone SDA Precinct

- Port Related Industry Precinct
- Industry Investigation Precinct
- Materials Transportation and Services Corridor Precinct (MTSC)

Disclaimer:
CQG has relied upon data obtained from QSpatial and other public sources, as well as the client (Grenof).
All internal access, manuevering areas, and infrastructure are subject to engineering design

N

Scale 1:2,750 (A3)

0 41 83 124

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 1.2

Project Halogen

Conceptual Operations Site Layout (MCU Submission)

GRENOF

Project No: 25054
Map No: 25054-02
Revision: RevA
6 November 2025

Layer Credits- © OpenStreetMap (and) contributors, CC-BY-SA; QSpatial - Roads, Cadastral Boundaries, Gladstone SDA Precinct; CQG; GRENOF

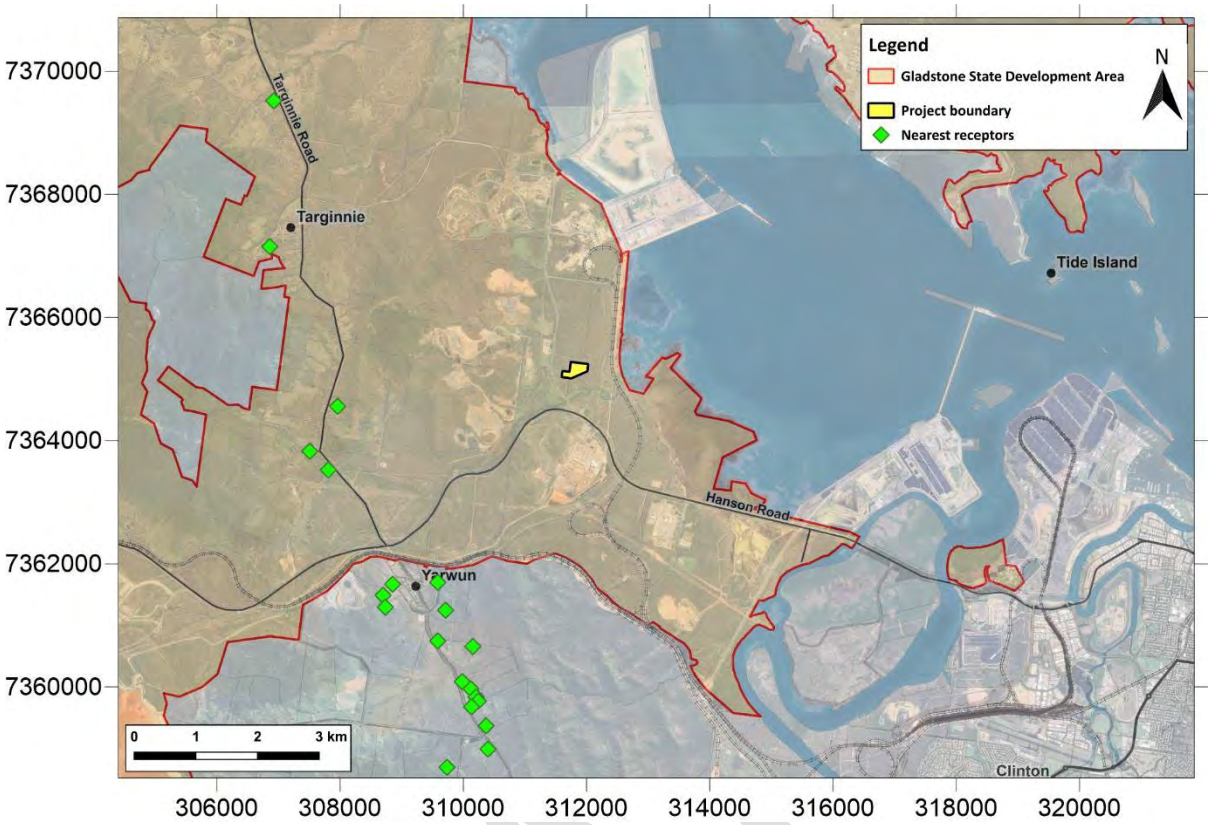


Figure 1.3: Location of nearest sensitive land uses (source: Katestone 2025a)

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Legend

- Project Area
- Minor Road
- Materials Transportation and Services Corridor Precinct (MTSC)

MSES Vegetation

- Regulated vegetation (category B - endangered or of concern)
- Regulated vegetation (category C- endangered or of concern)
- Regulated vegetation (category R- GBR riverine)

Watercourse lines

- Minor - perennial
- Minor - non perennial

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 1.4

Project Halogen

MSES Vegetation

CQG Consulting
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PO Box 8384, Allenstown 4700
Ph: +61 7 4922 9252 Fax: +61 7 4922 0195

Project No: 25054
Map No: 25054-24
Revision: RevA
10 November 2025

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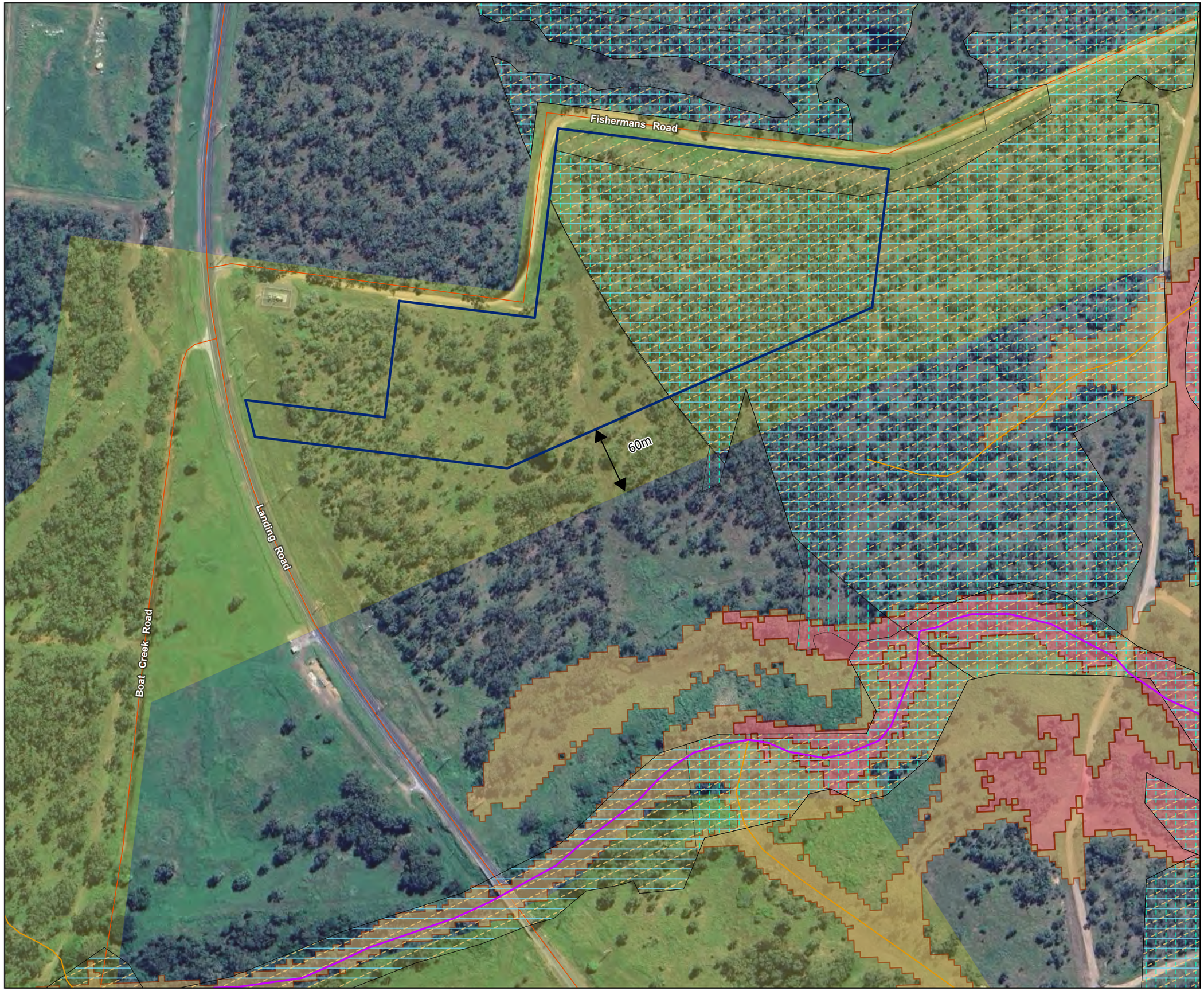

Legend

- Project Area
- Materials Transportation and Services Corridor Precinct (MTSC)
- Minor Road

Habitat

- Essential Habitat (Vegetation Management Act)
- MSES Wildlife habitat (special least concern animal)
- MSES Wildlife habitat (endangered or vulnerable)

Coastal Hazard Mapping

- Storm Tide Medium Hazard
- Storm Tide High Hazard

Waterway Barrier Works

Risk of Impact

- 2 - Moderate
- 4 - Major

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 1.5

Project Halogen

Essential Habitat and Waterway Mapping

CQG Consulting
180 Quay Street, Rockhampton Q 4700
PO Box 8384, Allenstown 4700
Ph: +61 7 4922 9252 Fax: +61 7 4922 0195

Project No: 25054
Map No: 25054-25
Revision: RevA
10 November 2025

Layer Credits- © OpenStreetMap (and) contributors, CC-BY-SA; QSpatial; CQG

2 Project Description

2.1 Overview of the Proposal

2.1.1 Purpose

The Purpose of Project Halogen is to reduce Australia's sovereign risk associated with essential chemicals including Cl_2 (single domestic producer with aging infrastructure, also imported) and NaOH (reliance on foreign supply), which are vital for our nation's industrial, economic, and public health sectors.

2.1.2 Key elements

Key elements of the Proposal include:

- Chlor-alkali plant consisting of:
  - plant and equipment north – production area including the electrolyser room (refer to **Section 2.2.2.3** for further details); and
  - plant and equipment south – salt and product storage.
- Ancillary facilities:
  - office;
  - parking area;
  - utilities;
  - access intersection – options being Fisherman's or Landing Road, with the latter currently preferred (refer to **Section 2.2.2.1**);
  - entry gate and internal maneuvering area; and
  - secure fencing of the Site boundaries.

Refer to **Figure 1.2** and **Appendix A** for the Site conceptual layout plan.

2.2 Details of the Proposal

2.2.1 Construction phase

Key production components of the chlor-alkali facility will be delivered to the Site in modular arrangements via B-double heavy vehicles up to 26 metres (m) in length. No over-size over-mass vehicles are proposed (Premise 2025).

Plant components will be assembled on Site on concrete slabs. Refer to **Appendix A** for a conceptual layout of the facility.

Other construction phase activities will likely include:

- Clearing and grubbing activities;
- Filling and levelling of the Site;
- Establishment of internal construction access roads and drainage;
- Concrete batching and delivery of construction materials;
- Delivery of plant equipment to establish key elements (refer to **Section 2.1.2**); and
- Upgrade of construction access to full intersection design standards prior to operations (refer to **Section 2.2.2.1**). Prior to the availability of the operations intersection, an access treatment suitable to safely accommodate construction vehicles and equipment will be established by the Delivery Manager.

Hours of construction will generally be restricted to daytime hours (i.e., Monday to Saturday, excluding public holidays, from 6:30 am to 6:30 pm as per GRC n.d). However, night works may be required for large concrete pours, or other time sensitive construction activities. Nuisance to the nearest sensitive receptors is not anticipated given the significant buffer distance between (refer to **Figure 1.3**) and minimal number of activities that may potentially warrant night work activities outside standard building work hours.

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2.2.2 Operations phase

2.2.2.1 Access intersection

The narrow width of the Fisherman's Road reserve (being 20 m wide) poses constraints to the access intersection design for B-double movement swept paths for the Proposal's ongoing operational needs.

Use of this intersection would likely require acquisition of land on the south-east corner of the intersection (portion of Lot 2 on SP200899) and relocation of Ergon power poles to accommodate the swept path design (Premise 2025).

Another access option, directly off Landing Road immediately south of Lot 2 on SP200899, has been identified as an alternative arrangement (refer to **Figure 1.2**). Given this arrangement would not require land acquisition or movement of power poles and is in-principle acceptable to MEDQ as the landowner (identified in the owners consent to lodge the DA), it is currently identified as the preferred option.

The access treatment is yet to be confirmed, however, will likely comprise compacted gravel with a nominal two coat bitumen seal treatment.

2.2.2.2 Key activities

Project Halogen will comprise a modular chlor-alkali production facility, manufacturing the following chemicals (project capacities listed are based on a 100% chemical basis at plant capacity):

- NaOH – approximately 100 tonnes per day (tpd), diluted to 50% concentration (i.e. approximately 200 tpd), for direct delivery to Rio Tinto Australia Yarwun (RTAY) and used in sodium hypochlorite (NaOCl) generation process;
- Liquefied Cl_2 gas – approximately 90 tpd, for delivery to water authorities and used in the hydrochloric acid (HCl) generation process; and
- Derivative products manufactured using the abovementioned primary chemicals as inputs:
    - NaOCl – approximately 40 tpd, diluted to a 12.5% concentration (i.e., approximately 320 tpd), for delivery to water authorities and other industrial customers; and
    - HCl – approximately 40 tpd, diluted to a 33% concentration (i.e., approximately 120 tpd), for delivery to various industrial and mining applications.

The base case is for product offtakes from the plant of 160,000 tpa (based on actual produced concentrations), but this may vary dependent on market demands for specific chemicals.

The proposed hours of operation are 24 hours a day, 7 days a week, with the following personnel assumed:

- 24/7 operations – 5 operators alternating over each 12 hour shift (four crews x 5 staff each in total); and
- Standard business hours – 14 management and administrative support staff.

Key activities that will be undertaken during operation include:

- Plant operation;
- Delivery of inputs to plant (salt and chemicals);
- Storage for input salt and chemicals and output chemicals and wastes;
- Transport of outputs from plant (chemicals and waste products);
- Security – including fencing and surveillance systems;
- Subcontractor management – coordinating with subcontractors for specialised maintenance or repair tasks;
- Data analysis and reporting – analysing data to optimise output production and other key performance metrics e.g., environmental, social and governance (ESG) metrics (including, but not limited to, greenhouse gas (GHG) abatement key result areas (KRAs), refer to **Appendix B**); and
- Waste management:
    - segregate waste streams; and
    - any waste generated that cannot be reused in the process will be transported offsite by an appropriately licensed contractor.

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2.2.2.3 Process summary

The electrolytic process uses electricity to convert high-purity brine into Cl_2 gas, H_2 gas and NaOH, with a membrane separating the resulting products (refer to **Figure 2.1**). The entire facility will have a closed loop design and consequently will not have any fugitive air releases. A potential fugitive source based on facilities elsewhere is the electrolyser room. In the case of the Proposal, the electrolyser room will be designed so that any leaks will be immediately identified by the control system due to the monitoring of pressure on either side of each electrolyser. The control system will have the capability to detect leaks as small as a pinhole.

A schematic view of the chlorine electrolysis cells is provided in **Figure 2.2**. In comparison to the alternative electrolysis techniques (diaphragm cell process and the mercury cell process), the membrane cell process has the following benefits:

- Low total energy consumption;
- Low investment and operating costs;
- Does not use mercury or asbestos; and
- High-purity chemical production.

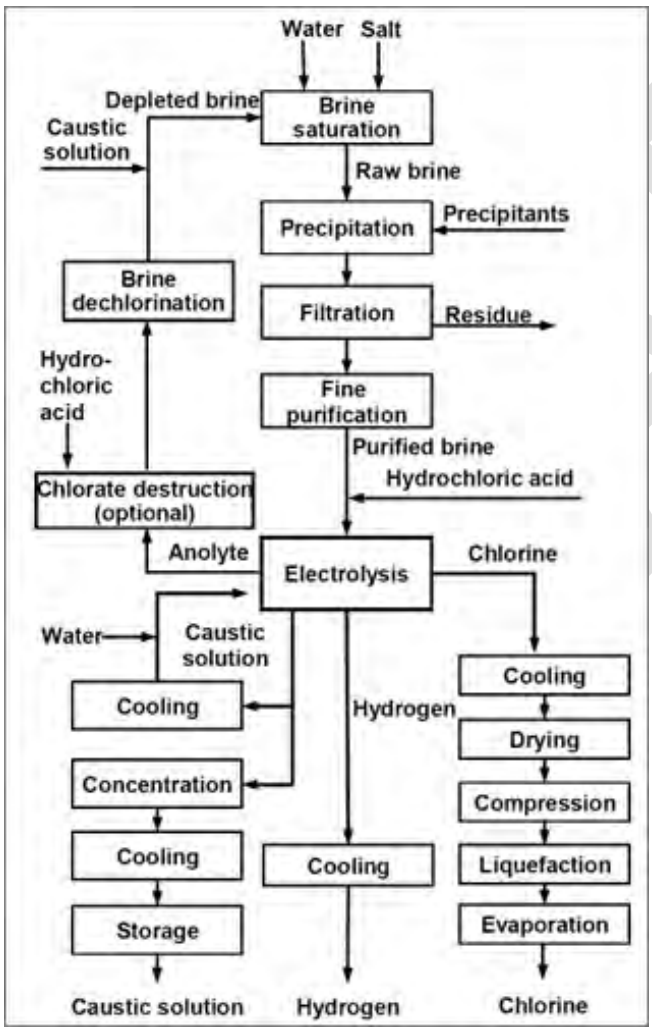

Figure 2.1: Typical flow diagram of the membrane cell technique (source: European Commission 2014)

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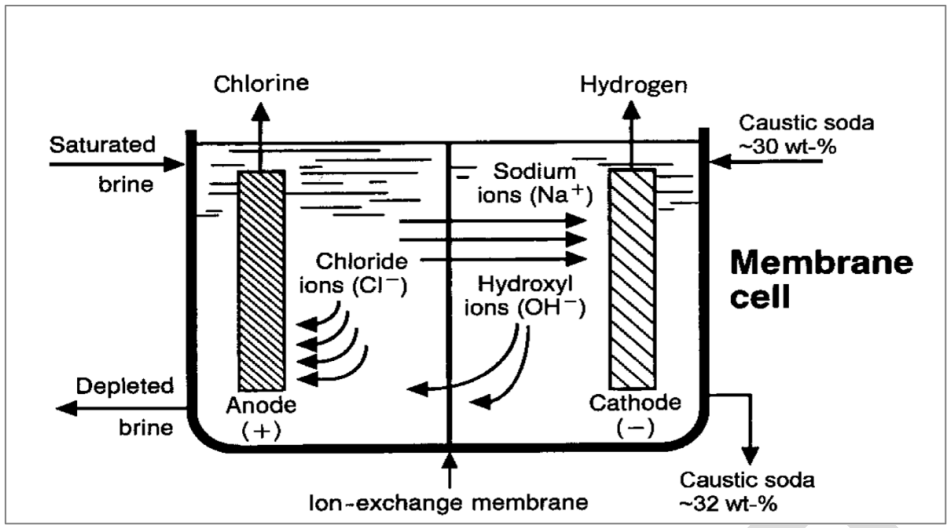

Figure 2.2: Schematic view of chlorine electrolysis cells for membrane cell technique (source: European Commission 2014)

2.2.3 Decommissioning phase

The estimated life of the chlor-alkali facility is approximately 50 years (lease period to be negotiated with MEDQ).

Prior to decommissioning GWT is to confirm the final land use with the landowner (MEDQ). Given the Site is within the GSDA, it is expected this will require the land to be left in a fit state suitable for future industrial purposes consistent with the Development Scheme. In any case the Site must be left safe, stable and non-polluting.

The current decommissioning plan would involve:

- Removal of all specific Project Halogen infrastructure, equipment and waste materials to ensure no sources of ongoing environmental harm or nuisance. Safe, stable and non-polluting hardstand or sealed surfaces, and non-specific Project Halogen infrastructure including service connections, may be retained in consultation with the landholder; and
- The acceptance criteria for handover to the landholder assumes the Site has been assessed as stable by a Registered Professional Engineer of Queensland (RPEQ) and non-polluting by a suitably qualified person (SQP) under the EP Act.

No progressive rehabilitation can occur during operations, with rehabilitation works only to commence in the decommissioning phase.

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3 Regulatory Context

The Proposal is defined as a special industry within the MTSC Precinct under the Development Scheme, meaning that it is assessable development. The OCG will be the assessment agency for the land use, and the Department of Environment, Tourism, Science, and Innovation (DETSI) will be the assessment agency for the operating ERA (ERA 7(6d) – Chemical manufacturing: manufacturing, in a year, more than 100,000 tonnes of inorganic chemicals.

The EMP will be reviewed and updated, as required, on receipt of approval conditions (refer to **Section 6**).

Key environmental legislation considerations for the Proposal is listed in **Table 3.1**.

Table 3.1: Key environmental legislation

Legislation	Summary
Commonwealth	
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Administering authority: Department of Climate Change, Energy, the Environment and Water (DCCEEW)	Establishes an assessment and approval framework for activities that have the potential for significant environmental impacts on matters of national environmental significance (MNES). The Site is located with the Great Barrier Reef (GBR) catchment area. This is relevant to the following three MNES matters under the EPBC Act: • World heritage values of a declared world heritage property; • National heritage values of a declared national heritage place; and • GBR Marine Park. The Proposal will not result in significant impacts to the GBR, if appropriate erosion and sediment control and stormwater management strategies are implemented (refer to **Table 5.3**, **Appendix C** and **Appendix D**). No MNES flora or fauna were observed during the ecological investigation conducted on 12 to 13 August 2025 (habitat assessments), although suitable habitat for the following MNES fauna was identified and further targeted fauna assessments for these species recommended (CQG 2025a): • Koala (*Phascolarctos cinereus*) – endangered; • Squatter pigeon (*Geophaps scripta scripta*) – vulnerable; and • Osprey (*Pandion haliaetus*) – migratory and marine. Targeted fauna surveys identified that Koala are unlikely, Squatter pigeon likely and Osprey known (identified during a diurnal survey flying overhead) to be present at the Site (CQG 2025b). The ecological assessments (CQG 2025a and 2025b) determined that the Proposal will not result in a significant impact to these MNES species if appropriate avoidance and mitigation strategies are implemented.
National Greenhouse and Energy Reporting Act 2007 (NGER Act) DCCEEW	The NGER Act provides for the reporting and dissemination of information related to GHG emissions, GHG projects, energy production and energy consumption. The NGER scheme is a single national framework for reporting company information as required under the NGER Act, administered by the Clean Energy Regulator (CER). NGER registration and emissions reporting of Scope 1 (GHG emissions released as a direct result of the activity) and Scope 2 (GHG emissions related to the use of power by the activity that is generated elsewhere) are mandatory for corporations or facilities that have energy production, energy use or GHG emissions that exceed the following annual thresholds:

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Legislation	Summary
	• GHG emissions: 25,000 t CO2-e (facility) or 50,000 t CO2-e (corporation); or • Energy production and / or consumption: 100 terajoules (TJ) (facility) or 200 TJ (corporation). Scope 3 (indirect GHG emissions, other than Scope 2 emissions i.e., not controlled by the facility), are not included in NGER reporting due to the potential for double counting. The GHG assessment (Katestone 2025b) determined that the Proposal will exceed the facility thresholds and trigger mandatory reporting under the NGER scheme.
State	
Aboriginal Cultural Heritage Act 2003 (ACH Act) Administering authority: Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism	The ACH Act provides for recognition, protection and conservation of Aboriginal cultural heritage. A cultural heritage search included in the Planning Report did not identify a record of any Aboriginal or Torres Strait Islander cultural heritage on the Site of interest to the First Nations Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda (FNBGGGTB) People. The ACH Act protects all indigenous cultural heritage in Queensland, whether or not it has been recorded in a database. All works must be undertaken in accordance with the cultural heritage duty of care: A person who carries out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal or Torres Strait Islander cultural heritage. Consistent with the cultural heritage duty of care, GWT is required to report unexpected finds to the FNBGGGTB People Native Title Group. Failure to comply with the duty of care is an offence, including unlawfully harming, excavating, relocating, taking away and possessing indigenous cultural heritage.
Biosecurity Act 2014 (Biosecurity Act) Administering authority: Department of Primary Industries (DPI)	The Biosecurity Act provides a biosecurity system framework which aims to minimise biosecurity risk, and facilitate responses to biosecurity impacts. Under the Biosecurity Act a general biosecurity obligation is placed on all persons to undertake all reasonable and practicable measures to prevent or minimise biosecurity risk. Additionally, the movement of biosecurity matter must comply with movement restrictions associated with each relevant biosecurity zone, and biosecurity instrument permits are required for the movement of biosecurity matter which cannot comply with movement restrictions. The following Category 3 restricted invasive flora species listed under the Biosecurity Act and weeds of national significance (WONS) were recorded on the Site during the ecological investigation: • Lantana (*Lantana camara*); and • Rubber vine (*Cryptostegia grandiflora*). Evidence of use by the following Category 3, 4 and 6 restricted invasive animals was recorded on the Site during the ecological investigation: • Feral pigs (*Sus scrofa*); • Foxes (*Vulpes vulpes*) – also classified as a Category 5 restricted invasive animal; and

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Legislation	Summary
	• Wild dogs (*Canis familiaris, C. familiaris dingo, C. lupus familiaris, C. lupus dingo*). The restricted invasive category requirements under the Biosecurity Act relevant to these species are as follows: • Category 3: the invasive plant or animal must not be distributed either by sale or gift, or otherwise releasing it into the environment; • Category 4: the invasive animal must not be moved; • Category 5: the invasive animal must not be kept; and • Category 6: the invasive animal must not be fed.
EP Act Administering authority: DETSI	The object of this Act is 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 (ecologically sustainable development). The three primary environmental duties that apply to everyone in Queensland are: • GED – a person must not carry out any activity that causes, or is likely to cause environmental harm, unless all reasonable and practicable measures to prevent or minimise the harm have been taken. Environmental harm is defined in Section 14 of the EP Act as any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value and includes environmental nuisance; • Duty to restore the environment – where an incident involving contamination of the environment has occurred, a person must, as soon as reasonably practicable after the incident happens, take measures, as far as reasonably practicable, to rehabilitate or restore the environment to its condition before the harm; and • Duty to notify of environmental harm – a person must inform the administering authority and landowner or occupier when an incident has occurred that may have caused or threatens serious or material environmental harm that is not authorised. The EP Act regulates activities that will or may have the potential to cause environmental harm and prescribes several mechanisms to ensure that objectives are met. The Proposal involves the following prescribed ERA under Schedule 2 of the EP Reg that will require an approved EA to commence; ERA 7(6d) – Chemical manufacturing: manufacturing, in a year, more than 100,000 tonnes of inorganic chemicals. The Site is located within the GBR catchment which triggers assessment again section 41AA of the EP Reg, related to the release of fine sediment and / or dissolved inorganic nitrogen from the Site. The Proposal will not result in a residual impact as defined under section 41AA(4) of the EP Reg, if appropriate erosion and sediment control and stormwater management strategies are implemented (refer to **Table 5.3**, **Appendix C** and **Appendix D**). The following environmental protection policies (EPPs) have been made under section 26 of the EP Act to identify values and objectives for the specified aspect: • EPP (Air); • EPP (Noise); and • EPP (Water and Wetland Biodiversity).

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Legislation	Summary
Fisheries Act 1994 (Fisheries Act) Administering authority: DPI	To provide for the use, conservation and enhancement of the community's fisheries resources and fish habitat. There are no waterways mapped under the Fisheries Act on the Site, with no direct impacts on waterways to result from the Proposal e.g., waterway barrier works (WWBW) or impacts to marine plants. The Site drains to Boat Creek, which is identified as a purple (major risk to fisheries) waterway approximately 250 m to the south of the Site. An unnamed tributary of Boat Creek, identified as an amber (moderate risk to fisheries), is located between the Site and Boat Creek. Refer to **Figure 1.5** for the location of these waterways with respect to the Proposal. The Proposal will minimise indirect impacts to mapped waterways, if appropriate erosion and sediment control and stormwater management strategies are implemented (refer to **Table 5.3**, **Appendix C** and **Appendix D**).
Nature Conservation Act 1992 (NC Act) Administering authority: DETSI	The NC Act is the primary legislation governing the protection and management of native wildlife, habitat and protected areas in Queensland. The protected plants flora survey trigger map identifies high risk areas for protected plants to occur and must be used to determine whether a targeted flora survey is required for a particular area. The Site is not located within the protected plants flora survey trigger map area. Refer to EPBC Act for a summary of the ecological assessment findings, noting the Koala and Squatter pigeon are also NC Act listed species (i.e. matters of state environmental significance (MSES)). Pre-clearance surveys will be required prior to commencement of clearing. Should active breeding places be observed, a species management program (SMP) must be obtained and implemented. Dependent upon the species to be disturbed, either a low risk SMP (least concern species only), or a high risk SMP (all protected wildlife) may be required.
Planning Act 2016 (Planning Act) Administering authority: DSDIP	To provide an efficient, effective, transparent, integrated, coordinated and accountable system of land use planning and development assessment to facilitate the achievement of ecological sustainability in Queensland. Although the SDPWO Act is the assessment instrument for land within an SDA, this process is aligned with the Planning Act. *Planning Regulation 2017 (Qld)* (Planning Regulation) referral triggers relevant to the SDPWO Act process are identified as: • Planning Regulation – Schedule 10, Part 5, Division 4, Table 2 – Non-devolved environmentally relevant activities (refer to EP Act responses); • Planning Regulation – Schedule 10, Part 9, Division 4, Subdivision 1, Table 1 – State transport infrastructure generally (triggered given The Proposal special industry use will transport more than 10,000 tpa on state-controlled roads); • Planning Regulation – Schedule 10, Part 9, Division 2, Table 1 and 2 – RaL and MCU subject to an easement or near a substation site (associated with the Ergon Energy easement on Landing Road and Boat Creek Substation); and • Planning Regulation – Schedule 10, Part 7, Division 3 – Hazardous chemical facility (refer to **Section 1.1**).

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Legislation	Summary
SDPWO Act Administering authority: OCG	To provide for State planning and development through a coordinated system of public works organisation, for environmental coordination. The Site is located within the GSDA and is subject to the Development Scheme prepared under the SDPWO Act. A DA for a MCU for a special industry and RaL will be assessed against the Development Scheme and need to be approved by the CG prior to commencement of site works for the development. OPW for the clearing of regulated regrowth vegetation (refer to VM Act comments) can be undertaken as a SDA self-assessable development, where associated with a MCU and / or RaL authorised by an SDA approval. An assessment against the strategic visions, overall objectives, preferred development intent of the MTSC Precinct and SDA wide assessment criteria for the Proposal MCU and RaL, and SDA self-assessable requirements for OPW for native vegetation clearing, is provided in the Planning Report.
Vegetation Management Act 1999 (VM Act)	To regulate the clearing of vegetation in a way that conserves remnant of concern regional ecosystems. The Queensland Herbarium regulated vegetation management map identified vegetation categories that are used to determine if clearing of native vegetation is considered assessable development requiring a permit. The Site is mapped as Category C (regrowth) vegetation, which was verified through a habitat assessment undertaken for the Site (CQG 2025a). OPW for the clearing of regulated regrowth vegetation can be undertaken as a SDA self-assessable development in the GSDA, where associated with a MCU and / or RaL authorised by an SDA approval (refer to SDPWO Act comments).
Waste Reduction and Recycling Act 2011 Administering authority: DETSI	To establish a framework for waste management and resource recovery practices in Queensland. It promotes the waste hierarchy i.e., avoid, reduce, reuse, recycle, recover and treat, with disposal only considered when there is no viable alternative. Minimal waste will be generated by the Proposal with these to be managed in consideration of the waste hierarchy and in accordance with requirements under the EP Act.
Water Act 2000 (Water Act) Administering authority: DETSI	To provide a framework for the sustainable management and efficient use of Queensland's water resources. There are no watercourses identified under the Water Act watercourse identification map on the Site, with no direct impacts to watercourses to result from the Proposal. The Site drains to Boat Creek, which is identified as a watercourse approximately 250 m to the south of the Site. Two unnamed tributaries of Boat Creek, located between the Site and Boat Creek are identified as drainage features (not defined as a watercourse under the Water Act). The Proposal will minimise indirect impacts to mapped watercourses and drainage features, if appropriate erosion and sediment control and stormwater management strategies are implemented (refer to **Table 5.3**, **Appendix C** and **Appendix D**). Overland flow water that is collected within the operational area may be reused as part of the proposal where available and practicable. In accordance with section 97

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Legislation	Summary
	of the Water Act, overland flow of water may be collected and retained as part of the Proposal to satisfy the requirements of the EA under the EP Act.
Local	
Gladstone Region Planning Scheme: Our Place Our Plan (Version 2) (Planning Scheme)	The Site is within the GRC local government area (LGA). The Planning Scheme has been developed to regulate land use planning and development assessment within the GRC LGA in accordance with the Planning Act. The Site is zoned Special Purposes zone under the Planning Scheme, identifying that development assessment for this area is managed by the CG in accordance with the Development Scheme under the SDPWO Act, rather than under the Planning Scheme. However, applicable Planning Scheme overlays are as follows: • Acid sulfate soils (ASS) 5 to 20 metres with respect to Australian Height Datum (mAHD); • Airport buffer 8 to 13 kilometres (km); • Bushfire hazard – Medium Potential Bushfire Intensity; • Mining leases (ML) – associated with ML80081 (Queensland Energy Resources Pty Ltd); and • Regional infrastructure – associated with the Ergon Energy easement.
Local laws	The *Local Government Act 2009* (Qld) allows for Councils to create laws and regulate specific matters within their LGA in accordance with their function or power under the Act. GRC has various local laws that may apply to the development e.g. related to local government controlled roads, community and environmental management and waste management. It is anticipated that approval will be required for works in a road reserve for access to the Site and any required upgrades (refer to Section 2.2.2.1), and potentially for trade waste disposal. GWT will take further advice from GRC and the OCG with respect to any requirements regarding OPW for site works, or otherwise as required during the referral stage.

Once GWT receive relevant approvals, this EMP will be updated to reflect the respective approval conditions.

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4 Management System

4.1 Site responsibilities

All GWT personnel and their contractors are responsible to ensure the GED under the EP Act (refer to **Section 3**).

The key roles and responsibilities under the EMP to meet the GED are outlined in **Table 4.1**.

Table 4.1: Roles and Responsibilities

Role	Responsibility
Operations Manager	The Operations Manager is responsible for overseeing the EMP performance, and shall: • Have in place all relevant approvals to allow the works to proceed; • Ensure the operational team is adequately resourced to implement the EMP; • Ensure appropriately qualified / competent personnel are engaged to conduct operational activities and / or engage external technical support, as required; • Ensure personnel are trained and aware of their obligations under the EMP, EP Act, general biosecurity obligation, cultural heritage duty of care and site-specific approvals (DA, EA and MHF licence); • Lead annual management performance reviews and authorise material amendments to the EMP; and • Notify OCG, DETSI, GRC and other external stakeholders, as required.
Site Supervisor	The Site Supervisor is responsible for implementing the EMP on a day-to-day basis, and shall: • Ensure personnel are familiar with the Site-specific requirements and comply with the EMP, EP Act, general biosecurity obligation, cultural heritage duty of care and site-specific approvals (DA, EA and MHF licence); • Coordinate ongoing reviews of compliance with the EMP, including site inspections and audits; • Sign off on any site approvals required for works e.g. ground disturbance permit, permit to dig, hot work permit etc; • Coordinate near miss, incident, non-compliance, emergency and complaint corrective actions, reports and investigations, and on-report to the Operations Manager, as required; • Oversee corrective and preventative actions; and • Assist the Operations Manager with performance reviews and notifications to external stakeholders, as required.
Environmental Consultant (CQG)	The Environmental Consultant is responsible for advising the Operations Manager and Site Supervisor on the implementation of the EMP on an as needs basis, including the provision of appropriately qualified person/s (AQP/s) for site inspection and / or audit, preclearance survey and fauna-spotter catcher services.
Indigenous Engagement Officer	The Indigenous Engagement Officer is responsible for advising the Operations Manager and Site Supervisor on Indigenous engagement matters generally, and cultural heritage matters specifically (including as outlined in **Section 5.5**). This person may be an external consultant.

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Role	Responsibility
All personnel	All personnel (including contractors) are responsible for working in accordance with the EMP and reporting any near-misses, incidents, non-compliances and complaints.

4.2 Competence, training, and awareness

Personnel employed, including contract personnel, are to be deemed competent in their role(s), with the relevant qualifications, skills and experience (e.g., licences / tickets, as required).

All personnel (including contractors) will complete a site safety and environmental induction prior to commencing works on the Site. The induction will include an overview of their obligations under the GED, general biosecurity obligation, cultural heritage duty of care (refer to **Section 3**) and this EMP. The induction will also outline incident / complaint / hazard communication and reporting protocols, correct use of emergency equipment and consequences for non-conformances.

Pre-start and toolbox talks will be held routinely. These meetings offer the opportunity to periodically refresh the workforce on their GED and associated EMP obligations as well as provide status updates on any environmental near misses, incidents, non-compliances or complaints reported. They also provide the opportunity for the workforce to raise environmental concerns and identify opportunities for improvement.

The Operations Manager and Site Supervisor will be provided with further training regarding the implementation of the EMP, if necessary.

Records of all qualifications, inductions, pre-start meetings, toolbox talks and other training provided will be maintained.

4.3 Incident management

4.3.1 Incident recording

Management of near-misses, incidents, non-compliances and emergencies is important to reduce the risk of the hazard occurring, or the severity of the hazard where it has occurred, to the environmental, cultural heritage or social values of the Site.

These may be defined as:

- A near-miss is any event that could have resulted in an injury or illness to people, danger to health, and / or damage to property or the environment;
- An incident is any event that has resulted in an injury or illness to people, danger to health, and / or damage to property or the environment; and
- An emergency is a major incident that requires an immediate response to preserve life, property and environment, including fire, significant spills, road accidents, natural disasters and civil disturbances (bomb threat).

In the event that a near-miss or incident occurs, the following steps will be followed immediately by a competent person:

- Prevention of further pollution, or harm to environmental, cultural heritage or social values;
- Clean-up and / or control of polluting substance(s) or environmental, cultural heritage or social harm;
- Implementation of mitigation measures to prevent recurrence of a similar incident;
- Instigate incident investigation as appropriate commensurate with the level of risk and / or harm; and
- Notification of the incident – can occur in parallel with steps above, noting the limited timeframe for DETSI notification, where required (refer to **Section 4.3.2**) and should emergency services assistance be required to manage the incident.

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All near-misses, incidents, non-compliances and emergencies must be recorded in a site register including the following information at a minimum:

- Time, date, duration and cause of any incident;
- Any resultant environmental harm; and
- Immediate clean up and corrective actions taken.

The Operations Manager will oversee further corrective and preventative actions and lead investigations associated with any near misses, incidents, non-compliances or emergencies with input from the Site Supervisor and workforce involved. A report will be prepared in accordance with GWT's incident management system, to ensure an adequate response to managing any non-compliance with the EA or GED, adverse environmental impacts and to avoid a recurrence.

4.3.2 Notification of incidents and emergencies

Emergencies likely to cause off-site impacts or significant environmental harm may require immediate contact with emergency services. The Operations Manager will make such contact as required.

Under the *Work Health Safety Act 2011 (Qld)* any incident that results in the death, serious injury or serious illness of a person, or involves a dangerous incident must also be reported to Workplace Health and Safety Queensland. Such notifiable incidents must be reported immediately on becoming aware of the incident (refer to the GWT WHSMP and ERP for the Site for further details).

DETSI will be provided details of a notifiable environmental event within 24 hours of GWT becoming aware of the event. The following are events notifiable to DETSI under the EP Act[1]:

- Material environmental harm as defined in section 16 of the EP Act i.e. environmental harm, that is not trivial or negligible in nature, extent or context;
- Serious environmental harm as defined in section 17 of the EP Act i.e. environmental harm that is irreversible; has a high impact or widespread effects to the environment or is caused to an area of high conservation significance; and
- A breach of a condition of the EA, whether any environmental harm has been caused or not.

DETSI can be contacted via either of the following options:

- Phone: 24/7 Pollution Hotline – 1300 130 372 (Option 2) – pollution incidents can be reported via this method 24 hours a day, 7 days a week; OR
- Online: Environmental reporting form, available here: https://www.qld.gov.au/environment/management/pollution-management/environmental-nuisance/reporting-form – note: this option is only manned from 8:30am to 5:00pm on standard business days. For any emergency release use the 24/7 Pollution Hotline option listed above.

After the notification, DETSI may request further information to assist in their assessment and investigation within a certain timeframe. GWT will respond to the DETSI request accordingly.

4.4 Complaint management

Complaints must be handled promptly and professionally to resolve the issue fairly and effectively for all concerned.

Complaints are to be recorded in a site register including the time, date, complainant contact details, reason for the complaint, any investigation undertaken, conclusion and actions taken to address the matter.

The Operations Manager will be responsible for communications with external stakeholders (including complainants) and ensure proposed resolution actions are implemented, as required.

[1] In addition, material environmental harm is identified as costing between $10,000 and $100,000, with serious greater than $100,000, for the actual or potential loss or damage to property or to prevent or minimise the harm and rehabilitate or restore the environment to its condition before the harm. These values were based on the financial year ending 30 June 2023. For subsequent financial years, the preceding financial years value is to be increased by the consumer price index for the previous financial year.

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4.5 Non-conformances and corrective actions

Any non-conformance with this EMP will be reported to the Operations Manager as soon as possible (noting as per **Section 4.3.2** a non-conformance with the EA is a notifiable event). A major non-conformance may result in the Site / activities being shut down until the non-conformance is rectified.

Corrective and preventative actions may include:

- Review and improvement of existing environmental controls and procedures;
- Site rehabilitation;
- Increased site inspections and monitoring;
- Modification of operational activity/ies; and
- Increased environmental awareness including retraining and toolbox talks.

Any non-conformance must be recorded in a site register and investigated commensurate with the risk identified to allow specific corrective and/or preventative actions to be identified, actioned and closed out. Actions are to be addressed and implemented within the time period specified by the incident investigation, assigned based on the identified level of risk.

4.6 Performance reviews

4.6.1 Routine inspections

Routine inspections will be carried out by the Site Supervisor to ensure the integrity and adequacy of management measures, including but not limited to, sediment and erosion / stormwater control systems, chemical and waste storage areas, housekeeping and other controls used to minimise the risk to the receiving environment or of non-compliances with the Site EA.

As outlined in **Section 5**, these routine inspections will include:

- Daily visual surveillance inspections of all key risk areas and controls; and
- Weekly inspections of key risk areas and controls, including the completion of a formal checklist.

Any areas of concern and recommended corrective actions will be documented. Any non-compliances, including against performance criteria outlined in **Section 5**, shall be recorded as per the procedure outlined in **Section 4.5**.

4.6.2 Event based inspections and monitoring

Weather forecasts will be checked daily to provide an early warning of potential inclement weather. Where severe weather or natural disasters (e.g., cyclones, bushfires etc) are forecast, the Site is to be inspected and assessed to ensure that there is adequate capacity in the sediment basin, there are no potentially contaminating materials exposed and emergency equipment is readily available and appropriately maintained (e.g. spills kits, firefighting equipment etc).

During periods of rainfall producing runoff, an inspection will be conducted at the lawful point of discharge to confirm the potential requirement to release. Stormwater releases from the sediment basin will be monitored as outlined in **Section 5** to ensure there is no risk of material or serious environmental harm to the receiving environment. In the case contaminants are released to the environment, the event would be managed as outlined in **Section 4.3**.

Immediately following periods of runoff occurring, site inspections will be conducted to ensure the integrity of access, sediment and erosion / stormwater control systems, chemical and waste storage areas, housekeeping and any other controls used to minimise the risk to the receiving environment or of non-compliances with the Site EA.

The inspections will be completed by the Operations Manager and / or the Site Supervisor and documented.

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4.6.3 Auditing

Site audits of compliance with the EA and / or this EMP should be conducted routinely by an AQP not involved with the day-to-day management of the Site.

The frequency of the Site audit will be determined based on the activities being conducted, but should not be less frequently than six-monthly during the construction and commissioning phases.

GWT has committed to achieving ISO 14001 certification for the operational environmental management system (EMS). This will ensure that the EMS is routinely audited by an AQP i.e., surveillance audits conducted annually, and recertification audits every three years during operations and decommissioning.

4.7 Risk Management

Risks associated with the Proposal, with performance targets and controls identified to manage these risks are outlined in **Section 5**.

A site risk register will be maintained for the Site activities, with the EMP updated as required based on this (refer to **Section 6**).

4.8 Documentation

This EMP, and other relevant documentation (including the GWT WHSMP and ERP) will be readily available and accessible to all personnel.

All documentation and records required under the EA and / or the EMS will be maintained for the life of the operation. Such records include, but are not limited to, training records (including personnel records and internal training and awareness materials), monitoring results (including calibration records, field sheets and laboratory reports), inspection checklists, site risk register and site incident, complaint and non-conformance register.

Relevant information can be provided by GWT's Operations Manager to the OCG, DETSI or GRC on request.

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5 Operational Controls

Management procedures and controls to manage potential impacts during construction, operation and closure of the Site as outlined in **Section 2.2**, are provided in the following **Tables 5.1** to **5.7**.

5.1 Land management

Table 5.1: Land degradation controls

Element	Description
Potential risk	• Land degradation through erosion, sedimentation or contamination. NOTE: the residual risk of land degradation is considered moderate if managed in accordance with this EMP, given the following inherent risks: • Potential for erosion and sedimentation – high during construction when soil is exposed, noting although the Site is relatively flat, sodic soils have been identified on the Site which are highly likely to be dispersive (refer to **Appendix C**). The risk will be significantly reduced during operations when the Site surface will be stabilised (refer to **Appendix D**); and • Potential for contamination – high given volumes of hazardous chemicals are to be stored on the Site during operations. A baseline assessment undertaken does not indicate the presence of contaminated soils or acid sulfate soils (ASS) at the Site (CQG 2025c).
Objective	To comply with the GED under the EP Act (refer to **Section 3**).
Performance targets	• No significant signs of erosion or contamination; • No notifiable incidents (refer to **Section 4.3.2**); • No complaints related to visual amenity; and • Achievement of rehabilitation acceptance criteria on decommissioning.
Management strategies	**General controls:** • High-risk activities (such as vegetation clearing and excavation) must be provided with a site approval prior to commencement, with relevant controls outlined in this EMP verified as being in place prior to commencement; • The Site will remain tidy with chemical storage, wastes, laydown materials, erosion, weeds etc to be visually assessed on an ongoing basis and managed as outlined throughout this EMP; • Hazardous materials will be substituted wherever practicable with non-hazardous, or less hazardous materials; • All chemicals and fuels in containers of greater than 15 litres must be stored within secondary containment, roofed wherever possible to prevent stormwater ingress, and in accordance with relevant Australian Standards (including segregation of incompatible substances). Any material captured within the secondary containment is to be managed as a hazardous waste (refer to **Table 5.7**); • Spills outside designated bunds will be cleaned up immediately, with reporting and monitoring undertaken, where necessary; • Refuelling of vehicles will occur in designated areas, supervised at all times with drip trays used and spill kits readily available; • Spill kits and other emergency equipment is to be located within a suitable distance from hazardous material storages. All equipment is to be clearly labelled, identified on the Site emergency plans and maintained to ensure adequate supplies in the case of an emergency spill; • Site personnel are to be trained in the correct use of emergency equipment and management of contaminated materials;

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Element	Description
	• Vehicles and equipment are to be serviced and maintained in accordance with manufacturer's specifications; and • Daily (on use) pre-starts are to be undertaken for all vehicles and equipment to identify any wear and tear which may contribute to a failure and result in a spill. Any plant leaking fuel or oil is to be tagged out and repaired prior to further use. **Construction phase specific controls:** • Exposed areas on the Site will be minimised and stabilised as soon as possible; • Erosion and sediment controls must be in place prior to commencement of construction. The controls will be designed, installed, maintained and monitored in accordance with the Erosion and Sediment Control Plan (ESCP) provided at **Appendix C**, to be further informed by the detailed design including a Dispersive Soil Management Plan; and • Should strong sulfuric "rotten egg" odours or black oozing soils, or evidence of contamination otherwise, be encountered during disturbance and excavation, works should immediately cease, soils be covered and advice sought from an AQP and / or SQP with experience in managing ASS and / or contaminated land. **Operational phase specific controls:** • The Site will be stabilised on commencement of operations, with stormwater controls to be designed, installed, maintained and monitored in accordance with the Stormwater Management Plan (SWMP) provided at **Appendix D**; and • All bulk chemicals are to be stored and handled in accordance with the General controls, and specific requirements of the EA and MHF licence. **Decommissioning phase specific controls:** • Prior to decommissioning GWT is to confirm the final land use with the landowner (MEDQ). Given the Site is within the GSDA, it is expected this will require the land to be left in a fit state suitable for future industrial purposes consistent with the Development Scheme. In any case the Site must be left safe, stable and non-polluting; and • The current decommissioning plan would involve: o removal of all specific Project Halogen infrastructure, equipment and waste materials to ensure no sources of ongoing environmental harm or nuisance. Safe, stable and non-polluting hardstand or sealed surfaces, and non-specific Project Halogen infrastructure including service connections, may be retained in consultation with the landholder; and o the acceptance criteria for handover to the landholder assumes the Site has been assessed as stable by a RPEQ and non-polluting by a SQP under the EP Act.
Performance review	• Routine and event based inspections and auditing as outlined in **Section 4.6**; and • Performance and proposed amendments (if any) will be reviewed annually as outlined in **Section 6**.
Reporting	• Any record or document generated through the implementation of this EMP must be retained for the life of the operation; • All incidents relating to land management shall be recorded in the Site incident, complaint and non-conformance register; and • Any non-compliances with the GED will be reported to the DETSI Pollution Hotline within the timeframe outlined in **Section 4.3.2**. Records must be kept including full details of the breach and any subsequent actions undertaken.

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Element	Description
Contingency actions	• Incidents and non-conformances will be investigated to determine the magnitude of the problem and identify and implement corrective and preventative actions; and • Should the management strategies as outlined in the EMP prove insufficient to meet the performance objectives the Operations Manager will further investigate and amend the EMP / communicate amendments accordingly.

Table 5.2: Ecology controls

Element	Description
Potential risk	• Disturbance of native flora, communities, fauna or habitat; and • Introduction of restricted invasive flora or fauna. NOTE: the residual risk of ecological impacts are considered low if managed in accordance with this EMP, given the following inherent risks: 1. Vegetation on the Site is largely regrowth vegetation with scattered remnant trees, reflecting a history of disturbance within an industrialised landscape; 2. Suitable foraging and shelter habitat was identified for Koala, Squatter pigeon and Osprey. No other threatened species or communities were identified as likely to occur (CQG 2025a). Targeted fauna surveys identified that Koala are unlikely, Squatter pigeon likely and Osprey known (identified during a diurnal survey flying overhead) to be present at the Site (CQG 2025b); and 3. The Site lies within an area mapped under the Queensland State Planning Policy's Bushfire Prone Area mapping and the Planning Scheme bushfire hazard overlay; classified as of medium potential bushfire intensity and potential impact buffer (Blackash 2025). The Proposal will result in the Site being cleared of existing regrowth vegetation. None of the chemicals produced by the chlor-alkali plant are flammable except for hydrogen which is vented below the lower explosion limit (Blackash 2025).
Objective	To comply with the GED under the EP Act, the VMA, the NC Act and general biosecurity obligation under the Biosecurity Act (refer to **Section 3**).
Performance targets	• No ground disturbance outside designated locations on the Site; • No significant impact to native flora and fauna; including no direct mortality, disturbance of active breeding sites or bushfires; and • No introduction of new, or spread of known, weed or pest species.
Management strategies	**General controls:** • Project vehicles and personnel are to stay on the designated operational and access areas; • Vehicle speed limits across the Site will be signed, these and speed limits on public roads will be adhered to; • Outdoor lighting will be designed, installed and maintained in accordance with Australian Standard 4282: Control of the obtrusive effects of outdoor lighting; • Ongoing weed inspections and management will be undertaken on the Site. Any chemicals used must be registered with the Australian Pesticides and Veterinary Medicines Authority, applied by licensed commercial operators for the intended use, at the suggested rates and only by methods registered on the label and safety data sheet. Non-residual and non-persistent herbicides are to be used to manage weeds onsite, to minimise the potential risk of harmful herbicide by-products entering the surface water receiving environment (refer to **Table 5.3**).

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Element	Description
	• All vehicles and plant to be washed and inspected prior to entering the Site. Weed and seed hygiene certificates (signed by authorised personnel who have completed *AHCBIO203 - Inspect and clean machinery, tools and equipment to preserve biosecurity* or equivalent) and pre-mobilisation inspection must be provided for all vehicles and plant until the Site clearing is complete and ground adequately stabilised for construction purposes, after which time such certificates and inspections will only be required for ground disturbing equipment; • No materials to be brought on site that are likely to harbour weeds or diseases (such as topsoil, mulch or turf) unless provided with a weed hygiene certificate; • No domestic animals permitted onsite; • Personnel are not permitted to approach, interact with or feed fauna, and not to intentionally harm or kill fauna including snakes. A fauna spotter catcher (FSC) or the RSPCA 1300 ANIMAL (1300 264 625) should be contacted for advice should any injured, sick or orphaned animals be encountered; • A FSC will be engaged to undertake a daily inspection of any open excavations to remove inadvertently trapped fauna and / or to manually relocate fauna (e.g., snakes) to nearby suitable habitat if required; • Injured wildlife are to be taken to nearest wildlife carer or veterinary clinic by the FSC and reported to regulatory authorities as required; • Personnel (including contractors) will be made aware of the general biosecurity obligation with respect to weeds and pests, and the GED with respect to other matters, including but not limited to, fauna interactions, emergency response etc, during the induction and toolbox talks; and • Waste will be managed as outlined in **Table 5.7** to avoid attraction of fauna. **Clearing phase specific controls:** • A site approval is required before clearing works can commence i.e., ground disturbance approval, with clearing controls outlined in this EMP verified as being in place prior to commencement; • Control restricted invasive weeds in the area prior to vegetation clearing in accordance with a Biosecurity Management Plan and the general biosecurity obligation under the Biosecurity Act (refer to **Section 3**); • Delineate clearing boundaries and no-go zones. Clearing will be restricted to Category C (regrowth) vegetation within the Site; • Pre-clearance surveys to be conducted ahead of clearing and ground disturbing activities (within one week of clearing commencing) by an AQP; • If animal breeding places are found during the pre-clearance survey, a SMP under the NC Act must be obtained prior to clearing in the area being permitted, and conditions complied with (refer to **Section 3**); • Maintain areas of land not required for immediate development undisturbed. Progressive vegetation clearing methods to be employed to enable fauna time to relocate without intervention; • A FSC must be present during all vegetation clearing and ground disturbance; • Fauna identified in the clearing footprint that do not relocate without intervention, must be manually relocated by a FSC to nearby suitable habitat; • Any potentially hollow-bearing limbs to be dismantled slowly and checked for fauna by the FSC; • Relocate fauna habitat features to adjacent undisturbed areas where possible i.e., fallen hollow logs, timber or rock piles; • Topsoil, subsoil and vegetative matter (excluding restricted invasive weeds) is to be removed from the disturbed area and stockpiled for use in operational landscaping areas where possible; and

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Element	Description
	• All areas not required for operations and associated asset protection zones (APZ) (refer to Bushfire controls) are to be landscaped i.e. ripped to relieve compaction, subsoil, topsoil and mulch reinstated. If natural regeneration following this process is unsuccessful, the area should be planted using suitable local species. **Bushfire management controls:** • Hot works or other high-risk activities must be provided with a site approval prior to commencement e.g., permit to dig, hot work permit etc. with relevant controls outlined in this EMP verified as being in place prior to commencement. No such activities are to be undertaken during total fire ban periods; • A comprehensive construction and operations ERP, including Bushfire Emergency Management and Evacuation Plan, will be prepared in accordance with the requirements of Australian Standard *AS3745-2010 Planning for Emergencies in facilities.* The ERP will be developed in consultation with local emergency services; • All facilities and services (e.g., gas and electricity) are to be designed in accordance with relevant building codes and Australian Standards (e.g. for pressure vessels); • Hazardous material stores, transformers and control rooms are to be designed and operated to withstand credible bushfire conditions; • The Site will be using piped natural gas onsite for steam production. A small amount of LPG will be stored on site for emergency steam generation only when natural gas is not available; • Incompatible substances are to be segregated as required by Australian Standards; • APZs designed and maintained for the Site, requiring separation of structures from hazardous vegetation by a minimum of 10 m; • Access will be designed and maintained for emergency service vehicles to and within the Site (medium rigid vehicle up to 23 t at a minimum); • Water carts to be available onsite as additional firefighting equipment, during construction prior to installation of a reticulated water supply; • Smoking only allowed in designated smoking areas, with sufficient “butt out bins” (or similar) available; and • Daily (on use) pre-starts of plant and equipment, with servicing undertaken in accordance with manufacturers specifications to ensure they are operating efficiently. All project vehicles, equipment, and machinery to be fitted with a fire extinguisher that needs to be checked during the pre-start and serviced six-monthly at a minimum.
Performance review	• Routine and event based inspections and auditing as outlined in **Section 4.6**; and • Performance and proposed amendments (if any) will be reviewed annually as outlined in **Section 6**.
Reporting	• Any record or document generated through the implementation of this EMP must be retained for the life of the operation; • All incidents relating to ecology management shall be recorded in the Site incident, complaint and non-conformance register; and • Any non-compliances with the GED will be reported to the DETSI Pollution Hotline within the timeframe outlined in **Section 4.3.2**. Records must be kept including full details of the breach and any subsequent actions undertaken.

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Element	Description
Contingency actions	• Incidents and non-conformances will be investigated to determine the magnitude of the problem and identify and implement corrective and preventative actions; and • Should the management strategies as outlined in the EMP prove insufficient to meet the performance objectives the Operations Manager will further investigate and amend the EMP / communicate amendments accordingly.

5.2 Water resource management

Table 5.3: Water resource controls

Element	Description
Potential risk	• Loss of sediments into waterways due to erosion caused by overland stormwater flows; • Water quality impacts caused by erosion and sedimentation from earthmoving activities; and • Water contamination as a result of storage and handling of hazardous materials and wastes. NOTE: the residual risk of water resource impacts is considered moderate if managed in accordance with this EMP, given • Those inherent risks outlined at **Table 5.1**; • The Site is within the GBR World Heritage Area catchment, although no direct impact on waterways will occur from the Proposal (approximately 250 m from the nearest mapped watercourse in Boat Creek); and • Geotechnical investigations conducted on 15 to 17 September 2025 (D&N Geotechnica 2025) identified groundwater seepage from three boreholes at between 6.2 m to 6.5 m below the ground surface. This is comparable with water-bed depths of 8 m and 13 m recorded from two groundwater bores on the Cleanaway Gladstone Industrial Waste Services site (151084 and 151082 respectively), developed on 21 September 2009 approximately 400 m to the west of the Site (Queensland Government 2025a).
Objective	To comply with the GED under the EP Act and the EPP (Water and Wetland Biodiversity) (refer to **Section 3**).
Performance targets	• No direct impacts to waterways or groundwater; • No overland flow releases outside criteria specified in **Appendix C** or **Appendix D**; and • No notifiable incidents (refer to **Section 4.3.2**).
Management strategies	**General controls:** • As per General controls in **Table 5.1** and **Table 5.7**; • No direct disturbance of mapped waterways is to occur; • High-risk activities (such as sediment pond discharge) must be provided with a site approval prior to commencement e.g., permit to release with relevant controls outlined in this EMP (including **Appendix C** during construction or **Appendix D** during operations) verified as being in place prior to commencement; • The quality of water to be released to the receiving environment will be monitored by an AQP prior to release from the sediment basin in accordance with the *Monitoring and Sampling Manual (DES 2018)*F;

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Element	Description
	• Water may be reused for where available and practicable, including for dust suppression and material conditioning during construction, and for watering of landscaped areas during operations; and • Hazardous materials will be substituted wherever practicable with non-hazardous, or less hazardous materials e.g., non-residual and non-persistent herbicides are to be used to manage weeds onsite. **Construction phase specific controls:** • Site establishment works should occur in the dry season, where possible; • Construction controls as outlined in **Table 5.1**; • Clearing controls as outlined in **Table 5.2**; and • Site surfaces are to be stabilised as soon as possible to avoid erosion and sedimentation. **Operational phase specific controls:** • As per **Table 5.1**; and • Any wastewater generated that cannot be reused in the process will be transported offsite by an appropriately licensed contractor or treated onsite in the future if a suitable treatment system is identified. **Decommissioning phase specific controls:** • As per **Table 5.1**.
Performance review	• Routine and event based inspections and auditing as outlined in **Section 4.6**; and • Performance and proposed amendments (if any) will be reviewed annually as outlined in **Section 6**.
Reporting	• Any record or document generated through the implementation of this EMP must be retained for the life of the operation; • All incidents relating to water resource management shall be recorded in the Site incident, complaint and non-conformance register; and • Any non-compliances with the GED will be reported to the DETSI Pollution Hotline within the timeframe outlined in **Section 4.3.2**. Records must be kept including full details of the breach and any subsequent actions undertaken.
Contingency actions	• Incidents and non-conformances will be investigated to determine the magnitude of the problem and identify and implement corrective and preventative actions; and • Should the management strategies as outlined in the EMP prove insufficient to meet the performance objectives the Operations Manager will further investigate and amend the EMP / communicate amendments accordingly.

5.3 Air quality management

Table 5.4: Air quality controls

Element	Description
Potential risk	• Nuisance to surrounding sensitive receptors resulting from dust associated with the construction, or Cl_2 and HCl emissions during operation (refer to Note 1); and • Significant unabated greenhouse gas emissions (refer to Note 2). NOTE (assuming engineering controls as specified): 1. The air quality assessment undertaken by Katestone (2025a) identified the key operational emission sources as the waste gas dechlorination stack (Cl_2

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Element	Description
	emissions) and HCl vent burner stack (Cl_2 and HCl emissions). Other potential sources were identified as negligible so were not included in the dispersion modelling. Both emissions complied with the relevant assessment criteria at the nearest sensitive receptor (residence) located 3.7 km to the west, with the highest concentration of either pollutant anywhere in the model domain predicted to be less than 0.3 % of the relevant air quality assessment criteria. Dust emissions during the construction phase were also identified as negligible; and 2. The greenhouse gas (GHG) assessment undertaken by Katestone (2025b) identifies the Proposal as a medium to high emitter, with baseline operational Scope 1 and 2 GHG emissions estimated at 3,985 t CO2-e and 56,413 t CO2-e respectively annually. The Proposal is expected to reduce imported chemical shipping emissions by approximately 3,500 t CO2-e to 22,000 t CO2-e per annum depending on the shipping method considered.
Objective	To comply with the GED under the EP Act, the EPP (Air) and NGER Act (refer to **Section 3**).
Performance targets	• No fugitive emissions from the Site activities observed to be impacting sensitive receptors; • No complaints related to air quality nuisance; and • Meeting GHG abatement measure KRAs.
Management strategies	**General controls:** • Avoid undertaking clearing, soil stripping or material handling activities during periods of high winds; • Loads shall be covered to reduce solid material escaping (dirt during construction, salt during operation etc). Chemicals will be transported in specifically designed hazardous material tankers to avoid loss of liquid or gas; • Waste to be contained and regularly removed from Site by appropriately licensed contractors to avoid odour generation (refer to **Table 5.7**); • Vehicles and equipment are to be serviced and maintained in accordance with manufacturer's specifications; • Daily (on use) pre-starts are to be undertaken for all vehicles and equipment to identify any wear and tear which may contribute to inefficient running and air emissions. Should such issues be identified the plant is to be tagged out and repaired prior to further use; • Vehicles and equipment to be turned off when not in use; • No burning will be permitted on the Site; and • Sustainable procurement guidelines will be applied to all preventative maintenance, repair and replacement works. **Construction phase specific controls:** • Maintain areas of land not required for immediate development undisturbed; • Erect solid screens or barriers around dust activities or the Site boundary; • Cover, seed or fence stockpiles and/or exposed surfaces to prevent wind erosion and stabilise exposed surfaces as soon as possible; • Seal site haul roads or apply water suppression and minimise vehicle speed on unsurfaced roads; • Use suitable dust suppression techniques (water sprays, local extraction, etc.) during use of cutting, grinding or sawing equipment; • Ensure an adequate water supply on the Site for effective dust and particulate matter suppression or mitigation, using non-potable water where possible and appropriate;

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Element	Description
	• Use of rumble grid or a wheel washing system at property entrance points to reduce mud tracking on public roads; and • Speed limits will be signposted on the Site and where required to further control dust, these will be reduced. Vehicles must adhere to speed limits. **Operational phase specific controls:** • The Site will be stabilised on commencement of operations; • Minimise designated salt storage stockpile drop heights during loading/unloading activities; • The entire facility will have a closed loop design and consequently will not have any fugitive releases. The design of the facility is such that any potential sources of release will be minimal, easily identified, and immediately and automatically rectified; • Systematic collection and redirection of waste gas stream to the Cl_2 absorption unit to reduce Cl_2 to trace levels (< 1 mg/Nm³) prior to release, with the scrubber on HCl synthesis unit to reduce Cl_2 and HCl to low levels (≤ 5 mg/Nm³ and ≤ 30 mg/Nm³, respectively); and • Hydrogen and Cl_2 gas detector sensors will be installed in buildings and key locations across the Site that are linked to the plant operations to assist in identifying, managing and fixing leaks in a timely manner. Any fugitive releases will be detected and result in the immediate and automatic shutdown of that part of the plant and process. **Greenhouse controls:** • Implement the facility GHG abatement plan for Scope 1 and 2 emissions (refer to **Appendix B**); • Undertake periodic reviews of the technical readiness level and commercial readiness level of technology and process options that can improve the emissions intensity of production and/or provide new business models; • Investigate and implement measures to address Scope 3 emissions where economically viable and technically feasible e.g., contract transport and logistics providers based on their verified emissions intensity, procure goods and capital goods with lowest verified embodied emissions or reduce commuting emissions via car-pooling incentives, public transport support, and flexible work policies; and • Identify and utilise local suppliers of products and materials to reduce Scope 3 transportation associated emissions.
Performance review	• Routine and event based inspections and auditing as outlined in **Section 4.6**; • Performance and proposed amendments (if any) will be reviewed annually as outlined in **Section 6**; and • Routine review of GHG emissions and performance against KRAs (refer to **Appendix B**).
Reporting	• Any record or document generated through the implementation of this EMP must be retained for the life of the operation; • All incidents relating to air quality management shall be recorded in the Site incident, complaint and non-conformance register; • Any non-compliances with the GED will be reported to the DETSI Pollution Hotline within the timeframe outlined in **Section 4.3.2**. Records must be kept including full details of the breach and any subsequent actions undertaken; and • Annual reporting of GHG emissions to the CER as required under the NGER scheme.

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Element	Description
Contingency actions	• Incidents and non-conformances will be investigated to determine the magnitude of the problem and identify and implement corrective and preventative actions; and • Should the management strategies as outlined in the EMP prove insufficient to meet the performance objectives the Operations Manager will further investigate and amend the EMP / communicate amendments accordingly.

5.4 Noise and vibration management

Table 5.5: Noise and vibration controls

Element	Description
Potential risk	• Nuisance to surrounding sensitive receptors resulting from noise and vibration associated with construction and operation. NOTE (assuming engineering controls as specified): 1. The noise and vibration assessment undertaken by SEG (2025) identified that noise from the operation is expected to readily comply with the noise level goals and acoustic quality objectives at Yarwun Village located approximately 4 km to the south-west and have a "no response" response from shorebirds in the intertidal area located approximately 1.5 km to the east; and 2. Vibration will be negligible with no blasting proposed and operational equipment that does not generate significant vibration.
Objective	To comply with the GED under the EP Act and the EPP (Noise) (refer to **Section 3**).
Performance targets	• No complaints related to noise or vibration; and • No property damage as a result of vibration.
Management strategies	• The occupational noise level from all plant and equipment is not to exceed 85 dB(A) at a distance of 1 m; • Ensure all equipment complies with the sound power levels modelled by the noise and vibration assessment (SEG 2025) as provided below: Table 8: Sound Power Levels ($L_{Aeq(1\ hr)}$) in dB(A) for plant Noise Source | Sound Power Level in dB in Octave band centre frequency (Hz) 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 Process Plant | 141 | 133 | 126 | 121 | 115 | 111 | 105 | 98 Front End Loader | 104 | 109 | 95 | 91 | 101 | 88 | 83 | 73 • Vehicles and equipment are to be serviced and maintained in accordance with manufacturer's specifications, fitted with high performance mufflers in good condition and not having rattles, noisy bearings etc. Should such issues be identified the plant is to be tagged out and repaired prior to further use; • Daily (on use) pre-starts are to be undertaken for all vehicles and equipment to ensure there are no excessive noise sources; • Vehicles and equipment to be turned off when not in use; and • Provide broad-band reversing audible alarms (rather than beepers) for mobile plant.
Performance review	• Routine and event based inspections and auditing as outlined in **Section 4.6**; and • Performance and proposed amendments (if any) will be reviewed annually as outlined in **Section 6**.

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Element	Description
Reporting	• Any record or document generated through the implementation of this EMP must be retained for the life of the operation; • All incidents relating to noise and vibration management shall be recorded in the Site incident, complaint and non-conformance register; and • Any non-compliances with the GED will be reported to the DETSI Pollution Hotline within the timeframe outlined in **Section 4.3.2**. Records must be kept including full details of the breach and any subsequent actions undertaken.
Contingency actions	• Incidents and non-conformances will be investigated to determine the magnitude of the problem and identify and implement corrective and preventative actions; and • Should the management strategies as outlined in the EMP prove insufficient to meet the performance objectives the Operations Manager will further investigate and amend the EMP / communicate amendments accordingly.

5.5 Cultural heritage management

Table 5.6: Cultural heritage controls

Element	Description
Potential risk	• Damage or destruction of cultural heritage items of significance to the FNBGGGTB People. NOTE: the residual risk of cultural heritage impacts is considered low if managed in accordance with this EMP, given the following inherent risks: 1. Cultural heritage searches generated for the Planning Report (Queensland Government 2025b) did not identify any known heritage matters on the Site; and 2. Under the ACH Act Duty of Care Guidelines (Queensland Government 2025c) the Proposal is classified as Category 5: Activities causing additional surface disturbance i.e., generally a high risk that it could harm Aboriginal cultural heritage.
Objective	To comply with the cultural heritage duty of care under the ACH Act (refer to **Section 3**).
Performance targets	• Cultural heritage monitors to be present during earth disturbing works; • No ground disturbance outside designated locations within the operational area; • No damage or destruction of cultural heritage items; and • No complaints related to management of unexpected finds.
Management strategies	• A site approval is required before ground disturbing works can commence i.e., ground disturbance approval, with clearing controls outlined in this EMP verified as being in place prior to commencement; • A cultural heritage assessment will be conducted prior to commencement of any ground disturbing activities in accordance with the ACH Act Duty of Care Guidelines (Queensland Government 2025c); • Consultation to take place with the FNBGGGTB People to confirm if a cultural heritage management plan or similar is required. GWT to work with the FNBGGGTB People to develop the plan; • A cultural heritage monitor will be onsite for all surface ground disturbance activities to a depth specified by the FNBGGGTB People. Records to be kept

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Element	Description
	of the names of the monitors, the date and area of works, along with details of any finds; • Should a potential article of cultural heritage be found, the Find – Stop – Notify – Manage procedure will be implemented i.e., FIND and item of potential cultural heritage, STOP all work at the location, the item shall not be removed or disturbed and the area flagged as a NO-GO zone, NOTIFY the FNBGGGTB People and MANAGE as agreed with the FNBGGGTB People; • Should potential human remains be found these must not be disturbed and reported to the Queensland Police in the first instance; and • No works can be undertaken in areas where an item of potential cultural heritage has been discovered until a formal all-clear is given by the relevant authority e.g., FNBGGGTB People and / or Queensland Police.
Performance review	• Routine and event based inspections and auditing as outlined in **Section 4.6**; and • Performance and proposed amendments (if any) will be reviewed annually as outlined in **Section 6**.
Reporting	• Any record or document generated through the implementation of this EMP must be retained for the life of the operation; • All incidents relating to cultural heritage management shall be recorded in the Site incident, complaint and non-conformance register; • GWT to report unexpected finds to the FNBGGGTB People. Should it be considered possible that the find is of human remains, Queensland Police are to be informed immediately; and • Records must be kept of any non-compliances with the cultural heritage duty, including full details of the breach and any subsequent actions undertaken.
Contingency actions	• Incidents and non-conformances will be investigated to determine the magnitude of the problem and identify and implement corrective and preventative actions; and • Should the management strategies as outlined in the EMP prove insufficient to meet the performance objectives the Operations Manager will further investigate and amend the EMP / communicate amendments accordingly.

5.6 Waste management

Table 5.7: Waste management controls

Element	Description
Potential risk	• Environmental harm or nuisance caused by generated by the operation.
Objective	To comply with the GED under the EP Act and the waste hierarchy under the *Waste Reduction and Recycling Act 2011* (refer to **Section 3**).
Performance targets	• Waste volumes stored on the Site to remain low at all times; • No complaints related to wastes or visual amenity; • No notifiable incidents (refer to **Section 4.3.2**); and • Achievement of rehabilitation acceptance criteria on decommissioning.

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Element	Description
Management strategies	**General controls:** • Operations will be managed in accordance with the waste hierarchy i.e., waste to first be avoided, then reduced, reused, recycled, recovered and treated, with disposal only considered when there is no viable alternative; • Wastes on the Site will be segregated to improve reuse and recycling opportunities and contained within dedicated receptacles to avoid contamination, litter or attraction of fauna; • All waste, including any hazardous wastes (e.g., hazardous goods packaging, liquid within secondary containment systems and sewage waste from pump out systems), will be contained and regularly removed from the Site by appropriately licensed contractors in accordance with requirements under the EP Act; • Waste materials are not to be buried or burnt on the Site; and • Cigarette butt disposal bins are to be provided in designated smoking areas. **Operational phase specific controls:** • As per **Table 5.2**. **Decommissioning phase specific controls:** • As per **Table 5.1**.
Performance review	• Routine and event based inspections and auditing as outlined in **Section 4.6**; and • Performance and proposed amendments (if any) will be reviewed annually as outlined in **Section 6**.
Reporting	• Any record or document generated through the implementation of this EMP must be retained for the life of the operation; • All incidents relating to waste management shall be recorded in the Site incident, complaint and non-conformance register; and • Any non-compliances with the GED will be reported to the DETSI Pollution Hotline within the timeframe outlined in **Section 4.3.2**. Records must be kept including full details of the breach and any subsequent actions undertaken.
Contingency actions	• Incidents and non-conformances will be investigated to determine the magnitude of the problem and identify and implement corrective and preventative actions; and • Should the management strategies as outlined in the EMP prove insufficient to meet the performance objectives the Operations Manager will further investigate and amend the EMP / communicate amendments accordingly.

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6 Management Review

This EMP is a dynamic document that will be reviewed periodically to ensure it remains fit-for-purpose. The EMP is the guiding document for the broader Site EMS that is to be ISO 14001 certified for operations.

As noted in **Section 3**, this DRAFT EMP will be reviewed and updated, as required, on receipt of approval conditions.

Thereafter, the EMP will be reviewed annually at a minimum to ensure it remains fit-for-purpose, and updated as required. Triggers for revision include, but are not limited to:

- EA, legislation or other government policy / programme changes;
- Significant changes are made to GWT systems or personnel responsibilities relevant to environmental management;
- Deficiencies or inconsistencies are noted during implementation of the EMP;
- Corrective actions identified from near misses or incidents, including external complaints; and
- Inclusion of an additional contingency measures, to address items identified during incident investigations, various inspections, performance reviews and / or risk assessment findings.

Any material changes to this EMP will be communicated to the personnel responsible to implement the amended requirements, as soon as practicable after the update.

The Site's environmental performance, risk register and incident, complaint and non-conformance register will be reviewed annually. Performance against this EMP and any changes to the EMP (or EMS more broadly) triggered, would form a part of these discussions.

In addition, the success of the KRAs (refer to **Appendix B**), and other ESG performance metrics still to be agreed, will be tied to executive key performance indicators as appropriate to their level of delegation and operational control.

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Limitations

This report has been prepared for GWT, for issue to the CG within the context of the GSDA Development Scheme May 2022 SDA requirements and DETSI for the EA submission.

CQG[1] takes no responsibility and disclaims all liability for any loss or damage that any party may suffer as a result of using or relying on any such information or recommendations contained in this report.

CQG has prepare this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above. No other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

Where information has been provided to CQG, this has been referenced in the report. In preparing this report, CQG has relied upon, and presumed accurate, any information provided by GWT and sub-consultants on its behalf and / or from other sources as referenced within. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that the conclusions expressed in this report may change.

No assessment beyond that specified in the document has occurred.

These limitations must be read in conjunction with other limitations noted within the report, and attachments to the report.

Should further information become available regarding the Project, CQG reserves the right to review the report in the context of the additional information.

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APPENDIX A:

Conceptual Design Layout

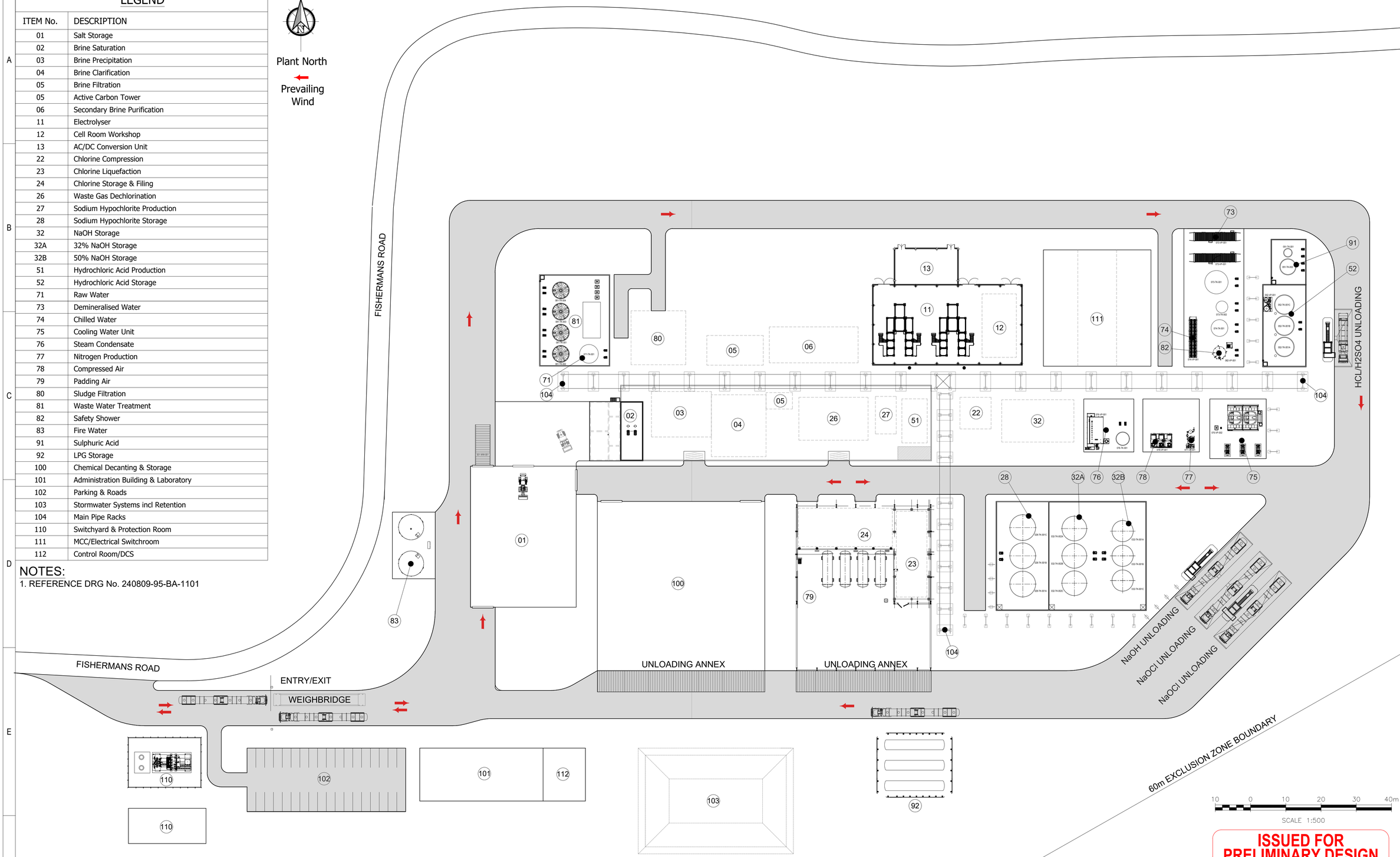
LEGEND

ITEM No.	DESCRIPTION
01	Salt Storage
02	Brine Saturation
03	Brine Precipitation
04	Brine Clarification
05	Brine Filtration
05	Active Carbon Tower
06	Secondary Brine Purification
11	Electrolyser
12	Cell Room Workshop
13	AC/DC Conversion Unit
22	Chlorine Compression
23	Chlorine Liquefaction
24	Chlorine Storage & Filing
26	Waste Gas Dechlorination
27	Sodium Hypochlorite Production
28	Sodium Hypochlorite Storage
32	NaOH Storage
32A	32% NaOH Storage
32B	50% NaOH Storage
51	Hydrochloric Acid Production
52	Hydrochloric Acid Storage
71	Raw Water
73	Demineralised Water
74	Chilled Water
75	Cooling Water Unit
76	Steam Condensate
77	Nitrogen Production
78	Compressed Air
79	Padding Air
80	Sludge Filtration
81	Waste Water Treatment
82	Safety Shower
83	Fire Water
91	Sulphuric Acid
92	LPG Storage
100	Chemical Decanting & Storage
101	Administration Building & Laboratory
102	Parking & Roads
103	Stormwater Systems incl Retention
104	Main Pipe Racks
110	Switchyard & Protection Room
111	MCC/Electrical Switchroom
112	Control Room/DCS

NOTES:
1. REFERENCE DRG No. 240809-95-BA-1101

Plant North

Prevailing Wind



ISSUED FOR PRELIMINARY DESIGN

NUMBER	REFERENCE DRAWINGS	REV	DATE	REVISION DESCRIPTION	DRN	CHK	ENG	REG No.	APP
		B	28.10.25	ISSUED FOR PRELIMINARY DESIGN	AMC	DB	MA		
		A	13.10.25	PRELIMINARY ISSUE	AMC				

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SCALE	1:500	
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CHECKED		
ENGINEER		
APPROVED		
CLIENT		

A1

GRENOF
HALOGEN PROJECT FEED STUDY
SITE LAYOUT
CONCEPTUAL PLAN

DRG. No. OC25008-0000-Z-GAR-001

REV B

DRAFT

APPENDIX B:

GHG Abatement Plan KRAs (excerpt from Katestone 2025b)

Table 10 Assessment of proposed GHG mitigation measures

KRA	Mitigation measure	Timeframe	Risks	Opportunities	Industry Standard	Emissions reduction estimate for the LOP (t CO_2-e)
KRA 1	Reduce production technology electricity use by 25% against the base case	Immediate	• High capital costs lead to procurement of less efficient production technologies	• Installation of highest efficiency production technologies provides best return on investment through optimal chemical production and reduced emission intensity of production	Best	817,199
KRA 2	Reduce Scope 2 emissions with investment in renewable energy technology where feasible and cost-effective	Immediate	• Inadequate capacity to support electricity demand if not correctly sized in design leading to higher emission intensity of production • Cost overruns, due to high consumption or underestimation of initial costs, delays causing extra labour or equipment costs • Increased maintenance demands or poorly integrated backup systems	• Greater self-reliance through on-site generation and storage enabling new revenue streams (e.g. selling of electricity) and reduces exposures to future grid price volatility • Eligibility of incentives and green financing, strengthening tender competitiveness and stakeholder confidence against climate risks	Best	TBD
KRA 3	Reduce emissions from onsite LPG combustion for boiler by <15% from the base case	Immediate	• Cost overruns from workforce training, lead times in procurement and design and construction requirements	• Greater energy self - reliance (when paired with KRA 4) improves margins	Best	33,425

KRA	Mitigation measure	Timeframe	Risks	Opportunities	Industry Standard	Emissions reduction estimate for the LOP (t CO_2-e)
			• Complete electrification and hydrogen fueled options may have low TRLs and CRLs			
KRA 4	Reduce GHG emissions due to transport fuel combustion by <95% through use of EVs	Immediate	• Additional charging and electrical-upgrade requirements can drive cost overruns and added labour • Reduced overall fire incidence, however fire from misuse or damage can be more intense and harder to extinguish	• Lower reliance on fossil fuels and less exposure to volatile fuel supply chains • Lower operating cost from higher drivetrain efficiency	Best	139,025
KRA 5	Reduce potential fugitive refrigerant leakage emissions by > 600 t CO2-e per annum	Immediate	• Additional system requirements and workforce training can drive cost overruns	• Improved low temperature energy performance, increasing production efficiency • Natural refrigerants support lower emission production, increasing green investment opportunities and lowers supply chain risks associated with HFC phase down	Best	31,820
KRA 6	Investigate offsetting residual emissions where necessary and cost-effective	As practicable	• Current technical and economic feasibility inadequate	• Building sustainability strategy and goals	Emerging	TBD

DRAFT

APPENDIX C:

Erosion and Sediment Control Plan (Construction Phase)

EROSION & SEDIMENT CONTROL PLAN (ESCP)

FISHERMANS ROAD, YARWUN
PROJECT HALOGEN CHLOR-ALKALI FACILITY

CLIENT: CQG CONSULTING

REFERENCE: 25-0204/R4211

VERSION: C

DATE: 12-11-2025

TOPO.

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1 SCOPE

Topo were engaged by CQG Consulting to develop a Certified Professional in Erosion and Sediment control (CPESC) certified Erosion and Sediment Control Plan (ESCP) for works associated with the construction of the proposed Chlor-Alkali Facility at Fishermans Road, Yarwun.

CQG Consulting has been engaged to prepare a development application (DA) for a material change of use (MCU) for a concurrence environmentally relevant activity (ERA) 7(6d) Chemical manufacturing: manufacturing, in a year, more than 100,000 tonnes of inorganic chemicals (proposed Chlor-Alkali facility). The project is referred to as 'Project Halogen'. The project is located within the Gladstone State Development Area (GSDA). This ESCP only covers the construction phase of the project. During operations the site will be stabilised and managed in accordance with the separate Stormwater Management Plan (SMP).

1.1. GUIDELINES

This ESCP has been prepared in accordance with the following documents:

- Best Practice Erosion and Sediment Control (International Erosion Control Association (IECA), 2008)
- Best Practice Erosion and Sediment Control (BPESC) - Appendix B – Sediment Basin Design and Operation (IECA, 2018)
- Guideline Stormwater and environmentally relevant activities (Department of Environment and Science (DES), 2014)
- Queensland Urban Drainage Manual (QUDM) (Institute of Public Works Engineering Australia Queensland (IPWEAQ), 2017)

1.2. CERTIFICATION

I, Steven Chamberlain, certify that this Erosion and Sediment Control Plan (ref: R4211) has been prepared to satisfy the intent and minimum standards nominated within the guidelines listed in Section 1.1.

CPESC No: 6,599 – RPEQ No: 15,545

1.3. REVISION

VERSION	DATE	AUTHOR	REVIEWER	APPROVED
DRAFT	14-08-2025	R. Kleijn	S. Chamberlain	S. Chamberlain
A	13-10-2025	R. Kleijn	S. Chamberlain	S. Chamberlain
B	29-10-2025	R. Kleijn	S. Chamberlain	S. Chamberlain
C	12-11-2025	R. Kleijn	S. Chamberlain	S. Chamberlain

2 PROJECT DESCRIPTION

2.1. LOCATION

The proposed Chlor-Alkali Facility will be constructed within Lot 1 on MPH32292 (56 Fishermans Road, Yarwun) and Lot 1 on SP200899 (26 Landing Road, Yarwun). The facility includes upgrading the access along Fishermans Road between the facility and the intersection with Landing Road.

The project area is approximately 7.65 ha which includes plant and ancillary facilities. The project components will consist of a chlor-alkali plant and ancillary facilities, including office, car parking and utilities.

The general locality of works is highlighted within Figure 1.

Figure 1 - Site Locality Project Halogen (Source: CQG Consulting)

2.2. PROJECT WORKS

The plant will have a product capacity of 160,000 tonnes per annum (tpa), with product outputs consisting of sodium hydroxide (NaOH) (caustic soda), liquid chlorine (Cl2), hydrogen chloride (HCl), and sodium hypochlorite (NaOCl). The chlor-alkali production facility will also produce derivative chemicals from the primary products, which include sodium hypochlorite (NaOCl) and hydrochloric acid (HCl).

The design will ensure a fully contained water management system with no contaminated wastewater discharged to the environment. Comprehensive bunding, collection and treatment systems will be designed to prevent contamination during spill scenarios.

Works associated with the project include, but may not be limited to:

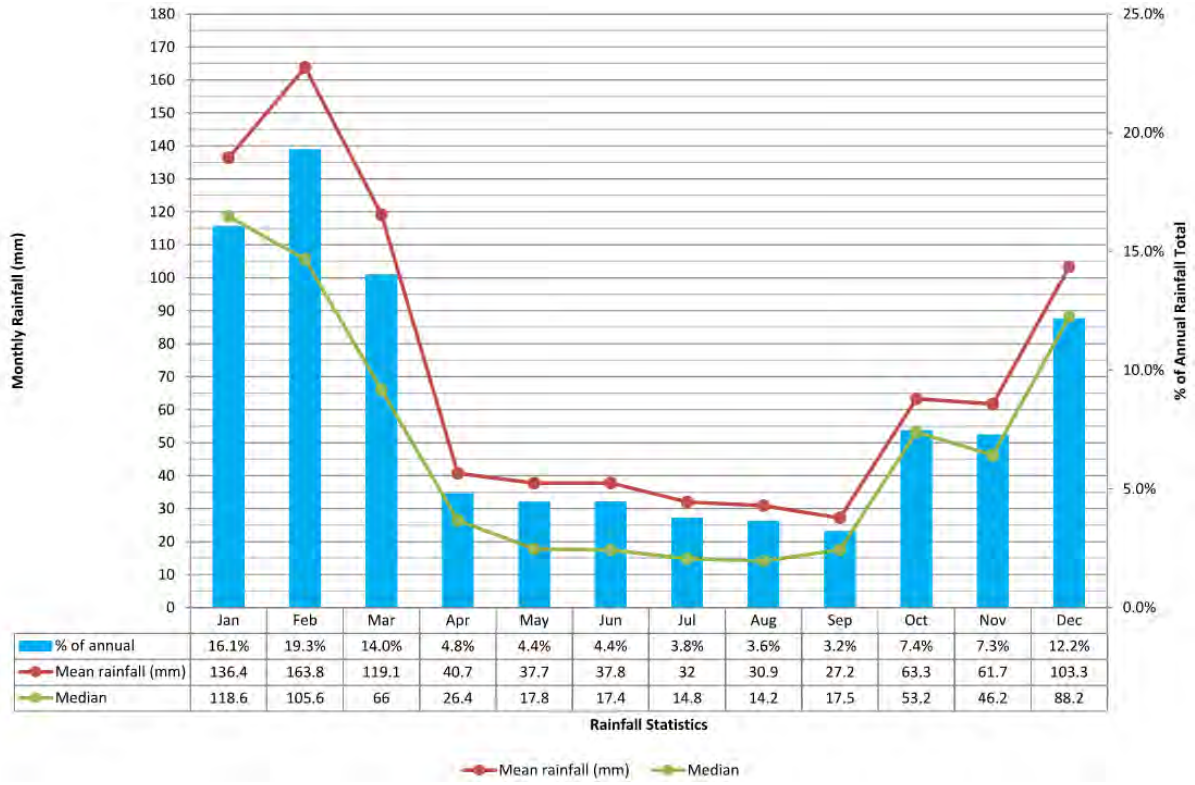
- Clearing and grubbing,
- Topsoil stripping,
- Bulk earthworks, cut to fill operations generally in line with the bulk earthworks strategy. Civil design will aim to balance the cut and fill such that earthworks will not require importation of fill material,
- Stockpiling and management of any borrow and/or fill areas,
- Installation of open drains and detention / sediment ponds for site runoff,
- Structural works associated with buildings and miscellaneous structures, and
- Site access road and internal roads/tracks.

3 SITE DESCRIPTION

3.1. CLIMATE

Based on historic rainfall data the period between October to March presents the greatest rainfall with approximately 76 % of the annual rainfall typically occurring during this period. As far as practical, all efforts should be made to reduce exposed areas to that reasonably manageable during this period. Based on the estimated construction duration, the project will extend through at least one wet season.

Historic rainfall for the region, derived from data represented by the closest Bureau of Meteorology Station (Gladstone Airport, approximately 10 km from site) is presented below in Figure 2.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
% of annual	16.1%	19.3%	14.0%	4.8%	4.4%	4.4%	3.8%	3.6%	3.2%	7.4%	7.3%	12.2%
Mean rainfall (mm)	136.4	163.8	119.1	40.7	37.7	37.8	32	30.9	27.2	63.3	61.7	103.3
Median	118.6	105.6	66	26.4	17.8	17.4	14.8	14.2	17.5	53.2	46.2	88.2

Figure 2 - Historic Rainfall (Source: BoM)

3.2. DRAINAGE & HYDROLOGY

The topography is quite consistent, and the site generally drains from northwest to southeast. Boat Creek runs along the southern boundary, approximately 250 m away from the site. Review of topographic data indicates external catchment to the west of Landing Road does not enter the site, but is directed to Boat Creek. Refer to Appendix A for further details.

The proposed works can be divided into two internal catchments; the access road works in Fishermans Road between Landing Road and the facility, and the facilities' footprint itself. The drainage path along Fishermans Road intersects the two catchments, as illustrated in the catchment plan included as Figure 3.

An external catchment of approximately 6 hectares, comprising the southernmost portion of Lot 1 RP614039 and Fishermans Road, reports to the site's western boundary. The intent of the ESCP is to divert any external catchments around the works, whilst maintaining that runoff as 'clean water'.

The landscape within the project area is characterised by existing bushland.

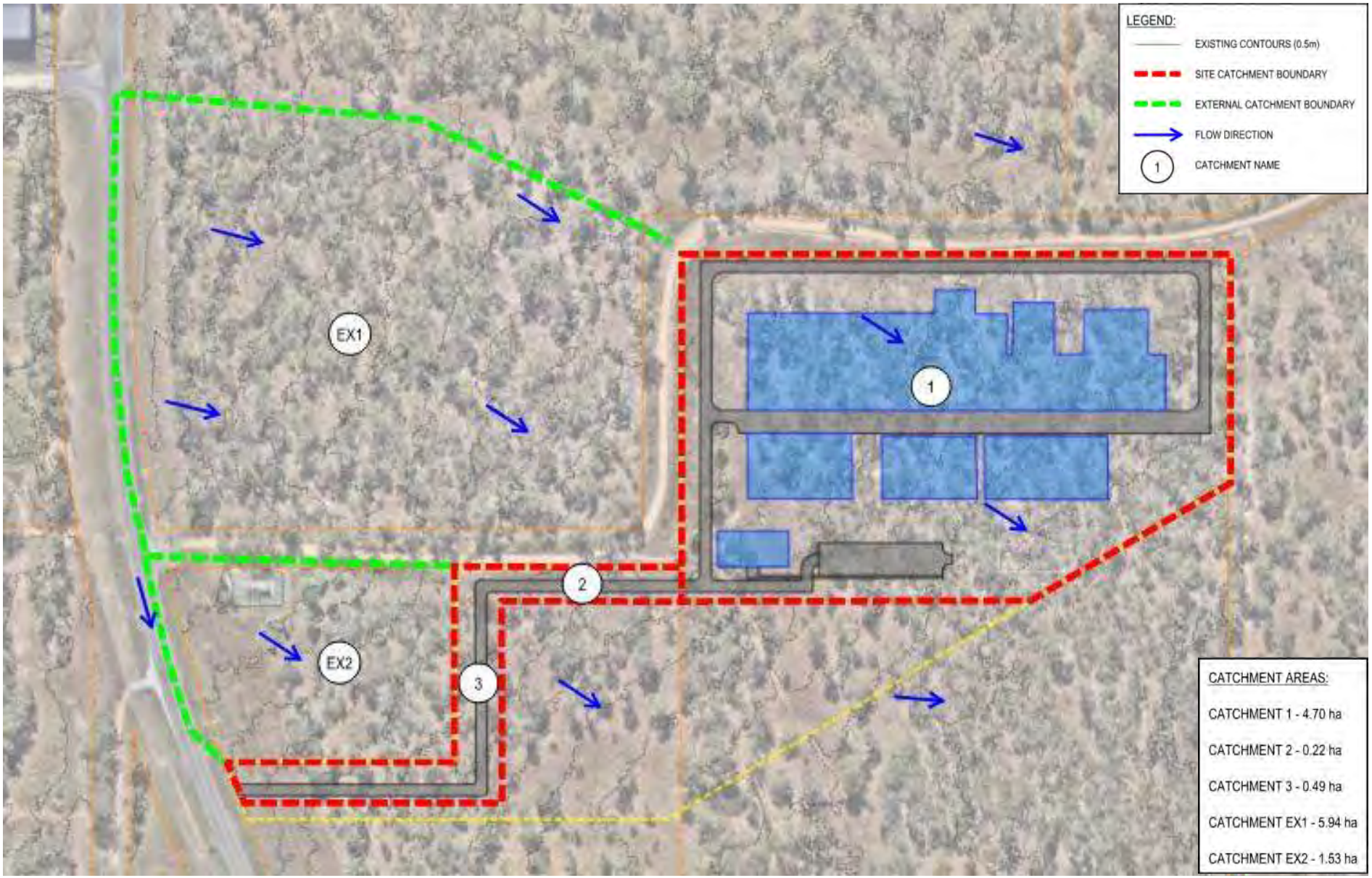


Figure 3 - Topography and Drainage Features – Chlor-Alkali Facility

3.3. SOILS

3.3.1. SOIL MAPPING

The soil survey of the Land Systems of the Calliope Area, covers parts of the Calliope and Gladstone areas at a 1:250,000 mapped scale. The survey was accessed via Queensland Globe and a single soil unit is located within the project area. A summary of the mapped soil unit is given in Table 1 and illustrated in Figure 4. The soil sample is classed as CCL382 and was taken nearby in Fishermans Road.

Table 1 - Summary of Soils

SOIL UNIT REF.	DESCRIPTION	CONCEPT	SPATIAL LOCATION
Nu – Nullegai	Sodosol Brown Mottled-Subtranic Eutrophic	Fine sandy loam over silty loam	Majority of Proposed Facility

Figure 4 - Soil Site Mapping – Chlor-Alkali Facility (Source: Queensland Globe)

Sodosols are texture-contrast soils with impermeable subsoils due to the concentration of sodium. Generally, these soils have a low-nutrient status and are very vulnerable to erosion and dryland salinity when vegetation is removed.

3.3.2. SOIL SAMPLING AND ANALYSIS

A geotechnical investigation was performed by Grenof Water Technologies (B-0645.00 R1, dated 21 October 2025).

The mapped soil landscape unit for the area is Narrows (Nw), generally described as colluvial and alluvial fans below the coastal range along the Narrow Strat, north of Gladstone. Soils are typically bleached, loamy or silty surface soils with sodic texture contrasts. Vegetation is mostly eucalypt woodland, swamp mahogany, tea tree understorey, and gum-topped box woodland. The site is not within an area mapped as potentially containing acid sulfate soils.

Boreholes (BH01–BH03) were advanced to 15 m below ground level, encountering a consistent alluvial soil profile comprising cohesive and granular materials. Groundwater seepage occurred between 6.2 m and 6.5 m below ground level (BGL).

Table 2 - Soil Description

UNIT	ORIGIN	DESCRIPTION	TYPICAL DEPTH (m BGL)
1	Topsoil	Silty sand, fine to coarse, dark brown with roots.	0–0.05
2a	Cohesive Alluvial Soil	Silty clay (low–medium plasticity, some high), trace sand and gravel, very stiff–hard	~0–6.2
2b	Cohesive Alluvial Soil	Sandy clay (low–medium plasticity), with interbedded silty clay; very stiff–hard	~6.2–12.8
2c	Cohesive Alluvial Soil	Lower silty clay (medium–high plasticity), trace sand and gravel, very stiff–hard	Below ~12 m
3a	Granular Alluvial Soil	Silty sand with gravel, locally gravelly clay; medium dense–very dense	Up to 9.5
3b	Granular Alluvial Soil	Silty gravel with sand; dense–very dense	Extending > 15 m

Laboratory analyses included Atterberg limits, PSD, CBR, compaction, shrink–swell index, soil chemistry, and aggressivity. The key observations were:

- Plasticity: Generally low–medium, locally high in cohesive units (silty clays)
- CBR (soaked, 95 % SMDD): Typically 3 – 5 %, consistent with alluvial clay subgrades
- Shrink–Swell Potential: Moderate, requiring attention for foundation design
- Electrical Conductivity: 94–400 µS/cm (non-aggressive to mildly aggressive)
- pH: Neutral to slightly alkaline (6.8 – 8.6)
- Chloride: 51 – 240 mg/kg (low)
- Sulphate: < 30 – 36 mg/kg (low)
- Exchangeable Sodium Percentage (ESP): 13 – 22 %, indicating strongly sodic soils
- Cation Exchange Capacity: 3.5 – 18 meq/100 g (low to moderate)
- Emerson Crumb tests indicating Emerson Class Numbers 1 and 2 (highly dispersive)

Based on the Emerson Class numbers, Exchangeable Sodium Percentage above 12 % and relatively low Cation Exchange Capacity, site soils are likely highly dispersive and will need to be managed accordingly during construction.

3.3.3. DISPERSIVE SOIL MANAGEMENT

As discussed, portions of the works comprise sodic soils, which are highly likely to be dispersive. In the event that dispersive soils are identified on the site, it is recommended a Dispersive Soil Management Plan (DSMP) be prepared prior to tendering and construction commencing. The following section summarises the proposed management and treatment to address dispersive soils on the project.

Identify and avoid – this approach is limited in terms of practical application to areas outside of project works. Consideration should be given to limiting disturbance and excavation of soils where not required, as a means to reduce the reliance on other management measures below.

Separation of topsoil and subsoil – good construction practices will dictate that topsoils be stripped and stockpiled separately to subsoils. Existing topsoil depths are sometimes sufficient to provide a protective layer of non-sodic material over subsoils.

Topsoil stockpiles which are planned to remain unused for prolonged periods of time should be stabilised using mulch, hydromulch or a permeable, biodegradable matting or mesh to allow sunlight and moisture to penetrate and maintain biological activity. Ensure stockpiles do not exceed 1.5 m height to prevent overheating.

Subsoil stockpiles should be compacted and covered using an impermeable cover such as plastic or have a layer of non sodic (and non erosive) material applied.

Chemical amelioration – this is the recommended approach as it addresses the underlying soil chemistry imbalance resulting in soil sodicity. Chemical amelioration by mixing of gypsum with identified subsoils is recommended. Reference should be made to the abovementioned technical note for gypsum application rates, or additional testing be undertaken to determine rates if not available.

Stockpiles of non sodic and sodic soils are to be clearly identified and kept separated at all times, to allow amelioration to occur efficiently.

3.3.3.1. SURFACE MATERIAL TREATMENT

Chemical amelioration shall be undertaken to address the underlying soil chemistry imbalance resulting in soil sodicity and ultimately dispersion. Chemical amelioration by mixing of gypsum with identified subsoils is recommended.

Treatment of dispersive soils typically requires gypsum application rates between 5 and 20 t/ha, however in severe cases this may be exceeded. Application rates consider a gypsum purity of 80 % to achieve a sodium percentage within soil of 5 % or less, which is considered non-sodic. Application rates are provided for treatment depths of 0.2 and 0.3 m, being the minimum and recommended depths respectively. It is recommended that application rates be correlated with sample depth and work areas to provide a suite of standardised treatments across the alignment based on degree of treatment required, stage of works and ultimate use of material.

3.3.3.2. DRAINAGE PROTECTION

In the presence of dispersive soils, where practical, water should be diverted away from such materials. Drains must not be excavated into dispersive soils without either lining with an impermeable material, lining with non-erosive, non-sodic material or gypsum treated material placed and stabilised to handle maximum flow velocities for the connected catchment up to the design event. Construction of large (permanent) diversion drains must be undertaken offline (i.e. without potential for inflow) as much as possible and scheduled for the drier winter period.

The use of rock check dams (or similar velocity control measures) should not be used in locations with potential dispersive soils exposed within the drainage path, unless the drainage paths are lined with a layer of non-dispersive soils.

The use of rock protection at inlets and outlets of culverts, chute lining or other drainage locations should account for potential dispersive soils and incorporate a layer of gypsum treatment to underlying soils.

3.3.3.3. TEMPORARY EROSION CONTROL DURING EARTHWORKS

A focus on erosion control throughout the construction phase is considered the most effective approach. Considering the wet season – dry season nature, a risk based approach should be undertaken to manage the risk of dispersion during construction works. This approach will be dictated by activities onsite and should consider rainfall forecasts, upcoming works, potential to limit extent and duration of exposure during high rainfall risk periods and contingency measures which can be employed to manage areas in the event of rainfall. Such measures would include assessment of temporary drainage to divert (where practical) all runoff away from dispersive soils, compaction of exposed areas to limit soil / water interaction, application of gypsum or ground cover treatment and maintenance of downslope sediment controls.

3.3.3.4. REVEGETATION AND LANDSCAPING PREPARATION

Application of gypsum and potentially other soil ameliorants nominated within the landscaping specification shall be applied by ripping and incorporation to depths of 0.3 m and subsequent light re-compaction of subsoil prior to placement of topsoil and landscaping treatment. Consideration should be given to the use of landscaping treatments which provide immediate or very rapid stabilisation (i.e. hardstand or turf as opposed to grass seed) as a means to protect soils, reduce erosion and limit potential scouring and maintenance.

Reference shall be made to the project DSMP for additional guidance on soil characteristics, material handling, stockpiling and reuse and treatment.

4 EROSION RISK ASSESSMENT

An erosion risk assessment has been conducted using the Revised Universal Soil Loss Equation (RUSLE). The calculated soil loss is then used to determine the level of sediment control required, as well as stabilisation and staging requirements.

$$A = K \times R \times LS \times P \times C$$ **Equation 1 (IECA 2008)**

Where:

A is the predicted soil loss per hectare per year
K is the soil erodibility factor
R is the rainfall erosivity factor
LS is the slope length/gradient factor
P is the erosion control practice factor
C is the ground cover and management factor

4.1. K-FACTOR – SOILS

The soil erodibility factor (K-factor) is a measure of the susceptibility of soil particles to detachment and transport by rainfall and runoff. Soil texture is the principal component affecting the K factor, but soil structure, organic matter and profile permeability also contribute.

To account for the variety of dispersive soil textures likely to be encountered, including in-situ and unknown imported fill properties, a K factor of 0.077 was determined for the site. This is considered representative of a range of soil textures including sodic clays. This is consistent with CSIRO mapping data source from the Queensland Spatial Catalogue (QSpatial – RUSLE K factor) but may need to be updated based on the results of specific soil testing.

4.2. R- FACTOR – RAINFALL

The rainfall erosivity factor (R factor), is a measure of the ability of rainfall to cause erosion. It is the product of two components (1) total energy and (2) intensity for each rainfall event. R factors are published for a range of locations throughout Queensland, including Rockhampton, which is considered reflective of the project area. Reference to Table E1 of IECA (2008) indicates an annual R factor value of 3,684.

Monthly R factor values are provided in Table 3. These values are provided for reference only but may be used in scheduling high risk works, such as those associated with major drainage for periods of lowest rainfall erosivity.

Table 3 - Monthly R-factor for Rockhampton (IECA, 2008)

J	F	M	A	M	J	J	A	S	O	N	D
769	806	497	144	166	92	66.2	69.9	58.9	169	276	570

4.3. LS - SLOPE-LENGTH

Slope length and slope gradient have substantial effects on soil erosion by water. The two effects are represented by the slope length factor (L) and the slope steepness factor (S). In application of RUSLE the two are evaluated together as a numerical representation of the length-slope combination (LS factor).

Slope (%) and length (m) are fairly consistent across the site, so an average factor has been attributed to each sub-catchment. Slope is around 1.5 % for the majority of the site and based on the recommendations of IECA (2008) for temporary cross drainage during construction, maximum slope lengths should be limited to 80 m during earthworks.

4.4. C-FACTOR - COVER

Within RUSLE, the C-factor measures the combined effect of all the interrelated cover and management variables adopted over the site. It also represents non-structural methods for controlling erosion (i.e. covering exposed areas with various erosion control products to minimise raindrop impact or stabilisation by temporary or permanent vegetation).

Soil loss estimates have adopted a default value of 1.0, representing an exposed surface with no ground cover. Considering the seasonal variability of the region a reliance on temporary erosion control throughout the wet season will be critical, with soil loss estimates adopting a conservative C factor of 0.1 where erosion control is applied. It is envisaged that a high level of temporary erosion control will be achieved (and maintained during active works) by a combination of industry accepted means including application of soil binder/polymer, erosion control mat (i.e. geotextile, jute, plastic sheeting), mulch and gravel sheeting.

4.5. P-FACTOR – PRACTICE

The P-factor measures the combined effect of all support practices and management variables. The P factor is decreased by practices that reduce both the velocity of runoff and the tendency of runoff to flow directly downhill. It also represents structural methods for controlling erosion. An industry accepted default value of 1.3 has been adopted as per Table E11 of IECA (2008) for all construction areas.

4.6. ESTIMATED SOIL LOSS SUMMARY

A detailed assessment of the erosion risk has been undertaken for the proposed facility to provide a simplified and standardised approach to managing erosion and identification of the minimum sediment control measures. The findings of this assessment are summarised in Table 4.

Table 4 - Erosion Risk Calculations

CATCHMENT ID	AREA (HA)	R	K	SLOPE (%)	LS [1]	P	C	A (t/ha/yr)	CONTROL
1	4.70	3,684	0.077	1.5	0.41	1.3	1	150	TYPE 1
2	0.22	3,684	0.077	1.5	0.31	1.3	1	114	TYPE 2
3	0.49	3,684	0.077	1.5	0.31	1.3	1	114	TYPE 2

Table Notes:

[1] Default slope length of 80 m conservatively applied Catchment 1, and 40 m for access roads (i.e. Catchments 2 & 3)

5 EROSION CONTROL

Erosion control refers to the management of the working area to prevent or reduce soil particles being mobilised or entrained in water. The soil loss estimates from Section 4.6 Estimated soil loss summary and resulting erosion risk specifies the extent of erosion control required on site. Given the seasonal variation in rainfall, as described in Section 3.1, implementation of erosion control measures should be based on monthly rainfall erosivity as presented in Table 4.4.4 of IECA (2008) for the Rockhampton region and presented here as Table 5.

Table 5 - Monthly Erosion Risk Rating Based on Monthly Rainfall Erosivity

LOCATION	J	F	M	A	M	J	J	A	S	O	N	D
Rockhampton	H	H	H	M	M	L	L	L	VL	M	M	H

E = Extreme, H = High, M = Moderate, L = Low, VL = Very Low erosion risk.

The standard best management practice requirements for erosion control are outlined below in Table 6.

Table 6 - Erosion Risk Rating Based on Soil Loss and Required Management (adapted from Table 4.4.7 of IECA, 2008)

EROSION RISK RATING	SOIL LOSS RATE (T/HA/YEAR)	ADVANCE LAND CLEARING ALLOWED (WKS WORK)	MAX DAYS TO STABILISATION AND % COVER	STAGED CONSTRUCTION AND STABILISATION OF EARTH BATTERS >6H:1V	STOCKPILES STABILISED
Very Low	0 to 150	8	30 (60%)		
Low	150+ to 225	8	30 (70%)		
Moderate	225 to 500	6	20 (70%)	✓	
High	500 to 1500	4	10 (75%)	✓	✓
Extreme	> 1500	2	5 (80%)	✓	✓

The following general erosion control strategy is proposed.

- Retain existing vegetation for as long as possible, with an emphasis placed on existing drainage lines and flow paths,
- Stage topsoil stripping to coincide with work program and limit to areas immediately prior to active earthworks,
- Stabilise temporary diversion bunds with soil binder or other approved measures. Diversion drainage features to be formed with topsoil, non-sodic subsoils or gypsum ameliorated soils,
- Establish stabilised site access points (where required and practical),
- Progressively stabilise exposed areas by placement of gravel per final design. For locations known to comprise sodic soils, apply gypsum to 0.2-0.3 m of soil surface prior to placement of gravel material, and
- Prior to rainfall, apply soil binder to exposed areas as a temporary measure with a heavy application being applied to high risk areas such as batters.

It should be recognised that application of the above strategy will greatly reduce the risk of erosion and reliance on sediment controls, as well as reducing ongoing maintenance of sediment control and removal/handling of sludge captured within the basins.

5.1. EROSION CONTROL DURING WORKS STAGES

Erosion control has been further separated into applicable project phases to identify controls relevant to each stage of construction, from clear and grub to landscaping.

5.1.1. CLEAR AND GRUB

+ Educate and inform site personnel about the presence of sodic soils and required management, including during stripping of topsoil,
+ Establish clearly flagged areas to prevent over-disturbance, and restrict stripping to approved areas only,
+ Stabilise diversion bunds and temporary drainage features with nominated measures,
+ Stage topsoil stripping to coincide with areas of active earthworks only,
+ Establish stabilised site access points, and
+ Stabilise any high traffic areas, such as haul routes or site facilities, with clean gravel, placed on non-dispersive or ameliorated material.

5.1.2. CUT AND FILL EARTHWORKS

+ Minimise occurrence and duration of stockpiling,
+ Maintain stabilised site access points, haul routes and facilities areas,
+ Carry out dust suppression and monitor air quality during high winds, noting that some works may be discontinued if excessive dust is observed,
+ Roughen earthworks areas, including batters,
+ Progressively stabilise steep batters if practical, using temporary erosion control (binders and blankets) or by expediting final treatment, and
+ Ameliorate or bury dispersive soils beneath non-dispersive material.

5.1.3. DRAINAGE STRUCTURES

+ Retain existing ground cover in drainage lines as long as possible, restricting disturbance to immediately before active works,
+ Expedite construction works in drainage lines, monitoring weather forecasts and maximising production during dry weather,
+ Implement temporary erosion control (erosion control mat or soil binder) prior to rainfall if permanent treatments are not complete, and
+ Incorporate gypsum treatment within drainage structures prior to placement of final treatment.

5.1.4. LANDSCAPING

+ Progressively complete landscaping throughout the facility wherever possible, ensuring site stabilisation is completed as soon after earthworks as possible
+ Combine temporary controls with long term stabilisation measures, such as binders, mulch or hydromulch to provide immediate stabilisation while landscaping establishes
+ Prior to high risk periods (i.e. wet season) seek to reduce exposed areas as much as practical and stabilise inactive work areas, considering the duration of inactivity and likelihood of significant rainfall
+ Rehabilitate all areas outside the main alignment, including haul routes, laydowns, stockpile areas and other facilities.

6 DRAINAGE CONTROL

Drainage control considers three main principles:

1. diverting external flow before it enters site,
2. directing site runoff to an appropriate sediment control, and
3. ensuring runoff is conveyed in a non-erosive manner.

6.1. DESIGN STANDARD

In accordance with IECA (2008) Table 4.3.1 and IECA (2018) Table B35 the recommended drainage design standard for temporary drainage works is summarised in Table 6. Where possible, it is recommended that drainage be constructed per the final design standards to reduce the need for re-work and reduce the likelihood of damage occurring during storm events that exceed the minimum design standards for temporary drainage works. The minimum temporary drainage design standard is the:

- 2-year ARI for temporary drains which will be operational for less than 12 months,
- 5-year ARI for temporary drains which will be operational for 12 to 24 months, and
- 10-year ARI for temporary drains which will be operational for more than 24 months.

Table 7 - Drainage design standards

DRAINAGE FEATURE	DESIGN CRITERIA	ANTICIPATED DESIGN LIFE
Temporary drainage/diversions[1]	1 in 2-year ARI	< 12 months
	1 in 5-year ARI	12 – 24 months
	1 in 10-year ARI	> 24 months
Temporary culverts	1 in 1-year ARI	Minimum 1 in 1 year ARI hydraulic capacity wherever reasonable and practicable.
Sediment basin emergency spillways[2]	1 in 10-year ARI	< 3 months
	1 in 20-year ARI	3 - 12 months
	1 in 50-year ARI	> 12 months

Notes: [1] Minimum 150 mm freeboard to be provided to drains
[2] Refer to IECA (2018) Table B35 for freeboard requirements

Existing table drains along Fishermans Road, pending their condition, are the preferred means of diverting external runoff. Given the confirmed presence of sodic subsoils and local topography, being relatively flat, the installation of diversion bunds on the extent of clear and grub works is considered the most effective means of achieving both clean and dirty water diversion. Bunds will assist drainage of site runoff where flat ground and local undulation makes drainage difficult to achieve. It is recommended to maintain the existing topsoil and vegetative cover as much as possible. Bunds are designed to prevent scour and convey runoff up to the design rainfall event. Further, bunds are considered to be the most practical option during fill operations as levels are continually changing.

Disturbance to existing drainage features is to be avoided where possible or for as long as possible. Works within these areas are to be undertaken immediately prior to requiring access and completed within a dry forecast unless contingency measures are applied. Where access crosses existing roadside drains, a temporary crossing incorporating a sized pipe will be installed.

Details regarding temporary drainage arrangement, staging and stabilisation of flow paths are presented within ESCPs.

7 SEDIMENT CONTROL

The calculated soil loss and associated erosion risk determines the minimum sediment control required in specific areas. In accordance with Table B1 of the revised BPESC - Appendix B (IECA 2018) and the soil loss assessments discussed in Section 5, Type 1 and Type 2 sediment controls are required throughout the project. Refer to Table 7 for the sediment control triggers.

Table 8 - Sediment Control Standard Based on Soil Loss (adapted from Table B1 of IECA, 2018)

AREA LIMIT (m^2)	SOIL LOSS RATE LIMIT (T/HA/YR)		
	TYPE 1	TYPE 2	TYPE 3
1,000	N/A	N/A	All cases
2,500	N/A	> 75	75
> 2,500	> 150	150	75
> 10,000	>75	N/A	75

Note: Based on Tables 4.5.1 and 4.5.3 of IECA (2008), adapted to suit Table B1 Revised Appendix B IECA (2018)

Examples of appropriate sediment controls are provided in Table 8 while the discharge criteria are provided in Table 9. Sediment controls are to be implemented ahead of clearing works and must be maintained (or upgraded) to suit site conditions.

Table 9 - Appropriate Sediment Controls

SEDIMENT CONTROL TECHNIQUE	ANTICIPATED SEDIMENT CONTROL TREATMENT MEASURE
Type 3	Sediment fence or Type 2
Type 2	Mulch bund, rock filter dam, filter tube dam, undersized basin/sump
Type 1	Sediment basin sized in accordance with BPESC - Appendix B – Sediment Basin Design and Operation (IECA, 2018)

7.1. ENVIRONMENTAL AUTHORITY CONDITIONS

The site will be subject to an Environmental Authority (EA), but the conditions in terms of discharge criteria and sediment control during construction are not known at this stage.

The 'Guideline for stormwater and environmentally relevant activities' (State of Queensland, 2014), in Part 1 for High Erosion Hazard sites states that (permanent) sediment basins must be designed for events up to and including a 24 hour storm event with an ARI of 1 in 10 years. For the purpose of this document, this is considered equivalent to the 10 % Annual Exceedance Probability (AEP).

Such use of a traditional capture, treat and release approach with a 10 % AEP, 24 hour storm design event implies capturing of **230 mm** rainfall depth within the facility. This option is considered to be impractical based on the long-term dosing requirements to achieve water quality treatment, as well as the available footprint and temporary nature of construction.

Based on the requirements of IECA (2008, 2018) and the Guideline Stormwater and environmentally relevant activities (DES, 2014), the water quality criteria specified in Table 9 are considered relevant to the project.

Table 10 - Project Discharge Criteria (expected)

PARAMETER	CONSTRUCTION DISCHARGE CRITERIA
Total Suspended Solids (TSS)	< 50mg/L for a 1 year ARI, 24 hour event (or equivalent turbidity)
Turbidity	Project specific. To be determined based on correlation to TSS limit via laboratory analysis correlating TSS to turbidity
pH	6.5 - 8.5
Hydrocarbons	No visible trace

7.2. HOW TO ACHIEVE DISCHARGE PARAMETERS

Unless otherwise specified for the construction stage within the EA, the project must provide sediment controls designed to achieve 80 % hydrologic efficiency (HE). A range of approaches are considered acceptable to achieve compliance with the 80% HE objective:

- High Efficiency Sediment (HES) Basins in accordance with IECA (2018)
- Large Traditional Sediment Basins (in accordance with Table 2 of HLW, 2018)
    - These basins are much larger than traditional Type D basins required under the previous State Planning Policy and IECA (2008)
- Total Capture – hold all water on site

A Type B High Efficiency Sediment (HES) sediment basin is proposed and has been sized in accordance with *Best Practice Erosion and Sediment Control (BPESC) - Appendix B – Sediment Basin Design and Operation* – Tables B2 and B7 (IECA, 2018).

Sizing of the HES basin was based on the 0.5 times the 1 year storm for the relevant time of concentration (approximately 15 minutes).

7.2.1. TYPE B BASIN OPERATIONAL REQUIREMENTS

Type B basins treat runoff as it passes through the system rather than following cessation of a rainfall event, as illustrated in Figure 5.

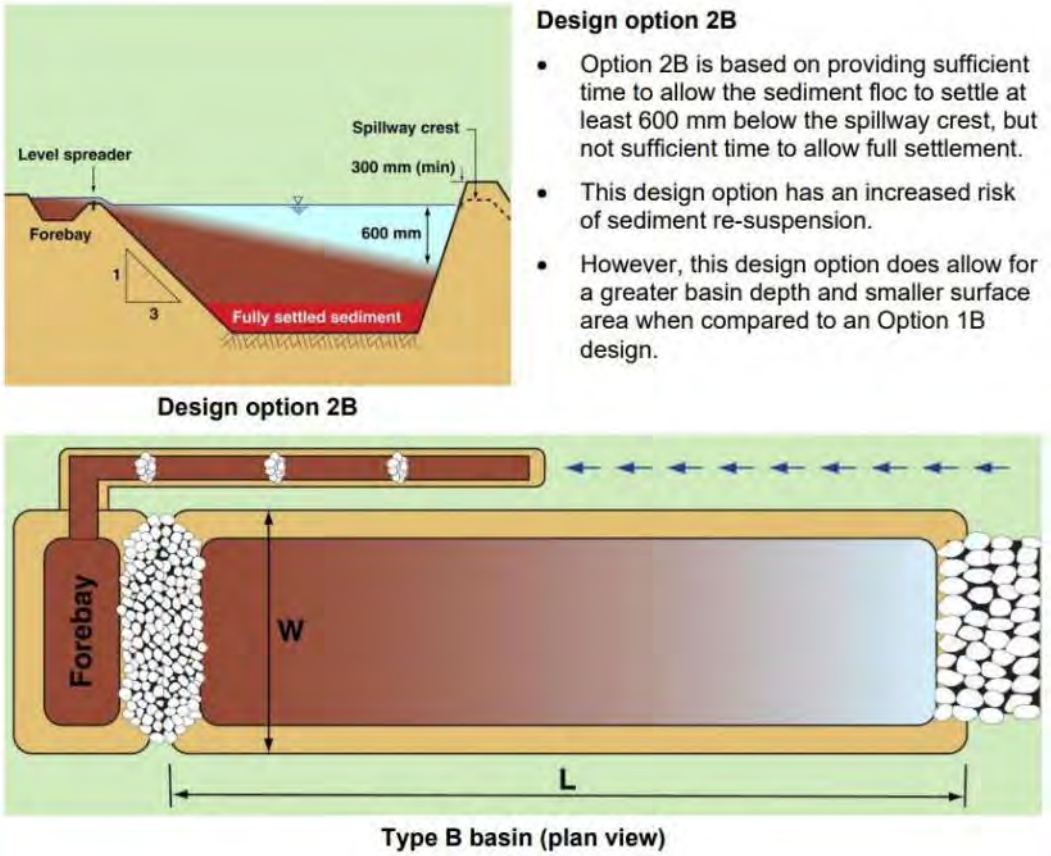


Figure 5 - Typical stages of operation for a Type B sediment basin (Source: Catchment and Creeks)

Type B basins are designed to automatically discharge clean runoff from the main basin cell over a wide, level spillway designed to "skim" clean runoff from the surface.

The preliminary sediment basin volume based on site catchments are provided in Table 11. Note that the design of these basins is dependant on the relevant catchment reporting to the basin, and any changes to the earthworks design are likely to require updated calculations to confirm the appropriate basin size.

Table 11 - Sediment Basin Preliminary Design Volumes

ID	AREA (ha)	VOLUME IN MAIN CELL (m^3)
SB1	4.70	1,823

7.3. TYPE 1

The nominated type and location of Type 1 controls (sediment basins) will be presented on ESCPs. Typical basin details and sections are included in Appendix A. Detailed design of the sediment basins will be required prior to construction and should be undertaken during the detailed design phase of the project.

7.4. TYPE 2 AND 3 CONTROLS

The nominated type and location of Type 2 and 3 sediment controls is presented in Appendix A. Minimum sizing for Type 2 sediment controls is based on best practice design standards. It is noted that Type 2 and 3 sediment controls do not achieve the specified discharge criteria and as such can only be implemented as supplementary or temporary controls, such as during construction of the sediment basins. Their use must be accompanied by increased erosion control standards over disturbed areas.

7.4.1. TYPE 2 SEDIMENT CONTROLS

Type 2 sediment controls (e.g. Rock Filter Dams (RFD), Filter Tube Dams (FTD) or Mulch Bunds) are proposed for locations that trigger the use of a Type 2 sediment controls along the access road. Several options for this type of control have been provided in the following sections.

7.4.1.1. ROCK FILTER DAMS

It is recommended that RFDs be constructed using a geotextile layer that can be easily removed and replaced when blocked with sediment. A typical section of the RFD with geotextile is presented as Figure 6. For further information and design considerations, reference should be made to the Catchments and Creeks Rock Filter Dam Fact Sheet (https://www.catchmentsandcreeks.com.au/docs/RFD-1.pdf). Again, the Type 2 sediment controls are not intended as a replacement for a Type 1 control, but in conjunction with an increased erosion control standard, are recommended where site constraints preclude the use of a Type 1 sediment control.

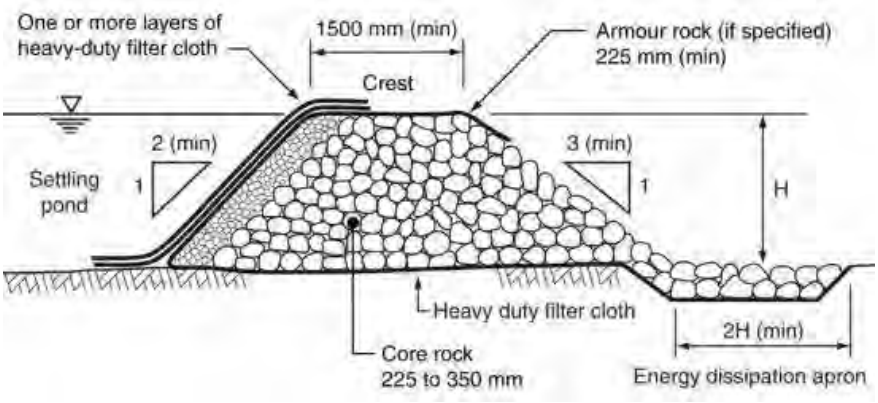


Figure 6 - Rock Filter Dam with Geotextile Filter (Source: Catchments and Creeks)

7.4.1.2. FILTER TUBE DAMS

Filter Tube Dams are an alternative to Rock Filter Dams. Figure 7 provides typical details of such a treatment system and proprietary devices are available. However, in both cases, consideration must be given to the expected flow rates and the structures designed accordingly. For further design considerations, refer the Catchment and Creeks Filter Tube Dam fact sheet https://www.catchmentsandcreeks.com.au/docs/FTD-1.pdf.

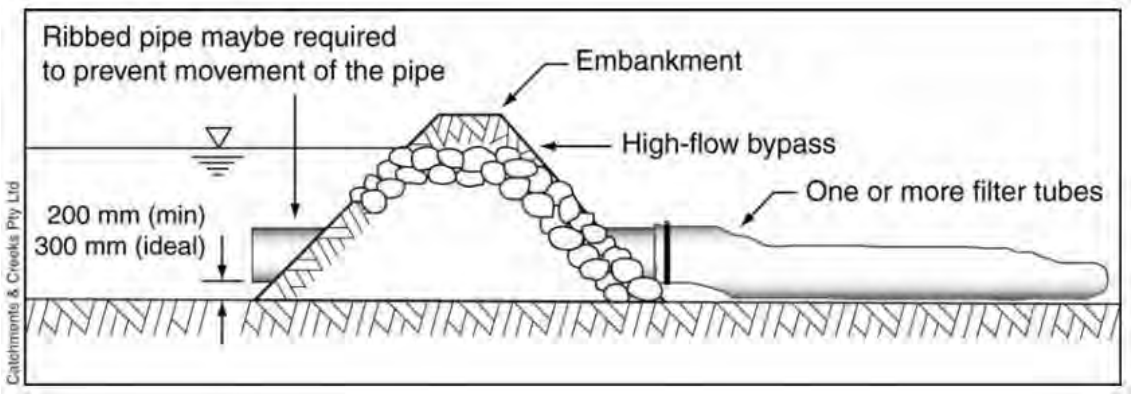


Figure 7 - Filter Tube Dam incorporated into Bund (Source: Catchments and Creeks)

7.4.1.3. MULCH BUNDS

Mulch filter bunds can be used to assist in filtering and settling coarse sediments from sheetflow and is achieved from runoff passing through the berm. The key design consideration is to maximise the surface area of ponding

up-slope of the bund such that coarse sediments are allowed to settle under gravity. It is therefore a requirement that the bund be placed along the contour in order to gain maximum benefit.

A typical bund section and placement recommendations are illustrated as Figure 8. Further details can be found within the Catchments and Creek fact sheet https://www.catchmentsandcreeks.com.au/docs/MB-1.pdf

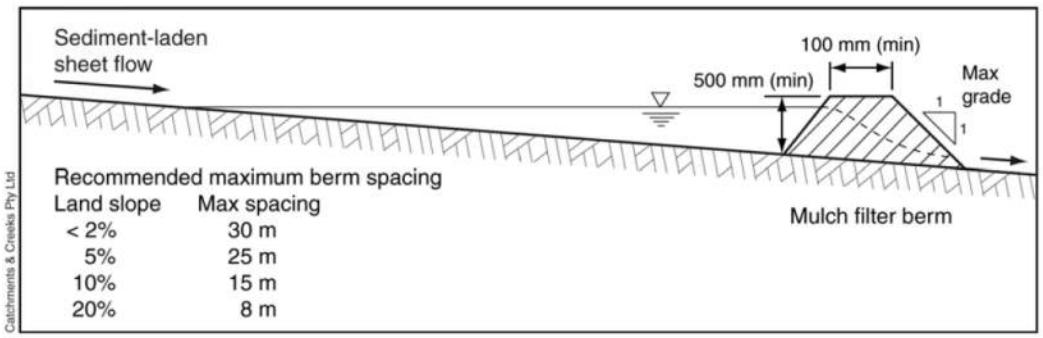


Figure 8 – Mulch Filter Bund Typical Section & Placement Details (Source: Catchments and Creeks)

7.4.2. COMPENSATORY MEASURES

Where Type 2 or 3 sediment control has been adopted in areas requiring Type 1 control the reduced standard shall be offset by increased erosion control in the catchment, typically soil binder or geotextile. A treatment train approach to sediment and drainage control will vary from location to location and on active works and current staging, but will generally include:

1) Sediment controls arranged in series to maximise treatment effectiveness.
2) Increased monitoring and maintenance (including desilting controls).
3) Passive treatment of drainage lines using gypsum, where relevant, taking care to ensure gypsum is fully dissolved prior to discharge from site.
4) Maximising detention/retention of runoff on site, utilising excavations and temporary bunding within the catchment (not just at discharge points).
5) Increased Type 2 design specification (grade) to increase ponding.
6) Application of compensatory Erosion Control.

7.5. SEDIMENT BASIN OPERATION

7.5.1. COAGULANT/FLOCCULENT

Prior to commencement of construction, jar tests are to be undertaken to determine the optimum coagulation or flocculant for site soils. Jar tests results are to recorded in accordance with the Floc Report provided in Appendix B.

7.5.2. DEWATERING

Basins are used and these are to be treated and dewatered within 5 days of cessation of a rainfall event.

7.5.3. PERFORMANCE ASSESSMENT

A Performance review of the sediment basin is to be undertaken following rainfall in accordance with Figure 9 and Appendix C. Water quality discharge criteria for sediment basins was previously provided in Table 10.

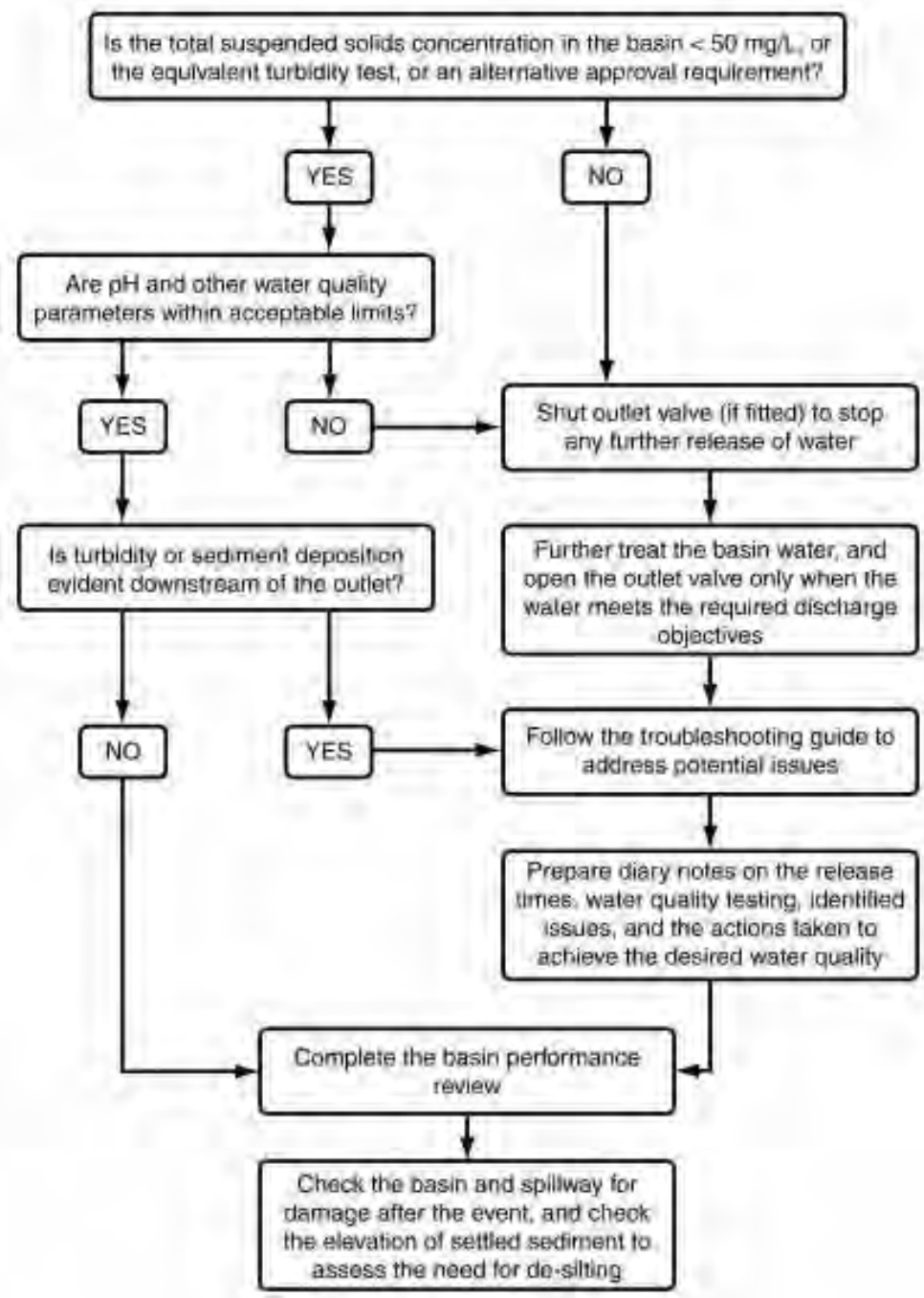


Figure 9 – Basin Performance Assessment Process (Source: IECA 2018)

8 ROLES AND RESPONSIBILITIES

Responsibilities of construction personnel in respect to ESC are outlined below. Reference should also be made to the contractors Construction Environmental Management Plan (CEMP).

Table 12 - Roles and Responsibilities

ROLE	RESPONSIBILITY
Project Manager	+ Overall responsibility of ESC implementation + Notify the Administrator of any non-compliance with ESCP + Ensure the prompt implementation of measures to mitigate erosion and sediment generation
Site Supervisor/Foremen	+ Undertake inspection of all control measures, discharge points and boundary of works per inspection requirements + Monitor daily rainfall + Notify Environmental Advisor/Consultant when runoff generating rainfall occurs in the previous 24 hours + Maintain current records of rainfall, storage volumes, water quality, treatment practices, discharge volumes (as appropriate) + Installation and maintenance of ESC + Ensure floc tests (Appendix B) and Basin Performance Inspections (Appendix C) are conducted (as required).
Project Team	+ Provide design information as required + Conduct in-situ monitoring (as required) + Collect and submit samples to laboratory (as required) + Collate results and prepare reports (as required) + Conduct site inspections and audits (as required) + Inspect ESC installation and maintenance + Inspect offsite impacts and management + Provide advice regarding ESC site improvement (as required)
Appointed CPESC	+ Undertake site inspection and reporting at the nominated frequency or as requested by client
All Personnel	+ Report any damage to ESC devices and any potential or actual environmental harm in line with Duty to Notify under the requirements of the *Environmental Protection Act 1994*

9 SITE INSPECTION AND MONITORING

Site inspections, monitoring and maintenance activities are to be conducted in accordance with the CEMP.

Management and reporting of non-conformances and incidents relating to erosion and sediment control shall be as per requirements for environmental non-conformances and incidents (to be specified in the CEMP). Notification to the Administrator or the Principal does not in any way negate the requirements on the Contractor to notify DETSI, other regulatory authorities and landowners under the Environmental Protection or other Acts.

Reference should be made to Sections 6.17 and 7.4 of the Best Practice Erosion and Sediment Control Document (IECA, 2008) as detailed below as well as any CEMP requirements.

ESCPs should be considered live documents that in some instances will require review and updating as site conditions change, or if the adopted measures fail to achieve the required treatment standard. When a site inspection detects a notable failure in the adopted ESC measures, the source of this failure must be reported, investigated and appropriate amendments made to the site and the ESCP.

Best practice site management requires all ESC measures to be inspected at the following frequencies and include the following checks as a minimum:

Daily site inspections (during rainfall)

- All drainage, erosion and sediment control measures. If inspection identifies maintenance of control measures is required to improve performance effectiveness proactively or reactively, then maintenance must be undertaken as soon as reasonably practicable
- Occurrences of excessive sediment deposition (whether on-site or off-site)
- All site discharge points (including dewatering activities as appropriate)

Weekly site inspections (even if work is not occurring on-site)

- All drainage, erosion and sediment control measures. If inspection identifies maintenance of control measures is required to improve performance effectiveness proactively or reactively, then maintenance must be undertaken as soon as reasonably practicable
- Occurrences of excessive sediment deposition (whether on-site or off-site)
- Occurrences of construction materials, litter or sediment placed, deposited, washed or blown from the site, including deposition by vehicular movements
- Litter and waste receptors
- Oil, fuel and chemical storage facilities

Prior to anticipated runoff producing rainfall (within 24 hours of expected rainfall)

- All drainage, erosion and sediment control measures. If inspection identifies maintenance of control measures is required to improve performance effectiveness proactively or reactively, then maintenance must be undertaken as soon as reasonably practicable
- All temporary flow diversion and drainage works

Following runoff producing rainfall (within 18 hours of rainfall event)

- All drainage, erosion and sediment control measures. If inspection identifies maintenance of control measures is required to proactive or reactively improve performance effectiveness than maintenance must be undertaken as soon as reasonably practicable
- Occurrences of excessive sediment deposition (whether on-site or off-site)
- Occurrences of construction materials, litter or sediment placed, deposited, washed or blown from the site, including deposition by vehicular movements
- Performance assessment of the sediment basin as per Section 7.5.3 and Appendix B

10 SEVERE WEATHER

The controls indicated in ESCPs are to be designed in accordance with criteria specified in IECA (2008, 2018) guidelines. These specifications are adopted based on the project duration and sensitivity of the receiving environment/community, with consideration given to the constraints of the project locality (e.g. seasonally high rainfall, constrained linear infrastructure etc) and practical implementation of best practice ESC. The controls, and any other sediment, drainage or erosion control installed on site may fail in rain events greater than those specified.

To reduce the impacts arising from a greater than design event, or other severe weather, a brief risk assessment has been completed.

10.1. RESPONSE TO SIGNIFICANT WEATHER

Following significant weather, the contractor will conduct a site-wide inspection of erosion, sediment and drainage controls and implement the following response strategy:

1. Identify maintenance items, including;
    a. damaged or scoured drains
    b. ripped or damaged drain lining and erosion controls
    c. excessive sediment deposition (whether on-site or off-site)
    d. construction materials, litter or sediment placed, deposited, washed or blown from the site, including deposition by vehicular movements
    e. water levels and sediment captured in sediment controls
2. Schedule corrective actions by order of priority, noting that the safety of project personnel and the public shall always take precedence
3. Dewater sediment controls and work areas in accordance with the nominated discharge criteria.
4. Carry out water quality monitoring in accordance with the EA and this ESCP.
5. Track closed out and outstanding items in a corrective action register
6. Present the corrective action register with water quality monitoring results as part of project records
7. Amend erosion and sediment control plans if necessary to account for any changes that may be required.

A severe weather management plan may be prepared for the project, identifying additional response measures to significant rainfall. This ESCP should be reviewed prior to the wet season with the intent of capturing any developing risks that may be identified since original issue.

Table 13 - Severe Weather Risk Assessment

HAZARD	LIKELIHOOD	IMPACT	CONTROL
Type 1 sediment controls fail	Low	Releases turbid water to the environment	+ Undertake monitoring and investigation per requirements of this ESCP. Notify to the regulator if release of turbid water warrants. + Remove deposited sediment from within and downslope of work area (without causing further disturbance) and reinstate control measures. + Review measures and consider if changes are required to meet the intent of this ESCP, and + Demonstrate all reasonable measures have been undertaken to prevent the release.
Type 2 or Type 3 sediment controls fail	Medium	Releases turbid water to the environment	+ Undertake monitoring and investigation per requirements of this ESCP. Notify to the regulator if release of turbid water warrants. + Remove deposited sediment from within and downslope of work area (without causing further disturbance) and reinstate control measures. + Review measures and consider if changes are required to meet the intent of this ESCP and demonstrate all reasonable measures have been undertaken to prevent the release.
Temporary drainage fails	Medium	Clean and dirty water combine, releases turbid water to the environment. Scour in drains	+ Due to highly dispersive soils, actively stabilise drainage features in accordance with the specification. Inspect and maintain regularly.
Surface treatment does not effectively stabilise surfaces	Low to medium	Surfaces will be exposed and subject to ongoing erosion.	+ Temporary or permanent surface treatments to be installed per specifications. Where flow velocities may exceed the allowable maximum, install additional measures to either reduce flow velocity or secure treatment (i.e. pinning of turf). + Rock treatments to be recessed and suitably installed to limit displacement. + Stabilisation by placement of temporary erosion control or permanent stabilisation (including landscaping) to be progressively undertaken to allow greater establishment. + Appropriate QA/QC of treatment application must be undertaken (even including temporary binder or hydromulching). + Monitor surfaces and flow paths for signs of failure. If flow velocities appear to exceed surface treatments, consider installation of temporary velocity controls to reduce shearing effects whilst vegetation establishes and/or consider alternative treatments. + It should be noted that use of velocity control measures (i.e. rock check dams, or similar) should only be used where dispersive soils are not present, or the channel base has been treated (either by burying below non-dispersive material, gypsum amelioration or use of an impermeable liner) as per guidance.
Dust generation	Low to high	Release to the environment and surrounding users	+ Increase dust suppression during high winds. Reduce traffic and machinery movement. Stabilise exposed areas.

It should be noted that the most effective control measure in the event of severe weather is to secure and stabilise as much exposed area as possible. This can also be achieved by scheduling high risk activities (such as stripping, or drainage work) to low risk periods of time (with limited rain forecast). Prior to forecasted severe weather (or any rainfall) all efforts should be made to secure the work area by temporary or permanent means.

APPENDIX A

EROSION AND SEDIMENT CONTROL PLANS

EROSION AND SEDIMENT CONTROL DRAWINGS

FISHERMANS ROAD, YARWUN
CHLOR-ALKALI FACILITY

COUNCIL - GLADSTONE CITY COUNCIL

DRAWING LIST:
D00 - COVER SHEET
D01 - BOAT CREEK LOCAL CATCHMENT PLAN
D02 - CATCHMENT PLAN - SITE
D03 - CLEAR AND GRUB CONTROLS
D04 - TOPSOIL STRIP CONTROLS
D05 - BULK EARTHWORKS CONTROLS
D06 - FINAL LEVELS CONTROLS
D07 - SEDIMENT BASIN SB1 DETAILS
D08 - SEDIMENT BASIN TYPICAL DETAILS
D09 - CALCULATIONS AND DRAINAGE SECTIONS
D10 - STANDARD DRAWINGS

REFER TO REPORT (REFERENCE: R4211) FOR ADDITIONAL DETAILS RELATING TO GUIDELINES USED, PROJECT AND SITE DESCRIPTION, CLIMATE, TOPOGRAPHY, SOILS, EROSION RISK ASSESSMENT, EROSION, SEDIMENT AND DRAINAGE CONTROL SPECIFICATIONS, SEDIMENT BASIN OPERATION, ROLES AND RESPONSIBILITIES AND SITE INSPECTION AND MONITORING

PROPOSED TEMPORARY DESIGN PROVIDED FOR CONSTRUCTION PHASE EROSION, SEDIMENT & DRAINAGE CONTROL ONLY. THE CLIENT IS RESPONSIBLE FOR ENSURING THE INSTALLATION OF ANY CONTROLS PROPOSED HEREIN CAN BE INSTALLED & OPERATED SAFELY FOR PEDESTRIANS, VEHICLES, WORKERS, CONTRACTORS, ADMINISTRATORS & MEMBERS OF THE PUBLIC

REVISION	DESCRIPTION	APPROVED BY	DATE
C	UPDATE FOR REVISED ACCESS	SC	12/11/2025
B	UPDATE FOLLOWING REVIEW	SC	29/10/2025
A	ORIGINAL ISSUE	SC	13/10/2025

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CLIENT: CQG CONSULTING

DRAWN: RK | DESIGNED: SC | DATE: 13/10/2025

RPEQ / SIGNATURE (IF REQUIRED)

CPESC NO. 6,599 RPEQ NO. 15,545

PROJECT: FISHERMANS ROAD - CHLOR-ALKALI FACILITY

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN COVER SHEET

PROJECT No: 25-0204 | DRAWING No: D00 | REVISION: C

7365000

7365000

LEGEND:

- EXISTING CONTOURS (2.0m)
- EXTERNAL CATCHMENT BOUNDARY
- DRAINAGE PATHS
- SITE BOUNDARY

TOPO.

REVISION	DESCRIPTION	APPROVED BY	DATE
C	UPDATE FOR REVISED ACCESS	SC	12/11/2025
C	UPDATE FOLLOWING REVIEW	SC	29/10/2025
A	ORIGINAL ISSUE	SC	13/10/2025

0 80

SCALE 1:8000

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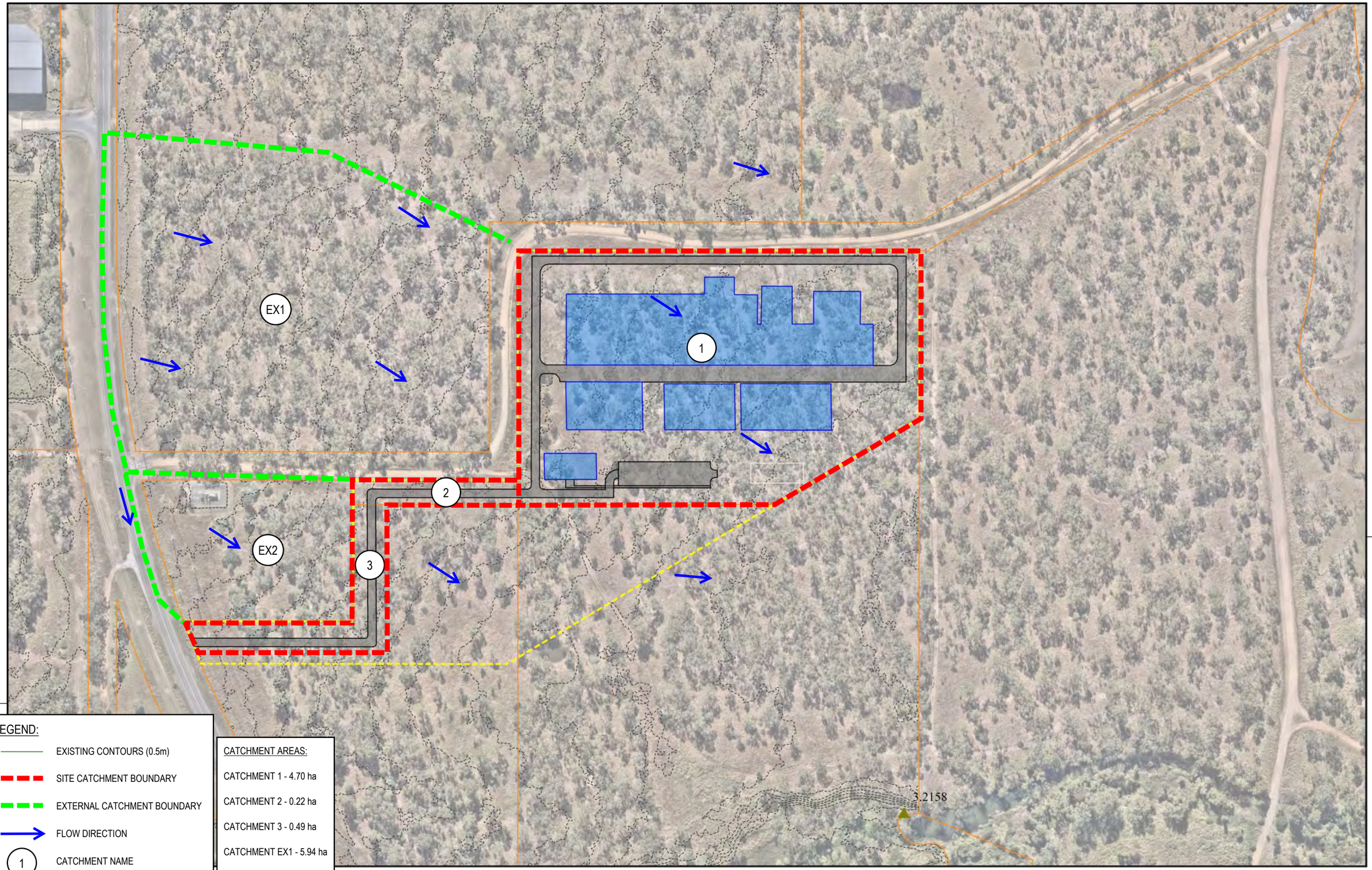
RPEQ / SIGNATURE (IF REQUIRED)

CPESC NO. 6,599 RPEQ NO. 15,545

PROJECT: FISHERMANS ROAD - CHLOR-ALKALI FACILITY

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN
BOAT CREEK LOCAL CATCHMENT PLAN

PROJECT No	DRAWING No	REVISION
25-0204	D01	C



LEGEND:

- EXISTING CONTOURS (0.5m)
- SITE CATCHMENT BOUNDARY
- EXTERNAL CATCHMENT BOUNDARY
- FLOW DIRECTION
- 1 CATCHMENT NAME

CATCHMENT AREAS:

CATCHMENT 1 - 4.70 ha

CATCHMENT 2 - 0.22 ha

CATCHMENT 3 - 0.49 ha

CATCHMENT EX1 - 5.94 ha

CATCHMENT EX2 - 1.53 ha

TOPO.

REVISION	DESCRIPTION	APPROVED BY	DATE
C	UPDATE FOR REVISED ACCESS	SC	12/11/2025
C	UPDATE FOLLOWING REVIEW	SC	29/10/2025
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RPEQ / SIGNATURE (IF REQUIRED)

CPESC NO. 6,599 RPEQ NO. 15,545

PROJECT: FISHERMANS ROAD - CHLOR-ALKALI FACILITY

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN
CATCHMENT PLAN - SITE

PROJECT No: 25-0204 | DRAWING No: D02 | REVISION: C

LEGEND:

- EXISTING CONTOURS (0.5m)
- DIRTY WATER DIVERSION DRAIN
- DIRTY WATER DIVERSION BUND
- CLEAN WATER DIVERSION
- SEDIMENT BASIN
- STABLE ENTRY/EXIT
- ACCESS TRACK
- ROCK FILTER DAM
- MULCH BUND OR SEDIMENT FENCE
- SUMP
- SPILLWAY

EXTERNAL RUNOFF FROM FISHERMANS ROAD DIRECTED AROUND WORKS IN EXISTING TABLE DRAIN

INSTALL MULCH BUNDS AT REGULAR INTERVALS TO REDUCE SLOPE LENGTH (PRIOR TO RAINFALL OR IF DELAY EXCEEDING 30 DAYS BETWEEN CLEARING AND TOPSOIL STRIP)

STABILISE ACCESS TRACK WITH CLEAN/LOW FINES CONTENT GRAVEL SHEETING

DW2

RFD1

INSTALL TYPE 2 CONTROL (ROCK FILTER DAM OR FILTER TUBE DAM) AT END OF BERM/DRAIN & DISCHARGE INTO EXISTING DRAINAGE PATH OR SUITABLE VEGETATED SURFACE. ENSURE PONDING AREA PROVIDED (PER DRAWING NO. D10)

PROVIDE CLEAN WATER DIVERSION BUNDS & TEMPORARY (OR PERMANENT) CULVERT CROSSING

INSTALL STABILISED ENTRY/EXIT

INSTALL TEMPORARY (OR PERMANENT) CULVERT CROSSING

INSTALL MULCH BUND AROUND LOWER PERIMETER

IF MULCH NOT AVAILABLE, SEDIMENT FENCE REQUIRED ON SITE BOUNDARY. PROVIDE RETURNS AT 15m SPACINGS. REFER DRAWING NO. D10 FOR DETAILS

DURING TRACK FORMATION, PROVIDE DIRTY WATER DIVERSION BUNDS & DISCHARGE RUNOFF VIA ROCK FILTER DAM. ENSURE PONDING AREA PROVIDED (PER DRAWING NO. D10)

7365000

7365000

ESC MANAGEMENT STRATEGY:

1. MAINTAIN HIGH LEVEL OF GROUND COVER FOR AS LONG AS POSSIBLE
2. INSTALL STABILISED ENTRY / EXIT POINTS AS SHOWN INDICATIVELY
3. USE SITE GAINED MULCH TO INSTALL BUNDS, STARTING AROUND LOWER PERIMETER AND PROGRESSIVELY THROUGHOUT SITE TO REDUCE SLOPE LENGTH
4. REMOVE ANY SEDIMENT BUILDUP FROM INSTALLED CONTROLS OR ACCESS POINTS AS SOON AS IDENTIFIED.

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REVISION	DESCRIPTION	APPROVED BY	DATE
C	UPDATE FOR REVISED ACCESS	SC	12/11/2025
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RK	SC	13/10/2025

RPEQ / SIGNATURE (IF REQUIRED)

CPESC NO. 6,599 RPEQ NO. 15,545

PROJECT: FISHERMANS ROAD - CHLOR-ALKALI FACILITY

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN CLEAR AND GRUB CONTROLS

PROJECT No	DRAWING No	REVISION
25-0204	D03	C

LEGEND:

- EXISTING CONTOURS (0.5m)
- DIRTY WATER DIVERSION DRAIN
- DIRTY WATER DIVERSION BUND
- CLEAN WATER DIVERSION
- SEDIMENT BASIN
- STABLE ENTRY/EXIT
- ROCK FILTER DAM
- MULCH BUND
- SUMP
- SPILLWAY
- PUMPED FLOWS
- CROSS DRAINAGE
- SEDIMENT FENCE
- EARTH BUND

EXTERNAL RUNOFF FROM FISHERMANS ROAD DIRECTED AROUND WORKS IN EXISTING TABLE DRAIN

INSTALL 0.5m HIGH (TOPSOIL) DIVERSION BERM ALONG BOUNDARY TO DIRECT EXTERNAL RUNOFF AROUND WORKS. LINE FLOWPATH WITH SOIL BINDER OR HYDROMULCH (USE EXISTING TABLE DRAIN IF PRESENT)

MAINTAIN MULCH BUNDS AT REGULAR INTERVALS TO REDUCE SLOPE LENGTH (PRIOR TO RAINFALL OR IF DELAY EXCEEDING 30 DAYS BETWEEN CLEARING AND TOPSOIL STRIP)

STABILISE OUTER FACE OF BUND WITH SOIL BINDER OR INSTALL SEDIMENT FENCE

INSTALL (TOPSOIL) DIVERSION BERM ALONG EDGE OF WORKS TO DIRECT RUNOFF TO SEDIMENT CONTROL. LINE FLOWPATH WITH SOIL BINDER OR HYDROMULCH

INSTALL 2m WIDE SPILLWAY IN BUND

MAINTAIN STABILISED ENTRY/EXIT UNTIL NEW ACCESS TRACK CONSTRUCTED

GRADE OUT BERM ALONG CONTOUR (OR GRADE FILL) TO GRAVITY FEED SITE RUNOFF TO SEDIMENT BASIN INLET

SB1 TYPE B
HIGH EFFICIENCY
V = 1,823 m³
IN MAIN CELL

SMALL AREA THAT CANNOT BE GRADED TO BASIN INLET TO BE CONTROLLED WITH EARTH BUND & PONDING AREA. DEWATER TO SB1 BASIN FOR TREATMENT FOLLOWING RAINFALL

CARPARK & SITE COMPOUND TO BE GRAVEL SHEETED. INDICATIVE LOCATION SHOWN

COMMENCE CONSTRUCTION OF SB1 HIGH EFFICIENCY SEDIMENT BASIN OFFLINE. SEE DRAWING NO. D07 FOR DETAIL

INSTALL (TOPSOIL) DIVERSION BERM ALONG EDGE OF WORKS TO DIRECT RUNOFF TO SEDIMENT CONTROL. LINE FLOWPATH AND OUTER FACE WITH SOIL BINDER. IF OUTER FACE OF BUNDS NOT STABILISED, SEDIMENT FENCE WILL BE REQUIRED

INSTALL 15m WIDE SPILLWAY. LINE WITH d_{50}-150mm WELL GRADED ROCK , UNDERLAID WITH GEOTEXTILE. SEE TYPICAL DETAIL. DISCHARGE ONTO NON-EROSIVE (GRASSED) SURFACE.

PROVIDE CLEAN WATER DIVERSION BUNDS & TEMPORARY (OR PERMANENT) CULVERT CROSSING

INSTALL STABILISED ENTRY/EXIT

DURING TRACK FORMATION, PROVIDE DIRTY WATER DIVERSION BUNDS & DISCHARGE RUNOFF VIA ROCK FILTER DAM. ENSURE PONDING AREA PROVIDED (PER DRAWING NO. D10)

CW1 DW1 RFD1

7365000

ESC MANAGEMENT STRATEGY:

1. MAINTAIN HIGH LEVEL OF GROUND COVER FOR AS LONG AS POSSIBLE
2. INSTALL STABILISED ENTRY / EXIT POINTS AS SHOWN INDICATIVELY
3. COMMENCE INSTALLATION OF SEDIMENT BASIN, WHILST MAINTAINING EXISTING COVER THROUGHOUT THE SITE AND KEEPING TOPSOIL STRIP TO THE MINIMUM REQUIRED FOR BASIN CONSTRUCTION
4. MAINTAIN MULCH BINDS
5. REMOVE ANY SEDIMENT BUILDUP FROM INSTALLED CONTROLS OR ACCESS POINTS AS SOON AS IDENTIFIED.
6. INSPECT, MAINTAIN AND OPERATE HIGH EFFICIENCY BASINS. CONFIRM ADEQUATE CAPACITY IN SEDIMENT STORAGE ZONE.

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RPEQ / SIGNATURE (IF REQUIRED)
CPESC NO. 6,599 RPEQ NO. 15,545

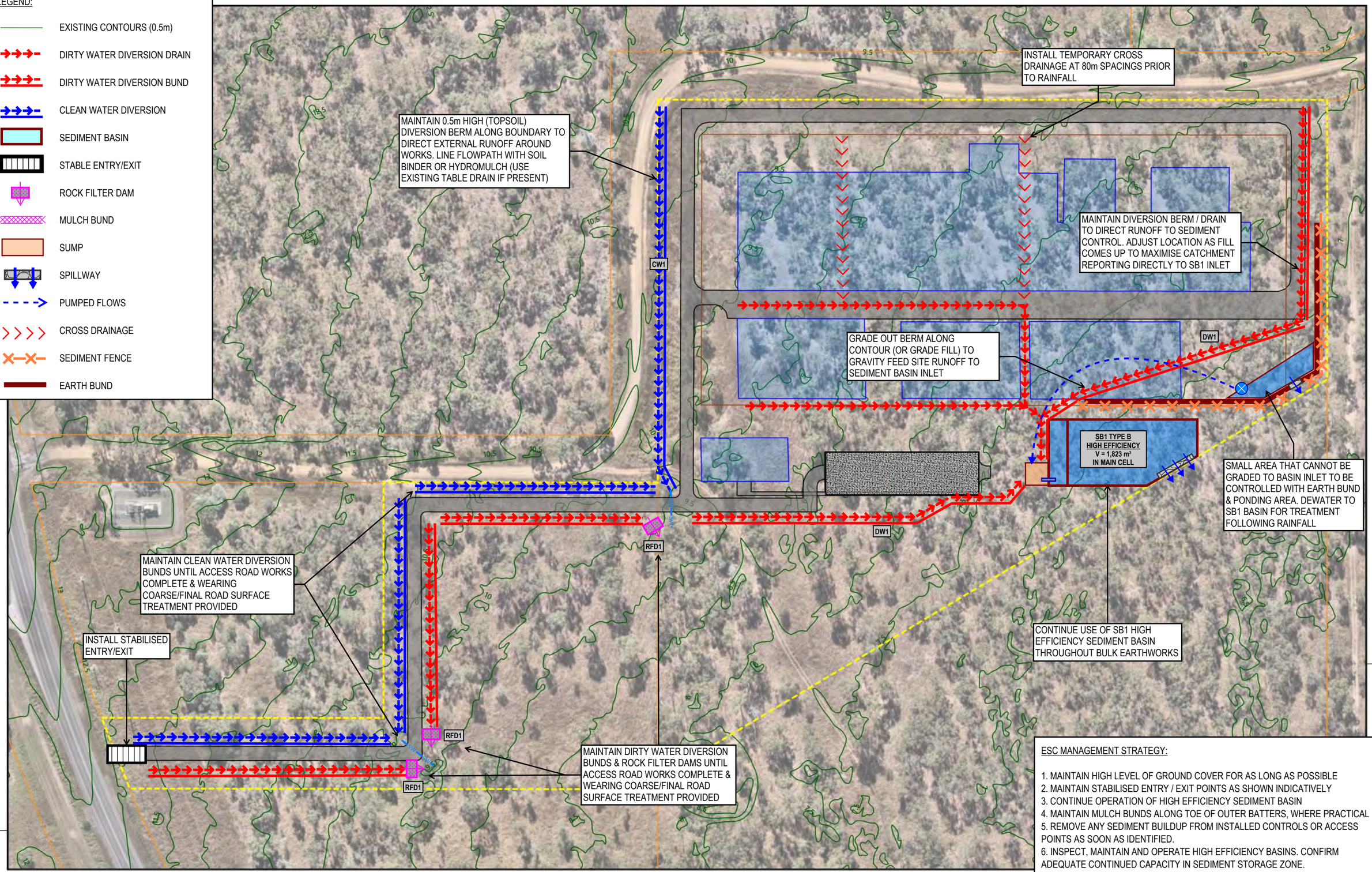
PROJECT: FISHERMANS ROAD - CHLOR-ALKALI FACILITY

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN
TOPSOIL STRIP CONTROLS

PROJECT No	DRAWING No	REVISION
25-0204	D04	C

LEGEND:

- EXISTING CONTOURS (0.5m)
- DIRTY WATER DIVERSION DRAIN
- DIRTY WATER DIVERSION BUND
- CLEAN WATER DIVERSION
- SEDIMENT BASIN
- STABLE ENTRY/EXIT
- ROCK FILTER DAM
- MULCH BUND
- SUMP
- SPILLWAY
- PUMPED FLOWS
- CROSS DRAINAGE
- SEDIMENT FENCE
- EARTH BUND



ESC MANAGEMENT STRATEGY:

1. MAINTAIN HIGH LEVEL OF GROUND COVER FOR AS LONG AS POSSIBLE
2. MAINTAIN STABILISED ENTRY / EXIT POINTS AS SHOWN INDICATIVELY
3. CONTINUE OPERATION OF HIGH EFFICIENCY SEDIMENT BASIN
4. MAINTAIN MULCH BUNDS ALONG TOE OF OUTER BATTERS, WHERE PRACTICAL
5. REMOVE ANY SEDIMENT BUILDUP FROM INSTALLED CONTROLS OR ACCESS POINTS AS SOON AS IDENTIFIED.
6. INSPECT, MAINTAIN AND OPERATE HIGH EFFICIENCY BASINS. CONFIRM ADEQUATE CONTINUED CAPACITY IN SEDIMENT STORAGE ZONE.
7. REMOVE SEDIMENT FROM SUMP AND FOREBAY ON A REGULAR BASIS

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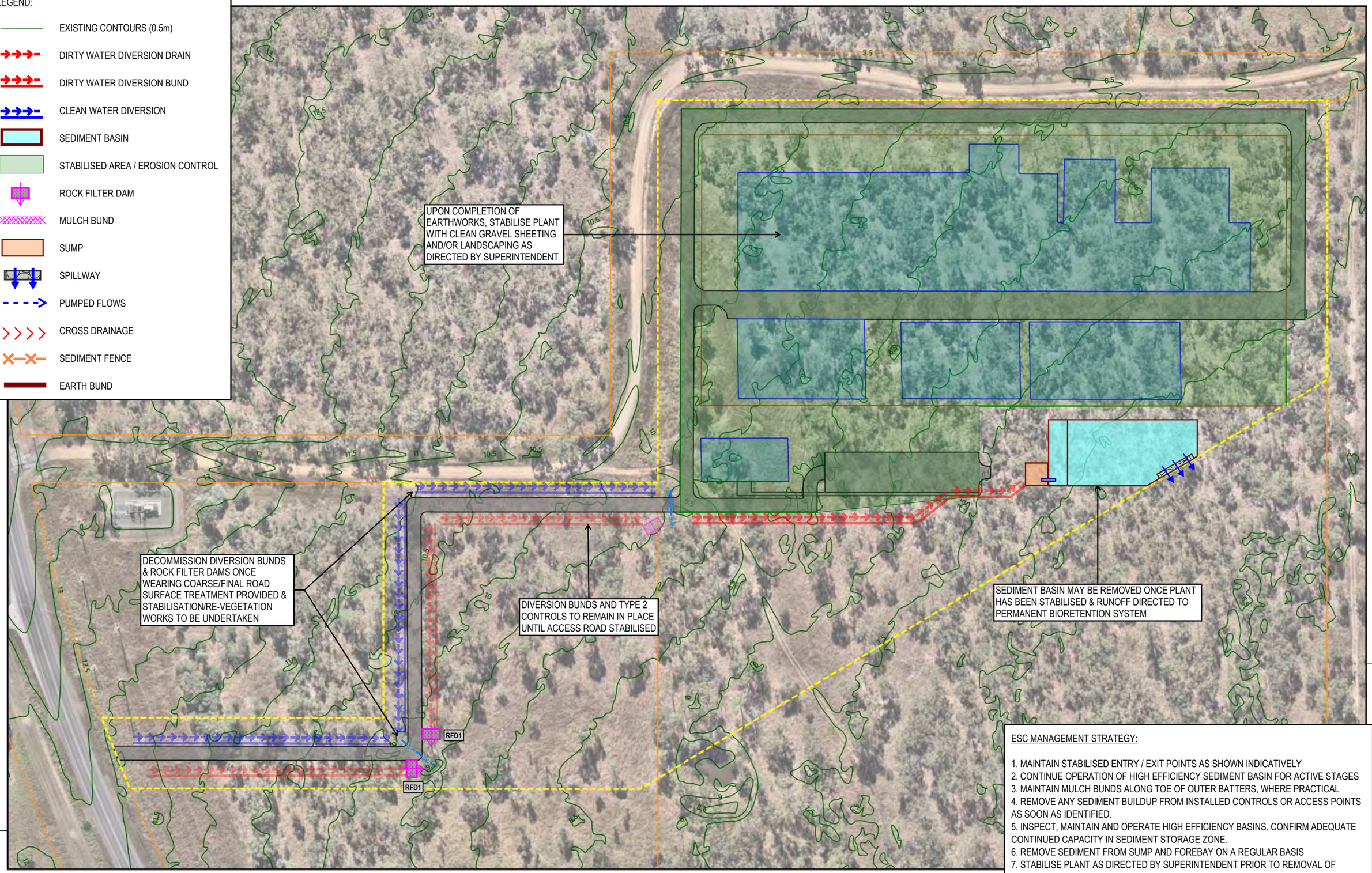
CPESC NO. 6,599 RPEQ NO. 15,545

PROJECT: FISHERMANS ROAD - CHLOR-ALKALI FACILITY
DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN BULK EARTHWORKS CONTROLS
PROJECT No: 25-0204 | DRAWING No: D05 | REVISION: C

LEGEND:

- EXISTING CONTOURS (0.5m)
- DIRTY WATER DIVERSION DRAIN
- DIRTY WATER DIVERSION BUND
- CLEAN WATER DIVERSION
- SEDIMENT BASIN
- STABILISED AREA / EROSION CONTROL
- ROCK FILTER DAM
- MULCH BUND
- SUMP
- SPILLWAY
- PUMPED FLOWS
- CROSS DRAINAGE
- SEDIMENT FENCE
- EARTH BUND



ESC MANAGEMENT STRATEGY:

1. MAINTAIN STABILISED ENTRY / EXIT POINTS AS SHOWN INDICATIVELY
2. CONTINUE OPERATION OF HIGH EFFICIENCY SEDIMENT BASIN FOR ACTIVE STAGES
3. MAINTAIN MULCH BUNDS ALONG TOE OF OUTER BATTERS, WHERE PRACTICAL
4. REMOVE ANY SEDIMENT BUILDUP FROM INSTALLED CONTROLS OR ACCESS POINTS AS SOON AS IDENTIFIED.
5. INSPECT, MAINTAIN AND OPERATE HIGH EFFICIENCY BASINS. CONFIRM ADEQUATE CONTINUED CAPACITY IN SEDIMENT STORAGE ZONE.
6. REMOVE SEDIMENT FROM SUMP AND FOREBAY ON A REGULAR BASIS
7. STABILISE PLANT AS DIRECTED BY SUPERINTENDENT PRIOR TO REMOVAL OF SEDIMENT BASIN

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RPEQ / SIGNATURE (IF REQUIRED)
CPESC NO. 6,599 RPEQ NO. 15,545

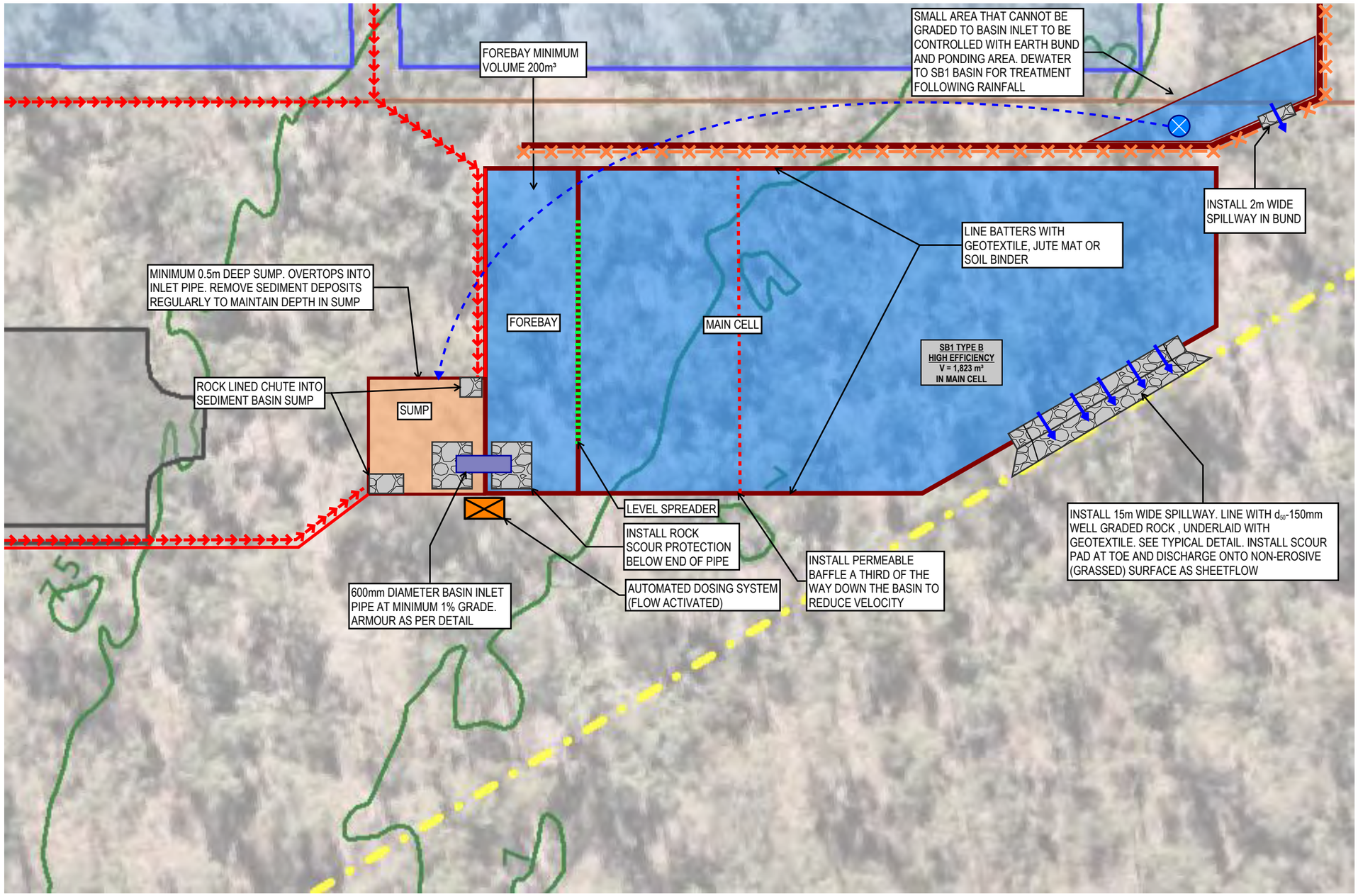
PROJECT: FISHERMANS ROAD - CHLOR-ALKALI FACILITY

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN PROGRESSIVE FINAL LEVELS CONTROLS

PROJECT No	DRAWING No	REVISION
25-0204	D06	C

LEGEND:

- DIRTY WATER DIVERSION
- AUTOMATED DOSING SYSTEM
- SEDIMENT BASIN
- SPILLWAY
- SCOUR PROTECTION / ROCK LINING
- BASIN SUMP
- LEVEL SPREADER
- PERMEABLE BAFFLE
- INLET PIPE
- CLEAN WATER DIVERSION
- SEDIMENT FENCE
- PUMPED FLOWS
- EARTH BUND



INDICATIVE LEVELS (PENDING SITE SURVEY):
MAIN SPILLWAY RL 6.5
MAIN CELL BASE RL 5.0
LEVEL SPREADER RL 6.7
PIPE USIL RL 7.0 DSIL RL 6.9

SEDIMENT BASIN LAYOUT AND LEVELS TO BE CONFIRMED WITH 3D MODEL BY SURVEYOR. MAY BE ADJUSTED TO SUIT ON SITE IN CONSULTATION WITH THE CPESC. IMPORTANTLY CASCADING THROUGH BASIN NEEDS TO BE MAINTAINED

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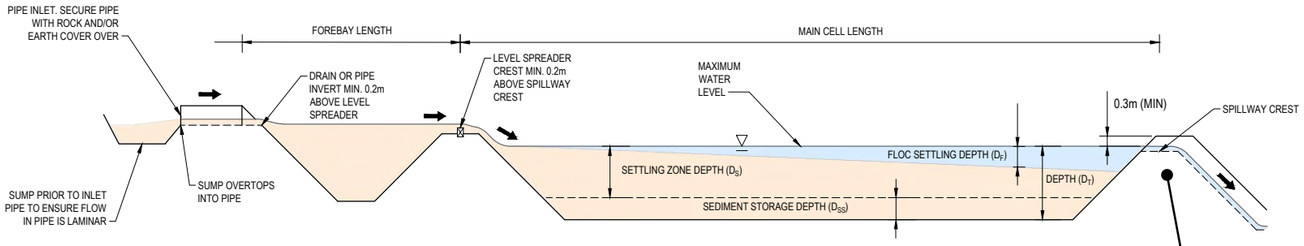
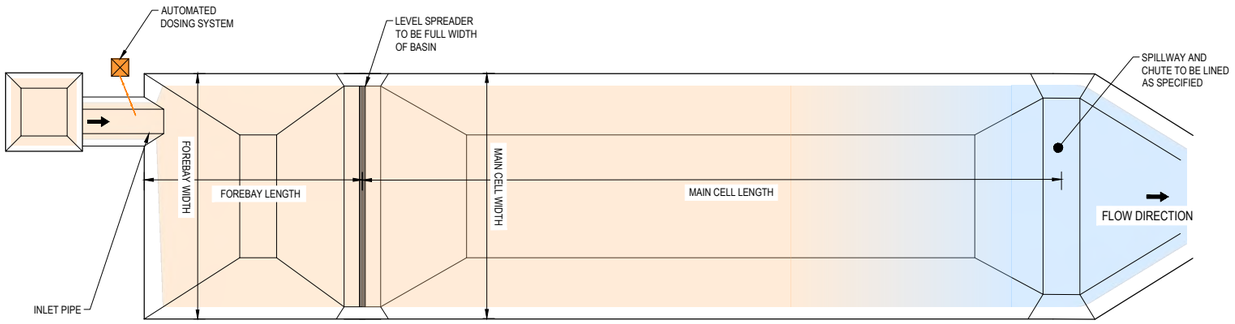
RPEQ / SIGNATURE (IF REQUIRED)
CPESC NO. 6,599 RPEQ NO. 15,545

PROJECT: FISHERMANS ROAD - CHLOR-ALKALI FACILITY
DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN SEDIMENT BASIN SB1 DETAILS

PROJECT No	DRAWING No	REVISION
25-0204	D07	C

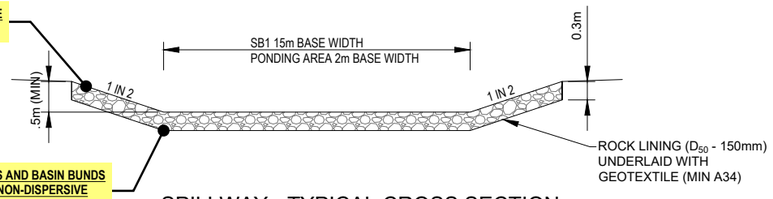


TYPE B SEDIMENT BASIN TYPICAL SECTION (nts) - FLOW ACTIVATED DOSER



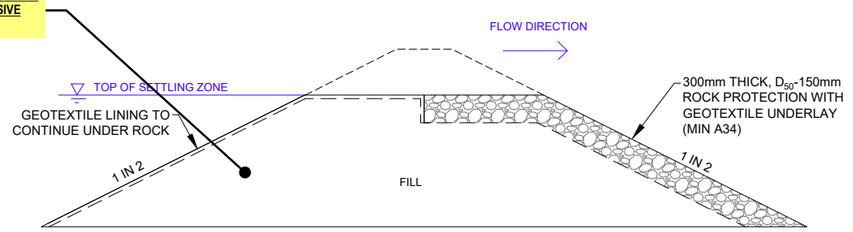
PULL ROCK UP ON SIDE BATTERS TO FORCE RUNOFF OVER ROCK IN MIDDLE

ALL DRAINAGE STRUCTURES AND BASIN BUNDS TO BE CONSTRUCTED WITH NON-DISPERSIVE MATERIAL

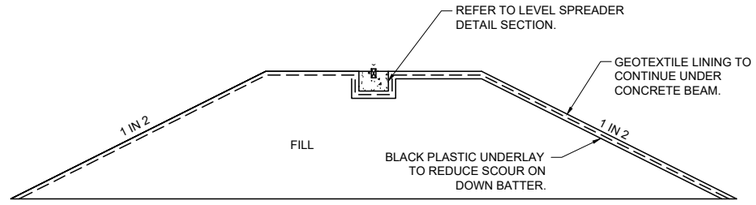


SPILLWAY - TYPICAL CROSS SECTION

ALL DRAINAGE STRUCTURES AND BASIN BUNDS TO BE CONSTRUCTED WITH NON-DISPERSIVE MATERIAL

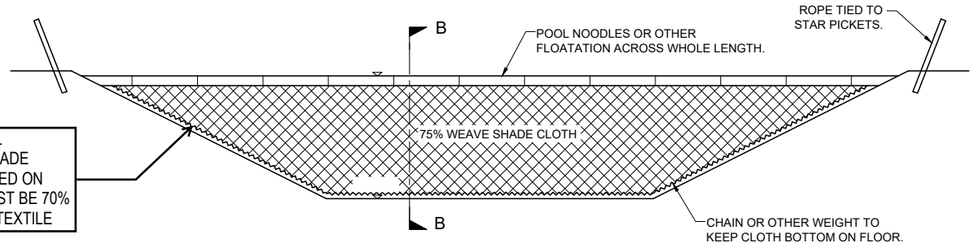


SPILLWAY TYPICAL SECTION



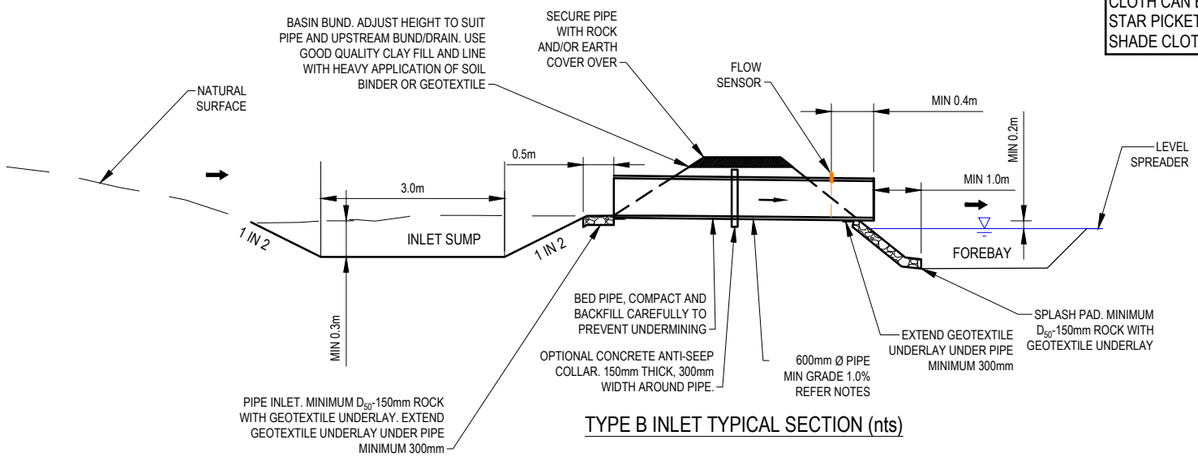
LEVEL SPREADER TYPICAL SECTION

LEVEL SPREADER TYPICAL SECTION

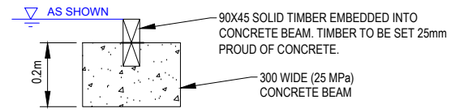


ALTERNATIVELY TO POOL NOODLES AND CHAIN, SHADE CLOTH CAN BE SUSPENDED ON STAR PICKETS. NOTE MUST BE 70% SHADE CLOTH, NOT GEOTEXTILE

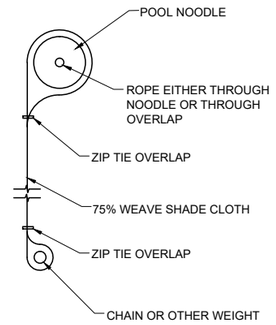
PERMEABLE BAFFLE SECTION



TYPE B INLET TYPICAL SECTION (nts)



LEVEL SPREADER DETAIL SECTION



PERMEABLE BAFFLE SECTION B

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RPEQ / SIGNATURE (IF REQUIRED)

CPESC NO. 6,599 RPEQ NO. 15,545

PROJECT: FISHERMANS ROAD - CHLOR-ALKALI FACILITY

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN SEDIMENT BASIN TYPICAL DETAILS

PROJECT No	DRAWING No	REVISION
25-0204	D08	C

BASIN SIZING CALCULATIONS - TYPE B HIGH EFFICIENCY

														SEDIMENT STORAGE					APPROX. DIMENSIONS				
BASIN ID	CATCH AREA (HA)	BATTERS (1 IN X)	L:W RATIO	SETTLING DEPTH D_S (m)	C_1	TIME OF CONC (MINS)	I_1 (mm/hr)	$0.5Q_1$ (m^3/s)	JAR TEST SETTLE AFTER 15 MINUTES (mm)	FLOC SETTLE DEPTH D_F (m)	MINIMUM A_s (m^2)	ACTUAL V_S (m^3)	SCOUR CHECK	SED STORAGE OPTION?	RUSLE SOIL LOSS (t/ha/yr)	CLEAN OUT FREQUENCY (MONTHS)	MIN SED. STORAGE VOLUME (m^3)	APPROX. REQ SED STORAGE DEPTH (m)	APPROX. LENGTH AT SPILLWAY (m)	APPROX. WIDTH AT SPILLWAY (m)	APPROX. DEPTH AT SPILLWAY (m)	SETTLING VOLUME (m^3)	TOTAL VOLUME AT SPILLWAY (m^3)
SB1	4.7	2	2	1.10	0.56	15	80	0.292	150	0.60	1276	1404	BAFFLE	30% VEST			421	0.4	54.9	27.5	1.5	1404	1823

NOTES:
1. SEDIMENT BASIN IS SIZED BASED ON A SETTLEMENT RATE OF 150MM IN 15 MINS. DUE TO TIME CONSTRAINTS, NO JAR TESTS HAVE BEEN UNDERTAKEN. SETTLEMENT RATE IS TO BE VERIFIED PRIOR TO CONSTRUCTION OF SEDIMENT BASINS

BASIN SIZING CALCULATIONS - ALTERNATIVE TYPE D BASIN - ERA 10Y/24H SIZING

BASIN ID	CATCH AREA (HA)	BATTERS (1 IN X)	L:W RATIO	SETTLING DEPTH D_S (m)	10Y / 24HR RAINFALL DEPTH	CV	V_{SET}	SED STORAGE OPTION?	V_{SS}	APPROX. REQ SED STORAGE DEPTH (m)	APPROX. LENGTH AT SPILLWAY (m)	APPROX. WIDTH AT SPILLWAY (m)	APPROX. DEPTH AT SPILLWAY (m)	SETTLING VOLUME (m^3)	TOTAL VOLUME AT SPILLWAY (m^3)
SB1 (ERA - 10Y/24HR))	4.7	2	3	1.20	230	1	9736	50% VSET	4868	0.6	163.2	54.4	1.8	9736	14604

SPILLWAY SIZING CALCULATIONS

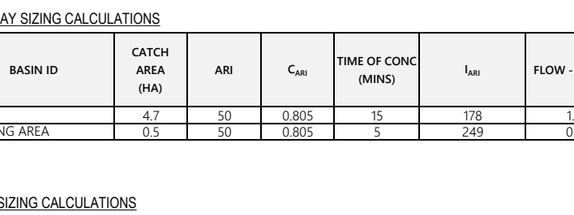
							WEIR						CHUTE							DISSIPATER		
BASIN ID	CATCH AREA (HA)	ARI	C_{ARI}	TIME OF CONC (MINS)	I_{ARI}	FLOW - Q (m^3/s)	BASE WIDTH	SIDE SLOPE 1 (1 in x)	U/S WATER LEVEL (m)	FREEBOARD (m)	MIN. HEIGHT SPILLWAY TO TOB (m)	TOP WIDTH (m)	LONG. SLOPE (m/m)	LINING	MANUAL MANNING ROUGH COEFF	DESIGN VEL (m/s)	DEPTH OF FLOW (m)	DEPTH WITH F/BOARD (m)	MEAN ROCK SIZE - D50 (mm)	WIDTH 1 (m)	WIDTH 2 (m)	LENGTH (m)
SB1	4.7	50	0.805	15	178	1.87	15	2	0.17	0.3	0.47	16.89	0.5	d50-150mm ROCK	0.117	1.28	0.10	0.40	100	17.2	17.2	1.3
PONDING AREA	0.5	50	0.805	5	249	0.28	2	2	0.17	0.3	0.47	3.88	0.5	d50-150mm ROCK	0.117	1.21	0.10	0.40	100	4.2	4.5	1.3

DRAIN SIZING CALCULATIONS

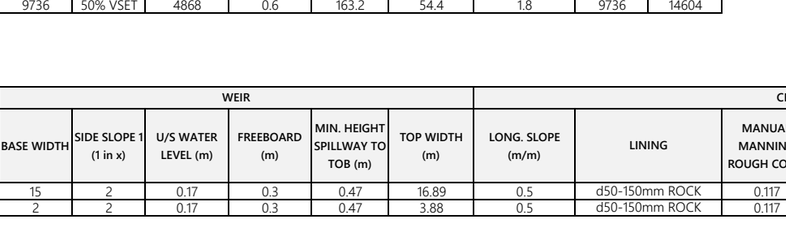
DRAIN ID	CATCH AREA (HA)	ARI	C_{ARI}	TIME OF CONC (MINS)	I_{ARI}	FLOW - Q (m^3/s)	LONG. SLOPE (m/m)	BASE WIDTH	SIDE SLOPE 1 (1 in x)	SIDE SLOPE 2 (1 in x)	LINING	MANNING ROUGH COEFF	MAX PERM VEL (m/s)	DESIGN VEL (m/s)	DEPTH OF FLOW (m)	DEPTH WITH F/BOARD (m)	DRAIN TOP WIDTH (m)	OK / NOT OK
DW1	2.5	10	0.7	15	136	0.66	0.01	0	2	50	Vital HR - 2L/m2	0.02	2.5	0.94	0.16	0.31	16.12	OK
DW2	0.5	10	0.7	5	190	0.18	0.01	0	2	50	Vital HR - 2L/m2	0.02	2.5	0.69	0.10	0.25	13.00	OK
CW1	5	10	0.7	15	136	1.32	0.01	0	2	50	Vital HR - 2L/m2	0.02	2.5	1.12	0.21	0.36	18.72	OK
CW2	0.5	10	0.7	5	190	0.18	0.01	0	2	50	Vital HR - 2L/m2	0.02	2.5	0.68	0.10	0.25	13.00	OK

DRAIN SIZING CALCULATIONS - ROCK LINED CHUTE

DRAIN ID	CATCH AREA (HA)	ARI	C_{ARI}	TIME OF CONC (MINS)	I_{ARI}	FLOW - Q (m^3/s)	LONG. SLOPE (m/m)	BASE WIDTH	SIDE SLOPE 1 (1 in x)	SIDE SLOPE 2 (1 in x)	ROCK SIZE - D50 (mm)	MANNING ROUGH COEFF	DESIGN VEL (m/s)	DEPTH OF FLOW (m)	FREEBOARD (m)	DEPTH WITH F/BOARD (m)	TOTAL DRAIN WIDTH (m)
CH1	2.5	10	0.7	15	136	0.66	0.25	1	3	3	d50-200mm ROCK	0.113	1.40	0.26	0.15	0.41	3.46

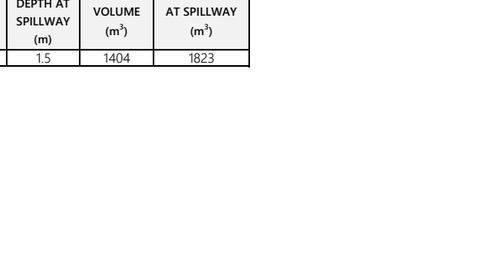


TYPICAL DIVERSION DRAIN SECTION

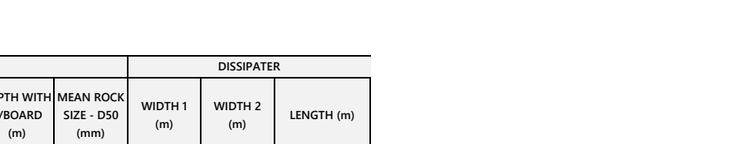


TYPICAL DIVERSION BUND SECTION

KEY IN ROCK AT TOP OF CHUTE



ROCK LINED CHUTE



ROCK LINED CHUTE

REFER CH1

DRAIN TO BE UNDERLAID WITH 0.3m OF NON-DISPERSIVE SOIL

TOPO.

REVISION	DESCRIPTION	APPROVED BY	DATE
C	UPDATE FOR REVISED ACCESS	SC	12/11/2025
C	UPDATE FOLLOWING REVIEW	SC	29/10/2025
A	ORIGINAL ISSUE	SC	13/10/2025

A3

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CPESC NO. 6,599 RPEQ NO. 15,545

PROJECT: FISHERMANS ROAD - CHLOR-ALKALI FACILITY

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN CALCULATIONS AND DRAINAGE SECTIONS

PROJECT No: 25-0204 | DRAWING No: D09 | REVISION: C

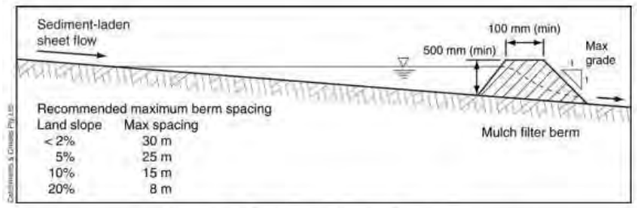
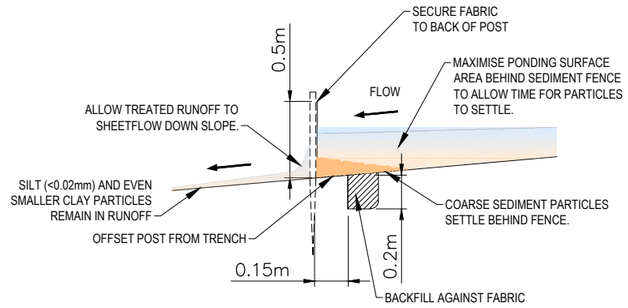


Figure 1 – Placement of mulch filter berms

Table 2 – Recommended dimensions of mulch filter berms

Conditions	Land slope perpendicular to bank	
	Less than 5%	Greater than 5%
Minimum bank height at time of formation	750mm	1000mm
Minimum bank height after natural settlement and organic breakdown	500mm	500mm
Top width of bank (min)	100mm	100mm
Base width (min)	1600mm	1600mm
Side slope (max)	1:1 (H:V)	1:1 (H:V)

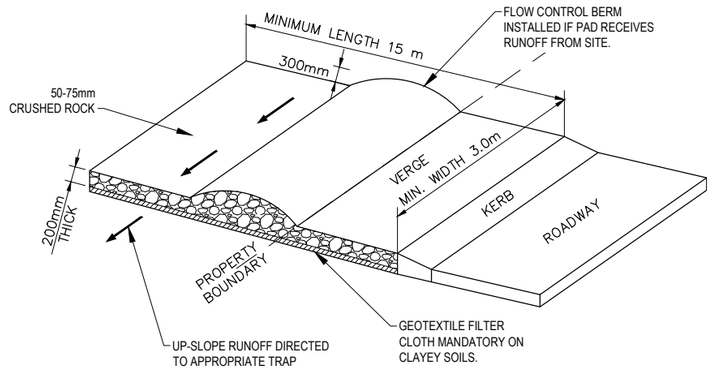
SOURCE: CATCHMENTS AND CREEKS



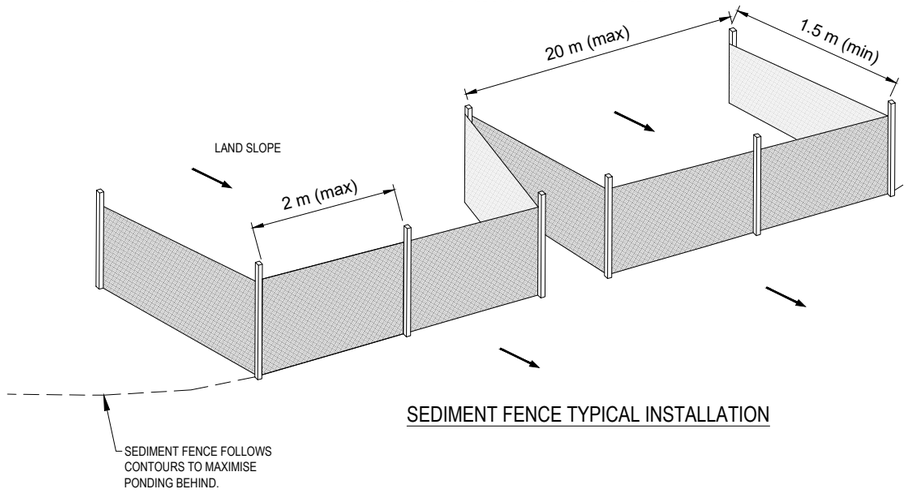
ANCHORING OF SEDIMENT FENCE

NOTES:

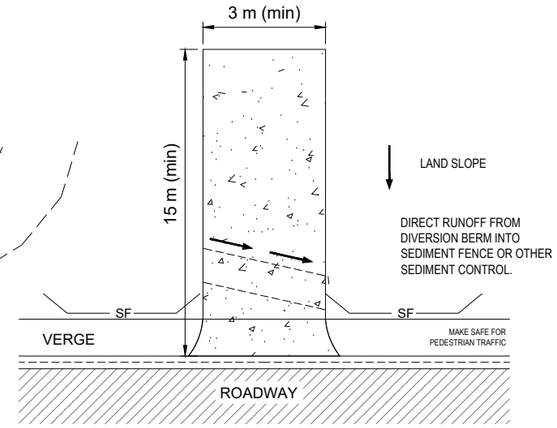
- ONLY SUITABLE FOR SHEET FLOW. SEDIMENT FENCE TO BE INSTALLED ALONG A LINE OF CONSTANT GROUND EXCAVATION WHERE PRACTICAL.
- IF CONCENTRATED FLOW EXISTS, INSTALL U-SHAPED SEDIMENT TRAP INSTEAD.
- BOTH ENDS OF THE SEDIMENT FENCE TO EXTEND UP THE SLOPE AT LEAST 1.5 m.
- MINIMUM 4 STAPES OR TIE WIRES PER STAKE



RETURNS PLACED AT 20m MAX SPACING IF FENCE IS LOCATED ALONG CONTOUR. OTHERWISE 5 TO 10 m DEPENDING ON SLOPE/



SEDIMENT FENCE TYPICAL INSTALLATION

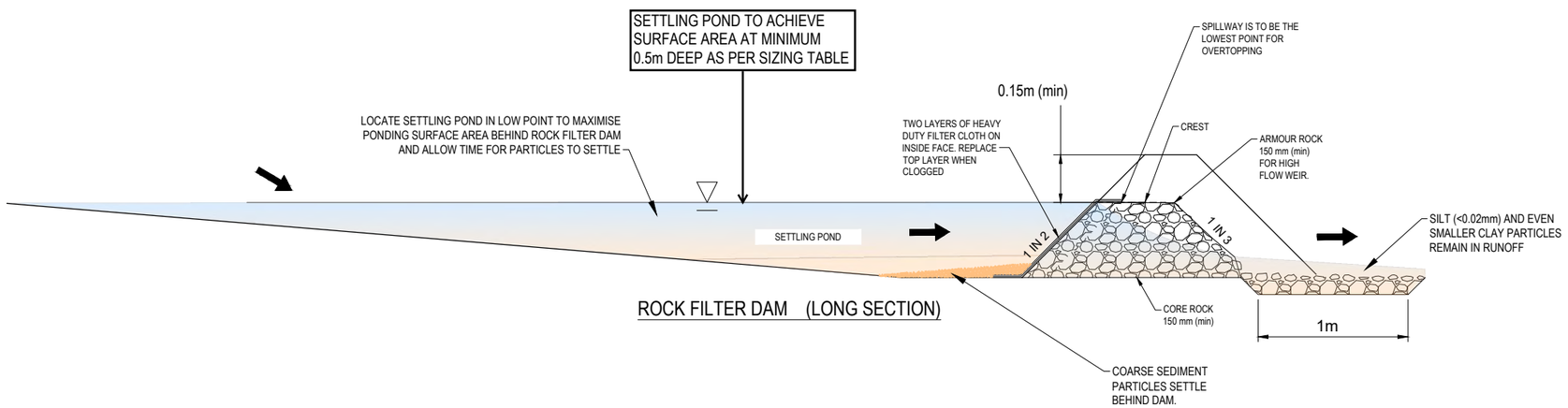


STABILISED ENTRY / EXIT

ROCK FILTER DAM SIZING TABLE

TYPE (SIZE)	CATCHMENT AREA (HA)	DEPTH (m)	UPSTREAM SURFACE AREA (m^2)	LENGTH (m)	WIDTH (m)
RFD1	0.10	0.50	4	3.5	1.2
RFD2	0.25	0.50	10	5.5	1.8
RFD3	0.50	0.50	20	7.7	2.6

SIZING DETERMINED USING THE FOLLOWING PARAMETERS:
AEP 1EY = 112 mm/hr FOR GLADSTONE, ASSUMED t_c = 5 min
DESIGN FLOW = 0.5*1EY = 56 mm/hr
UPSTREAM SURFACE AREA BASED ON CRITICAL SEDIMENT SIZE OF 0.05mm
INLCUDES ALLOWANCE (20%) FOR TURBULENT INFLOW
SURFACE AREA MUST BE ABLE TO POND RUNOFF AND CAN INCLUDE THAT AVAILABLE BEHIND BUNDS OR WITHIN TEMPORARY STORAGES



ROCK FILTER DAM (LONG SECTION)

TOPO.

REVISION	DESCRIPTION	APPROVED BY	DATE
C	UPDATE FOR REVISED ACCESS	SC	12/11/2025
B	UPDATE FOLLOWING REVIEW	SC	29/10/2025
A	ORIGINAL ISSUE	SC	13/10/2025

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RPEQ / SIGNATURE (IF REQUIRED)

CPESC NO. 6,599 RPEQ NO. 15,545

PROJECT: FISHERMANS ROAD - CHLOR-ALKALI FACILITY

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN STANDARD DRAWINGS

PROJECT No: 25-0204 | DRAWING No: D10 | REVISION: C

APPENDIX B

FLOC REPORT (TO BE PREPARED)

Floc Performance Report

BASIN IDENTIFICATION CODE/NUMBER: . . . . . .

SITE / PROJECT: . . . . . .

PREPARED BY: . . . . . **DATE:** . . . . . .

Chemical name:	Soil description:					
Dose rate:	0.00 Control					
Starting pH						
Starting turbidity						
Clarity[1] after 5 mins (mm)						
Clarity[1] after 15 mins (mm)						
Clarity[1] after 30 mins (mm)						
Clarity[1] after 60 mins (mm)						
Final pH						
Final turbidity						

Chemical name:	Soil description:					
Dose rate:	0.00 Control					
Starting pH						
Starting turbidity						
Clarity[1] after 5 mins (mm)						
Clarity[1] after 15 mins (mm)						
Clarity[1] after 30 mins (mm)						
Clarity[1] after 60 mins (mm)						
Final pH						
Final turbidity						

Note:

[1] For the purposes of a floc report, 'clarity' is defined as a level of turbidity that is likely to meet discharge requirements at a depth from the water level surface in the beaker. Clarity can be estimated visually or with the use of a turbidity meter.

APPENDIX C

BASIN PERFORMANCE REPORT

BASIN PERFORMANCE REPORT

Site / basin identification: _____ Inspector: _____

Date / time: _____ Recent rainfall: _____

Water quality in basin: NTU: _____ pH: _____ Water level in basin: _____

Issue Item		Potential Issue / Action Required (Y/N)	Comments/Action Undertaken
Inflow channel	Channel/pipe overtopped		
	Scour in channel		
	Chemical not mixing with inflow runoff		
	Catchment bypassing channel		
	Lateral inflow to main basin cell		
	Other		
Chemical & dosing	Chemical not working		
	No dosing		
	Incorrect dose rate		
	Other		
Fore bay	Sediment re-suspension		
	Other		
Level spreader	Concentrated flow over level spreader		
	Scour on backside of level spreader		
	Other		

Issue Item		Potential Issue / Action Required (Y/N)	Comments/Action Undertaken
Settling pond	Flow short circuiting in main basin		
	Erosion on side of basin batters		
	Other		
In-line baffles	Flow concentrating to one side of baffle		
	Flow conveyed over the top of the baffle		
	Flow restricted through baffle too much		
	Flow passes through baffle too quickly		
	Other		
Decant system	Decant sinks below surface		
	Decant raised above water level		
	Decant dropped on one side		
	Decant blocked		
	Decants concentrating flow in basin		
	Other		
Emergency spillway	Concentrated flow on spillway		
	Spillway too low		
	Spillway too high		
	Other		
Other General Comments			

DRAFT

APPENDIX D:

Stormwater Management Plan (Operational Phase)

STORMWATER MANAGEMENT PLAN

FISHERMANS ROAD, YARWUN

PROJECT HALOGEN CHLOR-ALKALI FACILITY

CLIENT: CQG CONSULTING

REFERENCE: 25-0204/R4331

VERSION: C

DATE: 12-11-2025

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1 INTRODUCTION

Topo were engaged by CQG Consulting to develop a Stormwater Management Plan (SMP) for the operational phase of the proposed Chlor-Alkali Facility at Fishermans Road, Yarwun.

CQG Consulting has been engaged to prepare a development application (DA) for a material change of use (MCU) for a concurrence environmentally relevant activity (ERA) 7(6d) Chemical manufacturing: manufacturing, in a year, more than 100,000 tonnes of inorganic chemicals (proposed Chlor-Alkali facility). The project is referred to as 'Project Halogen'. The project is located within the Gladstone State Development Area (GSDA).

This report identifies the stormwater quality management objectives for the operational phase (post-construction phase) of the proposed development. Construction based stormwater quality management objectives have been addressed in the CPESC certified Erosion and Sediment Control Plan (ESCP) prepared by Topo.

1.1. GUIDELINES

This SMP been prepared in accordance with:

- *MUSIC Modelling Guidelines (Water by Design, 2018),*
- *Water Sensitive Urban Design WSUD Technical Guidelines (Water by Design, 2006),*
- *Guidelines for the Construction and Establishment of Bioretention Systems and Wetlands (Water by Design, 2023), and*
- *Burnett-Mary Stormwater Quality Modelling - Development of Rainfall Datasets (DesignFlow, 2010).*

1.2. REVISION

VER.	DATE	AUTHOR	APPROVED
A	15-10-2025	S. CHAMBERLAIN	S. CHAMBERLAIN RPEQ NO. 15,545
B	29-10-2025	S. CHAMBERLAIN	S. CHAMBERLAIN RPEQ NO. 15,545
C	12-11-2025	S. CHAMBERLAIN	S. CHAMBERLAIN RPEQ NO. 15,545

2 PROJECT DESCRIPTION

2.1. LOCATION

The proposed Chlor-Alkali Facility will be constructed within Lot 1 on MPH32292 (56 Fishermans Road, Yarwun) and Lot 1 on SP200899 (26 Landing Road, Yarwun). The facility includes upgrading the access along Fishermans Road between the facility and the intersection with Landing Road.

The project area is approximately 7.65 ha which includes plant and ancillary facilities. The project components will consist of a chlor-alkali plant and ancillary facilities, including office, car parking and utilities.

The general locality of works is highlighted within Figure 1.

Figure 1 - Site Locality Project Halogen (Source: CQG Consulting)

3 SITE DESCRIPTION

3.1. CLIMATE

Based on historic rainfall data the period between October to March presents the greatest rainfall with approximately 76 % of the annual rainfall typically occurring during this period. As far as practical, all efforts should be made to reduce exposed areas to that reasonably manageable during this period.

Historic rainfall for the region, derived from data represented by the closest Bureau of Meteorology Station (Gladstone Airport, approximately 10 km from site) is presented below in Figure 2.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
% of annual	16.1%	19.3%	14.0%	4.8%	4.4%	4.4%	3.8%	3.6%	3.2%	7.4%	7.3%	12.2%
Mean rainfall (mm)	136.4	163.8	119.1	40.7	37.7	37.8	32	30.9	27.2	63.3	61.7	103.3
Median	118.6	105.6	66	26.4	17.8	17.4	14.8	14.2	17.5	53.2	46.2	88.2

Figure 2 - Historic Rainfall (Source: BoM)

3.2. TOPOGRAPHY & DRAINAGE

The site topography is quite consistent, falling from northwest to southeast at grades typically less than 1.5 %.

Boat Creek runs along the southern boundary, approximately 250 m away from the site. Review of topographic data indicates the external catchment to the west of Landing Road does not enter the site, but is directed to Boat Creek. Mapping of the Boat Creek catchment was undertaken using the 1 second DEM-H elevation data derived from the Shuttle Radar Topography Mission (SRTM). The DEM-H is the hydrologically enforced DEM and has drainage lines imposed and further smoothed. Based on this analysis, the Boat Creek catchment is approximately 3800 ha, as illustrated in Figure 3.

Further review of the topography using 1 m LIDAR tiles in the immediate vicinity of the site confirms the external catchment to the west of Landing Road does not enter the site, but is directed to Boat Creek. Refer to Figure 4 for further details.

3.3. LAWFUL POINT OF DISCHARGE

In the operational phase of the development, the external catchment from the eastern side of Landing Road will be diverted around the site, passing through a culvert under Fishermans Road. Therefore, all external catchment runoff will be diverted around the site and will not enter the proposed bioretention system. Refer to Appendix A for details in relation to the existing drainage features and conceptual drainage works to be undertaken as part of the development.

The Lawful Point of Discharge (LPD) will be located on the southern site boundary. All site runoff from the bioretention system will be conveyed by a vegetated swale to the LPD, with scour protection and a level spreader provided at the site outlet to ensure runoff exiting the site does not cause erosion and scour downstream of the LPD.

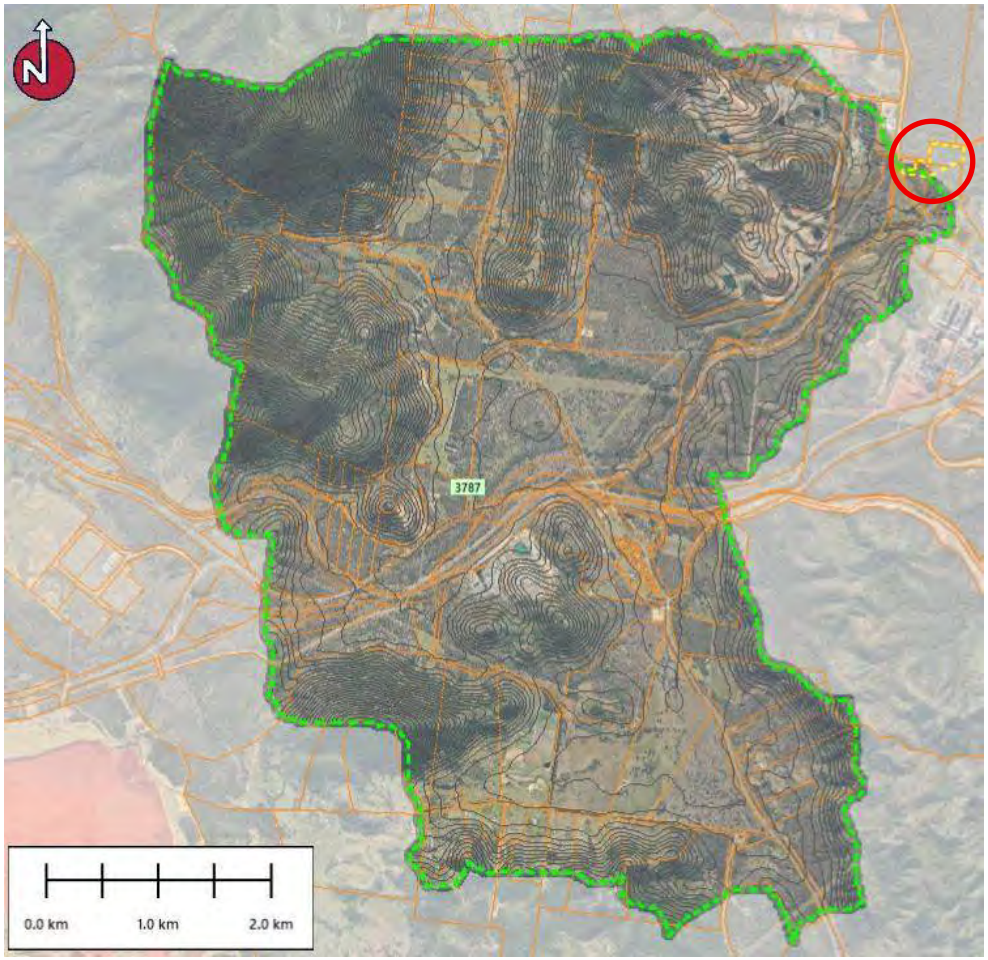


Figure 3 – Boat Creek Catchment (the Site identified by the red circle)

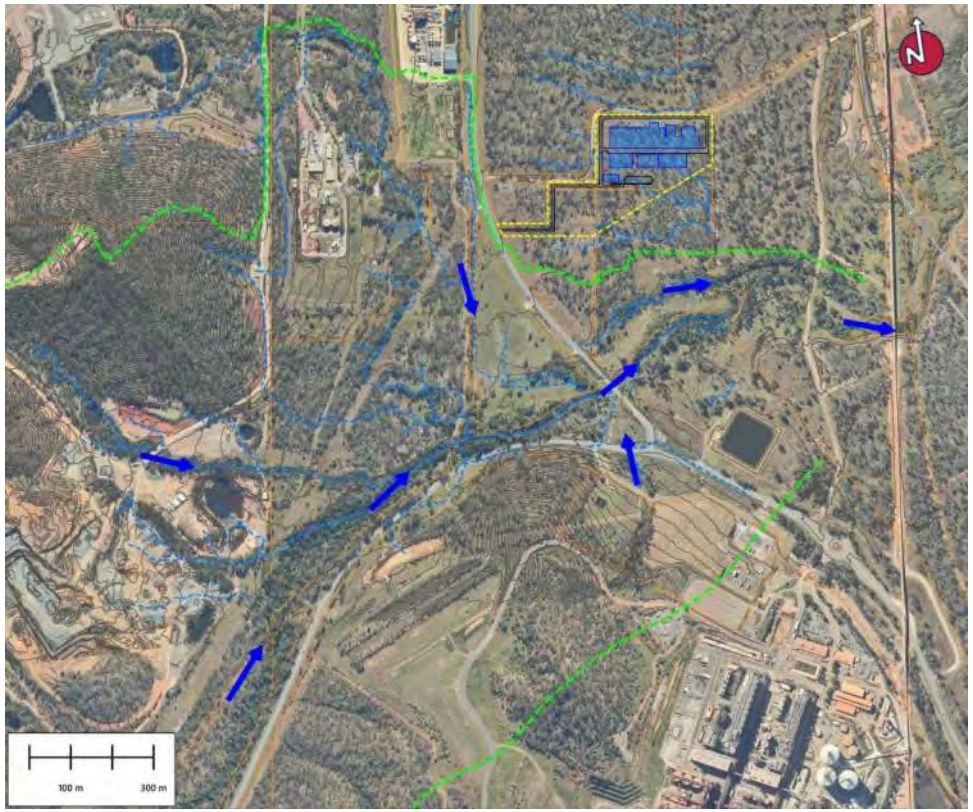


Figure 4 – Boat Creek and Local Catchment

4 WATER QUANTITY

4.1. DESIGN OBJECTIVES

The design objective is to demonstrate no actionable nuisance in terms of drainage as a result of the development. Stormwater detention requirements are generally waived in the following situations:

- Where the development will not cause adverse impacts or nuisance to neighbouring properties,
- If the site discharges directly into the 'ultimate' receiving waters and flooding is already controlled by river flooding or storm tide, and
- For sites that discharge directly into lower catchments of creeks or major drains where detention is considered undesirable.

While the development of Project Halogen has the potential to increase flow rates for the local catchment as a result of additional impervious areas, these will have no impact on peak water levels at the site or for adjacent properties. This is due to the magnitude and lag time of peak flows generated within the external catchments and storm surge conditions that dictate flooding and the Defined Flood Level for the site. Runoff for the site and local catchment will have entered Boat Creek and passed downstream prior to the peak of the external catchment flows passing the site.

Detaining flows on site increases the likelihood of the site's peak discharge coinciding with the peak of the external catchments. This could result in an increased peak flow rate downstream of the site.

Therefore, on-site detention is considered unnecessary for this development.

5 STORMWATER QUALITY

5.1. DESIGN OBJECTIVES

This report identifies the stormwater quality management objectives for the operational phase of the development. The load-based Water Quality Objectives (WQOs) stipulated for the specified for central Queensland South region, as defined in the Burnett–Mary Stormwater Quality Modelling guidelines, are summarised in Table 1.

Table 1 – Water Quality Design Objectives

MINIMUM REDUCTIONS IN MEAN ANNUAL LOAD FROM UNMITIGATED DEVELOPMENT (%)			
TOTAL SUSPENDED SOLIDS (TSS)	TOTAL PHOSPHORUS (TP)	TOTAL NITROGEN (TN)	GROSS POLLUTANTS > 5 mm
85	70	45	90

This report identifies the stormwater quality management objectives for the operational phase (post-construction phase) of the proposed development. Construction based stormwater quality management objectives has been addressed in the CPESC certified Erosion and Sediment Control Plan (ESCP) prepared by Topo.

5.2. MODELLING AND TREATMENT STRATEGY

Stormwater runoff quality from the proposed development site has been assessed using the Model for Urban Stormwater Improvement Conceptualisation (MUSIC). It is proposed to treat stormwater runoff from the site in a bioretention system sized to ensure compliance with the load-based reduction targets.

5.2.1. CATCHMENTS

Modelling has been undertaken using a "lumped" catchment modelling approach. The catchment definition is included in Table 2.

Table 2 – Catchment Definition

CATCHMENT ID	LAND USE	AREA (Ha)	FRACTION IMP. (%)
A	Industrial-Lump Node	5.1	80 %

5.2.2. MUSIC MODEL PARAMETERS

The parameters utilised in the MUSIC model are provided in Table 3 to Table 6 and comply with the MUSIC Modelling Guidelines (Water by Design, 2018).

Table 3 – Meteorological and Rainfall Runoff Data

INPUT	DATA USED IN MODELLING
Rainfall station	GLADSTONE– Station No 39123
Time step	6 minutes
Modelling period	1/01/1981 to 31/12/1990
Mean annual rainfall (mm)	915
Evapotranspiration (mm)	1,721
Rainfall runoff parameters	Industrial
Pollutant export parameters	Industrial

Table 4 – Rainfall Runoff Parameters

PARAMETER	SOURCE NODES
Landuse	Industrial
Rainfall threshold (mm)	1
Soil storage capacity (mm)	18
Initial storage (% capacity)	10
Field capacity (mm)	80
Infiltration capacity coefficient a	243
Infiltration capacity coefficient b	0.6
Initial depth (mm)	50
Daily recharge rate (%)	0
Daily baseflow rate (%)	31
Daily deep seepage rate (%)	0

Table 5 – Pollutant Export Parameters

LAND USE	FLOW TYPE	TSS (LOG_{10} mg/L)		TP (LOG_{10} mg /L)		TN (LOG_{10} mg /L)	
		MEAN	ST. DEV.	MEAN	ST. DEV.	MEAN	ST. DEV.
Industrial	Baseflow	0.78	0.45	-1.11	0.48	0.14	0.20
	Stormflow	1.92	0.44	-0.59	0.36	0.25	0.32

Table 6 – Bioretention System Parameters

PARAMETER	BIO 1
Surface area (m^2)	750
Extended detention depth (mm)	0.30
Filter area (m^2)	700
Unlined filter media perimeter (m)	106
Saturated hydraulic conductivity (mm/hr)	200
Filter depth (m)	0.5
TN content of filter media (%)	400
Orthophosphate content of filter media (mg/kg)	30
Is the base lined?	No
Effectiveness of plant TN removal	Effective
Overflow weir width (m)	17
Exfiltration rate (mm/hr)	0
Underdrain present?	Yes
Submerged zone with carbon present?	No
Depth of submerged zone (m)	N/A
Confirmation that K and C* remain default	Yes

NOTE: * measured at half the extended detention depth

5.2.3. RESULTS

The results of the MUSIC model indicate the treatment train achieves the required design objectives, as summarised in Table 7 and Figure 5.

Table 7 – MUSIC Results

LOCATION	POLLUTANT	INFLOWS (KG/YR)	OUTFLOWS (KG/YR)	REDUCTION ACHIEVED (%)	WATER QUALITY OBJECTIVES (%)
Outlet	TSS	5,250	789	85	85
	TP	14.1	3.51	75.2	70
	TN	87.2	41.6	52.3	45
	GP	897	0	100	90

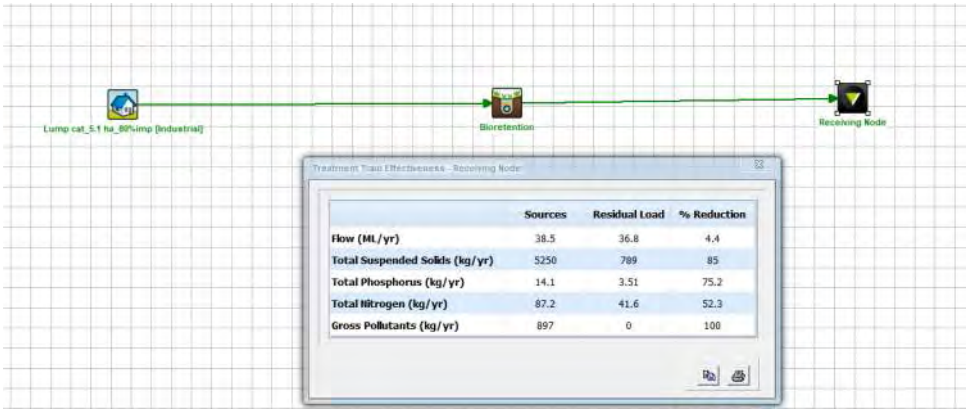


Figure 5 – Results & MUSIC Model

A typical bioretention system section is provided in Appendix A.

6 CONCLUSION

An increase in peak flow rates can be expected from any development resulting in an increase in impervious surfaces.

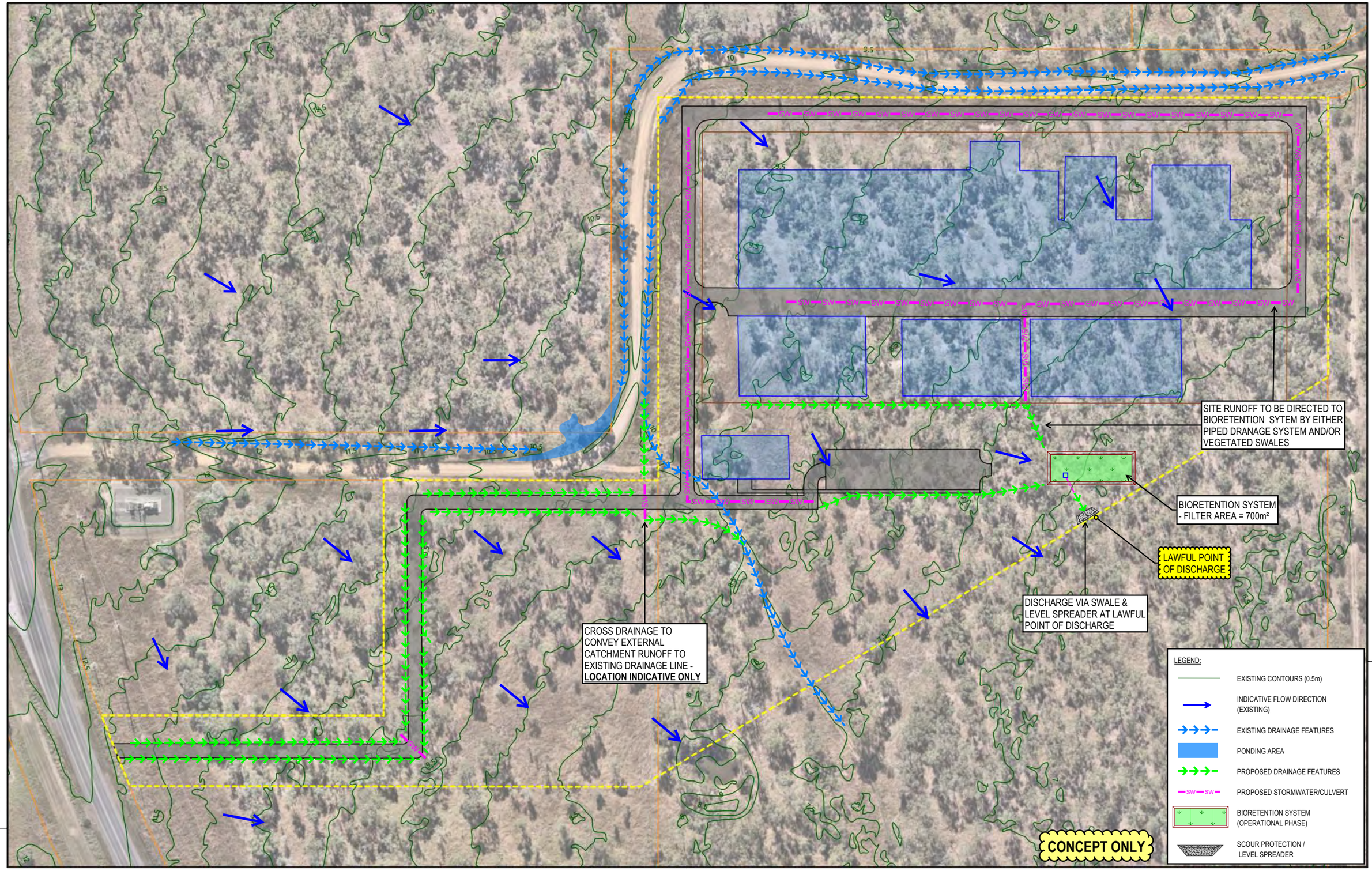
The design objective is to ensure no actionable drainage nuisance results from the development. While Project Halogen will increase impervious surfaces, this will not affect peak water levels for adjacent properties. Flooding at the site is governed by external catchment flows and storm surge, with local runoff entering Boat Creek and passing downstream before the peak flow of the external catchment arrives at the site.

The development will cause no loss of flood storage and no adverse flood impacts.

The water quality objectives for the Central Coast - South region will be met through a bioretention system with 700 m^2 of filter media (0.5 m depth, 0.3 m extended detention). Final design and modelling will confirm compliance during detailed design.

APPENDIX A

OPERATIONAL CONTROL CONCEPT PLAN



TOPO.

REVISION	DESCRIPTION	APPROVED BY	DATE
A	ORIGINAL ISSUE	SC	13/10/2025

NORTH

A3

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CLIENT: CQG CONSULTING

DRAWN	DESIGNED	DATE
RK	SC	13/10/2025

RPEQ / SIGNATURE (IF REQUIRED)

CPESC NO. 6,599 RPEQ NO. 15,545

PROJECT: FISHERMANS ROAD - CHLOR-ALKALI FACILITY

DRAWING TITLE: STORMWATER MANAGEMENT PLAN - DRAINAGE FEATURES & OPERATIONAL CONTROL CONCEPT PLAN

PROJECT No	DRAWING No	REVISION
25-0204	D01	B

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DETSI ref: N/A
Our ref: 25054

Camilla Scott
Delegate of the administering authority
Department of the Environment, Tourism, Science and Innovation
GPO Box 2454
BRISBANE QLD 4001

cc: Tristan Roberts
Manager
Energy and Extractive Resources
Energy, Extractive and Southwest Compliance
Via email: Tristan.Roberts@detsi.qld.gov.au

1 May 2026

Dear Camilla,

RE: Response to Department of the Environment, Tourism, Science and Innovation (DETSI) Further Request for Information

This letter is provided in response to DETSI email request for further information (RFI) queries dated 23 April 2026 (refer to Attachment A) related to the site-specific environmental authority (EA) application for an environmentally relevant activity (ERA)7(6)(d) chemical manufacturing, for the proposed Grenof Project Halogen (chlor-alkali facility) (the Proposal). The proposed location for the Facility is on Lot 1 on MPH32292 and Lot 1 on SP200899, Landing Road near Gladstone in Central Queensland (the Site).

CQG Consulting (CQG) has been engaged by Queensland company Grenof Pty Ltd (Grenof) to assist with the relevant development applications and the EA for the proposed Facility. This response letter is informed by our knowledge of the Study Area and our team's significant experience conducting environmental impact assessments for proposed developments throughout regional Queensland over the last 20 years, predominantly in the Gladstone region.

In recognition of the importance of this proposed development to ensure sovereign security for the provision of critical water treatment chemicals for our State, the Queensland government set up a working group in 2025 to facilitate the streamlining of assessment by its agencies. This working group meets regularly to discuss progress of the assessments to support Grenof in its endeavours to develop this much needed facility. To this end we are keen to work closely with DETSI to finalise the EA application.

If you or your departmental staff have relevant questions relating to the government working group please contact Amanda Koening from the Office of the Coordinator-General or Geoff Kerr from the Department of State Development Infrastructure and Planning, and if there are any questions relating to this responses (refer to Table 1 and the appendices) we ask that you please revert back to us at your earliest convenience.

PLANS AND DOCUMENTS
referred to in the
SDA APPROVAL

Queensland Government

SDA approval: AP2025/015

Head Office
ABN 61 107 574 514
180 Quay St, Rockhampton QLD 4700
PO Box 8384, Allenstown QLD 4700
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CQG Response

Table 1 lists the various items raised in your RFI and our response. In summary our team was surprised by the extent of investigation DETSI is requesting for some of the items compared to other assessment documentation for other projects, particularly within the Gladstone State Development Area.

Table 1: Grenof Chlor-Alkali Facility - DETSI Information Request and CQG Response

DETSI Information Request (April 2026)	
RFI Item 1	DETSI Information Requested: 1. *Likelihood of occurrence (LoO)* • *The LoO criteria requires species to have been recorded in the impact area or adjacent to the impact area to be considered known, likely or potential.* • *DETSI stance is that absence of a species record on or adjacent to the site is not evidence that the species does not occur within the subject area.* • *LoO criteria should also consider but not necessarily be limited to:* o *Expanded list of species from increased desktop buffer distance (see dotpoint 3 below)* o *Whether the subject area is within the species known habitat range;* o *Whether suitable habitat to support the species is in the subject area;* • *LoO assessment where suitable should reference current scientific knowledge preferentially federal and state prepared recovery or conservation advice, SPRAT profiles, etc (see dotpoint 2 below).* CQG Response: The original preliminary likelihood of occurrence assessment (Preliminary Significant Impact Assessment, Rev 1 Project No 25054) (CQG 2025)) was developed to inform the scope of targeted ecological investigations and identify species requiring further assessment. Following DETSI's further information request, the assessment has been refined using a precautionary approach consistent with the methodology adopted in the example ecology reports, which were identified by DETSI as appropriate examples of the required assessment approach (noting that these projects are not within the Gladstone State Development Area). CQG's revised LoO assessment considers: • Contemporary WildNet records within a 15 km search buffer for all species and a 25 km buffer for highly mobile species; • Whether the subject land occurs within the known distribution of the species; • Whether suitable habitat is present within or adjacent to the Project Area (impact area); • The functional role of habitat present (including breeding, feeding, nesting, migration, refuge and dispersal habitat where relevant); • Field survey findings and detectability limitations; and • Current scientific literature including National Recovery Plans, Conservation Advices, SPRAT profiles and State mapping resources.

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Absence of a species record on or adjacent to the Project Area[1] has not been treated as evidence of absence. A precautionary approach has been adopted where uncertainty exists.

Likelihood categories are defined as follows:

- Known to occur - The species/community has been recorded within the Study Area[2];
- Likely to occur - Suitable habitat is present and the species is known within the surrounding area (from previous investigations and records). Failure to detect the species may be due to transient use, seasonal use, low detectability, or limited survey opportunity;
- Possibly occurring - The species is within its known distribution, and suitable habitat is present however habitat may be degraded, limited or isolated, and survey results are inconclusive regarding presence or absence; and
- Unlikely to occur - The Study Area does not contain suitable habitat, is outside the known distribution, or available records are historical and field survey results indicate the species is likely absent.

No threatened flora species were confirmed during CQG's field assessment conducted in 2025. There is no protected plant flora survey trigger mapping within 1.5 km of the Study Area This preliminary assessment is based on desktop analysis, habitat verification and rapid field observations only, and does not replace formal protected plant flora surveys where required.

The revised LoO based on DETSI's extended search areas (*extending 15 km for all species and 25 km for highly mobile species*) concluded the following likelihood for the Study Area:

- Known to occur:
  - Fauna:
    - Osprey (*Pandion haliaetus*) — NCA[3]: Special least concern.
- Likely to occur:
  - Flora:
    - No flora species were assessed as likely to occur or known to occur.
  - Fauna:
    - Southern greater glider (*Petauroides volans volans*) — NCA: Endangered; and
    - Squatter pigeon (southern) (*Geophaps scripta scripta*) — NCA: Vulnerable.
- Possibly occurring:
  - Flora:
    - Wetland-associated protected flora species (general) — Various protected flora species (various NCA listings depending on species); and

[1] Project Area (7.65 ha) = The Project Area represents the broader assessment envelope within which direct and indirect impacts associated with the action may occur.

Impact Area (3.67 ha) = The disturbance footprint, comprises all areas where direct disturbance will occur as a result of the proposed action.

[2] Study Area (21.3 ha) = spatial extent considered for environmental assessment and is defined to capture all areas that may be directly or indirectly affected by the proposed action.

[3] NCA = *Nature Conservatio0n Act 1992* (Qld)

DETSI Information Request (April 2026)	
	▪ Protected plant trigger species (Protected Plants Flora Survey Trigger Map) — Various protected flora species (various NCA listings depending on species; pending targeted survey). o Fauna: ▪ Eastern curlew (*Numenius madagascariensis*) — NCA: Critically Endangered; ▪ Australian painted-snipe (*Rostratula australis*) — NCA: Endangered; ▪ Koala (*Phascolarctos cinereus*) — NCA: Endangered; ▪ Yellow-bellied glider (south-eastern) (*Petaurus australis australis*) — NCA: Vulnerable; ▪ Grey-headed flying-fox (*Pteropus poliocephalus*) — NCA: Least Concern; ▪ Powerful owl (*Ninox strenua*) — NCA: Vulnerable; ▪ Curlew sandpiper (*Calidris ferruginea*) — NCA: Critically endangered; ▪ Western alaskan bar-tailed godwit (*Limosa lapponica baueri*) — NCA: Endangered; ▪ Common greenshank (*Tringa nebularia*) — NCA: Endangered; ▪ Common sandpiper (*Actitis hypoleucos*) — NCA: Special least concern; ▪ Whimbrel (*Numenius phaeopus*) — NCA: Special least concern; and ▪ Sharp-tailed sandpiper (*Calidris acuminata*) — NCA: Vulnerable. • Unlikely to occur: o Flora: ▪ *Hernandia bivalvis* (Cudgerie) — NCA: Near threatened. o Fauna: ▪ Coastal sheathtail Bat (*Taphozous australis*) — NCA: Near threatened; ▪ Water mouse (*Xeromys myoides*) — NCA: Vulnerable; ▪ Grey plover (*Pluvialis squatarola*) — NCA: Vulnerable; ▪ Terek sandpiper (*Xenus cinereus*) — NCA: Vulnerable; ▪ Lesser sand plover (*Charadrius mongolus*) — NCA: Endangered; ▪ Asian dowitcher (*Limnodromus semipalmatus*) — NCA: Vulnerable; and ▪ Dugong (*Dugong dugon*) — NCA: Vulnerable. • Not carried forward: o Fauna: ▪ Southern purple-spotted Gudgeon (*Mogurnda adspersa*) — NCA: not listed (EPBC: Endangered) (removed from further consideration based on DETSI advice).
RFI Item 2	<u>DETSI Information requested:</u> *2. Strengthening Scientific Reasoning and Evidence in relation to protected wildlife habitat*

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- *The SRI Assessment provided lacks robust scientific reasoning and evidence. While several statements are made, they are not adequately substantiated with relevant references, such as National Recovery Plans (where available) or other authoritative sources. Instead, the assessment appears to rely heavily on the opinion of the suitably qualified person without sufficient supporting evidence. This observation is made with the understanding that a field assessment has been conducted and the initial application biodiversity report includes some references.*
- *Specific examples are outlined below:*

Eastern curlew

- *The Eastern curlew is listed as critically endangered under the Nature Conservation Act.*
- *The response states there is "limited suitable habitat" and that "clearing would not substantially reduce habitat extent or quality, as the site lacks the tidal mudflats and coastal wetlands typically used by the species." However, this assertion requires substantiation with evidence or further explanation.*
- *As part of the SRI assessment, it is expected that references to current scientific knowledge of the species are included. For example, this could involve citing a National Recovery Plan or other relevant literature.*
- *For the Eastern curlew, a federal consultation draft (curlew-sandpiper-consultation.docx) notes that Curlew sandpipers "mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters" (Higgins & Davies, 1996).*
- *The lot and plan are located near the Coastal Management District, which appears to be a sheltered and tidally influenced area, with the presence of mangroves and mudflats noted.*
- *The original ecology report references Pizzey and Knight Birds of Australia Field Guide. However, it is expected that federal or state information regarding the species would also be considered, and a precautionary approach adopted. For example, in cases where discrepancies exist between sources, all documents should be considered, and the most conservative approach applied.*
- *It is important to note that a National Recovery Plan is developed by experts, reviewed by government agencies, and approved by the federal Minister for the Environment. It reflects the most up-to-date scientific research and conservation priorities. In contrast, the Birds of Australia Field Guide is not a regulatory or legally binding document but rather a resource for birdwatchers.*

The Australian painted-snipe

- *The response states that 'No breeding or nesting habitat was identified during field surveys. The Project Area is not considered an ecologically significant location or important population area for the species.'*
- *DETSI's SRI guideline lists breeding, feeding, nesting, migration or resting sites as considerations for ecologically significant locations*

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DETSI Information Request (April 2026)	
	• *The assessment does not include a consideration of feeding, nesting or migration sites.* • *Page 11 of the National Recovery Plan for the Australian painted-snipe (Rostratula australis) (National Recovery Plan for the Australian Painted Snipe (Rostratula australis)) states* *Feeding* *The Australian painted-snipe eats plant material, seeds, insects, worms and molluscs, crustaceans and other invertebrates (Marchant and Higgins 1993). This species is mainly crepuscular (active at dawn and dusk), preferring to sit or stand quietly under cover of grass, reeds or other dense cover during day, becoming more active at dawn, dusk and during night. They generally remain in dense cover when feeding, although may forage over nearby mudflats and other open areas such as ploughed land or grassland (Marchant and Higgins 1993). The species may have quite specific foraging habitat requirements, but these are not well understood and further study is required. Feeding behaviour is likely to be different in wetlands where Australian painted-snipe are present for breeding compared to sites that may act as refuges or stop-over sites, e.g. sewage ponds, water storages. Behaviour is likely to change depending on the height and density of wetland vegetation.* *Considering the wetland is mapped within 500 metres of the project site it would make sense that the assessment would consider feeding, megaton and resting sites – for the above feeding consideration I would expect that the assessment would consider the abundance of feeding material on the lot and plan.* • *A further detailed response is needed which references relevant scientific literature or other authoritative sources and includes an assessment of all criteria under the SRI guideline.* <u>CQG Response:</u> CQG acknowledges DETSI's comments regarding the need for stronger scientific reasoning and clearer evidentiary support for the Significant Residual Impact (SRI) assessment in relation to protected wildlife habitat. We recognise that while the original assessment included field verification and desktop review, several conclusions relied too heavily on professional interpretation without sufficiently explicit reference to authoritative scientific sources such as National Recovery Plans, approved Conservation Advices, SPRAT profiles, and other contemporary peer-reviewed or government-supported literature. In response, the revised supporting assessment (Attachment C: Revised SRI Assessment) has been updated to strengthen the scientific basis for all priority flora and fauna species considered relevant to the proposed development. The revised assessment now: • Includes direct reference to National Recovery Plans, approved Conservation Advices, Species Profile and Threats Database (SPRAT) profiles, the Wildlife Conservation Plan for Migratory Shorebirds, and other relevant contemporary scientific literature; • Expands the habitat requirements, species distribution and ecological significance assessment for each priority species, including consideration of breeding, feeding, nesting, migration and resting habitat where relevant; • Applies a precautionary approach where habitat suitability or species occurrence cannot be confidently excluded; and

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DETSI Information Request (April 2026)	
	• Clearly distinguishes between habitat present within the broader locality and habitat occurring within the actual disturbance footprint, consistent with the Significant Residual Impact Guideline. Specific revisions have been made for Eastern curlew (*Numenius madagascariensis*) and Australian painted-snipe (*Rostratula australis*), as these were specifically identified in DETSI's comments. For Eastern curlew, the revised assessment provides detailed consideration of nearby coastal and tidal systems, including mangrove-lined waterways, mudflats and coastal wetland habitat within the broader Curtis Coast landscape, while clearly demonstrating that the disturbance footprint itself does not contain intertidal mudflats, estuarine shoreline, saltmarsh, mangrove foraging habitat, or secure high tide roosting habitat required to constitute an ecologically significant location for the species. CQG also notes that the example reference provided in the RFI excerpt refers to habitat characteristics described for Curlew sandpiper (*Calidris ferruginea*) rather than Eastern curlew (*Numenius madagascariensis*). The revised assessment has therefore considered both the approved Eastern curlew conservation advice and broader migratory shorebird habitat guidance, including the Curlew sandpiper consultation material referenced by DETSI, to ensure a precautionary and conservative assessment approach has been applied across comparable migratory shorebird habitat values. For Australian painted-snipe, the revised assessment now explicitly addresses not only breeding and nesting habitat, but also feeding, refuge, resting and stopover habitat in accordance with the National Recovery Plan and the SRI Guideline. Particular consideration has been given to mapped wetlands within proximity to the Study Area, drainage features including Boat Creek, and the potential for opportunistic use of wetland margins and low-lying areas. Additional revisions have also been undertaken for other priority species carried forward in the MSES assessment, including Greater glider, Koala, Squatter pigeon (southern), Yellow-bellied glider and other migratory shorebird species, to ensure conclusions are consistently supported by current scientific knowledge and relevant statutory guidance. Following these revisions, the updated likelihood of occurrence and SRI assessments conclude that while several species may occur within the broader locality, the Project Area[1] does not contain habitat likely to support important populations or ecologically significant locations as defined under the Significant Residual Impact Guideline, and the proposed action is therefore not expected to result in a significant residual impact to these matters. Please refer to Attachment C:Revised SRI Assessment for the revised species evidence matrix and updated Significant Residual Impact assessment.
RFI Item 3	<u>DETSI Information requested:</u> *3. Broadening the Search Buffer for WildNet and Reassessing Species in the SRI Assessment* • *The department typically requires a 50 km or 100 km buffer for WildNet searches. However, the required buffer distance may vary depending on the geographic location and the nature of the species present. For instance, in remote areas such as the Cooper Basin, a 100 km buffer is generally expected due to the limited number of visitors reporting data in the system.* • *In this specific case, the department is satisfied with a 15 km buffer for all species and a 25 km buffer for highly mobile species.*

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DETSI Information Request (April 2026)	
	• *It is requested that the SRI assessment be updated to ensure that all species identified within the specified buffer zones are considered.* • *SRI assessment in accordance with the guideline should also consider but not necessarily be limited to the following in making a recommendation:* o *the type of habitat being impacted (nesting, breeding, feeding, etc)* o *habitat quality* o *conservation status* o *sightings/records* o *indirect impacts* o *cumulative impacts* o *mitigation measures* *Example - Common brushtail* - *While the detailed survey identified Common brushtail possum as present it does not discuss the scratches noted on trees and the likelihood of their origin being the possum rather than being made by Greater or Yellow-bellied gliders. There are records on State databases of the endangered Southern greater glider Petauroides volans volans within1.1 km of the subject lands (north). Seventeen (17) records on the Wildnet database occur within 10 km of the proposed development. An SRI assessment is required for this species.* CQG Response: CQG acknowledges DETSI's comments regarding WildNet search buffer distances and the need to ensure all species identified within the applicable search radius are appropriately considered within the (LoO and SRI assessments. In response, WildNet searches have been reviewed and updated consistent with DETSI's request using a: • 15 km search buffer for all species; and • 25 km search buffer for highly mobile species. The revised WildNet search results have been used to reassess species occurrence, habitat relevance and the requirement for further SRI consideration for all relevant threatened flora and fauna species within the Project Area. This review included consideration of: • Habitat type and ecological function (including breeding, nesting, feeding, refuge and movement habitat); • Habitat quality and condition; • Conservation status; • Proximity and number of confirmed records; • Indirect and cumulative impacts; and • Mitigation measures relevant to impact avoidance and minimisation. Specific review was undertaken for Southern greater glider (*Petauroides volans volans*), noting the records identified by DETSI including a record within approximately 1.1 km north of the Project Area and multiple WildNet records within 10 km of the Impact Area. The revised assessment adopts a more precautionary approach and recognises that suitable eucalypt woodland habitat, hollow-bearing trees and arboreal habitat features

DETSI Information Request (April 2026)	
	support the species being considered likely to occur. Accordingly, Greater glider has been carried forward within the revised SRI assessment. Review of tree scratches and arboreal habitat features has also been reconsidered in the context of potential use by Greater glider and Yellow-bellied glider, rather than attributing these features solely to Common brushtail possum. The updated likelihood of occurrence assessment is provided in Attachment B: Revised Likelihood of Occurrence Assessment, and the revised Significant Residual Impact assessment is provided in Attachment C: Revised SRI Assessment.
RFI Item 4	DETSI Information requested: *4.Rehabilitation* • *Rehabilitation has been mentioned multiple times as a mitigation measure to reduce the risk of an SRI.* • *However, based on our conversation yesterday, we do not believe rehabilitation can be considered a suitable mitigation measure, given that the project is expected to span approximately 40 years and the site is not being progressively rehabilitated.* CQG Response: CQG acknowledges DETSI's comments regarding the use of rehabilitation as a mitigation measure in the SRI assessment. It should also be noted for the record that the site is to be used for an industrial facility and not a mining operation that would typically be progressively rehabilitated. Following discussion with DETSI, CQG agrees that rehabilitation cannot be relied upon as a primary mitigation measure for reducing or avoiding a significant residual impact where: • Impacts to habitat occur at project commencement; • The operational life of the Facility is expected to extend for approximately 50+ years; and • Progressive rehabilitation is not proposed during the operational phase. In this context, end-of-life rehabilitation does not provide immediate ecological function for threatened species habitat and should not be used to justify avoidance of a Significant Residual Impact under the Queensland Environmental Offsets Policy. Accordingly, references to rehabilitation as a primary mitigation measure supporting the SRI conclusion have been removed from the revised assessment. The revised Significant Residual Impact assessment instead relies on: • Avoidance and minimisation of clearing extent; • Retention of surrounding habitat connectivity; • Habitat quality and condition within the disturbance footprint; • Absence of ecologically significant breeding, feeding, nesting, migration or resting habitat within the impact area; and • Implementation of standard construction and operational mitigation measures. The conclusion regarding no significant residual impact has been retained based on these factors rather than future rehabilitation outcomes. Please refer to Attachment C: Revised Significant Residual Impact Assessment.

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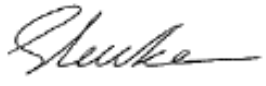
DETSI Information Request (April 2026)	
RFI Item 5	DETSI Information requested: *5. Quantifying PEM impact* • *As discussed, regardless of whether an SRI is triggered, we will require a quantification of all PEMs impacted on-site. Could you please complete the attached form to provide this information?* CQG Response: CQG acknowledges DETSI's request for quantification of all Prescribed Environmental Matters (PEMs) impacted by the proposed action. In response, the attached PEM impact quantification form has been completed to identify the extent of all relevant prescribed environmental matters occurring within the Project Area and the corresponding impact footprint. This includes consideration of: • Mapped threatened wildlife habitat; • Essential habitat; • Protected plant trigger areas; • Regulated vegetation and relevant regional ecosystems; • Wetland and waterway associated habitat values; and • Other relevant MSES values where applicable. The quantified impact areas have been reviewed to ensure consistency with the revised Likelihood of Occurrence Assessment (Attachment B), revised Significant Residual Impact Assessment (Attachment C), and the broader project mapping and impact tables. Please refer to Attachment D: PEM Impact Quantification Form. Revised habitat and vegetation maps specific to the Project Area and Impact Area for field verified regional ecosystems, Koala, Squatter Pigeon and Osprey are reference in the PEM Impact Quantification Form and are provided in Attachment D. Please refer to Attachment E: Greater Glider Habitat Assessment, which provides the revised habitat assessment supporting the updated likelihood of occurrence and Significant Residual Impact assessment for *Petauroides volans volans*.

A precautionary reassessment has been undertaken to address the matters raised, supported by revised ecological analysis and additional technical appendices as prepared by our Principal Ecologist and Environmental Discipline Lead, Rebbekah Hearn and revised by our Company Director, Patrice Brown. Please let me know if you require any further information.

Yours sincerely,



Scott Lucke
Principal Planner
CQG Consulting

Attachments:

Attachment A: DETSI EA Application Further RFI queries email (23 April 2026)

Attachment B: Revised Likelihood of Occurrence Assessment

Attachment C: Revised Ecological Assessment and SRI Supporting Information

Attachment D: PEM Quantification Table

Attachment E: Greater Glider Habitat Modelling

Attachment A:

DETSI EA Application Further RFI queries email (23 April 2026)

Rebbekah Hearn

From: Tristan Roberts <Tristan.Roberts@detsi.qld.gov.au>
Sent: Thursday, 23 April 2026 10:37 AM
To: Scott Lucke; Helena Braye
Cc: Rebbekah Hearn; Scott Barnes; Melanie Harris; Amanda Koenig; docreg@cqgroup.com.au
Subject: RE: 25054 Project Halogen - EA application further RFI queries

Caution: This is an external email and may be malicious. Please take care when clicking links or opening attachments.

OFFICIAL

Hi Scott,

No worries – thanks for catching up.

Here is updated requirements for Offsets/PEMS – which replaces what we originally asked for in original email.

1. **Likelihood of occurrence**
   - The LoO criteria requires species to have been recorded in the impact area or adjacent to the impact area to be considered known, likely or potential.
   - DETSI stance is that absence of a species record on or adjacent to the site is not evidence that the species does not occur within the subject area.
   - LoO criteria should also consider but not necessarily be limited to:
     - Expanded list of species from increased desktop buffer distance (see dotpoint 3 below)
     - Whether the subject area is within the species known habitat range;
     - Whether suitable habitat to support the species is in the subject area;
   - LoO assessment where suitable should reference current scientific knowledge preferentially federal and state prepared recovery or conservation advice, SPRAT profiles, etc (see dotpoint 2 below).

2. Strengthening Scientific Reasoning and Evidence in relation to protected wildlife habitat

- The SRI Assessment provided lacks robust scientific reasoning and evidence. While several statements are made, they are not adequately substantiated with relevant references, such as National Recovery Plans (where available) or other authoritative sources. Instead, the assessment appears to rely heavily on the opinion of the suitably qualified person without sufficient supporting evidence. This observation is made with the understanding that a field assessment has been conducted and the initial application biodiversity report includes some references.
- Specific examples are outlined below:

<u>Eastern Curlew</u>

- The eastern curlew is listed as critically endangered under the *Nature Conservation Act*.
- The response states there is "limited suitable habitat" and that “clearing would not substantially reduce habitat extent or quality, as the site lacks the tidal mudflats and coastal wetlands typically used by the species.” However, this assertion requires substantiation with evidence or further explanation.
- As part of the SRI assessment, it is expected that references to current scientific knowledge of the species are included. For example, this could involve citing a National Recovery Plan or other relevant literature.

- For the eastern curlew, a federal consultation draft (*curlew-sandpiper-consultation.docx*) notes that curlew sandpipers "mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters" (Higgins & Davies, 1996).
- The lot and plan are located near the Coastal Management District, which appears to be a sheltered and tidally influenced area, with the presence of mangroves and mudflats noted.
- The original ecology report references *Pizzey and Knight Birds of Australia Field Guide*. However, it is expected that federal or state information regarding the species would also be considered, and a precautionary approach adopted. For example, in cases where discrepancies exist between sources, all documents should be considered, and the most conservative approach applied.
- It is important to note that a National Recovery Plan is developed by experts, reviewed by government agencies, and approved by the federal Minister for the Environment. It reflects the most up-to-date scientific research and conservation priorities. In contrast, the *Birds of Australia Field Guide* is not a regulatory or legally binding document but rather a resource for birdwatchers.

The Australian painted-snipe

- The response states that *'No breeding or nesting habitat was identified during field surveys. The Project Area is not considered an ecologically significant location or important population area for the species.'*
- DETSI's SRI guideline lists breeding, feeding, nesting, migration or resting sites as considerations for ecologically significant locations
- The assessment does not include a consideration of feeding, nesting or migration sites.
- Page 11 of the National Recovery Plan for the Australian Painted Snipe (Rostratula australis) (National Recovery Plan for the Australian Painted Snipe (Rostratula australis)) states

Feeding
The Australian Painted Snipe eats plant material, seeds, insects, worms and molluscs, crustaceans and other invertebrates (Marchant and Higgins 1993). This species is mainly crepuscular (active at dawn and dusk), preferring to sit or stand quietly under cover of grass, reeds or other dense cover during day, becoming more active at dawn, dusk and during night. They generally remain in dense cover when feeding, although may forage over nearby mudflats and other open areas such as ploughed land or grassland (Marchant and Higgins 1993). The species may have quite specific foraging habitat requirements, but these are not well understood and further study is required. Feeding behaviour is likely to be different in wetlands where Australian Painted Snipe are present for breeding compared to sites that may act as refuges or stop-over sites, e.g. sewage ponds, water storages. Behaviour is likely to change depending on the height and density of wetland vegetation.

- Considering the wetland is mapped within 500 metres of the project site it would make sense that the assessment would consider feeding, megaton and resting sites – for the above feeding consideration I would expect that the assessment would consider the abundance of feeding material on the lot and plan.
- A further detailed response is needed which references relevant scientific literature or other authoritative sources and includes an assessment of all criteria under the SRI guideline.

3. Broadening the Search Buffer for WildNet and Reassessing Species in the SRI Assessment

- The department typically requires a 50 km or 100 km buffer for WildNet searches. However, the required buffer distance may vary depending on the geographic location and the nature of the species present. For instance, in remote areas such as the Cooper Basin, a 100 km buffer is generally expected due to the limited number of visitors reporting data in the system.
- In this specific case, the department is satisfied with a 15 km buffer for all species and a 25 km buffer for highly mobile species.
- It is requested that the SRI assessment be updated to ensure that all species identified within the specified buffer zones are considered.

- SRI assessment in accordance with the guideline should also consider but not necessarily be limited to the following in making a recommendation:
    - the type of habitat being impacted (nesting, breeding, feeding, etc)
    - habitat quality
    - conservation status
    - sightings/records
    - indirect impacts
    - cumulative impacts
    - mitigation measures

  Example - Common Brushtail
    - While the detailed survey identified common brushtail possum as present it does not discuss the scratches noted on trees and the likelihood of their origin being the possum rather than being made by greater or yellow-bellied gliders. There are records on State databases of the endangered southern greater glider *Petauroides volans volans* within1.1 km of the subject lands (north). Seventeen (17) records on the Wildnet database occur within 10 km of the proposed development. An SRI assessment is required for this species.

3. Southern purple-spotted gudgeon

- Based on our discussion, this species no longer requires further consideration.

4.Rehabilitation

- Rehabilitation has been mentioned multiple times as a mitigation measure to reduce the risk of an SRI.
- However, based on our conversation yesterday, we do not believe rehabilitation can be considered a suitable mitigation measure, given that the project is expected to span approximately 40 years and the site is not being progressively rehabilitated.

5. Quantifying PEM impact

- As discussed, regardless of whether an SRI is triggered, we will require a quantification of all PEMs impacted on-site. Could you please complete the attached form to provide this information?

6. Examples of other Ecology Reports

For reference, please find examples of other ecology reports below which are also available on the DETSI webpage "Current EA applications or amendment documents' under the petroleum and gas applications heading:

- Arrow Biodiversity Report
- APLNG Ecology Report

Please note the above document links are temporarily available and will be removed in the future, please download a copy at your earliest convenience.

From: Scott Lucke <scott.lucke@cqgroup.com.au>
Sent: Wednesday, 22 April 2026 8:23 AM
To: Tristan Roberts; Helena Braye
Cc: Rebbekah Hearn; Scott Barnes; Melanie Harris; Amanda Koenig; docreg@cqgroup.com.au
Subject: 25054 Project Halogen - EA application further RFI queries
Importance: High

Good Morning Tristan and Helena,

Thanks for your time yesterday to go through the additional RFI items – it was nice to meet you both.

As discussed at the end of the meeting, we understand a few minor alterations will be made to the list of additional RFI items per your attached email based on our meeting discussions.

Can we please request that this gets sent through as soon as possible to allow us to respond accordingly and aim to arrange another follow up meeting with DETSI / OCG to run through our response before final submission?

Thanks.

Regards,

Scott Lucke
Principal Planner

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Attachment B:

Revised Likelihood of Occurrence Assessment

Appendix B: Revised Likelihood of Occurrence Assessment for proposed Grenof Facility GSDA

Table B.1: Threatened Flora Likelihood of Occurrence Assessment

Name	Status	Source	Habitat requirements, distribution and range	Potential habitat	Likelihood of occurrence	Justification
Cycas megacarpa	EPBC: Endangered; NCA: Endangered	PMST, WildNet 15 km, MSES, Protected Plants Trigger Map, Conservation Advice / SPRAT	*Cycas megacarpa* occurs in Central Queensland, primarily within the Curtis Coast and adjacent inland ranges, typically on low hills, drainage lines, foothills and colluvial slopes supporting open eucalypt woodland, woodland margins and vine thicket interfaces. It is commonly associated with gravelly, sandy or loamy soils in remnant woodland landscapes and often occurs in ecotones between woodland and vine thicket vegetation (DCCEEW 2024a; Queensland Herbarium 2024; Forster 1996). The Project Area occurs within the broader known distribution of the species and within mapped regional ecosystems capable of supporting suitable habitat.	Limited potential habitat may occur within remnant woodland margins, drainage lines and vegetation associated with Boat Creek and adjoining remnant vegetation. Much of the Impact Area is disturbed and fragmented by industrial development and weed invasion.	Possibly occurring	The Project Area occurs within the accepted distributional range and broad habitat associations are present in parts of the site. However, no individuals were recorded during field assessment and no confirmed populations were identified within the Impact Area. Habitat quality is reduced by disturbance, fragmentation and invasive species, reducing the likelihood of occurrence within the Impact Area itself. A precautionary “possibly occurring” rating is adopted pending targeted survey where required (DCCEEW 2024a; DESI 2024a).
Hernandia bivalvis (Cudgerie)	NCA: Near threatened	WildNet 15 km, MSES, WildNet records, Queensland Herbarium profile	This species is typically associated with littoral rainforest, coastal vine thickets and sheltered coastal rainforest margins on fertile moist soils, generally close to the coast in protected locations. It is most commonly associated with intact rainforest structure and closed canopy coastal vegetation communities and is largely restricted to coastal north-eastern Queensland and suitable sheltered coastal habitats further south where remnant habitat persists (Bostock & Holland 2018; Queensland Herbarium 2024; DEHP 2016). The broader Gladstone coastal region falls within the broader regional range; however, occurrence is strongly tied to specific littoral rainforest habitat.	No suitable littoral rainforest, coastal vine thicket or intact closed-canopy coastal rainforest habitat occurs within the Project Area. Existing vegetation is dominated by regrowth woodland, disturbed grassland and industrially modified vegetation communities.	Unlikely to occur	Although the Project Area occurs within the broader regional range, the site does not support the specific habitat structure required by the species. Field verification did not identify littoral rainforest or associated vegetation communities. The absence of suitable habitat results in an “unlikely to occur” rating (Queensland Herbarium 2024; DESI 2024a).
Wetland-associated protected flora species (general)	Various	WildNet 15 km, MSES wetland mapping, PMST	A number of protected flora species in the Gladstone region are associated with freshwater wetlands, ephemeral drainage lines, riparian margins, swamp margins and seasonally inundated depressions. These species depend on hydrologically functional wetland systems, alluvial soils and persistent or seasonal moisture availability (DCCEEW 2024b; DESI 2024b; Queensland Herbarium 2024). Such habitats are often associated with mapped wetlands, drainage features and low-lying riparian zones.	Limited potential habitat may occur adjacent to Boat Creek, drainage lines and low-lying wetland margins outside the main Impact Area. Most of the Stage 1 Impact Area is outside these habitats.	Possibly occurring	Wetland-associated habitat occurs within the broader Project Area, particularly near Boat Creek and mapped drainage features. However, the main Impact Area is largely outside these areas and no threatened wetland flora species were identified during field assessment. Species may occur locally but are unlikely to be significantly affected by the proposed action.
Protected plant trigger species (Protected Plants Flora Survey Trigger Map)	Various	Protected Plants Flora Survey Trigger Map, WildNet, RE mapping, MSES	Species dependent on mapped regional ecosystems and protected plant trigger areas identified under the Protected Plants Flora Survey Trigger Map. Presence depends on final Impact Area, mapped RE, habitat condition and protected plant trigger mapping in accordance with the Flora Survey Guidelines – Protected Plants (DEHP 2020; DESI 2024c). Trigger mapping identifies where targeted survey may be required prior to clearing.	Potential habitat is dependent on final clearing extent and verification of trigger mapping in relation to remnant vegetation and mapped REs.	Possibly occurring	Protected plant targeted flora surveys were not completed as part of the preliminary ecological assessment. Where protected plant trigger areas apply, the presence of listed flora cannot be excluded without formal survey in accordance with the Flora Survey Guidelines – Protected Plants. This category is retained conservatively pending detailed survey if required (DEHP 2020).

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Table B.2: Threatened Fauna Likelihood of Occurrence Assessment

Name	Status	Habitat requirements, distribution and range	Potential habitat	Likelihood of occurrence	Justification
Eastern curlew (*Numenius madagascariensis*)	EPBC: Critically endangered, migratory, marine; NCA: Endangered	The Eastern curlew is a large migratory shorebird that occurs in Australia during the non-breeding season and is strongly associated with sheltered coastal habitats including intertidal mudflats, estuaries, mangrove margins, saltmarshes, sandflats, coastal lagoons and adjacent high-tide roosting areas. Important habitat typically includes extensive undisturbed foraging flats and nearby secure roost sites. The species occurs widely along the Queensland coast, including the Curtis Coast and Gladstone Harbour region, where estuarine and tidal wetland systems provide suitable habitat. Protection of foraging and roosting habitat is identified as a key recovery priority (DCCEEW 2024c; DoE 2015a; Commonwealth of Australia 2017).	The Impact Area does not contain intertidal mudflat, estuarine foreshore, mangrove or saltmarsh habitat. However, Boat Creek, nearby wetlands and tidally influenced coastal habitats occur within the broader locality and may provide indirect or occasional habitat use opportunities.	Possibly occurring	The species has been recorded within the broader 25 km WildNet search area and the Project Area lies within the broader regional coastal range. However, the Impact Area itself lacks the primary foraging and roosting habitat described in the Conservation Advice and SPRAT profile. Potential use would likely be limited to transient movement, flyover use, or opportunistic use of nearby wetland/coastal habitats rather than regular occupation of the Impact Area. Given DETSI's specific request to consider nearby coastal and wetland habitats, a precautionary "possibly occurring" rating is appropriate.
Australian painted-snipe (*Rostratula australis*)	EPBC: Endangered; NCA: Endangered	The Australian painted-snipe is a cryptic, highly dispersive wetland species associated with shallow freshwater or brackish wetlands, ephemeral swamps, inundated grasslands, farm dams, vegetated wetland margins, sedgelands, mudflats and low-energy floodplain wetlands. It prefers shallow wetlands with fringing vegetation for cover and foraging, often responding opportunistically to rainfall and local wetland conditions. The species occurs irregularly across inland and coastal Australia and may occupy habitat temporarily following suitable seasonal conditions (DCCEEW 2024d; DSEWPaC 2011; Commonwealth of Australia 2017).	The Impact Area is not considered to contain core breeding habitat. Limited marginal habitat may occur in low-lying seasonally wet areas and in proximity to mapped wetlands, drainage features and Boat Creek outside the primary Impact Area.	Possibly occurring	The Project Area occurs within the broad distributional range of the species and wetland habitat is mapped within the broader locality. No individuals were recorded during field surveys and the Impact Area lacks well-developed shallow vegetated wetland habitat suitable for regular breeding, feeding or refuge use. However, due to the species' highly mobile and opportunistic behaviour, transient use of nearby wetland margins cannot be excluded, particularly during favourable seasonal conditions. A conservative "possibly occurring" rating is therefore retained.
Southern greater glider (*Petauroides volans volans*)	EPBC: Endangered; NCA: Endangered	The Greater glider is an arboreal nocturnal marsupial largely restricted to mature eucalypt forests and woodlands of eastern Australia. It depends on hollow-bearing trees for denning and shelter and typically occurs where there is a reliable supply of suitable eucalypt browse species and connected canopy habitat. Older forests with abundant hollows are particularly important, and fragmentation significantly reduces habitat suitability. The species occurs within coastal and near-coastal central Queensland, including the broader Gladstone region (DCCEEW 2024e; Lindenmayer et al. 2020).	Eucalypt woodland and regrowth occur within and adjacent to the Project Area, including some hollow-bearing trees and arboreal habitat features. Habitat quality is reduced by fragmentation, weed invasion and surrounding industrial land use.	Likely to occur	DETSI identified multiple nearby records, including records within close proximity and several within 10 km of the Project Area. Suitable eucalypt woodland habitat and potential denning resources are present, and the broader landscape supports known populations. Although targeted fauna surveys did not confirm the species, non-detection does not exclude occurrence due to nocturnal behaviour, low-density occupancy and imperfect detectability. Given available habitat, nearby records and precautionary EPBC assessment principles, a "likely to occur" rating is appropriate and the species should be carried forward to SRI assessment.
Koala (*Phascolarctos cinereus*)	EPBC: Endangered; NCA: Endangered	The Koala occurs across eastern Australia and is associated with eucalypt woodland and forest containing preferred browse species, shelter trees and habitat connectivity that supports dispersal and gene flow. Habitat suitability depends on tree species composition, landscape connectivity, disturbance history and proximity to established populations. The National Recovery Plan emphasises retention of habitat extent, condition and connectivity as critical to persistence. The Project Area occurs within the broader known distribution of the listed Koala population in Queensland (DCCEEW 2022b; DCCEEW 2024f).	The Project Area contains limited regrowth woodland and scattered eucalypt species that may provide marginal foraging habitat, shelter and movement opportunities. Habitat is fragmented, degraded and located within an industrial landscape with high edge effects.	Possibly occurring	The Project Area is within the broader species range and contains some habitat elements relevant to Koala movement and marginal foraging. However, targeted SAT surveys did not record Koalas, scats or characteristic scratches, and habitat condition is generally low to moderate due to fragmentation, invasive grasses and surrounding industrial disturbance. Regular occupancy is therefore unlikely; however, occasional dispersal, transient use or low-density occurrence cannot be excluded. A precautionary "possibly occurring" rating is considered appropriate.

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Name	Status	Habitat requirements, distribution and range	Potential habitat	Likelihood of occurrence	Justification
Squatter pigeon (southern) (*Geophaps scripta scripta*)	EPBC: Vulnerable; NCA: Vulnerable	The southern Squatter pigeon occurs in eastern Queensland and northern New South Wales, typically inhabiting open eucalypt woodland and grassy woodland with patchy native grass cover, sparse shrub layers, access to water and areas of bare ground for foraging. The species is sensitive to dense weed cover, grazing pressure and altered fire regimes, which reduce habitat quality and movement opportunities. It is often associated with gently undulating woodland landscapes and riparian edges where water access is reliable (DCCEEW 2024g; TSSC 2015a).	Open woodland and disturbed grassy areas occur within the Project Area. Habitat quality is reduced by weed invasion, fragmentation and disturbance, although some suitable foraging and movement habitat remains.	Likely to occur	Suitable open woodland and grassy habitat occurs within and adjacent to the Project Area and the species was identified as likely in previous assessments. While breeding habitat quality is reduced by disturbance and invasive groundcover, sufficient habitat remains for foraging and local movement. The broader landscape remains consistent with known habitat preferences, and the species should be conservatively treated as likely to occur and carried forward to SRI assessment.
Yellow-bellied glider (*Petaurus australis australis*)	EPBC: Vulnerable; NCA: Vulnerable	The Yellow-bellied glider occurs in eucalypt forests and woodlands from southern Queensland to Victoria and requires large hollow-bearing trees for denning, connected canopy for movement and productive sap-feed trees, particularly smooth-barked eucalypts. It is generally associated with larger intact forest tracts and is sensitive to fragmentation and loss of denning habitat. Local occurrence is often linked to landscape-scale habitat connectivity rather than isolated habitat patches (DCCEEW 2024h; Goldingay & Kavanagh 1991).	Eucalypt regrowth and woodland occur within and adjacent to the Project Area, but habitat is fragmented, limited in extent and heavily influenced by surrounding industrial land uses.	Possibly occurring	The site occurs within the broader known range of the species and some potential habitat features are present, including eucalypt woodland and occasional hollow-bearing trees. However, the Impact Area is small, degraded and unlikely to support a resident social group or breeding habitat. Local records of glider species support a conservative assessment, and occasional foraging or transient use cannot be excluded. A “possibly occurring” rating is therefore retained.
Grey-headed flying-fox (*Pteropus poliocephalus*)	EPBC: Vulnerable; NCA: Common	The Grey-headed flying-fox is a highly mobile species occurring along eastern Australia and uses flowering and fruiting forests, woodlands, urban trees and riparian vegetation for foraging. It travels large distances between seasonal food resources and relies on established camps for roosting, typically in dense riparian or urban vegetation. Camps are considered critical habitat, while foraging habitat may be widespread and opportunistically used (DAWE 2021; DCCEEW 2024i).	Flowering eucalypts and riparian vegetation may provide occasional foraging habitat within the Project Area and surrounding landscape. No camp or significant roosting habitat was identified within the Impact Area.	Possibly occurring	The Project Area falls within the species’ broad foraging range and the species may opportunistically use flowering resources when available. However, no camp, maternity site or important roosting habitat occurs within the Impact Area and habitat is not considered critical to the species’ persistence. Use is likely to be occasional and low intensity, supporting a “possibly occurring” rating only.
Osprey (*Pandion haliaetus*)	EPBC: Migratory / Marine; NCA: Special least concern	Osprey is a coastal and estuarine raptor associated with rivers, estuaries, tidal creeks, coastlines and large inland waterbodies where fish prey is available. It requires elevated nesting structures such as dead trees, pylons or artificial structures near productive aquatic foraging habitat. The species is widespread along the Queensland coast and commonly recorded near estuarine systems and tidal waterways (Marchant & Higgins 1993).	Nearby Boat Creek, drainage systems and broader coastal habitats provide suitable foraging habitat in the locality. The Impact Area itself does not provide important nesting habitat or significant aquatic foraging habitat.	Known to occur	Osprey was recorded flying overhead during targeted fauna surveys, confirming species presence within the broader Project Area. Use of the Impact Area is likely transient only, with no nesting habitat or significant foraging dependency identified within the Impact Area itself. The species is therefore considered known to occur locally, but significant impact risk is low.
Coastal sheathtail bat (*Taphozous australis*)	NCA: Near threatened	The Coastal sheathtail bat is generally associated with coastal environments including sea cliffs, caves, rock overhangs, coastal escarpments, islands and nearby open foraging habitat. Day roosts are typically within rock features, caves or large man-made structures close to the coast. Distribution is strongly tied to the presence of suitable roosting habitat rather than general woodland availability (Churchill 2008).	No suitable cliff lines, caves, rock overhangs or equivalent coastal roosting habitat occur within the Impact Area.	Unlikely to occur	Although the species may occur regionally within the broader coastal landscape, the Impact Area lacks the essential roosting habitat required for regular occupation. No caves, cliffs or coastal rock features were identified during field verification, and there is no strong habitat linkage to known roosting requirements. The species is therefore considered unlikely to occur within the Impact Area.

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Name	Status	Habitat requirements, distribution and range	Potential habitat	Likelihood of occurrence	Justification
Powerful owl (*Ninox strenua*)	NCA: Vulnerable	The Powerful owl is a large forest owl associated with mature open forest, woodland and riparian forest containing large hollow-bearing trees for nesting and sufficient arboreal prey resources such as possums and gliders. It generally requires extensive, relatively intact habitat and is sensitive to fragmentation and loss of mature den trees. Breeding habitat is usually associated with long-established forest structure (Higgins 1999; Debus & Chafer 1994).	Some woodland and riparian habitat occurs within and adjacent to the Project Area; however, habitat is fragmented, small in extent and heavily disturbed. Mature hollow-bearing nesting trees are limited.	Possibly occurring	The Project Area lies within the broader species range and may provide occasional foraging habitat for transient individuals moving through the landscape. However, the site is unlikely to support breeding due to the absence of extensive mature woodland and limited hollow-bearing nesting habitat. A conservative "possibly occurring" rating is appropriate for foraging use only.
Water mouse (*Xeromys myoides*)	EPBC: Vulnerable; NCA: Vulnerable	The Water mouse is associated with coastal wetland systems including mangroves, saltmarshes, sedgelands, supralittoral wetland margins and low-energy estuarine environments. It requires intact coastal wetland habitat with suitable nesting substrate above tidal influence and adjacent intertidal feeding areas. Known populations are strongly tied to mangrove-saltmarsh systems and tidal wetland connectivity (DCCEEW 2024k; DSEWPaC 2011a).	No suitable mangrove, saltmarsh or coastal wetland nesting habitat occurs within the Impact Area. Broader coastal habitat occurs elsewhere in the regional landscape but not within the Impact Area.	Unlikely to occur	Suitable habitat may occur within the wider coastal environment of the Curtis Coast, but the Impact Area itself does not contain mangrove, saltmarsh or supratidal nesting habitat required by the species. No credible direct impact pathway to known habitat is identified and no field evidence of the species was recorded. The species is therefore unlikely to occur within the development footprint.
Curlew sandpiper (*Calidris ferruginea*)	EPBC: Critically endangered, migratory, marine; NCA: Critically endangered	The Curlew sandpiper is a migratory shorebird that occurs in Australia during the non-breeding season and is primarily associated with intertidal mudflats, estuaries, saltmarshes, lagoons, sewage ponds, shallow freshwater wetlands and coastal wetlands with exposed soft substrate. It prefers open shallow foraging areas with predictable water regimes and secure roosting habitat nearby. The species occurs widely along the Queensland coast including the Curtis Coast and Gladstone Harbour region (DCCEEW 2024l; DoE 2015b; Commonwealth of Australia 2017).	No core intertidal or shallow wetland habitat occurs within the Impact Area. Nearby coastal wetlands, drainage lines and estuarine systems occur within the broader locality.	Possibly occurring	Regional records and nearby coastal wetland systems support possible transient occurrence within the broader locality; however, the Impact Area itself lacks the primary feeding and roosting habitat required for regular use. Potential use would be limited to occasional flyover or opportunistic use of nearby habitat outside the Impact Area. A precautionary "possibly occurring" rating is adopted.
Western alaskan bar-tailed godwit (*Limosa lapponica baueri*)	EPBC: Vulnerable; NCA: Vulnerable	This migratory shorebird primarily uses intertidal mudflats, sandflats, estuaries, mangrove margins and coastal roosting habitat during the non-breeding season. It depends on extensive tidal flats with abundant benthic invertebrate prey and nearby undisturbed roost sites. The species is regularly recorded along coastal Queensland, particularly within estuarine systems and broad tidal landscapes (DCCEEW 2024m; Commonwealth of Australia 2017).	No primary intertidal mudflat or estuarine foraging habitat occurs within the Impact Area. Broader Curtis Coast systems provide suitable habitat regionally.	Possibly occurring	The species may occur within the broader Curtis Coast coastal system, but the Impact Area does not provide the tidal flats or roosting habitat required for regular occupation. Use of the Impact Area would be, at most, incidental or transient during movement between more suitable habitats.
Common greenshank (*Tringa nebularia*)	EPBC: Migratory / Marine; NCA: Special least concern	Common greenshank uses mudflats, estuaries, saltmarshes, mangroves, wetlands, dams and shallow freshwater or brackish water margins. It is more flexible in habitat use than many shorebirds and may utilise both natural and artificial wetlands where shallow foraging habitat is available. The species is widespread and regularly recorded in coastal Queensland (DCCEEW 2024n; Commonwealth of Australia 2017).	Limited marginal wetland habitat may occur near drainage features and Boat Creek; however, these are largely outside the main Impact Area.	Possibly occurring	The species is highly mobile and known regionally. Although the Impact Area lacks extensive wetland habitat, occasional transient use of drainage lines, shallow inundated areas or nearby wetland margins cannot be excluded. Important or regularly used habitat is not present within the Impact Area.
Common sandpiper (*Actitis hypoleucos*)	EPBC: Migratory / Marine; NCA: Special least concern	Common sandpiper occurs along muddy, sandy or rocky edges of rivers, creeks, estuaries, drains, dams and shorelines and is frequently associated with small waterbodies and linear drainage systems. It is less dependent on large tidal systems than other migratory shorebirds and may use modified waterways where suitable edge habitat remains (DCCEEW 2024o; Commonwealth of Australia 2017).	Potential marginal habitat may occur along Boat Creek and drainage features outside the main Impact Area. Little suitable habitat occurs within the primary Impact Area.	Possibly occurring	Regional records and nearby drainage habitat support possible occurrence. However, the Impact Area itself is not considered important habitat and would likely only support occasional foraging or movement by transient individuals. Significant impact risk is low.

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Name	Status	Habitat requirements, distribution and range	Potential habitat	Likelihood of occurrence	Justification
Whimbrel (*Numenius phaeopus*)	EPBC: Migratory / Marine; NCA: Special least concern	Whimbrel is a migratory shorebird associated with intertidal mudflats, estuaries, mangrove margins, saltmarshes and sheltered coastal roosting habitat. It generally relies on tidal coastal systems with exposed feeding areas and adjacent secure roost sites. The species is common in suitable coastal habitats throughout Queensland (DCCEEW 2024p; Commonwealth of Australia 2017).	No core shorebird habitat occurs within the Impact Area. Suitable habitat occurs in nearby coastal and estuarine systems only.	Possibly occurring	The species may occur within nearby coastal habitats and broader tidal systems; however, the Impact Area lacks suitable foraging or roosting habitat. Use of the site would likely be limited to transient movement only.
Grey plover (*Pluvialis squatarola*)	EPBC: Migratory / Marine; NCA: Special least concern	Grey plover occurs mainly on coastal mudflats, sandflats, beaches, estuaries and saltmarshes during the non-breeding season. It is strongly associated with open intertidal habitat and coastal roosting sites and rarely occurs away from these systems (DCCEEW 2024q; Commonwealth of Australia 2017).	No suitable core intertidal habitat occurs within the Impact Area. Broader regional coastal habitat occurs outside the Impact Area.	Unlikely to occur	Although the species may occur regionally within coastal systems, habitat within the Impact Area does not match its primary foraging or roosting requirements. There is no credible direct impact pathway to important habitat and regular site use is considered unlikely.
Terek sandpiper (*Xenus cinereus*)	EPBC: Migratory / Marine; NCA: Special least concern	Terek sandpiper is primarily coastal and uses intertidal mudflats, mangrove margins, estuaries and sheltered coastal waters. It is strongly associated with tidal systems and mangrove-lined estuaries and rarely occurs inland (DCCEEW 2024r; Commonwealth of Australia 2017).	No intertidal, mangrove or estuarine habitat occurs within the Impact Area. Suitable habitat is restricted to the broader coastal system.	Unlikely to occur	Suitable habitat is restricted to broader coastal systems and is absent from the development footprint. There is no credible impact pathway to primary habitat and occurrence within the Impact Area is unlikely.
Lesser sand plover (*Charadrius mongolus*)	EPBC: Endangered, migratory, marine; NCA: Endangered	Lesser sand plover is a coastal migratory shorebird using sandy beaches, intertidal flats, estuaries, coastal lagoons and exposed shorelines. It depends on open coastal foraging habitat and secure roosting areas and is strongly associated with intertidal systems (DCCEEW 2024s; DoE 2015c).	No suitable sandy coastal or intertidal habitat occurs within the Impact Area.	Unlikely to occur	The Project Area lacks the coastal sandy and intertidal habitats required by the species. Although regional occurrence is possible, there is no suitable habitat within the Impact Area and regular use is unlikely.
Asian dowitcher (*Limnodromus semipalmatus*)	EPBC: Migratory / Marine; NCA: Special least concern	Asian dowitcher is a rare migratory shorebird associated with intertidal mudflats, estuaries, saltmarshes and shallow coastal wetlands. It depends on extensive soft-sediment foraging habitat and sheltered tidal systems during the non-breeding season (DCCEEW 2024t; Commonwealth of Australia 2017).	No suitable core habitat occurs within the Impact Area. Broader regional coastal systems may support the species.	Unlikely to occur	While regional coastal records may occur, the Impact Area does not provide important habitat and lacks any credible direct impact pathway to core foraging or roosting areas. Occurrence within the Impact Area is unlikely.
Sharp-tailed sandpiper (*Calidris acuminata*)	EPBC: Migratory / Marine; NCA: Special least concern	Sharp-tailed sandpiper uses shallow freshwater and brackish wetlands, mudflats, saltmarshes, flooded grasslands, farm dams and ephemeral wetlands. It is more flexible than strictly coastal shorebirds and may use inland wetland systems where shallow water and soft substrate are present (DCCEEW 2024u; Commonwealth of Australia 2017).	Limited marginal wetland habitat may occur in the broader locality, particularly around drainage features and seasonal wet areas, but not within the core Impact Area.	Possibly occurring	The species is mobile and may use nearby ephemeral wetland habitat during favourable conditions. However, the Impact Area itself lacks important wetland habitat features and regular use is unlikely. A conservative “possibly occurring” rating is retained.
Dugong (*Dugong dugon*)	EPBC: Migratory / Marine; NCA: Vulnerable	Dugong is a marine mammal dependent on shallow coastal waters supporting seagrass meadows, particularly protected embayments, bays and sheltered nearshore marine environments. It is strongly associated with marine habitat and does not utilise terrestrial environments (DCCEEW 2024v; Marsh et al. 2002).	No marine habitat, seagrass meadow or tidal marine environment occurs within or adjacent to the Impact Area.	Unlikely to occur	The terrestrial Project Area provides no habitat for this species and there is no credible direct impact pathway to marine seagrass habitat. Although the species may occur within the wider coastal region, it is not relevant to the Impact Area and is unlikely to be affected by the proposed action.
Southern purple-spotted gudgeon (*Mogurnda adspersa*)	NCA: Endangered	Freshwater fish associated with slow-flowing or still waters including creeks, pools, wetlands and vegetated freshwater systems with aquatic cover, submerged structure and refuge habitat. It prefers relatively permanent freshwater habitat with good structural complexity (Pusey et al. 2004; Queensland Government 2024).	Boat Creek and associated aquatic habitat occur outside the main Impact Area. Limited aquatic habitat occurs within the development footprint itself.	Not carried forward	DETSI advised that this species no longer requires further consideration. While freshwater habitat may occur in the broader locality, the species is not expected to be directly affected by the current Impact Area and has been removed from further SRI consideration.

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Likelihood of Occurrence:

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WildNet Species List
Species: All
Sensitive species: All
Conservation significant: 1
Vetting stage: All
Latitude: -23.8142
Longitude: 151.1526
Distance: 25
Kingdom: All
Phylum: All
Class: All
Order: All
Family: All
Genus: All
Status jurisdiction: All
Status code: All
Establishment: All
Pest status: All
Conservation plan: All
Species profile: All
Protected area: All
Conservation area: All
Recovery plan: All

WN Taxon ID	Kingdom	Class	Family	Scientific name	Common name	NCA status	EPBC status	Superseded	Conservation significant	Establishment	Sensitive species	Area survey lists	Sighting records	Specimen records	Sighting summary
9	Animalia	Insecta	Lycaenidae	Jalmenus eubulus	pale imperial hairstreak	V		No	Yes	QA	No		1	0	1
18168	Animalia	Actinopterygii	Eleotridae	Mogurnda adspersa	southern purplespotted gudgeon		E	No	Yes	QA	No		6	0	6
706	Animalia	Amphibia	Limnodynastidae	Adelotus brevis	tusked frog	V		No	Yes	QA	No		1	1	1
1728	Animalia	Aves	Accipitridae	Erythrotriorchis radiatus	red goshawk	E	E	No	Yes	QA	No		1	0	1
1965	Animalia	Aves	Apodidae	Apus pacificus	fork-tailed swift	SL		No	Yes	QAI	No		2	0	2
1971	Animalia	Aves	Apodidae	Hirundapus caudacutus	white-throated needletail	V	V	No	Yes	QAI	No		8	0	8
1958	Animalia	Aves	Burhinidae	Esacus magnirostris	beach stone-curlew	V		No	Yes	QAI	No		81	1	81
22493	Animalia	Aves	Cacatuidae	Calyptorhynchus lathami erebus	glossy black-cockatoo (northern)	V		No	Yes	Q	No		4	0	4
1946	Animalia	Aves	Charadriidae	Charadrius bicinctus	double-banded plover	SL		No	Yes	QAI	No		2	0	2
1948	Animalia	Aves	Charadriidae	Charadrius leschenaultii	greater sand plover	V	V	No	Yes	QAI	No		17	0	17
1936	Animalia	Aves	Charadriidae	Charadrius mongolus	lesser sand plover	E	E	No	Yes	QAI	No		97	0	97
1944	Animalia	Aves	Charadriidae	Pluvialis fulva	Pacific golden plover	SL		No	Yes	QAI	No		75	0	75
1931	Animalia	Aves	Charadriidae	Pluvialis squatarola	grey plover	V	V	No	Yes	QAI	No		16	0	16
19465	Animalia	Aves	Charadriidae	Thinornis cucullatus	hooded plover	C	V	No	Yes	VA	No		1	0	1
1785	Animalia	Aves	Columbidae	Geophaps scripta scripta	squatter pigeon (southern subspecies)	V	V	No	Yes	QA	No		56	0	56
1736	Animalia	Aves	Cuculidae	Cuculus optatus	oriental cuckoo	SL		No	Yes	QAI	No		3	0	3
1259	Animalia	Aves	Diomedeidae	Phoebetria palpebrata	light-mantled sooty albatross	SL		No	Yes	VU	No		1	1	1
1920	Animalia	Aves	Laridae	Chlidonias leucopterus	white-winged black tern	SL		No	Yes	QAI	No		1	0	1
1891	Animalia	Aves	Laridae	Gelochelidon nilotica	gull-billed tern	SL		No	Yes	VU	No		2	0	2
1896	Animalia	Aves	Laridae	Hydroprogne caspia	Caspian tern	SL		No	Yes	QAI	No		335	0	335
1899	Animalia	Aves	Laridae	Sterna hirundo	common tern	SL		No	Yes	QAI	No		37	0	37
1905	Animalia	Aves	Laridae	Sternula albifrons	little tern	SL	V	No	Yes	QAI	No		49	0	49
1895	Animalia	Aves	Laridae	Thalasseus bergii	crested tern	SL		No	Yes	QAI	No		103	0	103
1702	Animalia	Aves	Pandionidae	Pandion haliaetus cristatus	eastern osprey	SL		No	Yes	QAI	No		118	1	118
1188	Animalia	Aves	Procellariidae	Ardenna pacifica	wedge-tailed shearwater	V		No	Yes	QAI	No		6	0	6
1190	Animalia	Aves	Procellariidae	Ardenna tenuirostris	short-tailed shearwater	SL		No	Yes	QAI	No		9	0	9
1883	Animalia	Aves	Rostratulidae	Rostratula australis	Australian painted-snipe	E	E	No	Yes	QA	No		1	0	1
1885	Animalia	Aves	Scolopacidae	Actitis hypoleucos	common sandpiper	SL		No	Yes	QAI	No		30	0	30

WN Taxon ID	Kingdom	Class	Family	Scientific name	Common name	NCA status	EPBC status	Superseded	Conservation significant	Establishment	Sensitive species	Area survey lists	Sighting records	Specimen records	Sighting summary
1872	Animalia	Aves	Scolopacidae	Arenaria interpres	ruddy turnstone	V	V	No	Yes	QAI	No		26	0	26
1874	Animalia	Aves	Scolopacidae	Calidris acuminata	sharp-tailed sandpiper	V	V	No	Yes	QAI	No		77	0	77
1875	Animalia	Aves	Scolopacidae	Calidris alba	sanderling	SL		No	Yes	QAI	No		4	0	4
1877	Animalia	Aves	Scolopacidae	Calidris canutus	red knot	V	V	No	Yes	QAI	No		10	0	10
1863	Animalia	Aves	Scolopacidae	Calidris falcinellus	broad-billed sandpiper	SL		No	Yes	QAI	No		4	0	4
1878	Animalia	Aves	Scolopacidae	Calidris ferruginea	curlew sandpiper	CR	CE	No	Yes	QAI	No		81	0	81
1879	Animalia	Aves	Scolopacidae	Calidris melanotos	pectoral sandpiper	SL		No	Yes	QAI	No		2	0	2
1880	Animalia	Aves	Scolopacidae	Calidris ruficollis	red-necked stint	SL		No	Yes	QAI	No		202	0	202
1856	Animalia	Aves	Scolopacidae	Calidris tenuirostris	great knot	V	V	No	Yes	QAI	No		39	0	39
1857	Animalia	Aves	Scolopacidae	Gallinago hardwickii	Latham's snipe	V	V	No	Yes	QAI	No		12	0	12
1867	Animalia	Aves	Scolopacidae	Limosa lapponica baueri	Western Alaskan bar-tailed godwit	E	E	No	Yes	QAI	No		320	0	320
1855	Animalia	Aves	Scolopacidae	Limosa limosa	black-tailed godwit	E	E	No	Yes	QAI	No		9	0	9
1843	Animalia	Aves	Scolopacidae	Numenius madagascariensis	eastern curlew	CR	CE	No	Yes	QAI	No		495	1	495
1844	Animalia	Aves	Scolopacidae	Numenius minutus	little curlew	SL		No	Yes	QAI	No		1	0	1
1845	Animalia	Aves	Scolopacidae	Numenius phaeopus	whimbrel	SL		No	Yes	QAI	No		446	1	446
1860	Animalia	Aves	Scolopacidae	Tringa brevipes	grey-tailed tattler	SL		No	Yes	QAI	No		198	0	198
1861	Animalia	Aves	Scolopacidae	Tringa incana	wandering tattler	SL		No	Yes	QAI	No		5	0	5
1853	Animalia	Aves	Scolopacidae	Tringa nebularia	common greenshank	E	E	No	Yes	QAI	No		112	0	112
1841	Animalia	Aves	Scolopacidae	Tringa stagnatilis	marsh sandpiper	SL		No	Yes	QAI	No		49	0	49
1827	Animalia	Aves	Scolopacidae	Xenus cinereus	terek sandpiper	V	V	No	Yes	QAI	No		103	1	103
1107	Animalia	Aves	Strigidae	Ninox strenua	powerful owl	V		No	Yes	QA	No		15	0	15
1268	Animalia	Aves	Sulidae	Sula leucogaster	brown booby	SL		No	Yes	QAI	No		9	2	9
1825	Animalia	Aves	Threskiornithidae	Plegadis falcinellus	glossy ibis	SL		No	Yes	QAI	No		8	0	8
1092	Animalia	Aves	Turnicidae	Turnix melanogaster	black-breasted button-quail	V	V	No	Yes	QA	No		15	0	15
22620	Animalia	Chondrichthyes	Dasyatidae	Hemitrygon fluviorum	estuary stingray	NT		No	Yes	QAI	No		1	0	1
1055	Animalia	Mammalia	Balaenopteridae	Megaptera novaeangliae	humpback whale	C		No	Yes	QAI	No		1	0	1
800	Animalia	Mammalia	Dasyuridae	Dasyurus hallucatus	northern quoll	C	E	No	Yes	QA	No		2	0	2
1032	Animalia	Mammalia	Delphinidae	Sousa sahulensis	Australian humpback dolphin	V	V	No	Yes	QAI	No		11	0	11
714	Animalia	Mammalia	Dugongidae	Dugong dugon	dugong	V		No	Yes	QAI	No		7	1	7
1010	Animalia	Mammalia	Emballonuridae	Taphozous australis	coastal sheathtail bat	NT		No	Yes	QAI	No		3	0	3
994	Animalia	Mammalia	Megadermatidae	Macroderma gigas	ghost bat	E	V	No	Yes	QA	No		1	0	1
724	Animalia	Mammalia	Muridae	Xeromys myoides	water mouse	V	V	No	Yes	QAI	No		15	1	15
875	Animalia	Mammalia	Petauridae	Petaurus australis australis	yellow-bellied glider (southern subspecies)	V	V	No	Yes	QA	No		25	3	25
860	Animalia	Mammalia	Phascolarctidae	Phascolarctos cinereus	koala	E	E	No	Yes	QA	No		16	0	16
2455	Animalia	Mammalia	Pseudocheiridae	Petauroides volans volans	southern greater glider	E	E	No	Yes	QA	No		46	1	46
962	Animalia	Mammalia	Pteropodidae	Pteropus poliocephalus	grey-headed flying-fox	C	V	No	Yes	QA	No		12	0	12
838	Animalia	Mammalia	Tachyglossidae	Tachyglossus aculeatus	short-beaked echidna	SL		No	Yes	QAI	No		46	0	46
30272	Animalia	Reptilia	Chelidae	Elseya albagula	white-throated snapping turtle	CR	CE	No	Yes	Q	No		1	0	1
35	Animalia	Reptilia	Cheloniidae	Caretta caretta	loggerhead turtle	E	E	No	Yes	QAI	No		3	0	3
37	Animalia	Reptilia	Cheloniidae	Chelonia mydas	green turtle	V	V	No	Yes	QAI	No		17	0	17
29	Animalia	Reptilia	Cheloniidae	Natator depressus	flatback turtle	V	V	No	Yes	QAI	No		26	11	26
584	Animalia	Reptilia	Crocodylidae	Crocodylus porosus	estuarine crocodile	V		No	Yes	QAI	No		1	0	1
511	Animalia	Reptilia	Elapidae	Acanthophis antarcticus	common death adder	V		No	Yes	QA	No		2	0	2
15850	Plantae	Equisetopsida	Acanthaceae	Graptophyllum excelsum		NT		No	Yes	NTQ	No		12	1	12
15513	Plantae	Equisetopsida	Amaryllidaceae	Crinum pedunculatum	river lily	SL		No	Yes	NTQ	No		3	1	3
11702	Plantae	Equisetopsida	Amaryllidaceae	Proiphys cunninghamii	Moreton Bay lily	SL		No	Yes	NTQ	No		3	2	3
5948	Plantae	Equisetopsida	Apocynaceae	Parsonsia larcomensis		V	V	No	Yes	NTQ	No		7	7	7
12776	Plantae	Equisetopsida	Arecaceae	Livistona australis	cabbage tree palm	SL		No	Yes	NTQ	No		1	0	1
29766	Plantae	Equisetopsida	Arecaceae	Livistona decora		SL		No	Yes	NTQ	No		19	0	19

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35028	Plantae	Equisetopsida	Asteraceae	Sphaeromorphaea major		NT		No	Yes	NTQ	No		7	6	7
17819	Plantae	Equisetopsida	Blechnaceae	Blechnum orientale		SL		No	Yes	NTQ	No		2	2	2
41590	Plantae	Equisetopsida	Blechnaceae	Blechnum parrisiae		SL		No	Yes	NTQ	No		1	1	1
6017	Plantae	Equisetopsida	Blechnaceae	Blechnum patersonii		SL		No	Yes	NTQ	No		1	0	1
33349	Plantae	Equisetopsida	Campanulaceae	Lobelia anceps		SL		No	Yes	NTQ	No		4	3	4
33856	Plantae	Equisetopsida	Campanulaceae	Lobelia concolor		SL		No	Yes	NTQ	No		1	0	1
16766	Plantae	Equisetopsida	Campanulaceae	Lobelia purpurascens	white root	SL		No	Yes	NTQ	No		3	0	3
13864	Plantae	Equisetopsida	Campanulaceae	Lobelia stenophylla		SL		No	Yes	NTQ	No		1	1	1
15918	Plantae	Equisetopsida	Campanulaceae	Wahlenbergia gracilis	sprawling bluebell	SL		No	Yes	NTQ	No		6	5	6
17490	Plantae	Equisetopsida	Combretaceae	Dansiea elliptica		NT		No	Yes	NTQ	No		13	9	13
7667	Plantae	Equisetopsida	Combretaceae	Macropteranthes leiocaulis		NT		No	Yes	NTQ	No		14	7	14
8445	Plantae	Equisetopsida	Cycadaceae	Cycas megacarpa		E	E	No	Yes	NTQ	Yes		6	4	6
35068	Plantae	Equisetopsida	Droseraceae	Drosera finlaysoniana		SL		No	Yes	NTQ	No		1	1	1
34475	Plantae	Equisetopsida	Droseraceae	Drosera lunata		SL		No	Yes	NTQ	No		1	1	1
14435	Plantae	Equisetopsida	Dryopteridaceae	Lastreopsis tenera		SL		No	Yes	NTQ	No		5	3	5
14008	Plantae	Equisetopsida	Goodeniaceae	Brunonia australis	blue pincushion	SL		No	Yes	NTQ	No		6	0	6
13625	Plantae	Equisetopsida	Hernandiaceae	Hernandia bivalvis	cudgerie	NT		No	Yes	NTQ	No		10	4	10
31031	Plantae	Equisetopsida	Hydrocharitaceae	Halophila ovalis		SL		No	Yes	NTQ	No		3	0	3
14509	Plantae	Equisetopsida	Hydrocharitaceae	Hydrilla verticillata	hydrilla	SL		No	Yes	NTQ	No		1	1	1
14366	Plantae	Equisetopsida	Hydrocharitaceae	Najas tenuifolia	water nymph	SL		No	Yes	NTQ	No		1	0	1
14339	Plantae	Equisetopsida	Hydrocharitaceae	Ottelia ovalifolia	swamp lily	SL		No	Yes	NTQ	No		1	0	1
34790	Plantae	Equisetopsida	Juncaginaceae	Cycnogeton procerus		SL		No	Yes	NTQ	No		1	0	1
15977	Plantae	Equisetopsida	Juncaginaceae	Triglochin striata	streaked arrowgrass	SL		No	Yes	NTQ	No		2	2	2
11707	Plantae	Equisetopsida	Laxmanniaceae	Cordyline manners-suttoniae		SL		No	Yes	NTQ	No		1	1	1
9417	Plantae	Equisetopsida	Lentibulariaceae	Utricularia gibba	floating bladderwort	SL		No	Yes	NTQ	No		1	1	1
14327	Plantae	Equisetopsida	Menyanthaceae	Nymphoides indica	water snowflake	SL		No	Yes	NTQ	No		3	1	3
22496	Plantae	Equisetopsida	Myrtaceae	Rhodamnia angustifolia	narrow-leaved malletwood	CR	CE	No	Yes	NTQ	No		1	1	1
16288	Plantae	Equisetopsida	Myrtaceae	Rhodamnia spongiosa		CR		No	Yes	NTQ	No		4	2	4
13436	Plantae	Equisetopsida	Nelumbonaceae	Nelumbo nucifera	pink waterlily	SL		No	Yes	NTQ	No		3	3	3
29765	Plantae	Equisetopsida	Nymphaeaceae	Nymphaea gigantea		SL		No	Yes	NTQ	No		2	2	2
13385	Plantae	Equisetopsida	Nymphaeaceae	Nymphaea pubescens		SL		No	Yes	NTQ	No		1	1	1
13386	Plantae	Equisetopsida	Nymphaeaceae	Nymphaea violacea		SL		No	Yes	NTQ	No		2	1	2
14087	Plantae	Equisetopsida	Orchidaceae	Acianthus fornicatus	pixie caps	SL		No	Yes	NTQ	Yes		2	1	2
17779	Plantae	Equisetopsida	Orchidaceae	Bulbophyllum minutissimum	grain-of-wheat orchid	SL		No	Yes	NTQ	Yes		1	1	1
13444	Plantae	Equisetopsida	Orchidaceae	Caladenia carnea		SL		No	Yes	NTQ	Yes		3	3	3
2163	Plantae	Equisetopsida	Orchidaceae	Chiloglottis diphylla		SL		No	Yes	NTQ	Yes		1	1	1
9260	Plantae	Equisetopsida	Orchidaceae	Chiloglottis sylvestris		SL		No	Yes	NTQ	Yes		1	0	1
9265	Plantae	Equisetopsida	Orchidaceae	Corybas barbarae	helmet orchid	SL		No	Yes	NTQ	Yes		2	1	2
17505	Plantae	Equisetopsida	Orchidaceae	Cymbidium canaliculatum		SL		No	Yes	NTQ	Yes		13	2	13
12828	Plantae	Equisetopsida	Orchidaceae	Dendrobium discolor		SL		No	Yes	NTQ	Yes		2	1	2
14631	Plantae	Equisetopsida	Orchidaceae	Dendrobium speciosum		SL		No	Yes	NTQ	Yes		1	0	1
14606	Plantae	Equisetopsida	Orchidaceae	Dipodium punctatum		SL		No	Yes	NTQ	Yes		2	0	2
9275	Plantae	Equisetopsida	Orchidaceae	Dipodium variegatum		SL		No	Yes	NTQ	Yes		2	2	2
5768	Plantae	Equisetopsida	Orchidaceae	Dockrillia bowmanii	scrub pencil orchid	SL		No	Yes	NTQ	Yes		6	0	6
5798	Plantae	Equisetopsida	Orchidaceae	Dockrillia mortii		SL		No	Yes	NTQ	Yes		1	0	1
5803	Plantae	Equisetopsida	Orchidaceae	Dockrillia schoenina	pencil orchid	SL		No	Yes	NTQ	Yes		2	0	2
5671	Plantae	Equisetopsida	Orchidaceae	Dockrillia teretifolia	rat's tail orchid	SL		No	Yes	NTQ	Yes		1	0	1
8197	Plantae	Equisetopsida	Orchidaceae	Geodorum densiflorum	pink nodding orchid	SL		No	Yes	NTQ	Yes		11	2	11
16345	Plantae	Equisetopsida	Orchidaceae	Pterostylis baptistii	king greenhood	SL		No	Yes	NTQ	Yes		1	1	1
9321	Plantae	Equisetopsida	Orchidaceae	Pterostylis nutans		SL		No	Yes	NTQ	Yes		1	1	1
12659	Plantae	Equisetopsida	Orchidaceae	Sarcochilus dilatatus	brown sarcochilus	SL		No	Yes	NTQ	Yes		3	1	3
12657	Plantae	Equisetopsida	Orchidaceae	Sarcochilus hillii		SL		No	Yes	NTQ	Yes		2	0	2
17354	Plantae	Equisetopsida	Polypodiaceae	Drynaria rigidula		SL		No	Yes	NTQ	No		9	1	9

WN Taxon ID	Kingdom	Class	Family	Scientific name	Common name	NCA status	EPBC status	Superseded	Conservation significant	Establishment	Sensitive species	Area survey lists	Sighting records	Specimen records	Sighting summary
17355	Plantae	Equisetopsida	Polypodiaceae	Drynaria sparsisora		SL		No	Yes	NTQ	No		9	2	9
16626	Plantae	Equisetopsida	Polypodiaceae	Microsorum punctatum		SL		No	Yes	NTQ	No		18	1	18
11696	Plantae	Equisetopsida	Polypodiaceae	Platycerium bifurcatum		SL		No	Yes	NTQ	No		1	0	1
6668	Plantae	Equisetopsida	Polypodiaceae	Pyrrosia confluens		SL		No	Yes	NTQ	No		2	0	2
16314	Plantae	Equisetopsida	Polypodiaceae	Pyrrosia confluens var. confluens		SL		No	Yes	NTQ	No		2	2	2
16317	Plantae	Equisetopsida	Polypodiaceae	Pyrrosia rupestris	rock felt fern	SL		No	Yes	NTQ	No		4	0	4
13099	Plantae	Equisetopsida	Potamogetonaceae	Potamogeton crispus	curly pondweed	SL		No	Yes	NTQ	No		1	1	1
31010	Plantae	Equisetopsida	Potamogetonaceae	Potamogeton octandrus		SL		No	Yes	NTQ	No		1	1	1
34205	Plantae	Equisetopsida	Potamogetonaceae	Stuckenia pectinata		SL		No	Yes	NTQ	No		1	1	1
18110	Plantae	Equisetopsida	Pteridaceae	Acrostichum speciosum	mangrove fern	SL		No	Yes	NTQ	No		4	2	4
18116	Plantae	Equisetopsida	Pteridaceae	Adiantum aethiopicum		SL		No	Yes	NTQ	No		21	0	21
21888	Plantae	Equisetopsida	Pteridaceae	Adiantum atroviride		SL		No	Yes	NTQ	No		2	1	2
18031	Plantae	Equisetopsida	Pteridaceae	Adiantum hispidulum		SL		No	Yes	NTQ	No		34	0	34
9284	Plantae	Equisetopsida	Pteridaceae	Adiantum hispidulum var. hispidulum		SL		No	Yes	NTQ	No		5	2	5
9285	Plantae	Equisetopsida	Pteridaceae	Adiantum hispidulum var. hypoglaucum		SL		No	Yes	NTQ	No		1	1	1
3255	Plantae	Equisetopsida	Pteridaceae	Adiantum hispidulum var. minus		SL		No	Yes	NTQ	No		1	0	1
17396	Plantae	Equisetopsida	Pteridaceae	Doryopteris concolor		SL		No	Yes	NTQ	No		15	0	15
9723	Plantae	Equisetopsida	Pteridaceae	Pellaea falcata		SL		No	Yes	NTQ	No		5	0	5
21889	Plantae	Equisetopsida	Pteridaceae	Pellaea nana		SL		No	Yes	NTQ	No		5	1	5
13800	Plantae	Equisetopsida	Pteridaceae	Pellaea paradoxa	heart fern	SL		No	Yes	NTQ	No		5	1	5
16344	Plantae	Equisetopsida	Pteridaceae	Pteris vittata	Chinese bracken	SL		No	Yes	NTQ	No		1	1	1
11988	Plantae	Equisetopsida	Rutaceae	Bosistoa transversa	three-leaved bosistoa	C	V	No	Yes	NTQ	No		14	11	14
28656	Plantae	Equisetopsida	Rutaceae	Zieria actites	Mt Larcom stink bush	V		No	Yes	NTQ	No		6	6	6
9091	Plantae	Equisetopsida	Sapindaceae	Atalaya collina		E	E	No	Yes	NTQ	No		12	11	12
14648	Plantae	Equisetopsida	Sapindaceae	Cupaniopsis shirleyana	wedge-leaf tuckeroo	V	V	No	Yes	NTQ	No		3	1	3
16205	Plantae	Equisetopsida	Schizaeaceae	Schizaea bifida	forked comb fern	SL		No	Yes	NTQ	No		3	2	3
33391	Plantae	Equisetopsida	Simaroubaceae	Samadera bidwillii		V	V	No	Yes	NTQ	No		4	4	4
17796	Plantae	Equisetopsida	Sterculiaceae	Brachychiton australis	broad-leaved bottle tree	SL		No	Yes	NTQ	No		19	1	19
17797	Plantae	Equisetopsida	Sterculiaceae	Brachychiton bidwillii	little kurrajong	SL		No	Yes	NTQ	No		2	0	2
17803	Plantae	Equisetopsida	Sterculiaceae	Brachychiton rupestris		SL		No	Yes	NTQ	No		3	0	3
14178	Plantae	Equisetopsida	Stylidiaceae	Stylidium eglandulosum		SL		No	Yes	NTQ	No		1	0	1
12561	Plantae	Equisetopsida	Stylidiaceae	Stylidium rotundifolium		SL		No	Yes	NTQ	No		1	1	1
17504	Plantae	Equisetopsida	Thelypteridaceae	Cyclosorus interruptus		SL		No	Yes	NTQ	No		5	0	5
12303	Plantae	Equisetopsida	Xanthorrhoeaceae	Xanthorrhoea fulva	swamp grasstree	SL		No	Yes	NTQ	No		3	2	3
15934	Plantae	Equisetopsida	Xanthorrhoeaceae	Xanthorrhoea johnsonii		SL		No	Yes	NTQ	No		6	0	6
9156	Plantae	Equisetopsida	Xanthorrhoeaceae	Xanthorrhoea latifolia subsp. latifolia		SL		No	Yes	NTQ	No		72	5	72
12306	Plantae	Equisetopsida	Xanthorrhoeaceae	Xanthorrhoea pumilio		SL		No	Yes	NTQ	No		9	4	9
16707	Plantae	Equisetopsida	Zamiaceae	Macrozamia miquelii		SL		No	Yes	NTQ	Yes		27	9	27
14130	Plantae	Equisetopsida	Zosteraceae	Zostera capricorni	eelgrass	SL		No	Yes	NTQ	No		1	0	1

WildNet Species List

Species: All
Sensitive species: All
Conservation significant: All
Vetting stage: All
Latitude: -23.8142
Longitude: 151.1526
Distance: 15
Kingdom: All
Phylum: All
Class: All
Order: All
Family: All
Genus: All
Status jurisdiction: All
Status code: All
Establishment: All
Pest status: All
Conservation plan: All
Species profile: All
Protected area: All
Conservation area: All
Recovery plan: All

WN Taxon ID	Kingdom	Class	Family	Scientific name	Common name	NCA status	EPBC status	Superseded	Conservation significant	Establishment	Sensitive species	Area survey lists	Sighting records	Specimen records	Sighting summary
34861	Animalia	Malacostraca	Palaemonidae	Macrobrachium sp.				No	No	QAI	No		1	0	1
26896	Animalia	Actinopterygii	Ambassidae	Ambassis agassizii	Agassiz's glassfish			No	No	QA	No		30	0	30
26910	Animalia	Actinopterygii	Anguillidae	Anguilla reinhardtii	longfin eel			No	No	QAI	No		6	0	6
26912	Animalia	Actinopterygii	Apogonidae	Glossamia aprion	mouth almighty			No	No	QAI	No		9	0	9
26920	Animalia	Actinopterygii	Atherinidae	Craterocephalus stercusmuscarum	flyspecked hardyhead			No	No	QA	No		15	0	15
26925	Animalia	Actinopterygii	Centropomidae	Lates calcarifer	barramundi			No	No	QAI	No		4	0	4
26941	Animalia	Actinopterygii	Clupeidae	Nematalosa erebi	bony bream			No	No	QA	No		7	0	7
26952	Animalia	Actinopterygii	Eleotridae	Gobiomorphus australis	striped gudgeon			No	No	QA	No		2	0	2
26954	Animalia	Actinopterygii	Eleotridae	Hypseleotris compressa	empire gudgeon			No	No	QAI	No		18	0	18
26955	Animalia	Actinopterygii	Eleotridae	Hypseleotris galii	firetail gudgeon			No	No	QA	No		5	0	5
26957	Animalia	Actinopterygii	Eleotridae	Hypseleotris species 1	Midgley's carp gudgeon			No	No	QA	No		4	0	4
18168	Animalia	Actinopterygii	Eleotridae	Mogurnda adspersa	southern purplespotted gudgeon		E	No	Yes	QA	No		5	0	5
27011	Animalia	Actinopterygii	Hemiramphidae	Arrhamphus sclerolepis	snubnose garfish			No	No	QAI	No		3	0	3
27017	Animalia	Actinopterygii	Kuhliidae	Kuhlia rupestris	jungle perch			No	No	QI	No		3	0	3
27020	Animalia	Actinopterygii	Lutjanidae	Lutjanus argentimaculatus	mangrove jack			No	No	QAI	No		1	0	1
27021	Animalia	Actinopterygii	Megalopidae	Megalops cyprinoides	oxeye herring			No	No	QAI	No		1	0	1
19495	Animalia	Actinopterygii	Melanotaeniidae	Melanotaenia sp.				No	No	QAI	No		1	0	1
27029	Animalia	Actinopterygii	Melanotaeniidae	Melanotaenia splendida splendida	eastern rainbowfish			No	No	Q	No		29	0	29
19524	Animalia	Actinopterygii	Monodactylidae	Monodactylus argenteus	diamondfish			No	No	QAI	No		1	0	1
27035	Animalia	Actinopterygii	Mugilidae	Mugil cephalus	sea mullet			No	No	QAI	No		12	0	12
27055	Animalia	Actinopterygii	Poeciliidae	Gambusia holbrooki	mosquitofish			No	No	II	No		15	0	15
19548	Animalia	Actinopterygii	Poeciliidae	Poecilia reticulata	guppy			No	No	II	No		4	0	4
27059	Animalia	Actinopterygii	Pseudomugilidae	Pseudomugil signifer	Pacific blue eye			No	No	QA	No		3	0	3
27064	Animalia	Actinopterygii	Scatophagidae	Scatophagus argus	spotted scat			No	No	QAI	No		1	0	1

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27065	Animalia	Actinopterygii	Scatophagidae	Selenotoca multifasciata	striped scat			No	No	QAI	No		3	0	3
27083	Animalia	Actinopterygii	Terapontidae	Amniataba percoides	barred grunter			No	No	QA	No		1	0	1
27089	Animalia	Actinopterygii	Terapontidae	Leiopotherapon unicolor	spangled perch			No	No	QA	No		14	0	14
27097	Animalia	Actinopterygii	Terapontidae	Terapon jarbua	crescent grunter			No	No	QAI	No		2	0	2
716	Animalia	Amphibia	Bufonidae	Rhinella marina	cane toad			No	No	II	No		147	26	147
624	Animalia	Amphibia	Hylidae	Cyclorana alboguttata	greenstripe frog	C		No	No	QA	No		7	1	7
617	Animalia	Amphibia	Hylidae	Litoria balatus	slender bleating treefrog	C		No	No	QA	No		5	0	5
627	Animalia	Amphibia	Hylidae	Litoria caerulea	common green treefrog	C		No	No	QAI	No		118	77	118
628	Animalia	Amphibia	Hylidae	Litoria chloris	orange eyed treefrog	C		No	No	QA	No		3	0	3
608	Animalia	Amphibia	Hylidae	Litoria fallax	eastern sedgefrog	C		No	No	QA	No		84	59	84
611	Animalia	Amphibia	Hylidae	Litoria gracilenta	graceful treefrog	C		No	No	QA	No		23	10	23
612	Animalia	Amphibia	Hylidae	Litoria inermis	bumpy rocketfrog	C		No	No	QA	No		9	1	9
614	Animalia	Amphibia	Hylidae	Litoria latopalmata	broad palmed rocketfrog	C		No	No	QA	No		32	15	32
604	Animalia	Amphibia	Hylidae	Litoria nasuta	striped rocketfrog	C		No	No	QAI	No		13	0	13
596	Animalia	Amphibia	Hylidae	Litoria peronii	emerald spotted treefrog	C		No	No	QA	No		1	0	1
42565	Animalia	Amphibia	Hylidae	Litoria pyrina				No	No		No		69	69	69
599	Animalia	Amphibia	Hylidae	Litoria rothii	eastern laughing treefrog	C		No	No	QI	No		31	22	31
600	Animalia	Amphibia	Hylidae	Litoria rubella	ruddy treefrog	C		No	No	QAI	No		23	3	23
29174	Animalia	Amphibia	Hylidae	Litoria wilcoxii	eastern stony creek frog	C		No	No	QA	No		6	0	6
679	Animalia	Amphibia	Limnodynastidae	Limnodynastes fletcheri	barking frog	C		No	No	QA	No		1	0	1
42568	Animalia	Amphibia	Limnodynastidae	Limnodynastes grayi				No	No		No		40	40	40
681	Animalia	Amphibia	Limnodynastidae	Limnodynastes peronii	striped marshfrog	C		No	No	QA	No		86	70	86
682	Animalia	Amphibia	Limnodynastidae	Limnodynastes salmini	salmon striped frog	C		No	No	QA	No		12	9	12
684	Animalia	Amphibia	Limnodynastidae	Limnodynastes tasmaniensis	spotted grassfrog	C		No	No	QA	No		59	42	59
673	Animalia	Amphibia	Limnodynastidae	Limnodynastes terraereginae	scarlet sided pobblebonk	C		No	No	QA	No		21	0	21
680	Animalia	Amphibia	Limnodynastidae	Platyplectrum ornatum	ornate burrowing frog	C		No	No	QA	No		39	15	39
695	Animalia	Amphibia	Myobatrachidae	Crinia deserticola	chirping froglet	C		No	No	QA	No		11	9	11
659	Animalia	Amphibia	Myobatrachidae	Pseudophryne major	great brown broodfrog	C		No	No	QA	No		77	67	77
661	Animalia	Amphibia	Myobatrachidae	Pseudophryne raveni	copper backed broodfrog	C		No	No	Q	No		7	3	7
639	Animalia	Amphibia	Myobatrachidae	Uperoleia rugosa	chubby gungan	C		No	No	QA	No		11	4	11
640	Animalia	Amphibia	Myobatrachidae	Uperoleia sp.		C		No	No	QAI	No		1	0	1
1422	Animalia	Aves	Acanthizidae	Acanthiza nana	yellow thornbill	C		No	No	QA	No		3	0	3
1423	Animalia	Aves	Acanthizidae	Acanthiza pusilla	brown thornbill	C		No	No	QA	No		8	0	8
1408	Animalia	Aves	Acanthizidae	Gerygone levigaster	mangrove gerygone	C		No	No	QAI	No		14	0	14
1396	Animalia	Aves	Acanthizidae	Gerygone olivacea	white-throated gerygone	C		No	No	QAI	No		17	0	17
1397	Animalia	Aves	Acanthizidae	Gerygone palpebrosa	fairy gerygone	C		No	No	QAI	No		13	0	13
1382	Animalia	Aves	Acanthizidae	Sericornis frontalis	white-browed scrubwren	C		No	No	QA	No		9	0	9
1371	Animalia	Aves	Acanthizidae	Smicrornis brevirostris	weebill	C		No	No	QA	No		14	0	14
1742	Animalia	Aves	Accipitridae	Accipiter cirrocephalus	collared sparrowhawk	C		No	No	QAI	No		11	0	11
1729	Animalia	Aves	Accipitridae	Accipiter fasciatus	brown goshawk	C		No	No	QAI	No		16	0	16
1730	Animalia	Aves	Accipitridae	Accipiter novaehollandiae	grey goshawk	C		No	No	QAI	No		7	0	7
1732	Animalia	Aves	Accipitridae	Aquila audax	wedge-tailed eagle	C		No	No	QAI	No		24	0	24
1721	Animalia	Aves	Accipitridae	Aviceda subcristata	Pacific baza	C		No	No	QAI	No		19	0	19
1722	Animalia	Aves	Accipitridae	Circus approximans	swamp harrier	C		No	No	QAI	No		1	0	1

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1725	Animalia	Aves	Accipitridae	Elanus axillaris	black-shouldered kite	C		No	No	QAI	No		16	0	16
1718	Animalia	Aves	Accipitridae	Haliaeetus leucogaster	white-bellied sea-eagle	C		No	No	QAI	No		67	2	67
1720	Animalia	Aves	Accipitridae	Haliastur indus	brahminy kite	C		No	No	QAI	No		114	2	114
1707	Animalia	Aves	Accipitridae	Haliastur sphenurus	whistling kite	C		No	No	QAI	No		160	0	160
1710	Animalia	Aves	Accipitridae	Hieraaetus morphnoides	little eagle	C		No	No	QAI	No		5	0	5
1712	Animalia	Aves	Accipitridae	Lophoictinia isura	square-tailed kite	C		No	No	QA	No		11	0	11
1714	Animalia	Aves	Accipitridae	Milvus migrans	black kite	C		No	No	QAI	No		29	0	29
1305	Animalia	Aves	Acrocephalidae	Acrocephalus australis	Australian reed-warbler	C		No	No	QAI	No		7	0	7
1973	Animalia	Aves	Aegothelidae	Aegotheles cristatus	Australian owlet-nightjar	C		No	No	QAI	No		38	0	38
1652	Animalia	Aves	Alaudidae	Mirafra javanica	Horsfield's bushlark	C		No	No	QAI	No		2	0	2
1776	Animalia	Aves	Alcedinidae	Ceyx azureus	azure kingfisher	C		No	No	QAI	No		3	0	3
1766	Animalia	Aves	Alcedinidae	Dacelo leachii	blue-winged kookaburra	C		No	No	QAI	No		33	0	33
1767	Animalia	Aves	Alcedinidae	Dacelo novaeguineae	laughing kookaburra	C		No	No	QA	No		122	0	122
1760	Animalia	Aves	Alcedinidae	Todiramphus macleayii	forest kingfisher	C		No	No	QAI	No		64	0	64
1762	Animalia	Aves	Alcedinidae	Todiramphus sanctus	sacred kingfisher	C		No	No	QAI	No		30	0	30
1759	Animalia	Aves	Alcedinidae	Todiramphus sordidus	Torresian kingfisher	C		No	No	QAI	No		22	0	22
1992	Animalia	Aves	Anatidae	Anas castanea	chestnut teal	C		No	No	QA	No		145	0	145
1993	Animalia	Aves	Anatidae	Anas gracilis	grey teal	C		No	No	QAI	No		139	0	139
1998	Animalia	Aves	Anatidae	Anas superciliosa	Pacific black duck	C		No	No	QAI	No		235	0	235
1999	Animalia	Aves	Anatidae	Aythya australis	hardhead	C		No	No	QAI	No		61	0	61
2003	Animalia	Aves	Anatidae	Chenonetta jubata	Australian wood duck	C		No	No	QA	No		53	0	53
2005	Animalia	Aves	Anatidae	Cygnus atratus	black swan	C		No	No	QA	No		58	0	58
1977	Animalia	Aves	Anatidae	Dendrocygna arcuata	wandering whistling-duck	C		No	No	QAI	No		17	0	17
1978	Animalia	Aves	Anatidae	Dendrocygna eytoni	plumed whistling-duck	C		No	No	QA	No		9	0	9
1980	Animalia	Aves	Anatidae	Malacorhynchus membranaceus	pink-eared duck	C		No	No	QA	No		1	0	1
1982	Animalia	Aves	Anatidae	Nettapus coromandelianus	cotton pygmy-goose	C		No	No	QAI	No		7	0	7
1983	Animalia	Aves	Anatidae	Nettapus pulchellus	green pygmy-goose	C		No	No	QAI	No		1	0	1
1989	Animalia	Aves	Anatidae	Radjah radjah	radjah shelduck	C		No	No	QAI	No		9	0	9
1996	Animalia	Aves	Anatidae	Spatula rhynchotis	Australasian shoveler	C		No	No	QAI	No		3	0	3
1279	Animalia	Aves	Anhingidae	Anhinga novaehollandiae	Australasian darter	C		No	No	QAI	No		69	0	69
1963	Animalia	Aves	Anseranatidae	Anseranas semipalmata	magpie goose	C		No	No	QAI	No		19	0	19
1969	Animalia	Aves	Apodidae	Aerodramus terraereginae	Australian swiftlet	C		No	No	QA	No		1	0	1
1965	Animalia	Aves	Apodidae	Apus pacificus	fork-tailed swift	SL		No	Yes	QAI	No		1	0	1
1971	Animalia	Aves	Apodidae	Hirundapus caudacutus	white-throated needletail	V	V	No	Yes	QAI	No		6	0	6
1829	Animalia	Aves	Ardeidae	Ardea alba modesta	eastern great egret	C		No	No	QAI	No		139	0	139
1831	Animalia	Aves	Ardeidae	Ardea intermedia	intermediate egret	C		No	No	QAI	No		72	0	72
1832	Animalia	Aves	Ardeidae	Ardea pacifica	white-necked heron	C		No	No	QA	No		17	0	17
1835	Animalia	Aves	Ardeidae	Ardea sumatrana	great-billed heron	C		No	No	QAI	No		1	0	1
1830	Animalia	Aves	Ardeidae	Bubulcus ibis	cattle egret	C		No	No	QAI	No		5	0	5
1839	Animalia	Aves	Ardeidae	Butorides striata	striated heron	C		No	No	QAI	No		115	0	115
1840	Animalia	Aves	Ardeidae	Egretta garzetta	little egret	C		No	No	QAI	No		225	1	225
1826	Animalia	Aves	Ardeidae	Egretta novaehollandiae	white-faced heron	C		No	No	QAI	No		218	0	218
1813	Animalia	Aves	Ardeidae	Egretta sacra	eastern reef egret	C		No	No	QAI	No		26	4	26
1816	Animalia	Aves	Ardeidae	Ixobrychus dubius	Australian little bittern	C		No	No	QAI	No		2	0	2

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1815	Animalia	Aves	Ardeidae	Ixobrychus flavicollis	black bittern	C		No	No	QAI	No		8	0	8
1818	Animalia	Aves	Ardeidae	Nycticorax caledonicus	nankeen night-heron	C		No	No	QAI	No		11	0	11
1658	Animalia	Aves	Artamidae	Artamus cinereus	black-faced woodswallow	C		No	No	QA	No		4	0	4
1659	Animalia	Aves	Artamidae	Artamus cyanopterus	dusky woodswallow	C		No	No	QA	No		2	0	2
1660	Animalia	Aves	Artamidae	Artamus leucorynchus	white-breasted woodswallow	C		No	No	QA	No		28	0	28
1646	Animalia	Aves	Artamidae	Artamus minor	little woodswallow	C		No	No	QA	No		1	0	1
1649	Animalia	Aves	Artamidae	Artamus superciliosus	white-browed woodswallow	C		No	No	QA	No		1	0	1
1654	Animalia	Aves	Artamidae	Cracticus nigrogularis	pied butcherbird	C		No	No	QA	No		52	0	52
1656	Animalia	Aves	Artamidae	Cracticus torquatus	grey butcherbird	C		No	No	QA	No		25	0	25
1644	Animalia	Aves	Artamidae	Gymnorhina tibicen	Australian magpie	C		No	No	QAI	No		124	0	124
1645	Animalia	Aves	Artamidae	Strepera graculina	pied currawong	C		No	No	QA	No		28	0	28
22479	Animalia	Aves	Artamidae	Strepera graculina graculina	pied currawong (eastern Australia)	C		No	No	QA	No		1	0	1
1956	Animalia	Aves	Burhinidae	Burhinus grallarius	bush stone-curlew	C		No	No	QAI	No		25	0	25
1958	Animalia	Aves	Burhinidae	Esacus magnirostris	beach stone-curlew	V		No	Yes	QAI	No		48	1	48
1191	Animalia	Aves	Cacatuidae	Cacatua galerita	sulphur-crested cockatoo	C		No	No	QAI	No		26	0	26
1196	Animalia	Aves	Cacatuidae	Calyptorhynchus banksii	red-tailed black-cockatoo	C		No	No	QA	No		36	0	36
1193	Animalia	Aves	Cacatuidae	Eolophus roseicapilla	galah	C		No	No	QA	No		31	0	31
1173	Animalia	Aves	Cacatuidae	Nymphicus hollandicus	cockatiel	C		No	No	QA	No		2	0	2
1185	Animalia	Aves	Cacatuidae	Zanda funerea	yellow-tailed black-cockatoo	C		No	No	QA	No		1	0	1
1636	Animalia	Aves	Campephagidae	Coracina novaehollandiae	black-faced cuckoo-shrike	C		No	No	QAI	No		74	0	74
1637	Animalia	Aves	Campephagidae	Coracina papuensis	white-bellied cuckoo-shrike	C		No	No	QAI	No		23	0	23
1639	Animalia	Aves	Campephagidae	Edolisoma tenuirostre	common cicadabird	C		No	No	QAI	No		32	0	32
1640	Animalia	Aves	Campephagidae	Lalage leucomela	varied triller	C		No	No	QAI	No		26	0	26
1642	Animalia	Aves	Campephagidae	Lalage tricolor	white-winged triller	C		No	No	QAI	No		1	0	1
1975	Animalia	Aves	Caprimulgidae	Caprimulgus macrurus	large-tailed nightjar	C		No	No	QAI	No		12	0	12
1089	Animalia	Aves	Casuariidae	Dromaius novaehollandiae	emu	C		No	No	QA	No		6	0	6
1946	Animalia	Aves	Charadriidae	Charadrius bicinctus	double-banded plover	SL		No	Yes	QAI	No		1	0	1
1948	Animalia	Aves	Charadriidae	Charadrius leschenaultii	greater sand plover	V	V	No	Yes	QAI	No		5	0	5
1936	Animalia	Aves	Charadriidae	Charadrius mongolus	lesser sand plover	E	E	No	Yes	QAI	No		47	0	47
1937	Animalia	Aves	Charadriidae	Charadrius ruficapillus	red-capped plover	C		No	No	QAI	No		245	0	245
1938	Animalia	Aves	Charadriidae	Charadrius sp.		C		No	No	U	No		5	0	5
1940	Animalia	Aves	Charadriidae	Elseyornis melanops	black-fronted dotterel	C		No	No	QAI	No		130	0	130
1942	Animalia	Aves	Charadriidae	Erythrogonys cinctus	red-kneed dotterel	C		No	No	QA	No		20	0	20
1944	Animalia	Aves	Charadriidae	Pluvialis fulva	Pacific golden plover	SL		No	Yes	QAI	No		38	0	38
1931	Animalia	Aves	Charadriidae	Pluvialis squatarola	grey plover	V	V	No	Yes	QAI	No		11	0	11
19465	Animalia	Aves	Charadriidae	Thinornis cucullatus	hooded plover	C	V	No	Yes	VA	No		1	0	1
27774	Animalia	Aves	Charadriidae	Vanellus miles	masked lapwing	C		No	No	QAI	No		215	0	215
1933	Animalia	Aves	Charadriidae	Vanellus miles novaehollandiae	masked lapwing (southern subspecies)	C		No	No	QAI	No		39	0	39
1820	Animalia	Aves	Ciconiidae	Ephippiorhynchus asiaticus	black-necked stork	C		No	No	QAI	No		15	0	15
1294	Animalia	Aves	Cisticolidae	Cisticola exilis	golden-headed cisticola	C		No	No	QAI	No		22	0	22

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1295	Animalia	Aves	Cisticolidae	Cisticola juncidis laveryi	zitting cisticola	C		No	No	Q	No		1	0	1
1628	Animalia	Aves	Climacteridae	Climacteris picumnus	brown treecreeper	C		No	No	QA	No		4	0	4
18293	Animalia	Aves	Climacteridae	Cormobates leucophaea metastasis	white-throated treecreeper (southern)	C		No	No	QA	No		7	0	7
1801	Animalia	Aves	Columbidae	Chalcophaps longirostris	Pacific emerald dove	C		No	No	QA	No		5	0	5
1804	Animalia	Aves	Columbidae	Columba livia	rock dove			No	No	II	No		8	0	8
1809	Animalia	Aves	Columbidae	Geopelia cuneata	diamond dove	C		No	No	QA	No		1	0	1
1810	Animalia	Aves	Columbidae	Geopelia humeralis	bar-shouldered dove	C		No	No	QAI	No		74	0	74
18323	Animalia	Aves	Columbidae	Geopelia placida	peaceful dove	C		No	No	QAI	No		73	0	73
1785	Animalia	Aves	Columbidae	Geophaps scripta scripta	squatter pigeon (southern subspecies)	V	V	No	Yes	QA	No		49	0	49
1787	Animalia	Aves	Columbidae	Leucosarcia melanoleuca	wonga pigeon	C		No	No	QA	No		4	0	4
1789	Animalia	Aves	Columbidae	Lopholaimus antarcticus	topknot pigeon	C		No	No	QA	No		2	0	2
1791	Animalia	Aves	Columbidae	Macropygia phasianella	brown cuckoo-dove	C		No	No	QAI	No		6	0	6
1793	Animalia	Aves	Columbidae	Ocyphaps lophotes	crested pigeon	C		No	No	QA	No		37	0	37
1795	Animalia	Aves	Columbidae	Phaps chalcoptera	common bronzewing	C		No	No	QA	No		5	0	5
1771	Animalia	Aves	Columbidae	Ptilinopus regina	rose-crowned fruit-dove	C		No	No	QAI	No		9	0	9
1773	Animalia	Aves	Columbidae	Ptilinopus superbus	superb fruit-dove	C		No	No	QAI	No		1	0	1
1774	Animalia	Aves	Columbidae	Spilopelia chinensis	spotted dove			No	No	II	No		4	0	4
1779	Animalia	Aves	Coraciidae	Eurystomus orientalis	dollarbird	C		No	No	QAI	No		31	0	31
1603	Animalia	Aves	Corcoracidae	Corcorax melanorhamphos	white-winged chough	C		No	No	QA	No		27	0	27
1608	Animalia	Aves	Corvidae	Corvus coronoides	Australian raven	C		No	No	QA	No		4	0	4
1609	Animalia	Aves	Corvidae	Corvus orru	Torresian crow	C		No	No	QAI	No		128	0	128
1754	Animalia	Aves	Cuculidae	Cacomantis flabelliformis	fan-tailed cuckoo	C		No	No	QAI	No		21	2	21
1750	Animalia	Aves	Cuculidae	Cacomantis pallidus	pallid cuckoo	C		No	No	QAI	No		4	1	4
1743	Animalia	Aves	Cuculidae	Cacomantis variolosus	brush cuckoo	C		No	No	QAI	No		9	0	9
1751	Animalia	Aves	Cuculidae	Centropus phasianinus	pheasant coucal	C		No	No	QA	No		55	0	55
1744	Animalia	Aves	Cuculidae	Chalcites basalis	Horsfield's bronze-cuckoo	C		No	No	QAI	No		6	0	6
1745	Animalia	Aves	Cuculidae	Chalcites lucidus	shining bronze-cuckoo	C		No	No	QAI	No		6	0	6
1756	Animalia	Aves	Cuculidae	Chalcites minutillus barnardi	Eastern little bronze-cuckoo	C		No	No	QAI	No		4	0	4
1736	Animalia	Aves	Cuculidae	Cuculus optatus	oriental cuckoo	SL		No	Yes	QAI	No		1	0	1
1738	Animalia	Aves	Cuculidae	Eudynamys orientalis	eastern koel	C		No	No	QAI	No		42	0	42
1740	Animalia	Aves	Cuculidae	Scythrops novaehollandiae	channel-billed cuckoo	C		No	No	QAI	No		48	0	48
1611	Animalia	Aves	Dicaeidae	Dicaeum hirundinaceum	mistletoebird	C		No	No	QAI	No		41	0	41
1601	Animalia	Aves	Dicruridae	Dicrurus bracteatus	spangled drongo	C		No	No	QAI	No		70	0	70
1366	Animalia	Aves	Estrildidae	Lonchura castaneothorax	chestnut-breasted mannikin	C		No	No	QAI	No		8	0	8
1367	Animalia	Aves	Estrildidae	Lonchura punctulata	nutmeg mannikin			No	No	II	No		2	0	2
1359	Animalia	Aves	Estrildidae	Neochmia temporalis	red-browed finch	C		No	No	QA	No		1	0	1
1342	Animalia	Aves	Estrildidae	Taeniopygia bichenovii	double-barred finch	C		No	No	QA	No		43	0	43
1949	Animalia	Aves	Eurostopodidae	Eurostopodus mystacalis	white-throated nightjar	C		No	No	QAI	No		13	0	13
1716	Animalia	Aves	Falconidae	Falco berigora	brown falcon	C		No	No	QAI	No		8	0	8

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1704	Animalia	Aves	Falconidae	Falco cenchroides	nankeen kestrel	C		No	No	QAI	No		39	0	39
1691	Animalia	Aves	Falconidae	Falco longipennis	Australian hobby	C		No	No	QAI	No		13	0	13
1692	Animalia	Aves	Falconidae	Falco peregrinus macropus	Australian peregrine falcon	C		No	No	QA	No		12	0	12
1678	Animalia	Aves	Gruidae	Antigone rubicunda	brolga	C		No	No	QAI	No		5	0	5
1925	Animalia	Aves	Haematopodidae	Haematopus fuliginosus	sooty oystercatcher	C		No	No	QA	No		11	1	11
1926	Animalia	Aves	Haematopodidae	Haematopus longirostris	Australian pied oystercatcher	C		No	No	QAI	No		164	1	164
1572	Animalia	Aves	Hirundinidae	Hirundo neoxena	welcome swallow	C		No	No	QAI	No		73	0	73
1585	Animalia	Aves	Hirundinidae	Petrochelidon ariel	fairy martin	C		No	No	QA	No		16	0	16
1573	Animalia	Aves	Hirundinidae	Petrochelidon nigricans	tree martin	C		No	No	QAI	No		16	0	16
1928	Animalia	Aves	Jacanidae	Irediparra gallinacea	comb-crested jacana	C		No	No	QAI	No		17	0	17
18153	Animalia	Aves	Laridae	Anous minutus	black noddy	C		No	No	QAI	No		3	0	3
1919	Animalia	Aves	Laridae	Chlidonias hybrida	whiskered tern	C		No	No	QAI	No		5	0	5
1920	Animalia	Aves	Laridae	Chlidonias leucopterus	white-winged black tern	SL		No	Yes	QAI	No		1	0	1
1912	Animalia	Aves	Laridae	Chroicocephalus novaehollandiae	silver gull	C		No	No	QAI	No		155	1	155
1886	Animalia	Aves	Laridae	Gelochelidon macrotarsa	Australian tern	C		No	No	QAI	No		159	0	159
1891	Animalia	Aves	Laridae	Gelochelidon nilotica	gull-billed tern	SL		No	Yes	VU	No		2	0	2
1908	Animalia	Aves	Laridae	Gygis alba	white tern	C		No	No	VU	No		2	0	2
1896	Animalia	Aves	Laridae	Hydroprogne caspia	Caspian tern	SL		No	Yes	QAI	No		213	0	213
1911	Animalia	Aves	Laridae	Larus dominicanus	kelp gull	C		No	No	VU	No		1	0	1
1898	Animalia	Aves	Laridae	Onychoprion fuscatus	sooty tern	C		No	No	QAI	No		6	0	6
1899	Animalia	Aves	Laridae	Sterna hirundo	common tern	SL		No	Yes	QAI	No		15	0	15
1905	Animalia	Aves	Laridae	Sternula albifrons	little tern	SL	V	No	Yes	QAI	No		5	0	5
1907	Animalia	Aves	Laridae	Thalasseus bengalensis	lesser crested tern	C		No	No	QAI	No		4	0	4
1895	Animalia	Aves	Laridae	Thalasseus bergii	crested tern	SL		No	Yes	QAI	No		61	0	61
1289	Animalia	Aves	Locustellidae	Cincloramphus timoriensis	tawny grassbird	C		No	No	QAI	No		11	0	11
18458	Animalia	Aves	Maluridae	Malurus lamberti	variegated fairy-wren	C		No	No	QA	No		3	0	3
1556	Animalia	Aves	Maluridae	Malurus lamberti sensu lato	variegated fairy-wren			Yes	No	QA	No		5	0	5
1558	Animalia	Aves	Maluridae	Malurus melanocephalus	red-backed fairy-wren	C		No	No	QA	No		58	2	58
1694	Animalia	Aves	Megapodiidae	Alectura lathami	Australian brush-turkey	C		No	No	QA	No		26	0	26
1696	Animalia	Aves	Megapodiidae	Megapodius reinwardt	orange-footed scrubfowl	C		No	No	QA	No		1	0	1
1552	Animalia	Aves	Meliphagidae	Acanthagenys rufogularis	spiny-cheeked honeyeater	C		No	No	QA	No		2	0	2
1523	Animalia	Aves	Meliphagidae	Caligavis chrysops	yellow-faced honeyeater	C		No	No	QA	No		15	0	15
1537	Animalia	Aves	Meliphagidae	Conopophila rufogularis	rufous-throated honeyeater	C		No	No	QA	No		1	0	1
1539	Animalia	Aves	Meliphagidae	Entomyzon cyanotis	blue-faced honeyeater	C		No	No	QAI	No		69	0	69
1524	Animalia	Aves	Meliphagidae	Gavicalis fasciogularis	mangrove honeyeater	C		No	No	QA	No		36	0	36
1496	Animalia	Aves	Meliphagidae	Gavicalis virescens	singing honeyeater	C		No	No	QA	No		1	0	1
1517	Animalia	Aves	Meliphagidae	Lichenostomus melanops	yellow-tufted honeyeater	C		No	No	QA	No		3	0	3
1497	Animalia	Aves	Meliphagidae	Lichmera indistincta	brown honeyeater	C		No	No	QA	No		100	0	100
1500	Animalia	Aves	Meliphagidae	Manorina melanocephala	noisy miner	C		No	No	QA	No		56	0	56
1504	Animalia	Aves	Meliphagidae	Meliphaga lewinii	Lewin's honeyeater	C		No	No	QA	No		38	0	38

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1505	Animalia	Aves	Meliphagidae	Meliphaga notata	yellow-spotted honeyeater	C		No	No	Q	No		1	0	1
1507	Animalia	Aves	Meliphagidae	Melithreptus albogularis	white-throated honeyeater	C		No	No	QAI	No		87	0	87
1483	Animalia	Aves	Meliphagidae	Melithreptus gularis	black-chinned honeyeater	C		No	No	QA	No		6	0	6
1485	Animalia	Aves	Meliphagidae	Melithreptus lunatus	white-naped honeyeater	C		No	No	QA	No		7	0	7
1488	Animalia	Aves	Meliphagidae	Myzomela obscura	dusky honeyeater	C		No	No	QAI	No		15	0	15
1489	Animalia	Aves	Meliphagidae	Myzomela sanguinolenta	scarlet honeyeater	C		No	No	QA	No		27	0	27
1516	Animalia	Aves	Meliphagidae	Nesoptilotis leucotis	white-eared honeyeater	C		No	No	QA	No		2	0	2
1493	Animalia	Aves	Meliphagidae	Philemon citreogularis	little friarbird	C		No	No	QAI	No		40	0	40
1494	Animalia	Aves	Meliphagidae	Philemon corniculatus	noisy friarbird	C		No	No	QAI	No		93	0	93
1482	Animalia	Aves	Meliphagidae	Phylidonyris niger	white-cheeked honeyeater	C		No	No	QA	No		1	0	1
1471	Animalia	Aves	Meliphagidae	Plectorhyncha lanceolata	striped honeyeater	C		No	No	QA	No		2	0	2
1513	Animalia	Aves	Meliphagidae	Ptilotula fusca	fuscous honeyeater	C		No	No	QA	No		1	0	1
1764	Animalia	Aves	Meropidae	Merops ornatus	rainbow bee-eater	C		No	No	QAI	No		72	0	72
1594	Animalia	Aves	Monarchidae	Carterornis leucotis	white-eared monarch	C		No	No	QA	No		4	0	4
1589	Animalia	Aves	Monarchidae	Grallina cyanoleuca	magpie-lark	C		No	No	QAI	No		63	0	63
1595	Animalia	Aves	Monarchidae	Monarcha melanopsis	black-faced monarch	C		No	No	QAI	No		7	0	7
1598	Animalia	Aves	Monarchidae	Myiagra alecto	shining flycatcher	C		No	No	QAI	No		7	0	7
1599	Animalia	Aves	Monarchidae	Myiagra cyanoleuca	satin flycatcher	C		No	No	QAI	No		13	0	13
1600	Animalia	Aves	Monarchidae	Myiagra inquieta	restless flycatcher	C		No	No	QA	No		7	0	7
1586	Animalia	Aves	Monarchidae	Myiagra rubecula	leaden flycatcher	C		No	No	QAI	No		59	0	59
1597	Animalia	Aves	Monarchidae	Symposiachrus trivirgatus	spectacled monarch	C		No	No	QAI	No		13	0	13
1455	Animalia	Aves	Motacillidae	Anthus novaeseelandiae	Australasian pipit	C		No	No	QAI	No		21	0	21
1451	Animalia	Aves	Nectariniidae	Cinnyris jugularis	olive-backed sunbird	C		No	No	QAI	No		3	0	3
1453	Animalia	Aves	Neosittidae	Daphoenositta chrysoptera	varied sittella	C		No	No	QAI	No		9	1	9
1442	Animalia	Aves	Oriolidae	Oriolus sagittatus	olive-backed oriole	C		No	No	QAI	No		23	0	23
1444	Animalia	Aves	Oriolidae	Sphecotheres vieilloti	Australasian figbird	C		No	No	QAI	No		61	0	61
1680	Animalia	Aves	Otididae	Ardeotis australis	Australian bustard	C		No	No	QAI	No		6	0	6
1449	Animalia	Aves	Pachycephalidae	Colluricincla harmonica	grey shrike-thrush	C		No	No	QAI	No		38	0	38
1450	Animalia	Aves	Pachycephalidae	Colluricincla megarhyncha	little shrike-thrush	C		No	No	QAI	No		24	0	24
1436	Animalia	Aves	Pachycephalidae	Pachycephala pectoralis	golden whistler	C		No	No	QAI	No		8	0	8
1437	Animalia	Aves	Pachycephalidae	Pachycephala rufiventris	rufous whistler	C		No	No	QAI	No		50	0	50
1702	Animalia	Aves	Pandionidae	Pandion haliaetus cristatus	eastern osprey	SL		No	Yes	QAI	No		69	1	69
1415	Animalia	Aves	Paradisaeidae	Ptiloris paradiseus	paradise riflebird	C		No	No	QA	No		2	0	2
1389	Animalia	Aves	Pardalotidae	Pardalotus punctatus	spotted pardalote	C		No	No	QA	No		10	0	10
1392	Animalia	Aves	Pardalotidae	Pardalotus striatus	striated pardalote	C		No	No	QA	No		73	0	73
1360	Animalia	Aves	Passeridae	Passer domesticus	house sparrow			No	No	II	No		16	0	16
1284	Animalia	Aves	Pelecanidae	Pelecanus conspicillatus	Australian pelican	C		No	No	QAI	No		198	0	198
1347	Animalia	Aves	Petroicidae	Eopsaltria australis	eastern yellow robin	C		No	No	QA	No		6	0	6

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1339	Animalia	Aves	Petroicidae	Microeca fascinans	jacky winter	C		No	No	QAI	No		1	0	1
1332	Animalia	Aves	Petroicidae	Petroica rosea	rose robin	C		No	No	QA	No		1	0	1
1261	Animalia	Aves	Phalacrocoracidae	Microcarbo melanoleucos	little pied cormorant	C		No	No	QAI	No		165	0	165
1275	Animalia	Aves	Phalacrocoracidae	Phalacrocorax carbo	great cormorant	C		No	No	QAI	No		6	0	6
1263	Animalia	Aves	Phalacrocoracidae	Phalacrocorax sulcirostris	little black cormorant	C		No	No	QA	No		108	0	108
1264	Animalia	Aves	Phalacrocoracidae	Phalacrocorax varius	pied cormorant	C		No	No	QAI	No		92	0	92
1699	Animalia	Aves	Phasianidae	Coturnix pectoralis	stubble quail	C		No	No	QA	No		1	0	1
1690	Animalia	Aves	Phasianidae	Pavo cristatus	Indian peafowl			No	No	II	No		1	0	1
1698	Animalia	Aves	Phasianidae	Synoicus chinensis	king quail	C		No	No	QAI	No		1	0	1
1687	Animalia	Aves	Phasianidae	Synoicus ypsilophorus	brown quail	C		No	No	QAI	No		14	0	14
1326	Animalia	Aves	Pittidae	Pitta versicolor	noisy pitta	C		No	No	QAI	No		2	0	2
1955	Animalia	Aves	Podargidae	Podargus strigoides	tawny frogmouth	C		No	No	QA	No		61	0	61
1271	Animalia	Aves	Podicipedidae	Podiceps cristatus	great crested grebe	C		No	No	QAI	No		1	0	1
1260	Animalia	Aves	Podicipedidae	Poliocephalus poliocephalus	hoary-headed grebe	C		No	No	QA	No		4	0	4
1249	Animalia	Aves	Podicipedidae	Tachybaptus novaehollandiae	Australasian grebe	C		No	No	QAI	No		76	0	76
1318	Animalia	Aves	Pomatostomidae	Pomatostomus temporalis	grey-crowned babbler	C		No	No	QAI	No		24	0	24
22463	Animalia	Aves	Pomatostomidae	Pomatostomus temporalis temporalis	grey-crowned babbler (eastern)	C		No	No	QAI	No		1	0	1
1180	Animalia	Aves	Psittaculidae	Alisterus scapularis	Australian king-parrot	C		No	No	QA	No		16	0	16
1182	Animalia	Aves	Psittaculidae	Aprosmictus erythropterus	red-winged parrot	C		No	No	QAI	No		15	0	15
1145	Animalia	Aves	Psittaculidae	Glossopsitta concinna	musk lorikeet	C		No	No	QA	No		2	0	2
1147	Animalia	Aves	Psittaculidae	Parvipsitta pusilla	little lorikeet	C		No	No	QA	No		22	0	22
1136	Animalia	Aves	Psittaculidae	Platycercus adscitus	pale-headed rosella	C		No	No	QA	No		67	0	67
21976	Animalia	Aves	Psittaculidae	Platycercus adscitus palliceps	pale-headed rosella (southern form)	C		No	No	QA	No		3	0	3
1124	Animalia	Aves	Psittaculidae	Trichoglossus chlorolepidotus	scaly-breasted lorikeet	C		No	No	QA	No		64	0	64
1125	Animalia	Aves	Psittaculidae	Trichoglossus moluccanus	rainbow lorikeet	C		No	No	QA	No		142	0	142
1623	Animalia	Aves	Psophodidae	Psophodes olivaceus	eastern whipbird	C		No	No	QA	No		5	0	5
1320	Animalia	Aves	Ptilonorhynchidae	Ptilonorhynchus violaceus	satin bowerbird	C		No	No	QA	No		1	0	1
1686	Animalia	Aves	Rallidae	Fulica atra	Eurasian coot	C		No	No	QAI	No		18	0	18
1673	Animalia	Aves	Rallidae	Gallinula tenebrosa	dusky moorhen	C		No	No	QAI	No		50	0	50
1675	Animalia	Aves	Rallidae	Gallirallus philippensis	buff-banded rail	C		No	No	QAI	No		35	0	35
1670	Animalia	Aves	Rallidae	Lewinia pectoralis	Lewin's rail	C		No	No	QAI	No		1	0	1
1662	Animalia	Aves	Rallidae	Porphyrio melanotus	purple swamphen	C		No	No	QAI	No		69	0	69
1674	Animalia	Aves	Rallidae	Tribonyx ventralis	black-tailed native-hen	C		No	No	QA	No		1	0	1
1893	Animalia	Aves	Recurvirostridae	Himantopus leucocephalus	pied stilt	C		No	No	QAI	No		178	0	178
1881	Animalia	Aves	Recurvirostridae	Recurvirostra novaehollandiae	red-necked avocet	C		No	No	QA	No		44	0	44
1575	Animalia	Aves	Rhipiduridae	Rhipidura albiscapa	grey fantail	C		No	No	QAI	No		39	0	39
1576	Animalia	Aves	Rhipiduridae	Rhipidura leucophrys	willie wagtail	C		No	No	QAI	No		53	0	53
22466	Animalia	Aves	Rhipiduridae	Rhipidura leucophrys picata	willie wagtail (northern)	C		No	No	QAI	No		1	0	1
1578	Animalia	Aves	Rhipiduridae	Rhipidura rufifrons	rufous fantail	C		No	No	QAI	No		21	0	21

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1885	Animalia	Aves	Scolopacidae	Actitis hypoleucos	common sandpiper	SL		No	Yes	QAI	No		24	0	24
1872	Animalia	Aves	Scolopacidae	Arenaria interpres	ruddy turnstone	V	V	No	Yes	QAI	No		6	0	6
1874	Animalia	Aves	Scolopacidae	Calidris acuminata	sharp-tailed sandpiper	V	V	No	Yes	QAI	No		53	0	53
1875	Animalia	Aves	Scolopacidae	Calidris alba	sanderling	SL		No	Yes	QAI	No		4	0	4
1877	Animalia	Aves	Scolopacidae	Calidris canutus	red knot	V	V	No	Yes	QAI	No		8	0	8
1863	Animalia	Aves	Scolopacidae	Calidris falcinellus	broad-billed sandpiper	SL		No	Yes	QAI	No		3	0	3
1878	Animalia	Aves	Scolopacidae	Calidris ferruginea	curlew sandpiper	CR	CE	No	Yes	QAI	No		47	0	47
1879	Animalia	Aves	Scolopacidae	Calidris melanotos	pectoral sandpiper	SL		No	Yes	QAI	No		2	0	2
1880	Animalia	Aves	Scolopacidae	Calidris ruficollis	red-necked stint	SL		No	Yes	QAI	No		99	0	99
1856	Animalia	Aves	Scolopacidae	Calidris tenuirostris	great knot	V	V	No	Yes	QAI	No		24	0	24
1857	Animalia	Aves	Scolopacidae	Gallinago hardwickii	Latham's snipe	V	V	No	Yes	QAI	No		11	0	11
1862	Animalia	Aves	Scolopacidae	Heteroscelus sp.				No	No	U	No		1	0	1
1867	Animalia	Aves	Scolopacidae	Limosa lapponica baueri	Western Alaskan bar-tailed godwit	E	E	No	Yes	QAI	No		174	0	174
1855	Animalia	Aves	Scolopacidae	Limosa limosa	black-tailed godwit	E	E	No	Yes	QAI	No		6	0	6
1843	Animalia	Aves	Scolopacidae	Numenius madagascariensis	eastern curlew	CR	CE	No	Yes	QAI	No		286	1	286
1844	Animalia	Aves	Scolopacidae	Numenius minutus	little curlew	SL		No	Yes	QAI	No		1	0	1
1845	Animalia	Aves	Scolopacidae	Numenius phaeopus	whimbrel	SL		No	Yes	QAI	No		287	1	287
1860	Animalia	Aves	Scolopacidae	Tringa brevipes	grey-tailed tattler	SL		No	Yes	QAI	No		70	0	70
1861	Animalia	Aves	Scolopacidae	Tringa incana	wandering tattler	SL		No	Yes	QAI	No		3	0	3
1853	Animalia	Aves	Scolopacidae	Tringa nebularia	common greenshank	E	E	No	Yes	QAI	No		86	0	86
1841	Animalia	Aves	Scolopacidae	Tringa stagnatilis	marsh sandpiper	SL		No	Yes	QAI	No		42	0	42
1827	Animalia	Aves	Scolopacidae	Xenus cinereus	terek sandpiper	V	V	No	Yes	QAI	No		54	0	54
1102	Animalia	Aves	Strigidae	Ninox boobook	southern boobook	C		No	No	QAI	No		56	0	56
1101	Animalia	Aves	Strigidae	Ninox connivens	barking owl	C		No	No	QAI	No		25	0	25
1106	Animalia	Aves	Strigidae	Ninox sp.		C		No	No	U	No		1	0	1
1107	Animalia	Aves	Strigidae	Ninox strenua	powerful owl	V		No	Yes	QA	No		15	0	15
1303	Animalia	Aves	Sturnidae	Sturnus vulgaris	common starling			No	No	II	No		1	0	1
1268	Animalia	Aves	Sulidae	Sula leucogaster	brown booby	SL		No	Yes	QAI	No		1	0	1
1822	Animalia	Aves	Threskiornithidae	Platalea flavipes	yellow-billed spoonbill	C		No	No	QA	No		6	0	6
1823	Animalia	Aves	Threskiornithidae	Platalea regia	royal spoonbill	C		No	No	QAI	No		99	0	99
1825	Animalia	Aves	Threskiornithidae	Plegadis falcinellus	glossy ibis	SL		No	Yes	QAI	No		8	0	8
1812	Animalia	Aves	Threskiornithidae	Threskiornis molucca	Australian white ibis	C		No	No	QAI	No		122	0	122
1800	Animalia	Aves	Threskiornithidae	Threskiornis spinicollis	straw-necked ibis	C		No	No	QAI	No		34	0	34
1091	Animalia	Aves	Turnicidae	Turnix maculosus	red-backed button-quail	C		No	No	QAI	No		4	0	4
1092	Animalia	Aves	Turnicidae	Turnix melanogaster	black-breasted button-quail	V	V	No	Yes	QA	No		2	0	2
1094	Animalia	Aves	Turnicidae	Turnix pyrrhothorax	red-chested button-quail	C		No	No	QA	No		1	0	1
1081	Animalia	Aves	Turnicidae	Turnix varius	painted button-quail	C		No	No	QA	No		4	0	4
1108	Animalia	Aves	Tytonidae	Tyto javanica	eastern barn owl	C		No	No	QAI	No		3	0	3
1109	Animalia	Aves	Tytonidae	Tyto longimembris	eastern grass owl	C		No	No	QAI	No		1	0	1
1096	Animalia	Aves	Tytonidae	Tyto novaehollandiae	masked owl	C		No	No	QAI	No		2	0	2
1276	Animalia	Aves	Zosteropidae	Zosterops lateralis	silvereye	C		No	No	QAI	No		20	0	20
22620	Animalia	Chondrichthyes	Dasyatidae	Hemitrygon fluviorum	estuary stingray	NT		No	Yes	QAI	No		1	0	1
930	Animalia	Mammalia	Acrobatidae	Acrobates pygmaeus	feathertail glider	C		No	No	QA	No		3	0	3
1084	Animalia	Mammalia	Bovidae	Bos taurus	European cattle			No	No	II	No		8	0	8
1067	Animalia	Mammalia	Canidae	Canis familiaris	dog			No	No	II	No		7	0	7
1068	Animalia	Mammalia	Canidae	Canis familiaris (dingo)	dingo			No	No	QA	No		8	0	8
1069	Animalia	Mammalia	Canidae	Canis sp.				No	No	II	No		1	0	1
1071	Animalia	Mammalia	Canidae	Vulpes vulpes	red fox			No	No	II	No		12	0	12
800	Animalia	Mammalia	Dasyuridae	Dasyurus hallucatus	northern quoll	C	E	No	Yes	QA	No		2	0	2

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811	Animalia	Mammalia	Dasyuridae	Planigale maculata	common planigale	C		No	No	QA	No		16	0	16
793	Animalia	Mammalia	Dasyuridae	Sminthopsis murina	common dunnart	C		No	No	QA	No		3	0	3
1032	Animalia	Mammalia	Delphinidae	Sousa sahulensis	Australian humpback dolphin	V	V	No	Yes	QAI	No		4	0	4
22372	Animalia	Mammalia	Delphinidae	Tursiops aduncus	Indo-Pacific bottlenose dolphin	C		No	No	QAI	No		3	0	3
33037	Animalia	Mammalia	Delphinidae	Tursiops sp.	bottlenose dolphin	C		No	No	QAI	No		1	0	1
714	Animalia	Mammalia	Dugongidae	Dugong dugon	dugong	V		No	Yes	QAI	No		7	1	7
1006	Animalia	Mammalia	Emballonuridae	Saccolaimus flaviventris	yellow-bellied sheathtail bat	C		No	No	QAI	No		28	0	28
1010	Animalia	Mammalia	Emballonuridae	Taphozous australis	coastal sheathtail bat	NT		No	Yes	QAI	No		3	0	3
1012	Animalia	Mammalia	Emballonuridae	Taphozous sp.		C		No	No	QAI	No		3	0	3
1013	Animalia	Mammalia	Emballonuridae	Taphozous troughtoni	Troughton's sheathtail bat	C		No	No	Q	No		10	0	10
814	Animalia	Mammalia	Equidae	Equus caballus	horse			No	No	II	No		8	0	8
1056	Animalia	Mammalia	Felidae	Felis catus	cat			No	No	II	No		11	0	11
832	Animalia	Mammalia	Leporidae	Lepus europaeus	European brown hare			No	No	II	No		15	0	15
834	Animalia	Mammalia	Leporidae	Oryctolagus cuniculus	rabbit			No	No	II	No		13	0	13
901	Animalia	Mammalia	Macropodidae	Macropus giganteus	eastern grey kangaroo	C		No	No	QA	No		47	0	47
906	Animalia	Mammalia	Macropodidae	Macropus sp.		C		No	No	QA	No		1	0	1
912	Animalia	Mammalia	Macropodidae	Notamacropus agilis	agile wallaby	C		No	No	QAI	No		5	0	5
914	Animalia	Mammalia	Macropodidae	Notamacropus dorsalis	black-striped wallaby	C		No	No	QA	No		4	0	4
902	Animalia	Mammalia	Macropodidae	Notamacropus parryi	whiptail wallaby	C		No	No	QA	No		27	0	27
904	Animalia	Mammalia	Macropodidae	Notamacropus rufogriseus	red-necked wallaby	C		No	No	QA	No		3	0	3
903	Animalia	Mammalia	Macropodidae	Osphranter robustus	common wallaroo	C		No	No	QA	No		2	0	2
900	Animalia	Mammalia	Macropodidae	Petrogale herberti	Herbert's rock-wallaby	C		No	No	Q	No		1	0	1
896	Animalia	Mammalia	Macropodidae	Thylogale stigmatica	red-legged pademelon	C		No	No	QAI	No		2	0	2
884	Animalia	Mammalia	Macropodidae	Thylogale thetis	red-necked pademelon	C		No	No	QA	No		1	0	1
885	Animalia	Mammalia	Macropodidae	Wallabia bicolor	swamp wallaby	C		No	No	QA	No		28	0	28
994	Animalia	Mammalia	Megadermatidae	Macroderma gigas	ghost bat	E	V	No	Yes	QA	No		1	0	1
954	Animalia	Mammalia	Miniopteridae	Miniopterus australis	little bent-wing bat	C		No	No	QAI	No		31	0	31
955	Animalia	Mammalia	Miniopteridae	Miniopterus orianae oceanensis	eastern bent-wing bat	C		No	No	QAI	No		14	0	14
989	Animalia	Mammalia	Molossidae	Austronomus australis	white-striped freetail bat	C		No	No	QA	No		9	0	9
996	Animalia	Mammalia	Molossidae	Chaerephon jobensis	northern freetail bat	C		No	No	QAI	No		8	0	8
998	Animalia	Mammalia	Molossidae	Mormopterus lumsdenae	northern free-tailed bat	C		No	No	QA	No		9	0	9
1000	Animalia	Mammalia	Molossidae	Mormopterus norfolkensis	east coast freetail bat	C		No	No	QA	No		2	0	2
22061	Animalia	Mammalia	Molossidae	Mormopterus ridei	eastern free-tailed bat	C		No	No	QA	No		5	0	5
988	Animalia	Mammalia	Molossidae	Mormopterus sp.		C		No	No	QAI	No		6	0	6
767	Animalia	Mammalia	Muridae	Hydromys chrysogaster	water rat	C		No	No	QAI	No		4	0	4
772	Animalia	Mammalia	Muridae	Melomys burtoni	grassland melomys	C		No	No	QA	No		13	0	13
759	Animalia	Mammalia	Muridae	Melomys cervinipes	fawn-footed melomys	C		No	No	QA	No		4	0	4
761	Animalia	Mammalia	Muridae	Melomys sp.		C		No	No	QA	No		2	0	2
764	Animalia	Mammalia	Muridae	Mus musculus	house mouse			No	No	II	No		16	0	16
749	Animalia	Mammalia	Muridae	Pseudomys gracilicaudatus	eastern chestnut mouse	C		No	No	QA	No		1	0	1
741	Animalia	Mammalia	Muridae	Rattus fuscipes	bush rat	C		No	No	QA	No		1	0	1
731	Animalia	Mammalia	Muridae	Rattus rattus	black rat			No	No	II	No		7	0	7
734	Animalia	Mammalia	Muridae	Rattus tunneyi	pale field-rat	C		No	No	QA	No		1	0	1
724	Animalia	Mammalia	Muridae	Xeromys myoides	water mouse	V	V	No	Yes	QAI	No		15	1	15

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784	Animalia	Mammalia	Peramelidae	Isoodon macrourus	northern brown bandicoot	C		No	No	QAI	No		22	0	22
787	Animalia	Mammalia	Peramelidae	Perameles nasuta	long-nosed bandicoot	C		No	No	QA	No		2	0	2
875	Animalia	Mammalia	Petauridae	Petaurus australis australis	yellow-bellied glider (southern subspecies)	V	V	No	Yes	QA	No		18	3	18
879	Animalia	Mammalia	Petauridae	Petaurus norfolcensis	squirrel glider	C		No	No	QA	No		10	0	10
36762	Animalia	Mammalia	Petauridae	Petaurus notatus	Krefft's glider	C		No	No	QA	No		12	0	12
880	Animalia	Mammalia	Petauridae	Petaurus sp.		C		No	No	QAI	No		1	0	1
859	Animalia	Mammalia	Phalangeridae	Trichosurus vulpecula	common brushtail possum	C		No	No	QA	No		73	0	73
860	Animalia	Mammalia	Phascolarctidae	Phascolarctos cinereus	koala	E	E	No	Yes	QA	No		5	0	5
862	Animalia	Mammalia	Potoroidae	Aepyprymnus rufescens	rufous bettong	C		No	No	QA	No		18	0	18
2455	Animalia	Mammalia	Pseudocheiridae	Petauroides volans volans	southern greater glider	E	E	No	Yes	QA	No		36	1	36
851	Animalia	Mammalia	Pseudocheiridae	Pseudocheirus peregrinus	common ringtail possum	C		No	No	QA	No		3	1	3
984	Animalia	Mammalia	Pteropodidae	Pteropus alecto	black flying-fox	C		No	No	QAI	No		30	0	30
962	Animalia	Mammalia	Pteropodidae	Pteropus poliocephalus	grey-headed flying-fox	C	V	No	Yes	QA	No		11	0	11
963	Animalia	Mammalia	Pteropodidae	Pteropus scapulatus	little red flying-fox	C		No	No	QAI	No		19	0	19
964	Animalia	Mammalia	Pteropodidae	Pteropus sp.	flying-fox	C		No	No	QAI	No		1	0	1
968	Animalia	Mammalia	Rhinolophidae	Rhinolophus megaphyllus	eastern horseshoe-bat	C		No	No	QAI	No		1	0	1
1080	Animalia	Mammalia	Suidae	Sus scrofa	pig			No	No	II	No		10	0	10
838	Animalia	Mammalia	Tachyglossidae	Tachyglossus aculeatus	short-beaked echidna	SL		No	Yes	QAI	No		28	0	28
972	Animalia	Mammalia	Vespertilionidae	Chalinolobus gouldii	Gould's wattled bat	C		No	No	QA	No		29	0	29
973	Animalia	Mammalia	Vespertilionidae	Chalinolobus morio	chocolate wattled bat	C		No	No	QA	No		5	0	5
961	Animalia	Mammalia	Vespertilionidae	Chalinolobus nigrogriseus	hoary wattled bat	C		No	No	QAI	No		10	0	10
948	Animalia	Mammalia	Vespertilionidae	Chalinolobus picatus	little pied bat	C		No	No	QA	No		11	0	11
22066	Animalia	Mammalia	Vespertilionidae	Myotis macropus	large-footed myotis	C		No	No	QA	No		19	0	19
946	Animalia	Mammalia	Vespertilionidae	Nyctophilus bifax	northern long-eared bat	C		No	No	QAI	No		2	0	2
935	Animalia	Mammalia	Vespertilionidae	Nyctophilus geoffroyi	lesser long-eared bat	C		No	No	QA	No		2	0	2
936	Animalia	Mammalia	Vespertilionidae	Nyctophilus gouldi	Gould's long-eared bat	C		No	No	QA	No		2	0	2
938	Animalia	Mammalia	Vespertilionidae	Nyctophilus sp.		C		No	No	QAI	No		5	0	5
943	Animalia	Mammalia	Vespertilionidae	Scoteanax rueppellii	greater broad-nosed bat	C		No	No	QA	No		6	0	6
945	Animalia	Mammalia	Vespertilionidae	Scotorepens balstoni	inland broad-nosed bat	C		No	No	QA	No		2	0	2
931	Animalia	Mammalia	Vespertilionidae	Scotorepens greyii	little broad-nosed bat	C		No	No	QA	No		23	0	23
19464	Animalia	Mammalia	Vespertilionidae	Scotorepens orion	south-eastern broad-nosed bat	C		No	No	QA	No		10	0	10
933	Animalia	Mammalia	Vespertilionidae	Scotorepens sp.		C		No	No	QA	No		3	0	3
925	Animalia	Mammalia	Vespertilionidae	Vespadelus pumilus	eastern forest bat	C		No	No	QA	No		5	0	5
928	Animalia	Mammalia	Vespertilionidae	Vespadelus troughtoni	eastern cave bat	C		No	No	QA	No		1	0	1
929	Animalia	Mammalia	Vespertilionidae	Vespadelus vulturnus	little forest bat	C		No	No	QA	No		1	0	1
574	Animalia	Reptilia	Agamidae	Chlamydosaurus kingii	frilled lizard	C		No	No	QAI	No		10	0	10
567	Animalia	Reptilia	Agamidae	Diporiphora australis	tommy roundhead	C		No	No	QA	No		14	2	14
561	Animalia	Reptilia	Agamidae	Diporiphora nobbi	nobbi	C		No	No	QA	No		8	0	8
556	Animalia	Reptilia	Agamidae	Pogona barbata	bearded dragon	C		No	No	QA	No		16	1	16
537	Animalia	Reptilia	Boidae	Antaresia maculosa	spotted python	C		No	No	QA	No		25	0	25
538	Animalia	Reptilia	Boidae	Antaresia sp.		C		No	No	QAI	No		1	0	1
540	Animalia	Reptilia	Boidae	Aspidites melanocephalus	black-headed python	C		No	No	QA	No		6	1	6
534	Animalia	Reptilia	Boidae	Morelia sp.		C		No	No	QAI	No		1	0	1
519	Animalia	Reptilia	Boidae	Morelia spilota	carpet python	C		No	No	QA	No		37	0	37

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396	Animalia	Reptilia	Carphodactylidae	Underwoodisaurus milii	thick-tailed gecko	C		No	No	QA	No		1	1	1
30272	Animalia	Reptilia	Chelidae	Elseya albagula	white-throated snapping turtle	CR	CE	No	Yes	Q	No		1	0	1
58	Animalia	Reptilia	Chelidae	Emydura macquarii krefftii	Krefft's river turtle	C		No	No	Q	No		7	0	7
45	Animalia	Reptilia	Chelidae	Emydura sp.		C		No	No	QAI	No		1	0	1
54	Animalia	Reptilia	Chelidae	Wollumbinia latisternum	saw-shelled turtle	C		No	No	QA	No		1	0	1
35	Animalia	Reptilia	Cheloniidae	Caretta caretta	loggerhead turtle	E	E	No	Yes	QAI	No		1	0	1
37	Animalia	Reptilia	Cheloniidae	Chelonia mydas	green turtle	V	V	No	Yes	QAI	No		15	0	15
522	Animalia	Reptilia	Colubridae	Boiga irregularis	brown tree snake	C		No	No	QAI	No		14	0	14
512	Animalia	Reptilia	Colubridae	Dendrelaphis punctulatus	green tree snake	C		No	No	QAI	No		85	0	85
508	Animalia	Reptilia	Colubridae	Tropidonophis mairii	freshwater snake	C		No	No	QAI	No		12	0	12
584	Animalia	Reptilia	Crocodylidae	Crocodylus porosus	estuarine crocodile	V		No	Yes	QAI	No		1	0	1
36209	Animalia	Reptilia	Diplodactylidae	Amalosia queenslandia	Queensland zigzag gecko	C		No	No	Q	No		44	0	44
429	Animalia	Reptilia	Diplodactylidae	Diplodactylus vittatus	wood gecko	C		No	No	QA	No		11	0	11
18294	Animalia	Reptilia	Diplodactylidae	Oedura monilis sensu lato	ocellated velvet gecko			Yes	No	QA	No		1	0	1
378	Animalia	Reptilia	Diplodactylidae	Oedura tryoni	southern spotted velvet gecko	C		No	No	QA	No		11	0	11
373	Animalia	Reptilia	Elapidae	Aipysurus mosaicus	mosaic sea snake	C		No	No	QAI	No		1	1	1
460	Animalia	Reptilia	Elapidae	Brachyurophis australis	coral snake	C		No	No	QA	No		1	0	1
501	Animalia	Reptilia	Elapidae	Cacophis harriettae	white-crowned snake	C		No	No	QA	No		1	0	1
455	Animalia	Reptilia	Elapidae	Cryptophis boschmai	Carpentaria whip snake	C		No	No	Q	No		3	1	3
457	Animalia	Reptilia	Elapidae	Cryptophis nigrescens	eastern small-eyed snake	C		No	No	QA	No		3	0	3
458	Animalia	Reptilia	Elapidae	Cryptophis nigrostriatus	black-striped snake	C		No	No	QI	No		1	0	1
493	Animalia	Reptilia	Elapidae	Demansia psammophis	yellow-faced whipsnake	C		No	No	QA	No		10	0	10
495	Animalia	Reptilia	Elapidae	Demansia torquata	collared whipsnake	C		No	No	Q	No		2	0	2
496	Animalia	Reptilia	Elapidae	Demansia vestigiata	lesser black whipsnake	C		No	No	QAI	No		10	0	10
486	Animalia	Reptilia	Elapidae	Furina diadema	red-naped snake	C		No	No	QA	No		9	0	9
477	Animalia	Reptilia	Elapidae	Hemiaspis signata	black-bellied swamp snake	C		No	No	QA	No		2	0	2
479	Animalia	Reptilia	Elapidae	Hoplocephalus bitorquatus	pale-headed snake	C		No	No	QA	No		1	0	1
361	Animalia	Reptilia	Elapidae	Hydrophis elegans	elegant sea snake	C		No	No	QAI	No		3	1	3
470	Animalia	Reptilia	Elapidae	Oxyuranus scutellatus	coastal taipan	C		No	No	QAI	No		4	0	4
462	Animalia	Reptilia	Elapidae	Pseudechis porphyriacus	red-bellied black snake	C		No	No	QA	No		2	0	2
454	Animalia	Reptilia	Elapidae	Pseudonaja textilis	eastern brown snake	C		No	No	QAI	No		21	0	21
444	Animalia	Reptilia	Elapidae	Vermicella annulata	bandy-bandy	C		No	No	QA	No		11	0	11
420	Animalia	Reptilia	Gekkonidae	Gehyra dubia	dubious dtella	C		No	No	QA	No		55	1	55
413	Animalia	Reptilia	Gekkonidae	Heteronotia binoei	Bynoe's gecko	C		No	No	QA	No		44	5	44
325	Animalia	Reptilia	Pygopodidae	Lialis burtonis	Burton's legless lizard	C		No	No	QAI	No		17	0	17
308	Animalia	Reptilia	Scincidae	Anomalopus verreauxii	three-clawed worm-skink	C		No	No	QA	No		9	0	9
311	Animalia	Reptilia	Scincidae	Calyptotis lepidorostrum	cone-eared calyptotis	C		No	No	Q	No		2	0	2
294	Animalia	Reptilia	Scincidae	Carlia munda	shaded-litter rainbow-skink	C		No	No	QA	No		22	1	22

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34646	Animalia	Reptilia	Scincidae	Carlia pectoralis	open-litter rainbow skink	C		No	No	Q	No		15	0	15
297	Animalia	Reptilia	Scincidae	Carlia pectoralis sensu lato				Yes	No	Q	No		12	0	12
302	Animalia	Reptilia	Scincidae	Carlia schmeltzii	robust rainbow-skink	C		No	No	Q	No		50	0	50
277	Animalia	Reptilia	Scincidae	Carlia vivax	tussock rainbow-skink	C		No	No	QA	No		73	1	73
214	Animalia	Reptilia	Scincidae	Concinnia brachysoma	northern bar-sided skink	C		No	No	Q	No		9	0	9
188	Animalia	Reptilia	Scincidae	Concinnia martini	dark bar-sided skink	C		No	No	QA	No		1	0	1
193	Animalia	Reptilia	Scincidae	Concinnia tenuis	bar-sided skink	C		No	No	QA	No		15	1	15
287	Animalia	Reptilia	Scincidae	Cryptoblepharus plagiocephalus sensu lato				Yes	No	QA	No		1	1	1
31898	Animalia	Reptilia	Scincidae	Cryptoblepharus pulcher pulcher	elegant snake-eyed skink	C		No	No	QA	No		34	0	34
274	Animalia	Reptilia	Scincidae	Cryptoblepharus sp.		C		No	No	QAI	No		1	0	1
260	Animalia	Reptilia	Scincidae	Cryptoblepharus virgatus sensu lato				Yes	No	QAI	No		27	1	27
239	Animalia	Reptilia	Scincidae	Ctenotus sp.		C		No	No	QAI	No		1	0	1
240	Animalia	Reptilia	Scincidae	Ctenotus spaldingi	straight-browed ctenotus	C		No	No	QAI	No		2	0	2
243	Animalia	Reptilia	Scincidae	Ctenotus taeniolatus	copper-tailed skink	C		No	No	QA	No		19	0	19
216	Animalia	Reptilia	Scincidae	Cyclodomorphus gerrardii	pink-tongued lizard	C		No	No	QA	No		4	0	4
190	Animalia	Reptilia	Scincidae	Eulamprus quoyii	eastern water skink	C		No	No	QA	No		9	5	9
173	Animalia	Reptilia	Scincidae	Glaphyromorphus punctulatus	fine-spotted mulch-skink	C		No	No	Q	No		13	0	13
174	Animalia	Reptilia	Scincidae	Glaphyromorphus sp.		C		No	No	QAI	No		1	0	1
179	Animalia	Reptilia	Scincidae	Lampropholis adonis	diamond-shielded sunskink	C		No	No	Q	No		3	0	3
180	Animalia	Reptilia	Scincidae	Lampropholis amicula	friendly sunskink	C		No	No	QA	No		2	0	2
184	Animalia	Reptilia	Scincidae	Lampropholis delicata	dark-flecked garden sunskink	C		No	No	QA	No		19	0	19
170	Animalia	Reptilia	Scincidae	Lampropholis guichenoti	pale-flecked garden sunskink	C		No	No	QA	No		2	0	2
167	Animalia	Reptilia	Scincidae	Lerista fragilis	eastern mulch slider	C		No	No	Q	No		10	0	10
150	Animalia	Reptilia	Scincidae	Lygisaurus foliorum	tree-base litter-skink	C		No	No	QA	No		93	2	93
127	Animalia	Reptilia	Scincidae	Menetia greyii	common dwarf skink	C		No	No	QA	No		3	0	3
136	Animalia	Reptilia	Scincidae	Morethia sp.		C		No	No	QA	No		1	0	1
138	Animalia	Reptilia	Scincidae	Morethia taeniopleura	fire-tailed skink	C		No	No	Q	No		10	0	10
113	Animalia	Reptilia	Scincidae	Ophioscincus cooloolensis	Cooloola snake-skink	C		No	No	Q	No		3	0	3
107	Animalia	Reptilia	Scincidae	Tiliqua scincoides scincoides	eastern bluetongue	C		No	No	QA	No		2	0	2
82	Animalia	Reptilia	Typhlopidae	Anilios unguirostris	claw-snouted blind snake	C		No	No	QA	No		2	0	2
83	Animalia	Reptilia	Typhlopidae	Anilios wiedii	brown-snouted blind snake	C		No	No	QA	No		7	0	7
78	Animalia	Reptilia	Varanidae	Varanus gouldii	sand monitor	C		No	No	QA	No		2	0	2
74	Animalia	Reptilia	Varanidae	Varanus panoptes	yellow-spotted monitor	C		No	No	QA	No		1	1	1
70	Animalia	Reptilia	Varanidae	Varanus semiremex	rusty monitor	C		No	No	Q	Yes		2	0	2
60	Animalia	Reptilia	Varanidae	Varanus tristis	black-tailed monitor	C		No	No	QA	No		13	0	13
61	Animalia	Reptilia	Varanidae	Varanus varius	lace monitor	C		No	No	QA	No		8	0	8

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26888	Animalia	Incertae sedis	Indeterminate	Indeterminate	Unknown or Code Pending			No	No	U	No		22	0	22
7857	Chromista	Phaeophyceae	Mesosporaceae	Mesospora schmidtii		C		No	No	NTQ	No		1	1	1
7832	Chromista	Phaeophyceae	Sargassaceae	Sargassum parvifolium		C		No	No	NTQ	No		1	1	1
6990	Chromista	Phaeophyceae	Sporochnaceae	Sporochnus comosus		C		No	No	NTQ	No		1	1	1
22953	Fungi	Dothideomycetes	Trypetheliaceae	Arthopyrenia cinereopruinosa		C		No	No	NTQ	No		1	1	1
23010	Fungi	Eurotiomycetes	Mycocaliciaceae	Chaenothecopsis				No	No		No		1	1	1
23098	Fungi	Lecanoromycetes	Caliciaceae	Dirinaria confluens		C		No	No	NTQ	No		4	4	4
24499	Fungi	Lecanoromycetes	Caliciaceae	Dirinaria flava		C		No	No	NTQ	No		1	1	1
23100	Fungi	Lecanoromycetes	Caliciaceae	Dirinaria picta		C		No	No	NTQ	No		1	1	1
25242	Fungi	Lecanoromycetes	Caliciaceae	Pyxine australiensis		C		No	No	NTQ	No		3	3	3
23533	Fungi	Lecanoromycetes	Caliciaceae	Pyxine cocoes		C		No	No	NTQ	No		1	1	1
22999	Fungi	Lecanoromycetes	Candelariaceae	Candelaria concolor		C		No	No	NTQ	No		1	1	1
23075	Fungi	Lecanoromycetes	Coccocarpiaceae	Coccocarpia palmicola		C		No	No	NTQ	No		2	2	2
23198	Fungi	Lecanoromycetes	Haematommataceae	Haematomma				No	No		No		1	1	1
24556	Fungi	Lecanoromycetes	Haematommataceae	Haematomma africanum		C		No	No	NTQ	No		3	3	3
23150	Fungi	Lecanoromycetes	Haematommataceae	Haematomma collatum		C		No	No	NTQ	No		1	1	1
23232	Fungi	Lecanoromycetes	Lecanoraceae	Lecanora				No	No		No		1	1	1
23189	Fungi	Lecanoromycetes	Lecanoraceae	Lecanora achroa		C		No	No	NTQ	No		1	1	1
24235	Fungi	Lecanoromycetes	Megalosporaceae	Megalospora queenslandica		C		No	No	NTQ	No		1	1	1
23384	Fungi	Lecanoromycetes	Parmeliaceae	Parmotrema				No	No		No		1	1	1
23379	Fungi	Lecanoromycetes	Parmeliaceae	Parmotrema robustum		C		No	No	NTQ	No		1	1	1
29480	Fungi	Lecanoromycetes	Parmeliaceae	Usnea dasaea		C		No	No	NTQ	No		1	1	1
24065	Fungi	Lecanoromycetes	Parmeliaceae	Usnea nidifica		C		No	No	NTQ	No		3	3	3
23170	Fungi	Lecanoromycetes	Physciaceae	Heterodermia obscurata		C		No	No	NTQ	No		1	1	1
23173	Fungi	Lecanoromycetes	Physciaceae	Hyperphyscia adglutinata		C		No	No	NTQ	No		1	1	1
23568	Fungi	Lecanoromycetes	Ramalinaceae	Ramalina confirmata		C		No	No	NTQ	No		12	12	12
29585	Fungi	Lecanoromycetes	Ramalinaceae	Ramalina inflata subsp. inflata		C		No	No	NTQ	No		1	1	1
23553	Fungi	Lecanoromycetes	Ramalinaceae	Ramalina inflata subsp. perpusilla		C		No	No	NTQ	No		3	3	3
29460	Fungi	Lecanoromycetes	Ramalinaceae	Ramalina luciae		C		No	No	NTQ	No		5	5	5
23555	Fungi	Lecanoromycetes	Ramalinaceae	Ramalina nervulosa		C		No	No	NTQ	No		7	7	7
23559	Fungi	Lecanoromycetes	Ramalinaceae	Ramalina pacifica		C		No	No	NTQ	No		5	5	5
23560	Fungi	Lecanoromycetes	Ramalinaceae	Ramalina peruviana		C		No	No	NTQ	No		3	3	3
23564	Fungi	Lecanoromycetes	Ramalinaceae	Ramalina subfraxinea var. norstictica		C		No	No	NTQ	No		6	6	6
23565	Fungi	Lecanoromycetes	Ramalinaceae	Ramalina tenella		C		No	No	NTQ	No		1	1	1
23764	Fungi	Lecanoromycetes	Teloschistaceae	Teloschistes flavicans		C		No	No	NTQ	No		1	1	1
23769	Fungi	Lecanoromycetes	Tephromelataceae	Tephromela atra		C		No	No	NTQ	No		1	1	1
25637	Fungi	Agaricomycetes	Agaricaceae	Chlorophyllum molybdites	green-spored parasol	C		No	No	NTQ	No		1	1	1
28576	Fungi	Agaricomycetes	Meripilaceae	Antrodia				No	No		No		1	1	1
28229	Fungi	Agaricomycetes	Polyporaceae	Loweporus tephroporus		C		No	No	NTQ	No		1	1	1
8698	Plantae	Ulvophyceae	Caulerpaceae	Caulerpa cupressoides		C		No	No	NTQ	No		1	1	1
8051	Plantae	Ulvophyceae	Trentepohliaceae	Trentepohlia odorata		C		No	No	NTQ	No		1	1	1
9171	Plantae	Incertae sedis	Indet.	Indet.		C		No	No	U	No		12	0	12
7708	Plantae	Florideophyceae	Ceramiaceae	Ceramium				No	No		No		2	2	2

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7585	Plantae	Florideophyceae	Galaxauraceae	Galaxaura				No	No		No		1	1	1
27485	Plantae	Florideophyceae	Liagoraceae	Ganonema samaense		C		No	No	NTQ	No		1	1	1
7249	Plantae	Florideophyceae	Liagoraceae	Liagora ceranoides		C		No	No	NTQ	No		1	1	1
7661	Plantae	Florideophyceae	Rhodomelaceae	Chondria armata		C		No	No	NTQ	No		1	1	1
7085	Plantae	Florideophyceae	Rhodomelaceae	Polysiphonia				No	No		No		3	3	3
7726	Plantae	Florideophyceae	Rhodymeniaceae	Botryocladia leptopoda		C		No	No	NTQ	No		1	1	1
5929	Plantae	Florideophyceae	Rhodymeniaceae	Chamaebotrys boergesenii		C		No	No	NTQ	No		1	1	1
7003	Plantae	Florideophyceae	Scinaiaceae	Scinaia				No	No		No		2	2	2
6497	Plantae	Florideophyceae	Scinaiaceae	Scinaia tsinglanensis		C		No	No	NTQ	No		1	1	1
12326	Plantae	Equisetopsida	Acanthaceae	Avicennia marina		C		No	No	NTQ	No		4	0	4
6798	Plantae	Equisetopsida	Acanthaceae	Avicennia marina subsp. australasica		C		No	No	NTQ	No		2	1	2
19376	Plantae	Equisetopsida	Acanthaceae	Brunoniella				No	No		No		1	0	1
17767	Plantae	Equisetopsida	Acanthaceae	Brunoniella australis	blue trumpet	C		No	No	NTQ	No		22	0	22
15850	Plantae	Equisetopsida	Acanthaceae	Graptophyllum excelsum		NT		No	Yes	NTQ	No		10	0	10
15853	Plantae	Equisetopsida	Acanthaceae	Graptophyllum spinigerum		C		No	No	NTQ	No		8	4	8
5869	Plantae	Equisetopsida	Acanthaceae	Harnieria hygrophiloides	white karambal	C		No	No	NTQ	No		2	0	2
16927	Plantae	Equisetopsida	Acanthaceae	Hygrophila angustifolia		C		No	No	NTQ	No		1	0	1
16375	Plantae	Equisetopsida	Acanthaceae	Pseuderanthemum variabile	pastel flower	C		No	No	NTQ	No		20	0	20
16262	Plantae	Equisetopsida	Acanthaceae	Rostellularia adscendens		C		No	No	NTQ	No		10	0	10
16258	Plantae	Equisetopsida	Acanthaceae	Rostellularia adscendens var. hispida		C		No	No	NTQ	No		1	1	1
33640	Plantae	Equisetopsida	Acanthaceae	Ruellia simplex				No	No	NAQ	No		3	3	3
19722	Plantae	Equisetopsida	Agavaceae	Agave americana				No	No	NAQ	No		1	0	1
11724	Plantae	Equisetopsida	Agavaceae	Furcraea foetida				No	No	NAQ	No		2	2	2
20379	Plantae	Equisetopsida	Aizoaceae	Carpobrotus				No	No		No		1	0	1
17691	Plantae	Equisetopsida	Aizoaceae	Carpobrotus glaucescens	pigface	C		No	No	NTQ	No		1	0	1
16192	Plantae	Equisetopsida	Aizoaceae	Sesuvium portulacastrum	sea purslane	C		No	No	NTQ	No		1	0	1
41980	Plantae	Equisetopsida	Aizoaceae	Sesuvium portulacastrum subsp. portulacastrum		C		No	No	NTQ	No		1	1	1
16014	Plantae	Equisetopsida	Aizoaceae	Trianthema portulacastrum	black pigweed			No	No	NAQ	No		2	2	2
18101	Plantae	Equisetopsida	Amaranthaceae	Achyranthes aspera		C		No	No	NTQ	No		9	0	9
18026	Plantae	Equisetopsida	Amaranthaceae	Alternanthera denticulata	lesser joyweed	C		No	No	NTQ	No		2	0	2
18029	Plantae	Equisetopsida	Amaranthaceae	Alternanthera nana	hairy joyweed	C		No	No	NTQ	No		6	0	6
17978	Plantae	Equisetopsida	Amaranthaceae	Alternanthera nodiflora	joyweed	C		No	No	NTQ	No		1	0	1
11849	Plantae	Equisetopsida	Amaranthaceae	Alternanthera pungens	khaki weed			No	No	NAQ	No		2	1	2
17982	Plantae	Equisetopsida	Amaranthaceae	Amaranthus				No	No		No		1	0	1
12109	Plantae	Equisetopsida	Amaranthaceae	Amaranthus hybridus	redshank			No	No	NAQ	No		1	0	1
17981	Plantae	Equisetopsida	Amaranthaceae	Amaranthus viridis	green amaranth			No	No	NAQ	No		2	1	2
17499	Plantae	Equisetopsida	Amaranthaceae	Deeringia amaranthoides	redberry	C		No	No	NTQ	No		2	1	2

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17500	Plantae	Equisetopsida	Amaranthaceae	Deeringia arborescens	climbing deeringia	C		No	No	NTQ	No		1	1	1
17051	Plantae	Equisetopsida	Amaranthaceae	Gomphrena celosioides	gomphrena weed			No	No	NAQ	No		9	4	9
15516	Plantae	Equisetopsida	Amaryllidaceae	Crinum				No	No		No		2	0	2
15513	Plantae	Equisetopsida	Amaryllidaceae	Crinum pedunculatum	river lily	SL		No	Yes	NTQ	No		1	0	1
11702	Plantae	Equisetopsida	Amaryllidaceae	Proiphys cunninghamii	Moreton Bay lily	SL		No	Yes	NTQ	No		3	2	3
40242	Plantae	Equisetopsida	Anacardiaceae	Euroschinus falcata var. angustifolia		C		No	No	NTQ	No		2	0	2
42211	Plantae	Equisetopsida	Anacardiaceae	Euroschinus falcata var. falcata		C		No	No	NTQ	No		5	2	5
17173	Plantae	Equisetopsida	Anacardiaceae	Euroschinus falcatus		C		No	No	XU	No		22	0	22
16720	Plantae	Equisetopsida	Anacardiaceae	Mangifera indica	mango			No	No	NAQ	No		1	0	1
16424	Plantae	Equisetopsida	Anacardiaceae	Pleiogynium timorense	Burdekin plum	C		No	No	NTQ	No		31	0	31
11769	Plantae	Equisetopsida	Anacardiaceae	Schinus terebinthifolius				No	No	NAQ	No		6	6	6
41406	Plantae	Equisetopsida	Annonaceae	Huberantha nitidissima		C		No	No	NTQ	No		13	0	13
8144	Plantae	Equisetopsida	Annonaceae	Melodorum leichhardtii		C		No	No	NTQ	No		28	0	28
15545	Plantae	Equisetopsida	Apiaceae	Centella asiatica		C		No	No	NTQ	No		2	0	2
15495	Plantae	Equisetopsida	Apiaceae	Cyclospermum leptophyllum				No	No	NAQ	No		2	2	2
9484	Plantae	Equisetopsida	Apocynaceae	Alstonia constricta	bitterbark	C		No	No	NTQ	No		22	1	22
5631	Plantae	Equisetopsida	Apocynaceae	Alyxia magnifolia		C		No	No	NTQ	No		6	2	6
19732	Plantae	Equisetopsida	Apocynaceae	Alyxia ruscifolia		C		No	No	NTQ	No		44	2	44
17935	Plantae	Equisetopsida	Apocynaceae	Asclepias curassavica	red-head cottonbush			No	No	NAQ	No		11	2	11
9698	Plantae	Equisetopsida	Apocynaceae	Carissa ovata	currantbush	C		No	No	NTQ	No		37	1	37
17693	Plantae	Equisetopsida	Apocynaceae	Cascabela thevetia	yellow oleander			No	No	NAQ	No		5	4	5
17710	Plantae	Equisetopsida	Apocynaceae	Catharanthus roseus	pink periwinkle			No	No	NAQ	No		4	3	4
15479	Plantae	Equisetopsida	Apocynaceae	Cryptostegia grandiflora	rubber vine			No	No	NAQ	No		21	0	21
36295	Plantae	Equisetopsida	Apocynaceae	Cynanchum viminale		C		No	No	NTQ	No		10	0	10
35895	Plantae	Equisetopsida	Apocynaceae	Cynanchum viminale subsp. australe		C		No	No	NTQ	No		4	0	4
35894	Plantae	Equisetopsida	Apocynaceae	Cynanchum viminale subsp. brunonianum		C		No	No	NTQ	No		7	2	7
17050	Plantae	Equisetopsida	Apocynaceae	Gomphocarpus physocarpus	balloon cottonbush			No	No	NAQ	No		25	4	25
8452	Plantae	Equisetopsida	Apocynaceae	Gymnanthera oblonga		C		No	No	NTQ	No		3	1	3
4710	Plantae	Equisetopsida	Apocynaceae	Gymnema pleiadenium		C		No	No	NTQ	No		1	0	1
11202	Plantae	Equisetopsida	Apocynaceae	Hoya australis		C		No	No	NTQ	No		21	0	21
41661	Plantae	Equisetopsida	Apocynaceae	Leichhardtia lloydii		C		No	No	NTQ	No		1	0	1
41666	Plantae	Equisetopsida	Apocynaceae	Leichhardtia micradenia		C		No	No	NTQ	No		1	0	1
41654	Plantae	Equisetopsida	Apocynaceae	Leichhardtia microlepis		C		No	No	NTQ	No		18	3	18
41642	Plantae	Equisetopsida	Apocynaceae	Leichhardtia rostrata		C		No	No	NTQ	No		2	1	2
41662	Plantae	Equisetopsida	Apocynaceae	Leichhardtia viridiflora		C		No	No	NTQ	No		8	1	8
41644	Plantae	Equisetopsida	Apocynaceae	Leichhardtia viridiflora subsp. viridiflora		C		No	No	NTQ	No		1	1	1
14385	Plantae	Equisetopsida	Apocynaceae	Marsdenia				No	No		No		1	0	1
16669	Plantae	Equisetopsida	Apocynaceae	Melodinus				No	No		No		1	0	1
11155	Plantae	Equisetopsida	Apocynaceae	Nerium oleander	oleander			No	No	NAQ	No		1	0	1
16528	Plantae	Equisetopsida	Apocynaceae	Parsonsia				No	No		No		2	0	2
16521	Plantae	Equisetopsida	Apocynaceae	Parsonsia lanceolata	northern silkpod	C		No	No	NTQ	No		13	0	13
5948	Plantae	Equisetopsida	Apocynaceae	Parsonsia larcomensis		V	V	No	Yes	NTQ	No		7	7	7
11416	Plantae	Equisetopsida	Apocynaceae	Parsonsia leichhardtii	black silkpod	C		No	No	NTQ	No		3	0	3
5903	Plantae	Equisetopsida	Apocynaceae	Parsonsia longipetiolata		C		No	No	NTQ	No		2	0	2

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5945	Plantae	Equisetopsida	Apocynaceae	Parsonsia paulforsteri		C		No	No	NTQ	No		19	3	19
16525	Plantae	Equisetopsida	Apocynaceae	Parsonsia plaesiophylla		C		No	No	NTQ	No		1	0	1
14344	Plantae	Equisetopsida	Apocynaceae	Parsonsia rotata	veinless silkpod	C		No	No	NTQ	No		5	0	5
16526	Plantae	Equisetopsida	Apocynaceae	Parsonsia straminea	monkey rope	C		No	No	NTQ	No		7	1	7
16527	Plantae	Equisetopsida	Apocynaceae	Parsonsia velutina	hairy silkpod	C		No	No	NTQ	No		11	0	11
14343	Plantae	Equisetopsida	Apocynaceae	Parsonsia ventricosa		C		No	No	NTQ	No		1	0	1
16184	Plantae	Equisetopsida	Apocynaceae	Secamone elliptica		C		No	No	NTQ	No		29	1	29
16059	Plantae	Equisetopsida	Apocynaceae	Tabernaemontana pandacaqui	banana bush	C		No	No	NTQ	No		1	0	1
35897	Plantae	Equisetopsida	Apocynaceae	Vincetoxicum carnosum		C		No	No	NTQ	No		1	1	1
41249	Plantae	Equisetopsida	Apocynaceae	Vincetoxicum grandiflorum		C		No	No	NTQ	No		3	0	3
35914	Plantae	Equisetopsida	Apocynaceae	Vincetoxicum ovatum		C		No	No	NTQ	No		12	1	12
12389	Plantae	Equisetopsida	Araceae	Gymnostachys anceps	settler's flax	C		No	No	NTQ	No		8	1	8
6367	Plantae	Equisetopsida	Araceae	Syngonium podophyllum				No	No	NAQ	No		1	1	1
11142	Plantae	Equisetopsida	Araceae	Typhonium brownii	black arum lily	C		No	No	NTQ	No		1	1	1
41442	Plantae	Equisetopsida	Araliaceae	Heptapleurum actinophyllum		C		No	No	NNQ	No		2	0	2
15277	Plantae	Equisetopsida	Araliaceae	Hydrocotyle acutiloba		C		No	No	NTQ	No		1	1	1
8462	Plantae	Equisetopsida	Araliaceae	Polyscias elegans	celery wood	C		No	No	NTQ	No		23	0	23
17960	Plantae	Equisetopsida	Araucariaceae	Araucaria cunninghamii	hoop pine	C		No	No	NTQ	No		1	0	1
12776	Plantae	Equisetopsida	Arecaceae	Livistona australis	cabbage tree palm	SL		No	Yes	NTQ	No		1	0	1
29766	Plantae	Equisetopsida	Arecaceae	Livistona decora		SL		No	Yes	NTQ	No		4	0	4
22101	Plantae	Equisetopsida	Arecaceae	Syagrus romanzoffiana	Queen palm			No	No	NAQ	No		2	0	2
17972	Plantae	Equisetopsida	Aristolochiaceae	Aristolochia elegans	calico-flower			No	No	NAQ	No		5	1	5
17973	Plantae	Equisetopsida	Aristolochiaceae	Aristolochia pubera		C		No	No	NTQ	No		5	0	5
19747	Plantae	Equisetopsida	Asparagaceae	Asparagus aethiopicus	ground asparagus			No	No	NAQ	No		1	1	1
7563	Plantae	Equisetopsida	Asparagaceae	Asparagus africanus	ornamental asparagus			No	No	NAQ	No		2	0	2
7566	Plantae	Equisetopsida	Asparagaceae	Asparagus plumosus	feathered asparagus fern			No	No	NAQ	No		1	0	1
12409	Plantae	Equisetopsida	Asparagaceae	Lomandra				No	No		No		2	0	2
13587	Plantae	Equisetopsida	Asparagaceae	Lomandra confertifolia		C		No	No	NTQ	No		9	1	9
14415	Plantae	Equisetopsida	Asparagaceae	Lomandra confertifolia subsp. pallida		C		No	No	NTQ	No		18	2	18
16771	Plantae	Equisetopsida	Asparagaceae	Lomandra filiformis		C		No	No	NTQ	No		2	0	2
12406	Plantae	Equisetopsida	Asparagaceae	Lomandra gracilis		C		No	No	NTQ	No		1	0	1
16776	Plantae	Equisetopsida	Asparagaceae	Lomandra longifolia		C		No	No	NTQ	No		24	1	24
18792	Plantae	Equisetopsida	Asparagaceae	Lomandra multiflora		C		No	No	NTQ	No		7	0	7
16777	Plantae	Equisetopsida	Asparagaceae	Lomandra multiflora subsp. multiflora		C		No	No	NTQ	No		4	1	4
14041	Plantae	Equisetopsida	Aspleniaceae	Asplenium				No	No		No		2	0	2
17937	Plantae	Equisetopsida	Aspleniaceae	Asplenium australasicum		C		No	No	NTQ	No		4	2	4
17942	Plantae	Equisetopsida	Aspleniaceae	Asplenium nidus		C		No	No	NTQ	No		1	0	1
17943	Plantae	Equisetopsida	Aspleniaceae	Asplenium paleaceum	scaly asplenium	C		No	No	NTQ	No		1	0	1
15715	Plantae	Equisetopsida	Asteraceae	Acanthospermum hispidum	star burr			No	No	NAQ	No		1	0	1
15835	Plantae	Equisetopsida	Asteraceae	Acmella grandiflora var. brachyglossa		C		No	No	NTQ	No		4	4	4
11158	Plantae	Equisetopsida	Asteraceae	Ageratum conyzoides	billygoat weed			No	No	NAQ	No		14	4	14

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14051	Plantae	Equisetopsida	Asteraceae	Ageratum houstonianum	blue billygoat weed			No	No	NAQ	No		12	1	12
35061	Plantae	Equisetopsida	Asteraceae	Apowollastonia spilanthoides		C		No	No	NTQ	No		4	1	4
15612	Plantae	Equisetopsida	Asteraceae	Baccharis halimifolia	groundsel bush			No	No	NAQ	No		2	1	2
14045	Plantae	Equisetopsida	Asteraceae	Bidens bipinnata	bipinnate beggar's ticks			No	No	NAQ	No		1	0	1
41299	Plantae	Equisetopsida	Asteraceae	Bidens biternata				No	No	NAQ	No		1	1	1
7691	Plantae	Equisetopsida	Asteraceae	Bidens pilosa				No	No	NAQ	No		22	1	22
36251	Plantae	Equisetopsida	Asteraceae	Blumea axillaris		C		No	No	NTQ	No		2	2	2
12285	Plantae	Equisetopsida	Asteraceae	Blumea saxatilis		C		No	No	NTQ	No		3	0	3
11093	Plantae	Equisetopsida	Asteraceae	Brachyscome				No	No		No		1	0	1
10098	Plantae	Equisetopsida	Asteraceae	Brachyscome basaltica		C		No	No	NTQ	No		1	1	1
15565	Plantae	Equisetopsida	Asteraceae	Calotis cuneifolia	burr daisy	C		No	No	NTQ	No		1	0	1
15567	Plantae	Equisetopsida	Asteraceae	Calotis hispidula	bogan flea	C		No	No	NTQ	No		1	0	1
15570	Plantae	Equisetopsida	Asteraceae	Calyptocarpus vialis	creeping cinderella weed			No	No	NAQ	No		10	2	10
15574	Plantae	Equisetopsida	Asteraceae	Carduus thoermeri	nodding thistle			No	No	NAQ	No		1	0	1
15537	Plantae	Equisetopsida	Asteraceae	Cassinia quinquefaria		C		No	No	NTQ	No		1	0	1
18916	Plantae	Equisetopsida	Asteraceae	Centipeda minima		C		No	No	NTQ	No		2	0	2
33042	Plantae	Equisetopsida	Asteraceae	Centratherum riparium		C		No	No	NTQ	No		1	1	1
8398	Plantae	Equisetopsida	Asteraceae	Chrysocephalum apiculatum	yellow buttons	C		No	No	NTQ	No		1	0	1
14001	Plantae	Equisetopsida	Asteraceae	Cirsium vulgare	spear thistle			No	No	NAQ	No		2	0	2
19371	Plantae	Equisetopsida	Asteraceae	Conyza				No	No	XU	No		4	0	4
29560	Plantae	Equisetopsida	Asteraceae	Coronidium lanuginosum		C		No	No	NTQ	No		3	1	3
14676	Plantae	Equisetopsida	Asteraceae	Crassocephalum crepidioides	thickhead			No	No	NAQ	No		1	1	1
22237	Plantae	Equisetopsida	Asteraceae	Cyanthillium cinereum		C		No	No	NTQ	No		37	4	37
15438	Plantae	Equisetopsida	Asteraceae	Eclipta prostrata	white eclipta			No	No	NAQ	No		4	4	4
15401	Plantae	Equisetopsida	Asteraceae	Emilia sonchifolia				No	No	NAQ	No		35	0	35
15399	Plantae	Equisetopsida	Asteraceae	Emilia sonchifolia var. javanica				No	No	NAQ	No		3	3	3
35896	Plantae	Equisetopsida	Asteraceae	Erigeron bonariensis				No	No	NAQ	No		3	1	3
35905	Plantae	Equisetopsida	Asteraceae	Erigeron sumatrensis				No	No	NAQ	No		8	2	8
35902	Plantae	Equisetopsida	Asteraceae	Eschenbachia leucantha		C		No	No	NTQ	No		1	1	1
8404	Plantae	Equisetopsida	Asteraceae	Gamochaeta pensylvanica				No	No	NAQ	No		3	1	3
10693	Plantae	Equisetopsida	Asteraceae	Gazania rigens				No	No	NAQ	No		1	1	1
9092	Plantae	Equisetopsida	Asteraceae	Glossocardia bidens	native cobbler's pegs	C		No	No	NTQ	No		4	1	4
15307	Plantae	Equisetopsida	Asteraceae	Gynura drymophila var. drymophila		C		No	No	NTQ	No		1	1	1
15317	Plantae	Equisetopsida	Asteraceae	Helichrysum				No	No		No		2	0	2
31935	Plantae	Equisetopsida	Asteraceae	Hypochaeris albiflora				No	No	NAQ	No		1	1	1
29504	Plantae	Equisetopsida	Asteraceae	Lactuca serriola forma serriola				No	No	NAQ	No		1	1	1
15269	Plantae	Equisetopsida	Asteraceae	Lagenophora gracilis				No	No	XU	No		3	0	3
41062	Plantae	Equisetopsida	Asteraceae	Lagenophora sublyrata		C		No	No	NTQ	No		2	1	2
14333	Plantae	Equisetopsida	Asteraceae	Olearia				No	No		No		1	0	1
14331	Plantae	Equisetopsida	Asteraceae	Olearia canescens		C		No	No	NTQ	No		2	0	2
35071	Plantae	Equisetopsida	Asteraceae	Olearia canescens subsp. discolor		C		No	No	NTQ	No		2	1	2

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15162	Plantae	Equisetopsida	Asteraceae	Olearia subspicata		C		No	No	NTQ	No		1	0	1
8367	Plantae	Equisetopsida	Asteraceae	Ozothamnus cassinioides		C		No	No	NTQ	No		4	2	4
6538	Plantae	Equisetopsida	Asteraceae	Peripleura bicolor		C		No	No	NTQ	No		1	1	1
6539	Plantae	Equisetopsida	Asteraceae	Peripleura diffusa		C		No	No	NTQ	No		2	0	2
6540	Plantae	Equisetopsida	Asteraceae	Peripleura hispidula		C		No	No	NTQ	No		13	0	13
6541	Plantae	Equisetopsida	Asteraceae	Peripleura hispidula var. hispidula		C		No	No	NTQ	No		1	1	1
6542	Plantae	Equisetopsida	Asteraceae	Peripleura hispidula var. setosa		C		No	No	NTQ	No		3	0	3
7090	Plantae	Equisetopsida	Asteraceae	Picris angustifolia subsp. carolorum-henricorum		C		No	No	NTQ	No		4	0	4
10607	Plantae	Equisetopsida	Asteraceae	Pluchea dioscoridis				No	No	XI	No		1	0	1
34237	Plantae	Equisetopsida	Asteraceae	Pluchea xanthina		C		No	No	NTQ	No		1	1	1
8363	Plantae	Equisetopsida	Asteraceae	Pseudognaphalium luteoalbum	Jersey cudweed	C		No	No	NTQ	No		1	1	1
10478	Plantae	Equisetopsida	Asteraceae	Pterocaulon				No	No		No		6	0	6
15129	Plantae	Equisetopsida	Asteraceae	Pterocaulon redolens		C		No	No	NTQ	No		24	1	24
9320	Plantae	Equisetopsida	Asteraceae	Pterocaulon serrulatum		C		No	No	NTQ	No		1	0	1
30174	Plantae	Equisetopsida	Asteraceae	Senecio brigalowensis		C		No	No	NTQ	No		1	1	1
12208	Plantae	Equisetopsida	Asteraceae	Sigesbeckia orientalis	Indian weed	C		No	No	NTQ	No		9	1	9
22236	Plantae	Equisetopsida	Asteraceae	Soliva sessilis				No	No	NAQ	No		1	1	1
15039	Plantae	Equisetopsida	Asteraceae	Sonchus oleraceus	common sowthistle			No	No	NAQ	No		8	2	8
34624	Plantae	Equisetopsida	Asteraceae	Sphaeromorphaea australis		C		No	No	NTQ	No		7	1	7
35028	Plantae	Equisetopsida	Asteraceae	Sphaeromorphaea major		NT		No	Yes	NTQ	No		2	2	2
26362	Plantae	Equisetopsida	Asteraceae	Sphagneticola trilobata				No	No	NAQ	No		5	5	5
35909	Plantae	Equisetopsida	Asteraceae	Symphyotrichum subulatum				No	No	NAQ	No		2	1	2
5622	Plantae	Equisetopsida	Asteraceae	Synedrellopsis grisebachii				No	No	NAQ	No		4	3	4
10448	Plantae	Equisetopsida	Asteraceae	Taraxacum officinale	dandelion			No	No	NAQ	No		1	1	1
30875	Plantae	Equisetopsida	Asteraceae	Thymophylla tenuiloba var. tenuiloba				No	No	NAQ	No		1	1	1
14987	Plantae	Equisetopsida	Asteraceae	Tridax procumbens	tridax daisy			No	No	NAQ	No		8	5	8
36235	Plantae	Equisetopsida	Asteraceae	Verbesina encelioides var. encelioides				No	No	NAQ	No		1	1	1
9527	Plantae	Equisetopsida	Asteraceae	Vittadinia dissecta		C		No	No	NTQ	No		1	0	1
14959	Plantae	Equisetopsida	Asteraceae	Vittadinia sulcata	native daisy	C		No	No	NTQ	No		2	0	2
22235	Plantae	Equisetopsida	Asteraceae	Xanthium occidentale				No	No	NAQ	No		3	1	3
27470	Plantae	Equisetopsida	Asteraceae	Xerochrysum bracteatum	golden everlasting daisy	C		No	No	NTQ	No		2	1	2
10411	Plantae	Equisetopsida	Asteraceae	Zinnia peruviana	wild zinnia			No	No	NAQ	No		1	0	1
25558	Plantae	Equisetopsida	Aytoniaceae	Asterella drummondii		C		No	No	NTQ	No		2	2	2
9090	Plantae	Equisetopsida	Balsaminaceae	Impatiens walleriana	balsam			No	No	NAQ	No		1	0	1
34188	Plantae	Equisetopsida	Bignoniaceae	Dolichandra unguis-cati	cat's claw creeper			No	No	NAQ	No		2	1	2
16569	Plantae	Equisetopsida	Bignoniaceae	Pandorea jasminoides		C		No	No	NTQ	No		1	0	1
16570	Plantae	Equisetopsida	Bignoniaceae	Pandorea pandorana	wonga vine	C		No	No	NTQ	No		28	2	28
17871	Plantae	Equisetopsida	Blechnaceae	Blechnum cartilagineum	gristle fern	C		No	No	NTQ	No		2	1	2

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17819	Plantae	Equisetopsida	Blechnaceae	Blechnum orientale		SL		No	Yes	NTQ	No		2	2	2
15507	Plantae	Equisetopsida	Boraginaceae	Cordia dichotoma		C		No	No	NTQ	No		2	0	2
11582	Plantae	Equisetopsida	Boraginaceae	Ehretia				No	No		No		1	0	1
8129	Plantae	Equisetopsida	Boraginaceae	Ehretia grahamii		C		No	No	NTQ	No		16	5	16
15393	Plantae	Equisetopsida	Boraginaceae	Ehretia membranifolia	weeping koda	C		No	No	NTQ	No		7	1	7
11193	Plantae	Equisetopsida	Boraginaceae	Heliotropium amplexicaule	blue heliotrope			No	No	NAQ	No		2	2	2
15968	Plantae	Equisetopsida	Boraginaceae	Trichodesma zeylanicum		C		No	No	NTQ	No		2	0	2
13719	Plantae	Equisetopsida	Boraginaceae	Trichodesma zeylanicum var. zeylanicum		C		No	No	NTQ	No		2	1	2
42227	Plantae	Equisetopsida	Brassicaceae	Cardamine occulta				No	No	NAQ	No		1	1	1
12221	Plantae	Equisetopsida	Brassicaceae	Lepidium bonariense	Argentine peppercress			No	No	NAQ	No		5	5	5
27691	Plantae	Equisetopsida	Brassicaceae	Lepidium didymum				No	No	NAQ	No		1	1	1
14438	Plantae	Equisetopsida	Brassicaceae	Lepidium virginicum	Virginian peppercress			No	No	NAQ	No		1	1	1
11630	Plantae	Equisetopsida	Brassicaceae	Rapistrum rugosum				No	No	NAQ	No		1	1	1
16667	Plantae	Equisetopsida	Byttneriaceae	Melochia pyramidata				No	No	NAQ	No		1	1	1
35845	Plantae	Equisetopsida	Byttneriaceae	Seringia lanceolata		C		No	No	NTQ	No		1	0	1
13881	Plantae	Equisetopsida	Cactaceae	Hylocereus undatus	night blooming cactus			No	No	NAQ	No		1	1	1
13842	Plantae	Equisetopsida	Cactaceae	Opuntia				No	No		No		3	0	3
26358	Plantae	Equisetopsida	Cactaceae	Opuntia monacantha				No	No	NAQ	No		1	1	1
19352	Plantae	Equisetopsida	Cactaceae	Opuntia stricta				No	No	NAQ	No		21	1	21
9535	Plantae	Equisetopsida	Cactaceae	Opuntia tomentosa	velvety tree pear			No	No	NAQ	No		5	0	5
13867	Plantae	Equisetopsida	Campanulaceae	Lobelia				No	No		No		1	0	1
33856	Plantae	Equisetopsida	Campanulaceae	Lobelia concolor		SL		No	Yes	NTQ	No		1	0	1
16766	Plantae	Equisetopsida	Campanulaceae	Lobelia purpurascens	white root	SL		No	Yes	NTQ	No		3	0	3
13864	Plantae	Equisetopsida	Campanulaceae	Lobelia stenophylla		SL		No	Yes	NTQ	No		1	1	1
15918	Plantae	Equisetopsida	Campanulaceae	Wahlenbergia gracilis	sprawling bluebell	SL		No	Yes	NTQ	No		2	1	2
17955	Plantae	Equisetopsida	Cannabaceae	Aphananthe philippinensis		C		No	No	NTQ	No		5	0	5
17667	Plantae	Equisetopsida	Cannabaceae	Celtis paniculata	native celtis	C		No	No	NTQ	No		8	0	8
16011	Plantae	Equisetopsida	Cannabaceae	Trema tomentosa		C		No	No	NTQ	No		10	0	10
16010	Plantae	Equisetopsida	Cannabaceae	Trema tomentosa var. tomentosa		C		No	No	NTQ	No		1	1	1
13987	Plantae	Equisetopsida	Capparaceae	Capparis				No	No		No		4	0	4
17725	Plantae	Equisetopsida	Capparaceae	Capparis arborea	brush caper berry	C		No	No	NTQ	No		28	2	28
13984	Plantae	Equisetopsida	Capparaceae	Capparis canescens		C		No	No	NTQ	No		14	1	14
13985	Plantae	Equisetopsida	Capparaceae	Capparis loranthifolia		C		No	No	NTQ	No		4	0	4
17729	Plantae	Equisetopsida	Capparaceae	Capparis mitchellii		C		No	No	NTQ	No		1	0	1
17730	Plantae	Equisetopsida	Capparaceae	Capparis ornans		C		No	No	NTQ	No		17	1	17
17732	Plantae	Equisetopsida	Capparaceae	Capparis sarmentosa	scrambling caper	C		No	No	NTQ	No		4	0	4
13988	Plantae	Equisetopsida	Caricaceae	Carica papaya	pawpaw			No	No	NAQ	No		2	0	2
17352	Plantae	Equisetopsida	Caryophyllaceae	Drymaria cordata subsp. cordata				No	No	NAQ	No		1	1	1
11374	Plantae	Equisetopsida	Caryophyllaceae	Polycarpaea corymbosa		C		No	No	NTQ	No		2	0	2
18012	Plantae	Equisetopsida	Casuarinaceae	Allocasuarina littoralis		C		No	No	NTQ	No		5	1	5
18013	Plantae	Equisetopsida	Casuarinaceae	Allocasuarina luehmannii	bull oak	C		No	No	NTQ	No		4	1	4
18014	Plantae	Equisetopsida	Casuarinaceae	Allocasuarina torulosa		C		No	No	NTQ	No		14	1	14
9087	Plantae	Equisetopsida	Casuarinaceae	Casuarina cunninghamiana		C		No	No	NTQ	No		6	0	6

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13995	Plantae	Equisetopsida	Casuarinaceae	Casuarina cunninghamiana subsp. cunninghamiana		C		No	No	NTQ	No		1	0	1
13994	Plantae	Equisetopsida	Casuarinaceae	Casuarina equisetifolia		C		No	No	NTQ	No		2	0	2
11097	Plantae	Equisetopsida	Celastraceae	Celastrus subspicata	large-leaved staffvine	C		No	No	NTQ	No		1	0	1
17458	Plantae	Equisetopsida	Celastraceae	Denhamia				No	No		No		3	0	3
34775	Plantae	Equisetopsida	Celastraceae	Denhamia cunninghamii		C		No	No	NTQ	No		10	0	10
34776	Plantae	Equisetopsida	Celastraceae	Denhamia disperma		C		No	No	NTQ	No		18	0	18
17455	Plantae	Equisetopsida	Celastraceae	Denhamia oleaster		C		No	No	NTQ	No		4	1	4
9618	Plantae	Equisetopsida	Celastraceae	Denhamia pittosporoides		C		No	No	NTQ	No		19	0	19
17456	Plantae	Equisetopsida	Celastraceae	Denhamia pittosporoides subsp. pittosporoides		C		No	No	NTQ	No		2	1	2
22222	Plantae	Equisetopsida	Celastraceae	Elaeodendron australe var. australe		C		No	No	NTQ	No		2	0	2
22226	Plantae	Equisetopsida	Celastraceae	Elaeodendron melanocarpum		C		No	No	NTQ	No		29	4	29
16964	Plantae	Equisetopsida	Celastraceae	Hippocratea barbata	knotvine	C		No	No	NTQ	No		4	0	4
16426	Plantae	Equisetopsida	Celastraceae	Pleurostylia opposita		C		No	No	NTQ	No		6	1	6
15034	Plantae	Equisetopsida	Celastraceae	Siphonodon australis	ivorywood	C		No	No	NTQ	No		6	1	6
17912	Plantae	Equisetopsida	Chenopodiaceae	Atriplex muelleri	lagoon saltbush	C		No	No	NTQ	No		1	1	1
9644	Plantae	Equisetopsida	Chenopodiaceae	Chenopodium				No	No		No		2	0	2
17684	Plantae	Equisetopsida	Chenopodiaceae	Chenopodium album	fat-hen			No	No	NAQ	No		1	0	1
14752	Plantae	Equisetopsida	Chenopodiaceae	Chenopodium murale	green fat-hen			No	No	NAQ	No		1	1	1
14621	Plantae	Equisetopsida	Chenopodiaceae	Dysphania littoralis	red crumbweed	C		No	No	NTQ	No		1	1	1
7742	Plantae	Equisetopsida	Chenopodiaceae	Einadia nutans		C		No	No	NTQ	No		1	0	1
17296	Plantae	Equisetopsida	Chenopodiaceae	Enchylaena tomentosa		C		No	No	NTQ	No		2	0	2
33924	Plantae	Equisetopsida	Chenopodiaceae	Salsola australis		C		No	No	NTQ	No		1	1	1
21957	Plantae	Equisetopsida	Chenopodiaceae	Sarcocornia quinqueflora				No	No	XU	No		2	0	2
16115	Plantae	Equisetopsida	Chenopodiaceae	Suaeda australis		C		No	No	NTQ	No		4	0	4
31663	Plantae	Equisetopsida	Chenopodiaceae	Tecticornia				No	No		No		1	0	1
16019	Plantae	Equisetopsida	Chenopodiaceae	Tecticornia australasica		C		No	No	NTQ	No		1	1	1
31667	Plantae	Equisetopsida	Chenopodiaceae	Tecticornia halocnemoides		C		No	No	NTQ	No		1	0	1
31677	Plantae	Equisetopsida	Chenopodiaceae	Tecticornia indica		C		No	No	NTQ	No		3	0	3
31671	Plantae	Equisetopsida	Chenopodiaceae	Tecticornia pergranulata subsp. queenslandica		C		No	No	NTQ	No		2	1	2
12969	Plantae	Equisetopsida	Colchicaceae	Iphigenia indica		C		No	No	NTQ	No		1	0	1
17490	Plantae	Equisetopsida	Combretaceae	Dansiea elliptica		NT		No	Yes	NTQ	No		9	5	9
13872	Plantae	Equisetopsida	Combretaceae	Lumnitzera racemosa		C		No	No	NTQ	No		3	1	3
14425	Plantae	Equisetopsida	Combretaceae	Macropteranthes fitzalanii		C		No	No	NTQ	No		5	0	5
13589	Plantae	Equisetopsida	Combretaceae	Macropteranthes leichhardtii	bonewood	C		No	No	NTQ	No		3	0	3
7667	Plantae	Equisetopsida	Combretaceae	Macropteranthes leiocaulis		NT		No	Yes	NTQ	No		12	5	12
13766	Plantae	Equisetopsida	Combretaceae	Terminalia				No	No		No		1	0	1

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16028	Plantae	Equisetopsida	Combretaceae	Terminalia porphyrocarpa		C		No	No	NTQ	No		35	3	35
10134	Plantae	Equisetopsida	Commelinaceae	Aneilema				No	No		No		1	0	1
17996	Plantae	Equisetopsida	Commelinaceae	Aneilema acuminatum		C		No	No	NTQ	No		6	1	6
17593	Plantae	Equisetopsida	Commelinaceae	Commelina				No	No		No		3	0	3
10033	Plantae	Equisetopsida	Commelinaceae	Commelina diffusa		C		No	No	XU	No		8	0	8
11105	Plantae	Equisetopsida	Commelinaceae	Commelina ensifolia	scurvy grass	C		No	No	NTQ	No		1	0	1
14720	Plantae	Equisetopsida	Commelinaceae	Commelina lanceolata		C		No	No	NTQ	No		2	0	2
16599	Plantae	Equisetopsida	Commelinaceae	Murdannia graminea	murdannia	C		No	No	NTQ	No		9	2	9
20354	Plantae	Equisetopsida	Convolvulaceae	Calystegia				No	No	QAI	No		1	0	1
9898	Plantae	Equisetopsida	Convolvulaceae	Cuscuta australis	Australian dodder	C		No	No	NTQ	No		1	0	1
36245	Plantae	Equisetopsida	Convolvulaceae	Distimake dissectus				No	No	NAQ	No		4	4	4
36246	Plantae	Equisetopsida	Convolvulaceae	Distimake quinquefolius				No	No	NAQ	No		1	1	1
17176	Plantae	Equisetopsida	Convolvulaceae	Evolvulus alsinoides		C		No	No	NTQ	No		12	0	12
17175	Plantae	Equisetopsida	Convolvulaceae	Evolvulus alsinoides var. decumbens		C		No	No	NTQ	No		4	1	4
14467	Plantae	Equisetopsida	Convolvulaceae	Ipomoea cairica				No	No	NAQ	No		2	2	2
16862	Plantae	Equisetopsida	Convolvulaceae	Ipomoea plebeia	bellvine	C		No	No	NTQ	No		3	0	3
16864	Plantae	Equisetopsida	Convolvulaceae	Ipomoea quamoclit	star of Bethlehem			No	No	NAQ	No		1	1	1
34730	Plantae	Equisetopsida	Convolvulaceae	Ipomoea violacea		C		No	No	NTQ	No		6	0	6
16882	Plantae	Equisetopsida	Convolvulaceae	Jacquemontia paniculata		C		No	No	NTQ	No		8	4	8
16881	Plantae	Equisetopsida	Convolvulaceae	Jacquemontia paniculata var. tomentosa		C		No	No	NTQ	No		2	0	2
16395	Plantae	Equisetopsida	Convolvulaceae	Polymeria calycina	pink bindweed	C		No	No	NTQ	No		4	1	4
16398	Plantae	Equisetopsida	Convolvulaceae	Polymeria pusilla		C		No	No	NTQ	No		2	0	2
40968	Plantae	Equisetopsida	Cornaceae	Alangium polyosmoides subsp. tomentosum		C		No	No	NTQ	No		2	0	2
21934	Plantae	Equisetopsida	Crassulaceae	Bryophyllum delagoense				No	No	NAQ	No		3	2	3
31058	Plantae	Equisetopsida	Crassulaceae	Bryophyllum x houghtonii				No	No	NAQ	No		2	1	2
9267	Plantae	Equisetopsida	Crassulaceae	Crassula sieberiana		C		No	No	NTQ	No		2	1	2
33898	Plantae	Equisetopsida	Cucurbitaceae	Citrullus lanatus				No	No	XU	No		1	0	1
17546	Plantae	Equisetopsida	Cucurbitaceae	Cucumis melo		C		No	No	NTQ	No		1	0	1
18824	Plantae	Equisetopsida	Cucurbitaceae	Diplocyclos palmatus		C		No	No	NTQ	No		8	1	8
41609	Plantae	Equisetopsida	Cyatheaceae	Alsophila australis		C		No	No	NTQ	No		2	2	2
8445	Plantae	Equisetopsida	Cycadaceae	Cycas megacarpa		E	E	No	Yes	NTQ	Yes		4	2	4
9529	Plantae	Equisetopsida	Cyperaceae	Abildgaardia ovata		C		No	No	NTQ	No		6	1	6
11754	Plantae	Equisetopsida	Cyperaceae	Carex breviculmis		C		No	No	NTQ	No		1	0	1
14779	Plantae	Equisetopsida	Cyperaceae	Carex inversa	knob sedge	C		No	No	NTQ	No		1	0	1
14670	Plantae	Equisetopsida	Cyperaceae	Cyperus				No	No		No		5	0	5
17510	Plantae	Equisetopsida	Cyperaceae	Cyperus aquatilis		C		No	No	NTQ	No		1	1	1
11060	Plantae	Equisetopsida	Cyperaceae	Cyperus concinnus		C		No	No	NTQ	No		2	1	2
14661	Plantae	Equisetopsida	Cyperaceae	Cyperus cyperoides		C		No	No	NTQ	No		3	0	3
17515	Plantae	Equisetopsida	Cyperaceae	Cyperus difformis	rice sedge	C		No	No	NTQ	No		4	1	4
17516	Plantae	Equisetopsida	Cyperaceae	Cyperus enervis		C		No	No	NTQ	No		2	0	2
14656	Plantae	Equisetopsida	Cyperaceae	Cyperus exaltatus	tall flatsedge	C		No	No	NTQ	No		1	0	1
13966	Plantae	Equisetopsida	Cyperaceae	Cyperus flaccidus		C		No	No	NTQ	No		8	0	8
17519	Plantae	Equisetopsida	Cyperaceae	Cyperus fulvus		C		No	No	NTQ	No		7	2	7
17521	Plantae	Equisetopsida	Cyperaceae	Cyperus gracilis		C		No	No	NTQ	No		21	3	21

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9443	Plantae	Equisetopsida	Cyperaceae	Cyperus haspan		C		No	No	NTQ	No		1	0	1
14657	Plantae	Equisetopsida	Cyperaceae	Cyperus involucratus				No	No	NAQ	No		4	4	4
17525	Plantae	Equisetopsida	Cyperaceae	Cyperus javanicus		C		No	No	NTQ	No		1	0	1
11062	Plantae	Equisetopsida	Cyperaceae	Cyperus papyrus	papyrus			No	No	NAQ	No		1	0	1
17473	Plantae	Equisetopsida	Cyperaceae	Cyperus perangustus		C		No	No	NTQ	No		4	0	4
12420	Plantae	Equisetopsida	Cyperaceae	Cyperus polystachyos		C		No	No	NTQ	No		2	0	2
17475	Plantae	Equisetopsida	Cyperaceae	Cyperus polystachyos var. polystachyos		C		No	No	NTQ	No		1	1	1
17476	Plantae	Equisetopsida	Cyperaceae	Cyperus procerus		C		No	No	NTQ	No		1	1	1
17478	Plantae	Equisetopsida	Cyperaceae	Cyperus rotundus	nutgrass			No	No	NAQ	No		2	1	2
14666	Plantae	Equisetopsida	Cyperaceae	Cyperus scaber		C		No	No	NTQ	No		1	0	1
14667	Plantae	Equisetopsida	Cyperaceae	Cyperus scariosus		C		No	No	NTQ	No		1	1	1
11954	Plantae	Equisetopsida	Cyperaceae	Cyperus sesquiflorus				No	No	NAQ	No		1	1	1
11955	Plantae	Equisetopsida	Cyperaceae	Cyperus tenuispica		C		No	No	NTQ	No		1	0	1
17483	Plantae	Equisetopsida	Cyperaceae	Cyperus tetracarpus		C		No	No	NTQ	No		1	1	1
17340	Plantae	Equisetopsida	Cyperaceae	Eleocharis cylindrostachys		C		No	No	NTQ	No		1	1	1
9816	Plantae	Equisetopsida	Cyperaceae	Eleocharis dietrichiana		C		No	No	NTQ	No		1	1	1
14579	Plantae	Equisetopsida	Cyperaceae	Eleocharis dulcis		C		No	No	NTQ	No		1	1	1
14581	Plantae	Equisetopsida	Cyperaceae	Eleocharis equisetina		C		No	No	NTQ	No		1	1	1
11072	Plantae	Equisetopsida	Cyperaceae	Eleocharis philippinensis		C		No	No	NTQ	No		2	1	2
17113	Plantae	Equisetopsida	Cyperaceae	Fimbristylis				No	No		No		1	0	1
9376	Plantae	Equisetopsida	Cyperaceae	Fimbristylis aestivalis		C		No	No	NTQ	No		4	0	4
10137	Plantae	Equisetopsida	Cyperaceae	Fimbristylis bisumbellata		C		No	No	NTQ	No		5	0	5
17107	Plantae	Equisetopsida	Cyperaceae	Fimbristylis dichotoma	common fringe-rush	C		No	No	NTQ	No		16	1	16
17109	Plantae	Equisetopsida	Cyperaceae	Fimbristylis nutans		C		No	No	NTQ	No		1	0	1
17111	Plantae	Equisetopsida	Cyperaceae	Fimbristylis polytrichoides		C		No	No	NTQ	No		5	2	5
34364	Plantae	Equisetopsida	Cyperaceae	Fimbristylis quinquangularis		C		No	No	NTQ	No		2	1	2
14511	Plantae	Equisetopsida	Cyperaceae	Fimbristylis tristachya		C		No	No	NTQ	No		1	1	1
17130	Plantae	Equisetopsida	Cyperaceae	Fuirena ciliaris		C		No	No	NTQ	No		1	0	1
17078	Plantae	Equisetopsida	Cyperaceae	Gahnia aspera		C		No	No	NTQ	No		31	3	31
9381	Plantae	Equisetopsida	Cyperaceae	Lepidosperma laterale		C		No	No	NTQ	No		3	1	3
41286	Plantae	Equisetopsida	Cyperaceae	Machaerina articulata		C		No	No	NTQ	No		1	0	1
16225	Plantae	Equisetopsida	Cyperaceae	Scleria				No	No		No		1	0	1
16220	Plantae	Equisetopsida	Cyperaceae	Scleria brownii		C		No	No	NTQ	No		8	0	8
14228	Plantae	Equisetopsida	Cyperaceae	Scleria mackaviensis		C		No	No	NTQ	No		20	0	20
11912	Plantae	Equisetopsida	Cyperaceae	Scleria novae-hollandiae		C		No	No	NTQ	No		2	0	2
17497	Plantae	Equisetopsida	Davalliaceae	Davallia pyxidata		C		No	No	NTQ	No		5	2	5
16965	Plantae	Equisetopsida	Dennstaedtiaceae	Histiopteris incisa	bats-wing fern	C		No	No	NTQ	No		1	1	1
16340	Plantae	Equisetopsida	Dennstaedtiaceae	Pteridium esculentum	common bracken	C		No	No	NTQ	No		3	1	3
17547	Plantae	Equisetopsida	Dicksoniaceae	Calochlaena dubia		C		No	No	NTQ	No		1	1	1
17438	Plantae	Equisetopsida	Dioscoreaceae	Dioscorea transversa	native yam	C		No	No	NTQ	No		22	0	22
32598	Plantae	Equisetopsida	Dracaenaceae	Sansevieria trifasciata var. trifasciata				No	No	NAQ	No		1	1	1
14435	Plantae	Equisetopsida	Dryopteridaceae	Lastreopsis tenera		SL		No	Yes	NTQ	No		3	2	3
12178	Plantae	Equisetopsida	Ebenaceae	Diospyros				No	No		No		1	0	1
17439	Plantae	Equisetopsida	Ebenaceae	Diospyros australis	black plum	C		No	No	NTQ	No		16	1	16
17442	Plantae	Equisetopsida	Ebenaceae	Diospyros fasciculosa	grey ebony	C		No	No	NTQ	No		7	0	7

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17443	Plantae	Equisetopsida	Ebenaceae	Diospyros geminata	scaly ebony	C		No	No	NTQ	No		43	4	43
17445	Plantae	Equisetopsida	Ebenaceae	Diospyros humilis	small-leaved ebony	C		No	No	NTQ	No		14	0	14
17327	Plantae	Equisetopsida	Elaeocarpaceae	Elaeocarpus eumundi	Eumundi quandong	C		No	No	NTQ	No		1	1	1
14572	Plantae	Equisetopsida	Elaeocarpaceae	Elaeocarpus obovatus	blueberry ash	C		No	No	NTQ	No		6	0	6
41455	Plantae	Equisetopsida	Elaeocarpaceae	Elaeocarpus obovatus subsp. obovatus		C		No	No	NTQ	No		2	2	2
18111	Plantae	Equisetopsida	Ericaceae	Acrotriche aggregata	red cluster heath	C		No	No	NTQ	No		2	1	2
16641	Plantae	Equisetopsida	Ericaceae	Monotoca scoparia	prickly broom heath	C		No	No	NTQ	No		1	0	1
14542	Plantae	Equisetopsida	Eriocaulaceae	Eriocaulon nanum		C		No	No	NTQ	No		1	1	1
17288	Plantae	Equisetopsida	Erythroxylaceae	Erythroxylum australe	cocaine tree	C		No	No	NTQ	No		14	0	14
6349	Plantae	Equisetopsida	Erythroxylaceae	Erythroxylum sp. (Splityard Creek L.Pedley 5360)		C		No	No	NTQ	No		10	1	10
18094	Plantae	Equisetopsida	Euphorbiaceae	Acalypha				No	No		No		1	1	1
11364	Plantae	Equisetopsida	Euphorbiaceae	Acalypha australis				No	No	NAQ	No		1	1	1
11503	Plantae	Equisetopsida	Euphorbiaceae	Acalypha capillipes	small-leaved acalypha	C		No	No	NTQ	No		4	0	4
18091	Plantae	Equisetopsida	Euphorbiaceae	Acalypha eremorum	soft acalypha	C		No	No	NTQ	No		24	0	24
18050	Plantae	Equisetopsida	Euphorbiaceae	Alchornea ilicifolia	native holly	C		No	No	NTQ	No		21	0	21
9348	Plantae	Equisetopsida	Euphorbiaceae	Alchornea thozetiana		C		No	No	NTQ	No		3	0	3
14825	Plantae	Equisetopsida	Euphorbiaceae	Baloghia inophylla	scrub bloodwood	C		No	No	NTQ	No		14	4	14
11329	Plantae	Equisetopsida	Euphorbiaceae	Claoxylon				No	No		No		1	0	1
17612	Plantae	Equisetopsida	Euphorbiaceae	Claoxylon australe	brittlewood	C		No	No	NTQ	No		1	0	1
17613	Plantae	Equisetopsida	Euphorbiaceae	Claoxylon tenerifolium	Queensland brittlewood	C		No	No	NTQ	No		6	0	6
13956	Plantae	Equisetopsida	Euphorbiaceae	Croton acronychioides	thick-leaved croton	C		No	No	NTQ	No		16	1	16
17561	Plantae	Equisetopsida	Euphorbiaceae	Croton insularis	Queensland cascarilla	C		No	No	NTQ	No		13	1	13
17562	Plantae	Equisetopsida	Euphorbiaceae	Croton phebalioides	narrow-leaved croton	C		No	No	NTQ	No		11	0	11
11494	Plantae	Equisetopsida	Euphorbiaceae	Croton stigmatosus	white croton	C		No	No	NTQ	No		4	1	4
34170	Plantae	Equisetopsida	Euphorbiaceae	Euphorbia bifida		C		No	No	NTQ	No		1	0	1
17160	Plantae	Equisetopsida	Euphorbiaceae	Euphorbia cyathophora	dwarf poinsettia			No	No	NAQ	No		4	3	4
5309	Plantae	Equisetopsida	Euphorbiaceae	Euphorbia dallachyana		C		No	No	NTQ	No		3	2	3
5515	Plantae	Equisetopsida	Euphorbiaceae	Euphorbia drummondii		C		No	No	NTQ	No		1	0	1
5516	Plantae	Equisetopsida	Euphorbiaceae	Euphorbia hirta				No	No	NAQ	No		3	3	3
4734	Plantae	Equisetopsida	Euphorbiaceae	Euphorbia hyssopifolia				No	No	NAQ	No		5	3	5
34392	Plantae	Equisetopsida	Euphorbiaceae	Euphorbia ophthalmica				No	No	NAQ	No		1	1	1
5519	Plantae	Equisetopsida	Euphorbiaceae	Euphorbia prostrata				No	No	NAQ	No		3	3	3
9904	Plantae	Equisetopsida	Euphorbiaceae	Euphorbia tannensis		C		No	No	NTQ	No		3	0	3
9244	Plantae	Equisetopsida	Euphorbiaceae	Euphorbia tannensis subsp. tannensis		C		No	No	NTQ	No		1	1	1
9713	Plantae	Equisetopsida	Euphorbiaceae	Euphorbia tirucalli	naked lady			No	No	NAQ	No		1	1	1
36308	Plantae	Equisetopsida	Euphorbiaceae	Euphorbia tithymaloides subsp. smallii				No	No	NAQ	No		1	1	1
17178	Plantae	Equisetopsida	Euphorbiaceae	Excoecaria agallocha	milky mangrove	C		No	No	NTQ	No		2	1	2
17179	Plantae	Equisetopsida	Euphorbiaceae	Excoecaria dallachyana	scrub poison tree	C		No	No	NTQ	No		11	0	11
5284	Plantae	Equisetopsida	Euphorbiaceae	Homalanthus populifolius		C		No	No	NTQ	No		3	1	3
16841	Plantae	Equisetopsida	Euphorbiaceae	Jatropha gossypiifolia	bellyache bush			No	No	NAQ	No		2	2	2
16753	Plantae	Equisetopsida	Euphorbiaceae	Macaranga tanarius	macaranga	C		No	No	NTQ	No		1	0	1
11312	Plantae	Equisetopsida	Euphorbiaceae	Mallotus				No	No		No		1	0	1
11406	Plantae	Equisetopsida	Euphorbiaceae	Mallotus claoxyloides	green kamala	C		No	No	NTQ	No		26	2	26
14380	Plantae	Equisetopsida	Euphorbiaceae	Mallotus discolor	white kamala	C		No	No	NTQ	No		2	0	2
8257	Plantae	Equisetopsida	Euphorbiaceae	Mallotus ficifolius		C		No	No	NTQ	No		2	1	2
16715	Plantae	Equisetopsida	Euphorbiaceae	Mallotus philippensis	red kamala	C		No	No	NTQ	No		39	2	39

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11252	Plantae	Equisetopsida	Euphorbiaceae	Ricinocarpos ledifolius	scrub wedding bush	C		No	No	NTQ	No		2	0	2
11288	Plantae	Equisetopsida	Euphorbiaceae	Ricinus communis	castor oil bush			No	No	NAQ	No		2	2	2
11246	Plantae	Equisetopsida	Euphorbiaceae	Tragia novae-hollandiae	stinging-vine	C		No	No	NTQ	No		6	1	6
24698	Plantae	Equisetopsida	Fissidentaceae	Fissidens asplenioides		C		No	No	NTQ	No		1	1	1
25615	Plantae	Equisetopsida	Frullaniaceae	Frullania				No	No		No		1	1	1
29264	Plantae	Equisetopsida	Funariaceae	Entosthodon apophysatus		C		No	No	NTQ	No		1	1	1
30324	Plantae	Equisetopsida	Gentianaceae	Schenkia australis		C		No	No	NTQ	No		2	1	2
10192	Plantae	Equisetopsida	Gleicheniaceae	Sticherus		C		No	No	U	No		1	0	1
10944	Plantae	Equisetopsida	Gleicheniaceae	Sticherus flabellatus var. flabellatus		C		No	No	NTQ	No		2	2	2
14008	Plantae	Equisetopsida	Goodeniaceae	Brunonia australis	blue pincushion	SL		No	Yes	NTQ	No		3	0	3
17060	Plantae	Equisetopsida	Goodeniaceae	Goodenia glabra		C		No	No	NTQ	No		2	1	2
17065	Plantae	Equisetopsida	Goodeniaceae	Goodenia rotundifolia		C		No	No	NTQ	No		1	0	1
9188	Plantae	Equisetopsida	Goodeniaceae	Scaevola taccada	Cardwell cabbage	C		No	No	NTQ	No		1	1	1
17017	Plantae	Equisetopsida	Haloragaceae	Haloragis heterophylla	rough raspweed	C		No	No	NTQ	No		3	1	3
9820	Plantae	Equisetopsida	Haloragaceae	Haloragis stricta		C		No	No	NTQ	No		3	0	3
12249	Plantae	Equisetopsida	Hemerocallidaceae	Dianella				No	No		No		15	0	15
13239	Plantae	Equisetopsida	Hemerocallidaceae	Dianella brevipedunculata		C		No	No	NTQ	No		8	1	8
17464	Plantae	Equisetopsida	Hemerocallidaceae	Dianella caerulea		C		No	No	NTQ	No		32	0	32
17463	Plantae	Equisetopsida	Hemerocallidaceae	Dianella caerulea var. vannata		C		No	No	NTQ	No		4	1	4
10281	Plantae	Equisetopsida	Hemerocallidaceae	Dianella longifolia		C		No	No	NTQ	No		4	1	4
12843	Plantae	Equisetopsida	Hemerocallidaceae	Dianella rara		C		No	No	NTQ	No		2	0	2
14594	Plantae	Equisetopsida	Hemerocallidaceae	Dianella revoluta		C		No	No	NTQ	No		5	0	5
15350	Plantae	Equisetopsida	Hemerocallidaceae	Geitonoplesium cymosum	scrambling lily	C		No	No	NTQ	No		20	0	20
40443	Plantae	Equisetopsida	Hemerocallidaceae	Geitonoplesium cymosum forma album		C		No	No	NTQ	No		1	0	1
15974	Plantae	Equisetopsida	Hemerocallidaceae	Tricoryne elatior	yellow autumn lily	C		No	No	NTQ	No		1	0	1
15308	Plantae	Equisetopsida	Hernandiaceae	Gyrocarpus americanus		C		No	No	NTQ	No		4	0	4
8394	Plantae	Equisetopsida	Hernandiaceae	Gyrocarpus americanus subsp. americanus		C		No	No	NTQ	No		6	1	6
13625	Plantae	Equisetopsida	Hernandiaceae	Hernandia bivalvis	cudgerie	NT		No	Yes	NTQ	No		10	4	10
14509	Plantae	Equisetopsida	Hydrocharitaceae	Hydrilla verticillata	hydrilla	SL		No	Yes	NTQ	No		1	1	1
14339	Plantae	Equisetopsida	Hydrocharitaceae	Ottelia ovalifolia	swamp lily	SL		No	Yes	NTQ	No		1	0	1
31079	Plantae	Equisetopsida	Hypopterygiaceae	Hypopterygium discolor		C		No	No	NTQ	No		1	1	1
13896	Plantae	Equisetopsida	Juncaceae	Juncus				No	No		No		1	0	1
16844	Plantae	Equisetopsida	Juncaceae	Juncus continuus		C		No	No	NTQ	No		1	0	1
13895	Plantae	Equisetopsida	Juncaceae	Juncus polyanthemus		C		No	No	NTQ	No		3	1	3
34790	Plantae	Equisetopsida	Juncaginaceae	Cycnogeton procerus		SL		No	Yes	NTQ	No		1	0	1
15667	Plantae	Equisetopsida	Lamiaceae	Ajuga australis	Australian bugle	C		No	No	NTQ	No		4	1	4
10005	Plantae	Equisetopsida	Lamiaceae	Anisomeles				No	No		No		6	0	6
35720	Plantae	Equisetopsida	Lamiaceae	Anisomeles moschata		C		No	No	NTQ	No		3	3	3
12453	Plantae	Equisetopsida	Lamiaceae	Callicarpa pedunculata	velvet leaf	C		No	No	NTQ	No		1	1	1
12413	Plantae	Equisetopsida	Lamiaceae	Clerodendrum				No	No		No		1	0	1
17628	Plantae	Equisetopsida	Lamiaceae	Clerodendrum floribundum		C		No	No	NTQ	No		20	0	20
12462	Plantae	Equisetopsida	Lamiaceae	Clerodendrum tomentosum		C		No	No	NTQ	No		2	0	2
41035	Plantae	Equisetopsida	Lamiaceae	Coleus australis		C		No	No	NTQ	No		5	3	5

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17100	Plantae	Equisetopsida	Lamiaceae	Glossocarya hemiderma		C		No	No	NTQ	No		26	0	26
15270	Plantae	Equisetopsida	Lamiaceae	Lamium amplexicaule	deadnettle			No	No	NAQ	No		1	1	1
11835	Plantae	Equisetopsida	Lamiaceae	Leonotis nepetifolia				No	No	NAQ	No		1	0	1
18679	Plantae	Equisetopsida	Lamiaceae	Leucas lavandulifolia				No	No	NAQ	No		3	1	3
14316	Plantae	Equisetopsida	Lamiaceae	Pityrodia salviifolia	pityrodia	C		No	No	NTQ	No		4	3	4
11765	Plantae	Equisetopsida	Lamiaceae	Salvia coccinea	red salvia			No	No	NAQ	No		2	0	2
36200	Plantae	Equisetopsida	Lamiaceae	Teucrium junceum		C		No	No	NTQ	No		2	0	2
15961	Plantae	Equisetopsida	Lamiaceae	Vitex acuminata		C		No	No	NTQ	No		2	0	2
18814	Plantae	Equisetopsida	Lamiaceae	Vitex lignum-vitae		C		No	No	NTQ	No		6	2	6
15964	Plantae	Equisetopsida	Lamiaceae	Vitex melicopea		C		No	No	NTQ	No		3	1	3
15965	Plantae	Equisetopsida	Lamiaceae	Vitex rotundifolia		C		No	No	NTQ	No		1	0	1
14118	Plantae	Equisetopsida	Lamiaceae	Vitex trifolia		C		No	No	NTQ	No		1	0	1
15914	Plantae	Equisetopsida	Lamiaceae	Vitex trifolia var. trifolia		C		No	No	NTQ	No		1	0	1
42600	Plantae	Equisetopsida	Lamiaceae	Volkameria heterophylla				No	No	NAQ	No		1	1	1
42599	Plantae	Equisetopsida	Lamiaceae	Volkameria inermis		C		No	No	NTQ	No		1	0	1
11855	Plantae	Equisetopsida	Lauraceae	Cassytha				No	No		No		4	0	4
17703	Plantae	Equisetopsida	Lauraceae	Cassytha filiformis	dodder laurel	C		No	No	NTQ	No		6	0	6
17705	Plantae	Equisetopsida	Lauraceae	Cassytha pubescens	downy devil's twine	C		No	No	NTQ	No		7	0	7
17543	Plantae	Equisetopsida	Lauraceae	Cryptocarya				No	No		No		1	0	1
17570	Plantae	Equisetopsida	Lauraceae	Cryptocarya bidwillii	yellow laurel	C		No	No	NTQ	No		6	1	6
17541	Plantae	Equisetopsida	Lauraceae	Cryptocarya triplinervis		C		No	No	NTQ	No		19	0	19
17539	Plantae	Equisetopsida	Lauraceae	Cryptocarya triplinervis var. pubens		C		No	No	NTQ	No		2	1	2
9129	Plantae	Equisetopsida	Lauraceae	Cryptocarya triplinervis var. triplinervis		C		No	No	NTQ	No		1	1	1
17303	Plantae	Equisetopsida	Lauraceae	Endiandra discolor	domatia tree	C		No	No	NTQ	No		1	1	1
16758	Plantae	Equisetopsida	Lauraceae	Litsea fawcettiana		C		No	No	NTQ	No		2	0	2
16761	Plantae	Equisetopsida	Lauraceae	Litsea reticulata		C		No	No	NTQ	No		1	0	1
11707	Plantae	Equisetopsida	Laxmanniaceae	Cordyline manners-suttoniae		SL		No	Yes	NTQ	No		1	1	1
15339	Plantae	Equisetopsida	Laxmanniaceae	Eustrephus latifolius	wombat berry	C		No	No	NTQ	No		66	1	66
40458	Plantae	Equisetopsida	Laxmanniaceae	Eustrephus latifolius subforma fimbriatus		C		No	No	NTQ	No		1	0	1
15149	Plantae	Equisetopsida	Lecythidaceae	Planchonia careya	cockatoo apple	C		No	No	NTQ	No		39	0	39
15827	Plantae	Equisetopsida	Leguminosae	Acacia aulacocarpa		C		No	No	NTQ	No		49	0	49
15829	Plantae	Equisetopsida	Leguminosae	Acacia bancroftiorum		C		No	No	NTQ	No		1	1	1
15790	Plantae	Equisetopsida	Leguminosae	Acacia concurrens		C		No	No	NTQ	No		1	0	1
14932	Plantae	Equisetopsida	Leguminosae	Acacia conferta		C		No	No	NNQ	No		1	0	1
15793	Plantae	Equisetopsida	Leguminosae	Acacia crassa subsp. longicoma		C		No	No	NTQ	No		8	3	8
15796	Plantae	Equisetopsida	Leguminosae	Acacia decora	pretty wattle	C		No	No	NTQ	No		10	0	10
21915	Plantae	Equisetopsida	Leguminosae	Acacia disparrima subsp. disparrima		C		No	No	NTQ	No		33	1	33
15798	Plantae	Equisetopsida	Leguminosae	Acacia excelsa		C		No	No	NTQ	No		1	0	1
14065	Plantae	Equisetopsida	Leguminosae	Acacia excelsa subsp. excelsa		C		No	No	NTQ	No		2	1	2
15799	Plantae	Equisetopsida	Leguminosae	Acacia falcata	sickle wattle	C		No	No	NTQ	No		1	0	1
15800	Plantae	Equisetopsida	Leguminosae	Acacia falciformis	broad-leaved hickory	C		No	No	NTQ	No		4	1	4
15744	Plantae	Equisetopsida	Leguminosae	Acacia fasciculifera	scaly bark	C		No	No	NTQ	No		28	2	28
15745	Plantae	Equisetopsida	Leguminosae	Acacia fimbriata	Brisbane golden wattle	C		No	No	NNQ	No		1	0	1
15746	Plantae	Equisetopsida	Leguminosae	Acacia flavescens	toothed wattle	C		No	No	NTQ	No		3	0	3

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15755	Plantae	Equisetopsida	Leguminosae	Acacia holosericea		C		No	No	NNQ	No		3	1	3
15758	Plantae	Equisetopsida	Leguminosae	Acacia implexa	lightwood	C		No	No	NTQ	No		2	1	2
14939	Plantae	Equisetopsida	Leguminosae	Acacia julifera		C		No	No	NTQ	No		3	0	3
15765	Plantae	Equisetopsida	Leguminosae	Acacia leiocalyx		C		No	No	NTQ	No		14	0	14
14066	Plantae	Equisetopsida	Leguminosae	Acacia leiocalyx subsp. leiocalyx		C		No	No	NTQ	No		12	0	12
15772	Plantae	Equisetopsida	Leguminosae	Acacia maidenii	Maiden's wattle	C		No	No	NTQ	No		17	0	17
15720	Plantae	Equisetopsida	Leguminosae	Acacia melanoxylon	blackwood	C		No	No	NTQ	No		2	0	2
14890	Plantae	Equisetopsida	Leguminosae	Acacia penninervis		C		No	No	NTQ	No		2	0	2
15734	Plantae	Equisetopsida	Leguminosae	Acacia penninervis var. longiracemosa		C		No	No	NTQ	No		1	0	1
15739	Plantae	Equisetopsida	Leguminosae	Acacia podalyriifolia	Queensland silver wattle	C		No	No	NNQ	No		1	0	1
15694	Plantae	Equisetopsida	Leguminosae	Acacia salicina	doolan	C		No	No	NTQ	No		3	1	3
15663	Plantae	Equisetopsida	Leguminosae	Aeschynomene brevifolia		C		No	No	NTQ	No		4	3	4
15664	Plantae	Equisetopsida	Leguminosae	Aeschynomene indica	budda pea	C		No	No	NTQ	No		2	1	2
11510	Plantae	Equisetopsida	Leguminosae	Albizia lebbeck	Indian siris	C		No	No	NNQ	No		2	1	2
20140	Plantae	Equisetopsida	Leguminosae	Alysicarpus				No	No		No		1	0	1
15671	Plantae	Equisetopsida	Leguminosae	Alysicarpus vaginalis				No	No	NAQ	No		2	1	2
15609	Plantae	Equisetopsida	Leguminosae	Austrosteenisia blackii	bloodvine	C		No	No	NTQ	No		20	0	20
18175	Plantae	Equisetopsida	Leguminosae	Austrosteenisia blackii var. blackii		C		No	No	NTQ	No		5	2	5
15614	Plantae	Equisetopsida	Leguminosae	Barklya syringifolia	golden shower tree	C		No	No	NTQ	No		21	1	21
10918	Plantae	Equisetopsida	Leguminosae	Bauhinia variegata				No	No	NAQ	No		1	0	1
15554	Plantae	Equisetopsida	Leguminosae	Caesalpinia				No	No		No		1	0	1
18899	Plantae	Equisetopsida	Leguminosae	Cajanus reticulatus		C		No	No	NTQ	No		1	0	1
15556	Plantae	Equisetopsida	Leguminosae	Cajanus reticulatus var. reticulatus		C		No	No	NTQ	No		2	1	2
15843	Plantae	Equisetopsida	Leguminosae	Canavalia papuana	wild jack bean	C		No	No	NTQ	No		1	1	1
15844	Plantae	Equisetopsida	Leguminosae	Canavalia rosea	coastal jack bean	C		No	No	NTQ	No		1	0	1
15536	Plantae	Equisetopsida	Leguminosae	Cassia				No	No		No		1	0	1
21988	Plantae	Equisetopsida	Leguminosae	Cassia brewsteri		C		No	No	NTQ	No		1	0	1
15579	Plantae	Equisetopsida	Leguminosae	Cassia fistula	Indian laburnum			No	No	NAQ	No		2	0	2
8173	Plantae	Equisetopsida	Leguminosae	Chamaecrista absus var. absus		C		No	No	NTQ	No		4	4	4
18870	Plantae	Equisetopsida	Leguminosae	Chamaecrista concinna		C		No	No	NTQ	No		1	1	1
7175	Plantae	Equisetopsida	Leguminosae	Chamaecrista mimosoides	dwarf cassia	C		No	No	NTQ	No		2	0	2
21834	Plantae	Equisetopsida	Leguminosae	Chamaecrista nomame		C		No	No	NTQ	No		5	0	5
7678	Plantae	Equisetopsida	Leguminosae	Chamaecrista nomame var. nomame		C		No	No	NTQ	No		10	3	10
22041	Plantae	Equisetopsida	Leguminosae	Chamaecrista rotundifolia				No	No	NAQ	No		1	1	1
8408	Plantae	Equisetopsida	Leguminosae	Chamaecrista rotundifolia var. rotundifolia				No	No	NAQ	No		5	4	5
15529	Plantae	Equisetopsida	Leguminosae	Chorizema parviflorum	eastern flame pea	C		No	No	NTQ	No		1	0	1
15501	Plantae	Equisetopsida	Leguminosae	Clitoria ternatea	butterfly pea			No	No	NAQ	No		4	4	4
15478	Plantae	Equisetopsida	Leguminosae	Crotalaria				No	No		No		2	0	2
14693	Plantae	Equisetopsida	Leguminosae	Crotalaria brevis		C		No	No	NTQ	No		4	0	4
15517	Plantae	Equisetopsida	Leguminosae	Crotalaria calycina		C		No	No	NTQ	No		3	2	3
15521	Plantae	Equisetopsida	Leguminosae	Crotalaria goreensis	gambia pea			No	No	NAQ	No		3	1	3

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14684	Plantae	Equisetopsida	Leguminosae	Crotalaria incana subsp. incana				No	No	NAQ	No		1	1	1
15468	Plantae	Equisetopsida	Leguminosae	Crotalaria lanceolata subsp. lanceolata				No	No	NAQ	No		1	0	1
15469	Plantae	Equisetopsida	Leguminosae	Crotalaria medicaginea	trefoil rattlepod	C		No	No	NTQ	No		3	0	3
26438	Plantae	Equisetopsida	Leguminosae	Crotalaria medicaginea var. neglecta		C		No	No	NTQ	No		1	1	1
15471	Plantae	Equisetopsida	Leguminosae	Crotalaria montana		C		No	No	NTQ	No		25	0	25
27173	Plantae	Equisetopsida	Leguminosae	Crotalaria montana var. angustifolia		C		No	No	NTQ	No		2	2	2
18779	Plantae	Equisetopsida	Leguminosae	Crotalaria pallida				No	No	NAQ	No		4	0	4
5917	Plantae	Equisetopsida	Leguminosae	Crotalaria pallida var. obovata				No	No	NAQ	No		4	4	4
34548	Plantae	Equisetopsida	Leguminosae	Crotalaria trichotoma				No	No	NAQ	No		1	1	1
9165	Plantae	Equisetopsida	Leguminosae	Delonix regia	poinciana			No	No	NAQ	No		2	1	2
15462	Plantae	Equisetopsida	Leguminosae	Desmodium				No	No		No		5	1	5
18774	Plantae	Equisetopsida	Leguminosae	Desmodium heterocarpon		C		No	No	NTQ	No		1	0	1
15458	Plantae	Equisetopsida	Leguminosae	Desmodium intortum				No	No	NAQ	No		1	0	1
15460	Plantae	Equisetopsida	Leguminosae	Desmodium rhytidophyllum		C		No	No	NTQ	No		25	1	25
13037	Plantae	Equisetopsida	Leguminosae	Desmodium tortuosum	Florida beggar-weed			No	No	NAQ	No		1	1	1
15334	Plantae	Equisetopsida	Leguminosae	Erythrina vespertilio		C		No	No	NTQ	No		11	0	11
32528	Plantae	Equisetopsida	Leguminosae	Erythrina vespertilio subsp. vespertilio		C		No	No	NTQ	No		3	2	3
13001	Plantae	Equisetopsida	Leguminosae	Flemingia lineata		C		No	No	NTQ	No		1	1	1
13000	Plantae	Equisetopsida	Leguminosae	Flemingia parviflora	flemingia	C		No	No	NTQ	No		17	0	17
15343	Plantae	Equisetopsida	Leguminosae	Galactia tenuiflora		C		No	No	NTQ	No		13	0	13
14524	Plantae	Equisetopsida	Leguminosae	Glycine				No	No		No		5	0	5
15352	Plantae	Equisetopsida	Leguminosae	Glycine clandestina var. clandestina		C		No	No	NTQ	No		4	1	4
15351	Plantae	Equisetopsida	Leguminosae	Glycine clandestina var. sericea		C		No	No	NTQ	No		4	0	4
15353	Plantae	Equisetopsida	Leguminosae	Glycine cyrtoloba		C		No	No	NTQ	No		1	1	1
15355	Plantae	Equisetopsida	Leguminosae	Glycine microphylla		C		No	No	NTQ	No		1	1	1
15356	Plantae	Equisetopsida	Leguminosae	Glycine tabacina	glycine pea	C		No	No	NTQ	No		23	0	23
15357	Plantae	Equisetopsida	Leguminosae	Glycine tomentella	woolly glycine	C		No	No	NTQ	No		8	2	8
42643	Plantae	Equisetopsida	Leguminosae	Grona filiformis		C		No	No	NTQ	No		1	0	1
42645	Plantae	Equisetopsida	Leguminosae	Grona heterocarpos var. strigosa		C		No	No	NTQ	No		3	3	3
42638	Plantae	Equisetopsida	Leguminosae	Grona pullenii		C		No	No	NTQ	No		1	1	1
42648	Plantae	Equisetopsida	Leguminosae	Grona triflora				No	No	NAQ	No		10	1	10
42634	Plantae	Equisetopsida	Leguminosae	Grona varians		C		No	No	NTQ	No		7	1	7
15309	Plantae	Equisetopsida	Leguminosae	Hardenbergia violacea		C		No	No	NTQ	No		11	2	11
41983	Plantae	Equisetopsida	Leguminosae	Heliodendron thozetianum		C		No	No	NTQ	No		30	4	30
15327	Plantae	Equisetopsida	Leguminosae	Hovea longipes	brush hovea	C		No	No	NTQ	No		4	0	4
15291	Plantae	Equisetopsida	Leguminosae	Indigofera australis		C		No	No	NTQ	No		4	0	4
18672	Plantae	Equisetopsida	Leguminosae	Indigofera australis subsp. australis		C		No	No	NTQ	No		3	2	3
15294	Plantae	Equisetopsida	Leguminosae	Indigofera hirsuta	hairy indigo	C		No	No	NTQ	No		14	3	14
15295	Plantae	Equisetopsida	Leguminosae	Indigofera linifolia		C		No	No	NTQ	No		6	3	6
15296	Plantae	Equisetopsida	Leguminosae	Indigofera linnaei	Birdsville indigo	C		No	No	NTQ	No		5	1	5

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15297	Plantae	Equisetopsida	Leguminosae	Indigofera pratensis		C		No	No	NTQ	No		4	1	4
10846	Plantae	Equisetopsida	Leguminosae	Indigofera spicata	creeping indigo			No	No	NAQ	No		2	1	2
15299	Plantae	Equisetopsida	Leguminosae	Indigofera tinctoria				No	No	NAQ	No		1	1	1
12965	Plantae	Equisetopsida	Leguminosae	Indigofera trifoliata		C		No	No	NTQ	No		1	1	1
15255	Plantae	Equisetopsida	Leguminosae	Isotropis filicaulis		C		No	No	NTQ	No		2	0	2
15260	Plantae	Equisetopsida	Leguminosae	Jacksonia scoparia		C		No	No	NTQ	No		13	2	13
15217	Plantae	Equisetopsida	Leguminosae	Leptosema oxylobioides		C		No	No	NTQ	No		1	1	1
8865	Plantae	Equisetopsida	Leguminosae	Leucaena leucocephala subsp. glabrata				No	No	NAQ	No		2	2	2
15235	Plantae	Equisetopsida	Leguminosae	Macroptilium atropurpureum	siratro			No	No	NAQ	No		8	2	8
14426	Plantae	Equisetopsida	Leguminosae	Macroptilium lathyroides				No	No	NAQ	No		3	1	3
18221	Plantae	Equisetopsida	Leguminosae	Macroptilium lathyroides var. semierectum				No	No	NAQ	No		1	1	1
18762	Plantae	Equisetopsida	Leguminosae	Macrotyloma axillare var. axillare				No	No	NAQ	No		1	1	1
9873	Plantae	Equisetopsida	Leguminosae	Medicago polymorpha	burr medic			No	No	NAQ	No		4	2	4
22928	Plantae	Equisetopsida	Leguminosae	Medicago sativa subsp. sativa				No	No	NAQ	No		1	1	1
36115	Plantae	Equisetopsida	Leguminosae	Mezoneuron nitens		C		No	No	NTQ	No		2	0	2
36129	Plantae	Equisetopsida	Leguminosae	Mezoneuron scortechinii		C		No	No	NTQ	No		5	0	5
10860	Plantae	Equisetopsida	Leguminosae	Mimosa pudica				No	No	NAQ	No		1	0	1
15206	Plantae	Equisetopsida	Leguminosae	Neptunia				No	No		No		1	0	1
15204	Plantae	Equisetopsida	Leguminosae	Neptunia gracilis		C		No	No	NTQ	No		4	2	4
14370	Plantae	Equisetopsida	Leguminosae	Neptunia gracilis forma gracilis		C		No	No	NTQ	No		4	0	4
42631	Plantae	Equisetopsida	Leguminosae	Oxytes brachypoda		C		No	No	NTQ	No		1	0	1
12902	Plantae	Equisetopsida	Leguminosae	Peltophorum pterocarpum	yellow poinciana			No	No	NAQ	No		1	1	1
42641	Plantae	Equisetopsida	Leguminosae	Pleurolobus gangeticus		C		No	No	NTQ	No		8	1	8
6007	Plantae	Equisetopsida	Leguminosae	Podolobium aciculiferum		C		No	No	NTQ	No		3	2	3
42632	Plantae	Equisetopsida	Leguminosae	Pullenia gunnii		C		No	No	NTQ	No		4	1	4
15093	Plantae	Equisetopsida	Leguminosae	Pycnospora lutescens	pycnospora	C		No	No	NTQ	No		3	0	3
15099	Plantae	Equisetopsida	Leguminosae	Rhynchosia acuminatissima		C		No	No	NTQ	No		6	0	6
14257	Plantae	Equisetopsida	Leguminosae	Rhynchosia minima		C		No	No	NTQ	No		8	0	8
15069	Plantae	Equisetopsida	Leguminosae	Senna barclayana		C		No	No	NTQ	No		1	0	1
18867	Plantae	Equisetopsida	Leguminosae	Senna gaudichaudii		C		No	No	NTQ	No		11	4	11
14196	Plantae	Equisetopsida	Leguminosae	Senna occidentalis	coffee senna			No	No	NAQ	No		3	1	3
15073	Plantae	Equisetopsida	Leguminosae	Senna pendula var. glabrata	Easter cassia			No	No	NAQ	No		5	4	5
24648	Plantae	Equisetopsida	Leguminosae	Senna septemtrionalis				No	No	NAQ	No		2	0	2
8199	Plantae	Equisetopsida	Leguminosae	Senna surattensis		C		No	No	NTQ	No		5	1	5
13072	Plantae	Equisetopsida	Leguminosae	Sesbania				No	No		No		1	0	1
18750	Plantae	Equisetopsida	Leguminosae	Sesbania cannabina		C		No	No	NTQ	No		2	0	2
15079	Plantae	Equisetopsida	Leguminosae	Sesbania cannabina var. cannabina		C		No	No	NTQ	No		2	2	2
36634	Plantae	Equisetopsida	Leguminosae	Solori involuta		C		No	No	NTQ	No		2	0	2

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15040	Plantae	Equisetopsida	Leguminosae	Sophora tomentosa subsp. australis		C		No	No	NTQ	No		1	0	1
15011	Plantae	Equisetopsida	Leguminosae	Stylosanthes guianensis				No	No	NAQ	No		1	0	1
15012	Plantae	Equisetopsida	Leguminosae	Stylosanthes humilis	Townsville stylo			No	No	NAQ	No		2	2	2
12876	Plantae	Equisetopsida	Leguminosae	Stylosanthes scabra				No	No	NAQ	No		13	2	13
21571	Plantae	Equisetopsida	Leguminosae	Swainsona				No	No		No		1	0	1
12879	Plantae	Equisetopsida	Leguminosae	Tamarindus indica				No	No	NAQ	No		1	1	1
15019	Plantae	Equisetopsida	Leguminosae	Tephrosia astragaloides		C		No	No	NTQ	No		2	2	2
27745	Plantae	Equisetopsida	Leguminosae	Tephrosia filipes		C		No	No	NTQ	No		4	0	4
15020	Plantae	Equisetopsida	Leguminosae	Tephrosia filipes subsp. filipes		C		No	No	NTQ	No		5	3	5
13759	Plantae	Equisetopsida	Leguminosae	Tephrosia glomeruliflora	pink tephrosia			No	No	NAQ	No		1	1	1
15021	Plantae	Equisetopsida	Leguminosae	Tephrosia juncea		C		No	No	NTQ	No		10	0	10
12881	Plantae	Equisetopsida	Leguminosae	Tephrosia noctiflora				No	No	NAQ	No		1	1	1
15023	Plantae	Equisetopsida	Leguminosae	Tephrosia purpurea var. sericea		C		No	No	NTQ	No		3	0	3
14149	Plantae	Equisetopsida	Leguminosae	Tephrosia rufula		C		No	No	NTQ	No		4	2	4
21665	Plantae	Equisetopsida	Leguminosae	Trifolium				No	No		No		1	0	1
14990	Plantae	Equisetopsida	Leguminosae	Trifolium repens var. repens	white clover			No	No	NAQ	No		2	1	2
14998	Plantae	Equisetopsida	Leguminosae	Uraria lagopodioides		C		No	No	NTQ	No		3	0	3
12890	Plantae	Equisetopsida	Leguminosae	Uraria picta		C		No	No	NTQ	No		2	1	2
30907	Plantae	Equisetopsida	Leguminosae	Vachellia bidwillii		C		No	No	NTQ	No		8	2	8
14952	Plantae	Equisetopsida	Leguminosae	Vigna lanceolata		C		No	No	NTQ	No		1	0	1
10123	Plantae	Equisetopsida	Leguminosae	Vigna lanceolata var. lanceolata		C		No	No	NTQ	No		2	0	2
10196	Plantae	Equisetopsida	Leguminosae	Vigna vexillata var. angustifolia		C		No	No	NTQ	No		1	0	1
21949	Plantae	Equisetopsida	Leguminosae	Zornia dyctiocarpa		C		No	No	NTQ	No		5	0	5
14919	Plantae	Equisetopsida	Leguminosae	Zornia floribunda		C		No	No	NTQ	No		1	0	1
13734	Plantae	Equisetopsida	Leguminosae	Zornia muriculata		C		No	No	NTQ	No		3	0	3
14923	Plantae	Equisetopsida	Leguminosae	Zornia muriculata subsp. muriculata		C		No	No	NTQ	No		2	2	2
9417	Plantae	Equisetopsida	Lentibulariaceae	Utricularia gibba	floating bladderwort	SL		No	Yes	NTQ	No		1	1	1
41230	Plantae	Equisetopsida	Linderniaceae	Torenia crustacea		C		No	No	NTQ	No		5	1	5
5943	Plantae	Equisetopsida	Loganiaceae	Mitrasacme nudicaulis var. nudicaulis		C		No	No	NTQ	No		1	1	1
7462	Plantae	Equisetopsida	Loganiaceae	Strychnos psilosperma	strychnine tree	C		No	No	NTQ	No		32	2	32
13059	Plantae	Equisetopsida	Loranthaceae	Amyema biniflora		C		No	No	NTQ	No		1	1	1
17988	Plantae	Equisetopsida	Loranthaceae	Amyema congener subsp. rotundifolia		C		No	No	NTQ	No		2	1	2
14850	Plantae	Equisetopsida	Loranthaceae	Amyema conspicua subsp. conspicua		C		No	No	NTQ	No		1	0	1
17991	Plantae	Equisetopsida	Loranthaceae	Amyema miquelii		C		No	No	NTQ	No		2	0	2
17995	Plantae	Equisetopsida	Loranthaceae	Amylotheca dictyophleba		C		No	No	NTQ	No		3	2	3
13236	Plantae	Equisetopsida	Loranthaceae	Dendrophthoe glabrescens		C		No	No	NTQ	No		1	0	1
14419	Plantae	Equisetopsida	Loranthaceae	Lysiana maritima		C		No	No	NTQ	No		1	1	1
11979	Plantae	Equisetopsida	Lythraceae	Ammannia multiflora	jerry-jerry	C		No	No	NTQ	No		5	0	5
18090	Plantae	Equisetopsida	Malvaceae	Abutilon				No	No		No		4	0	4

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31516	Plantae	Equisetopsida	Malvaceae	Abutilon albescens		C		No	No	NTQ	No		2	1	2
18081	Plantae	Equisetopsida	Malvaceae	Abutilon auritum	Chinese lantern	C		No	No	NTQ	No		12	0	12
14927	Plantae	Equisetopsida	Malvaceae	Abutilon grandifolium				No	No	NAQ	No		1	0	1
13048	Plantae	Equisetopsida	Malvaceae	Abutilon leucopetalum		C		No	No	NTQ	No		1	0	1
18089	Plantae	Equisetopsida	Malvaceae	Abutilon oxycarpum		C		No	No	NTQ	No		7	1	7
8340	Plantae	Equisetopsida	Malvaceae	Abutilon oxycarpum var. oxycarpum		C		No	No	NTQ	No		2	1	2
16963	Plantae	Equisetopsida	Malvaceae	Hibiscus				No	No		No		2	0	2
16953	Plantae	Equisetopsida	Malvaceae	Hibiscus divaricatus		C		No	No	NTQ	No		14	1	14
16955	Plantae	Equisetopsida	Malvaceae	Hibiscus heterophyllus		C		No	No	NTQ	No		16	4	16
16957	Plantae	Equisetopsida	Malvaceae	Hibiscus meraukensis	Merauke hibiscus	C		No	No	NTQ	No		1	0	1
16959	Plantae	Equisetopsida	Malvaceae	Hibiscus splendens	pink hibiscus	C		No	No	NTQ	No		1	0	1
33995	Plantae	Equisetopsida	Malvaceae	Hibiscus tridactylites		C		No	No	NTQ	No		1	1	1
16962	Plantae	Equisetopsida	Malvaceae	Hibiscus vitifolius		C		No	No	NTQ	No		2	0	2
22230	Plantae	Equisetopsida	Malvaceae	Malvastrum americanum				No	No	NAQ	No		5	0	5
16718	Plantae	Equisetopsida	Malvaceae	Malvastrum americanum var. americanum				No	No	NAQ	No		5	0	5
16719	Plantae	Equisetopsida	Malvaceae	Malvastrum coromandelianum	prickly malvastrum			No	No	NAQ	No		3	0	3
31326	Plantae	Equisetopsida	Malvaceae	Malvastrum coromandelianum subsp. coromandelianum				No	No	NAQ	No		4	2	4
16151	Plantae	Equisetopsida	Malvaceae	Sida				No	No		No		6	0	6
16193	Plantae	Equisetopsida	Malvaceae	Sida acuta	spinyhead sida			No	No	NAQ	No		1	0	1
34055	Plantae	Equisetopsida	Malvaceae	Sida ciliaris				No	No	NAQ	No		1	1	1
16195	Plantae	Equisetopsida	Malvaceae	Sida cordifolia				No	No	NAQ	No		19	2	19
16196	Plantae	Equisetopsida	Malvaceae	Sida corrugata		C		No	No	NTQ	No		1	0	1
22197	Plantae	Equisetopsida	Malvaceae	Sida hackettiana		C		No	No	NTQ	No		32	2	32
22198	Plantae	Equisetopsida	Malvaceae	Sida hackettiana subsp. (Gayndah P.Grimshaw+ PG2388)		C		No	No	NTQ	No		1	0	1
12920	Plantae	Equisetopsida	Malvaceae	Sida magnifica		C		No	No	NTQ	No		1	1	1
16146	Plantae	Equisetopsida	Malvaceae	Sida rhombifolia				No	No	NAQ	No		20	3	20
16147	Plantae	Equisetopsida	Malvaceae	Sida rohlenae		C		No	No	NTQ	No		1	0	1
22199	Plantae	Equisetopsida	Malvaceae	Sida sp. (Musselbrook M.B.Thomas+ MRS437)		C		No	No	NTQ	No		3	0	3
16148	Plantae	Equisetopsida	Malvaceae	Sida spinosa	spiny sida			No	No	NAQ	No		3	1	3
15990	Plantae	Equisetopsida	Malvaceae	Urena lobata	urena weed			No	No	NAQ	No		1	0	1
12012	Plantae	Equisetopsida	Marsileaceae	Marsilea crenata		C		No	No	NTQ	No		2	1	2
12358	Plantae	Equisetopsida	Marsileaceae	Marsilea mutica	shiny nardoo	C		No	No	NTQ	No		3	1	3
42052	Plantae	Equisetopsida	Meliaceae	Didymocheton gaudichaudianus		C		No	No	NTQ	No		1	0	1
16661	Plantae	Equisetopsida	Meliaceae	Melia azedarach	white cedar	C		No	No	NTQ	No		20	0	20
16557	Plantae	Equisetopsida	Meliaceae	Owenia acidula	emu apple	C		No	No	NTQ	No		1	0	1
15987	Plantae	Equisetopsida	Meliaceae	Turraea pubescens	native honeysuckle	C		No	No	NTQ	No		39	3	39
16897	Plantae	Equisetopsida	Menispermaceae	Hypserpa decumbens		C		No	No	NTQ	No		7	0	7
16860	Plantae	Equisetopsida	Menispermaceae	Legnephora moorei		C		No	No	NTQ	No		1	0	1
14323	Plantae	Equisetopsida	Menispermaceae	Pleogyne australis	wiry grape	C		No	No	NTQ	No		18	1	18
14269	Plantae	Equisetopsida	Menispermaceae	Sarcopetalum harveyanum	pearl vine	C		No	No	NTQ	No		1	0	1

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9647	Plantae	Equisetopsida	Menispermaceae	Stephania japonica		C		No	No	NTQ	No		2	0	2
16100	Plantae	Equisetopsida	Menispermaceae	Stephania japonica var. discolor		C		No	No	NTQ	No		2	0	2
15998	Plantae	Equisetopsida	Menispermaceae	Tinospora smilacina	snakevine	C		No	No	NTQ	No		10	0	10
14327	Plantae	Equisetopsida	Menyanthaceae	Nymphoides indica	water snowflake	SL		No	Yes	NTQ	No		3	1	3
14519	Plantae	Equisetopsida	Molluginaceae	Glinus oppositifolius		C		No	No	NTQ	No		3	3	3
14131	Plantae	Equisetopsida	Monimiaceae	Wilkiea macrophylla	large-leaved wilkiea	C		No	No	NTQ	No		6	2	6
17158	Plantae	Equisetopsida	Moraceae	Ficus				No	No		No		8	0	8
19858	Plantae	Equisetopsida	Moraceae	Ficus benjamina		C		No	No	NTQ	No		1	0	1
17132	Plantae	Equisetopsida	Moraceae	Ficus coronata	creek sandpaper fig	C		No	No	NTQ	No		1	0	1
17135	Plantae	Equisetopsida	Moraceae	Ficus fraseri	white sandpaper fig	C		No	No	NTQ	No		1	0	1
35581	Plantae	Equisetopsida	Moraceae	Ficus henneana		C		No	No	NTQ	No		1	0	1
13911	Plantae	Equisetopsida	Moraceae	Ficus microcarpa		C		No	No	NTQ	No		1	0	1
17143	Plantae	Equisetopsida	Moraceae	Ficus obliqua		C		No	No	NTQ	No		9	0	9
17144	Plantae	Equisetopsida	Moraceae	Ficus opposita		C		No	No	NTQ	No		21	0	21
13338	Plantae	Equisetopsida	Moraceae	Ficus platypoda				No	No	XU	No		2	0	2
17147	Plantae	Equisetopsida	Moraceae	Ficus racemosa		C		No	No	NTQ	No		1	0	1
8827	Plantae	Equisetopsida	Moraceae	Ficus racemosa var. racemosa		C		No	No	NTQ	No		2	0	2
13340	Plantae	Equisetopsida	Moraceae	Ficus rubiginosa	Port Jackson fig	C		No	No	NTQ	No		4	0	4
22365	Plantae	Equisetopsida	Moraceae	Ficus rubiginosa forma glabrescens		C		No	No	NTQ	No		1	1	1
17155	Plantae	Equisetopsida	Moraceae	Ficus virens		C		No	No	NTQ	No		3	0	3
17157	Plantae	Equisetopsida	Moraceae	Ficus watkinsiana	green-leaved Moreton Bay fig	C		No	No	NTQ	No		2	0	2
13825	Plantae	Equisetopsida	Moraceae	Maclura cochinchinensis	cockspur thorn	C		No	No	NTQ	No		4	1	4
3624	Plantae	Equisetopsida	Moraceae	Malaisia scandens		C		No	No	NTQ	No		13	1	13
4116	Plantae	Equisetopsida	Moraceae	Malaisia scandens subsp. scandens		C		No	No	NTQ	No		22	0	22
9118	Plantae	Equisetopsida	Moraceae	Streblus brunonianus	whalebone tree	C		No	No	NTQ	No		19	1	19
20110	Plantae	Equisetopsida	Myrsinaceae	Aegiceras				No	No	QAI	No		1	0	1
18035	Plantae	Equisetopsida	Myrsinaceae	Aegiceras corniculatum	river mangrove	C		No	No	NTQ	No		4	1	4
17344	Plantae	Equisetopsida	Myrsinaceae	Embelia australiana	embelia	C		No	No	NTQ	No		3	0	3
30309	Plantae	Equisetopsida	Myrsinaceae	Myrsine variabilis		C		No	No	NTQ	No		15	2	15
18104	Plantae	Equisetopsida	Myrtaceae	Acmena hemilampra subsp. hemilampra		C		No	No	NTQ	No		1	1	1
17999	Plantae	Equisetopsida	Myrtaceae	Angophora leiocarpa	rusty gum	C		No	No	NTQ	No		1	0	1
13321	Plantae	Equisetopsida	Myrtaceae	Backhousia kingii		C		No	No	NTQ	No		2	1	2
42249	Plantae	Equisetopsida	Myrtaceae	Blakella citriodora		C		No	No	NTQ	No		43	2	43
42283	Plantae	Equisetopsida	Myrtaceae	Blakella tessellaris		C		No	No	NTQ	No		32	0	32
42282	Plantae	Equisetopsida	Myrtaceae	Blakella torelliana		C		No	No	NNQ	No		2	1	2
6025	Plantae	Equisetopsida	Myrtaceae	Corymbia				No	No		No		1	0	1
6534	Plantae	Equisetopsida	Myrtaceae	Corymbia clarksoniana		C		No	No	NTQ	No		31	2	31
6574	Plantae	Equisetopsida	Myrtaceae	Corymbia erythrophloia	variable-barked bloodwood	C		No	No	NTQ	No		9	2	9
6445	Plantae	Equisetopsida	Myrtaceae	Corymbia intermedia	pink bloodwood	C		No	No	NTQ	No		29	1	29
6532	Plantae	Equisetopsida	Myrtaceae	Corymbia polycarpa	long-fruited bloodwood	C		No	No	NTQ	No		2	0	2
6443	Plantae	Equisetopsida	Myrtaceae	Corymbia trachyphloia subsp. trachyphloia		C		No	No	NTQ	No		2	0	2
17207	Plantae	Equisetopsida	Myrtaceae	Eucalyptus				No	No		No		2	0	2
17290	Plantae	Equisetopsida	Myrtaceae	Eucalyptus acmenoides		C		No	No	NTQ	No		9	2	9

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17252	Plantae	Equisetopsida	Myrtaceae	Eucalyptus crebra	narrow-leaved red ironbark	C		No	No	NTQ	No		73	2	73
17259	Plantae	Equisetopsida	Myrtaceae	Eucalyptus drepanophylla		C		No	No	NTQ	No		1	0	1
17262	Plantae	Equisetopsida	Myrtaceae	Eucalyptus exserta	Queensland peppermint	C		No	No	NTQ	No		28	0	28
19851	Plantae	Equisetopsida	Myrtaceae	Eucalyptus fibrosa		C		No	No	NTQ	No		2	0	2
13902	Plantae	Equisetopsida	Myrtaceae	Eucalyptus major	mountain grey gum	C		No	No	NTQ	No		2	2	2
17221	Plantae	Equisetopsida	Myrtaceae	Eucalyptus melanophloia		C		No	No	NTQ	No		2	0	2
17223	Plantae	Equisetopsida	Myrtaceae	Eucalyptus melliodora	yellow box	C		No	No	NTQ	No		2	1	2
17229	Plantae	Equisetopsida	Myrtaceae	Eucalyptus moluccana	gum-topped box	C		No	No	NTQ	No		13	1	13
12503	Plantae	Equisetopsida	Myrtaceae	Eucalyptus platyphylla	poplar gum	C		No	No	NTQ	No		4	1	4
17204	Plantae	Equisetopsida	Myrtaceae	Eucalyptus tereticornis		C		No	No	NTQ	No		47	0	47
26471	Plantae	Equisetopsida	Myrtaceae	Eucalyptus tereticornis subsp. tereticornis		C		No	No	NTQ	No		4	2	4
17208	Plantae	Equisetopsida	Myrtaceae	Eugenia reinwardtiana	beach cherry	C		No	No	NTQ	No		1	0	1
12146	Plantae	Equisetopsida	Myrtaceae	Eugenia uniflora	Brazilian cherry tree			No	No	NAQ	No		1	1	1
25908	Plantae	Equisetopsida	Myrtaceae	Gossia acmenoides		C		No	No	NTQ	No		5	0	5
27383	Plantae	Equisetopsida	Myrtaceae	Gossia bidwillii		C		No	No	NTQ	No		28	2	28
13416	Plantae	Equisetopsida	Myrtaceae	Leptospermum				No	No		No		1	0	1
14441	Plantae	Equisetopsida	Myrtaceae	Leptospermum polygalifolium	tantoon	C		No	No	NTQ	No		3	2	3
16780	Plantae	Equisetopsida	Myrtaceae	Lophostemon confertus	brush box	C		No	No	NTQ	No		21	2	21
16730	Plantae	Equisetopsida	Myrtaceae	Lophostemon suaveolens	swamp box	C		No	No	NTQ	No		46	0	46
13430	Plantae	Equisetopsida	Myrtaceae	Melaleuca				No	No		No		3	0	3
16684	Plantae	Equisetopsida	Myrtaceae	Melaleuca bracteata		C		No	No	NTQ	No		1	0	1
31373	Plantae	Equisetopsida	Myrtaceae	Melaleuca citrina		C		No	No	NTQ	No		1	0	1
18283	Plantae	Equisetopsida	Myrtaceae	Melaleuca fluviatilis		C		No	No	NTQ	No		3	0	3
16689	Plantae	Equisetopsida	Myrtaceae	Melaleuca leucadendra	broad-leaved tea-tree	C		No	No	NTQ	No		1	0	1
18771	Plantae	Equisetopsida	Myrtaceae	Melaleuca linariifolia	snow-in summer	C		No	No	NTQ	No		7	0	7
13828	Plantae	Equisetopsida	Myrtaceae	Melaleuca nervosa		C		No	No	NTQ	No		21	0	21
16694	Plantae	Equisetopsida	Myrtaceae	Melaleuca nodosa		C		No	No	NTQ	No		1	0	1
16695	Plantae	Equisetopsida	Myrtaceae	Melaleuca quinquenervia	swamp paperbark	C		No	No	NTQ	No		5	1	5
5505	Plantae	Equisetopsida	Myrtaceae	Melaleuca trichostachya		C		No	No	NTQ	No		1	1	1
31375	Plantae	Equisetopsida	Myrtaceae	Melaleuca viminalis		C		No	No	NTQ	No		7	2	7
16657	Plantae	Equisetopsida	Myrtaceae	Melaleuca viridiflora		C		No	No	NTQ	No		4	0	4
16554	Plantae	Equisetopsida	Myrtaceae	Osbornia octodonta	myrtle mangrove	C		No	No	NTQ	No		4	2	4
13399	Plantae	Equisetopsida	Myrtaceae	Psidium guajava	guava			No	No	NAQ	No		1	1	1
22496	Plantae	Equisetopsida	Myrtaceae	Rhodamnia angustifolia	narrow-leaved malletwood	CR	CE	No	Yes	NTQ	No		1	1	1
16288	Plantae	Equisetopsida	Myrtaceae	Rhodamnia spongiosa		CR		No	Yes	NTQ	No		4	2	4
16078	Plantae	Equisetopsida	Myrtaceae	Syzygium australe	scrub cherry	C		No	No	NTQ	No		3	0	3
16047	Plantae	Equisetopsida	Myrtaceae	Syzygium luehmannii		C		No	No	NTQ	No		1	0	1
13436	Plantae	Equisetopsida	Nelumbonaceae	Nelumbo nucifera	pink waterlily	SL		No	Yes	NTQ	No		1	1	1
16571	Plantae	Equisetopsida	Nephrolepidaceae	Nephrolepis cordifolia	fishbone fern	C		No	No	NTQ	No		2	0	2
17826	Plantae	Equisetopsida	Nyctaginaceae	Boerhavia				No	No		No		1	0	1
12868	Plantae	Equisetopsida	Nyctaginaceae	Boerhavia burbidgeana		C		No	No	NTQ	No		1	1	1
6062	Plantae	Equisetopsida	Nyctaginaceae	Boerhavia sp. (Bargara L.Pedley 5382)		C		No	No	NTQ	No		1	1	1
9478	Plantae	Equisetopsida	Nyctaginaceae	Bougainvillea glabra				No	No	NAQ	No		1	1	1

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19941	Plantae	Equisetopsida	Nymphaeaceae	Nymphaea caerulea				No	No	NAQ	No		4	1	4
29765	Plantae	Equisetopsida	Nymphaeaceae	Nymphaea gigantea		SL		No	Yes	NTQ	No		1	1	1
13390	Plantae	Equisetopsida	Ochnaceae	Ochna serrulata	ochna			No	No	NAQ	No		2	2	2
20919	Plantae	Equisetopsida	Oleaceae	Jasminum				No	No		No		1	0	1
16839	Plantae	Equisetopsida	Oleaceae	Jasminum didymum		C		No	No	NTQ	No		8	0	8
16836	Plantae	Equisetopsida	Oleaceae	Jasminum didymum subsp. didymum		C		No	No	NTQ	No		6	0	6
16837	Plantae	Equisetopsida	Oleaceae	Jasminum didymum subsp. lineare		C		No	No	NTQ	No		1	0	1
16838	Plantae	Equisetopsida	Oleaceae	Jasminum didymum subsp. racemosum		C		No	No	NTQ	No		28	1	28
9461	Plantae	Equisetopsida	Oleaceae	Jasminum simplicifolium		C		No	No	NTQ	No		11	0	11
16840	Plantae	Equisetopsida	Oleaceae	Jasminum simplicifolium subsp. australiense		C		No	No	NTQ	No		20	1	20
16794	Plantae	Equisetopsida	Oleaceae	Ligustrum australianum		C		No	No	NTQ	No		1	1	1
13835	Plantae	Equisetopsida	Oleaceae	Notelaea microcarpa		C		No	No	NTQ	No		16	0	16
16594	Plantae	Equisetopsida	Oleaceae	Olea paniculata		C		No	No	NTQ	No		11	0	11
13420	Plantae	Equisetopsida	Onagraceae	Ludwigia octovalvis	willow primrose	C		No	No	NTQ	No		5	2	5
16731	Plantae	Equisetopsida	Onagraceae	Ludwigia peploides subsp. montevidensis		C		No	No	NTQ	No		3	1	3
16732	Plantae	Equisetopsida	Onagraceae	Ludwigia perennis		C		No	No	NTQ	No		1	1	1
14087	Plantae	Equisetopsida	Orchidaceae	Acianthus fornicatus	pixie caps	SL		No	Yes	NTQ	Yes		2	1	2
17779	Plantae	Equisetopsida	Orchidaceae	Bulbophyllum minutissimum	grain-of-wheat orchid	SL		No	Yes	NTQ	Yes		1	1	1
13322	Plantae	Equisetopsida	Orchidaceae	Caladenia				No	No		Yes		1	1	1
13444	Plantae	Equisetopsida	Orchidaceae	Caladenia carnea		SL		No	Yes	NTQ	Yes		2	2	2
2163	Plantae	Equisetopsida	Orchidaceae	Chiloglottis diphylla		SL		No	Yes	NTQ	Yes		1	1	1
9260	Plantae	Equisetopsida	Orchidaceae	Chiloglottis sylvestris		SL		No	Yes	NTQ	Yes		1	0	1
9265	Plantae	Equisetopsida	Orchidaceae	Corybas barbarae	helmet orchid	SL		No	Yes	NTQ	Yes		2	1	2
17505	Plantae	Equisetopsida	Orchidaceae	Cymbidium canaliculatum		SL		No	Yes	NTQ	Yes		6	1	6
13286	Plantae	Equisetopsida	Orchidaceae	Dendrobium				No	No		Yes		2	0	2
12828	Plantae	Equisetopsida	Orchidaceae	Dendrobium discolor		SL		No	Yes	NTQ	Yes		2	1	2
14631	Plantae	Equisetopsida	Orchidaceae	Dendrobium speciosum		SL		No	Yes	NTQ	Yes		1	0	1
12792	Plantae	Equisetopsida	Orchidaceae	Dipodium				No	No		Yes		1	0	1
5768	Plantae	Equisetopsida	Orchidaceae	Dockrillia bowmanii	scrub pencil orchid	SL		No	Yes	NTQ	Yes		3	0	3
5798	Plantae	Equisetopsida	Orchidaceae	Dockrillia mortii		SL		No	Yes	NTQ	Yes		1	0	1
5803	Plantae	Equisetopsida	Orchidaceae	Dockrillia schoenina	pencil orchid	SL		No	Yes	NTQ	Yes		2	0	2
8197	Plantae	Equisetopsida	Orchidaceae	Geodorum densiflorum	pink nodding orchid	SL		No	Yes	NTQ	Yes		3	0	3
16345	Plantae	Equisetopsida	Orchidaceae	Pterostylis baptistii	king greenhood	SL		No	Yes	NTQ	Yes		1	1	1
9321	Plantae	Equisetopsida	Orchidaceae	Pterostylis nutans		SL		No	Yes	NTQ	Yes		1	1	1
16348	Plantae	Equisetopsida	Orchidaceae	Pterostylis revoluta	autumn greenhood	C		No	No	XU	Yes		1	0	1
12708	Plantae	Equisetopsida	Orchidaceae	Sarcochilus australis	butterfly orchid			No	No	XA	No		2	0	2
12659	Plantae	Equisetopsida	Orchidaceae	Sarcochilus dilatatus	brown sarcochilus	SL		No	Yes	NTQ	Yes		3	1	3
12657	Plantae	Equisetopsida	Orchidaceae	Sarcochilus hillii		SL		No	Yes	NTQ	Yes		1	0	1
24818	Plantae	Equisetopsida	Orthotrichaceae	Macromitrium aurescens		C		No	No	NTQ	No		1	1	1
24821	Plantae	Equisetopsida	Orthotrichaceae	Macromitrium diaphanum		C		No	No	NTQ	No		1	1	1
16000	Plantae	Equisetopsida	Osmundaceae	Todea barbara	king fern	C		No	No	NTQ	No		1	1	1
12741	Plantae	Equisetopsida	Oxalidaceae	Oxalis				No	No		No		5	1	5

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9457	Plantae	Equisetopsida	Oxalidaceae	Oxalis corniculata				No	No	NAQ	No		6	1	6
12740	Plantae	Equisetopsida	Oxalidaceae	Oxalis perennans		C		No	No	NTQ	No		3	1	3
9536	Plantae	Equisetopsida	Oxalidaceae	Oxalis rubens		C		No	No	NTQ	No		2	2	2
12866	Plantae	Equisetopsida	Papaveraceae	Argemone mexicana	prickly poppy			No	No	NAQ	No		1	1	1
19740	Plantae	Equisetopsida	Papaveraceae	Argemone ochroleuca				No	No	NAQ	No		1	0	1
17966	Plantae	Equisetopsida	Papaveraceae	Argemone ochroleuca subsp. ochroleuca	Mexican poppy			No	No	NAQ	No		3	3	3
16529	Plantae	Equisetopsida	Passifloraceae	Passiflora aurantia		C		No	No	NTQ	No		4	0	4
16530	Plantae	Equisetopsida	Passifloraceae	Passiflora foetida				No	No	NAQ	No		19	4	19
36076	Plantae	Equisetopsida	Passifloraceae	Passiflora pallida				No	No	NAQ	No		1	1	1
16532	Plantae	Equisetopsida	Passifloraceae	Passiflora suberosa	corky passion flower			No	No	NAQ	No		60	0	60
36078	Plantae	Equisetopsida	Passifloraceae	Passiflora suberosa subsp. litoralis				No	No	NAQ	No		3	0	3
16533	Plantae	Equisetopsida	Passifloraceae	Passiflora subpeltata	white passion flower			No	No	NAQ	No		5	1	5
7577	Plantae	Equisetopsida	Pentapetaceae	Melhania				No	No		No		1	0	1
16660	Plantae	Equisetopsida	Pentapetaceae	Melhania oblongifolia		C		No	No	NTQ	No		4	2	4
12784	Plantae	Equisetopsida	Petiveriaceae	Monococcus echinophorus	burr bush	C		No	No	NTQ	No		2	0	2
16302	Plantae	Equisetopsida	Petiveriaceae	Rivina humilis				No	No	NAQ	No		24	5	24
11367	Plantae	Equisetopsida	Phyllanthaceae	Actephila sessilifolia		C		No	No	NTQ	No		6	3	6
17808	Plantae	Equisetopsida	Phyllanthaceae	Breynia oblongifolia		C		No	No	NTQ	No		50	1	50
11327	Plantae	Equisetopsida	Phyllanthaceae	Bridelia exaltata		C		No	No	NTQ	No		1	0	1
17810	Plantae	Equisetopsida	Phyllanthaceae	Bridelia leichhardtii		C		No	No	NTQ	No		32	2	32
11302	Plantae	Equisetopsida	Phyllanthaceae	Flueggea				No	No	QAI	No		3	0	3
17126	Plantae	Equisetopsida	Phyllanthaceae	Flueggea leucopyrus		C		No	No	NTQ	No		12	0	12
9378	Plantae	Equisetopsida	Phyllanthaceae	Glochidion ferdinandi		C		No	No	NTQ	No		1	0	1
17096	Plantae	Equisetopsida	Phyllanthaceae	Glochidion lobocarpum		C		No	No	NTQ	No		7	0	7
16469	Plantae	Equisetopsida	Phyllanthaceae	Phyllanthus maderaspatensis var. maderaspatensis		C		No	No	NTQ	No		1	1	1
18266	Plantae	Equisetopsida	Phyllanthaceae	Phyllanthus microcladus		C		No	No	NTQ	No		11	1	11
11281	Plantae	Equisetopsida	Phyllanthaceae	Phyllanthus subcrenulatus		C		No	No	NTQ	No		1	0	1
16473	Plantae	Equisetopsida	Phyllanthaceae	Phyllanthus virgatus		C		No	No	NTQ	No		29	1	29
16409	Plantae	Equisetopsida	Phyllanthaceae	Poranthera microphylla	small poranthera	C		No	No	NTQ	No		1	0	1
35882	Plantae	Equisetopsida	Phyllanthaceae	Synostemon albiflorus		C		No	No	NTQ	No		7	1	7
17414	Plantae	Equisetopsida	Picrodendraceae	Dissiliaria muelleri	Mueller's redheart	C		No	No	NTQ	No		14	4	14
16505	Plantae	Equisetopsida	Picrodendraceae	Petalostigma pubescens	quinine tree	C		No	No	NTQ	No		27	0	27
12030	Plantae	Equisetopsida	Pinaceae	Pinus elliottii	slash pine			No	No	NAQ	No		1	0	1
15143	Plantae	Equisetopsida	Piperaceae	Peperomia				No	No		No		3	0	3
19968	Plantae	Equisetopsida	Piperaceae	Peperomia blanda				No	No	XU	No		1	0	1
5286	Plantae	Equisetopsida	Piperaceae	Peperomia leptostachya		C		No	No	NTQ	No		5	1	5
30283	Plantae	Equisetopsida	Piperaceae	Piper hederaceum		C		No	No	NTQ	No		1	0	1
22219	Plantae	Equisetopsida	Pittosporaceae	Auranticarpa rhombifolia		C		No	No	NTQ	No		12	1	12
14019	Plantae	Equisetopsida	Pittosporaceae	Bursaria incana		C		No	No	NTQ	No		3	1	3
16413	Plantae	Equisetopsida	Pittosporaceae	Pittosporum				No	No		No		1	0	1
16457	Plantae	Equisetopsida	Pittosporaceae	Pittosporum ferrugineum		C		No	No	NTQ	No		7	0	7
16459	Plantae	Equisetopsida	Pittosporaceae	Pittosporum revolutum	yellow pittosporum	C		No	No	NTQ	No		7	1	7
22387	Plantae	Equisetopsida	Pittosporaceae	Pittosporum spinescens		C		No	No	NTQ	No		34	3	34

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36589	Plantae	Equisetopsida	Pittosporaceae	Pittosporum tinifolium		C		No	No	NTQ	No		1	0	1
16411	Plantae	Equisetopsida	Pittosporaceae	Pittosporum venulosum		C		No	No	NTQ	No		3	0	3
14824	Plantae	Equisetopsida	Plantaginaceae	Bacopa floribunda		C		No	No	NTQ	No		2	1	2
18225	Plantae	Equisetopsida	Plantaginaceae	Mecardonia procumbens				No	No	NAQ	No		3	1	3
12727	Plantae	Equisetopsida	Plantaginaceae	Plantago debilis	shade plantain	C		No	No	NTQ	No		2	2	2
16183	Plantae	Equisetopsida	Plantaginaceae	Scoparia dulcis	scoparia			No	No	NAQ	No		5	1	5
13600	Plantae	Equisetopsida	Plantaginaceae	Stemodia glabella		C		No	No	NTQ	No		2	1	2
18034	Plantae	Equisetopsida	Plumbaginaceae	Aegialitis annulata	club mangrove	C		No	No	NTQ	No		3	1	3
6651	Plantae	Equisetopsida	Plumbaginaceae	Limonium solanderi		C		No	No	NTQ	No		3	2	3
16427	Plantae	Equisetopsida	Plumbaginaceae	Plumbago zeylanica	native plumbago	C		No	No	NTQ	No		1	1	1
15670	Plantae	Equisetopsida	Poaceae	Alloteropsis semialata	cockatoo grass	C		No	No	NTQ	No		7	0	7
15675	Plantae	Equisetopsida	Poaceae	Ancistrachne uncinulata	hooky grass	C		No	No	NTQ	No		24	1	24
14811	Plantae	Equisetopsida	Poaceae	Aristida				No	No		No		13	0	13
13707	Plantae	Equisetopsida	Poaceae	Aristida calycina		C		No	No	NTQ	No		2	0	2
15650	Plantae	Equisetopsida	Poaceae	Aristida caput-medusae		C		No	No	NTQ	No		1	0	1
11121	Plantae	Equisetopsida	Poaceae	Aristida gracilipes		C		No	No	NTQ	No		11	0	11
18398	Plantae	Equisetopsida	Poaceae	Aristida holathera		C		No	No	NTQ	No		1	0	1
15656	Plantae	Equisetopsida	Poaceae	Aristida leptopoda	white speargrass	C		No	No	NTQ	No		1	0	1
8934	Plantae	Equisetopsida	Poaceae	Aristida personata		C		No	No	NTQ	No		7	1	7
9289	Plantae	Equisetopsida	Poaceae	Aristida queenslandica		C		No	No	NTQ	No		1	0	1
11124	Plantae	Equisetopsida	Poaceae	Aristida queenslandica var. dissimilis		C		No	No	NTQ	No		13	2	13
11123	Plantae	Equisetopsida	Poaceae	Aristida queenslandica var. queenslandica		C		No	No	NTQ	No		5	0	5
9661	Plantae	Equisetopsida	Poaceae	Aristida ramosa	purple wiregrass	C		No	No	NTQ	No		1	0	1
10307	Plantae	Equisetopsida	Poaceae	Aristida spuria		C		No	No	NTQ	No		3	0	3
15658	Plantae	Equisetopsida	Poaceae	Aristida vagans		C		No	No	NTQ	No		5	0	5
15634	Plantae	Equisetopsida	Poaceae	Arundinella nepalensis	reedgrass	C		No	No	NTQ	No		24	0	24
9642	Plantae	Equisetopsida	Poaceae	Bothriochloa				No	No		No		1	0	1
15604	Plantae	Equisetopsida	Poaceae	Bothriochloa bladhii subsp. bladhii		C		No	No	NTQ	No		3	0	3
8843	Plantae	Equisetopsida	Poaceae	Bothriochloa decipiens		C		No	No	Q	No		2	0	2
14792	Plantae	Equisetopsida	Poaceae	Bothriochloa decipiens var. cloncurrensis		C		No	No	NTQ	No		1	0	1
10316	Plantae	Equisetopsida	Poaceae	Bothriochloa decipiens var. decipiens		C		No	No	NTQ	No		12	1	12
14794	Plantae	Equisetopsida	Poaceae	Bromus catharticus	prairie grass			No	No	NAQ	No		1	1	1
34710	Plantae	Equisetopsida	Poaceae	Calyptochloa gracillima subsp. gracillima		C		No	No	NTQ	No		2	0	2
14773	Plantae	Equisetopsida	Poaceae	Capillipedium parviflorum	scented top	C		No	No	NTQ	No		3	1	3
14774	Plantae	Equisetopsida	Poaceae	Capillipedium spicigerum	spicytop	C		No	No	NTQ	No		5	0	5
15540	Plantae	Equisetopsida	Poaceae	Cenchrus ciliaris				No	No	NAQ	No		1	1	1
15541	Plantae	Equisetopsida	Poaceae	Cenchrus echinatus	Mossman River grass			No	No	NAQ	No		5	4	5
33867	Plantae	Equisetopsida	Poaceae	Cenchrus setaceus				No	No	NAQ	No		1	1	1
10421	Plantae	Equisetopsida	Poaceae	Chionachne cyathopoda	river grass	C		No	No	NTQ	No		1	1	1
20434	Plantae	Equisetopsida	Poaceae	Chloris				No	No		No		2	0	2
30190	Plantae	Equisetopsida	Poaceae	Chloris divaricata		C		No	No	NTQ	No		1	0	1

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15550	Plantae	Equisetopsida	Poaceae	Chloris divaricata var. divaricata	slender chloris	C		No	No	NTQ	No		2	0	2
15551	Plantae	Equisetopsida	Poaceae	Chloris gayana	rhodes grass			No	No	NAQ	No		3	0	3
15552	Plantae	Equisetopsida	Poaceae	Chloris inflata	purpletop chloris			No	No	NAQ	No		8	3	8
14753	Plantae	Equisetopsida	Poaceae	Chloris truncata		C		No	No	NTQ	No		3	0	3
15526	Plantae	Equisetopsida	Poaceae	Chloris ventricosa	tall chloris	C		No	No	NTQ	No		2	0	2
15527	Plantae	Equisetopsida	Poaceae	Chloris virgata	feathertop rhodes grass			No	No	NAQ	No		2	1	2
20448	Plantae	Equisetopsida	Poaceae	Chrysopogon				No	No		No		1	0	1
15531	Plantae	Equisetopsida	Poaceae	Chrysopogon fallax		C		No	No	NTQ	No		22	0	22
11103	Plantae	Equisetopsida	Poaceae	Chrysopogon sylvaticus		C		No	No	NTQ	No		5	1	5
15498	Plantae	Equisetopsida	Poaceae	Cleistochloa subjuncea		C		No	No	NTQ	No		1	1	1
15483	Plantae	Equisetopsida	Poaceae	Cymbopogon bombycinus	silky oilgrass	C		No	No	NTQ	No		3	0	3
15484	Plantae	Equisetopsida	Poaceae	Cymbopogon queenslandicus		C		No	No	NTQ	No		2	0	2
15485	Plantae	Equisetopsida	Poaceae	Cymbopogon refractus	barbed-wire grass	C		No	No	NTQ	No		27	1	27
15486	Plantae	Equisetopsida	Poaceae	Cynodon dactylon				No	No	NAQ	No		3	0	3
10386	Plantae	Equisetopsida	Poaceae	Cynodon nlemfuensis var. nlemfuensis				No	No	NAQ	No		1	1	1
15489	Plantae	Equisetopsida	Poaceae	Dactyloctenium aegyptium	coast button grass			No	No	NAQ	No		3	1	3
15463	Plantae	Equisetopsida	Poaceae	Dichanthium annulatum	sheda grass			No	No	NAQ	No		1	1	1
9620	Plantae	Equisetopsida	Poaceae	Dichanthium sericeum		C		No	No	NTQ	No		1	0	1
15414	Plantae	Equisetopsida	Poaceae	Dichanthium tenue	small bluegrass	C		No	No	NTQ	No		4	0	4
10364	Plantae	Equisetopsida	Poaceae	Digitaria				No	No		No		4	0	4
10410	Plantae	Equisetopsida	Poaceae	Digitaria ammophila	silky umbrella grass	C		No	No	NTQ	No		1	1	1
15417	Plantae	Equisetopsida	Poaceae	Digitaria bicornis		C		No	No	NTQ	No		1	1	1
15419	Plantae	Equisetopsida	Poaceae	Digitaria brownii		C		No	No	NTQ	No		1	1	1
15420	Plantae	Equisetopsida	Poaceae	Digitaria ciliaris	summer grass			No	No	NAQ	No		1	1	1
11066	Plantae	Equisetopsida	Poaceae	Digitaria didactyla	Queensland blue couch			No	No	NAQ	No		1	0	1
15423	Plantae	Equisetopsida	Poaceae	Digitaria diffusa		C		No	No	NTQ	No		19	0	19
18913	Plantae	Equisetopsida	Poaceae	Digitaria eriantha				No	No	NAQ	No		1	0	1
10724	Plantae	Equisetopsida	Poaceae	Digitaria gibbosa		C		No	No	NTQ	No		1	0	1
10406	Plantae	Equisetopsida	Poaceae	Digitaria minima		C		No	No	NTQ	No		2	0	2
15426	Plantae	Equisetopsida	Poaceae	Digitaria parviflora		C		No	No	NTQ	No		4	0	4
15427	Plantae	Equisetopsida	Poaceae	Digitaria ramularis		C		No	No	NTQ	No		1	1	1
11065	Plantae	Equisetopsida	Poaceae	Digitaria violascens	bastard summergrass			No	No	NAQ	No		1	0	1
34492	Plantae	Equisetopsida	Poaceae	Dinebra decipiens		C		No	No	NTQ	No		1	0	1
34493	Plantae	Equisetopsida	Poaceae	Dinebra decipiens var. decipiens		C		No	No	NTQ	No		12	1	12
34494	Plantae	Equisetopsida	Poaceae	Dinebra decipiens var. peacockii		C		No	No	NTQ	No		6	2	6
34499	Plantae	Equisetopsida	Poaceae	Diplachne fusca var. fusca		C		No	No	NTQ	No		1	1	1
14567	Plantae	Equisetopsida	Poaceae	Echinochloa colona	awnless barnyard grass			No	No	NAQ	No		5	3	5
15435	Plantae	Equisetopsida	Poaceae	Echinochloa crus-galli	barnyard grass			No	No	NAQ	No		1	1	1
11068	Plantae	Equisetopsida	Poaceae	Echinochloa inundata	marsh millet	C		No	No	NTQ	No		1	1	1
15395	Plantae	Equisetopsida	Poaceae	Eleusine indica	crowsfoot grass			No	No	NAQ	No		2	2	2
11471	Plantae	Equisetopsida	Poaceae	Enneapogon avenaceus		C		No	No	NTQ	No		1	0	1
15405	Plantae	Equisetopsida	Poaceae	Enneapogon lindleyanus		C		No	No	NTQ	No		4	1	4

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10338	Plantae	Equisetopsida	Poaceae	Enneapogon robustissimus		C		No	No	NTQ	No		1	1	1
15409	Plantae	Equisetopsida	Poaceae	Enteropogon unispiceus		C		No	No	NTQ	No		8	0	8
15410	Plantae	Equisetopsida	Poaceae	Entolasia marginata	bordered panic	C		No	No	NTQ	No		1	1	1
15411	Plantae	Equisetopsida	Poaceae	Entolasia stricta	wiry panic	C		No	No	NTQ	No		7	0	7
10532	Plantae	Equisetopsida	Poaceae	Eragrostis				No	No		No		3	0	3
15390	Plantae	Equisetopsida	Poaceae	Eragrostis brownii	Brown's lovegrass	C		No	No	NTQ	No		2	1	2
15391	Plantae	Equisetopsida	Poaceae	Eragrostis cilianensis				No	No	NAQ	No		1	1	1
15361	Plantae	Equisetopsida	Poaceae	Eragrostis elongata		C		No	No	NTQ	No		6	1	6
15364	Plantae	Equisetopsida	Poaceae	Eragrostis lacunaria	purple lovegrass	C		No	No	NTQ	No		1	1	1
15367	Plantae	Equisetopsida	Poaceae	Eragrostis leptostachya		C		No	No	NTQ	No		9	0	9
15371	Plantae	Equisetopsida	Poaceae	Eragrostis parviflora	weeping lovegrass	C		No	No	NTQ	No		3	0	3
15373	Plantae	Equisetopsida	Poaceae	Eragrostis sororia		C		No	No	NTQ	No		3	0	3
15374	Plantae	Equisetopsida	Poaceae	Eragrostis spartinoides		C		No	No	NTQ	No		22	0	22
15378	Plantae	Equisetopsida	Poaceae	Eragrostis tenuifolia	elastic grass			No	No	NAQ	No		3	2	3
15330	Plantae	Equisetopsida	Poaceae	Eriochloa crebra	spring grass	C		No	No	NTQ	No		3	1	3
15331	Plantae	Equisetopsida	Poaceae	Eriochloa procera	slender cupgrass	C		No	No	NTQ	No		6	1	6
15332	Plantae	Equisetopsida	Poaceae	Eriochloa pseudoacrotricha		C		No	No	NTQ	No		3	1	3
15320	Plantae	Equisetopsida	Poaceae	Heteropogon contortus	black speargrass	C		No	No	NTQ	No		56	0	56
10578	Plantae	Equisetopsida	Poaceae	Hyparrhenia rufa				No	No	NAQ	No		11	1	11
15803	Plantae	Equisetopsida	Poaceae	Hyparrhenia rufa subsp. rufa				No	No	NAQ	No		10	6	10
15290	Plantae	Equisetopsida	Poaceae	Imperata cylindrica	blady grass	C		No	No	NTQ	No		16	1	16
29093	Plantae	Equisetopsida	Poaceae	Megathyrsus maximus				No	No	NAQ	No		7	0	7
28224	Plantae	Equisetopsida	Poaceae	Megathyrsus maximus var. coloratus				No	No	NAQ	No		2	1	2
28420	Plantae	Equisetopsida	Poaceae	Megathyrsus maximus var. maximus				No	No	NAQ	No		2	1	2
27900	Plantae	Equisetopsida	Poaceae	Megathyrsus maximus var. pubiglumis				No	No	NAQ	No		15	2	15
15242	Plantae	Equisetopsida	Poaceae	Melinis minutiflora	molasses grass			No	No	NAQ	No		3	0	3
9154	Plantae	Equisetopsida	Poaceae	Melinis repens	red natal grass			No	No	NAQ	No		27	2	27
21182	Plantae	Equisetopsida	Poaceae	Oplismenus				No	No		No		1	0	1
15163	Plantae	Equisetopsida	Poaceae	Oplismenus aemulus	creeping shade grass	C		No	No	NTQ	No		21	0	21
4207	Plantae	Equisetopsida	Poaceae	Oplismenus imbecillis		C		No	No	NTQ	No		1	0	1
10637	Plantae	Equisetopsida	Poaceae	Ottochloa gracillima	pademelon grass	C		No	No	NTQ	No		10	1	10
10638	Plantae	Equisetopsida	Poaceae	Ottochloa nodosa		C		No	No	NTQ	No		4	1	4
10656	Plantae	Equisetopsida	Poaceae	Panicum				No	No		No		1	0	1
13607	Plantae	Equisetopsida	Poaceae	Panicum effusum		C		No	No	NTQ	No		18	2	18
40372	Plantae	Equisetopsida	Poaceae	Panicum effusum var. hispidissimum		C		No	No	NTQ	No		1	0	1
18424	Plantae	Equisetopsida	Poaceae	Panicum simile		C		No	No	NTQ	No		11	0	11
12587	Plantae	Equisetopsida	Poaceae	Paspalidium				No	No		No		3	0	3
15185	Plantae	Equisetopsida	Poaceae	Paspalidium disjunctum		C		No	No	NTQ	No		2	0	2
14345	Plantae	Equisetopsida	Poaceae	Paspalidium distans	shotgrass	C		No	No	NTQ	No		20	1	20
15186	Plantae	Equisetopsida	Poaceae	Paspalidium gausum		C		No	No	NTQ	No		1	0	1
15187	Plantae	Equisetopsida	Poaceae	Paspalidium gracile	slender panic	C		No	No	NTQ	No		4	0	4
21234	Plantae	Equisetopsida	Poaceae	Paspalum				No	No		No		1	0	1
15134	Plantae	Equisetopsida	Poaceae	Paspalum dilatatum	paspalum			No	No	NAQ	No		2	1	2
10818	Plantae	Equisetopsida	Poaceae	Paspalum distichum	water couch			No	No	NAQ	No		1	1	1

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15136	Plantae	Equisetopsida	Poaceae	Paspalum scrobiculatum	ditch millet	C		No	No	NTQ	No		2	0	2
15138	Plantae	Equisetopsida	Poaceae	Paspalum vaginatum	saltwater couch			No	No	NAQ	No		1	1	1
10608	Plantae	Equisetopsida	Poaceae	Poa annua	annual poa			No	No	NAQ	No		1	1	1
18061	Plantae	Equisetopsida	Poaceae	Poaceae				No	No		No		1	0	1
27800	Plantae	Equisetopsida	Poaceae	Sarga leiocladum		C		No	No	NTQ	No		3	0	3
27781	Plantae	Equisetopsida	Poaceae	Sarga plumosum		C		No	No	NTQ	No		1	0	1
15060	Plantae	Equisetopsida	Poaceae	Sehima nervosum		C		No	No	NTQ	No		1	1	1
15033	Plantae	Equisetopsida	Poaceae	Setaria				No	No		No		1	0	1
20011	Plantae	Equisetopsida	Poaceae	Setaria pumila				No	No	NAQ	No		1	0	1
15032	Plantae	Equisetopsida	Poaceae	Setaria surgens		C		No	No	NTQ	No		4	0	4
15048	Plantae	Equisetopsida	Poaceae	Sorghum				No	No		No		1	0	1
10246	Plantae	Equisetopsida	Poaceae	Sorghum arundinaceum	Rhodesian Sudan grass			No	No	NAQ	No		4	3	4
15043	Plantae	Equisetopsida	Poaceae	Sorghum halepense	Johnson grass			No	No	NAQ	No		2	1	2
14213	Plantae	Equisetopsida	Poaceae	Sorghum nitidum		C		No	No	NTQ	No		7	0	7
10792	Plantae	Equisetopsida	Poaceae	Sorghum nitidum forma aristatum		C		No	No	NTQ	No		5	3	5
15041	Plantae	Equisetopsida	Poaceae	Sorghum x almum				No	No	NAQ	No		2	1	2
22165	Plantae	Equisetopsida	Poaceae	Sporobolus africanus	Parramatta grass			No	No	NAQ	No		1	1	1
15001	Plantae	Equisetopsida	Poaceae	Sporobolus creber		C		No	No	NTQ	No		2	2	2
14169	Plantae	Equisetopsida	Poaceae	Sporobolus elongatus		C		No	No	NTQ	No		3	0	3
10794	Plantae	Equisetopsida	Poaceae	Sporobolus jacquemontii				No	No	NAQ	No		1	1	1
10941	Plantae	Equisetopsida	Poaceae	Sporobolus laxus		C		No	No	NTQ	No		1	0	1
10158	Plantae	Equisetopsida	Poaceae	Sporobolus natalensis				No	No	NAQ	No		1	1	1
10156	Plantae	Equisetopsida	Poaceae	Sporobolus pyramidalis				No	No	NAQ	No		7	1	7
15003	Plantae	Equisetopsida	Poaceae	Sporobolus virginicus	sand couch	C		No	No	NTQ	No		9	0	9
21624	Plantae	Equisetopsida	Poaceae	Themeda				No	No		No		1	0	1
14973	Plantae	Equisetopsida	Poaceae	Themeda quadrivalvis	grader grass			No	No	NAQ	No		3	3	3
14974	Plantae	Equisetopsida	Poaceae	Themeda triandra	kangaroo grass	C		No	No	NTQ	No		47	2	47
29242	Plantae	Equisetopsida	Poaceae	Urochloa foliosa		C		No	No	NTQ	No		2	2	2
2359	Plantae	Equisetopsida	Poaceae	Urochloa mutica				No	No	NAQ	No		2	1	2
18339	Plantae	Equisetopsida	Poaceae	Urochloa subquadripara				No	No	NAQ	No		4	0	4
38659	Plantae	Equisetopsida	Poaceae	Urochloa trichopus				No	No	EXQ	No		1	0	1
17587	Plantae	Equisetopsida	Polygalaceae	Comesperma esulifolium	match heads	C		No	No	NTQ	No		1	1	1
14277	Plantae	Equisetopsida	Polygalaceae	Polygala paniculata				No	No	NAQ	No		1	1	1
33922	Plantae	Equisetopsida	Polygalaceae	Polygala triflora		C		No	No	NTQ	No		3	1	3
13252	Plantae	Equisetopsida	Polygonaceae	Antigonon leptopus				No	No	NAQ	No		2	2	2
21257	Plantae	Equisetopsida	Polygonaceae	Persicaria				No	No		No		1	0	1
14350	Plantae	Equisetopsida	Polygonaceae	Persicaria attenuata		C		No	No	NTQ	No		2	2	2
13155	Plantae	Equisetopsida	Polygonaceae	Persicaria decipiens	slender knotweed	C		No	No	NTQ	No		2	1	2
16394	Plantae	Equisetopsida	Polygonaceae	Polygonum				No	No		No		2	0	2
16271	Plantae	Equisetopsida	Polygonaceae	Rumex brownii	swamp dock	C		No	No	NTQ	No		1	1	1
17354	Plantae	Equisetopsida	Polypodiaceae	Drynaria rigidula		SL		No	Yes	NTQ	No		6	1	6
17355	Plantae	Equisetopsida	Polypodiaceae	Drynaria sparsisora		SL		No	Yes	NTQ	No		8	2	8
16626	Plantae	Equisetopsida	Polypodiaceae	Microsorum punctatum		SL		No	Yes	NTQ	No		8	1	8
11696	Plantae	Equisetopsida	Polypodiaceae	Platycerium bifurcatum		SL		No	Yes	NTQ	No		1	0	1
6668	Plantae	Equisetopsida	Polypodiaceae	Pyrrosia confluens		SL		No	Yes	NTQ	No		1	0	1
16314	Plantae	Equisetopsida	Polypodiaceae	Pyrrosia confluens var. confluens		SL		No	Yes	NTQ	No		2	2	2
16317	Plantae	Equisetopsida	Polypodiaceae	Pyrrosia rupestris	rock felt fern	SL		No	Yes	NTQ	No		4	0	4

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42261	Plantae	Equisetopsida	Pontederiaceae	Pontederia crassipes				No	No	NAQ	No		2	2	2
16359	Plantae	Equisetopsida	Portulacaceae	Portulaca oleracea	pigweed			No	No	NAQ	No		2	0	2
19434	Plantae	Equisetopsida	Portulacaceae	Portulaca pilosa				No	No	NAQ	No		4	1	4
13099	Plantae	Equisetopsida	Potamogetonaceae	Potamogeton crispus	curly pondweed	SL		No	Yes	NTQ	No		1	1	1
31010	Plantae	Equisetopsida	Potamogetonaceae	Potamogeton octandrus		SL		No	Yes	NTQ	No		1	1	1
34205	Plantae	Equisetopsida	Potamogetonaceae	Stuckenia pectinata		SL		No	Yes	NTQ	No		1	1	1
17047	Plantae	Equisetopsida	Proteaceae	Grevillea				No	No		No		1	0	1
17033	Plantae	Equisetopsida	Proteaceae	Grevillea helmsiae		C		No	No	NTQ	No		1	1	1
17045	Plantae	Equisetopsida	Proteaceae	Grevillea striata	beefwood	C		No	No	NTQ	No		1	1	1
18110	Plantae	Equisetopsida	Pteridaceae	Acrostichum speciosum	mangrove fern	SL		No	Yes	NTQ	No		1	1	1
18116	Plantae	Equisetopsida	Pteridaceae	Adiantum aethiopicum		SL		No	Yes	NTQ	No		8	0	8
21888	Plantae	Equisetopsida	Pteridaceae	Adiantum atroviride		SL		No	Yes	NTQ	No		2	1	2
18031	Plantae	Equisetopsida	Pteridaceae	Adiantum hispidulum		SL		No	Yes	NTQ	No		19	0	19
9284	Plantae	Equisetopsida	Pteridaceae	Adiantum hispidulum var. hispidulum		SL		No	Yes	NTQ	No		5	2	5
9285	Plantae	Equisetopsida	Pteridaceae	Adiantum hispidulum var. hypoglaucum		SL		No	Yes	NTQ	No		1	1	1
3255	Plantae	Equisetopsida	Pteridaceae	Adiantum hispidulum var. minus		SL		No	Yes	NTQ	No		1	0	1
17679	Plantae	Equisetopsida	Pteridaceae	Cheilanthes distans	bristly cloak fern	C		No	No	NTQ	No		1	0	1
8258	Plantae	Equisetopsida	Pteridaceae	Cheilanthes nudiuscula		C		No	No	NTQ	No		6	4	6
8916	Plantae	Equisetopsida	Pteridaceae	Cheilanthes sieberi		C		No	No	NTQ	No		9	0	9
17682	Plantae	Equisetopsida	Pteridaceae	Cheilanthes sieberi subsp. sieberi		C		No	No	NTQ	No		1	1	1
17396	Plantae	Equisetopsida	Pteridaceae	Doryopteris concolor		SL		No	Yes	NTQ	No		8	0	8
9723	Plantae	Equisetopsida	Pteridaceae	Pellaea falcata		SL		No	Yes	NTQ	No		5	0	5
21889	Plantae	Equisetopsida	Pteridaceae	Pellaea nana		SL		No	Yes	NTQ	No		5	1	5
13800	Plantae	Equisetopsida	Pteridaceae	Pellaea paradoxa	heart fern	SL		No	Yes	NTQ	No		2	0	2
24905	Plantae	Equisetopsida	Ptychomitriaceae	Ptychomitrium australe		C		No	No	NTQ	No		1	1	1
9557	Plantae	Equisetopsida	Putranjivaceae	Drypetes deplanchei	grey boxwood	C		No	No	NTQ	No		46	0	46
17622	Plantae	Equisetopsida	Ranunculaceae	Clematis glycinoides		C		No	No	NTQ	No		2	0	2
9659	Plantae	Equisetopsida	Rhamnaceae	Alphitonia excelsa	soap tree	C		No	No	NTQ	No		70	0	70
17294	Plantae	Equisetopsida	Rhamnaceae	Emmenosperma cunninghamii		C		No	No	NTQ	No		1	0	1
13094	Plantae	Equisetopsida	Rhamnaceae	Pomaderris				No	No		No		1	1	1
13141	Plantae	Equisetopsida	Rhamnaceae	Pomaderris canescens		C		No	No	NTQ	No		2	2	2
33130	Plantae	Equisetopsida	Rhamnaceae	Pomaderris sp. (Mt Larcom J.Brushe JB259)		C		No	No	NTQ	No		4	4	4
16278	Plantae	Equisetopsida	Rhamnaceae	Rhamnella vitiensis		C		No	No	NTQ	No		5	1	5
15949	Plantae	Equisetopsida	Rhamnaceae	Ventilago pubiflora		C		No	No	NTQ	No		11	2	11
17815	Plantae	Equisetopsida	Rhizophoraceae	Bruguiera gymnorhiza	large-fruited orange mangrove	C		No	No	NTQ	No		1	0	1
4134	Plantae	Equisetopsida	Rhizophoraceae	Ceriops australis		C		No	No	NTQ	No		2	2	2
13272	Plantae	Equisetopsida	Rhizophoraceae	Ceriops tagal	yellow mangrove	C		No	No	NTQ	No		4	1	4
16284	Plantae	Equisetopsida	Rhizophoraceae	Rhizophora stylosa	spotted mangrove	C		No	No	NTQ	No		3	1	3
15839	Plantae	Equisetopsida	Ripogonaceae	Ripogonum album	white supplejack	C		No	No	NTQ	No		1	0	1
12848	Plantae	Equisetopsida	Ripogonaceae	Ripogonum brevifolium	small-leaved supplejack	C		No	No	NTQ	No		3	0	3
14109	Plantae	Equisetopsida	Rosaceae	Eriobotrya japonica	loquat			No	No	NAQ	No		1	0	1
6242	Plantae	Equisetopsida	Rosaceae	Rubus probus		C		No	No	NTQ	No		2	1	2
5679	Plantae	Equisetopsida	Rosaceae	Rubus x novus		C		No	No	NTQ	No		1	1	1
18045	Plantae	Equisetopsida	Rubiaceae	Aidia racemosa		C		No	No	NTQ	No		28	8	28
12294	Plantae	Equisetopsida	Rubiaceae	Canthium				No	No	XI	No		3	1	3

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12298	Plantae	Equisetopsida	Rubiaceae	Coelospermum paniculatum var. paniculatum		C		No	No	NTQ	No		1	0	1
5565	Plantae	Equisetopsida	Rubiaceae	Coelospermum reticulatum		C		No	No	NTQ	No		55	2	55
27436	Plantae	Equisetopsida	Rubiaceae	Cyclophyllum coprosmoides		C		No	No	NTQ	No		16	0	16
27437	Plantae	Equisetopsida	Rubiaceae	Cyclophyllum coprosmoides var. coprosmoides		C		No	No	NTQ	No		1	0	1
27438	Plantae	Equisetopsida	Rubiaceae	Cyclophyllum coprosmoides var. spathulatum		C		No	No	NTQ	No		1	1	1
34578	Plantae	Equisetopsida	Rubiaceae	Gynochthodes canthoides		C		No	No	NTQ	No		6	0	6
14503	Plantae	Equisetopsida	Rubiaceae	Hodgkinsonia ovatiflora	golden ash	C		No	No	NTQ	No		3	0	3
12270	Plantae	Equisetopsida	Rubiaceae	Ixora beckleri	brown coffeewood	C		No	No	NTQ	No		2	0	2
12272	Plantae	Equisetopsida	Rubiaceae	Ixora queenslandica		C		No	No	NTQ	No		6	1	6
12274	Plantae	Equisetopsida	Rubiaceae	Knoxia sumatrensis		C		No	No	NTQ	No		3	3	3
16640	Plantae	Equisetopsida	Rubiaceae	Mitracarpus hirtus				No	No	NAQ	No		1	1	1
16648	Plantae	Equisetopsida	Rubiaceae	Morinda				No	No		No		1	0	1
15202	Plantae	Equisetopsida	Rubiaceae	Nauclea orientalis	Leichhardt tree	C		No	No	NTQ	No		2	0	2
7598	Plantae	Equisetopsida	Rubiaceae	Pavetta australiensis		C		No	No	NTQ	No		6	0	6
16538	Plantae	Equisetopsida	Rubiaceae	Pavetta australiensis var. australiensis		C		No	No	NTQ	No		3	3	3
9231	Plantae	Equisetopsida	Rubiaceae	Pomax				No	No		No		1	1	1
16407	Plantae	Equisetopsida	Rubiaceae	Pomax umbellata		C		No	No	NTQ	No		3	2	3
16339	Plantae	Equisetopsida	Rubiaceae	Psychotria				No	No		No		1	0	1
16334	Plantae	Equisetopsida	Rubiaceae	Psychotria daphnoides		C		No	No	NTQ	No		13	1	13
14292	Plantae	Equisetopsida	Rubiaceae	Psychotria daphnoides var. pubescens		C		No	No	NTQ	No		1	1	1
14293	Plantae	Equisetopsida	Rubiaceae	Psychotria loniceroides	hairy psychotria	C		No	No	NTQ	No		2	0	2
29251	Plantae	Equisetopsida	Rubiaceae	Psydrax				No	No		No		1	1	1
29828	Plantae	Equisetopsida	Rubiaceae	Psydrax lamprophylla forma lamprophylla		C		No	No	NTQ	No		1	0	1
2399	Plantae	Equisetopsida	Rubiaceae	Psydrax odorata		C		No	No	NTQ	No		24	0	24
29841	Plantae	Equisetopsida	Rubiaceae	Psydrax odorata forma australiana		C		No	No	NTQ	No		8	0	8
29826	Plantae	Equisetopsida	Rubiaceae	Psydrax odorata forma buxifolia		C		No	No	NTQ	No		6	0	6
29840	Plantae	Equisetopsida	Rubiaceae	Psydrax odorata subsp. australiana		C		No	No	NTQ	No		3	3	3
29823	Plantae	Equisetopsida	Rubiaceae	Psydrax oleifolia		C		No	No	NTQ	No		3	1	3
16300	Plantae	Equisetopsida	Rubiaceae	Richardia brasiliensis	white eye			No	No	NAQ	No		3	2	3
41463	Plantae	Equisetopsida	Rubiaceae	Scleromitrion subulatum		C		No	No	NTQ	No		2	2	2
16140	Plantae	Equisetopsida	Rubiaceae	Spermacoce				No	No		No		1	0	1
16135	Plantae	Equisetopsida	Rubiaceae	Spermacoce brachystema		C		No	No	NTQ	No		6	1	6
16139	Plantae	Equisetopsida	Rubiaceae	Spermacoce multicaulis		C		No	No	NTQ	No		15	2	15
12217	Plantae	Equisetopsida	Rubiaceae	Tarenna				No	No		No		2	0	2
20039	Plantae	Equisetopsida	Rubiaceae	Timonius timon		C		No	No	NTQ	No		1	0	1

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15997	Plantae	Equisetopsida	Rubiaceae	Timonius timon var. timon		C		No	No	NTQ	No		5	1	5
30694	Plantae	Equisetopsida	Rubiaceae	Triflorensia cameronii		C		No	No	NTQ	No		2	0	2
30510	Plantae	Equisetopsida	Rubiaceae	Triflorensia ixoroides		C		No	No	NTQ	No		12	0	12
15873	Plantae	Equisetopsida	Rutaceae	Acronychia				No	No		No		1	0	1
15870	Plantae	Equisetopsida	Rutaceae	Acronychia imperforata	beach acronychia	C		No	No	NTQ	No		1	1	1
15871	Plantae	Equisetopsida	Rutaceae	Acronychia laevis	glossy acronychia	C		No	No	NTQ	No		19	0	19
15872	Plantae	Equisetopsida	Rutaceae	Acronychia pauciflora	soft acronychia	C		No	No	NTQ	No		11	3	11
11989	Plantae	Equisetopsida	Rutaceae	Bosistoa medicinalis		C		No	No	NTQ	No		21	14	21
11988	Plantae	Equisetopsida	Rutaceae	Bosistoa transversa	three-leaved bosistoa	C	V	No	Yes	NTQ	No		14	11	14
11990	Plantae	Equisetopsida	Rutaceae	Bouchardatia neurococca	union nut	C		No	No	NTQ	No		4	1	4
27796	Plantae	Equisetopsida	Rutaceae	Coatesia paniculata		C		No	No	NTQ	No		9	1	9
18946	Plantae	Equisetopsida	Rutaceae	Dinosperma erythrococcum		C		No	No	NTQ	No		7	1	7
18945	Plantae	Equisetopsida	Rutaceae	Dinosperma melanophloium		C		No	No	NTQ	No		10	4	10
11300	Plantae	Equisetopsida	Rutaceae	Flindersia australis	crow's ash	C		No	No	NTQ	No		13	1	13
17125	Plantae	Equisetopsida	Rutaceae	Flindersia schottiana	bumpy ash	C		No	No	NTQ	No		2	0	2
17085	Plantae	Equisetopsida	Rutaceae	Geijera parviflora	wilga	C		No	No	NTQ	No		1	0	1
11430	Plantae	Equisetopsida	Rutaceae	Geijera salicifolia	brush wilga	C		No	No	NTQ	No		26	2	26
9465	Plantae	Equisetopsida	Rutaceae	Medicosma				No	No		No		1	0	1
12360	Plantae	Equisetopsida	Rutaceae	Medicosma cunninghamii	pinkheart	C		No	No	NTQ	No		1	0	1
16677	Plantae	Equisetopsida	Rutaceae	Micromelum minutum	clusterberry	C		No	No	NTQ	No		15	2	15
42041	Plantae	Equisetopsida	Rutaceae	Murraya lucida		C		No	No	NTQ	No		15	1	15
21837	Plantae	Equisetopsida	Rutaceae	Murraya paniculata 'Exotica'				No	No	NAQ	No		17	0	17
16239	Plantae	Equisetopsida	Rutaceae	Sarcomelicope simplicifolia subsp. simplicifolia	yellow aspen	C		No	No	NTQ	No		4	0	4
15899	Plantae	Equisetopsida	Rutaceae	Zanthoxylum brachyacanthum		C		No	No	NTQ	No		4	0	4
15908	Plantae	Equisetopsida	Rutaceae	Zieria				No	No		No		1	1	1
28656	Plantae	Equisetopsida	Rutaceae	Zieria actites	Mt Larcom stink bush	V		No	Yes	NTQ	No		6	6	6
16914	Plantae	Equisetopsida	Salicaceae	Homalium alnifolium	homalium	C		No	No	NTQ	No		12	2	12
16182	Plantae	Equisetopsida	Salicaceae	Scolopia braunii	flintwood	C		No	No	NTQ	No		4	1	4
11250	Plantae	Equisetopsida	Salicaceae	Xylosma terrae-reginae	xylosma	C		No	No	NTQ	No		8	1	8
16276	Plantae	Equisetopsida	Salviniaceae	Salvinia molesta	salvinia			No	No	NAQ	No		1	1	1
17181	Plantae	Equisetopsida	Santalaceae	Exocarpos latifolius		C		No	No	NTQ	No		27	0	27
14132	Plantae	Equisetopsida	Santalaceae	Notothixos incanus		C		No	No	NTQ	No		1	1	1
18052	Plantae	Equisetopsida	Sapindaceae	Alectryon connatus	grey birds-eye	C		No	No	NTQ	No		21	1	21
18054	Plantae	Equisetopsida	Sapindaceae	Alectryon diversifolius	scrub boonaree	C		No	No	NTQ	No		14	3	14
18007	Plantae	Equisetopsida	Sapindaceae	Alectryon subcinereus		C		No	No	NTQ	No		1	0	1
9489	Plantae	Equisetopsida	Sapindaceae	Alectryon subdentatus		C		No	No	NTQ	No		14	2	14
19727	Plantae	Equisetopsida	Sapindaceae	Alectryon tomentosus		C		No	No	NTQ	No		14	2	14
17930	Plantae	Equisetopsida	Sapindaceae	Arytera divaricata	coogera	C		No	No	NTQ	No		10	0	10
13714	Plantae	Equisetopsida	Sapindaceae	Atalaya				No	No		No		1	0	1
13712	Plantae	Equisetopsida	Sapindaceae	Atalaya calcicola		C		No	No	NTQ	No		7	3	7
9091	Plantae	Equisetopsida	Sapindaceae	Atalaya collina		E	E	No	Yes	NTQ	No		12	11	12
13711	Plantae	Equisetopsida	Sapindaceae	Atalaya multiflora	broad-leaved whitewood	C		No	No	NTQ	No		6	2	6
14042	Plantae	Equisetopsida	Sapindaceae	Atalaya rigida		C		No	No	NTQ	No		19	14	19

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17907	Plantae	Equisetopsida	Sapindaceae	Atalaya salicifolia		C		No	No	NTQ	No		18	7	18
13960	Plantae	Equisetopsida	Sapindaceae	Cupaniopsis				No	No		No		3	1	3
17548	Plantae	Equisetopsida	Sapindaceae	Cupaniopsis anacardioides	tuckeroo	C		No	No	NTQ	No		30	0	30
13686	Plantae	Equisetopsida	Sapindaceae	Cupaniopsis parvifolia	small-leaved tuckeroo	C		No	No	NTQ	No		1	0	1
14648	Plantae	Equisetopsida	Sapindaceae	Cupaniopsis shirleyana	wedge-leaf tuckeroo	V	V	No	Yes	NTQ	No		3	1	3
9052	Plantae	Equisetopsida	Sapindaceae	Cupaniopsis simulata		C		No	No	NTQ	No		1	1	1
33389	Plantae	Equisetopsida	Sapindaceae	Cupaniopsis sp. (Watalgan A.R.Bean 8611)		C		No	No	NTQ	No		16	14	16
13638	Plantae	Equisetopsida	Sapindaceae	Cupaniopsis wadsworthii		C		No	No	NTQ	No		26	3	26
14612	Plantae	Equisetopsida	Sapindaceae	Dodonaea				No	No		No		9	0	9
13649	Plantae	Equisetopsida	Sapindaceae	Dodonaea lanceolata		C		No	No	NTQ	No		14	0	14
17376	Plantae	Equisetopsida	Sapindaceae	Dodonaea lanceolata var. subsessilifolia		C		No	No	NTQ	No		1	0	1
13650	Plantae	Equisetopsida	Sapindaceae	Dodonaea tenuifolia		C		No	No	NTQ	No		2	1	2
17391	Plantae	Equisetopsida	Sapindaceae	Dodonaea viscosa		C		No	No	NTQ	No		1	0	1
17387	Plantae	Equisetopsida	Sapindaceae	Dodonaea viscosa subsp. burmanniana		C		No	No	NTQ	No		2	0	2
31862	Plantae	Equisetopsida	Sapindaceae	Elattostachys bidwillii		C		No	No	NTQ	No		1	0	1
13662	Plantae	Equisetopsida	Sapindaceae	Elattostachys nervosa	green tamarind	C		No	No	NTQ	No		1	0	1
17339	Plantae	Equisetopsida	Sapindaceae	Elattostachys xylocarpa	white tamarind	C		No	No	NTQ	No		24	2	24
16968	Plantae	Equisetopsida	Sapindaceae	Harpullia hillii		C		No	No	NTQ	No		6	0	6
16969	Plantae	Equisetopsida	Sapindaceae	Harpullia pendula		C		No	No	NTQ	No		4	0	4
16885	Plantae	Equisetopsida	Sapindaceae	Jagera pseudorhus		C		No	No	NTQ	No		24	0	24
6019	Plantae	Equisetopsida	Sapindaceae	Jagera pseudorhus var. pseudorhus		C		No	No	NTQ	No		4	2	4
14356	Plantae	Equisetopsida	Sapindaceae	Mischocarpus anodontus	veiny pearfruit	C		No	No	NTQ	No		1	0	1
8887	Plantae	Equisetopsida	Sapindaceae	Rhysotoechia bifoliolata		C		No	No	U	No		4	0	4
8959	Plantae	Equisetopsida	Sapindaceae	Rhysotoechia bifoliolata subsp. bifoliolata		C		No	No	NTQ	No		3	1	3
16578	Plantae	Equisetopsida	Sapotaceae	Niemeyera prunifera		C		No	No	NTQ	No		1	1	1
5289	Plantae	Equisetopsida	Sapotaceae	Planchonella australis		C		No	No	NTQ	No		1	0	1
9226	Plantae	Equisetopsida	Sapotaceae	Planchonella cotinifolia		C		No	No	NTQ	No		4	0	4
13559	Plantae	Equisetopsida	Sapotaceae	Planchonella cotinifolia var. cotinifolia		C		No	No	NTQ	No		1	0	1
16415	Plantae	Equisetopsida	Sapotaceae	Planchonella cotinifolia var. pubescens		C		No	No	NTQ	No		21	0	21
13125	Plantae	Equisetopsida	Sapotaceae	Planchonella pohlmaniana		C		No	No	NTQ	No		15	1	15
34941	Plantae	Equisetopsida	Sapotaceae	Pleioluma queenslandica		C		No	No	NTQ	No		3	1	3
32249	Plantae	Equisetopsida	Sapotaceae	Sersalisia sericea		C		No	No	NTQ	No		15	1	15
16205	Plantae	Equisetopsida	Schizaeaceae	Schizaea bifida	forked comb fern	SL		No	Yes	NTQ	No		3	2	3
8631	Plantae	Equisetopsida	Scrophulariaceae	Eremophila debilis	winter apple	C		No	No	NTQ	No		15	1	15
34086	Plantae	Equisetopsida	Scrophulariaceae	Eremophila sp. (Toomba Range J. Silcock JLS179)		C		No	No	U	No		1	0	1
16602	Plantae	Equisetopsida	Scrophulariaceae	Myoporum acuminatum	coastal boobialla	C		No	No	NTQ	No		6	1	6

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8586	Plantae	Equisetopsida	Scrophulariaceae	Myoporum boninense subsp. australe		C		No	No	NTQ	No		1	1	1
18047	Plantae	Equisetopsida	Simaroubaceae	Ailanthus triphysa	white siris	C		No	No	NTQ	No		2	0	2
33391	Plantae	Equisetopsida	Simaroubaceae	Samadera bidwillii		V	V	No	Yes	NTQ	No		4	4	4
15881	Plantae	Equisetopsida	Smilacaceae	Smilax australis	barbed-wire vine	C		No	No	NTQ	No		24	0	24
15882	Plantae	Equisetopsida	Smilacaceae	Smilax glyciphylla	sweet sarsaparilla	C		No	No	NTQ	No		4	1	4
13673	Plantae	Equisetopsida	Solanaceae	Capsicum frutescens				No	No	NAQ	No		2	0	2
17493	Plantae	Equisetopsida	Solanaceae	Datura ferox	fierce thornapple			No	No	NAQ	No		1	1	1
17496	Plantae	Equisetopsida	Solanaceae	Datura stramonium	common thornapple			No	No	NAQ	No		1	0	1
27897	Plantae	Equisetopsida	Solanaceae	Lycianthes shanesii		C		No	No	NTQ	No		2	1	2
13555	Plantae	Equisetopsida	Solanaceae	Physalis angulata				No	No	NAQ	No		1	1	1
13557	Plantae	Equisetopsida	Solanaceae	Physalis peruviana				No	No	NAQ	No		7	1	7
16129	Plantae	Equisetopsida	Solanaceae	Solanum				No	No		No		1	0	1
16157	Plantae	Equisetopsida	Solanaceae	Solanum americanum				No	No	NAQ	No		6	3	6
16165	Plantae	Equisetopsida	Solanaceae	Solanum ellipticum	potato bush	C		No	No	NTQ	No		4	0	4
16167	Plantae	Equisetopsida	Solanaceae	Solanum furfuraceum		C		No	No	NTQ	No		3	0	3
13788	Plantae	Equisetopsida	Solanaceae	Solanum nigrum				No	No	NAQ	No		16	0	16
16120	Plantae	Equisetopsida	Solanaceae	Solanum seaforthianum	Brazilian nightshade			No	No	NAQ	No		20	0	20
16124	Plantae	Equisetopsida	Solanaceae	Solanum stelligerum	devil's needles	C		No	No	NTQ	No		7	1	7
16126	Plantae	Equisetopsida	Solanaceae	Solanum torvum	devil's fig			No	No	NAQ	No		6	4	6
6183	Plantae	Equisetopsida	Sparrmanniaceae	Corchorus reynoldsiae		C		No	No	NTQ	No		2	2	2
17603	Plantae	Equisetopsida	Sparrmanniaceae	Corchorus trilocularis		C		No	No	NTQ	No		4	1	4
16994	Plantae	Equisetopsida	Sparrmanniaceae	Grewia				No	No		No		1	0	1
17049	Plantae	Equisetopsida	Sparrmanniaceae	Grewia latifolia	dysentery plant	C		No	No	NTQ	No		35	2	35
16993	Plantae	Equisetopsida	Sparrmanniaceae	Grewia retusifolia				No	No	XU	No		1	0	1
40981	Plantae	Equisetopsida	Sparrmanniaceae	Grewia savannicola		C		No	No	NTQ	No		1	0	1
15982	Plantae	Equisetopsida	Sparrmanniaceae	Triumfetta repens		C		No	No	NTQ	No		1	0	1
15983	Plantae	Equisetopsida	Sparrmanniaceae	Triumfetta rhomboidea	chinese burr			No	No	NAQ	No		10	1	10
16091	Plantae	Equisetopsida	Stackhousiaceae	Stackhousia monogyna	creamy candles	C		No	No	NTQ	No		1	0	1
9660	Plantae	Equisetopsida	Sterculiaceae	Argyrodendron trifoliolatum	booyong	C		No	No	NTQ	No		2	0	2
12650	Plantae	Equisetopsida	Sterculiaceae	Brachychiton				No	No		No		1	0	1
17796	Plantae	Equisetopsida	Sterculiaceae	Brachychiton australis	broad-leaved bottle tree	SL		No	Yes	NTQ	No		15	0	15
17803	Plantae	Equisetopsida	Sterculiaceae	Brachychiton rupestris		SL		No	Yes	NTQ	No		1	0	1
16103	Plantae	Equisetopsida	Sterculiaceae	Sterculia quadrifida	peanut tree	C		No	No	NTQ	No		26	0	26
29868	Plantae	Equisetopsida	Strelitziaceae	Strelitzia				No	No		No		1	1	1
9327	Plantae	Equisetopsida	Symplocaceae	Symplocos stawellii		C		No	No	NTQ	No		2	1	2
17927	Plantae	Equisetopsida	Tectariaceae	Arthropteris tenella	climbing fern	C		No	No	NTQ	No		3	1	3
15926	Plantae	Equisetopsida	Thymelaeaceae	Wikstroemia indica	tie bush	C		No	No	NTQ	No		1	0	1
12527	Plantae	Equisetopsida	Typhaceae	Typha domingensis		C		No	No	NTQ	No		3	1	3
15989	Plantae	Equisetopsida	Typhaceae	Typha orientalis	broad-leaved cumbungi	C		No	No	NTQ	No		1	0	1
14635	Plantae	Equisetopsida	Urticaceae	Dendrocnide photiniphylla	shiny-leaved stinging tree	C		No	No	NTQ	No		8	0	8
20953	Plantae	Equisetopsida	Verbenaceae	Lantana				No	No		No		1	0	1
19905	Plantae	Equisetopsida	Verbenaceae	Lantana camara	lantana			No	No	NAQ	No		49	1	49
13853	Plantae	Equisetopsida	Verbenaceae	Lantana montevidensis	creeping lantana			No	No	NAQ	No		15	3	15
7796	Plantae	Equisetopsida	Verbenaceae	Phyla canescens				No	No	NAQ	No		1	1	1
16143	Plantae	Equisetopsida	Verbenaceae	Stachytarpheta jamaicensis	Jamaica snakeweed			No	No	NAQ	No		11	3	11
12351	Plantae	Equisetopsida	Verbenaceae	Verbena				No	No		No		2	1	2
15951	Plantae	Equisetopsida	Verbenaceae	Verbena bonariensis	purpletop			No	No	NAQ	No		1	0	1
6181	Plantae	Equisetopsida	Verbenaceae	Verbena incompta				No	No	NAQ	No		1	1	1

WN Taxon ID	Kingdom	Class	Family	Scientific name	Common name	NCA status	EPBC status	Superseded	Conservation significant	Establishment	Sensitive species	Area survey lists	Sighting records	Specimen records	Sighting summary
27944	Plantae	Equisetopsida	Verbenaceae	Verbena litoralis var. litoralis				No	No	NAQ	No		3	3	3
20871	Plantae	Equisetopsida	Violaceae	Hybanthus		C		No	No	XU	No		1	0	1
41612	Plantae	Equisetopsida	Violaceae	Pigea enneasperma		C		No	No	NTQ	No		1	1	1
41630	Plantae	Equisetopsida	Violaceae	Pigea stellarioides		C		No	No	NTQ	No		12	1	12
18917	Plantae	Equisetopsida	Violaceae	Viola hederacea		C		No	No	NTQ	No		2	0	2
42132	Plantae	Equisetopsida	Vitaceae	Apocissus antarctica		C		No	No	NTQ	No		1	0	1
42148	Plantae	Equisetopsida	Vitaceae	Apocissus oblonga		C		No	No	NTQ	No		40	2	40
41432	Plantae	Equisetopsida	Vitaceae	Causonis clematidea		C		No	No	NTQ	No		1	0	1
17660	Plantae	Equisetopsida	Vitaceae	Cayratia acris	hairy grape	C		No	No	NTQ	No		13	1	13
17646	Plantae	Equisetopsida	Vitaceae	Cissus hastata		C		No	No	NTQ	No		1	1	1
12458	Plantae	Equisetopsida	Vitaceae	Cissus reniformis		C		No	No	NTQ	No		1	0	1
17651	Plantae	Equisetopsida	Vitaceae	Cissus repens		C		No	No	NTQ	No		1	0	1
31727	Plantae	Equisetopsida	Vitaceae	Clematicissus opaca		C		No	No	NTQ	No		20	0	20
14151	Plantae	Equisetopsida	Vitaceae	Tetrastigma nitens	shining grape	C		No	No	NTQ	No		14	1	14
15935	Plantae	Equisetopsida	Xanthorrhoeaceae	Xanthorrhoea				No	No		No		5	0	5
15934	Plantae	Equisetopsida	Xanthorrhoeaceae	Xanthorrhoea johnsonii		SL		No	Yes	NTQ	No		5	0	5
20072	Plantae	Equisetopsida	Xanthorrhoeaceae	Xanthorrhoea latifolia		C		No	No	NTQ	No		5	0	5
9156	Plantae	Equisetopsida	Xanthorrhoeaceae	Xanthorrhoea latifolia subsp. latifolia		SL		No	Yes	NTQ	No		19	1	19
12011	Plantae	Equisetopsida	Zamiaceae	Macrozamia				No	No		Yes		1	0	1
16707	Plantae	Equisetopsida	Zamiaceae	Macrozamia miquelii		SL		No	Yes	NTQ	Yes		25	8	25
14844	Plantae	Equisetopsida	Zingiberaceae	Alpinia caerulea	wild ginger	C		No	No	NTQ	No		1	0	1
14130	Plantae	Equisetopsida	Zosteraceae	Zostera capricorni	eelgrass	SL		No	Yes	NTQ	No		1	0	1

Attachment C:

Revised Ecological Assessment and SRI Supporting Information

Attachment C: Revised Scientific Evidence Matrix and MSES SRI Assessment

Species Evidence Matrix

The following Species Evidence Matrix has been prepared to address DETSI RFI Item 2 and strengthen the scientific basis for the Significant Residual Impact (SRI) assessment for protected wildlife habitat.

The original assessment relied on field verification, desktop review and professional ecological judgement however DETSI requested stronger reference to current scientific knowledge of the species, including National Recovery Plans, approved Conservation Advices, Species Profile and Threats Database (SPRAT) profiles, consultation draft documents, and other relevant contemporary literature.

In response, the revised assessment has been undertaken for all priority flora and fauna species assessed as known, likely or possibly occurring within the Project Area, with particular focus on threatened wildlife habitat and species specifically raised in the RFI, including Eastern curlew (*Numenius madagascariensis*) and Australian painted-snipe (*Rostratula australis*).

The matrix provides:

- The current authoritative scientific sources relied upon for each species;
- Habitat requirements, ecological function and known distribution;
- Site-specific habitat evidence relevant to the Impact Area;
- Consideration of breeding, feeding, nesting, migration and resting habitat where relevant; and
- A preliminary conclusion regarding habitat significance and likelihood of occurrence relevant to the SRI assessment.

A key distinction is made between habitat present within the broader locality and habitat occurring within the direct Impact Area. This distinction is critical when determining whether the Project Area contains an ecologically significant location or habitat likely to support an important population under the Queensland Environmental Offsets Policy Significant Residual Impact Guideline.

The Species Evidence Matrix provides the scientific basis for the revised SRI assessment presented in Table C.2.

The Species Evidence Matrix confirms that while a number of threatened flora and fauna species may occur within the broader locality, the Impact Area itself generally supports disturbed, fragmented and lower quality habitat compared to the surrounding coastal, wetland and remnant woodland landscape.

For migratory shorebirds and wetland-dependent species, the highest value habitat is associated with estuarine systems, tidal wetlands, mangrove lined waterways and persistent shallow wetlands located outside the Impact Area.

For woodland-dependent threatened fauna, habitat within the Impact Area is generally fragmented, disturbed and limited in extent, reducing its capacity to support important breeding populations, denning habitat or ecologically significant locations.

For threatened flora and protected plant species, no confirmed important populations were identified within the Impact Area, although protected plant compliance requirements remain relevant where trigger mapping applies.

These findings support the conclusion that while species occurrence within the broader locality is possible or likely for several taxa, the Impact Area itself is unlikely to contain habitat values that would meet the threshold for a significant residual impact under the Queensland Environmental Offsets Policy.

Table C.1: Species evidence matrix

Species	Current scientific sources relied upon	Relevant habitat / ecological requirements	Site-specific evidence	SRI criteria considered	Preliminary conclusion
Eastern curlew (*Numenius madagascariensis*)	Approved Conservation Advice, SPRAT profile, Wildlife Conservation Plan for Migratory Shorebirds, and relevant migratory shorebird literature including the Curlew sandpiper consultation material referenced by DETSI.	Eastern curlew is primarily associated with sheltered coastal and estuarine habitats, particularly intertidal mudflats, estuaries, mangroves, saltmarshes, sandflats, coastal lagoons and adjacent high-tide roosting areas. Important habitat generally comprises extensive productive tidal feeding areas and secure roost sites with low disturbance (DCCEEW 2024a; Commonwealth of Australia 2017; DoE 2015a). While the RFI example referenced Curlew Sandpiper habitat information, comparable migratory shorebird habitat guidance was considered conservatively alongside the species-specific Eastern curlew advice.	The Impact Area does not contain intertidal mudflat, estuarine foreshore, mangrove or saltmarsh habitat. The broader locality includes Boat Creek, nearby wetlands and downstream tidally influenced coastal systems. Local records for Eastern curlew and other migratory shorebirds occur within the broader search area and mapped MSES habitat values occur across the lots.	Feeding, roosting/resting and migration habitat considered. Breeding habitat is not relevant in Australia for this migratory species.	Possibly occurring within the broader locality; however, the Impact Area does not provide important feeding or roosting habitat and is not considered an ecologically significant location. No SRI expected.
Australian painted-snipe (*Rostratula australis*)	National Recovery Plan for the Australian Painted Snipe, SPRAT profile, and wetland bird ecological literature.	Australian painted-snipe is a cryptic, dispersive wetland species associated with shallow freshwater and brackish wetlands, vegetated swamp margins, dams, inundated grasslands, mudflats and ephemeral wetlands. The species feeds on seeds, plant material, insects, worms, molluscs, crustaceans and other invertebrates and may forage within dense wetland vegetation or nearby mudflats, grasslands and open areas depending on inundation and refuge availability (DSEWPaC 2011; Marchant & Higgins 1993). Feeding behaviour varies depending on whether habitat functions as breeding wetland, refuge or stopover habitat.	The Impact Area is not considered to contain core breeding habitat. Limited marginal habitat may occur in low-lying or seasonally wet areas near mapped wetlands, drainage features and Boat Creek. Field verification identified an unnamed waterway holding water and a small dam immediately south of the Impact Area.	Breeding, nesting, feeding, refuge, resting and stopover habitat considered.	Possibly occurring due to nearby wetland/drainage habitat and species mobility. The Impact Area does not contain well-developed shallow wetland habitat or dense wetland vegetation likely to support regular breeding, refuge or important feeding habitat. No SRI expected.
Southern greater glider (*Petauroides volans volans*)	Approved Conservation Advice, SPRAT profile and contemporary Australian literature on habitat requirements and hollow dependency.	Greater glider is an arboreal nocturnal marsupial associated with mature eucalypt forests and woodlands with connected canopy, abundant browse trees and hollow-bearing trees for denning. Older forests with high hollow availability are critical to persistence and fragmentation significantly reduces habitat suitability (DCCEEW 2024b; Lindenmayer et al. 2020).	Eucalypt woodland and regrowth occur within and adjacent to the Project Area, including some hollow-bearing trees and arboreal habitat features. Habitat quality is reduced by fragmentation, weed invasion and surrounding industrial land use. Nearby records occur within the local area.	Breeding, denning, feeding and movement habitat considered.	Likely to occur due to suitable woodland habitat and nearby records. However, habitat quality is reduced and the Impact Area does not contain extensive high-quality denning habitat likely to support an important population. Further SRI assessment required but no significant residual impact anticipated with mitigation.
Koala (*Phascolarctos cinereus*)	National Recovery Plan for the Koala, Conservation Advice, SPRAT profile and contemporary Queensland habitat literature.	Koala habitat is associated with eucalypt woodland and forest containing preferred browse species, shelter trees and connected habitat supporting movement and dispersal. Habitat suitability depends on tree species composition, landscape connectivity and disturbance history. Retention of habitat extent, condition and connectivity is critical to long-term persistence (DCCEEW 2022; Adams-Hosking et al. 2016).	The Project Area contains limited regrowth woodland and scattered eucalypt species that may provide marginal foraging and movement habitat. Targeted SAT surveys did not identify Koalas, scats or characteristic scratches. Habitat is fragmented and located within an industrial landscape.	Feeding, breeding, shelter and movement/dispersal habitat considered.	Possibly occurring, particularly for transient movement or low-density use. Regular occupation is unlikely and the site is not considered an important population area. No SRI expected.

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Species	Current scientific sources relied upon	Relevant habitat / ecological requirements	Site-specific evidence	SRI criteria considered	Preliminary conclusion
Squatter pigeon (southern) (*Geophaps scripta scripta*)	Conservation Advice, SPRAT profile and Threatened Species Scientific Committee advice.	Occurs in open eucalypt woodland and grassy woodland with sparse shrub cover, patchy native grass groundcover, access to water and areas of bare ground for foraging. Habitat quality declines with dense weed cover, overgrazing and altered fire regimes (DCCEEW 2024c; TSSC 2015).	Open woodland and disturbed grassy areas occur within the Project Area. Habitat quality is reduced by weed invasion and fragmentation, although some suitable foraging and movement habitat remains.	Feeding, breeding and movement habitat considered.	Likely to occur based on habitat availability and regional occurrence. Habitat is suitable for local use but is not considered high-quality breeding habitat of regional significance.
Yellow-bellied glider (*Petaurus australis australis*)	SPRAT profile and Australian ecological literature on glider habitat requirements.	Yellow-bellied glider occurs in eucalypt forests and woodlands with connected canopy, large hollow-bearing trees and productive sap-feed trees. It generally requires larger intact forest areas and is sensitive to fragmentation and den loss (DCCEEW 2024d; Goldingay & Kavanagh 1991).	Eucalypt woodland and regrowth occur within the Project Area, but habitat is fragmented, limited in extent and degraded by surrounding land use.	Denning, feeding and movement habitat considered.	Possibly occurring due to range and available habitat features; however, the site is unlikely to support a resident group or important breeding habitat. No SRI expected.
Grey-headed flying-fox (*Pteropus poliocephalus*)	National Recovery Plan, SPRAT profile and contemporary flying-fox ecology literature.	Grey-headed flying-fox is a highly mobile species using flowering and fruiting forests, woodlands, riparian vegetation and urban trees for foraging. It travels large distances between seasonal food resources and relies on established camps for roosting, typically within dense riparian or urban vegetation. Camps are considered critical habitat, while foraging habitat may be widespread and opportunistically used (DAWE 2021; Eby & Law 2008).	Flowering eucalypts and riparian vegetation may provide occasional foraging habitat within the Project Area and surrounding landscape. No camp, maternity roost or significant roosting habitat was identified within the Impact Area.	Feeding, roosting and movement habitat considered.	Possibly occurring due to broad foraging range and regional records; however, no camp or important roosting habitat occurs within the Impact Area and habitat is not considered critical to species persistence. No SRI expected.
Osprey (*Pandion haliaetus*)	SPRAT profile and HANZAB species account.	Osprey is a coastal and estuarine raptor associated with rivers, estuaries, tidal creeks, coastlines and large inland waterbodies where fish prey is available. It requires elevated nesting structures such as dead trees, pylons or artificial structures near productive aquatic habitat (Marchant & Higgins 1993; DCCEEW 2024e).	Nearby Boat Creek, drainage systems and broader coastal habitats provide suitable foraging habitat. Osprey was recorded flying overhead during targeted fauna surveys. No nesting habitat was identified within the Impact Area.	Feeding, nesting and movement habitat considered.	Known to occur locally based on survey records; however, use of the Impact Area is likely transient only and the Impact Area is not considered an ecologically significant nesting or feeding location. No SRI expected.
Powerful owl (*Ninox strenua*)	Queensland species profiles, HANZAB and contemporary owl habitat literature.	Powerful owl is associated with mature open forest, woodland and riparian forest containing large hollow-bearing trees for nesting and sufficient arboreal prey such as possums and gliders. It generally requires extensive relatively intact habitat and is sensitive to fragmentation and loss of mature den trees (Higgins 1999; Debus & Chafer 1994).	Some woodland and riparian habitat occurs within and adjacent to the Project Area; however, habitat is fragmented, small in extent and heavily disturbed. Mature hollow-bearing nesting trees are limited.	Nesting, feeding and movement habitat considered.	Possibly occurring for occasional foraging or transient use; however, the site is unlikely to support breeding due to lack of extensive mature woodland and nesting hollows. No SRI expected.
Curlew sandpiper (*Calidris ferruginea*)	Conservation Advice, SPRAT profile, Wildlife Conservation Plan for Migratory Shorebirds and the federal consultation draft referenced by DETSI.	Curlew sandpiper is a migratory shorebird associated mainly with intertidal mudflats in sheltered coastal areas such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes, lagoons and ponds near the coast. It may also occur inland around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare muddy or sandy edges. It occurs in both fresh and brackish waters (DoE 2015b; Higgins & Davies 1996; Commonwealth of Australia 2017).	The Impact Area does not contain intertidal mudflats, estuarine shoreline or coastal lagoons. Limited marginal wetland habitat occurs near drainage lines and the small dam outside the Impact Area. Broader coastal habitat occurs in the surrounding locality.	Feeding, roosting/resting and migration habitat considered.	Possibly occurring within the broader locality; however, the Impact Area does not provide important feeding or roosting habitat and is not considered an ecologically significant location. No SRI expected.

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Species	Current scientific sources relied upon	Relevant habitat / ecological requirements	Site-specific evidence	SRI criteria considered	Preliminary conclusion
Western alaskan bar-tailed Godwit (*Limosa lapponica baueri*)	SPRAT profile and Wildlife Conservation Plan for Migratory Shorebirds.	This migratory shorebird primarily uses intertidal mudflats, sandflats, estuaries, mangrove margins and coastal roosting habitat. It depends on extensive tidal flats with abundant benthic invertebrate prey and nearby undisturbed roost sites (DCCEEW 2024f; Commonwealth of Australia 2017).	No primary intertidal mudflat or estuarine foraging habitat occurs within the Impact Area. Broader Curtis Coast systems provide suitable habitat regionally.	Feeding, roosting and migration habitat considered.	Possibly occurring regionally, but the Impact Area does not provide important habitat and any use would be incidental or transient only. No SRI expected.
Common greenshank (*Tringa nebularia*)	SPRAT profile and Wildlife Conservation Plan for Migratory Shorebirds.	Common greenshank uses mudflats, estuaries, saltmarshes, mangroves, wetlands, dams and shallow freshwater or brackish water margins. It is more flexible in habitat use than many shorebirds and may utilise both natural and artificial wetlands (DCCEEW 2024g; Commonwealth of Australia 2017).	Limited marginal wetland habitat may occur near drainage features and Boat Creek; however, these areas are largely outside the Impact Area.	Feeding, resting and migration habitat considered.	Possibly occurring due to species mobility and nearby wetland habitat; however, important or regularly used habitat is not present within the Impact Area. No SRI expected.
Common sandpiper (*Actitis hypoleucos*)	SPRAT profile and Wildlife Conservation Plan for Migratory Shorebirds.	Common sandpiper occurs along muddy, sandy or rocky edges of rivers, creeks, estuaries, drains, dams and shorelines and may utilise modified waterways where suitable edge habitat remains (DCCEEW 2024h; Commonwealth of Australia 2017).	Potential marginal habitat occurs along Boat Creek and drainage features outside the main Impact Area. Little suitable habitat occurs within the primary Impact Area.	Feeding, resting and movement habitat considered.	Possibly occurring, particularly around nearby drainage lines; however, the Impact Area itself is not important habitat and significant impact risk is low.
Whimbrel (*Numenius phaeopus*)	SPRAT profile and Wildlife Conservation Plan for Migratory Shorebirds.	Whimbrel is associated with intertidal mudflats, estuaries, mangrove margins, saltmarshes and sheltered coastal roosting habitat and generally relies on tidal coastal systems with exposed feeding areas (DCCEEW 2024i; Commonwealth of Australia 2017).	No core shorebird habitat occurs within the Impact Area. Suitable habitat occurs only in nearby coastal and estuarine systems.	Feeding, roosting and migration habitat considered.	Possibly occurring in nearby coastal habitats, but the Impact Area lacks suitable habitat and use would be limited to transient movement only.
Sharp-tailed sandpiper (*Calidris acuminata*)	SPRAT profile and Wildlife Conservation Plan for Migratory Shorebirds.	Sharp-tailed sandpiper uses shallow freshwater and brackish wetlands, mudflats, saltmarshes, flooded grasslands, farm dams and ephemeral wetlands. It may utilise inland wetland systems where shallow water and soft substrate are present (DCCEEW 2024j; Commonwealth of Australia 2017).	Limited marginal wetland habitat may occur around drainage features and seasonally wet areas, but not within the core Impact Area.	Feeding, resting and migration habitat considered.	Possibly occurring due to nearby ephemeral wetland habitat and species mobility; however, regular use of the Impact Area is unlikely. No SRI expected.
Cycas megacarpa	Conservation Advice, SPRAT profile and Queensland Herbarium profile.	*Cycas megacarpa* occurs in central Queensland, typically on low hills, foothills, drainage lines and woodland margins supporting open eucalypt woodland and vine thicket interfaces. It is commonly associated with gravelly, sandy or loamy soils in remnant woodland landscapes (DCCEEW 2024k; Forster 1996; Queensland Herbarium 2024).	Limited potential habitat occurs within remnant woodland margins, drainage lines and vegetation associated with Boat Creek and adjoining remnant vegetation. Much of the Impact Area is disturbed and fragmented by industrial development and weed invasion.	Habitat extent, population significance and protected plant values considered.	Possibly occurring due to regional range and broad habitat associations; however, no individuals were recorded during field assessment and habitat quality is reduced. No SRI expected pending targeted survey where required.
Protected plant trigger species / wetland-associated protected flora	Protected Plants Flora Survey Trigger Map, Flora Survey Guidelines – Protected Plants, WildNet and Queensland Herbarium profiles.	Species dependent on mapped regional ecosystems, protected plant trigger areas and wetland-associated habitats including riparian margins, drainage lines, ephemeral wetlands and remnant woodland. Presence depends on final Impact Area, habitat condition and formal protected plant survey requirements (DEHP 2020; DESI 2024; Queensland Herbarium 2024).	Potential habitat is dependent on final clearing extent and verification of trigger mapping in relation to remnant vegetation and mapped REs. Limited wetland habitat occurs near Boat Creek and drainage features.	Protected plant trigger mapping, habitat extent and survey obligations considered.	Possibly occurring pending targeted survey. Protected plant targeted flora surveys were not completed and listed flora cannot be excluded without formal survey in accordance with the Flora Survey Guidelines.

7.3 Revised Significant Residual Impact (SRI) Assessment

The Significant Residual Impact (SRI) assessment has been revised in response to DETSI Item 2 to provide stronger scientific justification and direct alignment with the Queensland Environmental Offsets Policy Significant Residual Impact Guideline for protected wildlife habitat.

This assessment applies to Matters of State Environmental Significance (MSES) prescribed under Schedule 2 of the Environmental Offsets Regulation 2014, including:

- Essential habitat for endangered and vulnerable wildlife;
- Protected plant habitat and high-risk areas identified under the Flora Survey Trigger Map; and
- Habitat for endangered, vulnerable and special least concern animals, including foraging, roosting, nesting and breeding habitat.

For species where potential habitat is present and may be impacted, the revised assessment considers whether the proposed action is likely to result in a significant residual impact by assessing whether impacts are likely to:

- Lead to a long-term decrease in the size of a local population;
- Reduce the extent of occurrence of the species;
- Fragment an existing population;
- Result in genetically distinct populations forming due to habitat isolation;
- Result in invasive species becoming established;
- Introduce disease causing population decline;
- Interfere with species recovery; or
- Disrupt ecologically significant locations, including breeding, feeding, nesting, migration or resting sites.

For special least concern species, the assessment similarly considers whether the action is likely to result in population decline, fragmentation, reduced extent of occurrence, habitat isolation, or disruption to ecologically significant breeding, feeding or nesting habitat.

The revised assessment uses current scientific knowledge including National Recovery Plans, approved Conservation Advices, SPRAT profiles, the Wildlife Conservation Plan for Migratory Shorebirds, and other contemporary literature to ensure conclusions are supported by authoritative evidence rather than professional opinion alone.

The assessment also distinguishes between:

1. Habitat occurring within the broader locality; and
2. Habitat present within the actual Impact Area.

The assessment considered all relevant statutory SRI criteria for endangered, vulnerable and special least concern wildlife habitat, including whether the proposed action is likely to lead to a long-term decrease in the size of a local population, reduce the extent of occurrence of a species, fragment an existing population, result in genetically distinct populations forming due to habitat isolation, result in invasive species becoming established, introduce disease causing population decline, interfere with species recovery, or disrupt ecologically significant locations including breeding, feeding, nesting, migration or resting sites (Queensland Government 2020).

The revised assessment confirms that while a number of threatened flora and fauna species may occur within the broader locality, the Impact Area itself is primarily characterised by disturbed regrowth woodland, fragmented grassland and modified habitat of comparatively low ecological value relative to surrounding coastal, wetland and remnant woodland systems. Field verification confirmed that the majority of mapped wetland, estuarine and higher-order habitat values occur outside the direct Impact Area and are associated with broader landscape features such as Boat Creek and downstream coastal systems.

For migratory shorebirds including Eastern Curlew, Curlew Sandpiper, Whimbrel, Bar-tailed Godwit and other listed shorebirds, suitable habitat is largely confined to broader coastal and estuarine systems outside the Impact Area, including tidal mudflats, mangroves, saltmarshes and estuarine shorelines. These habitat features are recognised as the primary feeding and roosting environments for these species under the Wildlife Conservation Plan for Migratory Shorebirds and approved conservation advice (Commonwealth of Australia 2017; DCCEEW 2024a; DoE

2015a, 2015b). The Project Area does not contain important feeding habitat, secure roosting habitat or ecologically significant migration stopover habitat.

Similarly, for Australian Painted-snipe, while limited wetland features occur within the broader locality, the Impact Area does not contain persistent shallow vegetated wetland habitat, breeding habitat, or refuge habitat likely to support an important population or ecologically significant location. The species' reliance on shallow vegetated freshwater or brackish wetlands and opportunistic use of inundated wetland margins is well described in the National Recovery Plan and supporting ornithological literature (DSEWPaC 2011; Marchant & Higgins 1993).

For woodland-dependent threatened species including Greater Glider, Koala, Squatter pigeon (southern), Yellow-bellied Glider and Powerful Owl, habitat within the Impact Area is fragmented, degraded and of insufficient extent and quality to represent an important breeding population, critical denning habitat or regionally significant ecological location. These species require mature woodland structure, habitat connectivity and, for arboreal mammals and owls, reliable hollow-bearing trees and breeding habitat, which are limited within the Impact Area (DCCEEW 2022; DCCEEW 2024b–d; Lindenmayer et al. 2020; Higgins 1999).

For threatened flora including *Cycas megacarpa* and other protected plant trigger species, no confirmed populations were identified within the Impact Area, and habitat quality is reduced by fragmentation, industrial disturbance and weed invasion. Remaining uncertainty regarding listed flora presence will be addressed through separate protected plant compliance requirements and targeted survey where required in accordance with the Flora Survey Guidelines – Protected Plants (DEHP 2020; DCCEEW 2024k).

Accordingly, the proposed action is not expected to result in a significant residual impact to protected wildlife habitat under the Queensland Environmental Offsets Policy, and environmental offsets are not considered necessary for these matters. The proposed clearing is not expected to reduce local population viability, fragment important habitat, interfere with species recovery, or disrupt ecologically significant breeding, feeding, nesting, migration or resting locations for the assessed species (Queensland Government 2020).

Table C.2: Revised Significant Residual Impact Assessment

Species	Relevant statutory SRI criteria	Site-specific assessment	SRI outcome
Eastern curlew (*Numenius madagascariensis*)	• Disruption to ecologically significant locations (feeding, roosting/resting, migration stopover habitat); • Long-term decrease in local population; and • Reduced extent of occurrence.	Eastern curlew is associated with intertidal mudflats, estuaries, mangroves, saltmarshes, sandflats and adjacent high-tide roosting habitat (DCCEEW 2024a; Commonwealth of Australia 2017). While suitable habitat occurs within the broader Curtis Coast landscape and downstream tidal systems, the Impact Area does not contain intertidal mudflat, estuarine shoreline, mangrove, saltmarsh or secure roosting habitat. Small drainage features and a minor dam do not provide equivalent ecological function. No aggregation sites, important roosting habitat or important feeding habitat were identified. Use of the Impact Area would likely be limited to transient movement only.	The proposed action will not disrupt an ecologically significant location, reduce important habitat extent or cause population decline. No significant residual impact is expected.
Australian painted-snipe (*Rostratula australis*)	Disruption to ecologically significant locations (breeding, feeding, nesting, refuge/resting and stopover habitat); long-term decrease in local population; interference with species recovery	The species uses shallow freshwater and brackish wetlands, vegetated wetland margins, ephemeral wetlands and inundated grasslands and may forage in nearby mudflats, grasslands and open areas depending on wetland condition (DSEWPaC 2011; Marchant & Higgins 1993). The Impact Area does not contain core breeding habitat or persistent shallow vegetated wetlands. Limited marginal habitat occurs near drainage lines, Boat Creek and a small dam outside the footprint. Habitat is insufficient to support regular breeding, refuge habitat or an important population.	Opportunistic use may occur within the broader locality; however, the site is not an ecologically significant location and does not support habitat critical to recovery. No significant residual impact is expected.
Southern greater glider (*Petauroides volans volans*)	Long-term decrease in local population; fragmentation of an existing population; habitat isolation; disruption to breeding/denning habitat; interference with recovery	Greater glider requires mature eucalypt woodland with connected canopy and hollow-bearing trees for denning (DCCEEW 2024b; Lindenmayer et al. 2020). Woodland habitat occurs within the Project Area and nearby records confirm likely occurrence; however, habitat is fragmented, degraded and influenced by surrounding industrial disturbance. Hollow-bearing trees are limited and the Impact Area does not support extensive high-quality denning habitat likely to sustain an important local population. Connectivity to broader habitat remains available outside the Impact Area.	Habitat loss is not expected to fragment a population, isolate habitat or interfere with species recovery. Significant residual impact is not expected following mitigation and habitat retention measures.
Koala (*Phascolarctos cinereus*)	Long-term decrease in local population; reduced extent of occurrence; fragmentation of an existing population; disruption to breeding/shelter habitat; interference with recovery	Koala habitat depends on browse tree composition, habitat connectivity and shelter values (DCCEEW 2022; Adams-Hosking et al. 2016). Limited regrowth woodland and scattered eucalypts occur within the site and may provide marginal movement and foraging habitat. SAT surveys did not detect Koalas, scats or scratches. Habitat is fragmented and highly disturbed and does not represent core habitat or an important population area.	The site may support occasional movement or low-density use but is not considered an important population area or ecologically significant location. Habitat removal will not materially reduce regional occurrence or interfere with recovery. No significant residual impact is expected.
Squatter pigeon (southern) (*Geophaps scripta scripta*)	Long-term decrease in local population; reduced extent of occurrence; disruption to feeding, breeding and nesting habitat	Suitable open woodland and grassy habitat occurs within and adjacent to the Project Area, although habitat quality is reduced by weeds and fragmentation (DCCEEW 2024c; TSSC 2015). Some local habitat remains suitable for foraging and movement; however, the site does not represent high-quality breeding habitat of regional significance and broader habitat remains available in the surrounding landscape.	Local use may occur, but the proposed action is not expected to reduce population viability or disrupt an ecologically significant breeding location. No significant residual impact is expected.
Yellow-bellied glider (*Petaurus australis australis*)	Long-term decrease in local population; fragmentation; habitat isolation; disruption to denning and breeding habitat	The species requires large connected eucalypt forest with hollow-bearing trees and sap-feed resources (DCCEEW 2024d; Goldingay & Kavanagh 1991). The Project Area contains fragmented regrowth woodland with limited denning resources and is unlikely to support a resident social group. Habitat connectivity to larger surrounding woodland systems remains intact outside the Impact Area.	Possible transient or low-level use may occur, but the Impact Area is not considered important breeding habitat and will not cause fragmentation or habitat isolation. No significant residual impact is expected.

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Species	Relevant statutory SRI criteria	Site-specific assessment	SRI outcome
Grey-headed flying-fox (*Pteropus poliocephalus*)	Long-term decrease in local population; disruption to roosting habitat; interference with recovery	Grey-headed flying-fox relies on foraging habitat across broad landscapes and established camps for roosting (DAWE 2021; Eby & Law 2008). Flowering eucalypts and riparian vegetation may provide occasional foraging habitat; however, no camp, maternity roost or critical roosting habitat occurs within the Impact Area.	The proposed action will not impact a camp or critical habitat necessary for species persistence and is not expected to result in population decline or interfere with recovery. No significant residual impact is expected.
Osprey (*Pandion haliaetus*)	Long-term decrease in local population; reduced extent of occurrence; disruption to ecologically significant feeding or nesting habitat (special least concern criteria)	Osprey is associated with rivers, estuaries and coastal waterways where fish prey is available (Marchant & Higgins 1993). The species was recorded flying overhead during targeted surveys, confirming local occurrence. No nesting habitat occurs within the Impact Area and foraging habitat values are associated with nearby waterways outside the clearing area.	The species is known locally, but the Impact Area is not an ecologically significant feeding or nesting location and will not reduce local population viability. No significant residual impact is expected.
Powerful owl (*Ninox strenua*)	Long-term decrease in local population; fragmentation; disruption to nesting and feeding habitat	Powerful owl requires mature woodland with large hollow-bearing trees and sufficient arboreal prey (Higgins 1999; Debus & Chafer 1994). Woodland habitat within the site is fragmented and small in extent, with limited nesting hollows. The site may provide occasional foraging habitat only and is unlikely to support breeding.	No important breeding habitat occurs within the Impact Area and the proposed action is not expected to fragment a local population or disrupt an ecologically significant nesting site. No significant residual impact is expected.
Curlew sandpiper (*Calidris ferruginea*)	Disruption to ecologically significant feeding, roosting and migration habitat; long-term decrease in local population	Curlew sandpiper occurs mainly on intertidal mudflats, estuaries, coastal lagoons and shallow wetlands and may also use inland wetlands with muddy edges (DoE 2015b; Higgins & Davies 1996). The Impact Area does not contain intertidal mudflats, estuarine habitat or important wetland feeding habitat. Limited drainage features and a small dam occur outside the main footprint.	Suitable habitat occurs regionally but not within the Impact Area. The action will not remove important habitat or disrupt an ecologically significant location. No significant residual impact is expected.
Western alaskan bar-tailed godwit (*Limosa lapponica baueri*)	Disruption to ecologically significant feeding, roosting and migration habitat; long-term decrease in local population; reduced extent of occurrence	This migratory shorebird primarily uses intertidal mudflats, sandflats, estuaries, mangrove margins and coastal roosting habitat, relying on extensive tidal flats with abundant benthic invertebrate prey and nearby undisturbed roost sites (DCCEEW 2024f; Commonwealth of Australia 2017). No primary intertidal mudflat, estuarine shoreline or secure roosting habitat occurs within the Impact Area. Broader Curtis Coast coastal systems provide suitable habitat regionally.	The Impact Area does not contain important feeding or roosting habitat and is not an ecologically significant location. The action will not reduce habitat extent for an important population or result in long-term population decline. No significant residual impact is expected.
Common greenshank (*Tringa nebularia*)	Disruption to ecologically significant feeding, resting and migration habitat; long-term decrease in local population	Common greenshank uses mudflats, estuaries, saltmarshes, mangroves, wetlands, dams and shallow freshwater or brackish water margins and may utilise both natural and artificial wetlands (DCCEEW 2024g; Commonwealth of Australia 2017). Limited marginal wetland habitat may occur near drainage features and Boat Creek; however, these areas are largely outside the Impact Area and no important aggregation or regularly used habitat occurs on site.	Occasional transient use may occur, but the Impact Area is not an ecologically significant feeding or resting site and will not affect local population viability. No significant residual impact is expected.
Common sandpiper (*Actitis hypoleucos*)	Disruption to ecologically significant feeding, resting and movement habitat; reduced extent of occurrence	Common sandpiper occurs along muddy, sandy or rocky edges of rivers, creeks, estuaries, drains, dams and shorelines and may utilise modified waterways where suitable edge habitat remains (DCCEEW 2024h; Commonwealth of Australia 2017). Potential marginal habitat occurs along Boat Creek and drainage features outside the main Impact Area. Little suitable habitat occurs within the primary clearing area itself.	The Impact Area does not contain important habitat and the species would only use nearby drainage features opportunistically. The action will not reduce extent of occurrence or disrupt an ecologically significant location. No significant residual impact is expected.

Species	Relevant statutory SRI criteria	Site-specific assessment	SRI outcome
Whimbrel (*Numenius phaeopus*)	Disruption to ecologically significant feeding, roosting and migration habitat; long-term decrease in local population	Whimbrel is associated with intertidal mudflats, estuaries, mangrove margins, saltmarshes and sheltered coastal roosting habitat and relies on tidal coastal systems with exposed feeding areas (DCCEEW 2024i; Commonwealth of Australia 2017). No core shorebird habitat occurs within the Impact Area. Suitable habitat occurs only in nearby coastal and estuarine systems outside the clearing area.	The Project will not remove important feeding or roosting habitat and the Impact Area is not an ecologically significant location. No significant residual impact is expected.
Sharp-tailed sandpiper (*Calidris acuminata*)	Disruption to ecologically significant feeding, resting and migration habitat; long-term decrease in local population	Sharp-tailed sandpiper uses shallow freshwater and brackish wetlands, mudflats, saltmarshes, flooded grasslands, farm dams and ephemeral wetlands and may utilise inland wetland systems where shallow water and soft substrate are present (DCCEEW 2024j; Commonwealth of Australia 2017). Limited marginal wetland habitat may occur around drainage features and seasonally wet areas, but not within the core Impact Area.	The species may use nearby ephemeral wetland habitat opportunistically; however, the Impact Area does not contain important habitat or an ecologically significant resting or feeding location. No significant residual impact is expected.
Cycas megacarpa	Long-term decrease in local population; reduced extent of occurrence; fragmentation of an existing population; interference with recovery; disruption to an ecologically significant location for endangered flora	*Cycas megacarpa* occurs in central Queensland on low hills, foothills, drainage lines and woodland margins supporting open eucalypt woodland and vine thicket interfaces, commonly on gravelly, sandy or loamy soils (DCCEEW 2024k; Forster 1996; Queensland Herbarium 2024). Limited potential habitat occurs within remnant woodland margins, drainage lines and vegetation associated with Boat Creek and adjoining remnant vegetation. No individuals were recorded during field assessment and habitat quality is reduced by fragmentation, disturbance and weed invasion.	While the Project Area occurs within the accepted distributional range, no confirmed population or important local population was identified within the Impact Area. The action is not expected to reduce extent of occurrence, fragment a population or interfere with recovery. No significant residual impact is expected, subject to protected plant compliance requirements where applicable.
Protected plant trigger species (including wetland-associated protected flora)	Long-term decrease in local population; reduced extent of occurrence; fragmentation; interference with recovery; impacts to essential habitat and protected plant trigger areas	Species may occur in mapped regional ecosystems, drainage lines, riparian margins, ephemeral wetlands and protected plant trigger areas identified under the Flora Survey Trigger Map. Presence depends on final Impact Area, habitat condition and formal survey requirements in accordance with the Flora Survey Guidelines – Protected Plants (DEHP 2020; DESI 2024; Queensland Herbarium 2024). Protected plant targeted flora surveys were not completed during the preliminary assessment.	Listed flora cannot be excluded where protected plant trigger areas apply. Formal targeted survey is required to confirm presence/absence prior to clearing. This category is retained conservatively pending detailed survey; however, based on current evidence, no confirmed significant residual impact has been identified. Further compliance obligations will be addressed separately under protected plant requirements.
Water mouse (*Xeromys myoides*)	Disruption to ecologically significant nesting, feeding and refuge habitat; long-term decrease in local population; reduced extent of occurrence	Water mouse is associated with mangroves, saltmarshes, sedgelands and supratidal coastal wetland systems requiring intact coastal wetland habitat with suitable nesting substrate above tidal influence and adjacent intertidal feeding areas (DCCEEW 2024l; DSEWPaC 2011a). No suitable mangrove, saltmarsh or supratidal nesting habitat occurs within the Impact Area. Broader coastal habitat occurs elsewhere in the regional landscape only.	The Impact Area does not contain habitat required by the species and no credible direct impact pathway to important habitat exists. The action will not affect an ecologically significant location or important population. No significant residual impact is expected.
Coastal sheathtail bat (*Taphozous australis*)	Long-term decrease in local population; reduced extent of occurrence; disruption to breeding and roosting habitat	Coastal sheathtail bat is associated with coastal cliffs, caves, rock overhangs, sea caves, islands and adjacent foraging habitat. Day roosts are strongly dependent on rock features or large suitable structures (Churchill 2008). No caves, cliffs, rock overhangs or equivalent coastal roosting habitat occur within the Impact Area.	Although the species may occur regionally, the site lacks the essential roosting habitat required for regular occupation or breeding. The action will not reduce habitat extent or disrupt an ecologically significant breeding location. No significant residual impact is expected.
Dugong (*Dugong dugon*)	Long-term decrease in local population; reduced extent of occurrence; disruption to ecologically significant feeding habitat	Dugong is a marine mammal dependent on shallow coastal waters supporting seagrass meadows, particularly protected bays and sheltered nearshore marine environments (DCCEEW 2024m; Marsh et al. 2002). No marine habitat, seagrass meadow or tidal marine environment occurs within or adjacent to the terrestrial Impact Area.	The Project Area provides no habitat for the species and there is no credible direct impact pathway to marine seagrass habitat. The action will not affect feeding habitat or local population viability. No significant residual impact is expected.

Species	Relevant statutory SRI criteria	Site-specific assessment	SRI outcome
Grey plover (*Pluvialis squatarola*), Terek sandpiper (*Xenus cinereus*), Lesser sand plover (*Charadrius mongolus*), Asian dowitcher (*Limnodromus semipalmatus*)	Disruption to ecologically significant feeding, roosting and migration habitat; long-term decrease in local population	These migratory shorebirds are strongly associated with intertidal mudflats, estuaries, coastal lagoons, mangrove margins and sheltered coastal roosting habitat (Commonwealth of Australia 2017; relevant SPRAT profiles). No suitable core intertidal habitat occurs within the Impact Area and habitat values are restricted to the broader regional coastal system outside the clearing area.	While regional occurrence is possible, the Impact Area does not provide important feeding or roosting habitat and is not considered an ecologically significant location. No significant residual impact is expected.

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Attachment D:

PEM Quantification Table

Table L1 – Authorised impacts to Prescribed Environmental Matters

Prescribed environmental matters	Location	Significant residual impact and offset required	Total area of impact (ha)	Comments
Regulated vegetation				
Endangered regional ecosystem – *RE 12.3.3 (regrowth) Eucalyptus tereticornis woodland on Quaternary alluvium*	25054-12 Project Halogen – Special Industry – Verified Regional Ecosystem Mapping_RevB	No	0 ha	Regional ecosystems were groundtruthed during ecological surveys.
Of concern regional ecosystem (not within an urban area)	25054-12 Project Halogen – Special Industry – Verified Regional Ecosystem Mapping_RevB	No	0 ha	Regional ecosystems were groundtruthed during ecological surveys. No of concern RE verified
Regional ecosystems (not within an urban area) that intersect a wetland on the vegetation management wetlands map	NA	No	0 ha	No vegetation management wetlands mapped
An area of essential habitat (not in an urban area) on the essential habitat map for an animal that is critically endangered wildlife, endangered wildlife or vulnerable wildlife or a plant that is critically endangered wildlife, endangered wildlife or vulnerable wildlife – *Koala, Easter curlew, Western Alaskan bar-tailed godwit*	Lot 1 MPH32292	No	Project Area – 7.49 ha Impact Area – 3.65 ha	Mapped essential habitat
For native vegetation clearing - essential habitat (not in an urban area) for an animal that is near threatened wildlife or a plant that is near threatened wildlife – insert species name	NA	No	0 ha	
Regional ecosystems (not within an urban area) within the defined distance from the defining banks of a relevant watercourse or relevant drainage feature – insert RE ID	NA	No	0 ha	Not present in Project Area
Connectivity areas				
Connectivity area that is a regional ecosystem (not in urban area)	NA	No	0 ha	Refer to Landscape Fragmentation and Connectivity tool results provided in previous RFI response (dated 16 March 2026)
Wetlands and watercourses				
A wetland in a wetland protection area – insert reference	NA	No	0 ha	Not present in Project Area
A wetland of high ecological significance shown on the map of Queensland wetland environmental values – *i*nsert reference	NA	No	0 ha	Not present in Project Area
A wetland or watercourse in high ecological value waters – insert reference	NA	No	0 ha	Not present in Project Area
Designated precincts in strategic environmental areas				
Designated precinct in a strategic environmental area – insert reference	NA	No	0 ha	Not present in Project Area
Protected wildlife habitat				

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Prescribed environmental matters	Location	Significant residual impact and offset required	Total area of impact (ha)	Comments
An area that is shown as a high risk area on the flora survey trigger map and that contains plants that are critically endangered wildlife, endangered wildlife or vulnerable wildlife - insert area and species names	NA	No	0 ha	Not present in Project Area
An area that is not shown as a high-risk area on the flora survey trigger map that contains plants that are critically endangered wildlife, endangered wildlife or vulnerable wildlife – Nil	NA	No	0 ha	No CEEVNT plants recorded
A koala habitat area	NA	No	0 ha	*Not part of the South East Queensland Koala Conservation Strategy 202-2025 Area*
Habitat for an animal that is critically endangered wildlife, endangered wildlife or vulnerable wildlife or a special least concern animal – Koala, Greater glider, Squatter pigeon and Osprey	Project Area and Impact Area	No	See below	Refer to Attachment E
Koala	25054-18 Project Halogen – Special Industry – Koala Habitat_RevB	No	Project Area: • Breeding & foraging – 7.49ha • Dispersal – 0.16 ha Impact Area: • Breeding & foraging – 3.65 ha • Dispersal – 0.0.2 ha	Refer to Attachment E
Greater glider	25054-29 Project Halogen – Special Industry – Greater Glider Habitat	No	Project Area – 5.99 ha Impact Area – 3.18 ha	
Squatter pigeon	25054-19 Project Halogen – Special Industry – Squatter pigeon Habitat (Vulnerable)_RevB	No	Project Area – 7.49 ha Impact Area -3.65 ha	
Osprey	Project Area and Impact 25054-20 Project Halogen – Special Industry – Osprey Habitat (Migratory & Marine)_RevB	No	Project Area – 7.49 ha Impact Area - 3.65 h	
Protected areas				
A protected area - national park (all classes)	NA	No	0 ha	Not present in Project Area
A protected area – conservation park	NA	No	0 ha	Not present in Project Area
A protected area – resources reserve	NA	No	0 ha	Not present in Project Area
A protected area – special wildlife reserve	NA	No	0 ha	Not present in Project Area
A protected area – nature refuge	NA	No	0 ha	Not present in Project Area
Highly protected zones of state marine parks				
A highly protected area of a relevant Queensland marine park.	NA	No	0 ha	Not present in Project Area

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Prescribed environmental matters	Location	Significant residual impact and offset required	Total area of impact (ha)	Comments
Fish habitat areas				
A declared fish habitat area – insert reference	NA	No	0 ha	Not present in Project Area
Waterway providing for fish passage				
Any part of a waterway (not in an urban area) providing for passage of fish – insert reference	NA	No	0 ha	Not present in Project Area
Marine plants				
Marine plant (not in an urban area) – insert reference	NA	No	0 ha	Not present in Project Area
Legally secured offset area				
Legally secured offset area – insert reference	NA	No	0 ha	Not present in Project Area

Legend

- Project Area
- Impact Area
- Minor Road

Verified Regional Ecosystem Mapping

- 11.3.29
- 11.3.29a
- 12.3.3 - TBC

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 3.5

Grenof Water Technologies Pty Ltd

Project Halogen - Special Industry

Verified Regional Ecosystem Mapping

CQG Consulting
180 Quay Street, Rockhampton Q 4700
PO Box 8384, Allenstown 4700
Ph: +61 7 4922 9252 Fax: +61 7 4922 0195

Project No: 25054
Map No: 25054-12
Revision: RevB
29 April 2026

Layer Credits- © OpenStreetMap (and) contributors, CC-BY-SA; QSpatial; CQG

Legend

- Project Area
- Impact Area
- Minor Road

Koala Habitat (Endangered)

- Potential Dispersal Habitat
- Potential Breeding and Foraging Habitat

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 5.1

Grenof Water Technologies Pty Ltd

Project Halogen - Special Industry

Koala Habitat (Endangered)

CQG Consulting

180 Quay Street, Rockhampton Q 4700
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Ph: +61 7 4922 9252 Fax: +61 7 4922 0195

Project No: 25054
Map No: 25054-18
Revision: RevB
29 April 2026

Layer Credits- © OpenStreetMap (and) contributors, CC-BY-SA; QSpatial; CQG

Legend

- Project Area
- Impact Area
- Minor Road

Squatter pigeon Habitat (Vulnerable)

- Potential Breeding and Foraging Habitat

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 5.2

Grenof Water Technologies Pty Ltd

Project Halogen - Special Industry

Squatter pigeon Habitat (Vulnerable)

CQG Consulting
180 Quay Street, Rockhampton Q 4700
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Ph: +61 7 4922 9252 Fax: +61 7 4922 0195

Project No: 25054
Map No: 25054-19
Revision: RevB
29 April 2026

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Legend

- Project Area
- Impact Area
- Minor Road

Osprey Habitat (Migratory & Marine)

- Potential Nesting Habitat

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 5.3

Grenof Water Technologies Pty Ltd

Project Halogen - Special Industry

Osprey Habitat (Migratory & Marine)

CQG Consulting

180 Quay Street, Rockhampton Q 4700
PO Box 8384, Allenstown 4700
Ph: +61 7 4922 9252 Fax: +61 7 4922 0195

Project No: 25054
Map No: 25054-20
Revision: RevB
29 April 2026

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Attachment E:

Greater Glider Habitat Modelling

Attachment E: Greater Glider Habitat Assessment

Purpose and context

This Greater Glider Habitat Assessment has been prepared in response to DETSI Request for Further Information (RFI) Item 3 and Item 5 regarding the need to broaden WildNet search buffers and ensure all relevant threatened species are appropriately considered within the revised Likelihood of Occurrence (LoO) and Significant Residual Impact (SRI) assessment and PEMs quantification.

DETSI specifically identified records of the endangered Southern Greater Glider (*Petauroides volans volans*) occurring within proximity to the Project Area, including a confirmed WildNet record approximately 1.1 km north of the subject land and multiple records within 10 km of the proposed development footprint. DETSI also noted that tree scratches recorded during field assessment had been discussed primarily in the context of Common Brushtail Possum and requested further consideration of whether these features may also indicate use by Greater Glider or Yellow-bellied Glider.

Given the proximity of confirmed records, the presence of suitable eucalypt woodland habitat, hollow-bearing trees and arboreal habitat features, a revised precautionary assessment has been undertaken to determine:

- Habitat suitability within the disturbance footprint;
- The likelihood of occurrence of Southern Greater Glider;
- Whether the site supports breeding, denning, feeding or movement habitat relevant to the species; and
- Whether the proposed action is likely to result in a Significant Residual Impact (SRI) under the Queensland Environmental Offsets Policy Significant Residual Impact Guideline.

This assessment supports the revised LoO assessment (Attachment B), revised SRI assessment (Attachment C), and PEM quantification tables (Attachment D).

Desktop evidence review

Southern Greater Glider (*Petauroides volans volans*) is listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Nature Conservation Act 1992* (Qld), reflecting substantial population declines associated with habitat loss, fragmentation, increased fire frequency, climate stress and the loss of hollow-bearing trees (DCCEEW 2024a; Lindenmayer et al. 2020).

WildNet searches revised in accordance with DETSI advice (15 km for all species and 25 km for highly mobile species) identified multiple confirmed records of Southern Greater Glider within the broader locality, including a record approximately 1.1 km north of the Project Area and 17 records within 10 km of the disturbance footprint. These records confirm the species occurs within the local landscape and support a precautionary assessment of likely occurrence.

Southern Greater Glider is strongly associated with mature eucalypt forest and woodland containing connected canopy structure, abundant browse resources and hollow-bearing trees used for denning and shelter (Kavanagh 1984; Lindenmayer et al. 1991; DCCEEW 2024a). The species is an obligate hollow-user and typically depends on multiple den trees within a home range, with larger trees and older forest structure strongly correlated with occupancy and persistence (Smith et al. 2007; Lindenmayer et al. 2020).

Habitat fragmentation is a major threat because canopy disconnection reduces movement capacity and increases predation risk, while the loss of mature den trees can rapidly reduce local persistence (McLean et al. 2015; DCCEEW 2024a). Retention of woodland connectivity and hollow-bearing trees is therefore a critical factor when assessing significance of impact.

Mapped regional ecosystems within and adjoining the Project Area include remnant and regrowth eucalypt woodland capable of supporting arboreal mammals, particularly along woodland corridors and less disturbed sections associated with Boat Creek and adjoining remnant vegetation. The broader landscape retains connectivity to larger woodland systems outside the disturbance footprint, although habitat quality within the Project Area is reduced by industrial disturbance, weed invasion and fragmentation.

Field Evidence

Field assessment identified multiple arboreal habitat features relevant to Southern Greater Glider, including hollow-bearing trees, stags and senescent trees, large eucalypt forage trees, connected canopy woodland patches, tree scratches observed on multiple trees, and woodland corridors adjoining remnant vegetation.

These features are documented within the original habitat assessment (CQG 2025), including Figure 3.7 (Koala and Glider Foraging Trees and Arboreal Hollows) and Figure 3.9 (Significant Habitat Trees), which identify the distribution of arboreal hollows, forage trees and structurally important habitat features across the Project Area.

While tree scratches were originally discussed in relation to Common Brushtail Possum, DETSI noted that these features may also be attributable to Southern Greater Glider or Yellow-bellied Glider. Scratch marks alone are not diagnostic; however, where they occur on larger eucalypts associated with connected woodland habitat and nearby hollow-bearing trees, they support a precautionary interpretation of potential glider use (Kavanagh 1984; Eyre et al. 2016).

No direct observations of Greater Glider were recorded during the survey however absence of direct detection is not considered sufficient to exclude the species. Greater Gliders are nocturnal, cryptic and highly dependent on den hollows, and detectability during opportunistic daytime surveys is low unless targeted spotlighting, thermal imaging or dedicated nocturnal survey methods are undertaken (Smith et al. 2007; DCCEEW 2024a). Failure to detect individuals during general ecological surveys is therefore not considered reliable evidence of absence.

Accordingly, a precautionary approach has been adopted.

Habitat suitability assessment

Habitat within the Project Area is considered suitable for Southern Greater Glider, particularly for foraging habitat, denning opportunities associated with hollow-bearing trees, and movement habitat between surrounding woodland patches.

However, habitat quality is variable and generally lower than higher-value remnant woodland in the surrounding landscape due to fragmentation from existing industrial land use, weed invasion and edge effects, reduced canopy continuity in parts of the disturbance footprint, and limited extent of mature woodland containing high densities of large den trees.

Research consistently demonstrates that Greater Glider occupancy is strongly linked to mature forest structure, den tree availability and retained canopy connectivity, with fragmented regrowth habitat supporting lower density and less reliable long-term occupancy than intact woodland systems (Lindenmayer et al. 1991; McLean et al. 2015; Lindenmayer et al. 2020).

The disturbance footprint does not contain extensive intact mature forest likely to support a regionally important or high density breeding population. Rather, the site is more likely to function as local foraging habitat, supplementary denning habitat and movement habitat within the broader woodland landscape.

Importantly, habitat connectivity to surrounding remnant woodland remains available outside the direct disturbance footprint and the proposed action is not expected to isolate habitat patches or create genetically distinct populations through fragmentation.

Based on current scientific knowledge and site-specific evidence, Southern Greater Glider is considered likely to occur within the Project Area.

Habitat modelling and mapping

Greater glider habitat has been mapped within the impact area as suitable eucalypt woodland supporting denning, shelter, foraging and movement functions. This includes denning and shelter habitat associated with hollow-bearing trees, stags and senescent habitat trees, as well as broader foraging and movement habitat associated with connected eucalypt woodland containing suitable browse resources and canopy connectivity.

The mapped habitat extent generally corresponds with eucalypt woodland habitat previously identified for Koala and other arboreal fauna however the Greater glider assessment has been further refined using field-verified hollow-bearing tree records, arboreal habitat features, observed tree scratches, canopy connectivity and the proximity of confirmed WildNet records.

Denning habitat represents a subset of the broader suitable habitat area and has not been treated as an additional impact area for PEM quantification. Habitat classes were spatially reviewed, overlap removed, and the total impacted Greater glider habitat footprint calculated using dissolved polygons to avoid double counting.

Areas of cleared land, highly disturbed grassland, hardstand, access tracks and fragmented vegetation lacking canopy connectivity were excluded from the mapped habitat extent, as these areas do not provide habitat likely to support regular Greater glider use.

Significant Residual Impact Consideration

The relevant SRI criteria for endangered wildlife habitat include whether the proposed action is likely to:

- Lead to a long-term decrease in the size of a local population;
- Reduce the extent of occurrence of the species;
- Fragment an existing population;
- Result in genetically distinct populations forming due to habitat isolation;
- Interfere with species recovery; or
- Disrupt ecologically significant locations including breeding, feeding, nesting or denning habitat.

While suitable habitat occurs within the Project Area and the species is considered likely to occur, the disturbance footprint does not contain extensive high-quality denning habitat or habitat likely to support an important local population.

The proposed clearing is not expected to:

- Isolate habitat from the broader landscape;
- Remove regionally significant denning habitat;
- Fragment an existing important population; or
- Interfere with species recovery at a local or regional scale.

The broader woodland landscape surrounding the Project Area retains more extensive and higher quality habitat values, and habitat connectivity remains available following development.

Avoidance of higher value habitat patches and retention of surrounding woodland connectivity further reduce the likelihood of significant impact.

Accordingly, while Southern Greater Glider should be carried forward as a likely occurring species in the revised LoO and SRI assessment, the proposed action is not expected to result in a Significant Residual Impact under the Queensland Environmental Offsets Policy.

Conclusion

The revised assessment confirms that Southern Greater Glider should be considered likely to occur within the broader Project Area based on:

- Multiple nearby WildNet records;
- Suitable eucalypt woodland habitat;
- Hollow-bearing trees and arboreal habitat features;
- Observed tree scratches and structural habitat evidence; and
- Landscape connectivity to surrounding remnant woodland.

A precautionary approach has therefore been adopted and the species has been carried forward within the revised SRI assessment.

However, habitat within the disturbance footprint is fragmented, disturbed and of insufficient extent and quality to represent an ecologically significant location or important breeding population. The Project Area is more likely to function as supplementary foraging, denning and movement habitat within the broader landscape rather than critical habitat necessary for species persistence.

Accordingly, the proposed action is not expected to result in a Significant Residual Impact for Southern Greater Glider, and environmental offsets are not considered necessary for this species.

Reference List

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Legend

- Project Area
- Impact Area
- Greater Glider Habitat
- Minor Road

N

Scale 1:2,000 (A3)

0 30 60 90

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure E.1

Grenof Water Technologies Pty Ltd

Project Halogen - Special Industry

Greater Glider Habitat

CQG Consulting

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Project No: 25054
Map No: 25054-29
Revision: Rev0
29 April 2026

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Grenof Water Technologies Pty Ltd

Project Halogen

Preliminary Significant Impact Assessment

November 2025

PLANS AND DOCUMENTS
referred to in the
SDA APPROVAL

Queensland Government

SDA approval: AP2025/015

Document History and Status

Revision	Date	Prepared by	Reviewed by	Client Reviewer
Rev 0	09/09/2025	Nikki Cannon, Rebbekah Hearn	Patrice Brown	N/A
Rev 1	11/11/2025	Nikki Cannon	Rebbekah Hearn	
Name of Project:		Project Halogen - Special Industry		
Client:		Grenof Water Technologies Pty Ltd		
Client Project Manager:		Scott Barnes		
Name of Document:		Preliminary Significant Impact Assessment		
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APPENDIX A: Desktop Searches

APPENDIX B: Preliminary Likelihood of Occurrence Assessment

APPENDIX C: BioCondition Scores

APPENDIX D: Regional Ecosystem Verification

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APPENDIX G: Verified Likelihood of Occurrence Assessment

Glossary

Acronym	Meaning
ACCC	Australian Competition and Consumer Commission
ASL	above sea-level
CQG	CQ Environmental Pty Ltd T/A CQG Consulting
DBH	Diameter at breast height
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DETSI	Department of Environment, Tourism, Science and Innovation
DNRMMRRD	Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development
EDQ	Economic Development Queensland
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cwth)
GSDA	Gladstone State Development Area
GWT	Grenof Water Technologies Pty Ltd
ha	Hectares
Impact Area	The area that will be developed as a part of the Project (the development footprint)
km	Kilometres
m	metres
MCU	Material Change of Use
MNES	Matter of National Environmental Significance
MSES	Matters of State Environmental Significance
MTSC	Material Transport and Services Corridor
NCA	*Nature Conservation Act 1992* (Qld)
PMST	Protected Matter Search Tool
Project Area	The wider area of land in which the Project is located and which has been investigated for the purposes of this report
QLD	Queensland
RE	Regional Ecosystem

Acronym	Meaning
RVM	Regulated Vegetation Management
SI	Significant Impact
SIA	Significant Impact Assessment
SRI	Significant Residual Impact
SRIA	Significant Residual Impact Assessment
TEC	Threatened Ecological Community
The Guidelines	*Significant Impact Guidelines 1.1 Matters of National Environmental Significance*
The State Guidelines	*Queensland Environmental Offsets Policy Significant Residual Impact Guideline*
VMA	*Vegetation Management Act 1999* (Qld)
WoNS	Weeds of National Significance
WSAA	Water Services Association of Australia

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Executive Summary

Grenof Water Technologies Pty Ltd (GWT) proposes to develop a chlor-alkali facility (Project Halogen) within the Gladstone State Development Area (GSDA), Central Queensland. The Project is designed to reduce sovereign risk associated with Australia's dependence on imported chlorine and caustic soda, both essential for industrial, economic, and public health sectors. The preferred site (Lot 1 on SP200899 and Lot 1 on MPH32292) was selected due to proximity to transport corridors, industrial customers and the Port of Gladstone.

CQG Consulting (CQG) was engaged to conduct a habitat assessment and Preliminary Significant Impact Assessment (SIA), focusing on Matters of National Environmental Significance (MNES) under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwth) (EPBC Act) and Matters of State Environmental Significance (MSES) under Queensland legislation.

The assessment aimed to:

- Characterise ecological values in the Project Area (21.3 ha, with a 7.65 ha Stage 1 Impact Area);
- Evaluate potential impacts on threatened species, ecological communities, and regulated vegetation; and
- Identify mitigation measures and assess the likelihood of significant residual impacts.

This assessment is preliminary, providing early insights to inform targeted surveys, design refinements and mitigation planning.

The assessment combined:

- Desktop searches of national and state databases (e.g., EPBC PMST, WildNet, regulated vegetation mapping);
- Field habitat surveys (August 2025), including BioCondition assessments, regional ecosystem (RE) verification, and habitat feature mapping;
- A likelihood of occurrence analysis for species identified as potentially present; and
- Significant impact assessment in accordance with Significant Impact Guidelines 1.1 Matters of National Environmental Significance (DoE 2013) and Queensland Environmental Offsets Policy Significant Residual Impact Guideline (DEHP 2014).

Key findings of the assessment included:

- Matters of National Environmental Significance:
    - Threatened species: Koala (*Phascolarctos cinereus*, endangered under EPBC Act) and Squatter pigeon (*Geophaps scripta scripta*, vulnerable under EPBC Act) were assessed as likely to occur. No individuals or evidence were detected, habitat quality is low and the Impact Area is small and sits within an industrialised landscape;
    - Migratory species: Osprey (Pandion haliaetus) is known locally, but no important nesting or foraging habitat exists within the Impact Area; and
    - Threatened Ecological communities: The Subtropical Eucalypt Floodplain Forest and Woodland TEC was identified as potentially occurring but field verification found vegetation did not meet diagnostic thresholds due to poor condition and exotic species dominance.
- Matters of State Environmental Significance:
    - Mapping identified essential habitat for threatened wildlife, and regulated vegetation including endangered and of concern REs. Field surveys confirmed these as degraded regrowth with moderate to low BioCondition scores. Habitat quality is compromised by invasive grasses and past disturbance, reducing ecological value; and
    - Invasive species: Invasive species including Rubber vine (*Cryptostegia grandiflora*) and Lantana (*Lantana camara*) were recorded, alongside evidence of feral pigs, dogs and foxes. A Biosecurity Management Plan is recommended.

Based on current evidence and with effective mitigation and further targeted surveys, the Project is unlikely to cause a significant residual impact on MNES or MSES values due to the Impact Area being small, degraded and isolated from higher-quality habitats.

1 Introduction

1.1 Project Background

Grenof Water Technologies Pty Ltd (GWT) is proposing to develop a chlor-alkali facility (Project Halogen or the Project) in the Gladstone State Development Area (GSDA) to mitigate sovereign risk associated with essential chemicals including chlorine (single domestic producer with aging infrastructure) and caustic soda (reliance on foreign supply), which are vital for Australia's industrial, economic and public health sectors. These products are currently imported into Gladstone for industrial use.

Economic Development Queensland (EDQ) has been assisting GWT with identifying an appropriate location to develop the facility, with Lot 1 on SP200899 and Lot 1 on MPH32292 as the preferred site due to the existing access to suitable transport routes to Gladstone industries and the Port.

This report provides a preliminary assessment of significant impacts resulting from Project Halogen on matters of environmental significance listed under State and Commonwealth legislation.

1.2 Site Description

The 'Project Area '(i.e., the wider area of land in which the Project is located and which has been investigated for the purposes of this report) is comprised of two neighbouring lots (Lot 1 on MPH32292 and Lot 1 on SP200899) located on Landing Road and Fishermans Road in Yarwun within the Gladstone State Development Area (GSDA). The Project Area consists of approximately 21.3 hectares (ha) and is situated approximately 10 kilometres (km) north-west of Gladstone in Central Queensland (refer to Figure 1.1).

The 'Impact Area' (i.e., the footprint of the proposed Stage 1 development) covers 7.65 ha in the northern portion of the Project Area (refer to Figure 1.1).

CQG understands that clearing for the Project will be restricted to the Impact Area for Stage 1 which is subject to a Material Change of Use (MCU) application under the GSDA Planning Scheme.

1.3 Objectives

CQG Consulting (CQG) was engaged by GWT to conduct a habitat assessment and significant impact assessment (SIA) for matters of national environmental significance (MNES) listed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwth) (EPBC Act) and matters of state environmental significance (MSES) listed under Queensland legislation that have been identified as known, likely or as having the potential to occur within the Project Area.

The overarching objective of the habitat assessment and SIA is to determine if the Project is likely to have a significant residual impact (SRI) on MNES or MSES.

This objective will be achieved through the following scope of works:

- Review of existing publicly available information relating to the Impact Area;
- Present the findings of a habitat assessment within the Impact Area;
- Identifying the potential impacts of the proposed action on the MNES and MSES values known, likely or with the potential to occur within the Impact Area;
- Providing recommendations for avoidance and mitigation measures; and
- Preliminary identification of potential residual impacts (if any) against the state and Commonwealth criteria.

As targeted ecological investigations confirming the presence of MNES and MSES have not yet been conducted within the Project Area (i.e., the wider area of land in which the Impact Area is located and which has been investigated for the purposes of this report), this document is presented as a Preliminary SIA.

This Preliminary SIA will allow for early identification of potential impacts, inform the scope of targeted ecological investigations and potential measures that could be implemented as a part of the Project design or construction to avoid significant impacts.

Legend

- Project Area
- Impact Area
- Highway
- Major Road
- Minor Road
- North Coast Rail Line

N

Scale 1:40,000 (A3)

0 600 1,200 1,800

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 1.1

Grenof Water Technologies Pty Ltd

Project Halogen - Special Industry

Project Location

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Project No: 25054
Map No: 25054-07
Revision: RevA
10 November 2025

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2 Methodology

2.1 Desktop Assessment

The following searches of publicly available databases were conducted for the Project Area:

- EPBC Act Protected Matters Search Tool (PMST) (Department of Climate Change, Energy, the Environment and Water (DCCEEW));
- Matters of State Environmental Significance (MSES) (Department of Environment, Tourism, Science and Innovation (DETSI));
- Biodiversity and Conservation Values report (DETSI);
- WildNet database species list request (DETSI); and
- Regulated vegetation management framework report (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development (DNRMMRRD) including:
    - Vegetation Management Property Report (DNRMMRRD) and mapping; and
    - Regional Ecosystems (RE) Report (DETSI) and mapping.

Full desktop results are provided in Appendix A.

2.2 Likelihood of occurrence

A preliminary 'likelihood of occurrence' rating was assigned to any significant species listed under the EPBC Act identified through the database searches in order to inform the scope of ecology investigations. The definitions used to determine the preliminary likelihood of occurrence for species are provided in Table 2.1.

Table 2.1: Likelihood of Occurrence Criteria

Rating	Definition	Code
Known	Listed fauna - Habitat is present in the Impact Area and the species has been recorded in the Impact Area, or in connected habitat adjacent to the Impact Area, in the last 10 years	K
	Threatened flora - Habitat is present in the Impact Area and the species has been recorded in the Impact Area during the last 10 years.	
	Threatened Ecological Community (TEC) - Presence of TEC has been confirmed through groundtruthing during surveys undertaken in the last 2 years.	
Likely	Listed fauna: • Habitat is present in the Impact Area and the species has been recorded in the Impact Area, or in connected habitat adjacent to the Impact Area, in the last 11 to 30 years; OR • Habitat is present in the Impact Area and the species has been recorded within its dispersal range/limit from the Impact Area in the last 11 to 30 years, and there are no significant barriers to movement between the records and the Impact Area.	L
	Threatened flora: • Habitat is present in the Impact Area, and the species has been recorded in the Impact Area in the last 11 to 30 years; OR • Habitat is present in the Impact Area and adequate surveys to determine presence/ absence have not been undertaken, but the vegetation community composition indicates the species is probably present.	

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Rating	Definition	Code
	TEC - The TEC has been identified as potentially present within the Impact Area from desktop search results but has yet to be groundtruthed to confirm presence.	
Potential	Listed fauna • Habitat is present in the Impact Area and the species has been recorded in the Impact Area, or in connected habitat adjacent to the Impact Area, more than 31 years ago; OR • Habitat is in the Impact Area, the Impact Area is within the species modelled distribution range, and the species may use the habitat at least occasionally or opportunistically; OR • Habitat is in the Impact Area and it could be used in the future as climate refugia	P
	Threatened flora • Habitat is present in the Impact Area and the species has been recorded in the Impact Area more than 31 years ago; OR • Habitat is present in the Impact Area, the Impact Area is within the species modelled distribution, and adequate surveys have not been undertaken to prove the species is absent.	
	TEC – The TEC has been identified as potentially present within vegetation immediately adjacent to the Impact Area from desktop search results but has yet to be groundtruthed to confirm presence.	
Unlikely	Listed fauna • Habitat is not present within the Impact Area or adjacent to the Impact Area and the Impact Area is within the species distribution; OR • Habitat is present in the Impact Area and the species has been recorded within its dispersal range/limit from the Impact Area over 30 years ago, and there are no significant barriers to movement between the records and the Impact Area.	U
	Threatened flora - Habitat is not present within or adjacent to the Impact Area and robust targeted surveys have not been undertaken to prove if the species is absent.	
	TEC – Desktop searches do not indicate the likely presence of this TEC	
Confirmed absent	Listed fauna - This likelihood category is not applicable to fauna as it is very difficult to prove absence of a species identified in the PMST report as having the potential to occur.	A
	Threatened flora - Habitat is not within or adjacent to the Impact Area and robust targeted surveys have proven the species to be absent.	
	TEC - Recent ground-truthing of vegetation has determined that that the TEC is not present.	

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2.3 Ecology Investigation (Habitat Assessment)

Rapid ecology survey was undertaken by a CQG senior ecologist and CQG senior environmental scientist on 2 July 2025 to verify vegetation mapping, weeds species and habitat at a high level prior to a planned burn off of the Project Area (email summary provided to Grenof and EDQ on 18 July 2025). This burn off did not occur prior to the habitat assessment.

Habitat assessments were undertaken by a CQG senior ecologist and CQG technical officer on 12 and 13 August 2025 using the following methodology:

- BioCondition surveys according to the *BioCondition Assessment Manual* (Eyre et al 2015) to provide information about habitat including vegetation condition and capacity to support biodiversity values;
- Verification of RE and vegetation communities through both quaternary vegetation surveys for classification and detailed descriptions of REs and vegetation communities within 100 metres (m) x 50 m plots as per *Methodology for surveying and mapping of regional ecosystems and vegetation communities in Queensland, Version 7.0* (Neldner et al 2023);
- Identification of flora species present utilising available keys and reference material; and
- Identification of fauna habitat features present within the Project Area and Impact Area.

BioCondition surveys were undertaken in the northern part of the Site with a focus on the Impact Area, with quaternary surveys undertaken in the southern portion of the Site adjacent to Boat Creek, due to limited mobility and visibility.

Vegetation condition is defined as the relative capacity of a site to support the suite of species expected to occur within the same RE in its reference state (or 'best-on-offer') condition, through metric scoring (Queensland Government 2023). The higher the BioCondition score, the greater the capacity for the RE to support flora and fauna species.

The BioCondition score assigned to the transect indicates the condition relative to the benchmarks set for the RE being assessed (BioCondition class). The BioCondition class is presented on a scale out of 1-4 with 1 being functional and 4 being dysfunctional vegetation with minimal alignment to the benchmarks for that RE (refer to Table 2.2).

Table 2.2: BioCondition Classes

BioCondition class	BioCondition Score (out of 100)
1- Functional	>80
2- Moderately functional	60 - 80
3- Moderately dysfunctional	40 - 59
4- Dysfunctional	<40

In line with the *BioCondition Assessment Manual* (Eyre et al 2015), assessments should be undertaken after summer rainfall growing season when plant diversity is greatest. For areas south of the Tropic of Capricorn the optimal survey timing is May or June.

A random meander style survey was undertaken to identify significant habitat features, such as arboreal hollows or trees that contribute to threatened species presence and utilisation of the landscape.

2.4 Survey Limitations

No trapping or deployment of fauna detection devices including camera traps or Anabat recording devices was undertaken as a part of this scope of work. The scope did not include targeted surveys for fauna species.

Floristic identification is largely seasonal (i.e., flowers, seeds and pods), hence identification of certain seasonal species, which may have been dormant at the time of the survey, was limited. This scope of works did not include protected plant flora surveys, groundwater monitoring or collection of vegetation samples for laboratory analysis.

Similarly, fauna that is cryptic, migratory, seasonal or nocturnal may not have been recorded during the survey effort.

Invasive grass height and cover over much of the Project Area was very high limiting survey capacity and coverage in some locations. Access to the area alongside Boat Creek was impeded due to dense Guinea grass presence.

In line with the BioCondition Assessment Manual (Eyre et al 2015), assessments should ideally be undertaken after summer rainfall growing season when plant diversity is greatest. For areas south of the Tropic of Capricorn the optimal survey timing is May or June. Rainfall had been received in the leadup to the survey and standing water was present across a portion of the site.

3 Results

3.1 Desktop Assessment

Full results for the desktop searches are provided in Appendix A and summarised in the following sections. A map showing environmental constraints identified by the desktop analysis is provided in Figure 3.1, Figure 3.2 and Figure 3.3.

3.1.1 Matters of National Environmental Significance

3.1.1.1 Threatened Ecological Communities

The verified REs 12.3.3 and 12.3.7 are listed as being associated with the TEC 'Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions' in the conservation advice document developed by DCCEEW (2022).

3.1.1.2 Preliminary Likelihood of Occurrence

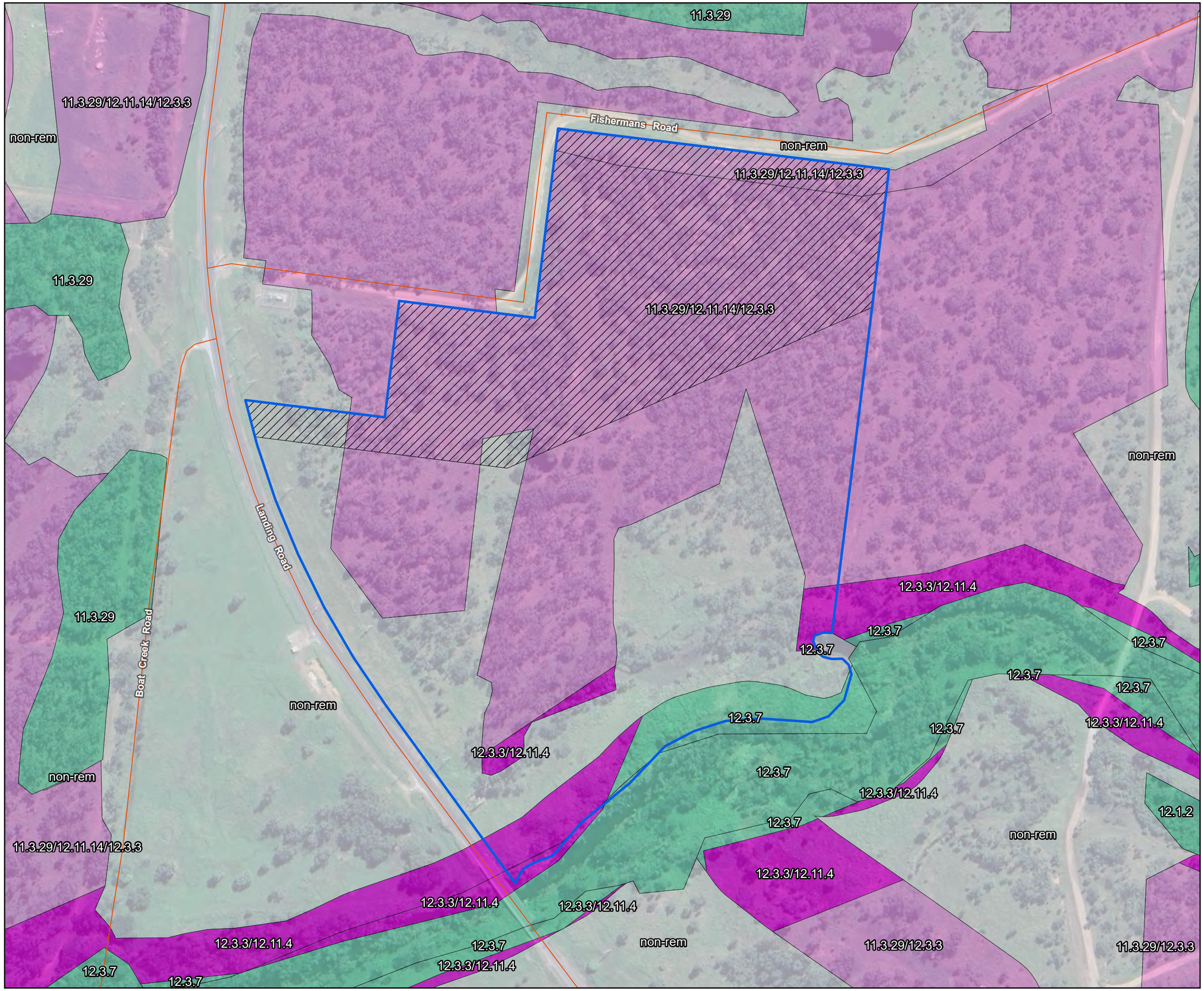
A number of MNES communities and species were identified as likely or known to occur within the Project Area during the desktop likelihood of occurrence assessment including the following, along with their status under the EPBC Act:

- Threatened ecological communities:
  - Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions TEC, endangered.
- Mammals:
  - Greater Glider (southern and central) (*Petauroides volans*), endangered;
  - Yellow-bellied Glider (south-eastern) (Petaurus australis australis), vulnerable; and
  - Koala (*Phascolarctos cinereus*), endangered.
- Birds:
  - Osprey (*Pandion haliaetus*), migratory and marine; and
  - Squatter Pigeon (southern) (*Geophaps scripta scripta*), vulnerable.

3.1.1.3 Invasive Flora and Fauna

There are 78 introduced flora species listed in the WildNet database for the Survey Area, and a one kilometre buffer zone. Three of these species are classed as Weeds of National Significance (WoNS):

- Rubber vine (*Cryptostegia grandiflora*);
- Prickly pear (*Opuntia stricta*); and
- Lantana (*Lantana camara*).



Legend

- Project Area
- Impact Area
- Minor Road

Regional Ecosystem Class

- Non-remnant
- Endangered - Regrowth
- Endangered - Remnant
- Not Of Concern

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 3.1

Grenof Water Technologies Pty Ltd

Project Halogen - Special Industry

Regional Ecosystem Mapping

CQG Consulting
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Project No: 25054
Map No: 25054-08
Revision: RevA
10 November 2025

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Legend

- Project Area
- Impact Area
- Minor Road

Regulated Vegetation

- Category A Area
- Category B Area
- Category C Area
- Category R Area
- Water
- Category X Area

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 3.2

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Project Halogen - Special Industry

RVM Mapping

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Map No: 25054-09
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10 November 2025

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Legend

- Project Area
- Impact Area
- Essential Habitat (Vegetation Management Act)
- Minor Road

Watercourse Lines

- Minor - perennial
- Minor - non perennial

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 3.3

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Project Halogen - Special Industry

Essential Habitat and Waterway Mapping

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Revision: RevA
10 November 2025

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3.1.2 Matters of State Environmental Significance

3.1.2.1 Flora and Vegetation Communities

The Queensland Government mapping tool identified the MSES listed in Table 3.1 as being present within Lot 1 on SP200899 and Lot 1 on MPH32292.

Table 3.1: MSES Summary

MSES Summary	Area (ha) Lot 1 on SP200899	Area (ha) Lot 1 on MPH32292	Area Total (ha)
Habitat for threatened (endangered or vulnerable) wildlife	0.00	5.51	5.51
Habitat for special least concern animals	0.00	5.72	5.72
Regulated Vegetation – Endangered/ Of concern in Category B (remnant)	0.00	0.03	0.03
Regulated Vegetation – Category R (GBR riverine regrowth)	0.00	1.07	1.07
Regulated Vegetation – Endangered/ Of concern in Category C (regrowth)	3.07	10.68	13.75
Regulated Vegetation – Essential habitat	0.00	6.22	6.22

The MSES report indicated that suitable habitat for 24 fauna and four flora species listed as either vulnerable, endangered or critically endangered under the *Nature Conservation Act 1992* (Qld) (NCA) exists within the Project Area, all with no records locally.

Local records indicate presence of:

- Eastern curlew (*Numenius madagascariensis*) listed as NCA endangered and *Environment Protection and Biodiversity Conservation Act 1999* (Cwth) (EPBC Act) critically endangered;
- Western Alaskan bar-tailed godwit (*Limosa lapponica baueri*) listed NCA and EPBC Act vulnerable;
- Whimbrel (*Numenius phaeopus*) NCA special least concern;
- Common sandpiper (*Actitis hypoleucos*) NCA special least concern; and
- Common greenshank (*Tringa nebularia*) NCA special least concern.

3.1.2.2 Regulated Vegetation and Regional Ecosystems

Regulated vegetation mapping was searched for the Survey Area (refer to Appendix A). The current *Vegetation Management Act 1999* (Qld) (VMA) regulated vegetation mapping shows the site mapped as a mix of Category B (remnant vegetation), Category C (high-value regrowth), Category R (regrowth within 50 m of a watercourse or drainage feature in the Great Barrier Reef catchment) and Category X (non-remnant vegetation) containing an endangered and of concern RE.

Table 3.2, Figure 3.1 and Figure 3.2 summarise the REs and RVM categories mapped within the Project Area.

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Table 3.2: RE and RVM Categories

RE	RVM Category	Description	VMA Status
11.3.29	Category C	*Eucalyptus crebra, E. exserta,* Melaleuca spp. woodland on alluvial plains	Least concern
12.11.14	Category C	*Eucalyptus crebra, E. tereticornis, Corymbia intermedia* woodland on metamorphics +/- interbedded volcanics	Of concern
12.11.4	Category B Category C Category R	Semi-evergreen vine thicket on metamorphics +/- interbedded volcanics	Of concern
12.3.3	Category B Category C Category R	*Eucalyptus tereticornis* woodland on Quaternary alluvium	Endangered
12.3.7	Category B Category C Category R	*Eucalyptus tereticornis, Casuarina cunninghamiana subsp. cunninghamiana* +/- Melaleuca spp. fringing woodland	Least concern
Non-rem	Category X	Non-remnant vegetation	None

3.1.2.3 Invasive Flora and Fauna

There are 78 introduced flora species listed in the WildNet database for the Survey Area, and a one kilometre buffer zone. Four of these species are listed under *Biosecurity Act 2014* (Qld) as restricted and/or classed as WoNS:

- Rubber vine (*Cryptostegia grandiflora*) – WoNS & category 3 restricted invasive *Biosecurity Act 2014* (Qld);
- Prickly pear (*Opuntia stricta*) - WoNS & category 3 restricted invasive *Biosecurity Act 2014* (Qld);
- Lantana (*Lantana camara*) - WoNS & category 3 restricted invasive *Biosecurity Act 2014* (Qld); and
- Creeping lantana (*Lantana montevidensis*) - category 3 restricted invasive *Biosecurity Act 2014* (Qld).

There are six introduced fauna species listed in the WildNet database for the Survey Area, and a one kilometre buffer zone. Those listed under *Biosecurity Act 2014* (Qld) are:

- Mosquito fish *(Gambusia holbrooki*) – restricted noxious fish;
- Feral cat (*Felis catus*) – category 3, 4 and 6 restricted invasive animal; and
- Rabbit (*Oryctolagus cuniculus*) - category 3, 4, 5 and 6 restricted invasive animal.

3.2 Field Results

A random meander was conducted across the two lots, with two BioCondition surveys and two quaternary surveys undertaken. Survey locations are shown on Figure 3.4.

3.2.1 Matters of National Environmental Significance

3.2.1.1 Threatened Ecological Communities

The verified REs 12.3.3 and 12.3.7 are listed as being associated with the TEC 'Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions' in the conservation advice document developed by DCCEEW (2022). These two REs are mapped and were groundtruthed to exist in the riparian vegetation on the northern side of Boat Creek, within the Project Area.

There are a series of key diagnostic characteristics to determine if an ecological community meets the criteria of a TEC. The vegetation present within the Project Area has been assessed against these criteria (refer to Table 3.3).

Table 3.3: TEC Assessment

Key Diagnostic Characteristic	Comment
It occurs in the New South Wales North Coast and South Eastern Queensland Interim Biogeographic Regionalisation for Australia bioregions, and on Curtis Island in the Brigalow Belt North IBRA Bioregion.	Yes, Project Area is located in the South Eastern Queensland Bioregion
It occurs in the catchments of the eastern watershed of the Great Dividing Range, typically in their lower reaches.	Yes, Project Area is within the Great Dividing Range watershed
It occurs at elevations up to 250 m above sea-level (ASL), most typically below 50 m ASL.	Yes, Project Area is approximately 5 m ASL.
It occurs on alluvial landforms including river floodplains, riparian zones (e.g., along riverbanks, lake foreshores and creek lines), the floors of tributary gullies, floodplain pockets, alluvial flats, fans, terraces, and localised colluvial fans; as well as on localised depressions amongst low rises and on associated sites where water can pond.	Yes, occurs on the bank of Boat Creek.
It occurs on alluvial soils of various textures including silts, clay loams, sandy loams, gravel and cobbles.	Yes, clay loam type soil observed.
It does not typically occur on soils that are primarily marine or aeolian sands, but may occur on such substrates after they have been modified by fluvial activity.	Yes
It occurs as a tall closed-forest, tall open-forest, closed forest, open forest, tall woodland, or woodland The canopy has a crown cover of at least 20%	12.3.3 – No, crown cover less than 20%, open woodland. 12.3.7 – Yes, woodland.
It has a canopy dominated by one or a combination of Angophora, Corymbia, Eucalyptus, Lophostemon and/or Syncarpia tree species, but NOT dominated by Eucalyptus robusta (swamp mahogany). Other canopy tree species may be present, and in some area's rainforest trees may be prominent.	12.3.3 – No, few canopy trees present. 12.3.7 – Yes, Blakella (formerly Corymbia) and Eucalyptus dominate canopy.

Key Diagnostic Characteristic	Comment
A mid-layer (including a sub-canopy, and/or shrub-layer) may be present, sparse or absent; and fauna may be abundant or rare.	12.3.3 – No, few mid-layer trees observed. 12.3.7 – No, few mid-layer trees observed.
Patch size is larger than 0.5 ha	12.3.3 – No, patch is under 0.5 ha 12.3.7 – No, patch is under 0.5 ha
Patch breaks are less than 30 m	12.3.3 – No, road reserve approximately 30 m wide. 12.3.7 – No, no other patches nearby.
Introduced species presence	The patches do not meet the nationally protected thresholds due to the dominance of introduced species present.
Outcome	Vegetation present does not meet the key diagnostic characteristics of a TEC

Further to the results in Table 3.3 above, the patches do not meet the nationally protected thresholds due to the dominance of introduced species present.

3.2.1.2 Invasive Flora

Two weeds listed as WoNS were observed within the survey area:

- Rubbervine (*Cryptostegia grandiflora*); and
- Lantana (*Lantana camara*).

3.2.2 Matters of State Environmental Significance

3.2.2.1 Flora and Vegetation Communities

BioCondition surveys were undertaken at two of the four survey sites, both within the Impact Area. Quaternary surveys were undertaken at T3 and T4 due to poor access and mobility in the dense Guinea grass. Full BioCondition score data is collated in Appendix C. Table 3.4 shows the summarised results of the BioCondition assessments. The average score for the Impact Area indicates that vegetation is moderately dysfunctional.

Legend

- Project Area
- Impact Area
- Survey Locations (Points)
- Survey Locations (Lines)
- GPS Tracks
- Minor Road

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 3.4

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Project Halogen - Special Industry

Survey Locations

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Project No: 25054
Map No: 25054-11
Revision: RevA
10 November 2025

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3.2.2.2 Regulated Vegetation and Regional Ecosystems

The RE's on site were found to be consistent with the mapping. Full RE verification is in Appendix D and species lists in Appendix E. Figure 3.5 shows verified RE mapping.

Table 3.4: Verified Regional Ecosystems

Verified RE	RVM Category	RE Description	VMA Status	Project Area (ha)	Impact Area (ha)
11.3.29	Regrowth	*Eucalyptus crebra, E. exserta,* Melaleuca spp. woodland on alluvial plains.	Least concern	2.6	0.50
11.3.29a	Regrowth	*Eucalyptus crebra* +/- *Corymbia dallachiana* +/- C. *erythrophloia, E. moluccana* woodland. Occurs on broad plains and fans formed from Quaternary alluvium.	Least concern	12.6	6.99
12.3.3	Regrowth	*Eucalyptus tereticornis* woodland on Quaternary alluvium	Endangered	0.8	-
Non-remnant			NA	5.3	0.16
			Total Areas	21.3	7.65

3.2.2.3 Wetlands and watercourses

An unnamed waterway was confirmed to be holding water and aquatic flora in the southern portion of the Project Area. The water way runs adjacent to Boat Creek and appears to join it to the east of the lot boundary. An unmapped dam, holding water, was located along the boundary of the two lots, immediately south of the Project footprint (refer to Figure 3.6).

3.2.2.4 Invasive Flora and Fauna

Evidence of use by feral pigs, dogs and foxes were observed across the Site.

Two weeds listed as restricted invasive species under the *Biosecurity Act 2014* (Qld) were observed within the survey area (refer to Table 3.5).

Table 3.5: Restricted Invasive Species

Scientific name	Common name	*Biosecurity Act 2014* (Qld) Status
Cryptostegia grandiflora	Rubber vine	Restricted, category 3
Lantana camara	Lantana	Restricted, category 3

Legend

- Project Area
- Impact Area
- Minor Road

Verified Regional Ecosystem Mapping

- 11.3.29
- 11.3.29a
- 12.3.3 - TBC

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 3.5

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Project Halogen - Special Industry

Verified Regional Ecosystem Mapping

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Project No: 25054
Map No: 25054-12
Revision: RevA
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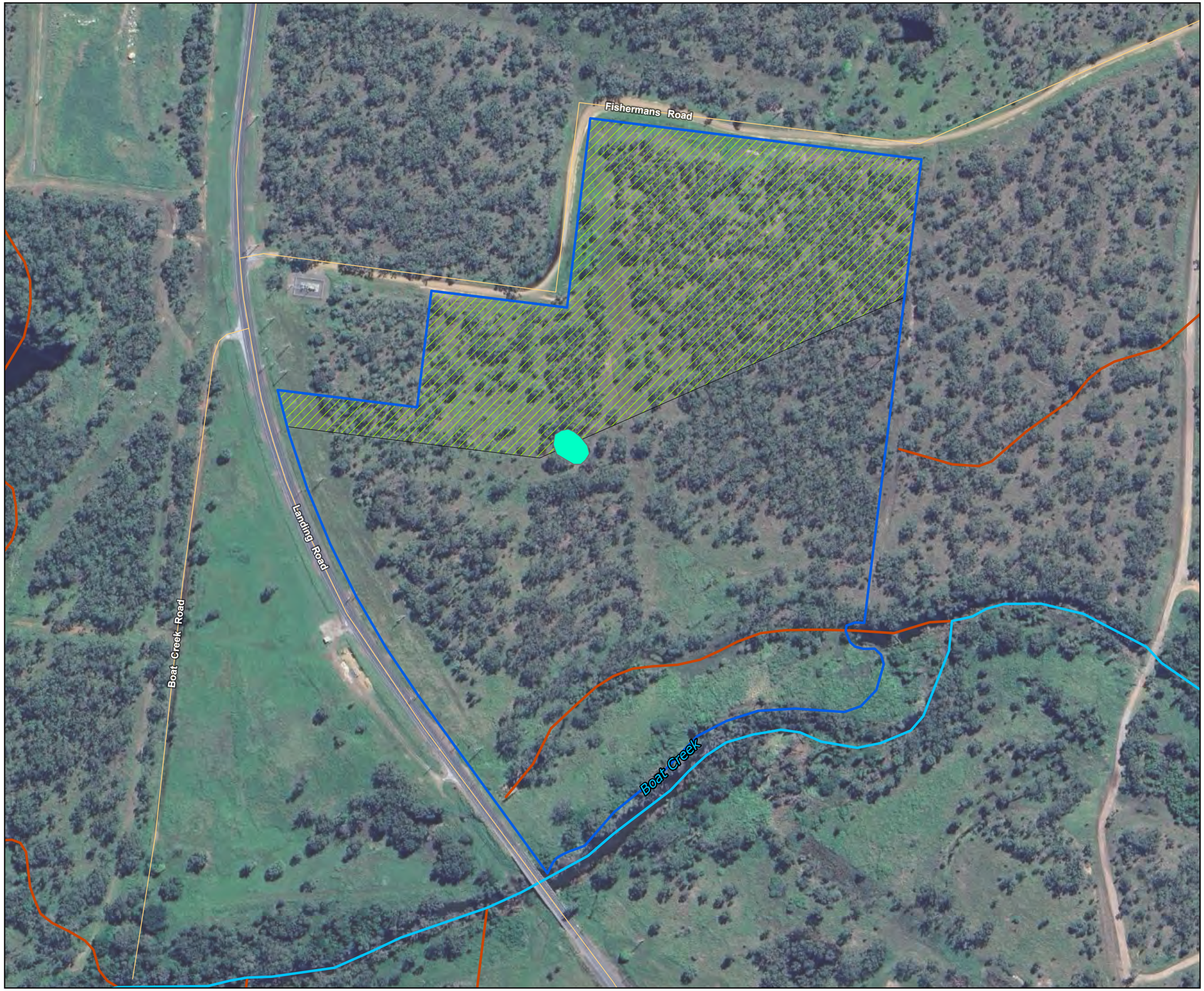

Legend

- Project Area
- Impact Area
- Unmapped Dam
- Watercourse [defined by Water Act 2000]
- Drainage feature [defined by Water Act 2000]
- Minor Road

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 3.6

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Project Halogen - Special Industry

Verified Waterways

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Project No: 25054
Map No: 25054-14
Revision: RevA
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3.2.3 Fauna and habitat features

A mixture of habitat features and fauna sign were observed across the Site during the random meanders, see Figure 3.7, Figure 3.8 and Figure 3.9 for locations and Appendix F for details. Koala and glider foraging trees and trees with arboreal hollows visible were measured for DBH and height, with the tallest tree being approximately 30 metres tall and the largest tree at 100 centimetres DBH. The following habitat features were recorded:

- Arboreal hollows (refer to Photograph 3.1);
- Koala & glider foraging trees;
- Stags;
- Scratches on trees (refer to Photograph 3.2);
- Scat (possum, pig, dog and fox);
- Feral pig tracks;
- Bones (likely macropod);
- Arboreal termite mounds;
- Small burrows;
- Small diggings (likely echidna or bandicoot);
- Exfoliating bark;
- Flowering trees (Acacia sp. and Melaleuca sp.);
- Open pipe;
- Standing water; and
- Stick nests.

Trees heights and diameter at breast height (DBH) were measured for the larger trees observed.

Photograph 3.1: Arboreal hollow in *E. tereticornis*

Photograph 3.2: Scratches on *B. dallachiana*

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Legend

- Project Area
- Impact Area
- Minor Road
- Koala and Glider Foraging Trees
- Arboreal Hollows

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 3.7

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Project Halogen - Special Industry

Koala and Glider Foraging Trees and Arboreal Hollows

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Project No: 25054
Map No: 25054-15
Revision: RevA
10 November 2025

Layer Credits- © OpenStreetMap (and) contributors, CC-BY-SA; QSpatial; CQG

Fishermans Road

Landing Road

Boat Creek Road

Legend

- Project Area
- Impact Area
- Arboreal Termite Mounds
- Minor Road

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 3.8

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Project Halogen - Special Industry

Arboreal Termite Mounds

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Project No: 25054
Map No: 25054-16
Revision: RevA
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Legend

- Project Area
- Impact Area
- Minor Road

Habitat Features and Fauna Sign

- Burrow
- Dam
- Diggings
- Exfoliating bark
- Flowering trees
- Man-made structure
- Prints
- Scat
- Scratches
- Stag
- Standing water
- Stick nest

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 3.9

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Project Halogen - Special Industry

Habitat Features and Fauna Sign

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Project No: 25054
Map No: 25054-17
Revision: RevA
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4 Verified Likelihood of Occurrence

The preliminary likelihood of occurrence assessment (refer to Section 2.2) was revised based on habitat assessment and field survey results. Table 4.1 summarises the results of the verified likelihood of occurrence assessment with the detailed information provided in Appendix G.

Species considered known or likely based on the habitat assessment include:

- Mammals:
  - Koala (*Phascolarctos cinereus*), endangered.
- Birds:
  - Osprey (*Pandion haliaetus*), migratory and marine; and
  - Squatter Pigeon (southern) (*Geophaps scripta scripta*), vulnerable.

While none of these species were recorded during the habitat assessment or signs of their presence (scats, scratches or tracks), they are considered either known to be present based on previous records immediately adjacent to the Impact Area, or likely to be present based on habitat suitability.

Targeted fauna surveys should be undertaken to confirm presence of these, and any other potential species within the Impact Area.

Table 4.1: Likelihood Assessment Summary

Matter	EPBC Act Status	NCA Status	Description / Habitat	Verified Likelihood of Occurrence Within Impact Area	Likelihood Notes
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	-	The subtropical eucalypt floodplain forest and woodland TEC is a floodplain forest community dominated by eucalyptus and other myrtaceous tree species. This community occurs in the NSW North Coast and SE QLD IBRA bioregions and on Curtis Island in the Brigalow Belt north IBRA Bioregion. It encompasses an area from just north of Newcastle, NSW in the south, to just north of Gladstone in QLD. It occurs as a tall closed-forest, tall open forest, closed forest with a canopy that has at least 20% crown cover. The canopy is dominated by Angophora, Corymbia, Eucalyptus, Lophostemon and/or Syncarpia tree species, but NOT dominated by Eucalyptus robusta.	Absent	Patches do not meet key diagnostic criteria for TEC
Greater Glider (southern and central) *Petauroides volans*	Endangered	Endangered	The southern and central Greater Glider occurs in eastern Australia, where it has a broad distribution from around Proserpine in QLD, south through NSW and the ACT, to Wombat State Forest in central VIC. This species is largely restricted to eucalypt forests and woodlands of eastern Australia. It is typically found in highest abundance in taller, montane, moist eucalypt forests on fertile soils, with relatively old trees and abundance hollows. It is likely that only a proportion of forest in potential habitat areas is suitable for the species, as the structural attributes of the forest overstorey and forage quality it relies on vary considerably across the landscape (TSSC Conservation Advice, 2022).	Potential	Although largely regrowth vegetation is present within the Impact Area, there were a number of older growth hollow-bearing trees within the Impact Area. There is a record for Greater glider within 15 km of the site in Gladstone, however the date and accuracy of this record is unknown. The nearest reliable sightings are approx. 65 km to the south-west in Kroombit Tops National Park and approx. 62 km south-east near Miriam Value. These areas are not connected to the Impact Area.
Koala *Phascolarctos cinereus*	Endangered	Endangered	The Koala is endemic to Australia. The biological species range extends from north-eastern QLD to the south-east corner of SA. Koalas naturally inhabit a range of temperate, subtropical and tropical forests, woodland and semi-arid community's dominated by Eucalyptus species. Their habitat can broadly be defined as any forest or woodland containing species that are a known Koala food tree, or shrubland with emergent food trees (SPRAT 2017).	Likely	Suitable foraging and sheltering trees are present, however there is no records within 10 km.
Yellow-bellied Glider (south-eastern) *Petaurus australis australis*	Vulnerable	Vulnerable	The Yellow-bellied Glider is found in tall mature Eucalypt Forest and they feed on a range of sources including winter-flowering Eucalypts which provide nectar and pollen. They also feed upon the sap of Eucalypts in which they chew V-shaped incisions to collect the sap. Yellow-bellied Gliders den in large tree hollows (NPWS, 2000).	Unlikely	While there are records within 2 km of the Impact Area in large patches of tall remnant forest, the vegetation identified within the Impact Area is unlikely to be suitable (not consistent with tall forest) and no feeding incisions were recorded during the survey.
Osprey *Pandion haliaetus*	Migratory Marine	-	The Osprey is thinly distributed around the coast of Australia where they forage for fish in fresh, brackish, or saline waters of rivers, lakes, estuaries and inshore coastal waters (Schodde and Tidemann, 1993; NPWS, 2000). Nests are usually located near a suitable area of foraging habitat and are a bulky structure made from piled sticks, often positioned in a tall dead tree or artificial structures such as telecommunication towers or poles (Schodde and Tidemann, 1993; NPWS, 2000). Breeding pairs defend breeding territory against other Ospreys, and active nests are usually more than 1 km apart (NPWS, 2005).	Known	There are numerous records for Osprey within the Gladstone region, including within 1 km of the Impact Area. The Impact Area is mapped as regrowth vegetation however there are several larger trees and stags with potential value for nesting. The Impact Area is approx. 1.5 km from foraging habitat.
Squatter Pigeon (southern) *Geophaps scripta scripta*	Vulnerable	Vulnerable	The known distribution of the Squatter Pigeon extends south from the Burdekin-Lynd divide in the southern region of Cape York Peninsula to the border Rivers region of northern NSW, and from the east coast to Hughenden, Longreach and Charleville. Their habitat is generally defined as open-forests to sparse, open woodlands and scrub that are mostly dominated by Eucalypts, Corymbia, Acacia or Callitris species. The habitat is generally remnant, regrowth or partly modified vegetation communities and within 3 km of water bodies or courses. Foraging occurs on well-drained, gravelly or loamy soils which support the open-forest to woodland communities with patchy, tussock-grassy understories (SPRAT, 2015).	Likely	Suitable habitat is present within the Impact Area.

5 Habitat Mapping and Modelling

Habitat criteria for species identified as known of likely based on the desktop assessment and ecology survey was determined through review of guidelines and references, including the following:

- Koala:
  - Conservation Advice for *Phascolarctos cinereus* (Koala) combined populations of Queensland, New South Wales and the Australian Capital Territory (Department of Agriculture, Water and the Environment 2022);
  - A review of koala habitat assessment criteria and methods (Youngentob et al 2022); and
  - National Recovery Plan for the Koala *Phascolarctos cinereus* (combined populations of Queensland, New South Wales and the Australian Capital Territory) (Department of Agriculture, Water and the Environment 2022).
- Squatter pigeon:
  - Approved Conservation Advice for Geophaps scripta scripta (southern squatter pigeon) (Threatened Species Scientific Committee (TSSC) 2015); and
  - Species Profile and Threats Database (SPRAT): Geophaps scripta scripta – southern squatter pigeon (Department of Climate Change, Energy, the Environment and Water (DCCEEW) 2023).
- Osprey:
  - The breeding biology of the Osprey Pandion haliaetus on the north coast of New South Wales, Corella, 30(1), pp. 1–8 (Clancy 2006); and
  - Species Profile: Osprey (Pandion haliaetus cristatus) (Queensland Government (DES) 2020).

These criteria are summarised in Table 5.1.

Habitat for likely species was mapped within the Project Area based on ecology survey data and the criteria in Table 5.1. Maps are provided in Figure 5.1, Figure 5.2 and Figure 5.3.

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Table 5.1: Habitat assessment criteria

Habitat Criteria	Species (EPBC Act Status)		
	Koala (Endangered)	Squatter pigeon (Vulnerable)	Osprey (Migratory, Marine)
General habitat description	Koala habitat includes the total set of attributes required by koalas to meet the needs of individual survival and reproduction, and how those resources are arranged in the landscape to maintain viable metapopulation processes (landscape context dependent).	Prefers open eucalypt woodlands and grassy forests on loamy or sandy soils, often in areas with access to permanent or ephemeral water. Forages on the ground for seeds in sparsely grassed understories, nests in shallow ground scrapes often near cover.	The Osprey is a fish-eating raptor found along coasts, estuaries, large rivers, lakes, and reservoirs. It requires access to shallow open water for hunting and tall trees, cliffs, or artificial structures for nesting. Nests are large stick platforms, often reused and added to annually, reaching >1 m deep and 2 m across. Nest placement usually high in trees (10-30 m), or on artificial structures.
Habitat critical to survival	• Habitat used during periods of stress (examples flood, drought or fire); • Habitat used to meet essential life cycle requirements (e.g. foraging, breeding, social behaviour, dispersal); • The extent to which the habitat is used by important populations; • Whether the habitat is necessary to maintain genetic diversity and long-term evolutionary development; • Whether the habitat is necessary for use as corridors to allow the species to move freely between sites used to meet essential life cycle requirements; • Whether the habitat is necessary to ensure the long-term future of the species or ecological community through reintroduction or re-colonisation; and • Any other way in which habitat may be critical to the survival of a listed threatened species or a listed threatened ecological community (EPBC Act). Assume occupancy where suitable habitat is present or the area is likely used for movement, unless recolonisation is highly unlikely. As the Koala is listed endangered, even small losses of habitat (as little as 1 ha) can be significant depending on context	• Includes areas of intact open woodland with native grass groundcover and nearby water sources (within ~3 km); and • Also includes known breeding sites and foraging grounds within the Brigalow Belt and associated regions of QLD.	• Breeding sites near permanent waterbodies with abundant fish populations are critical; and • Large nest structures are typically built on tall trees, dead snags, cliffs, or increasingly on human-made platforms (e.g., power poles, towers).
Locally important trees[1] / vegetation composition (foraging, denning and/or shelter)	• Region-specific, including non-remnant elements such as roadside/rail vegetation and paddock trees; and • Includes *Eucalyptus tereticornis*, *E. populnea*, *E. crebra*, *E. melanophloia*, *Corymbia citriodora variegata* and *E. platyphylla*, with secondary use of other eucalypts such as *E. drepanophylla* and *E. exserta*.	• Key canopy species include *Eucalyptus crebra* (Narrow-leaved ironbark), *Corymbia citriodora* (Spotted gum), *E. populnea* (Poplar box), *E. melanophloia* (Silver-leaved ironbark); and • Ground layer dominated by native grasses such as Bothriochloa, Chloris, Panicum and Aristida spp.	• Not dependent on specific plant species but requires large trees or snags close to aquatic foraging habitat for nesting; and • In coastal Queensland, Casuarina, Melaleuca, and tall Eucalyptus species are often used.

[1] A tree from a species that is regularly browsed by a threatened scopes in a particular region, such that it could be considered a substantial portion of the animal's diet

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Habitat Criteria	Species (EPBC Act Status)		
	Koala (Endangered)	Squatter pigeon (Vulnerable)	Osprey (Migratory, Marine)
Vegetation condition (intactness, canopy cover, regeneration)	• Adequate canopy cover provides thermal refuge (shade in summer, shelter in storms) and influences microclimate. Higher canopy cover is often linked with greater leaf biomass and higher availability of food trees. Sparse canopy reduces the availability of safe pathways for arboreal movement, forcing Koalas to travel on the ground, which increases mortality risk; and • Recruitment of younger eucalypts ensures long-term habitat persistence as mature feed trees senesce. A regenerating understorey provides successional food resources and ensures continuity of suitable canopy structure. Areas without regeneration may function only in the short term, reducing long-term habitat value and offset suitability.	• Intact groundcover of native grasses for seed foraging; • Low shrub density to maintain open structure; • Canopy condition that provides scattered cover but allows ground movement; and • Areas free of heavy grazing, weeds, or soil compaction.	• Intact riparian or coastal vegetation is important for providing secure nest sites; and • Loss of tall trees through clearing or coastal development reduces nesting opportunities.
Landscape context (patch size, connectivity to other patches, corridors)	• Koalas rely on continuous patches of native eucalypt woodland and forest rather than fragmented or highly disturbed patches. Intact vegetation supports stable food resources, provides shelter from predators and reduces stress from constant ground movement. Fragmented habitat with frequent gaps increases mortality risk (vehicles, predation) and reduces population resilience; and • Koalas, especially subadult males, can disperse 1-3 km or more.	• Requires access to permanent or semi-permanent water (creeks, farm dams, waterholes) within typical daily movement distances (~3 km); • Habitat value is highest in large, contiguous woodland patches with nearby water; • Connectivity between foraging areas and permanent water is critical; and • Road networks and clearing reduce viability.	• Requires a mosaic of aquatic foraging habitats within 5–10 km of nesting sites; and • Sensitive to disturbance during breeding and nest site abandonment can occur if human activity is too close.
Climate refugia	• Drainage lines, riparian strips and other cooler, moister patches that provide resilience during heatwaves/bushfire.	• Likely to persist in riparian corridors, drainage lines, and areas with permanent/semi-permanent water during drought; and • Shaded woodland patches and intact grassland mosaics act as microclimate refuges in hotter, drier conditions.	• Refugia are linked to coastal and estuarine systems with reliable fish stocks; and • Coastal wetlands and river mouths with high fish productivity provide resilience under climate variability.
Evidence of use (scats, scratches, sightings)	• Sightings of individuals in trees (day or night surveys); • Thermal imaging or spotlighting detections during nocturnal surveys; • Acoustic recordings of male bellowing calls (breeding season, typically September–January); • Camera trap detections: Often used along habitat corridors or watering points; • Spot assessment technique (SAT): Standardised method combining tree-based scat searches and habitat scoring (developed by Phillips & Callaghan); • Scat surveys: Often used in conjunction with habitat assessment to confirm use. Scats (faecal pellets) - oval, ~16-20 mm, fibrous texture, characteristic smell of eucalyptus oil, found at the base of feed trees, often in groups beneath favoured resting branches; • Scratch marks on tree trunks - vertical or diagonal parallel claw marks on the bark of eucalypts, best identified on smooth-barked species like *Eucalyptus tereticornis* (forest red gum); • Tracks / footprints - rare but can be detected in soft soil or sandy substrates under trees; • Community reports: Verified local sightings, wildlife care records, or roadkill records; and • Wildlife databases: EPBC Protected Matters Search Tool (PMST) or Queensland WildNet database.	• Direct sightings of birds foraging or drinking; • Ground nests (shallow scrapes with minimal lining, usually in cover of grass tussocks); and • Database records (PMST, WildNet, Atlas of Living Australia) provide supporting presence data.	• Direct observation of foraging flights; • Presence of large stick nests; • Distinctive vocalisations near nest sites; and • Database records (PMST, WildNet, Atlas of Living Australia) provide supporting presence data.

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Legend

- Project Area
- Impact Area
- Minor Road

Koala Habitat (Endangered)

- Potential Dispersal Habitat
- Potential Breeding and Foraging Habitat

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 5.1

Grenof Water Technologies Pty Ltd

Project Halogen - Special Industry

Koala Habitat (Endangered)

CQG Consulting
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PO Box 8384, Allenstown 4700
Ph: +61 7 4922 9252 Fax: +61 7 4922 0195

Project No: 25054
Map No: 25054-18
Revision: RevA
10 November 2025

Layer Credits- © OpenStreetMap (and) contributors, CC-BY-SA; QSpatial; CQG

Legend

- Project Area
- Impact Area
- Minor Road

Squatter pigeon Habitat (Vulnerable)

- Potential Breeding and Foraging Habitat

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 5.2

Grenof Water Technologies Pty Ltd

Project Halogen - Special Industry

Squatter pigeon Habitat (Vulnerable)

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Project No: 25054
Map No: 25054-19
Revision: RevA
10 November 2025

Layer Credits- © OpenStreetMap (and) contributors, CC-BY-SA; QSpatial; CQG

Legend

- Project Area
- Impact Area
- Minor Road

Osprey Habitat (Migratory & Marine)

- Potential Nesting Habitat

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure 5.3

Grenof Water Technologies Pty Ltd

Project Halogen - Special Industry

Osprey Habitat (Migratory & Marine)

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Project No: 25054
Map No: 25054-20
Revision: RevA
10 November 2025

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6 Impacts and Mitigation Measures

The Impact Area covers an area of 7.65 ha, most of which contains regrowth and scattered remnant trees. Much of the area within the Impact Area has been subject to historic clearing but may contain regrowth of native vegetation communities which may be of habitat value to threatened species.

Riparian vegetation along watercourses and tributaries within the Project Area is considered to be remnant (although most is mapped as non-remnant by the State).

The key potential impacts associated with the Project stages are outlined in Table 6.1.

Table 6.1: Project activities and potential impacts

Project Stage	Activity	Risk	Potential Impact
Construction	Site establishment and vegetation clearing	Habitat loss, fragmentation and degradation	• Clearing of vegetation and habitat; • Mortality and injury; • Indirect impacts such as noise, dust, vibration or lighting; • Decline of threatened species populations through inappropriate land management practices; • Weed and pest incursion; • Erosion and sedimentation; • Stormwater management; and • Connectivity, fragmentation and barriers to movement.
		Introduction and exacerbation of invasive species	
	Construction activities including vehicular movements	Dust generation	
		Soil erosion and sedimentation	
Operation and maintenance	Project activities	Introduction and exacerbation of invasive species	
Decommissioning	Project conclusion and rehabilitation works	Introduction and exacerbation of invasive species	
		Dust generation	
		Soil erosion and sedimentation	

An overview of the potential impacts associated with the construction, operation or decommissioning of the Project on the relevant MNES is outlined in Table 6.2.

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Table 6.2: Potential impacts and general mitigation measures

Potential Impacts	General Mitigation Measures	Timing
Clearing of vegetation and habitat	• Prior to any vegetation clearing pre-clearance surveys will be undertaken within the Impact Area to inform the micro-siting process to further minimise disturbance to threatened species and their habitat; • 'No-go' areas, including clearing limits will be clearly demarcated including the implementation of signage and fencing to ensure approved clearing limits are not exceeded. Information fact sheets will also be given to applicable land holders. 'No go' areas will include areas adjacent to the Impact Area which contain habitat (known or potential) for threatened species; • Ongoing monitoring will occur within Impact Area and 5 m either side of the Development Footprint to monitor for impacts to threatened species and habitat including the presence of invasive species; • Rehabilitation will be undertaken of disturbed areas no longer required for active use or construction to ensure habitat is restored and does not lead to further degradation; • Personnel will be informed of the known threatened species and habitat within the Project Area, as well as the procedures for minimising Project impacts through site inductions, training, and toolbox talks; • Project vehicles and personnel are to stay on approved tracks to reduce the risk of impacting areas of habitat; • The period between decommissioning activities and rehabilitation of disturbed areas will be kept to a minimum to prevent the establishment of exotic species and loss of soil; • Topsoil and subsoil to be reinstated in the same order as extracted to minimise inversion of sub and topsoils. Topsoil to be replaced to match surrounding ground levels; • Seed mix to contain relevant species, aligned with prior land use. The species that will be used in rehabilitation works will be identified in consultation with the landowners. Where practicable vegetation best aligned with the historic vegetation at the rehabilitation site will be selected. All rehabilitation activities adjacent to remnant areas to consist only of native species; • Where rock was naturally occurring on the ground surface, the surface rock will be replaced as part of rehabilitation works; • All waste materials and equipment to be removed from the Development Footprint area once decommissioning and rehabilitation works are completed; • Any temporary access roads not required for operation and maintenance, or that are not going to be retained by the landowner are to be closed and reinstated to a condition comparable with the surrounding land use; and • All work areas, temporary access tracks and other areas that have been compacted by construction activities are to be ripped to relieve compaction and to trap water and seed, where practical.	Pre-construction, construction and decommissioning
Mortality and injury	Mortality and injury to threatened species may result during construction and operation, most likely during vegetation clearing and vehicle strike as animals' traverse areas on the ground. This is particularly likely during the breeding seasons of arboreal and nesting species. Traffic volumes associated with the Project are not likely to be significant and night-time traffic is unlikely. To minimise the potential direct mortality of fauna, a project-specific Environmental Management Plan (EMP) will be implemented to include practical measures to be implemented prior to and during construction, including: • Delineation of clearing boundaries and no-go zones; • Spotter/Catcher oversight of all clearing activities; • Pre-clearance surveys to locate active fauna breeding sites; • A sequential clearing plan which affords fauna the opportunity to relocate away from the work front; • Enforcement of vehicular speed limits within work areas; and • Daily inspection of any open excavations to remove inadvertently trapped fauna.	At all times throughout the life of the Project

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Potential Impacts	General Mitigation Measures	Timing
Indirect impacts such as noise, dust, vibration or lighting	Excessive noise, vibration and dust deposition can cause impacts to vegetation and fauna, including (but not limited to) the following: • Increased dust from vegetation clearing, earthworks and vehicle movements during construction has the potential to temporarily and locally impact flora and fauna values in the vicinity of the Impact Area. Dust is expected to only be a potential issue during vegetation clearing, construction and demolition and will be mitigated by routine environmental management measures; • Noise may adversely affect fauna by interfering with communication (e.g. territorial bird song), masking the sound of predators and prey, causing avoidance reactions and displacement from habitat. Construction noise will be generated by the Project through the use of machinery, plant and vehicles, and will vary from short intermittent noise from plant and equipment to more persistent noise from generators. Individuals that occur within the Impact Area may be deterred from habitat. Project construction works and therefore potential noise impacts will be temporary; • Vibration from vehicles and equipment may cause temporary disturbance to fauna, and displacement or structural damage to habitat for fauna; • Artificial lighting from infrastructure and machinery may impact fauna within the Project Area during construction. Artificial lighting can have a range of impacts which vary between species. Artificial light can disrupt patterns of both nocturnal and diurnal species by eliciting responses. Some species may avoid brightly lit areas, potentially due to the perception of being increased risk of predation. Conversely, some species such as nocturnal reptiles, frogs and bats may congregate at artificial light sources to feed on insects attracted to light. Other potential adverse impacts include disruption of breeding and migratory patterns, disorientation and potential collision with structures; and • Indirect impacts to breeding places also need to be considered, including noise and dust generated during construction.	At all times throughout the life of the Project
Decline of threatened species populations through inappropriate land management practices	Inappropriate land management practices including bushfire management can result in loss or decline of threatened species populations. Mitigation measures include: • Implement bushfire management measures in accordance with the Project Bushfire Management Plan; and • Following agreement with the landholder any additional access tracks within the Project Area that are required for construction only and will not be used during operation, will be decommissioned or made inaccessible (subject to agreement with landholder) to minimise direct or indirect impacts to threatened species populations.	Pre-construction and construction
Weed and pest incursion	The presence and abundance of feral animal and weed species adversely effects native species through increased predation, competition for resources, introduction of disease, reduced ecosystem function and habitat degradation. Vegetation clearing, fragmentation and opening up areas through clearing allows invasive species access to previously unoccupied areas, although it is noted that due to previous disturbance invasive species are widespread and well established within the Impact Area. Mitigation measures include: • A Biosecurity Management Plan to be developed for the Project; • Material imported into the Study Area (i.e., for use as fill etc.) will be obtained from an appropriately licensed source where the source location is deemed 'weed clean'. Evidence will be obtained from the provider prior to importation of material to the Project site. Imported fill (rocks/screenings) shall be free of contamination from mud clumps and weed seeds; • Use only native or certified weed free seeds in all rehabilitation works, including hydro mulch; • No viable weed species (declared or otherwise) are to be mulched or chipped in rehabilitation works; • All personnel are to be trained in the identification of key weed species during general induction and toolbox talks. Known weed species on the site are to be displayed on posters on the HSE board and any other suitable locations around the Project site; • Site vehicles (mobile plant including light vehicles) and equipment are to arrive on site 'clean' of weed seeds and other organic matter. Site vehicles are to be inspected and recorded with documented evidence, via a washdown register or weed and seed certificate, prior to entering the Project Area; • Progressive rehabilitation of bare/ disturbed areas will be completed as soon as the area is no longer needed for construction; • Monitoring and Management of weed species within areas disturbed as part of decommissioning (including rehabilitation areas) will continue for up to two years post-works; and • Site vehicles (mobile plant including light vehicles) will be driven to conditions and remain on approved access tracks to avoid mud, organic matter and weed seeds becoming stuck or caught on the vehicle. Offroad driving will be minimised to avoid contamination.	At all times throughout the life of the Project
Erosion and sedimentation	An Erosion and Sediment Control Plan (ESCP) is to be prepared by a Certified Professional in Erosion and Sediment Control. The plan will be developed in accordance with the Best Practice Erosion and Sediment Control guideline (IECA, 2008), which specifies sediment and erosion control requirements based on assessed erosion risk and estimated soil loss. Mitigation measures include: • Progressive rehabilitation of bare/ disturbed areas will be completed as soon as the area is no longer needed for construction; • Areas of bare earth will be limited to essential areas needed for the construction of Project infrastructure. Vegetation cover, mulch and other suitable methods to prevent dust generation will be adopted, where practicable; • Stockpiles (topsoil and subsoil) will be maintained to prevent windblown dust generation, especially during dry and/or windy conditions. This will include watering or covering of material as per the ESCP;	At all times throughout the life of the Project

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Potential Impacts	General Mitigation Measures	Timing
	• Maximum speed limits will be in place as applicable within the Study Area to avoid excessive dust generation. Speeds on public roads are to be observed as per road signage; • Restrict vehicles to approved access tracks (where constructed, or where approval for use exists with the landowner) and only vehicles required for the safe and essential construction activities will be allowed in work areas; • A construction water cart will be used to suppress dust during earthworks. Where watering is used, ensure that there is no surface ponding/pooling of water as per the ESCP; and • Promptly clean up spilled materials on traffic areas where the disturbance of the spilled material will generate harm/excessive dust.	
Stormwater Management	A Stormwater Management Plan is to be prepared for the Project. Additionally, the ESCP and the project-specific EMP will outline measures and controls to minimise potential impacts from chemical spills/leaks and from discharge of treated or untreated wastewater. Measures will include: • Safe storage of chemicals away from watercourses to ensure any spillages are contained; • Revegetation of soil to stabilise the land, reduce peak stormwater flows and reduce sediment discharge via stormwater runoff; • Use of non-residual and non-persistent herbicides to manage weeds onsite, to minimise the potential risk of harmful herbicide by-products entering the surface water receiving environment; • Installation and operation of a septic tank to service the operations and maintenance building will be designed and operated in accordance with relevant statutory requirements and Australian Standards. Regulated wastes will be removed from site and disposed in a suitable facility by a licensed operator; and • Increases in impervious areas will be limited to the footprint of buildings and infrastructure including carparks and internal access roads.	At all times throughout the life of the Project
Connectivity, fragmentation and barriers to movement	Connectivity is a linkage of landscapes that provides suitable habitat connections for fauna between two or more areas with suitable habitat. Connectivity is critical for maintaining healthy populations of organisms by promoting biological diversity through reproduction and allowing fauna to respond to environmental changes. Fragmentation and degradation of remnant vegetation can, in turn, disrupt essential ecosystems processes such as pollination, seed dispersal and regeneration. Smaller fragments of remnant vegetation are also vulnerable to invasive species, fire and other 'edge effects'. Mitigation measures to be implemented include: • Retention of riparian and remnant vegetation corridors that occur within the Project Area and allowing for regeneration along these corridors; and • Design of fencing to facilitate movement of fauna through the Impact Area where practicable and safe and so as not to impede movement within the wider Project Area.	Pre-construction, construction and decommissioning

7 Significant Impact Assessment

A Significant Impact Assessment has been undertaken to identify any residual impacts after the implementation of mitigation measures, with a focus on the Impact Area.

7.1 Legislative Requirements

Legislation considered for this SIA focusses on the EPBC Act, the Environmental Offsets Policy and relevant State legislation as outlined in Table 7.1.

Table 7.1: Relevant Environmental Legislation and Offset Framework

Framework	Summary
Commonwealth	
Environment Protection and Biodiversity Conservation Act 1999	• Protects and manages nationally significant matters and conservation of Australian biodiversity; • Provides national environmental assessment and approvals process; • Promotes ecologically sustainable development; and • Recognises the role of Indigenous people in conservation and ecological sustainability.
Environmental Offsets Policy 2023	• Provides guidance on the role of offsets in environmental impact assessments; and • Improves environmental outcomes through best practice offset principles.
MNES Significant Impact Guidelines 1.1	• Provides guidance on determining whether an action is likely to have a significant impact on a matter protected under the EPBC Act.
Offsets assessment guide	• Allows for quantification of impacts and offsets where the impacted protected matter is a threatened species or ecological community (not used as part of this assessment).
State	
Environmental Offsets Act 2014 (Qld)	• Outlines the offsets framework in Queensland; • Specifies the delivery of environmental offsets across jurisdictions; and • Provides a single point-of-truth for offsets in Queensland.
Environmental Offsets Regulation 2014	• Lists the MNES regulated under the *Environmental Offsets Act 2014* (Qld); and • Specifies prescribed activities.
Queensland Environmental Offsets Policy Version 1.10	• Details how offset proposals are assessed to ensure they meet the requirements of the *Environmental Offsets Act 2014* (Qld).
Significant Residual Impact Guideline	• Applied to assist in determining whether or not the Project will, or is likely to have a SRI on the MSES identified within the disturbance footprint; and • Includes Landscape Fragmentation and Connectivity Tool.

7.2 Matters of National Environmental Significance

Only MNES considered likely or known to occur within the Project Area have been included in the assessment i.e., the threatened species as outlined in Section 4. The assessments undertaken area based on MNES significant impact criteria as in *Significant Impact Guidelines 1.1 Matters of National Environmental Significance* (DoE 2013) (the Guidelines) and other relevant EPBC Act guidelines as references throughout this section.

7.2.1 Listed Threatened Species

7.2.1.1 Endangered Species

The Koala (*Phascolarctos cinereus*) (listed as endangered under the EPBC Act) is considered likely to occur in the Impact Area (Section 4 and Appendix G).

No Koala or evidence of their presence was recorded within the Impact Area during the habitat assessment, however a number of foraging and sheltering trees were identified.

Based on the absence of a local Koala population, the small Impact Area (7.65 ha), the industrialised context and proposed mitigation measures, the action is unlikely to have a significant impact on the Koala under the EPBC Act guidelines as identified in the Guidelines in Table 7.2.

7.2.1.2 Vulnerable Species

Although not observed during the habitat assessment surveys, the Squatter Pigeon (southern) (*Geophaps scripta scripta*) (listed as vulnerable under the EPBC Act) is considered likely to occur in the Impact Area (Section 4 and Appendix G):

The vulnerable species criteria in the Guidelines focusses on an 'important population of species' defined as a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:

- Key source populations either for breeding or dispersal;
- Populations that are necessary for maintain genetic diversity; and/or
- Populations that are near the limit for the species range.

Based on the small and degraded footprint (7.65 ha), absence of important populations in the area, availability of higher-quality habitat nearby and proposed mitigation measures, the action is unlikely to have a significant impact on the southern Squatter Pigeon under the EPBC Act guidelines. Refer to the SIA in Table 7.3 for more information.

7.2.2 Listed Migratory Species

The Osprey (*Pandion haliaetus*) (listed as migratory and marine under the EPBC Act), is considered likely to occur in the likelihood of occurrence assessment (Section 3.1.1.2 and Appendix G):

Given the marginal habitat within the small Impact Area (7.65 ha), the availability of higher-quality foraging and nesting habitat nearby, and proposed mitigation measures, the action is unlikely to result in a significant impact on the Osprey under the EPBC Act. Refer to the SIA in Table 7.4 for more information.

Table 7.2: SIA for EPBC Act listed Critically Endangered and Endangered Species Considered Likely to Occur Within Project Footprint

Criteria	Assessment of Nature and Extent of Impacts
Koala (*Phascolarctos cinereus)*	
Possibility that the action will lead to a long-term decrease in the size of the population	Unlikely Conservation Advice for Phascolarctos cinereus (Koala) combined populations of Qld, NSW and ACT (DAWE 2022) defines an important population of Koala as those that: • Have the potential to act as source populations to adjacent areas of suitable, or potentially suitable, habitat; • Exist in areas of climatically suitable refugia during periods of environmental stress including droughts, heatwaves, and long-term climate change; • Are genetically diverse; • Are disease free and/or exhibit low rates of infection with important pathogens; • Contain genes which may confer adaptation to current and future environmental stressors; and • Are geographical or environmental outliers within the species range. No Koalas were sighted or signs of their presence recorded during the habitat assessment surveys. Suitable foraging and potential dispersal habitat are present, however there are no records within 10 km. The Project footprint has been designed and revised to avoid and minimise impact to areas of higher habitat value to Koala while allowing for enhancement and protection of riparian corridors associated with Boat Creek adjacent to the Impact Area. Given the lack of evidence of a local population within the Project Area, and the relatively small size of the Impact Area (7.65 ha) it is considered unlikely that the Project would lead to a long-term decrease in the size of a population.
Possibility that the action will reduce the area of occupancy of the species	Unlikely No Koalas were sighted or signs of their presence recorded during the habitat assessment surveys. Suitable foraging and potential dispersal habitat are present, however there are no records within 10 km. The Impact Area is within an industrialised landscape with low quality habitat and provides negligible value as a refugia during times of stress. While the wider Project Area and the adjacent Boat Creek riparian area may provide value as potential corridors to allow movement of the species, the Impact Area is unlikely to be

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Criteria	Assessment of Nature and Extent of Impacts
	necessary for these processes. Given the long term disturbance from adjacent industry and future proposed projects, it is considered unlikely that the Impact Area would be recolonised. Indirect impacts (through land and water contamination) are a potential due to the nature of the action, however mitigation measures will be put in place to avoid this, therefore it is unlikely to action will reduce the area of occupancy of the species.
Possibility that the action will fragment an existing population into two or more populations	Unlikely Given the small size of the Impact Area (7.65 ha) and that it will not fragment existing habitat or movement corridors, it is considered unlikely that the action will result in fragmentation of existing populations.
Possibility that the action will adversely affect habitat critical to the survival of species	Unlikely Critical habitat for the Koala includes the following attributes necessary for survival of the species: • Food trees: Presence of preferred species such as Eucalyptus, Corymbia, Angophora – Eucalyptus and Corymbia/Blakella species are present within the Impact Area • Connectivity: Well-connected landscapes that support breeding and movement – the Impact Area does not create fragmentation of surround potential habitat and allows for connectivity between adjacent areas (for example, along Boat Creek). • Proximity to known populations or likelihood of recolonization – there are no known populations of Koala in the area surrounding the Impact Area. There are no records of Koala within 10 km. Given eh industrialised landscape it is unlikely the species would recolonise the area. • Landscape context: Includes refugia and metapopulation-supporting landscapes – no known metapopulations are present within the area surrounding the Impact Area. The Impact Area is within an industrialised landscape with low quality habitat and provides negligible value as a refugia during times of stress. The action is unlikely to adversely affect habitat critical to the survival of the Koala.
Possibility that the action will lead disrupt the breeding cycle of a population	Unlikely It is unlikely the activity will disrupt the breeding cycle of a population due to the small size of the Impact Area and the availability of breeding habitat in adjacent areas.

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Criteria	Assessment of Nature and Extent of Impacts
Possibility that the action will modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely The Impact Area is within an industrialised landscape with low quality habitat and provides negligible value as a refugia during times of stress. While the wider Project Area and the adjacent Boat Creek riparian area may provide higher value as potential habitat to allow movement of the species, the Impact Area is unlikely to be necessary for these processes. Given the long term disturbance from adjacent industry and future proposed projects, it is unlikely that the Impact Area would modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
Possibility that the action will result in invasive species that are harmful to critically endangered or endangered species' habitat	Unlikely Appropriate mitigation and management actions, including the development of a project-specific biosecurity management plan should be implemented. With such management in place, it is unlikely the action will result in the introduction or spread of weeds, such as rubber vine, that may cause the species to decline above that which the species would already normally be exposed to.
Possibility that the action will introduce disease that may cause the species to decline	Unlikely Appropriate mitigation and management actions, including the development of a project-specific biosecurity management plan should be implemented. With such management in place, it is unlikely the action will result in the introduction of a disease that may cause the species to decline above that which the species would already normally be exposed to.
Possibility that the action will interfere with the recovery of the species	Unlikely While short term, localised impacts on the koala may occur, it is unlikely that the action will result in interference with the recovery of the species as per the recovery objectives (e.g., maintaining habitat connectivity, disease management, climate resilience) outlined in the National Recovery Plan for the Koala (DAWE 2022).
Outcome	The Action is not expected to result a significant impact on the population of the Koala.

Table 7.3: SIA for EPBC Act listed Vulnerable Considered Likely to Occur Within the Project Footprint

Criteria	Assessment of Nature and Extent of Impacts
Squatter Pigeon (southern) (*Geophaps scripta scripta)*	
Possibility the action will lead to a long-term decrease in the size of an important population of a species	Unlikely The southern boundary (Border Rivers of northern NSW) of the known distribution of the Squatter pigeon is contracting northwards (DCCEEW 2023). Therefore, all relatively small isolated and sparsely distributed sub-populations occurring south of the Carnarvon Ranges in Central Queensland are considered to be important sub-populations of the subspecies. This includes, but is not limited to: • The population occurring in the Condamine River Catchment and Darling Downs of southern Queensland; and • The population known to occur in southern Queensland; and any population potentially occurring in northern NSW. Given that the Project Area is located to the north-east of the Carnarvon Ranges, populations likely to be present within the Project Area do not meet this definition. It is therefore unlikely that the Project will lead to a long-term decrease in the size of an important population.
Possibility the action will reduce the area of occupancy of an important population	Unlikely In 2000, the area of occupancy for the Squatter pigeon was considered to be 10,000 km^2 (DCCEEW 2023). The Project will result negligible impacts to available breeding, foraging and dispersal habitat for this species, no important populations have been identified within the Impact Area and it is therefore it is unlikely that the Project will reduce the area of occupancy of an important population.
Possibility the action will fragment an existing important population into two or more populations	Unlikely As discussed above, the potential population of Squatter pigeons likely to occur within the Impact Area is not considered an important population. The species is likely to be found in low densities. The species is able to move freely within the surrounding landscape and co-exists with the current land use. The impacts associated with the Project are unlikely to have an impact on the population and individuals can continue to disperse across the landscape and around the Project infrastructure.

Criteria	Assessment of Nature and Extent of Impacts
	It is unlikely that the construction and ongoing operation of the Project will fragment any existing populations into two or more populations.
Possibility the action will adversely affect habitat critical to the survival of a species	Unlikely Whilst there is no current critical habitat identified for the survival of the species, key habitat values for the Squatter pigeon are generally defined as the following: • Open forests to sparse open woodlands and scrub that are mostly dominated in the overstory by Eucalyptus, Corymbia, Acacia or Callitris species; • Remnant, regrowth or partly modified vegetation communities; and • Within 3 km of water bodies or water courses. The Impact Area consists of regrowth vegetation that fits the definition of partly modified vegetation communities as described in the species profile (DCCEEW 2025). Impacts to these habitat values are not considered to be significant for several reasons including but not limited to: • The construction and ongoing operation of the Project will not require the removal or modification of any farm dams or watercourses that currently provide habitat value to Squatter pigeon; and • Natural regeneration of the adjacent riparian corridors which will increase the availability of foraging and roosting habitats in proximity to potential water resources. As the broader region contains habitat of higher quality and supports water features, the Project is unlikely to have a significant impact on habitat critical to the survival of the species.
Possibility the action will disrupt the breeding cycle of an important population	Unlikely Squatter pigeons are capable of breeding through the year when suitable resources and breeding habitats are available (DoE 2025). The Impact Area contains relatively small (7.65 ha), marginal breeding habitat. Considering that the suitable breeding habitat is available in the broader region, and no important populations have been identified within the Project Area, it is unlikely that the Project will disrupt the breeding cycle of an important population.
Possibility the action will modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely

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Criteria	Assessment of Nature and Extent of Impacts
	Well-draining, gravelly, sandy or loam soils landscapes are often good indicators of natural foraging and breeding habitat for the Squatter pigeon. Open forest to woodland communities with patchy tussock-grassy understories support foraging and breeding requirements. There is an abundance of dense exotic grasses (Guinea grass) which dominate much of the non-remnant vegetation on site, lowering the habitat quality for Squatter pigeons within these habitats (TSSC 2015). With vegetation already modified within the Impact Area, the availability of abundance habitat in the wider area and the small size of the Impact Area, it is unlikely that the Project will negatively affect the availability or quality of habitat for the Squatter pigeon to the extent that the species is likely to decline.
Possibility the action will result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Unlikely Invasive flora and fauna species are prevalent within the Project Area. These include weed species that develop dense ground cover and predators including feral pigs. The Project will implement a Biosecurity Management Plan to mitigate the risk of further weed species introduction and also manage the invasive fauna species present on site. As such it is unlikely that the Project will result in new invasive species becoming established within or around the Project Area, nor will it result in an increase in the distribution or abundance of existing invasive species.
Possibility the action will introduce disease that may cause the species to decline	Unlikely Diseases that may impact the population of Squatter pigeon are poorly known. No species which may carry novel diseases will be introduced to the Impact Area as a result of the Project. It is unlikely that a disease may be introduced to the Impact Area that may cause the species to decline.
Possibility the action will interfere substantially with the recovery of the species.	Unlikely The Project infrastructure is concentrated within largely non-remnant vegetation which has dense coverage of introduced grasses which may impede the ability of Squatter pigeons to utilise the habitat. While there is no recovery plan for this species, the Conservation Advice (2015) was reviewed to identify threats to the species. Based on this review it is unlikely that the Project will interfere substantially with the recovery of the species.
Outcome	The Action is not expected to result a significant impact on the population of the Squatter pigeon.

Table 7.4: SIA for EPBC Act listed Migratory Species Considered Likely to Occur Within the Project Footprint

Criteria	Assessment of Nature and Extent of Impacts
Osprey (*Pandion haliaetus)*	
Possibility the action will substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrogeological cycles), destroy or isolate an area of important habitat for migratory species	Unlikely Whilst habitat suitable for the osprey is present in the southern part of the Project Area, that habitat is not likely to be reduced by works within the Impact Area. It is considered unlikely that the activity will substantially modify, destroy or isolate an area of important habitat for the osprey.
Possibility the action will result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species	Unlikely Invasive flora and fauna species are prevalent within the Project Area. These include weed species that develop dense ground cover and predators including feral pigs. The Project will implement a Biosecurity Management Plan to mitigate the risk of further weed species introduction and also manage the invasive fauna species present on site. As such it is considered unlikely that the Project will result in new invasive species becoming established within or around the Project Area, nor will it result in an increase in the distribution or abundance of existing invasive species.
Possibility the action will seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species	Unlikely Osprey typically breed from June through to September, with young fledging by October / November. The Impact Area contains relatively small (7.65 ha), marginal nesting and breeding habitat. Considering that the suitable breeding habitat is available in the broader region, and no ecologically significant proportion of the population has been identified within the Project Area, it is considered unlikely that the Project will disrupt the breeding cycle of an important population
Outcome	The Action is not expected to result a significant impact on the population of the Osprey

7.3 Matters of State Environmental Significance

Only MSES that were triggered in the environmental constraint's desktop assessment for the Impact Area and verified during site surveys (refer to Section 3.2.2) have been included in this assessment.

The assessment undertaken is based on the MSES significant residual impact (SRI) criteria in *Queensland Environmental Offsets Policy Significant Residual Impact Guideline* (DEHP 2014) (the State Guidelines). The MSES SRI criteria assessed are outlined in Table 7.5.

Table 7.5: MSES SRI Assessment Requirements

MSES SRI Criteria	Description	MSES SRI Assessment Required
Regulated vegetation	The Impact Area is mapped as Category C regrowth vegetation. Category R (regrowth within 50 m of a watercourse or drainage feature in the Great Barrier Reef catchment) endangered RE 12.3.3 Eucalyptus tereticornis woodland on Quaternary alluvium verified within the Project Area, but outside of the Impact Area. Vegetation clearing within the Gladstone State Development Area is managed under the MCU application process.	No
Connectivity areas	Landscape fragmentation and connectivity tool test results indicate the impact on connectivity areas is not significant.	No
Wetlands and watercourses	No wetlands or watercourses within the Impact Area.	No
Protected wildlife habitat	Habitat for threatened (endangered or vulnerable) wildlife and 5.72 ha of habitat for special least concern animals mapped across the two lots.	Yes (refer to Section 7.3.1)
Koala habitat in South- East Queensland	The Impact Area is outside of the South- East Queensland Koala district.	No
Protected areas	The Impact Area is not within a protected area	No
Fish habitat area and highly protected zones of State marine parks	No fish habitat areas mapped within the Impact Area.	No
Waterway providing for fish passage	No waterways within the Impact Area.	No
Marine plants	No marine environments or marine plants recorded within the Impact Area.	No
Legally secured offsets area	The Impact Area is not within a legally secured offset area	No

7.3.1 Protected wildlife habitat

7.3.1.1 Endangered and vulnerable wildlife habitat

Essential habitat is mapped for two endangered and one vulnerable species under the VMA (refer to Appendix A) as follows:

- Eastern Curlew (*Numenius madagascariensis)* - Endangered*;*
- Koala (*Phascolarctos cinereus)* - Endangered; and
- Western Alaskan bar-tailed godwit (*Limosa lapponica baueri)* - Vulnerable.

Of these, the verified likelihood of occurrence assessment (refer to Section 4) identified the Koala as being likely to occur within the Impact Area.

These species have been assessed against the significant residual impact criteria identified in the State Guidelines in Table 7.6.

Table 7.6: SRI Assessment for NCA listed Endangered or Vulnerable Species

Criteria	Response
The action is likely to lead to a long-term decrease in the size of local population	Unlikely None of the identified species were sighted, nor were signs of their presence recorded, during habitat assessment surveys. Suitable foraging and potential dispersal habitat are present for the Koala, but there are no records within 10 km. No intertidal or coastal roosting/foraging habitat is present within or adjacent to the Impact Area. The Project footprint (7.65 ha) has been designed to avoid and minimise impact to areas of higher habitat value, while protecting riparian corridors (Boat Creek). Given the absence of evidence for a local population and the small scale of impact, a long-term population decrease is not expected.
The action is likely to reduce the extent of occurrence of the species	Unlikely No Koalas, Eastern curlews, or Bar-tailed godwits were detected during surveys. The Impact Area is an industrialised landscape with low-quality vegetation and negligible refugia value. Migratory shorebirds depend on intertidal habitats, which are absent from the Impact Area. With mitigation for indirect risks (e.g. water quality protection), the action is not expected to reduce extent of occurrence.
The action is likely to fragment existing population	Unlikely The small size of the Impact Area (7.65 ha) means it will not fragment Koala habitat or disrupt movement corridors. For migratory shorebirds, fragmentation is not relevant due to the absence of intertidal or roosting habitat.
The action is likely to result in genetically distinct populations forming as a result of habitat isolation	Unlikely For Koala, given the absence of a local population and the marginal value of habitat, the action will not result in genetic isolation. For Eastern Curlew and Bar-tailed Godwit, this criterion is not applicable given their migratory ecology.

Criteria	Response
The action is likely to result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species habitat	Unlikely Invasive flora and fauna species (e.g. dense groundcover weeds, feral pigs) are already present in the Project Area. A Biosecurity Management Plan will mitigate further introductions and manage existing pests. There is no risk to intertidal habitats used by shorebirds, as these are not present within or adjacent to the Impact Area.
The action is likely to introduce disease that may cause the population to decline	Unlikely With implementation of a project-specific Biosecurity Management Plan, it is unlikely the action would introduce novel diseases that may cause species decline.
The action is likely to interfere with the recovery of the species	Unlikely While short-term, localised impacts may occur, they will not interfere with Koala recovery objectives given the absence of a local population. Eastern Curlew and Bar-tailed Godwit recovery actions focus on intertidal habitat protection, which is not affected by this Project.
The action is likely to cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species.	Unlikely The Impact Area contains marginal terrestrial habitat only. No intertidal, coastal roosting or breeding sites used by Eastern Curlew or Bar-tailed Godwit occur within or near the Project Area. The Project is therefore unlikely to disrupt ecologically significant locations.
Outcome	The action is not expected to result in a significant residual impact on essential habitat for the Koala, Eastern Curlew or Western Alaskan bar-tailed godwit.

7.4 Summary

The results of the SIA assessment indicate that due to the marginal habitat within the small Impact Area (7.65 ha), the availability of higher-quality foraging and nesting habitat nearby, and proposed mitigation measures, the action is unlikely to result in a significant impact to MNES or to MSES is considered likely to occur as a result of the action.

Table 7.7 provide a summary of the outcomes of the SIA for species that are considered known or likely to be present within the Impact Area, including species with mapped essential habitat under the VMA.

Table 7.7: Summary of SIA

Matter	Findings	Outcome
MNES		
Threatened fauna	Two threatened species (Koala and Squatter Pigeon) are likely to occur within the Project Area. However, the Impact Area (7.65 ha) supports only low-quality, fragmented habitat with minimal connectivity. No records occur within or immediately adjacent to the Impact Area.	No significant residual impact likely
Migratory and marine fauna	The Osprey (Pandion haliaetus) are known to occur in the Project Area. No important nesting, roosting or foraging habitats are present within the Impact Area.	No significant residual impact likely

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Matter	Findings	Outcome
MSES		
Protected wildlife habitat	Mapped habitat for threatened wildlife overlaps the Project Area. Field surveys confirmed habitat is degraded and dominated by regrowth or exotic species, with negligible value for supporting threatened wildlife populations. Eastern Curlew (Numenius madagascariensis) and Western Alaskan Bar-tailed Godwit (Limosa lapponica baueri) were considered. No important nesting, roosting or foraging habitats are present within the Impact Area. Intertidal habitats required by shorebirds are absent.	No significant residual impact likely

8 Conclusion

This Preliminary Significant Impact Assessment has evaluated the potential impacts of Project Halogen on MNES and MSES within the proposed Impact Area at Yarwun, Gladstone. The assessment has drawn upon a combination of desktop review, field-based habitat surveys and verification of regional ecosystems to identify environmental values and inform potential risks.

The Impact Area is comprised largely of regrowth vegetation with scattered remnant trees, reflecting a history of disturbance within an industrialised landscape. While suitable foraging and shelter habitat for threatened fauna such as the Koala (*Phascolarctos cinereus*), Squatter Pigeon (*Geophaps scripta scripta*) and Osprey (*Pandion haliaetus*) was identified, no direct observations of these species were recorded during surveys.

The vegetation present does not meet the diagnostic criteria for a Threatened Ecological Community. BioCondition scores for the site indicate moderately dysfunctional regrowth communities, though patches of remnant riparian vegetation adjacent to Boat Creek (and outside of the Impact Area) provide higher relative habitat values and ecological connectivity.

When assessed against the Commonwealth's *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* and the Queensland *Environmental Offsets Policy Significant Residual Impact Guideline*, it is considered unlikely that the Project will result in a significant residual impact on MNES or MSES. Potential risks such as habitat loss, fragmentation, mortality of fauna, spread of invasive species, and indirect impacts (e.g. noise, dust, lighting, and stormwater management) can be effectively avoided, mitigated or managed through the application of targeted measures, including pre-clearance surveys, delineation of no-go zones, implementation of fauna spotter/catchers, progressive rehabilitation, erosion and sediment control, and biosecurity management planning.

Overall, the findings of this preliminary assessment indicate that, with appropriate avoidance and mitigation strategies, the Project is not expected to significantly impact threatened species, migratory species or other matters protected under State and Commonwealth legislation.

8.1 Recommendations

The following recommendations are provided:

- Targeted fauna surveys should be undertaken to refine species-specific habitat use, confirm the presence or absence of MNES within the Project Area, and ensure ongoing compliance with legislative requirements; and
- A project-specific Environmental Management Plan should be developed taking into consideration the Mitigation measures provided in Section 6, to include a biosecurity management plan, bushfire management plan, stormwater management plan and erosion and sediment control plan.

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Limitations

This report has been prepared for the use of the client, Grenof Water Technologies Pty Ltd, for the purpose of this commission only.

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This report does not provide a complete assessment of the environmental status of the site but is limited to the scope defined herein.

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APPENDIX A:

Desktop Searches

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: 24-Jun-2025

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

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

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

World Heritage Properties:	1
National Heritage Places:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	8
Listed Threatened Species:	63
Listed Migratory Species:	55

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:	99
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	1

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	25
Key Ecological Features (Marine):	None
Biologically Important Areas:	5
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [Resource Information]

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

National Heritage Places [Resource Information]

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

Listed Threatened Ecological Communities [Resource Information]

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

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area	In feature area
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area	In buffer area only
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In feature area
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area	In feature area
Weeping Myall Woodlands	Endangered	Community may occur within area	In feature area

Listed Threatened Species [Resource Information]

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

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area	In buffer area only
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Critically Endangered	Species or species habitat may occur within area	In feature area
Epthianura crocea macgregori Capricorn Yellow Chat, Yellow Chat (Dawson) [67090]	Critically Endangered	Species or species habitat may occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to 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
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Pluvialis squatarola](#) Grey Plover [865]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Pterodroma neglecta neglecta](#) Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In buffer area only
[Rostratula australis](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
[Sternula albifrons](#) Little Tern [82849]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Thalassarche impavida](#) Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
[Turnix melanogaster](#) Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
MAMMAL			
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
[Dasyurus hallucatus](#) Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area	In feature area
[Macroderma gigas](#) Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat may occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Breeding known to occur within area	In buffer area only
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat known to occur within area	In feature area
PLANT			
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cossinia australiana Cossinia [3066]	Endangered	Species or species habitat may occur within area	In feature area
Cupaniopsis shirleyana Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cycas megacarpa [55794]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Cycas ophiolitica [55797]	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 likely to occur within area	In feature area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area	In feature area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
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
Lepidochelys olivacea			
Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Natator depressus			
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
SHARK			
Carcharias taurus (east coast population)			
Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Foraging, feeding or related behaviour may occur within area	In buffer area only
Carcharodon carcharias			
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Pristis zijsron			
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area	In buffer area only
Rhincodon typus			
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sphyrna lewini			
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus			
Common Noddy [825]		Species or species habitat known to occur within 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	In feature area
[Fregata ariel](#) Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area	In buffer area only
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only
[Macronectes giganteus](#) Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
[Phaethon lepturus](#) White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
[Sternula albifrons](#) Little Tern [82849]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Thalassarche impavida](#) Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
[Anoxypristis cuspidata](#) Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area	In buffer area only
[Balaenoptera edeni](#) Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
[Carcharhinus longimanus](#) Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Carcharias taurus](#) Grey Nurse Shark [64469]		Foraging, feeding or related behaviour may occur within area	In buffer area only
[Carcharodon carcharias](#) White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Crocodylus porosus](#) Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area	In buffer area only
[Dugong dugon](#) Dugong [28]		Species or species habitat known to occur within area	In buffer area only
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
[Lamna nasus](#) Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In buffer area only
[Lepidochelys olivacea](#) Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area	In buffer area only
[Megaptera novaeangliae](#) Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Mobula alfredi as Manta alfredi			
Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In buffer area only
Mobula birostris as Manta birostris			
Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
Natator depressus			
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Orcaella heinsohni			
Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Orcinus orca			
Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Pristis zijsron			
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area	In buffer area only
Rhincodon typus			
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sousa sahulensis as Sousa chinensis			
Australian Humpback Dolphin [87942]	Vulnerable	Breeding known to occur within area	In buffer area only
Migratory Terrestrial Species			
Cuculus optatus			
Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Arenaria interpres](#) Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
[Calidris ruficollis](#) Red-necked Stint [860]		Species or species habitat known to occur within area	In buffer area only
[Calidris tenuirostris](#) Great Knot [862]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Charadrius mongolus](#) Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Limnodromus semipalmatus](#) Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius phaeopus Whimbrel [849]		Species or species habitat known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat known to occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Tringa brevipes Grey-tailed Tattler [851]		Species or species habitat known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area	In buffer area only
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat known to occur within area	In feature area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
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 known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
[Calidris ruficollis](#) Red-necked Stint [860]		Species or species habitat known to occur within area overfly marine area	In buffer area only
[Calidris tenuirostris](#) Great Knot [862]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In buffer area only
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Charadrius mongolus](#) Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Charadrius ruficapillus](#) Red-capped Plover [881]		Species or species habitat known to occur within area overfly marine area	In buffer area only
[Fregata ariel](#) Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area	In buffer area only
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius phaeopus Whimbrel [849]		Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat known to occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In buffer area only
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Symposiachrus trivirgatus as Monarcha trivirgatus			
Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area	In feature area
Thalassarche impavida			
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Tringa brevipes as Heteroscelus brevipes			
Grey-tailed Tattler [851]		Species or species habitat known to occur within area	In buffer area only
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Tringa stagnatilis			
Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Xenus cinereus			
Terek Sandpiper [59300]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In buffer area only
Fish			
Acentronura tentaculata			
Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In buffer area only
Campichthys tryoni			
Tryon's Pipefish [66193]		Species or species habitat may occur within area	In buffer area only
Choeroichthys brachysoma			
Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area	In buffer area only
Corythoichthys amplexus			
Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area	In buffer area only
Corythoichthys haematopterus Reef-top Pipefish [66201]		Species or species habitat may occur within area	In buffer area only
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area	In buffer area only
Corythoichthys ocellatus Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area	In buffer area only
Corythoichthys paxtoni Paxton's Pipefish [66204]		Species or species habitat may occur within area	In buffer area only
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area	In buffer area only
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area	In buffer area only
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area	In buffer area only
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area	In buffer area only
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area	In buffer area only
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area	In buffer area only
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area	In buffer area only
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area	In buffer area only
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area	In buffer area only
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In buffer area only
Hippocampus bargibanti Pygmy Seahorse [66721]		Species or species habitat may occur within area	In buffer area only
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area	In buffer area only
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area	In buffer area only
Hippocampus zebra Zebra Seahorse [66241]		Species or species habitat may occur within area	In buffer area only
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Micrognathus andersonii Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area	In buffer area only
Nannocampus pictus Painted Pipefish, Reef Pipefish [66263]		Species or species habitat may occur within area	In buffer area only
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area	In buffer area only
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In buffer area only
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In buffer area only
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In buffer area only
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In buffer area only
Mammal			
Dugong dugon Dugong [28]		Species or species habitat known to occur within area	In buffer area only
Reptile			
Aipysurus duboisii Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area	In buffer area only
Aipysurus laevis Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area	In buffer area only
Aipysurus mosaicus as Aipysurus eydouxii Mosaic Sea Snake [87261]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Emydocephalus annulatus Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area	In buffer area only
Hydrophis hardwickii as Lapemis hardwickii Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area	In buffer area only
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area	In buffer area only
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		Species or species habitat may occur within area	In buffer area only
Hydrophis peronii as Acalyptophis peronii Horned Sea Snake [93509]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hydrophis platura as Pelamis platurus Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area	In buffer area only
Hydrophis stokesii as Astrotia stokesii Stokes' Sea Snake [93510]		Species or species habitat may occur within area	In buffer area only
Laticauda colubrina Yellow-lipped Sea Krait [1092]		Species or species habitat may occur within area	In buffer area only
Laticauda laticaudata a sea krait [1093]		Species or species habitat may occur within area	In buffer area only
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

Whales and Other Cetaceans			[Resource Information]
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Breeding known to occur within area	In buffer area only
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only

Habitat Critical to the Survival of Marine Turtles			[Resource Information]
Scientific Name	Behaviour	Presence	Buffer Status
All year (Jun - Aug)			
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur	In buffer area only

Extra Information

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status
Port Curtis	QLD	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
CQ-H2 Surplus Industrial Water Pipeline (SIWP) Project	2024/09935		Assessment	In buffer area only
Renewable Diesel and Sustainable Aviation Fuel Project	2022/09369		Completed	In buffer area only
Controlled action				
Blackwater to Gladstone Gas Pipeline Project	2011/6034	Controlled Action	Completed	In feature area
Clinton Vessel Interaction Project - Clinton Widening, Qld	2017/7976	Controlled Action	Post-Approval	In buffer area only
Construct and operate 447km high pressure gas transmission pipeline	2009/4976	Controlled Action	Post-Approval	In feature area
Construction of a Chlor-Alkali/Ethylene Di-Chlorid	2003/922	Controlled Action	Completed	In buffer area only
Construction of a Chlor-Alkali-Ethylene Di-Chloride (CA/EDC) Plant at the Gladst	2002/764	Controlled Action	Completed	In feature area
Construction of a high pressure buried gas pipeline, Kogan to Gladstone, QLD	2009/5029	Controlled Action	Post-Approval	In buffer area only
Development of the Yarwun Coal Terminal	2012/6348	Controlled Action	Completed	In buffer area only
Gas Pipeline with Alternative Pipleine to Supply Natural Gas Liquefaction Park	2008/4096	Controlled Action	Post-Approval	In buffer area only
Gladstone New Fuels Development Project - stage 2A	2014/7241	Controlled Action	Completed	In buffer area only
H2-Hub??? Gladstone - Export-class Green Hydrogen and Ammonia Complex	2021/9049	Controlled Action	Referral Decision	In feature area
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				
LNG Plant and Ancillary onshore and marine facilities	2009/4977	Controlled Action	Post-Approval	In buffer area only
Queensland Curtis LNG Project - LNG Marine Facilities	2008/4401	Controlled Action	Post-Approval	In feature area
Queensland Curtis LNG Project - Pipeline Network	2008/4399	Controlled Action	Post-Approval	In buffer area only
Talisman Saber 2005 Military Exercise	2004/1819	Controlled Action	Post-Approval	In buffer area only
The Arrow Gas Transmission Pipeline, Gladstone to Curtis Island	2009/5008	Controlled Action	Post-Approval	In feature area
Not controlled action				
Calcining Plant	2001/193	Not Controlled Action	Completed	In buffer area only
Fishermans Landing site conversion for Lime Kiln	2002/740	Not Controlled Action	Completed	In buffer area only
Gladstone Energy and Ammonia Project, Qld	2018/8305	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
Project Sun Liquefied Natural Gas Plant and Pipeline	2008/3994	Not Controlled Action	Completed	In feature area
Replacement of Existing Processing Plant with a smaller Technology Demonstration Plant	2009/5064	Not Controlled Action	Completed	In buffer area only
Referral decision				
Gas Transmission Pipeline to supply Natural Gas Liquefaction Park	2008/4061	Referral Decision	Completed	In buffer area only

Biologically Important Areas			[Resource Information]
Scientific Name	Behaviour	Presence	Buffer Status
Dolphins			
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Breeding	Known to occur	In buffer area only
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur	In buffer area only
Seabirds			

Scientific Name	Behaviour	Presence	Buffer Status
Ardenna pacifica			
Wedge-tailed Shearwater [84292]	Foraging	Likely to occur	In buffer area only
Sharks			
Carcharias taurus			
Grey Nurse Shark [64469]	Foraging	Known to occur	In buffer area only
Whales			
Megaptera novaeangliae			
Humpback Whale [38]	Breeding and calving	Known to occur	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 is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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Department of the Environment, Tourism, Science and Innovation

Environmental Reports

Biodiversity and Conservation Values

Biodiversity Planning Assessments and Aquatic Conservation Assessments

For the selected area of interest

Lot: 1 Plan: MPH32292

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 co-ordinates" option, the resulting assessment area encompasses an area extending from 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 field survey may be required to validate values on the ground.

Please direct queries about these reports to: biodiversity.planning@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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Summary Information

Tables 1 to 8 provide an overview of the AOI with respect to selected topographic and environmental values.

Table 1: Details for area of interest: Lot: 1 Plan: MPH32292, with area 15.49 ha

Local Government(s)	
Gladstone Regional	
Bioregion(s)	**Subregion(s)**
Southeast Queensland	Burnett - Curtis Hills and Ranges
Catchment(s)	
Calliope	

The following table identifies available Biodiversity Planning Assessments (BPAs) and Aquatic Conservation Assessments (ACAs) with respect to the AOI.

Table 2: Available Biodiversity Planning and Aquatic Conservation Assessments

Biodiversity Planning Assessment(s)	Aquatic Conservation Assessment(s) (riverine)	Aquatic Conservation Assessment(s) (non-riverine)
Southeast Queensland v4.1	Great Barrier Reef Catchments v1.1	Great Barrier Reef Catchments v.1.3

Table 3: Remnant regional ecosystems within the AOI as per the Qld Herbarium's 'biodiversity status'

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.02	0.13
Of concern	0.02	0.16
No concern at present	0.00	0.00

The following table identifies the extent and proportion of the user specified area of interest (AOI) which is mapped as being of "State", "Regional" or "Local" significance via application of the Queensland Department of the Environment, Tourism, Science and Innovation's *Biodiversity Assessment and Mapping Methodology* (BAMM).

Table 4: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
State	0.04	0.29

Table 5: Non-riverine wetlands intersecting the AOI

(No Records)

NB. The figures presented in the table above are derived from the relevant non-riverine Aquatic Conservation Assessment(s). Later releases of wetland mapping produced via the Queensland Wetland Mapping Program may provide more recent information in regards to wetland extent.

Table 6: Named waterways intersecting the AOI

Name	Permanency
SANDY CREEK	Non-perennial

Refer to **Map 1** for general locality information.

The following two tables identify the extent and proportion of the user specified AOI which is mapped as being of "Very High", "High", "Medium", "Low", or "Very Low" aquatic conservation value for riverine and non-riverine wetlands via application of the Queensland Department of the Environment, Tourism, Science and Innovation's *Aquatic Biodiversity Assessment and Mapping Method* (AquaBAMM).

Table 7: Summary table, aquatic conservation significance (riverine)

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	15.49	99.98

Table 8: Summary table, aquatic conservation significance (non-riverine)

(No Records)

Biodiversity Planning Assessments

Introduction

The Department of the Environment, Tourism, Science and Innovation (DETSI) attributes biodiversity significance on a bioregional scale through a Biodiversity Planning Assessment (BPA). A BPA involves the integration of ecological criteria using the *Biodiversity assessment and Mapping Methodology* (BAMM) and is developed in two stages: 1) **diagnostic criteria**, and 2) **expert panel criteria**. The diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion, while the expert panel criteria allows for the refinement of the mapped information from the diagnostic output by incorporating local knowledge and expert opinion.

The BAMM methodology has application for identifying areas with various levels of significance solely for biodiversity reasons. These include threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetlands or other types of habitat important for the maintenance of biodiversity or ecological processes. While natural resource values such as dryland salinity, soil erosion potential or land capability are not dealt with explicitly, they are included to some extent within the biodiversity status of regional ecosystems recognised by the DETSI. Biodiversity Planning Assessments (BPAs) assign three levels of overall biodiversity significance.

- **State significance** - areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales. In addition, areas flagged as being of State significance due to the presence of endangered, vulnerable and/or near threatened taxa, are identified as "State Habitat for EVNT taxa".
- **Regional significance** - areas assessed as being significant for biodiversity at the subregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance.
- **Local significance and/or other values** - areas assessed as not being significant for biodiversity at state or regional scales. Local values are of significance at the local government scale.

For further information on released BPAs and a copy of the underlying methodology, go to:

http://www.qld.gov.au/environment/plants-animals/biodiversity/planning/

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

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

The following table identifies the extent and proportion of the user specified AOI which is mapped as being of "State", "Regional" or "Local" significance via application of the BAMM.

Table 9: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
State	0.04	0.29

Refer to **Map 2** for further information.

Diagnostic Criteria

Diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion. These criteria are diagnostic in that they are used to filter the available data and provide a "first-cut" or initial determination of biodiversity significance. This initial assessment is then combined through a second group of other essential criteria.

A description of the individual diagnostic criteria is provided in the following sections.

Criteria A. Habitat for EVNT taxa: Classifies areas according to their significance based on the presence of endangered, vulnerable and/or rare (EVNT) taxa. EVNT taxa are those scheduled under the *Nature Conservation Act 1992* and/or the *Environment Protection and Biodiversity Conservation Act 1999*. It excludes highly mobile fauna taxa which are instead considered in Criterion H and brings together information on EVNT taxa using buffering of recorded sites or habitat suitability models (HSM) where available.

Criteria B. Ecosystem value: Classifies on the basis of biodiversity status of regional ecosystems, their extent in protected areas (presence of poorly conserved regional ecosystems), the presence of significant wetlands; and areas of national importance such as the presence of Threatened Ecological Communities, World Heritage areas and Ramsar

sites. Ecosystem value is applied at a bioregional (**B1**) and regional (**B2**) scale.

Criteria C. Tract size: Measures the relative size of tracts of vegetation in the landscape. The size of any tract is a major indicator of ecological significance, and is also strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts.

Criteria D. Relative size of regional ecosystems: Classifies the relative size of each regional ecosystem unit within its bioregion (**D1**) and its subregion (**D2**). Remnant units are compared with all other occurrences with the same regional ecosystem. Large examples of a regional ecosystem are more significant than smaller examples of the same regional ecosystem because they are more representative of the biodiversity values particular to the regional ecosystem, are more resilient to the effects of disturbance, and constitute a significant proportion of the total area of the regional ecosystem.

Criteria F. Ecosystem diversity: Is an indicator of the number of regional ecosystems occurring within an area. An area with high ecosystem diversity will have many regional ecosystems and ecotones relative to other areas within the bioregion.

Criteria G. Context and connection: Represents the extent to which a remnant unit incorporates, borders or buffers areas such as significant wetlands, endangered ecosystems; and the degree to which it is connected to other vegetation.

A summary of the biodiversity status based upon the diagnostic criteria is provided in the following table.

Table 10: Summary of biodiversity significance based upon diagnostic criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Regional	Remnant contains at least 1 Vulnerable or Near Threatened species (A)	0.04	0.29

Assessment of diagnostic criteria with respect to the AOI

The following table reflects an assessment of the individual diagnostic criteria noted above in regards to the AOI.

Table 11: Assessment of individual diagnostic criteria with respect to the AOI

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
A: Habitat for EVNT Taxa	0.00	0.00	0.04	0.29	0.00	0.00	0.00	0.00
B1: Ecosystem Value (Bioregion)	0.00	0.00	0.00	0.00	0.04	0.29	0.00	0.00
B2: Ecosystem Value (Subregion)	0.00	0.00	0.00	0.00	0.04	0.29	0.00	0.00
C: Tract Size	0.00	0.00	0.04	0.29	0.00	0.00	0.00	0.00
D1: Relative RE Size (Bioregion)	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.29
D2: Relative RE Size (Subregion)	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.29
F: Ecosystem Diversity	0.00	0.00	0.04	0.29	0.00	0.00	0.00	0.00
G: Context and Connection	0.04	0.29	0.00	0.00	0.00	0.00	0.00	0.00

Other Essential Criteria

Other essential criteria (also known as expert panel criteria) are based on non-uniform information sources and which may rely more upon expert opinion than on quantitative data. These criteria are used to provide a "second-cut" determination of biodiversity significance, which is then combined with the diagnostic criteria for an overall assessment of relative biodiversity significance. A summary of the biodiversity status based upon the other essential criteria is provided in the following table.

Table 12: Summary of biodiversity significance based upon other essential criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
State	Remnant contains Core Habitat for Priority Taxa (H) & Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I) & Remnant forms part of a bioregional corridor (J)	0.04	0.29

A description of each of the other essential criteria and associated assessment in regards to the AOI is provided in the following sections.

Criteria H. Essential and general habitat for priority taxa: Priority taxa are those which are at risk or of management concern, taxa of scientific interest as relictual (ancient or primitive), endemic taxa or locally significant populations (such as a flying fox camp or heronry), highly specialised taxa whose habitat requirements are complex and distributions are not well correlated with any particular regional ecosystem, taxa important for maintaining genetic diversity (such as complex spatial patterns of genetic variation, geographic range limits, highly disjunct populations), taxa critical for management or monitoring of biodiversity (functionally important or ecological indicators), or economic and culturally important taxa.

Criteria I. Special biodiversity values: areas with special biodiversity values are important because they contain multiple taxa in a unique ecological and often highly biodiverse environment. Areas with special biodiversity values can include the following:

- Ia - centres of endemism - areas where concentrations of taxa are endemic to a bioregion or subregion are found.
- Ib - wildlife refugia (Morton *et al*. 1995), for example, islands, mound springs, caves, wetlands, gorges, mountain ranges and topographic isolates, ecological refuges, refuges from exotic animals, and refuges from clearing. The latter may include large areas that are not suitable for clearing because of land suitability/capability.
- Ic - areas with concentrations of disjunct populations.
- Id - areas with concentrations of taxa at the limits of their geographic ranges.
- Ie - areas with high species richness.
- If - areas with concentrations of relictual populations (ancient and primitive taxa).
- Ig - areas containing REs with distinct variation in species composition associated with geomorphology and other environmental variables.
- Ih - an artificial waterbody or managed/manipulated wetland considered by the panel/s to be of ecological significance.
- Ii - areas with a high density of hollow-bearing trees that provide habitat for animals.
- Ij - breeding or roosting sites used by a significant number of individuals.
- Ik - climate change refuge.

The following table identifies the value and extent area of the Other Essential Criteria H and I within the AOI.

Table 13: Relative importance of expert panel criteria (H and I) used to access overall biodiversity significance with respect to the AOI

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
H: Core Habitat Priority Taxa	0.04	0.29	0.00	0.00	0.00	0.00	0.00	0.00
Ia: Centres of Endemism	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ib: Wildlife Refugia	0.04	0.29	0.00	0.00	0.00	0.00	0.00	0.00
Ic: Disjunct Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
Id: Limits of Geographic Ranges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ie: High Species Richness	0.00	0.00	0.04	0.29	0.00	0.00	0.00	0.00
If: Relictual Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ig: Variation in Species Composition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ih: Artificial Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ii: Hollow Bearing Trees	0.04	0.29	0.00	0.00	0.00	0.00	0.00	0.00
Ij: Breeding or Roosting Site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ik: Climate Refugia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NB. Whilst biodiversity values associated with Criteria I may be present within the site (refer to tables 12 and 15), for the New England Tableland and Central Queensland Coast BPAs, area and % area figures associated with Criteria Ia through to Ij cannot be listed in the table above (due to slight variations in data formats between BPAs).

Criteria J. Corridors: areas identified under this criterion qualify either because they are existing vegetated corridors important for contiguity, or cleared areas that could serve this purpose if revegetated. Some examples of corridors include riparian habitats, transport corridors and "stepping stones".

Bioregional and subregional conservation corridors have been identified in the more developed bioregions of Queensland through the BPAs, using an intensive process involving expert panels. Map 3 displays the location of corridors as identified under the Statewide Corridor network. The Statewide Corridor network incorporates BPA derived corridors and for bioregions where no BPA has been assessed yet, corridors derived under other planning processes. *Note: as a result of updating and developing a statewide network, the alignment of corridors may differ slightly in some instances when compared to those used in individual BPAs.*

The functions of these corridors are:

- **Terrestrial** Bioregional corridors, in conjunction with large tracts of remnant vegetation, maintain ecological and evolutionary processes at a landscape scale, by:

  - Maintaining long term evolutionary/genetic processes that allow the natural change in distributions of species and connectivity between populations of species over long periods of time;
  - Maintaining landscape/ecosystems processes associated with geological, altitudinal and climatic gradients, to allow for ecological responses to climate change;
  - Maintaining large scale seasonal/migratory species processes and movement of fauna;
  - Maximising connectivity between large tracts/patches of remnant vegetation;
  - Identifying key areas for rehabilitation and offsets; and

- **Riparian** Bioregional Corridors also maintain and encourage connectivity of riparian and associated ecosystems.

The location of the corridors is determined by the following principles:

- Terrestrial

  - Complement riparian landscape corridors (i.e. minimise overlap and maximise connectivity);
  - Follow major watershed/catchment and/or coastal boundaries;
  - Incorporate major altitudinal/geological/climatic gradients;

- Include and maximise connectivity between large tracts/patches of remnant vegetation;
- Include and maximise connectivity between remnant vegetation in good condition; and

- Riparian

- Located on the major river or creek systems within the bioregion in question.

The total extent of remnant vegetation triggered as being of "State", "Regional" or "Local" significance due to the presence of an overlying BPA derived terrestrial or riparian corridor within the AOI, is provided in the following table. For further information on how remnant vegetation is triggered due to the presence of an overlying BPA derived corridor, refer to the relevant landscape BPA expert panel report(s).

Table 14: Extent of triggered remnant vegetation due to the presence of BPA derived corridors with respect to the AOI

Biodiversity Significance	Area (Ha)	% of AOI
State	0.04	0.29

NB: area figures associated with the extent of corridor triggered remnant vegetation are only available for those bioregions where a BPA has been undertaken.

Refer to **Map 3** for further information.

Threatening process/condition (Criteria K) - areas identified by experts under this criterion may be used to amend (upgrade or downgrade) biodiversity significance arising from the "first-cut" analysis. The condition of remnant vegetation is affected by threatening processes such as weeds, ferals, grazing and burning regime, selective timber harvesting/removal, salinity, soil erosion, and climate change.

Assessment of Criteria K with respect to the AOI is not currently included in the "Biodiversity and Conservation Values" report, as it has not been applied to the majority of Queensland due to data/information limitations and availability.

Special Area Decisions

Expert panel derived "Special Area Decisions" are used to assign values to Other Essential Criteria. The specific decisions which relate to the AOI in question are listed in the table below.

Table 15: Expert panel decisions for assigning levels of biodiversity significance with respect to the AOI

Decision Number	Description	Panel Recommended Significance	Criteria Values
seqn_l_01	Terrestrial bioregional corridors	State or Regional	Criterion J
seqn_l_50	Riparian lowland forest systems (other than riparian/gallery rainforests systems)	Regional	Ib (wildlife refugia): VERY HIGH Ie (high species richness: HIGH Ii (hollow bearing trees): VERY HIGH

Expert panel decision descriptions:

Decision Number	Description
seqn_l_01	The expert panel reviewed the existing bioregional corridors for northern SEQ. Corridors were assigned as being of State or Regional significance. For further information, refer to sections 2.3.2 and 3.2 of this report.

Decision Number	Description
seqn_l_50	Riparian lowland forest ecosystems are important components of the lowland landscape, frequently exhibiting higher species richness and abundance than surrounding habitats. They act as movement pathways along riparian systems for a number of species, especially aves. They also often provide critical resources for many species in terms of food, shelter and nesting site. For example, the seasonal flowering of melaleuca is important for species of honeyeaters, whilst narrow bands of flooded gum along watercourses are significant habitat for koalas *Phascolarctos cinereus*, especially in times of drought. Large trees in these systems also act as a source of nest hollows for many species of birds, bats and arboreal mammals (Lovett & Price 2007). Due to historical and preferential clearing in SEQ, remaining systems are often heavily fragmented and have undergone a substantial reduction in their extent. In many areas, condition is often poor and subject to substantial weed problems. Wildlife refugia (Criterion Ib). High species richness (Criterion Ie). Larger trees in such systems are often a significant source of nest hollows (Criterion Ii). Note - for the same decision relevant to the southern portion of the SEQ bioregion refer to seqs_l_57.

Aquatic Conservation Assessments

Introduction

The Aquatic Biodiversity Assessment and Mapping Method or AquaBAMM (Clayton *et al.* 2006), was developed to assess conservation values of wetlands in queensland, and may also have application in broader geographical contexts. It is a comprehensive method that uses available data, including data resulting from expert opinion, to identify relative wetland conservation/ecological values within a specified study area (usually a catchment). The product of applying this method is an Aquatic Conservation Assessment (ACA) for the study area.

An ACA using AquaBAMM is non-social, non-economic and identifies the conservation/ecological values of wetlands at a user-defined scale. It provides a robust and objective conservation assessment using criteria, indicators and measures that are founded upon a large body of national and international literature. The criteria, each of which may have variable numbers of indicators and measures, are naturalness (aquatic), naturalness (catchment), diversity and richness, threatened species and ecosystems, priority species and ecosystems, special features, connectivity and representativeness. An ACA using AquaBAMM is a powerful decision support tool that is easily updated and simply interrogated through a geographic information system (GIS).

Where they have been conducted, ACAs can provide a source of baseline wetland conservation/ecological information to support natural resource management and planning processes. They are useful as an independent product or as an important foundation upon which a variety of additional environmental and socio-economic elements can be added and considered (i.e. an early input to broader 'triple-bottom-line' decision-making processes). An ACA can have application in:

- determining priorities for protection, regulation or rehabilitation of wetlands and other aquatic ecosystems
- on-ground investment in wetlands and other aquatic ecosystems
- contributing to impact assessment of large-scale development (e.g. dams)
- water resource and strategic regional planning prcesses

For a detailed explanation of the methodology please refer to the summary and expert panel reports relevant to the ACA utilised in this assessment. These reports can be accessed at Wetland *Info*:

http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

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

Explanation of Criteria

Under the AquaBAMM, eight criteria are assessed to derive an overall conservation value. Similar to the Biodiversity Assessment and Mapping Methodology, the criteria may be primarily diagnostic (quantitative) or primarily expert opinion (qualitative) in nature. The following sections provide a brief description of each of the 8 criteria.

Criteria 1. Naturalness - Aquatic: This attribute reflects the extent to which a wetland's (riverine, non-riverine, estuarine) aquatic state of naturalness is affected through relevant influencing indicators which include: presence of exotic flora and fauna; presence of aquatic communities; degree of habitat modification and degree of hydrological modification.

Criteria 2. Naturalness - Catchment: The naturalness of the terrestrial systems of a catchment can have an influence on many wetland characteristics including: natural ecological processes e.g. nutrient cycling, riparian vegetation, water chemistry, and flow. The indicators utilised to assess this criterion include: presence of exotic flora and/or fauna; riparian, catchment and flow modification.

Criteria 3. Naturalness - Diversity and Richness: This criterion is common to many ecological assessment methods and can include both physical and biological features. It includes such indicators as species richness, riparian ecosystem richness and geomorphological diversity.

Criteria 4. Threatened Species and Ecosystems: This criterion evaluates ecological rarity characteristics of a wetland. This includes both species rarity and rarity of communities / assemblages. The communities and assemblages are best represented by regional ecosystems. Species rarity is determined by NCA and EPBC status with Endangered, Vulnerable or Near-threatened species being included in the evaluation. Ecosystem rarity is determined by regional ecosystem biodiversity status i.e. Endangered, Of Concern, or Not of Concern.

Criteria 5. Priority Species and Ecosystems: Priority flora and fauna species lists are expert panel derived. These are aquatic, semi-aquatic and riparian species which exhibit at least 1 particular trait in order to be eligible for consideration. For flora species the traits included:

- It forms significant macrophyte beds (in shallow or deep water).
- It is an important food source.
- It is important/critical habitat.
- It is implicated in spawning or reproduction for other fauna and/or flora species.
- It is at its distributional limit or is a disjunct population.
- It provides stream bank or bed stabilisation or has soil binding properties.
- It is a small population and subject to threatening processes.

Fauna species are included if they meet at least one of the following traits:

- It is endemic to the study area (>75 per cent of its distribution is in the study area/catchment).
- It has experienced, or is suspected of experiencing, a serious population decline.
- It has experienced a significant reduction in its distribution and has a naturally restricted distribution in the study area/catchment.
- It is currently a small population and threatened by loss of habitat.
- It is a significant disjunct population.
- It is a migratory species (other than birds).
- A significant proportion of the breeding population (>one per cent for waterbirds, >75 per cent other species) occurs in the waterbody (see Ramsar criterion 6 for waterbirds).
- Limit of species range.

See the individual expert panel reports for the priority species traits specific to an ACA.

Criteria 6. Special Features: Special features are areas identified by flora, fauna and ecology expert panels which exhibit characteristics beyond those identified in other criteria and which the expert panels consider to be of the highest ecological importance. Special feature traits can relate to, but are not solely restricted to geomorphic features, unique ecological processes, presence of unique or distinct habitat, presence of unique or special hydrological regimes e.g. spring-fed streams. Special features are rated on a 1 - 4 scale (4 being the highest).

Criteria 7. Connectivity: This criterion is based on the concept that appropriately connected aquatic ecosystems are healthy and resilient, with maximum potential biodiversity and delivery of ecosystem services.

Criteria 8. Representativeness: This criterion applies primarily to non-riverine assessments, evaluates the rarity and uniqueness of a wetland type in relation to specific geographic areas. Rarity is determined by the degree of wetland protection within "protected Areas" estate or within an area subject to the *Fisheries Act 1994*, *Coastal Protection and Management Act 1995*, or *Marine Parks Act 2004*. Wetland uniqueness evaluates the relative abundance and size of a wetland or wetland management group within geographic areas such as catchment and subcatchment.

Riverine Wetlands

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water. AquaBAMM, when applied to riverine wetlands uses a discrete spatial unit termed subsections. A subsection can be considered as an area which encompasses discrete homogeneous stream sections in terms of their natural attributes (i.e. physical, chemical, biological and utilitarian values) and natural resources. Thus in an ACA, an aquatic conservation significance score is calculated for each subsection and applies to all streams within a subsection, rather than individual streams as such.

Please note, the area figures provided in Tables 16 and 17, are derived using the extent of riverine subsections within the AOI. Refer to **Map 5** for further information. A summary of the conservation significance of riverine wetlands within the AOI is provided in the following table.

Table 16: Overall level/s of riverine aquatic conservation significance

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	15.49	99.98

The individual aquatic conservation criteria ratings for riverine wetlands within the AOI are listed below.

Table 17: Level/s of riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	0.00	0.00	0.00	0.00	15.49	99.98
2. Naturalness catchment	0.00	0.00	15.49	99.98	0.00	0.00	0.00	0.00
3. Diversity and richness	0.00	0.00	15.49	99.98	0.00	0.00	0.00	0.00
4. Threatened species and ecosystems	0.00	0.00	15.49	99.98	0.00	0.00	0.00	0.00
5. Priority species and ecosystems	15.49	99.98	0.00	0.00	0.00	0.00	0.00	0.00
6. Special features	0.00	0.00	15.49	99.98	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	0.00	0.00	15.49	99.98
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to riverine wetlands within the AOI.

Table 18: Expert panel decisions for assigning overall levels of riverine aquatic conservation significance

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
ca_r_fl_01	Creeks flowing off Mt Larcom	Calliope	6.3.1	3
ca_r_fl_02	Regional ecosystem 12.3.7	Calliope	5.2.1	4

4 is the highest rating/value

Expert panel decision descriptions:

Decision number	Description
ca_r_fl_01	Cherry Creek contains rare and threatened species including *Actephila sessilifolia, Atalaya rigida, Cupaniopsis shirleyana* and also has patches of rainforest dominated by Mueller's redheart (*Dissiliaria muelleri*). Mueller's redheart (*Dissiliaria muelleri*) is not currently listed as rare or threatened but has a very restricted distribution. The vegetation along these creeks is part of a large remnant area that contains significant patches of dry rainforest as well as the rocky outcrops of Mt Larcom that are habitat to rare and endemic species. This area was previously a national park proposal and is currently under threat from industrial development and lack of appropriate ecological management.
ca_r_fl_02	Regional ecosystem 12.3.7 is the southeast Queensland bioregion equivalent of 11.3.25 and 8.3.3. That is, it is one of the only ecosystems where you can find black ironbox (*Eucalyptus raveretiana*) providing important habitat for many fauna species.

Non-riverine Wetlands

Non-riverine wetlands include both lacustrine and palustrine wetlands, however, do not currently incorporate estuarine, marine or subterranean wetland types. A summary of the conservation significance of non-riverine wetlands within the AOI is provided in the following table. Refer to **Map 6** for further information.

Table 19: Overall level/s of non-riverine aquatic conservation significance

(No Records)

The following table provides an assessment of non-riverine wetlands within the AOI and associated aquatic conservation criteria values.

Table 20: Level/s of non-riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Naturalness catchment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. Diversity and richness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. Threatened species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6. Special features	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to non-riverine wetlands within the AOI.

Table 21: Expert panel decisions for assigning overall levels of non-riverine aquatic conservation significance.

Decision number	Special feature	Catchment	Criteria/Indicator/ Measure	Conservation rating (1-4)
(No Records)				

4 is the highest rating/value

Expert panel decision descriptions:

Decision number	Description
(No Records)	

Threatened and Priority Species

Introduction

This chapter contains a list of threatened and priority flora and/or fauna species that have been recorded on, or within 4km of the Assessment Area.

The information presented in this chapter with respect to species presence is derived from compiled databases developed primarily for the purpose of BPAs and ACAs. Data is collated from a number of sources and is updated periodically.

It is important to note that the list of species provided in this report, may differ when compared to other reports generated from other sources such as the State government's WildNet, Herbrecs or the federal government's EPBC database for a number of reasons.

Records for threatened and priority species are filtered and checked based on a number of rules including:

- Taxonomic nomenclature - current scientific names and status,
- Location - cross-check co-ordinates with location description,
- Taxon by location - requires good knowledge of the taxon and history of the record,
- Duplicate records - identify and remove,
- Expert panels - check records and provide new records,
- Flora cultivated records excluded,
- Use precise records less than or equal to 2000m,
- Use recent records greater than or equal to 1975 animals, greater than or equal to 1950 plants.

Threatened Species

Threatened species are those species classified as "Endangered" or "Vulnerable" under the *Environment Protection and Biodiversity Conservation Act 1999* or "Endangered", "Vulnerable" or "Near threatened" under the *Nature Conservation Act 1992*.

The following threatened species have been recorded on, or within approximately 4km of the AOI.

Table 22: Threatened species recorded on, or within 4km of the AOI

Species	Common name	NCA status	EPBC status	Migratory species*	Wetland species**	Identified flora/fauna
Aceratium sericoleopsis	silky aceratium	NT				FL
Bosistoa transversa	three-leaved bosistoa	C	V			FL
Calidris acuminata	sharp-tailed sandpiper	SL	V	Y	I	FA
Calidris ferruginea	curlew sandpiper	CR	CE	Y	I	FA
Charadrius mongolus	lesser sand plover	E	E	Y	I	FA
Cycas megacarpa		E	E			FL
Dugong dugon	dugong	V		Y	I	FA
Geophaps scripta scripta	squatter pigeon (southern subspecies)	V	V			FA
Hernandia bivalvis	cudgerie	NT				FL
Limnodromus semipalmatus	Asian dowitcher	SL	V	Y	I	FA

Species	Common name	NCA status	EPBC status	Migratory species*	Wetland species**	Identified flora/fauna
Limosa lapponica baueri	Western Alaskan bar-tailed godwit	V	E	Y	I	FA
Ninox strenua	powerful owl	V				FA
Numenius madagascariensis	eastern curlew	E	CE	Y	I	FA
Petauroides volans volans	southern greater glider	E	E			FA
Petaurus australis australis	yellow-bellied glider (southern subspecies)	V	V			FA
Phascolarctos cinereus	koala	E	E			FA
Pluvialis squatarola	grey plover	SL	V	Y	I	FA
Pteropus poliocephalus	grey-headed flying-fox	C	V			FA
Taphozous australis	coastal sheathtail bat	NT				FA
Tringa nebularia	common greenshank	SL	E	Y	I	FA
Xenus cinereus	terek sandpiper	SL	V	Y	I	FA
Xeromys myoides	water mouse	V	V		I	FA

NB. Please note that the threatened species listed in this section are based upon the most recently compiled DETSI internal state-wide threatened species dataset. This dataset may contain additional records that were not originally available for inclusion in the relevant individual BPAs and ACAs.

**JAMBA - Japan-Australia Migratory Bird Agreement; CAMBA - China-Australia Migratory Bird Agreement; ROKAMBA - Republic of Korea-Australia Migratory Bird Agreement; CMS - Convention on the Conservation of Migratory Species.*

***I - wetland indicator species; D - wetland dependent species.*

BPA Priority Species

A list of BPA priority species that have been recorded on, or within approximately 4km of the AOI is contained in the following table.

Table 23: Priority species recorded on, or within 4km of the AOI

Species	Common name	Identified flora/fauna
Chlamydosaurus kingii	frilled lizard	FA
Kuhlia rupestris	jungle perch	FA
Lampropholis adonis	diamond-shielded sunskink	FA
Melaleuca nervosa		FL
Melaleuca viridiflora		FL
Mogurnda adspersa	southern purplespotted gudgeon	FA

Species	Common name	Identified flora/fauna
Mormopterus norfolkensis	east coast freetail bat	FA
Mugil cephalus	sea mullet	FA
Ninox connivens	barking owl	FA
Notamacropus agilis	agile wallaby	FA
Notamacropus dorsalis	black-striped wallaby	FA
Petaurus australis australis	yellow-bellied glider (southern subspecies)	FA
Petrogale herberti	Herbert's rock-wallaby	FA
Pomatostomus temporalis	grey-crowned babbler	FA
Pteropus alecto	black flying-fox	FA
Scagacola cavernula	Rockhampton Carnivorous Snail	FA
Scoteanax rueppellii	greater broad-nosed bat	FA
Varanus semiremex	rusty monitor	FA
Varanus varius	lace monitor	FA

NB. Please note that the list of priority species is based on those species identified in the BPAs, however records for these species may be more recent than the originals used. furthermore, the BPA priority species databases are updated from time to time. At each update, the taxonomic details for all species are amended as necessary to reflect current taxonomic name and/or status changes.

ACA Priority Species

A list of ACA priority species used in riverine and non-riverine ACAs that have been recorded on, or within approximately 4km of the AOI are contained in the following tables.

Table 24: Priority species recorded on, or within 4 km of the AOI - riverine

Species	Common name	Identified flora/fauna
Ardea alba modesta	Eastern Great Egret	FA
Casuarina cunninghamiana		FL
Eucalyptus tereticornis		FL
Kuhlia rupestris	Jungle Perch	FA
Lates calcarifer	Barramundi	FA
Lomandra longifolia		FL
Megalops cyprinoides	Oxeye Herring/Tarpon	FA
Melaleuca leucadendra	broad-leaved tea-tree	FL
Melaleuca viminalis		FL
Mugil cephalus	Sea Mullet	FA
Nymphoides indica	water snowflake	FL

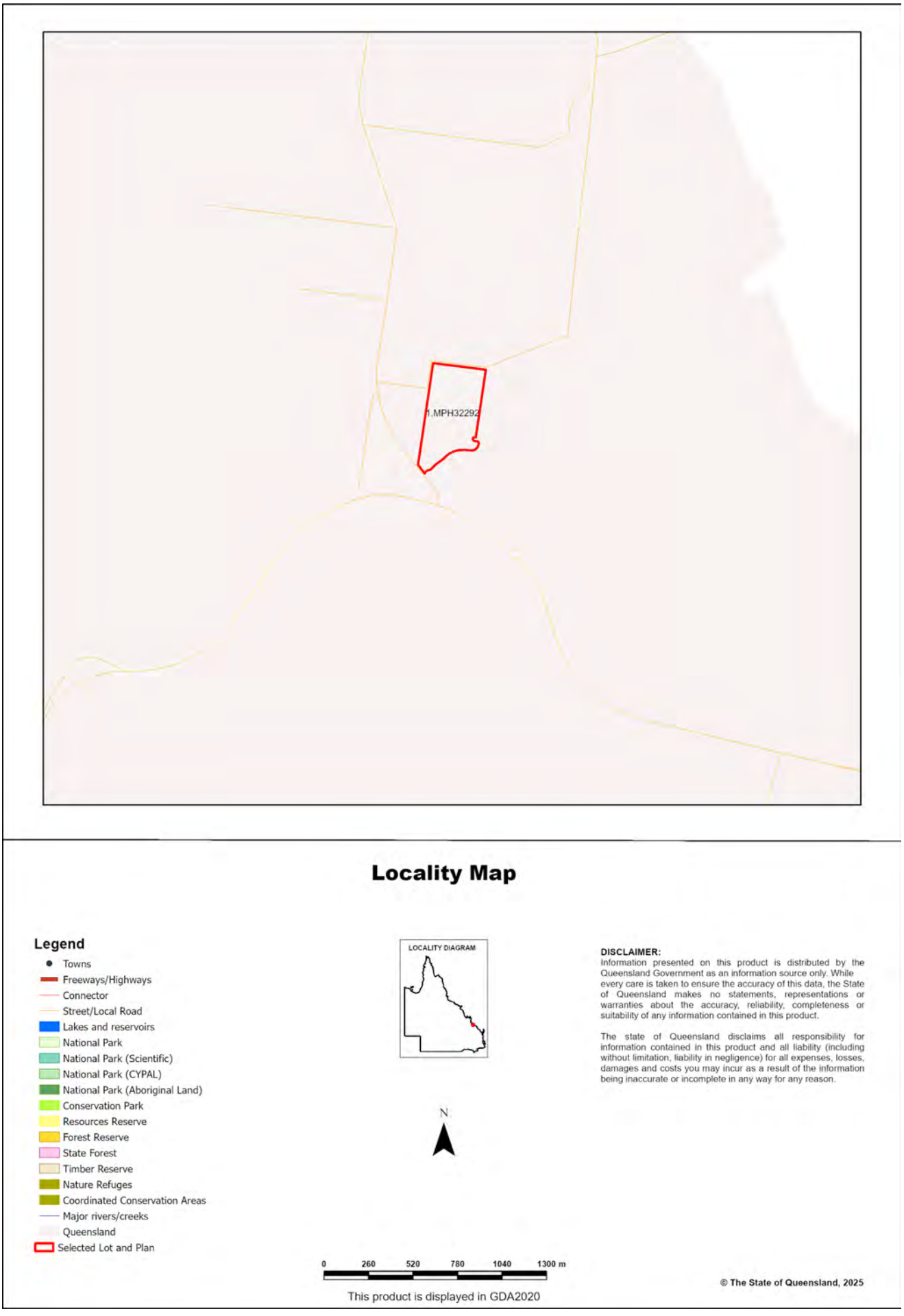
Table 25: Priority species recorded on, or within 4 km of the AOI - non-riverine

Species	Common name	Identified flora/fauna
Ardea alba modesta	Eastern Great Egret	FA
Cyperus exaltatus	tall flatsedge	FL
Eucalyptus tereticornis		FL
Lates calcarifer	Barramundi	FA
Machaerina articulata	jointed twigrush	FL
Megalops cyprinoides	Oxeye Herring/Tarpon	FA
Melaleuca leucadendra	broad-leaved tea-tree	FL
Melaleuca viminalis		FL
Mugil cephalus	Sea Mullet	FA
Nymphoides indica	water snowflake	FL

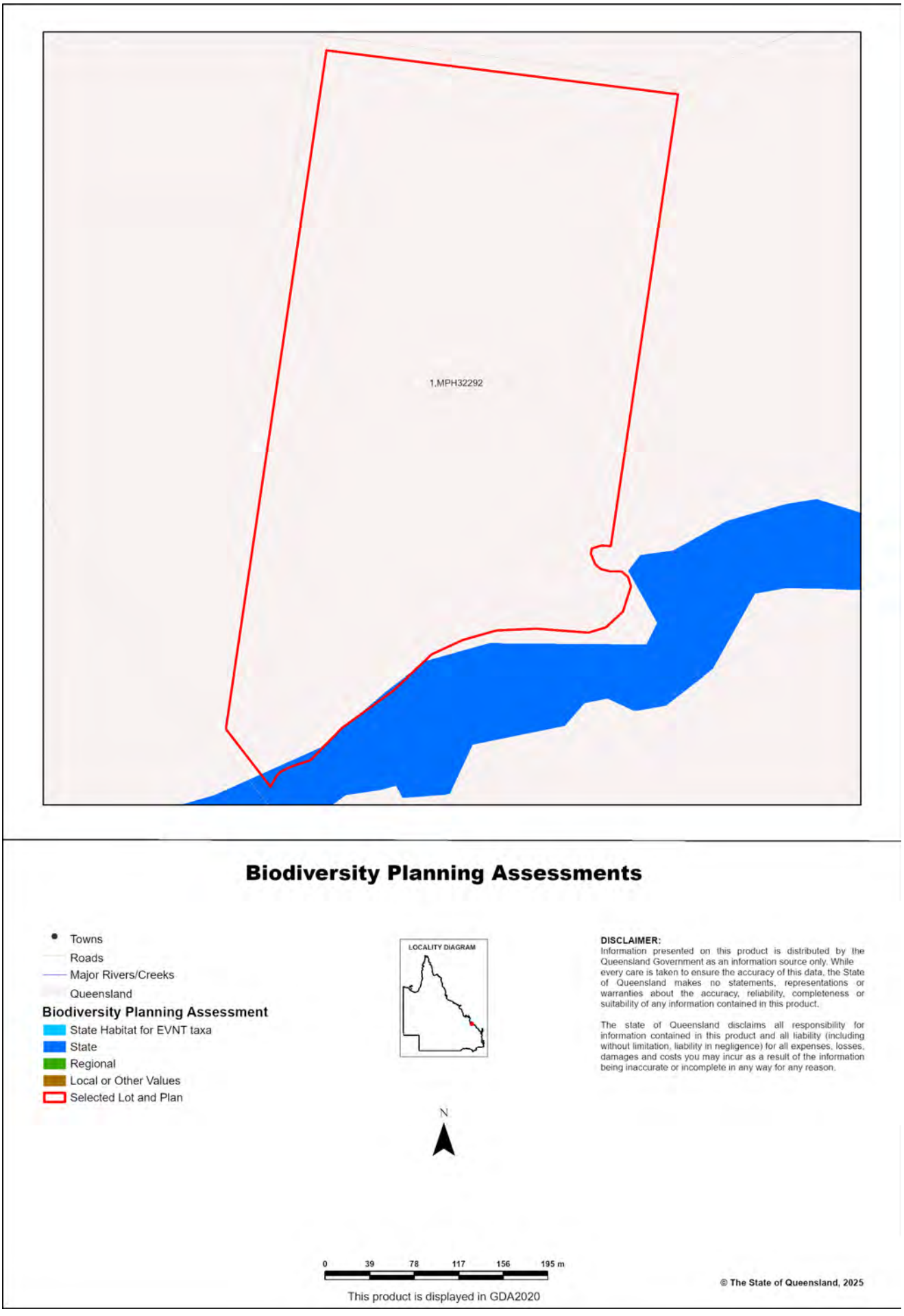
NB. Please note that the priority species records used in the above two tables are comprised of those adopted for the released individual ACAs. The ACA riverine and non-riverine priority species databases are updated from time to time to reflect new release of ACAs. At each update, the taxonomic details for all ACAs records are amended as necessary to reflect current taxonomic name and/or status changes.

Maps

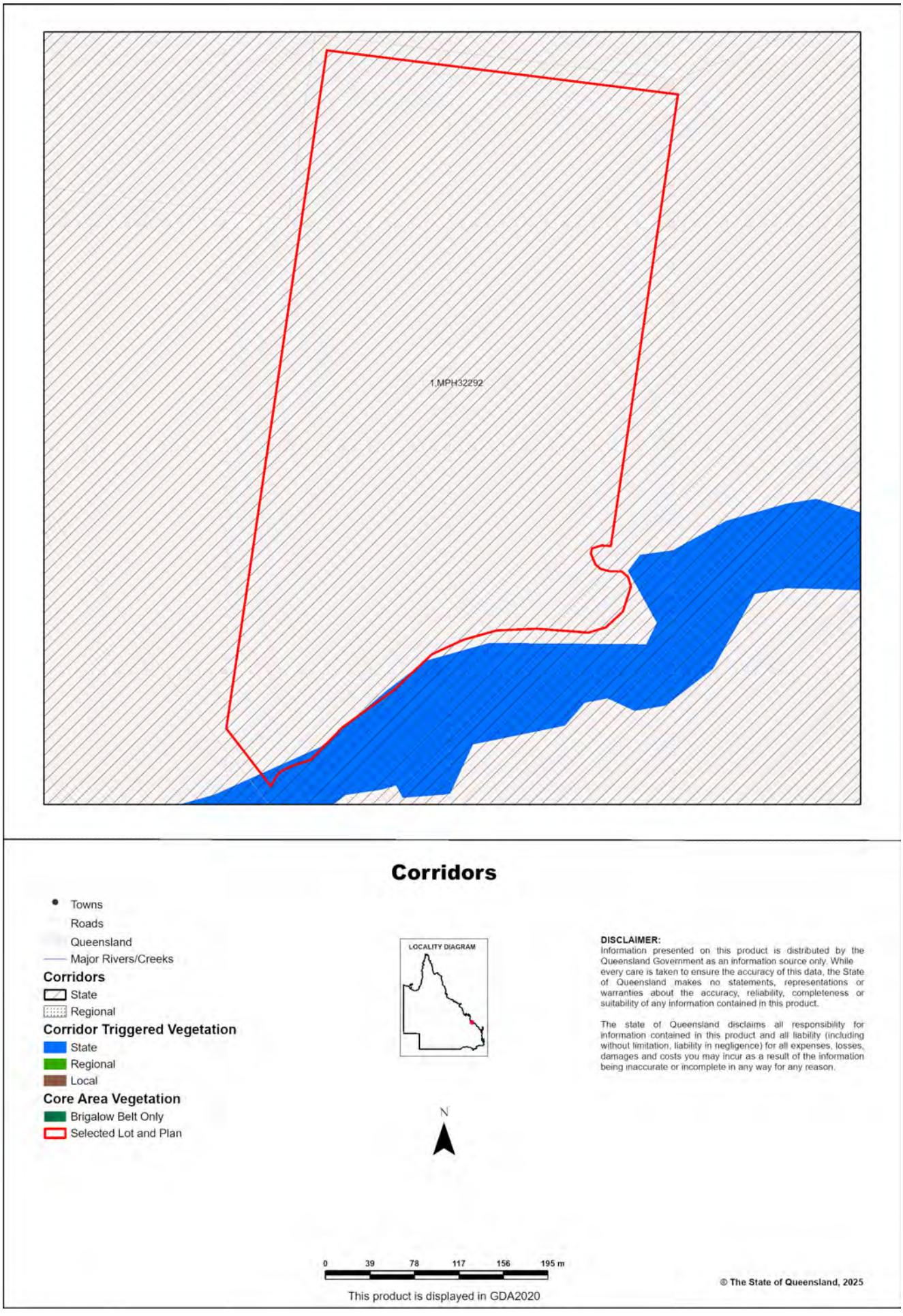
Map 1 - Locality Map



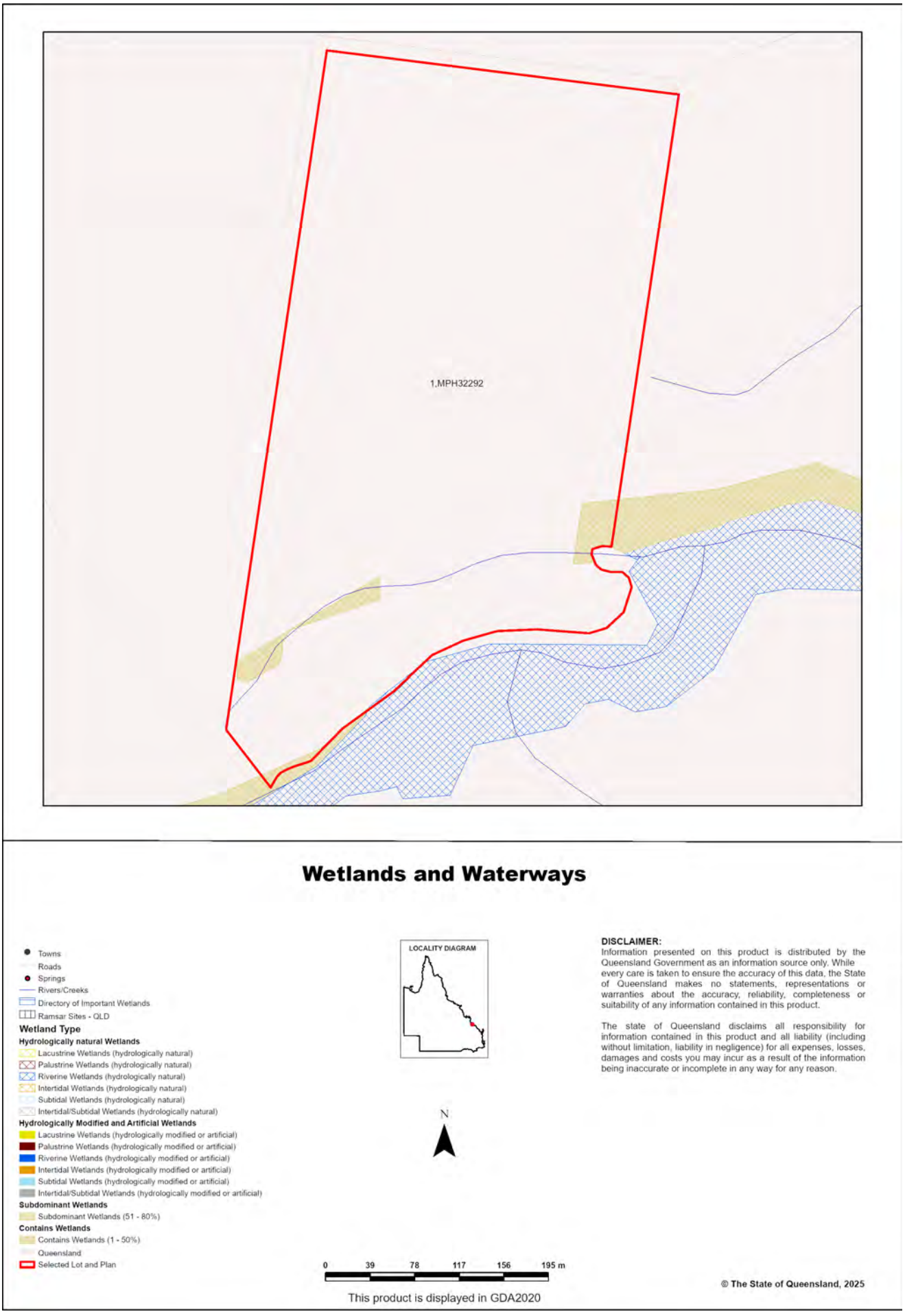
Map 2 - Biodiversity Planning Assessment (BPA)



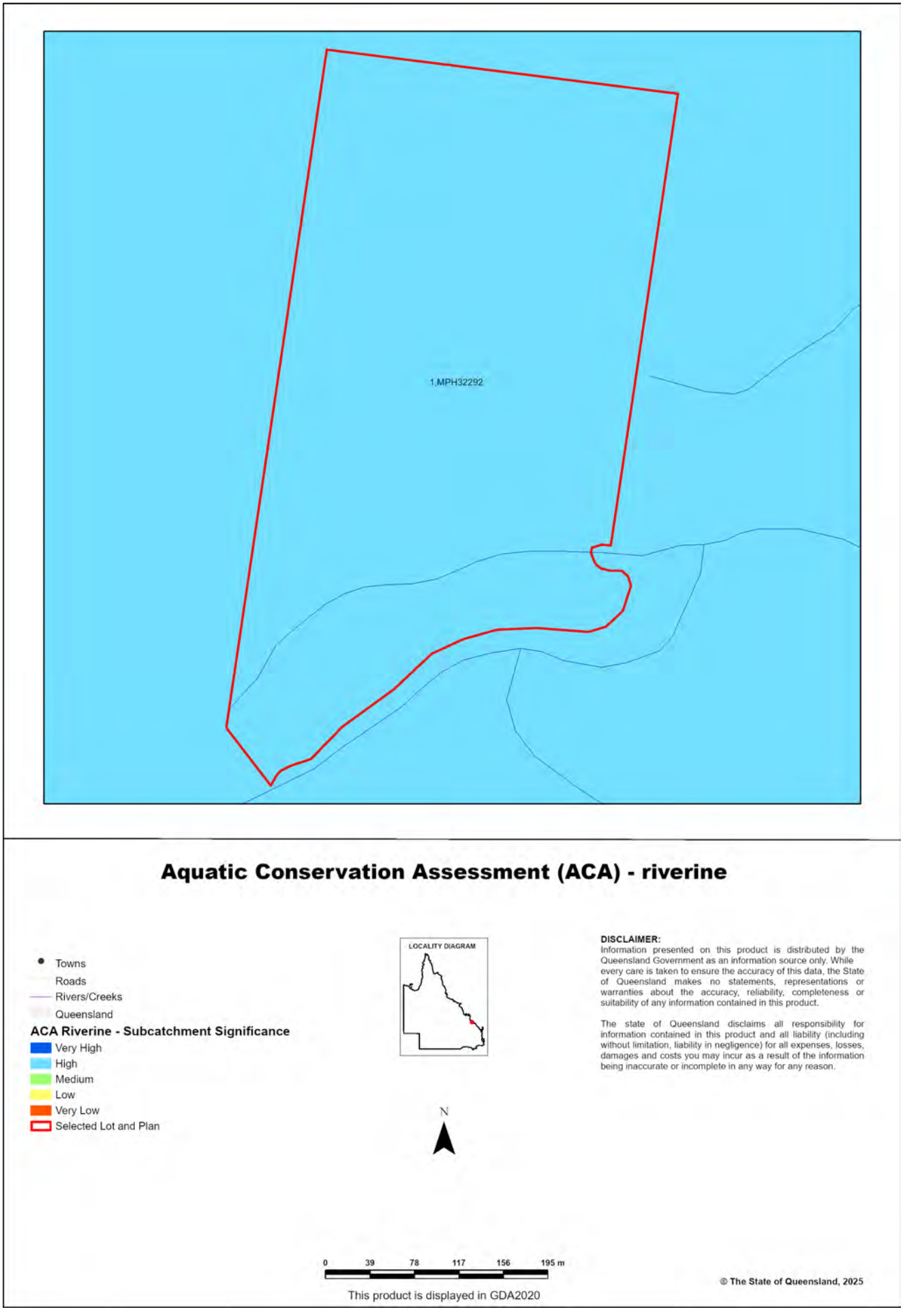
Map 3 - Corridors



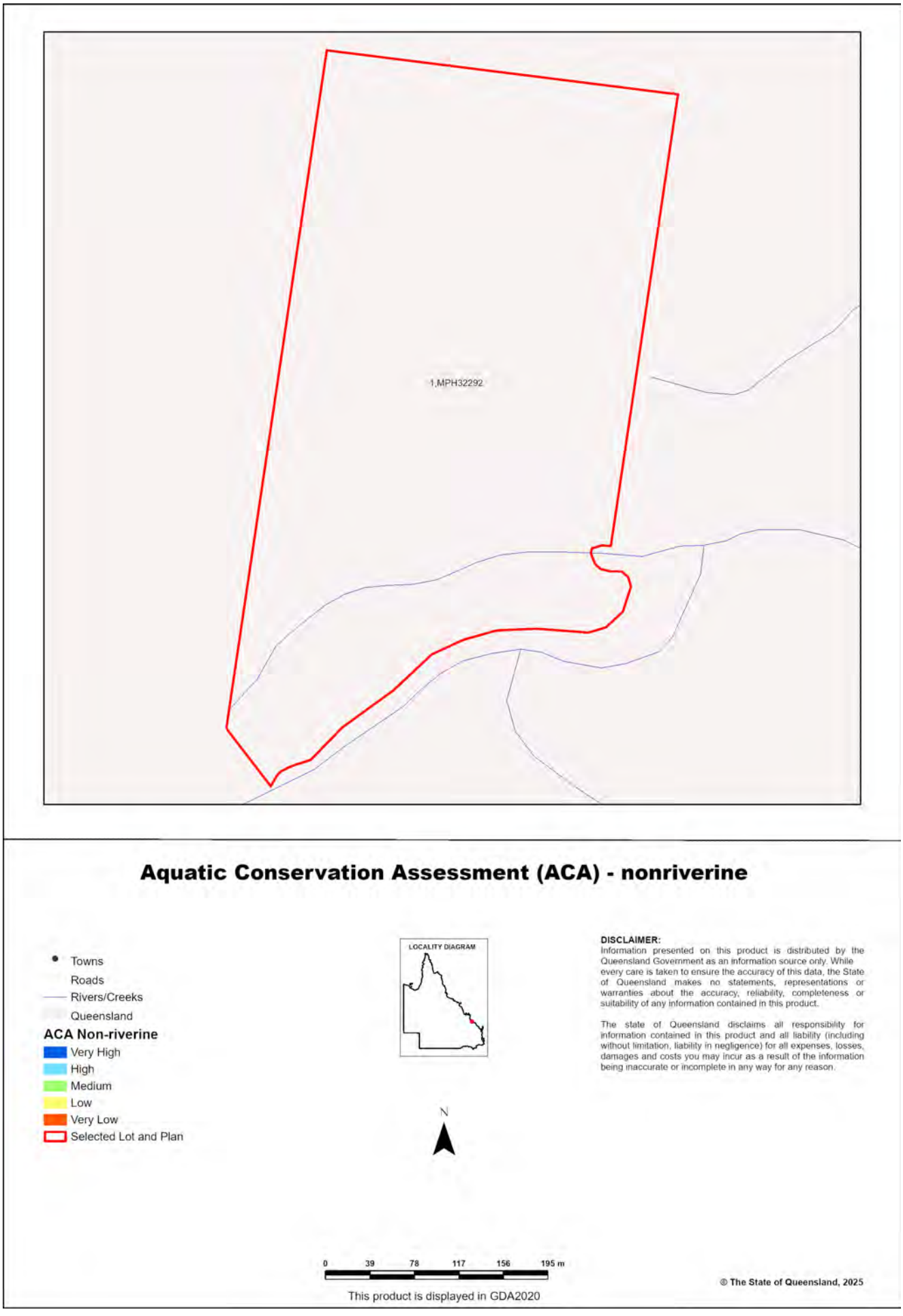
Map 4 - Wetlands and waterways



Map 5 - Aquatic Conservation Assessment (ACA) - riverine



Map 6 - Aquatic Conservation Assessment (ACA) - non-riverine



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Appendices

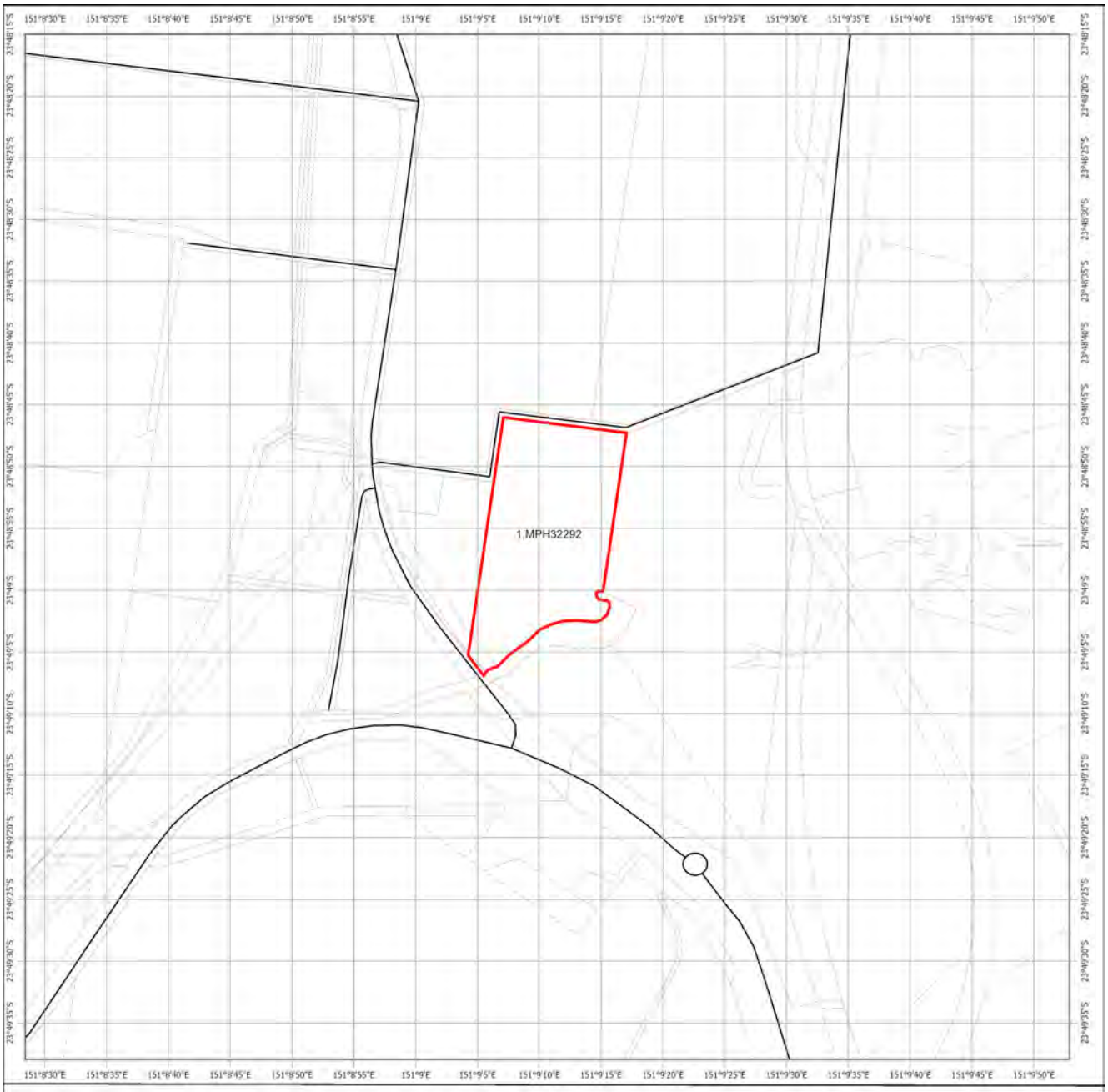
Appendix 1 - Source Data

Theme	Datasets
Aquatic Conservation Assessments Non-riverine*	Combination of the following datasets: Cape York Peninsula Non-riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Non-riverine v1.3 Lake Eyre and Bulloo Basins v1.1 QMDBB Non-riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Non-riverine ACA v1.1 Southern Gulf Catchments Non-riverine ACA v1.1 WBBGBRCC Non-riverine ACA v2.1
Aquatic Conservation Assessments Riverine*	Combination of the following datasets: Cape York Peninsula Riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Riverine v1.1 Lake Eyre and Bulloo Basins v1.1 QMDBB Riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Riverine ACA v1.1 Southern Gulf Catchments Riverine ACA v1.1 WBBGBRCC Riverine ACA v2.1
Biodiversity Planning Assessments*	Combination of the following datasets: Brigalow Belt BPA v2.1 Cape York Peninsula BPA v1.1 Central Queensland Coast BPA v1.3 Channel Country BPA v1.1 Desert Uplands BPA v1.3 Einasleigh Uplands BPA v1.1 Gulf Plains BPA v1.1 Mitchell Grass Downs BPA v1.1 Mulga Lands BPA v1.4 New England Tableland v3.1 Northwest Highlands v1.1 Southeast Queensland v4.1 Wet Tropics v1.1
Statewide BPA Corridors*	Statewide corridors v1.7
Threatened Species	An internal DETSI database compiled from Wildnet, Herbrecs, Corveg, the QLD Museum, as well as other incidental sources.
BPA Priority Species	An internal DETSI database compiled from Wildnet, Herbrecs, Corveg, the QLD Museum, as well as other incidental sources.
ACA Priority Species	An internal DETSI database compiled from Wildnet, Herbrecs, Corveg, the QLD Museum, as well as other incidental sources.

These datasets are available at:
http://dds.information.qld.gov.au/DDS

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
ACA	- Aquatic Conservation Assessment
AQUABAMM	- Aquatic Biodiversity Assessment and Mapping Methodology
BAMM	- Biodiversity Assessment and Mapping Methodology
BoT	- Back on Track
BPA	- Biodiversity Planning Assessment
CAMBA	- China-Australia Migratory Bird Agreement
DETSI	- Department of the Environment, Tourism, Science and Innovation
EPBC	- *Environment Protection and Biodiversity Conservation Act 1999*
EVNT	- Endangered, Vulnerable, Near Threatened
GDA2020	- Geocentric Datum of Australia 2020
GIS	- Geographic Information System
JAMBA	- Japan-Australia Migratory Bird Agreement
NCA	- *Nature Conservation Act 1992*
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
ROKAMBA	- Republic of Korea-Australia Migratory Bird Agreement



Protected Plants Flora Survey Trigger Map

High risk area
Other land parcel boundaries
Freeways / motorways / highways
Secondary roads / streets
Selected Lot and Plan

LOCALITY DIAGRAM

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of the Environment, Tourism, Science and Innovation at palm@des.qld.gov.au

N

0 100 200 300 400 500 m

This product is displayed in: GDA2020

Disclaimer: While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

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Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see section 89 of the Act.

Please see the Department of the Environment, Tourism, Science and Innovation webpage on the clearing of protected plants for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map
The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information
Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of the Environment, Tourism, Science and Innovation does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of the Environment, Tourism, Science and Innovation webpage on the clearing of protected plants for more information.

Queensland Government

Department of the Environment, Tourism, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Lot: 1 Plan: MPH32292

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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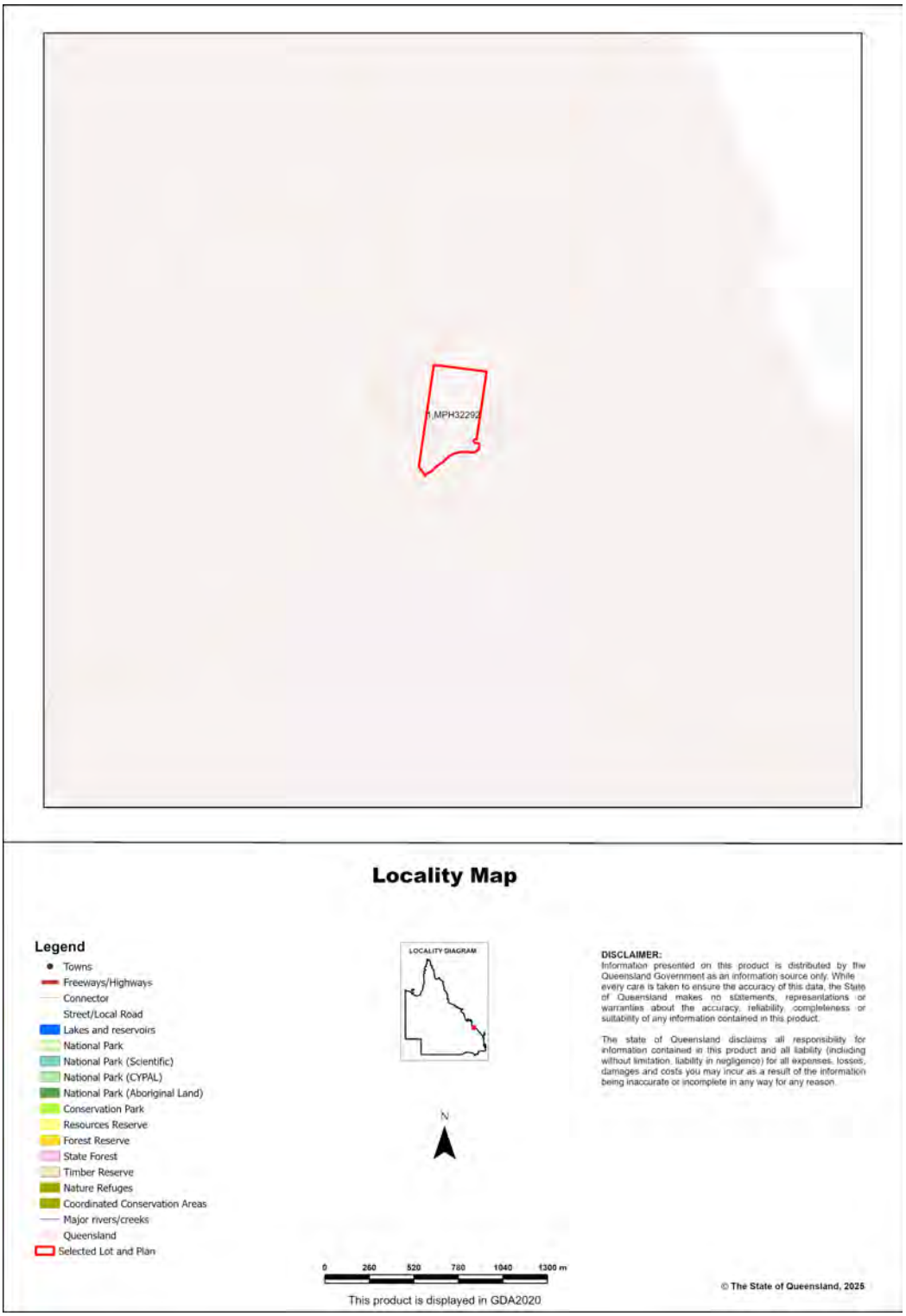
Assessment Area Details

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: Lot: 1 Plan: MPH32292, with area 15.49 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Gladstone Regional	Calliope	Southeast Queensland	Burnett - Curtis Hills and Ranges



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	
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	5.51 ha	35.6%
7b Special least concern animals	5.72 ha	36.9%
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)	0.03 ha	0.2%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	10.68 ha	68.9%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	1.07 ha	6.9%
8d Regulated Vegetation - Essential habitat	6.22 ha	40.2%
8e Regulated Vegetation - intersecting a watercourse	0 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

Values are present

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	Core
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

Scientific name	Common name	NCA status	EPBC status	Migratory status
Numenius madagascariensis	eastern curlew	E	CE	M-C/J/R/B/E
Limosa lapponica baueri	Western Alaskan bar-tailed godwit	V	V	M-C/J/R/B/E

Special least concern animal species records

Scientific name	Common name	Migratory status
Numenius phaeopus	whimbrel	M-C/J/R/B/E
Actitis hypoleucos	common sandpiper	M-C/J/R/B/E
Tringa nebularia	common greenshank	M-C/J/R/B/E

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
12.3.3/12.11.4	E-dom	rem_end

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

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.29/12.11.14/12.3.3	E-subdom	hvr_end
12.3.3/12.11.4	E-dom	hvr_end

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

Regulated vegetation map category	Map number
R	9150

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

Not applicable

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

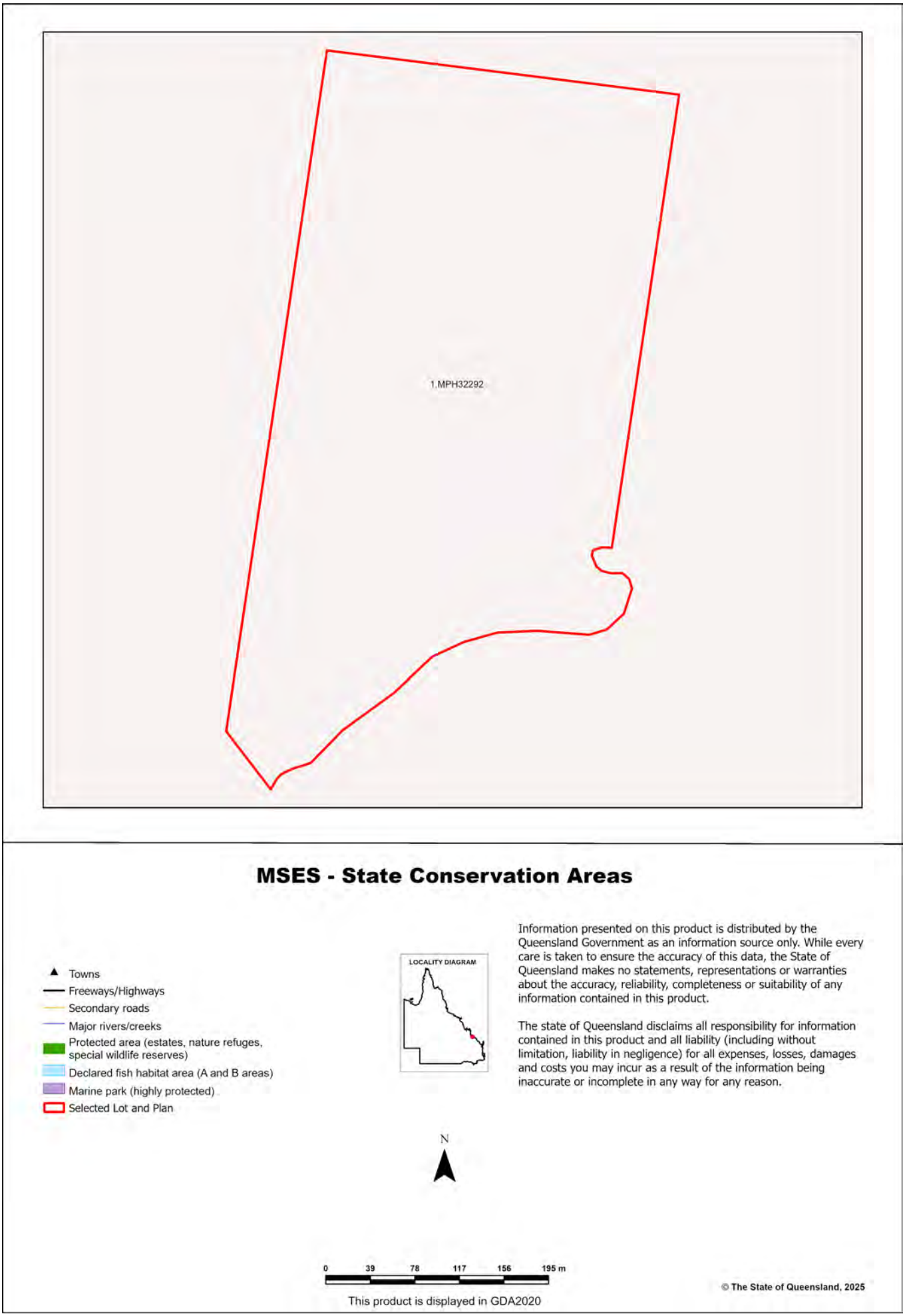
(No results)

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

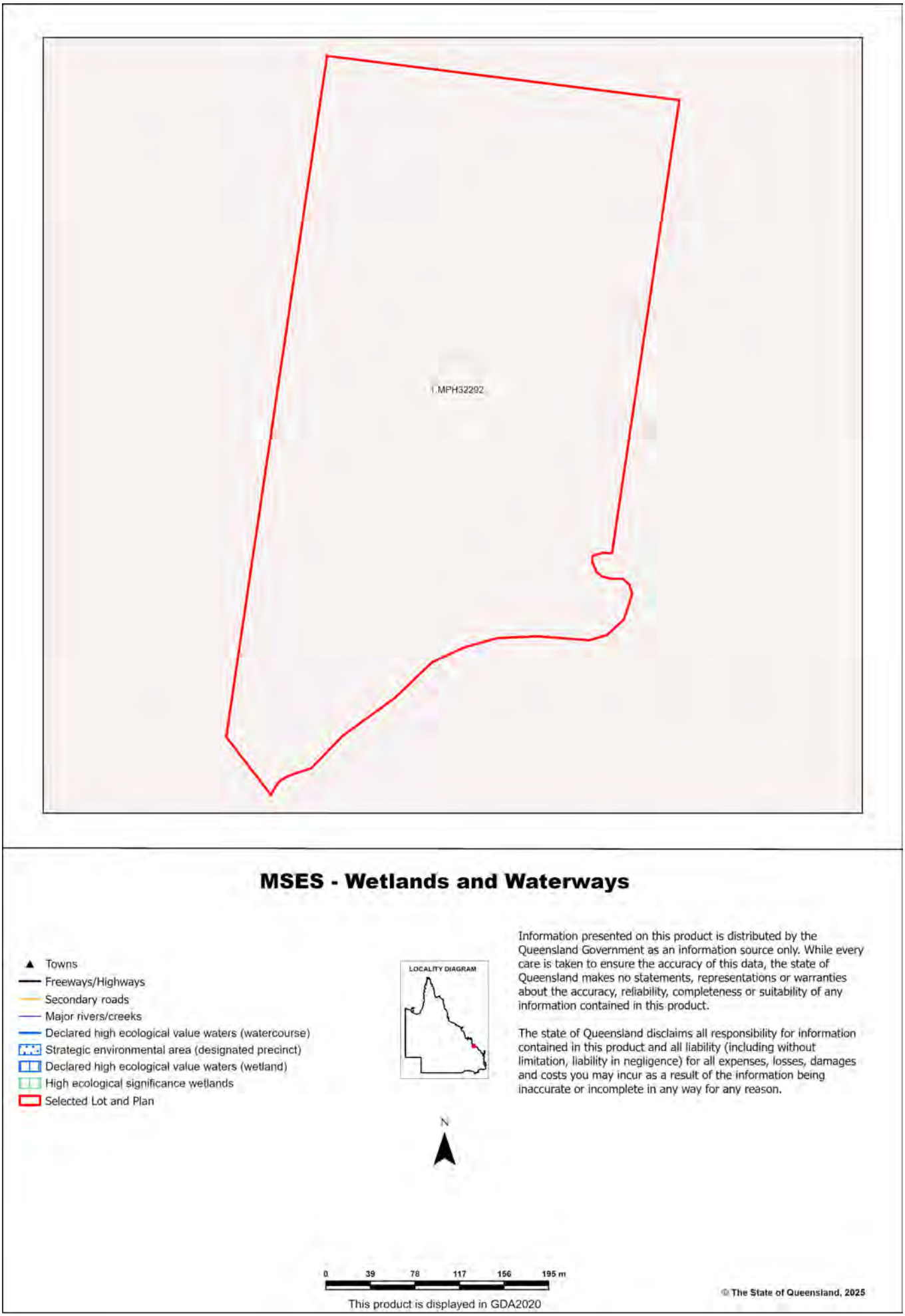
(No results)

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

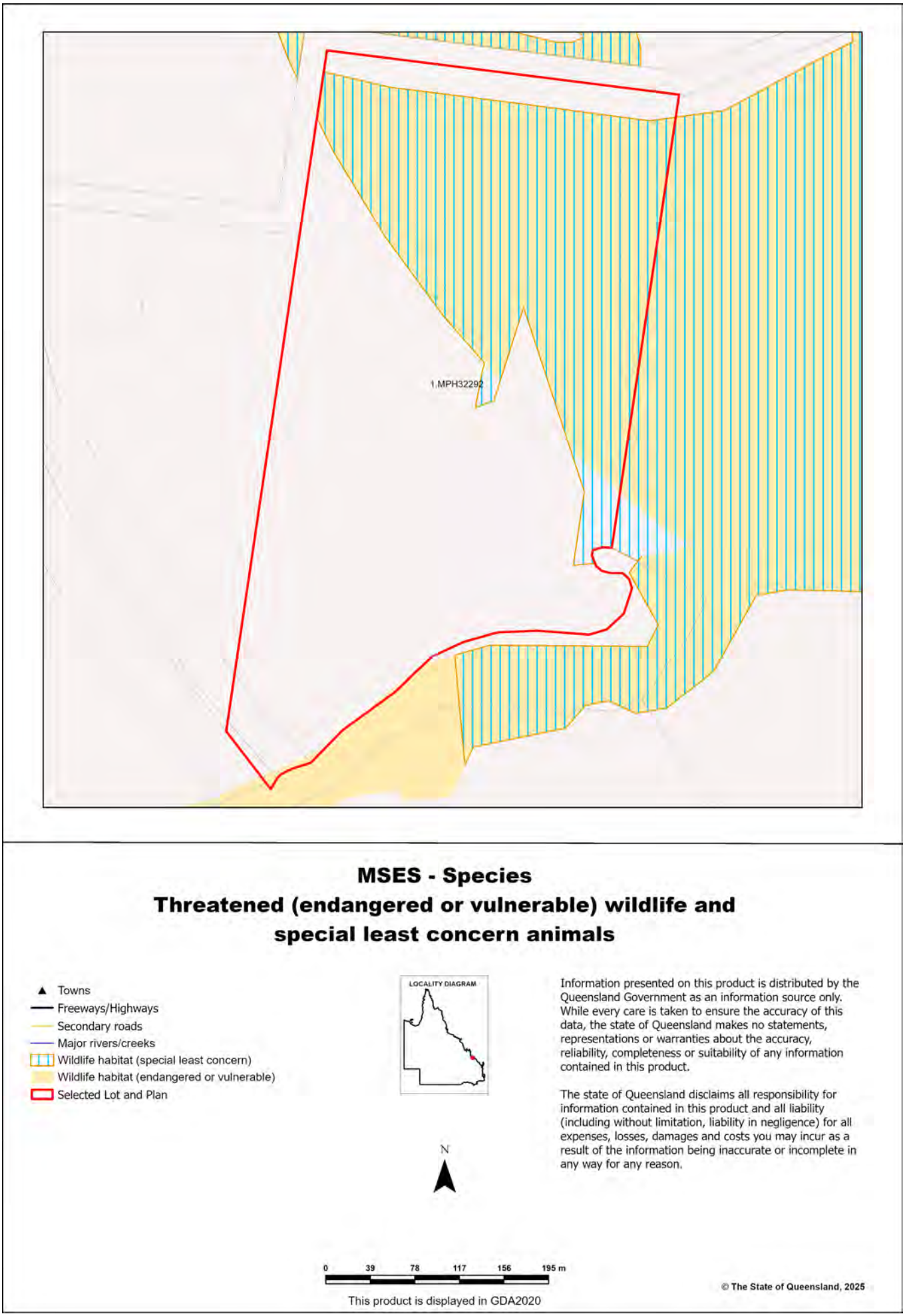
Map 1 - MSES - State Conservation Areas



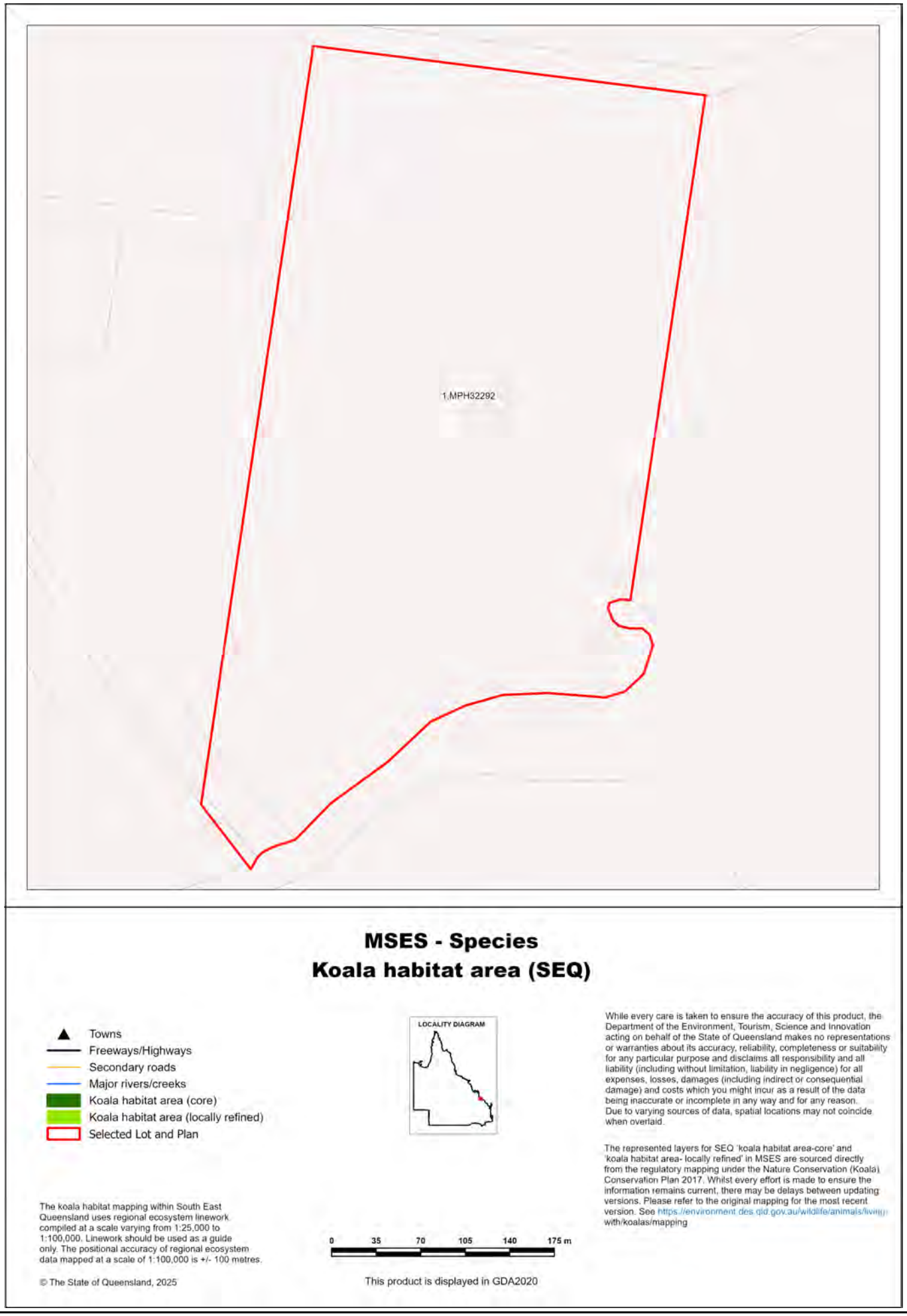
Map 2 - MSES - Wetlands and Waterways



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



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

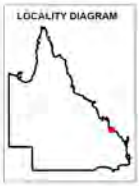


Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)

MSES - Wildlife habitat (sea turtle nesting areas)

Towns
Freeways/Highways
Secondary roads
Major rivers/creeks
Wildlife habitat (sea turtle nesting areas)
Selected Lot and Plan

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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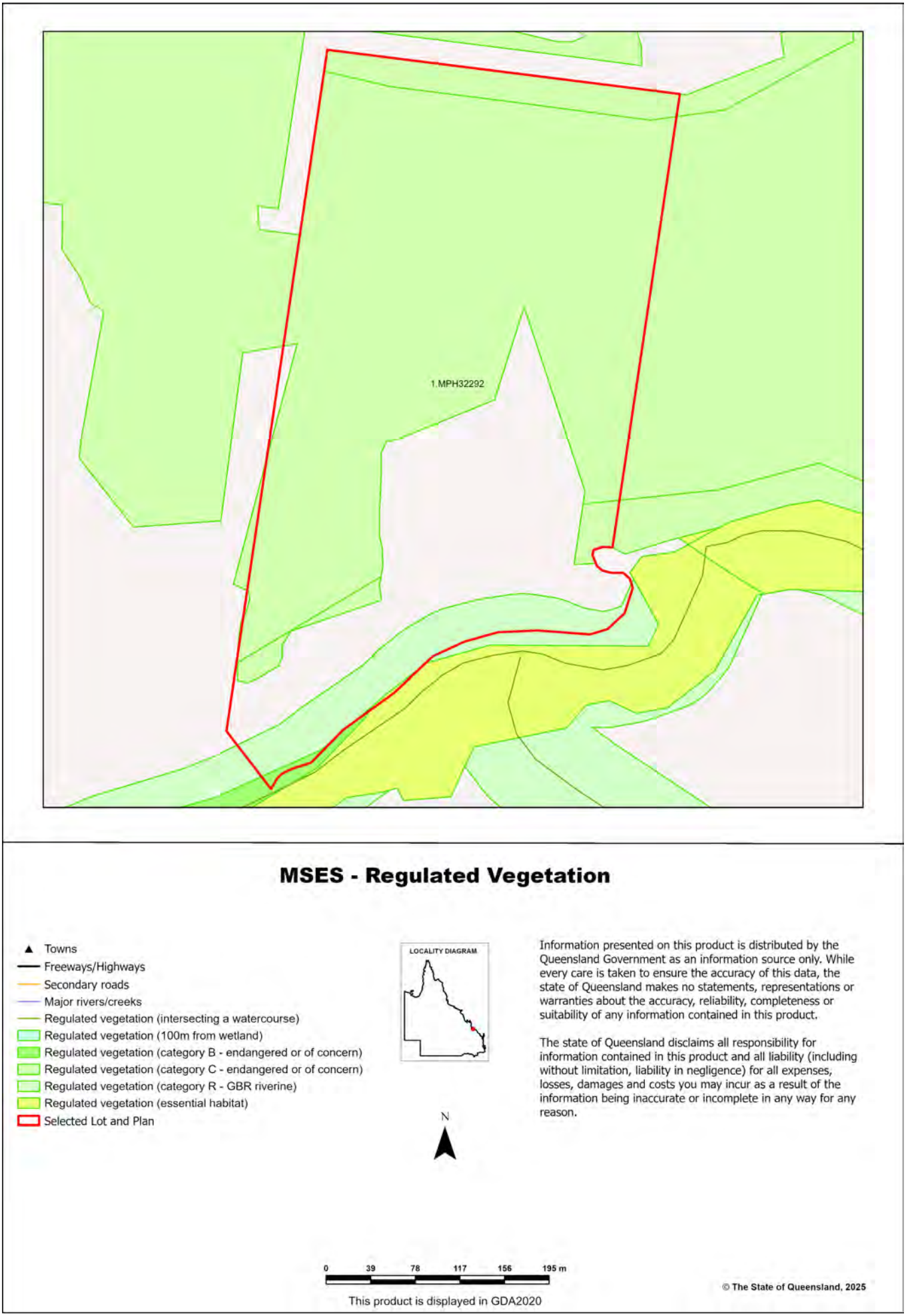
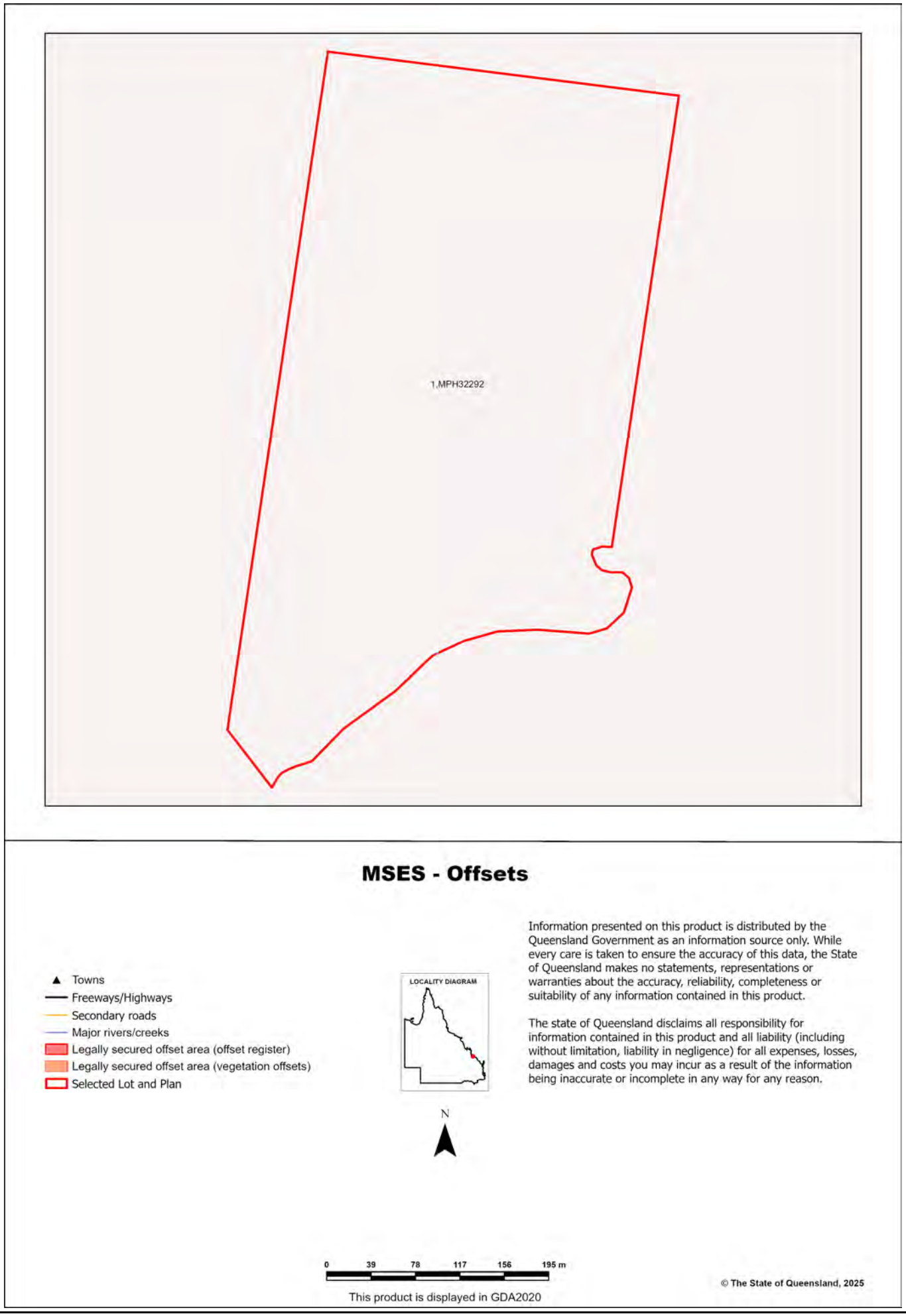
This product is displayed in GDA2020

Map 4 - MSES - Regulated Vegetation



Map 5 - MSES - Offset Areas



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

Queensland Government

Department of the Environment, Tourism, Science and Innovation

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest
Lot: 1 Plan: MPH32292

Environmental Reports - General Information

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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 field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the Queensland Herbarium & Biodiversity Science's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium & Biodiversity Science's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development website https://www.nrmmrrd.qld.gov.au/

Please direct queries about these reports to: Queensland.Herbarium@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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Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Details for area of interest:
Lot: 1 Plan: MPH32292, with area 15.49 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Gladstone Regional	Calliope	Southeast Queensland	Burnett - Curtis Hills and Ranges

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.02	0.13
Of concern	0.02	0.16
No concern at present	0.00	0.00
Total remnant vegetation	0.04	0.29

Refer to **Map 2** for further information.

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and may be distinguished by differences in structure or sub-dominant species in the ecologically dominant layer. Vegetation communities with different dominant species in the ecologically dominant layer may be amalgamated in to a regional ecosystem if they are not mappable and predictable in the landscape at 1:100 000 scale. Vegetation communities may be mappable at a scale larger than 1:100 000. Vegetation communities within a regional ecosystem are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2023) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium & Biodiversity Science's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development website https://www.nrmmrrd.qld.gov.au/.

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 percent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 percent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (<1000 ha); or patch size (<100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

*****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.*

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
12.11.4	Semi-evergreen vine thicket on metamorphics +/- interbedded volcanics	Of concern	0.01	0.09
12.3.3	Eucalyptus tereticornis woodland on Quaternary alluvium	Endangered	0.02	0.13
12.3.7	Eucalyptus tereticornis, Casuarina cunninghamiana subsp. cunninghamiana +/- Melaleuca spp. fringing woodland	Of concern	0.01	0.07
non-remnant	None	None	15.44	99.70

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
12.11.4	Pre-clearing 4000 ha; Remnant 2021 3000 ha	7a	Contains Palustrine	High
12.3.3	Pre-clearing 437000 ha; Remnant 2021 38000 ha	16c	Not a Wetland	Low
12.3.7	Pre-clearing 124000 ha; Remnant 2021 68000 ha	16a	Riverine	Low
non-remnant	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
12.11.4	12.11.4: Habitat for threatened flora species including Rhodamnia angustifolia and Fontainea venosa.
12.3.3	12.3.3: Habitat for threatened plant species including Rhaponticum australe. This ecosystem is known to provide suitable habitat for koalas (Phascolarctos cinereus). 12.3.3a: Habitat for threatened plant species including occasional Rhaponticum australe. This ecosystem is known to provide suitable habitat for koalas (Phascolarctos cinereus). 12.3.3b: Habitat for threatened flora species including Melaleuca irbyana. 12.3.3c: Habitat for threatened flora species including Melaleuca irbyana and Marsdenia coronata. 12.3.3d: Habitat for threatened plant species including Rhaponticum australe. This ecosystem is known to provide suitable habitat for koalas (Phascolarctos cinereus).
12.3.7	12.3.7: Habitat for an extensive range of aquatic flora and fauna. This ecosystem is known to provide suitable habitat for koalas (Phascolarctos cinereus). 12.3.7a: This ecosystem is known to provide suitable habitat for koalas (Phascolarctos cinereus). 12.3.7c: This ecosystem is known to provide suitable habitat for koalas (Phascolarctos cinereus). 12.3.7d: This ecosystem is known to provide suitable habitat for koalas (Phascolarctos cinereus).
non-remnant	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at: https://publications.qld.gov.au/dataset/redd/resource/

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	15.44	99.70
16a	Open forest and woodlands dominated by Eucalyptus camaldulensis (river red gum) (or E. tereticornis (blue gum)) and/or E. coolabah (coolabah) (or E. microtheca (coolabah)) fringing drainage lines. Associated species may include Melaleuca spp., Corymbia tessellaris (carbeen), Angophora spp., Casuarina cunninghamiana (riveroak). Does not include alluvial areas dominated by herb and grasslands or alluvial plains that are not flooded.	0.01	0.07

BVG (1 Million)	Description	Area (Ha)	% of AOI
16c	Woodlands and open woodlands dominated by Eucalyptus coolabah (coolabah) or E. microtheca (coolabah) or E. largiflorens (black box) or E. tereticornis (blue gum) or E. chlorophylla on floodplains. Does not include alluvial areas dominated by herb and grasslands or alluvial plains that are not flooded.	0.02	0.13
7a	Semi-evergreen vine thickets on wide range of substrates.	0.01	0.09

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See: http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/

The descriptions are compiled using site survey data from the Queensland Herbarium & Biodiversity Science's QBEIS database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2023 (PDF)* section 3.3 of: https://www.qld.gov.au/__data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community. http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/

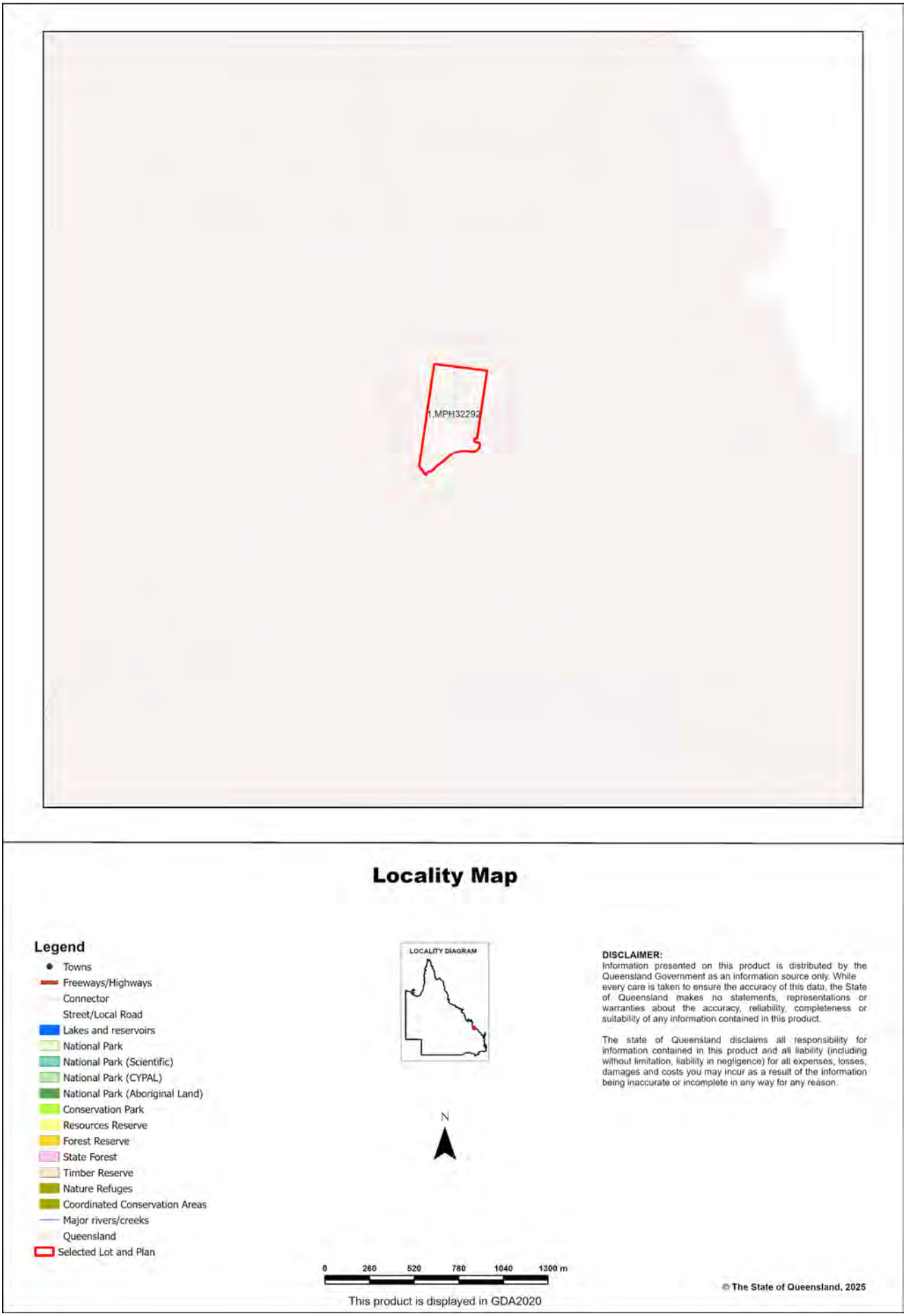
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

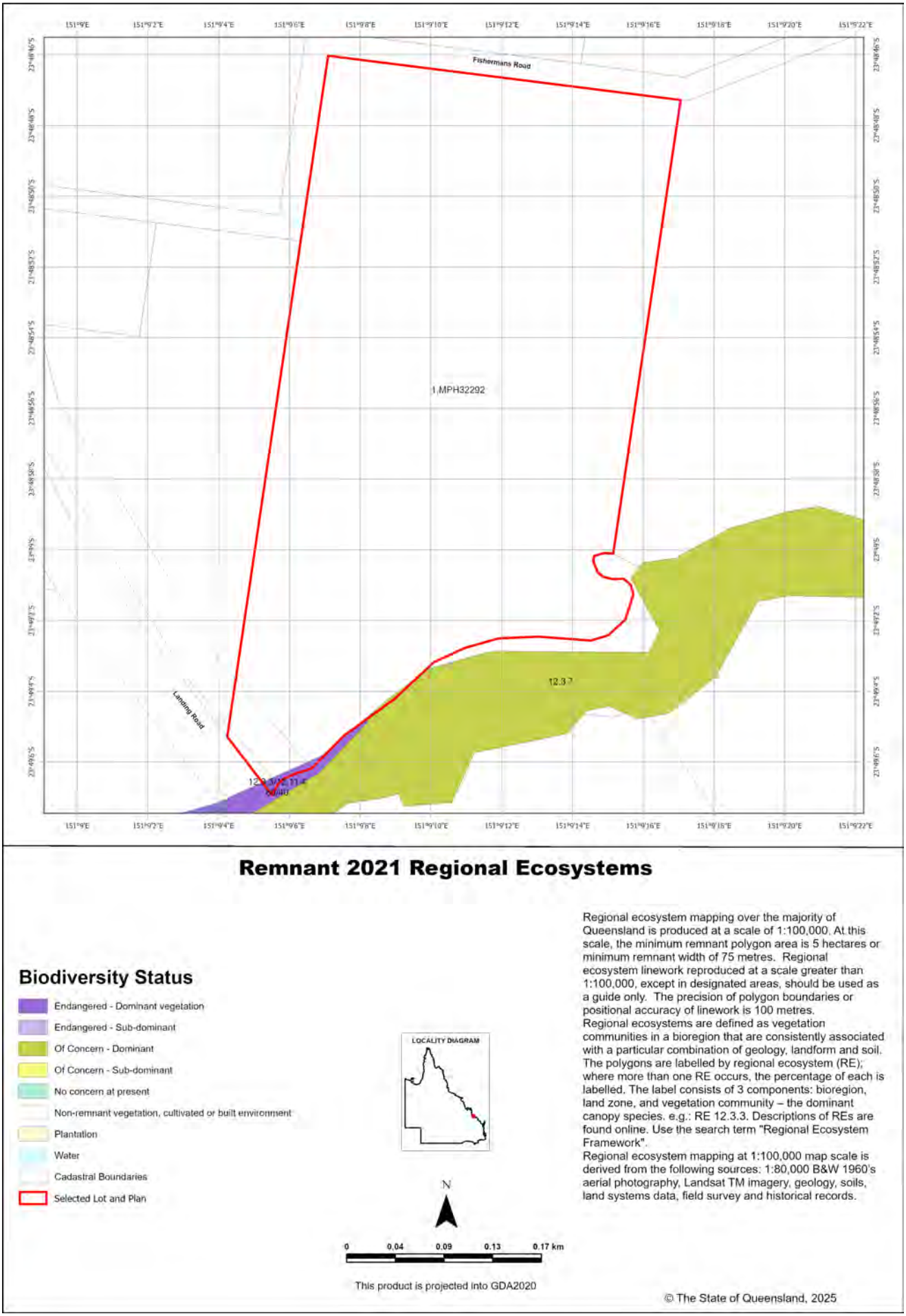
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
12.11.4	Not currently available	Not currently available
12.3.3	Available	Available
12.3.7	Available	Available
non-remnant	Not currently available	Not currently available

Maps

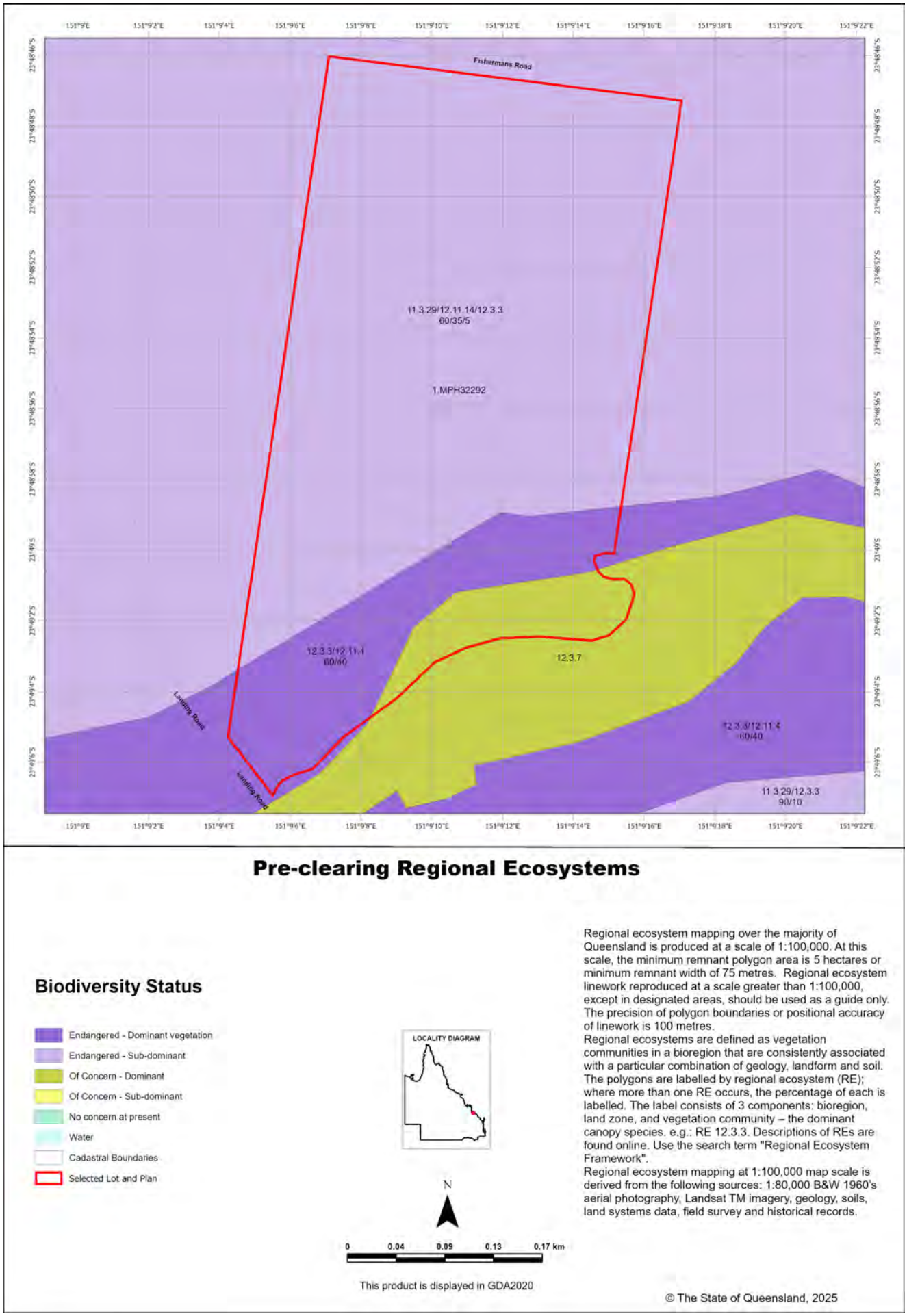
Map 1 - Location



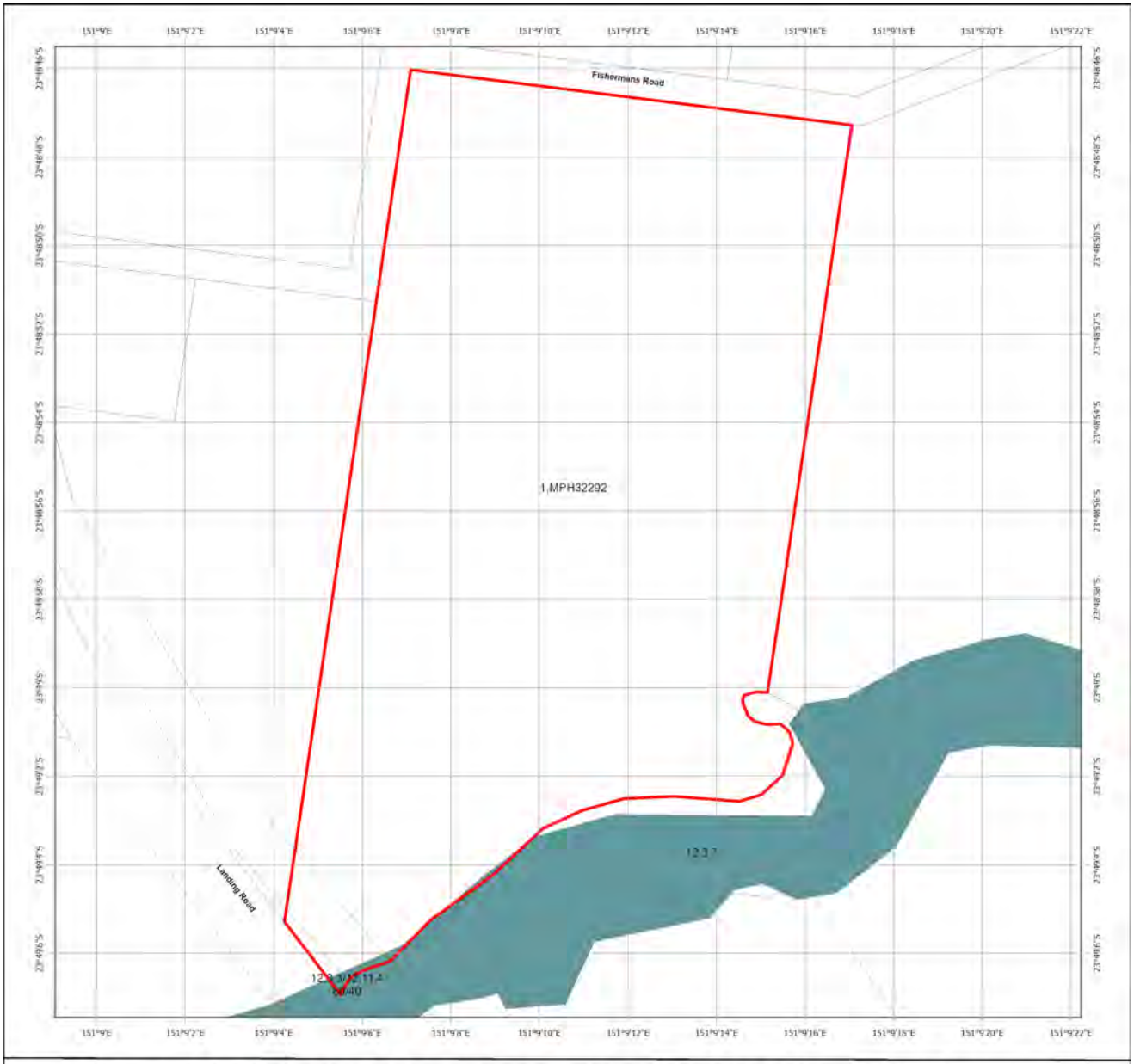
Map 2 - Remnant 2021 regional ecosystems



Map 3 - Pre-clearing regional ecosystems



Map 4 - Remnant 2021 regional ecosystems by BVG (5M)



Remnant 2021 Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups
BVG5M Description (BVG1M codes)

1. Rainforests and scrubs (1-7b)
2. Wet eucalypt open forests (8-8b)
3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
4. Eucalypt open forests to woodlands on floodplains (16-16d)
5. Eucalypt dry woodlands on inland depositional plains (17-18d)
6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
7. Callitris woodland - open forests (20a)
8. Melaleuca open woodlands on depositional plains (21-22c)
9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
12. Other coastal communities or heaths (28-29b)
13. Tussock grasslands, forblands (30-32b)
14. Hummock grasslands (33-33b)
15. Wetlands (swamps and lakes) (34-34g)
16. Mangroves and saltmarshes (35-35b)

Non-remnant vegetation, cultivated or built environment
Water
Cadastral Boundaries
Selected Lot and Plan

N

0 0.04 0.09 0.13 0.17 km

This product is displayed in GDA2020

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled. Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.
Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil.
The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework".
Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.
Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy.
Non-remnant vegetation includes regrowth and disturbed native vegetation.

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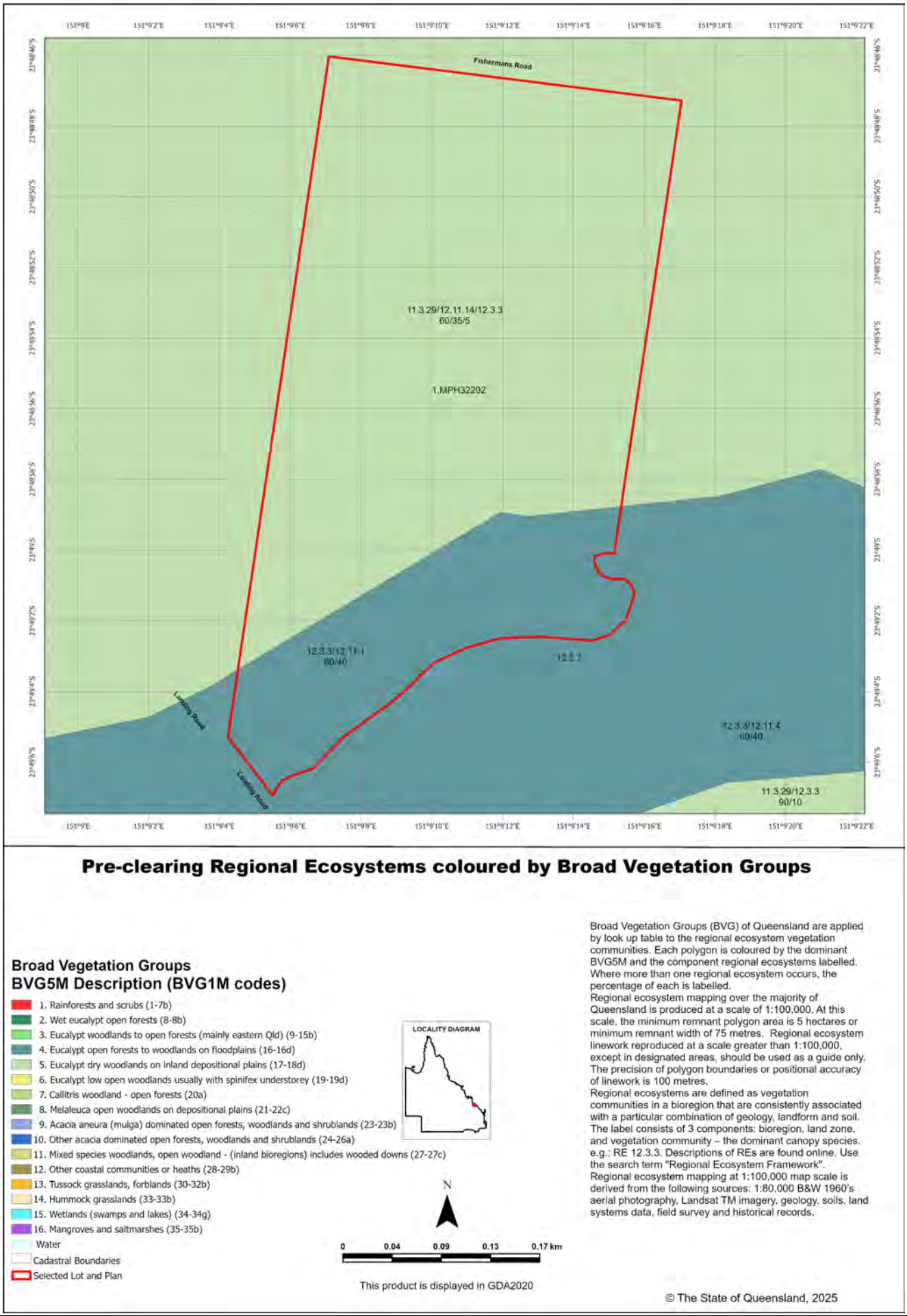
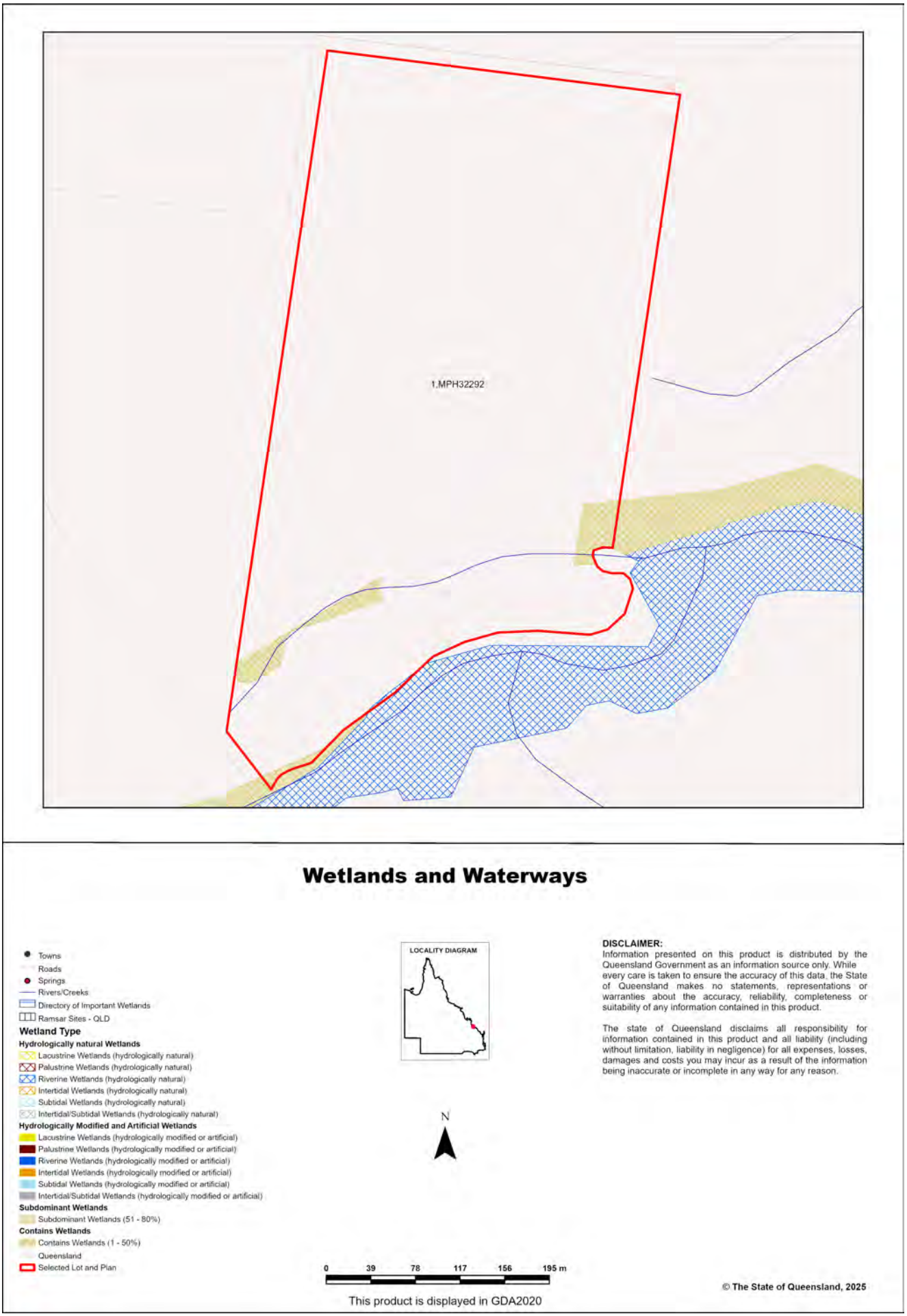
Map 5 - Pre-clearing regional ecosystems by BVG (5M)



Map 6 - Wetlands and waterways



Links and Other Information Sources

The Department of the Environment, Tourism, Science and Innovation's Website - http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/ provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from: https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/broad-vegetation

The methodology for mapping regional ecosystems can be downloaded from: https://www.qld.gov.au/__data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Technical descriptions for regional ecosystems can be obtained from: http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/

Benchmarks can be obtained from: http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Spatial Catalogue, Queensland Spatial Catalogue : Queensland Government (information.qld.gov.au)

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link: https://qldglobe.information.qld.gov.au/

References

Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F., Ford, A.J. and Accad, A. (2023). The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 6.0. Queensland Herbarium, Department of Environment and Science. (https://publications.qld.gov.au/dataset/redd/resource/78209e74-c7f2-4589-90c1-c33188359086)

Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F, Richter,D., Addicott, E.P. and Appelman, C.N. (2023) Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland. Version 7.0. Updated December 2023. Queensland Herbarium, Queensland Department of Environment, Science and Innovation, Brisbane. (https://www.qld.gov.au/__data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf).

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems.* Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:
http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/

- Regional Ecosystem Description Database

The datasets listed below are available for download from:
Queensland Spatial Catalogue : Queensland Government (information.qld.gov.au)

- Biodiversity status of pre-clearing and 2021 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas
- Pre-clearing broad vegetation groups of Queensland
- Remnant 2021 broad vegetation groups of Queensland

Appendix 2 - Acronyms and Abbreviations

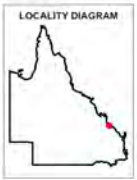
AOI - Area of Interest
GIS - Geographic Information System
RE - Regional Ecosystem
REDD - Regional Ecosystem Description Database
VMA - *Vegetation Management Act 1999*

Regulated Vegetation Management Map

Queensland Government

Category A area (Vegetation offsets/compliance notices/VDecs)
Category B area (Remnant vegetation)
Category C area (High-value regrowth vegetation)
Category R area (Reef regrowth watercourse vegetation)
Category X area (Exempt clearing work on Freehold, Indigenous and Leasehold land)
Water
Other land parcel boundaries
Selected Lot and Plan

LOCALITY DIAGRAM



N

0 175 350 525 700 875 m

This product is displayed in:
GDA2020

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Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.nrmmrrd.qld.gov.au or contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development.

Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at http://www.spatial.information.qld.gov.au/

Land parcel boundaries are provided as locational aid only.

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.

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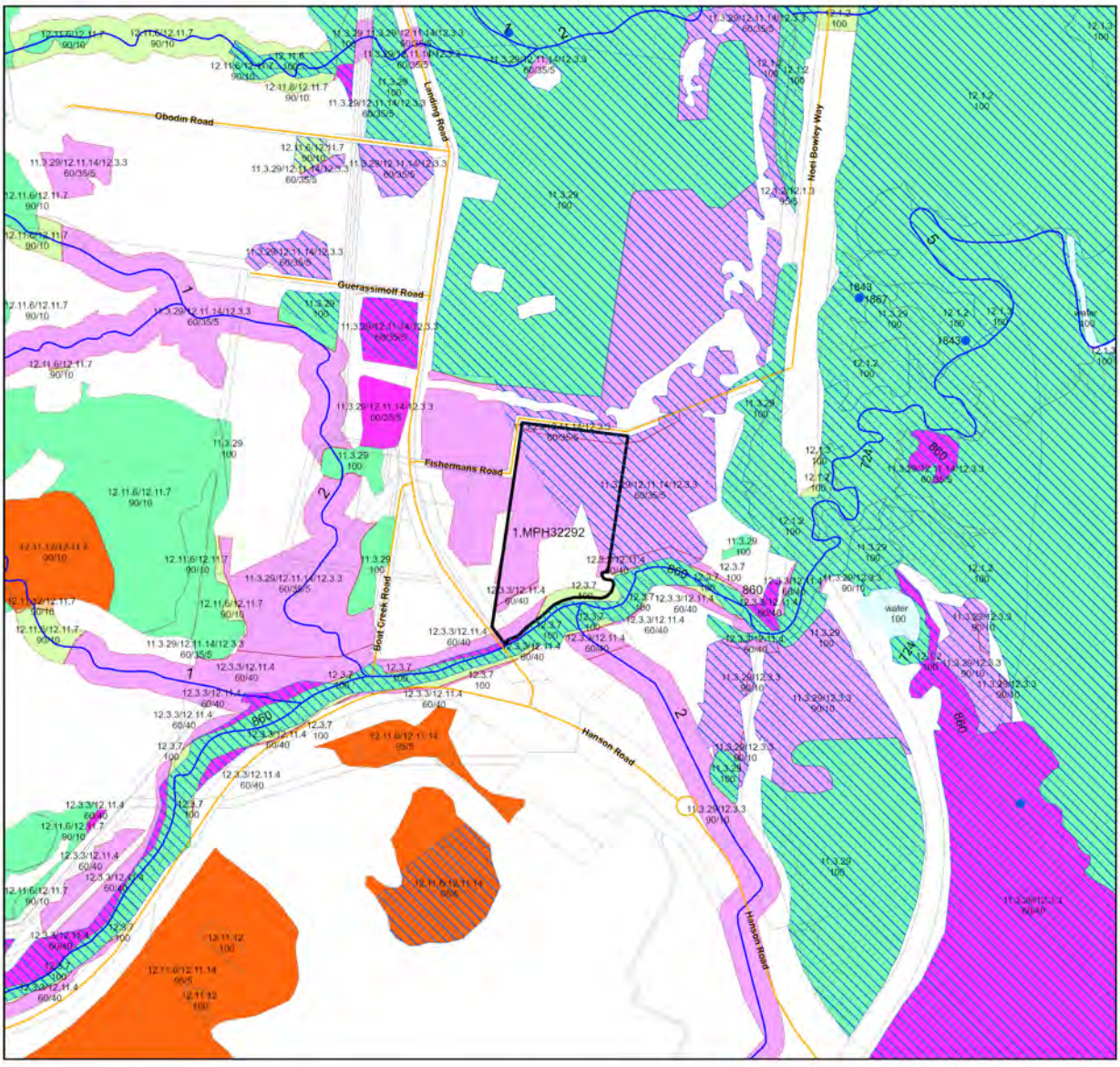

Vegetation Management Supporting Map

- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category C or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R area that is a least concern regional ecosystem
- Category X area
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map (Stream order shown as black number against stream where available)
- Highway
- Connector
- Street/Local Road
- National Parks, State Forest and other reserves
- Other land parcel boundaries
- Selected Lot and Plan

Queensland Government

LOCALITY DIAGRAM

N

0 125 250 375 500 625 m

This product is displayed in: GDA2020

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

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Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.nrmmrrd.qld.gov.au or contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at http://www.spatial.information.qld.gov.au/

Land parcel boundaries are provided as locational aid only.

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Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - State Code 16: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the *Planning Act 2016*; and
- Accepted development vegetation clearing codes made under the *Vegetation Management Act 1999*

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s on the accompanying essential habitat map.

This report identifies essential habitat in Category A, B and Category C areas.

The numeric labels on the essential habitat map can be cross referenced with the database below to determine which essential habitat factors might exist for a particular species.

Essential habitat is compiled from a combination of species habitat models and buffered species records.

The Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development website http://www.nrmmrrd.qld.gov.au has more information on how the layer is applied under the State Development Assessment Provisions - State Code 16: Native vegetation clearing and the *Vegetation Management Act 1999*.

Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated.

Essential habitat, for protected wildlife, means a category A area, a category B area or category C area shown on the regulated vegetation management map-

1. that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or
2. in which the protected wildlife, at any stage of its life cycle, is located.

Protected wildlife includes critically endangered, endangered, vulnerable or near-threatened native wildlife prescribed under the *Nature Conservation Act 1992*.

Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
860	Phascolarctos cinereus	koala	E	Open forests and woodlands containing Eucalyptus, Corymbia, Lophostemon or Melaleuca trees having a trunk of a diameter of more than 10cm at 1.3m above the ground. Tree species used for food and habitat varies across the state and can include: Corymbia citriodora, Corymbia henryi, Corymbia intermedia, Eucalyptus acmenoides, Eucalyptus bancroftii, Eucalyptus biturbinata, Eucalyptus blakelyi, Eucalyptus brownii, Eucalyptus camaldulensis, Eucalyptus carnea, Eucalyptus chloroclada, Eucalyptus coolabah, Eucalyptus crebra, Eucalyptus dealbata, Eucalyptus drepanophylla, Eucalyptus dunnii, Eucalyptus eugenioides, Eucalyptus exserta, Eucalyptus fibrosa, Eucalyptus grandis, Eucalyptus helidonica, Eucalyptus latisinensis, Eucalyptus longirostrata, Eucalyptus major, Eucalyptus melanophloia, Eucalyptus melliodora, Eucalyptus microcarpa, Eucalyptus microcorys, Eucalyptus microtheca, Eucalyptus moluccana, Eucalyptus montivaga, Eucalyptus orgadophila, Eucalyptus papuana, Eucalyptus pilularis, Eucalyptus platyphylla, Eucalyptus populnea, Eucalyptus portuensis, Eucalyptus propinqua, Eucalyptus racemosa, Eucalyptus resinifera, Eucalyptus robusta, Eucalyptus saligna, Eucalyptus seeana, Eucalyptus siderophloia, Eucalyptus sideroxylon, Eucalyptus tereticornis, Eucalyptus thozetiana, Eucalyptus tindaliae, Eucalyptus umbra, Lophostemon confertus, Melaleuca leucadendra, Melaleuca quinquenervia.	Sea level to 1000m.		Riparian areas, plains and hill/escarpment slopes.
1843	Numenius madagascariensis	eastern curlew	E	Foraging on soft, intertidal mudflat, with a preference for broad flats, often in sheltered areas near mangroves and estuaries/creeks, also on sandflats and occasionally ocean beaches, rock platforms and coral reefs. Roost on saltflat, saltmarsh, mangroves, reef flat, sandy spits and grassland near water.	Sea level to 100m.	Sand, sandy mud and mud substrates.	Associated with coastlines and wetlands.
1867	Limosa lapponica baueri	Western Alaskan bar-tailed godwit	V	Foraging on large intertidal mudflat/sandflat, banks in estuaries, inlets, bays and coastal lagoons; also saline wetlands, saltmarsh, sandy beach, rock platform and coral reef-flat. Roost on sandy beach/spit and near saltmarsh.	Sea level to 100m.	Sand and mud substrates.	Associated with coastlines and wetlands.

Label	Regional Ecosystem (mandatory unless otherwise specified)
860	4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.8, 4.3.10, 4.3.11, 4.5.3, 4.5.5, 4.5.6, 4.5.8, 4.5.9, 4.7.1, 4.7.7, 4.7.8, 4.9.6, 4.9.10, 4.9.12, 4.9.17, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.7, 6.3.8, 6.3.9, 6.3.11, 6.3.12, 6.3.17, 6.3.18, 6.3.22, 6.3.24, 6.3.25, 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.5.1, 6.5.2, 6.5.3, 6.5.5, 6.5.6, 6.5.7, 6.5.8, 6.5.9, 6.5.10, 6.5.11, 6.5.13, 6.5.14, 6.5.15, 6.5.16, 6.5.17, 6.5.18, 6.5.19, 6.6.2, 6.7.1, 6.7.2, 6.7.5, 6.7.6, 6.7.7, 6.7.9, 6.7.11, 6.7.12, 6.7.13, 6.7.14, 6.7.17, 6.9.3, 7.2.3, 7.2.4, 7.2.7, 7.2.11, 7.3.7, 7.3.8, 7.3.9, 7.3.12, 7.3.13, 7.3.14, 7.3.16, 7.3.19, 7.3.20, 7.3.21, 7.3.25, 7.3.26, 7.3.39, 7.3.40, 7.3.42, 7.3.43, 7.3.44, 7.3.45, 7.3.47, 7.3.48, 7.3.50, 7.5.1, 7.5.2, 7.5.3, 7.5.4, 7.8.7, 7.8.8, 7.8.10, 7.8.15, 7.8.16, 7.8.17, 7.8.18, 7.8.19, 7.11.5, 7.11.6, 7.11.13, 7.11.14, 7.11.16, 7.11.18, 7.11.19, 7.11.20, 7.11.21, 7.11.31, 7.11.32, 7.11.33, 7.11.34, 7.11.35, 7.11.37, 7.11.41, 7.11.42, 7.11.43, 7.11.44, 7.11.45, 7.11.46, 7.11.47, 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1867	2.1.1, 2.1.4, 2.1.5, 3.1.6, 7.1.2, 7.1.3, 8.1.2, 8.1.3, 8.1.4, 11.1.1, 11.1.2, 11.1.3, 12.1.2, 12.1.3.

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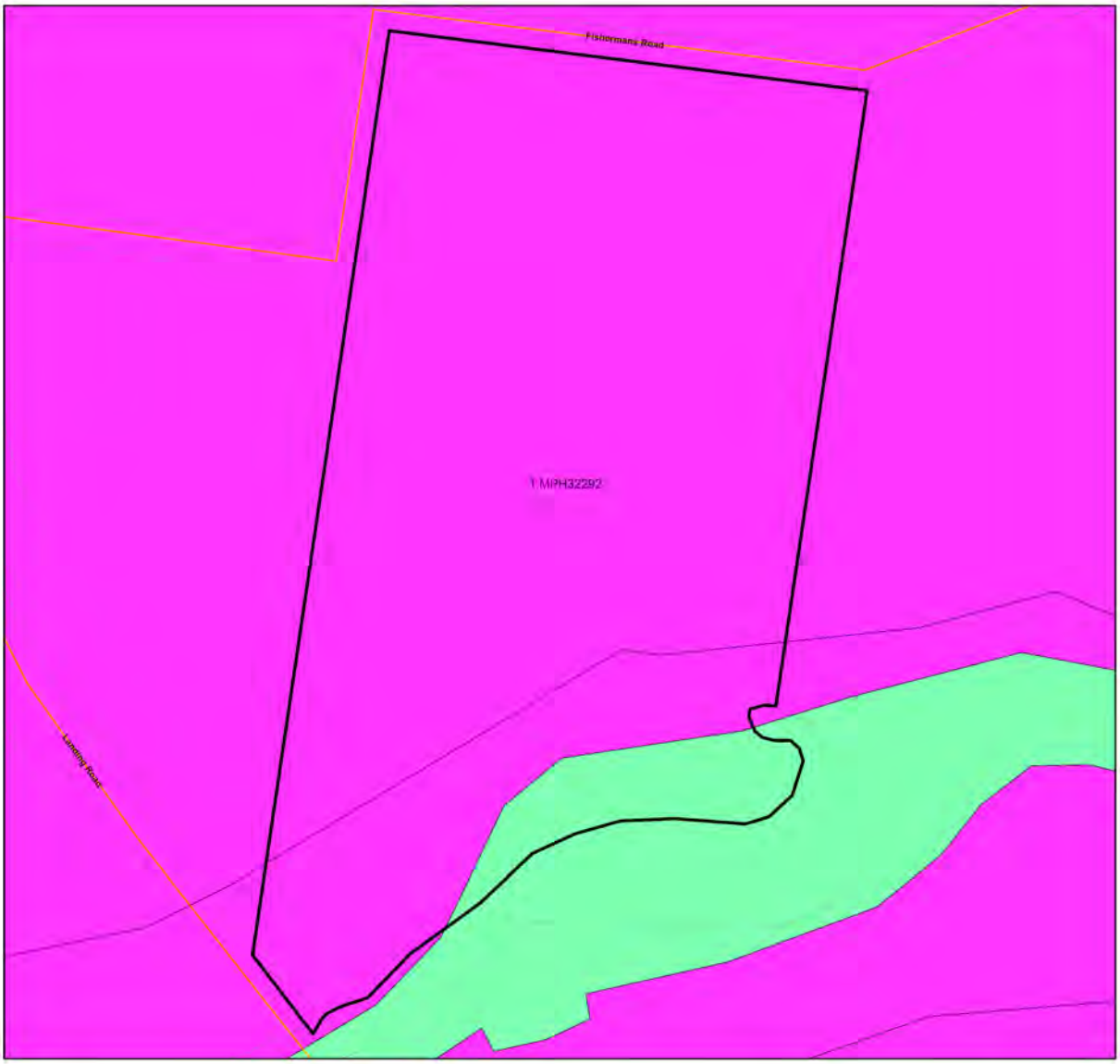

Vegetation Management Pre-clear Regional Ecosystem Map

- Highway
- Connector
- Street/Local Road
- Other land parcel boundaries
- Pre-clearing area containing Endangered RE
- Pre-clearing area containing Of Concern RE
- Pre-clearing area that is a Least Concern RE
- Water
- Selected Lot and Plan

LOCALITY DIAGRAM

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Digital data for the Pre-clearing regional ecosystem map is available from the Queensland Spatial Portal at http://www.spatial.information.qld.gov.au/

Land parcel boundaries shown are provided as a locational aid only.

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Queensland Government

Vegetation management report

For Lot: 1 Plan: MPH32292
24/06/2025

nrmmrrd.qld.gov.au

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Recent changes

Updated mapping

Updated vegetation mapping was released on 22 November 2023 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, essential habitat, wetland and high-value regrowth mapping.

The Department of the Environment, Tourism, Science and Innovation have also updated their koala protection mapping to align with the Queensland Herbarium scientific updates.

The latest version (v10) of the Protected Plants Flora Survey Trigger Map (trigger map) was released on 6 September 2023.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:
Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of the Environment, Tourism, Science and Innovation who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of the Environment, Tourism, Science and Innovation who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:
- the vegetation management framework, which may include:

- exempt clearing work;
- accepted development vegetation clearing code;
- an area management plan;
- a development approval;

- the protected plant framework, which may include:

- the need to undertake a flora survey;
- exempt clearing;
- a protected plant clearing permit;

- the koala protection framework, which may include:

- exempted development;
- a development approval;
- the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

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1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 1 Plan: MPH32292 are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
1	MPH32292	Freehold	158,750
A	CTN2166	Easement	2,398

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

Does the property Lot: 1 Plan: MPH32292 have a freehold tenure and is in the Wet Tropics of Queensland World Heritage Area?

No, this property is not located in the Wet Tropics of Queensland World Heritage Area.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 1 Plan: MPH32292, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Gladstone Regional	Calliope	Southeast Queensland	Burnett - Curtis Hills and Ranges

2. Vegetation management framework (administered by the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development)

The *Vegetation Management Act 1999* (VMA), the Vegetation Management Regulation 2023, the *Planning Act 2016* and the Planning Regulation 2017, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem identified in the Vegetation Management Regional Ecosystem Description Database (VM REDD) as having a grassland structure; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at

https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/exemptions/.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at

https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/codes/

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at
https://vegetation-apps.dnrm.qld.gov.au

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development and then follow the conditions and requirements listed in the AMP.

https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/area-management-plans

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at

https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/development

2.5. Contact information for the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development

For further information on the vegetation management framework:

Phone 135VEG (135 834)

Email vegetation@resources.qld.gov.au

Visit https://www.resources.qld.gov.au/?contact=vegetation to submit an online enquiry.

3. Vegetation management framework for Lot: 1 Plan: MPH32292

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property

Vegetation category	Area (ha)
Category B	0.04
Category C	10.68
Category R	1.07
Category X	3.70

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

There is no Property Map of Assessable Vegetation (PMAV) present on this property.

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at
https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
11.3.29	Least concern	C	6.23	Eucalyptus crebra, E. exserta, Melaleuca spp. woodland on alluvial plains	Sparse
12.11.14	Of concern	C	3.63	Eucalyptus crebra, E. tereticornis, Corymbia intermedia woodland on metamorphics +/- interbedded volcanics	Sparse
12.11.4	Of concern	B	0.01	Semi-evergreen vine thicket on metamorphics +/- interbedded volcanics	Dense
12.11.4	Of concern	C	0.12	Semi-evergreen vine thicket on metamorphics +/- interbedded volcanics	Dense
12.11.4	Of concern	R	0.19	Semi-evergreen vine thicket on metamorphics +/- interbedded volcanics	Dense
12.3.3	Endangered	B	0.02	Eucalyptus tereticornis woodland on Quaternary alluvium	Sparse
12.3.3	Endangered	C	0.70	Eucalyptus tereticornis woodland on Quaternary alluvium	Sparse
12.3.3	Endangered	R	0.29	Eucalyptus tereticornis woodland on Quaternary alluvium	Sparse
12.3.7	Least concern	B	0.01	Eucalyptus tereticornis, Casuarina cunninghamiana subsp. cunninghamiana +/- Melaleuca spp. fringing woodland	Sparse
12.3.7	Least concern	C	less than 0.01	Eucalyptus tereticornis, Casuarina cunninghamiana subsp. cunninghamiana +/- Melaleuca spp. fringing woodland	Sparse
12.3.7	Least concern	R	0.59	Eucalyptus tereticornis, Casuarina cunninghamiana subsp. cunninghamiana +/- Melaleuca spp. fringing woodland	Sparse
non-rem	None	X	3.70	None	None

Please note:
1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.
2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses
Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat
Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or
2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
860	Phascolarctos cinereus	koala	E	Open forests and woodlands containing Eucalyptus, Corymbia, Lophostemon or Melaleuca trees having a trunk of a diameter of more than 10cm at 1.3m above the ground. Tree species used for food and habitat varies across the state and can include: Corymbia citriodora, Corymbia henryi, Corymbia intermedia, Eucalyptus acmenoides, Eucalyptus bancroftii, Eucalyptus biturbinata, Eucalyptus blakelyi, Eucalyptus brownii, Eucalyptus camaldulensis, Eucalyptus carnea, Eucalyptus chloroclada, Eucalyptus coolabah, Eucalyptus crebra, Eucalyptus dealbata, Eucalyptus drepanophylla, Eucalyptus dunnii, Eucalyptus eugenioides, Eucalyptus exserta, Eucalyptus fibrosa, Eucalyptus grandis, Eucalyptus helidonica, Eucalyptus latisinensis, Eucalyptus longirostrata, Eucalyptus major, Eucalyptus melanophloia, Eucalyptus melliodora, Eucalyptus microcarpa, Eucalyptus microcorys, Eucalyptus microtheca, Eucalyptus moluccana, Eucalyptus montivaga, Eucalyptus orgadophila, Eucalyptus papuana, Eucalyptus pilularis, Eucalyptus platyphylla, Eucalyptus populnea, Eucalyptus portuensis, Eucalyptus propinqua, Eucalyptus racemosa, Eucalyptus resinifera, Eucalyptus robusta, Eucalyptus saligna, Eucalyptus seeana, Eucalyptus siderophloia, Eucalyptus sideroxylon, Eucalyptus tereticornis, Eucalyptus thozetiana, Eucalyptus tindaliae, Eucalyptus umbra, Lophostemon confertus, Melaleuca leucadendra, Melaleuca quinquenervia.	Sea level to 1000m.		Riparian areas, plains and hill/escarpment slopes.
1843	Numenius madagascariensis	eastern curlew	E	Foraging on soft, intertidal mudflat, with a preference for broad flats, often in sheltered areas near mangroves and estuaries/creeks, also on sandflats and occasionally ocean beaches, rock platforms and coral reefs. Roost on saltflat, saltmarsh, mangroves, reef flat, sandy spits and grassland near water.	Sea level to 100m.	Sand, sandy mud and mud substrates.	Associated with coastlines and wetlands.
1867	Limosa lapponica baueri	Western Alaskan bar-tailed godwit	V	Foraging on large intertidal mudflat/sandflat, banks in estuaries, inlets, bays and coastal lagoons; also saline wetlands, saltmarsh, sandy beach, rock platform and coral reef-flat. Roost on sandy beach/spit and near saltmarsh.	Sea level to 100m.	Sand and mud substrates.	Associated with coastlines and wetlands.

Label	Regional Ecosystem (mandatory unless otherwise specified)
860	4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.8, 4.3.10, 4.3.11, 4.5.3, 4.5.5, 4.5.6, 4.5.8, 4.5.9, 4.7.1, 4.7.7, 4.7.8, 4.9.6, 4.9.10, 4.9.12, 4.9.17, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.7, 6.3.8, 6.3.9, 6.3.11, 6.3.12, 6.3.17, 6.3.18, 6.3.22, 6.3.24, 6.3.25, 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.5.1, 6.5.2, 6.5.3, 6.5.5, 6.5.6, 6.5.7, 6.5.8, 6.5.9, 6.5.10, 6.5.11, 6.5.13, 6.5.14, 6.5.15, 6.5.16, 6.5.17, 6.5.18, 6.5.19, 6.6.2, 6.7.1, 6.7.2, 6.7.5, 6.7.6, 6.7.7, 6.7.9, 6.7.11, 6.7.12, 6.7.13, 6.7.14, 6.7.17, 6.9.3, 7.2.3, 7.2.4, 7.2.7, 7.2.11, 7.3.7, 7.3.8, 7.3.9, 7.3.12, 7.3.13, 7.3.14, 7.3.16, 7.3.19, 7.3.20, 7.3.21, 7.3.25, 7.3.26, 7.3.39, 7.3.40, 7.3.42, 7.3.43, 7.3.44, 7.3.45, 7.3.47, 7.3.48, 7.3.50, 7.5.1, 7.5.2, 7.5.3, 7.5.4, 7.8.7, 7.8.8, 7.8.10, 7.8.15, 7.8.16, 7.8.17, 7.8.18, 7.8.19, 7.11.5, 7.11.6, 7.11.13, 7.11.14, 7.11.16, 7.11.18, 7.11.19, 7.11.20, 7.11.21, 7.11.31, 7.11.32, 7.11.33, 7.11.34, 7.11.35, 7.11.37, 7.11.41, 7.11.42, 7.11.43, 7.11.44, 7.11.45, 7.11.46, 7.11.47, 7.11.48, 7.11.49, 7.11.50, 7.11.51, 7.12.4, 7.12.5, 7.12.17, 7.12.21, 7.12.22, 7.12.23, 7.12.24, 7.12.25, 7.12.26, 7.12.27, 7.12.28, 7.12.29, 7.12.30, 7.12.33, 7.12.34, 7.12.35, 7.12.51, 7.12.52, 7.12.53, 7.12.54, 7.12.55, 7.12.56, 7.12.57, 7.12.58, 7.12.59, 7.12.60, 7.12.61, 7.12.62, 7.12.63, 7.12.65, 7.12.66, 7.12.69, 8.1.5, 8.2.3, 8.2.6, 8.2.7, 8.2.8, 8.2.11, 8.2.12, 8.2.13, 8.2.14, 8.3.1, 8.3.2, 8.3.3, 8.3.5, 8.3.6, 8.3.8, 8.3.10, 8.3.11, 8.3.13, 8.5.1, 8.5.2, 8.5.3, 8.5.5, 8.5.6, 8.5.7, 8.9.1, 8.10.1, 8.11.1, 8.11.3, 8.11.4, 8.11.5, 8.11.6, 8.11.8, 8.11.10, 8.11.12, 8.12.4, 8.12.5, 8.12.6, 8.12.7, 8.12.8, 8.12.9, 8.12.12, 8.12.14, 8.12.20, 8.12.22, 8.12.23, 8.12.25, 8.12.26, 8.12.27, 8.12.29, 8.12.31, 8.12.32, 9.3.1, 9.3.2, 9.3.3, 9.3.4, 9.3.5, 9.3.6, 9.3.7, 9.3.8, 9.3.10, 9.3.11, 9.3.13, 9.3.14, 9.3.15, 9.3.16, 9.3.17, 9.3.19, 9.3.20, 9.3.21, 9.3.22, 9.3.27, 9.4.1, 9.4.2, 9.5.1, 9.5.3, 9.5.4, 9.5.5, 9.5.6, 9.5.7, 9.5.8, 9.5.9, 9.5.10, 9.5.11, 9.5.12, 9.5.15, 9.5.16, 9.5.17, 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12.11.27, 12.11.28, 12.12.2, 12.12.3, 12.12.4, 12.12.5, 12.12.6, 12.12.7, 12.12.8, 12.12.9, 12.12.11, 12.12.12, 12.12.14, 12.12.15, 12.12.23, 12.12.24, 12.12.25, 12.12.28, 13.3.1, 13.3.2, 13.3.3, 13.3.4, 13.3.5, 13.3.7, 13.9.2, 13.11.1, 13.11.2, 13.11.3, 13.11.4, 13.11.5, 13.11.6, 13.11.8, 13.11.9, 13.12.1, 13.12.2, 13.12.3, 13.12.4, 13.12.5, 13.12.6, 13.12.8, 13.12.9, 13.12.10.
1843	2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.6, 7.1.1, 7.1.2, 7.1.3, 8.1.1, 8.1.2, 8.1.3, 8.1.4, 11.1.1, 11.1.2, 11.1.3, 11.1.4, 12.1.2, 12.1.3
1867	2.1.1, 2.1.4, 2.1.5, 3.1.6, 7.1.2, 7.1.3, 8.1.2, 8.1.3, 8.1.4, 11.1.1, 11.1.2, 11.1.3, 12.1.2, 12.1.3.

3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

No Class A

No Class B

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 1 Plan: MPH32292.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:
https://www.qld.gov.au/environment/land/management/vegetation/maps/map-request

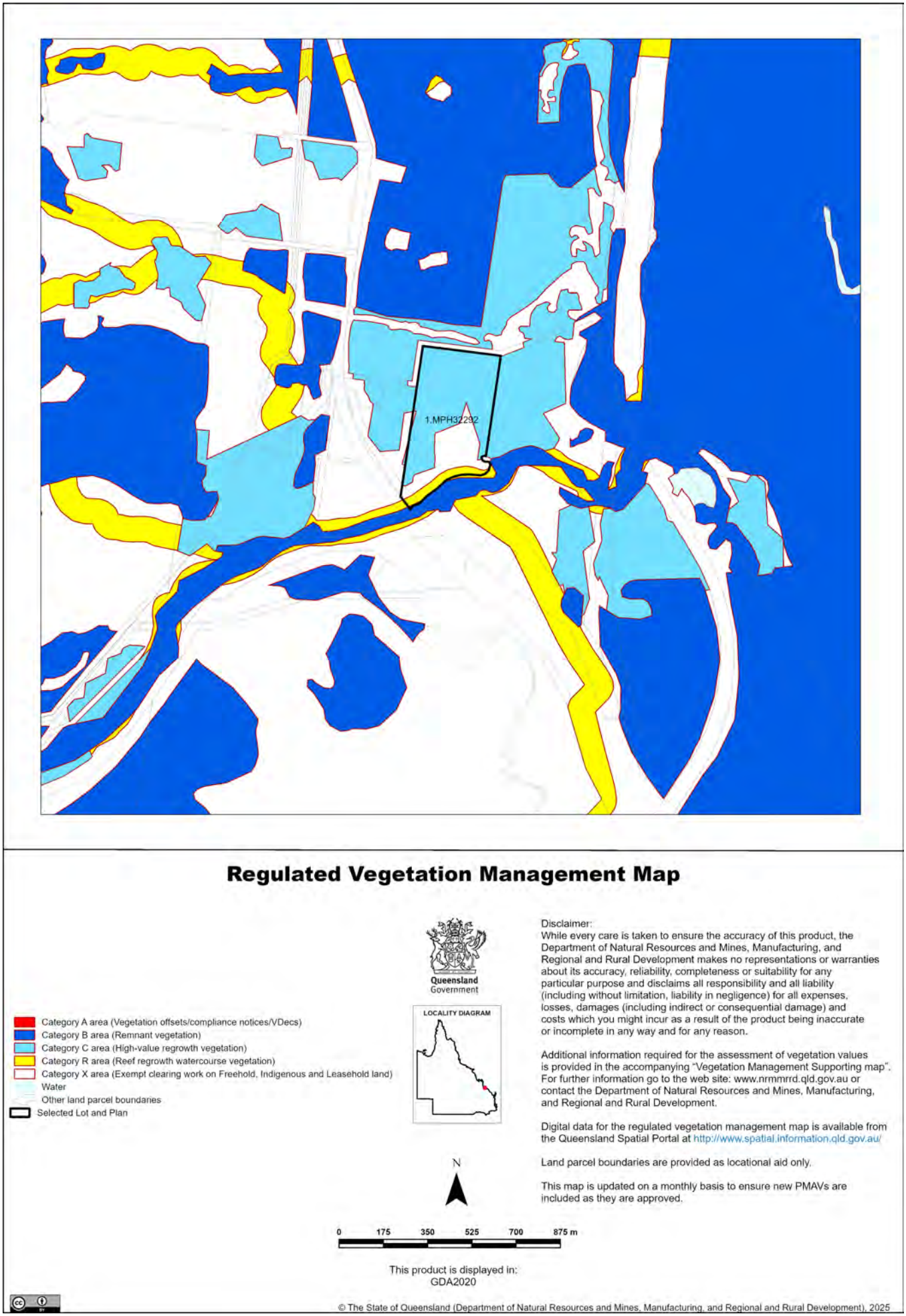
Regulated vegetation management map
The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new property maps of assessable vegetation (PMAV).

Vegetation management supporting map
The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

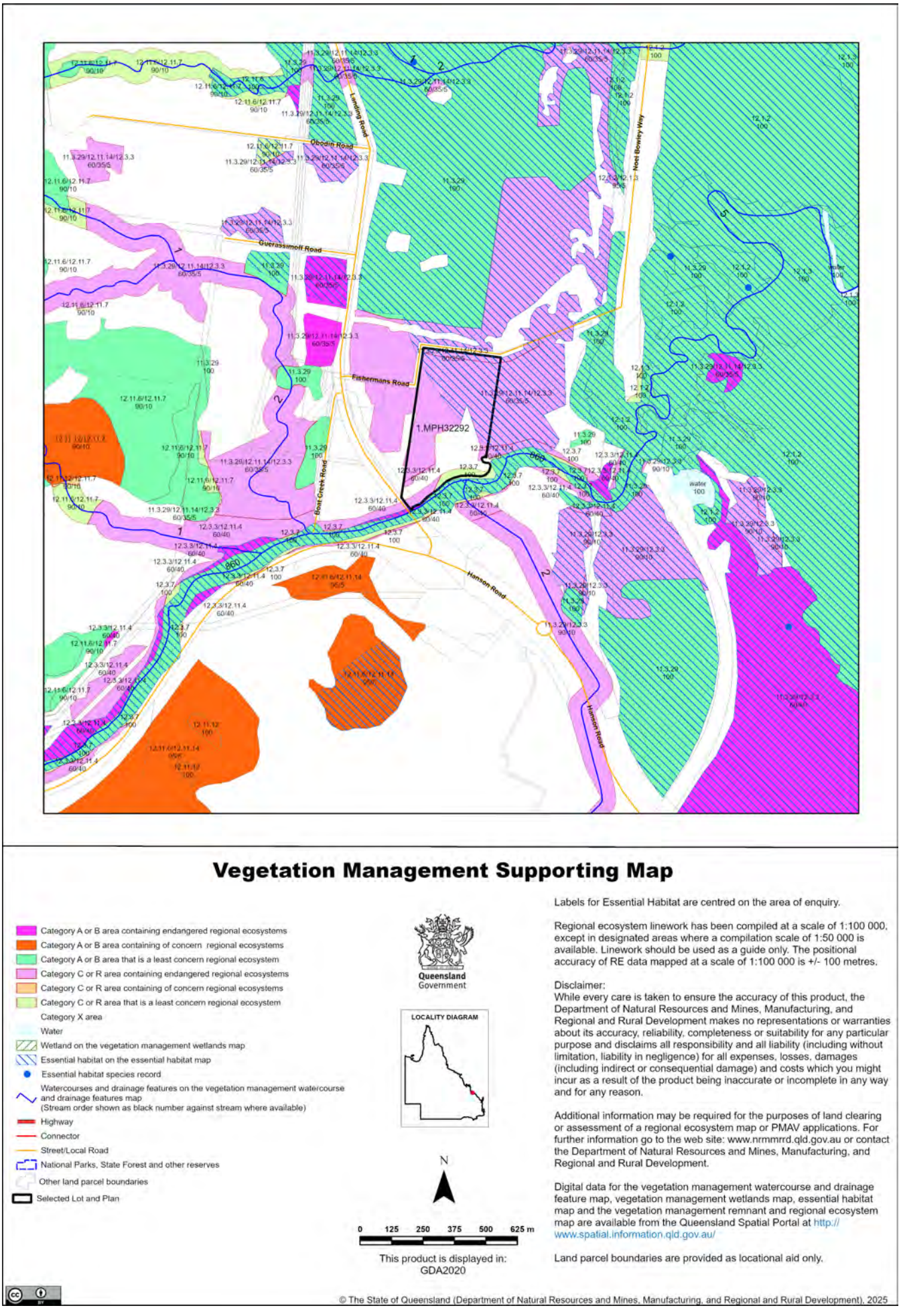
Coastal/non-coastal map
The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture
The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

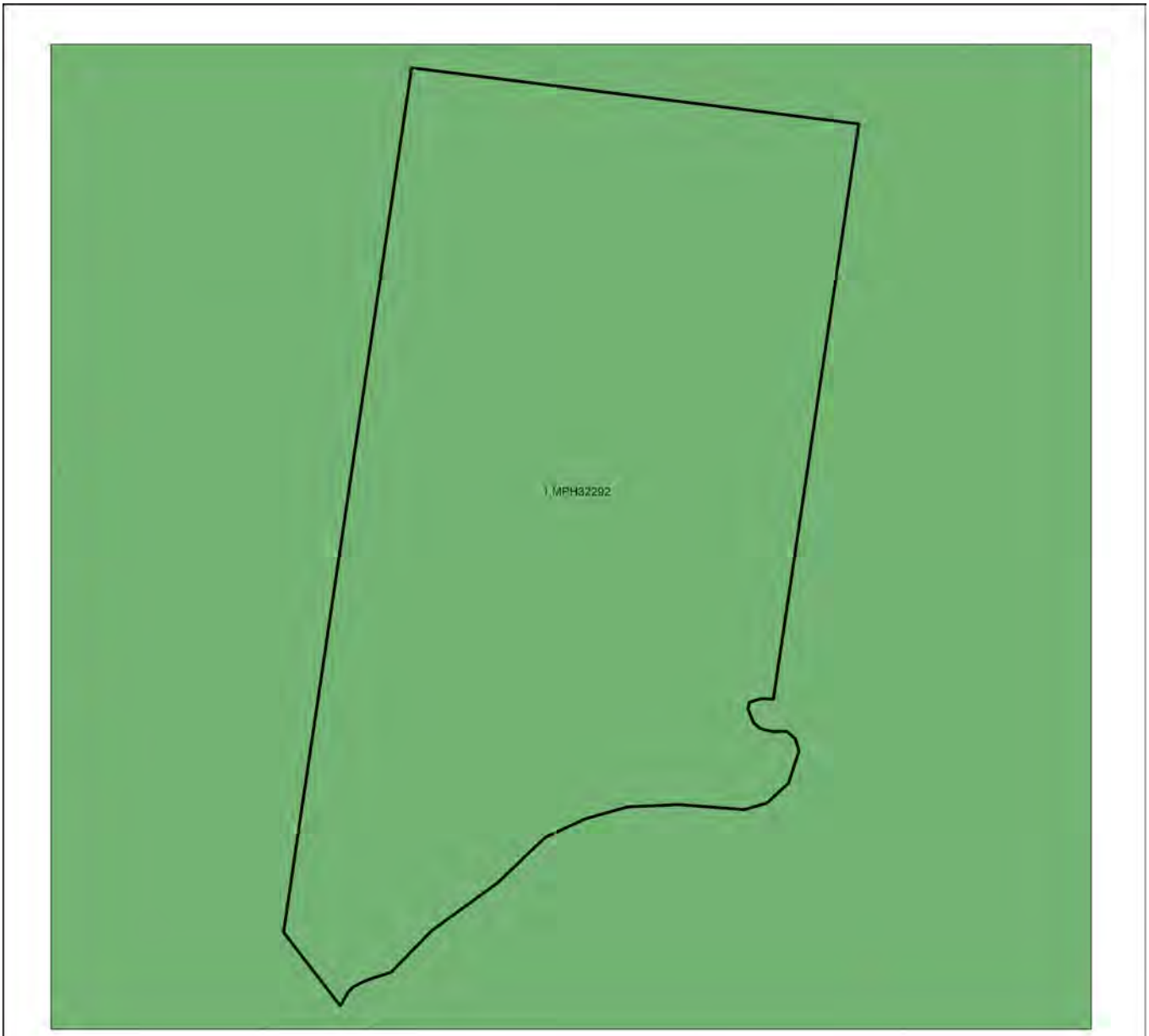
4.1 Regulated vegetation management map



4.2 Vegetation management supporting map



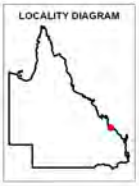
4.3 Coastal/non-coastal map



Coastal/Non Coastal Map

Coastal
Non Coastal
Other land parcel boundaries
Selected Lot and Plan

LOCALITY DIAGRAM



Disclaimer:
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Land parcel boundaries shown are provided as a locational aid only.

N

0 39 78 117 156 195 m

This product is displayed in:
GDA2020

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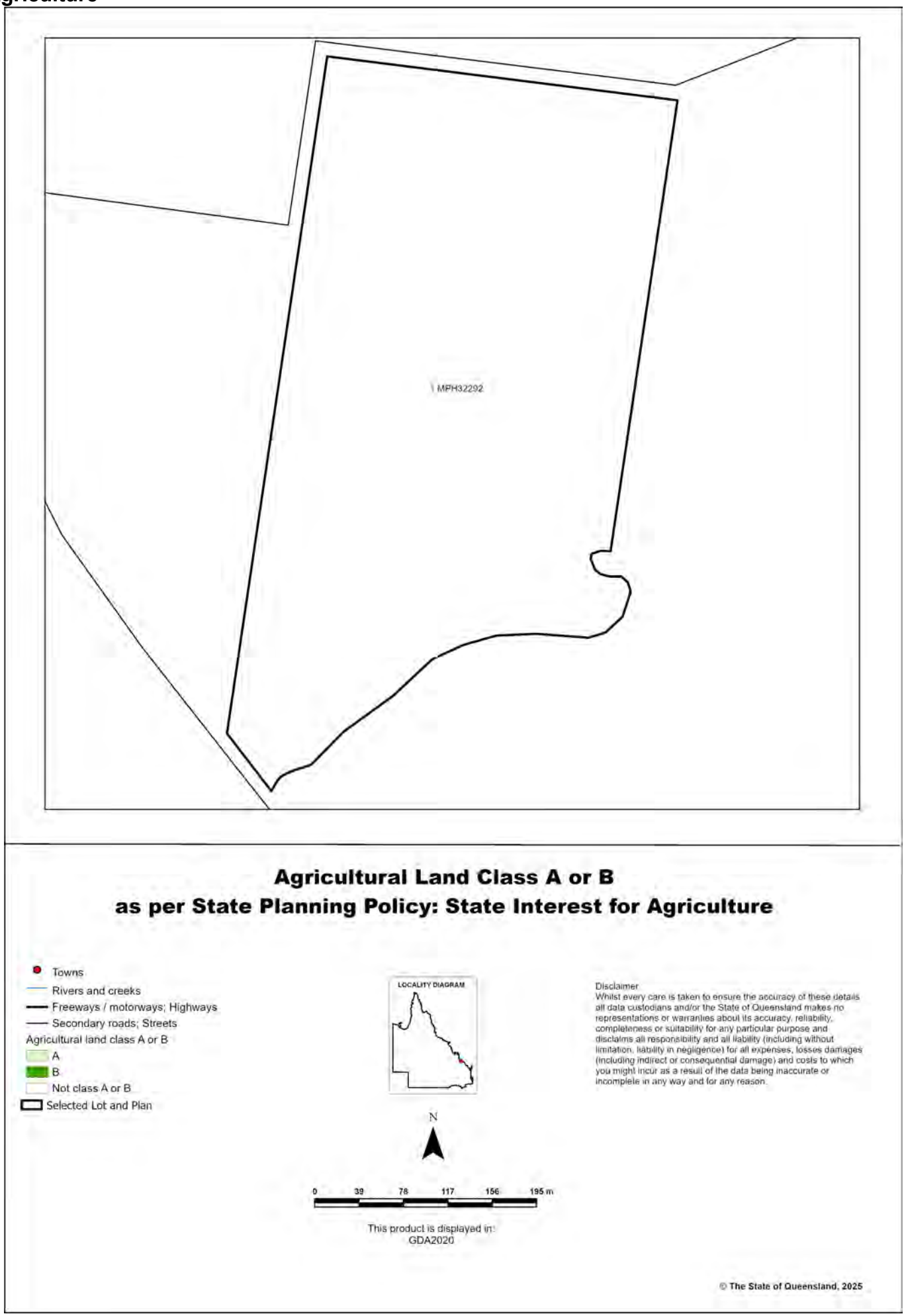
4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture



5. Protected plants framework (administered by the Department of the Environment, Tourism, Science and Innovation (DETSI))

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992* (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see Operational policy: When a protected plant in Queensland is considered to be 'in the wild') that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for threatened and near threatened plants. These are areas where threatened or near threatened plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the Flora survey guidelines. The main objective of a flora survey is to locate any threatened or near threatened plants that may be present in the clearing impact area.

If the flora survey identifies that threatened or near threatened plants are not present within the clearing impact area or clearing within 100m of Endangered, Vulnerable, Near-Threatened (EVNT) plants can be avoided, the clearing activity is exempt from a permit. An exempt clearing notification form must be submitted to the Department of the Environment, Tourism, Science and Innovation, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that threatened or near threatened plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the clearing permit application form.

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that threatened or near threatened plantsare present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DETSI

For further information on the protected plants framework:
Phone 1300 130 372 (and select option four)
Email palm@des.qld.gov.au
Visit https://www.qld.gov.au/environment/plants-animals/plants/protected-plants

5.5 Protected plants flora survey trigger map

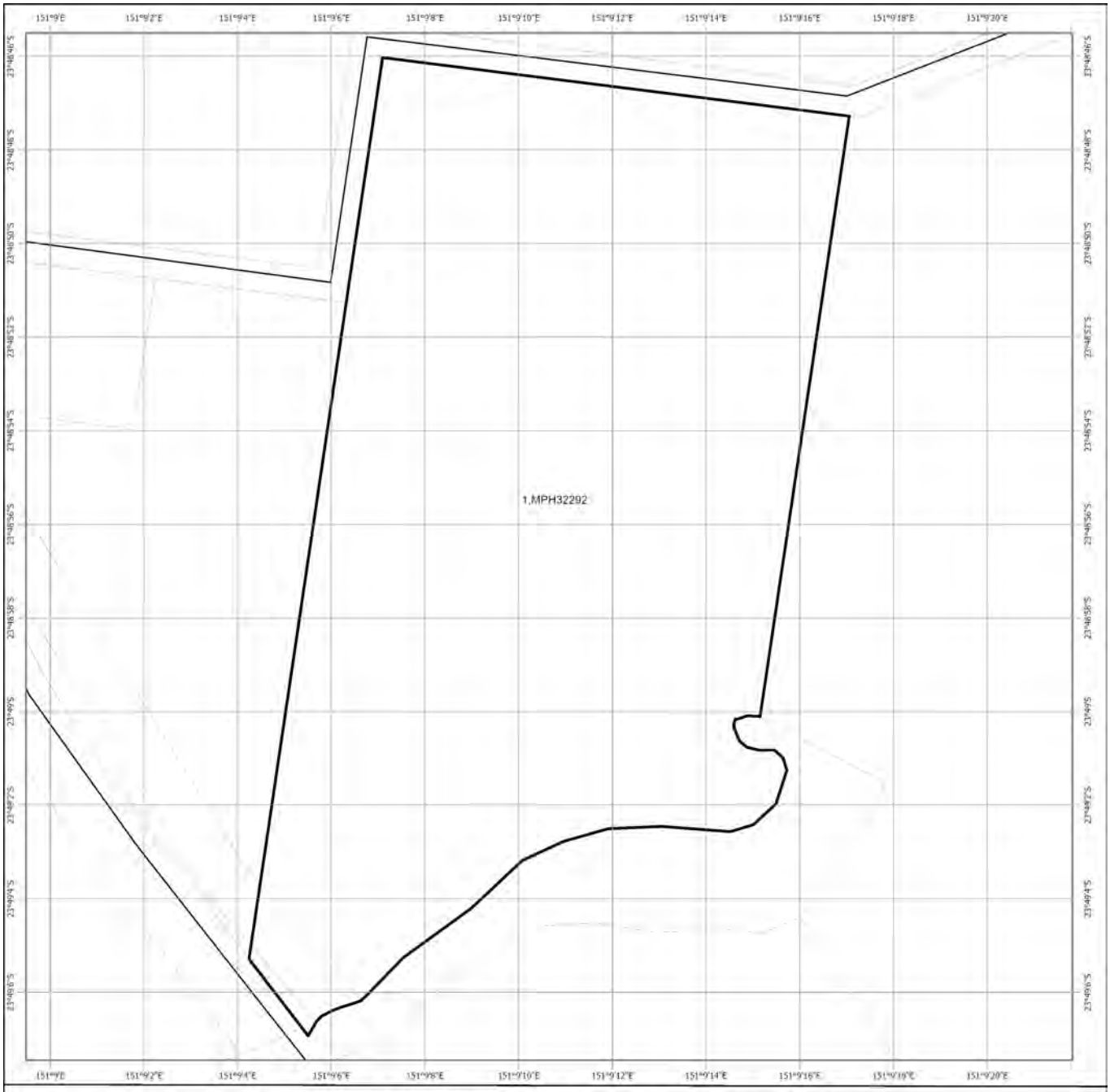
This map included may also be requested individually at: https://apps.des.qld.gov.au/map-request/flora-survey-trigger/.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

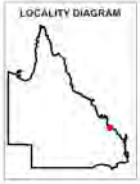
Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of the Environment, Tourism, Science and Innovation does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of the Environment, Tourism, Science and Innovation webpage on the clearing of protected plants for more information.



Protected Plants Flora Survey Trigger Map

High risk area
Other land parcel boundaries
Freeways / motorways / highways
Secondary roads / streets
Selected Lot and Plan

LOCALITY DIAGRAM



N

0 26 52 78 104 130 m

This product is displayed in: GDA2020

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of the Environment, Tourism, Science and Innovation at palm@des.qld.gov.au

Disclaimer: While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

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6. Koala protection framework (administered by the Department of the Environment, Tourism, Science and Innovation (DETSI))

The koala (*Phascolarctos cinereus*) is listed in Queensland as endangered by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the Nature Conservation (Animals) Regulation 2020, the Nature Conservation (Koala) Conservation Plan 2017, the *Planning Act 2016* and the Planning Regulation 2017.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.

Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the Planning Regulation 2017 for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document Spatial modelling in South East Queensland.

Section 7.2 shows any koala habitat area that exists on your property.

Under the Nature Conservation (Koala) Conservation Plan 2017, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document Guideline - Requests to make, amend or revoke a koala habitat area determination.

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the Planning Regulation 2017 (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

1. Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
2. Does not include destroying standing vegetation stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the Planning Regulation 2017. More information on exempted development can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:

  - the local government planning scheme makes the development assessable;
  - the premises includes an area that is both a koala priority area and a koala habitat area; and
  - the development does not involve interfering with koala habitat (defined above); and

- development in identified koala broad-hectare areas.

The Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the Nature Conservation (Koala) Conservation Plan 2017 prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DETSI

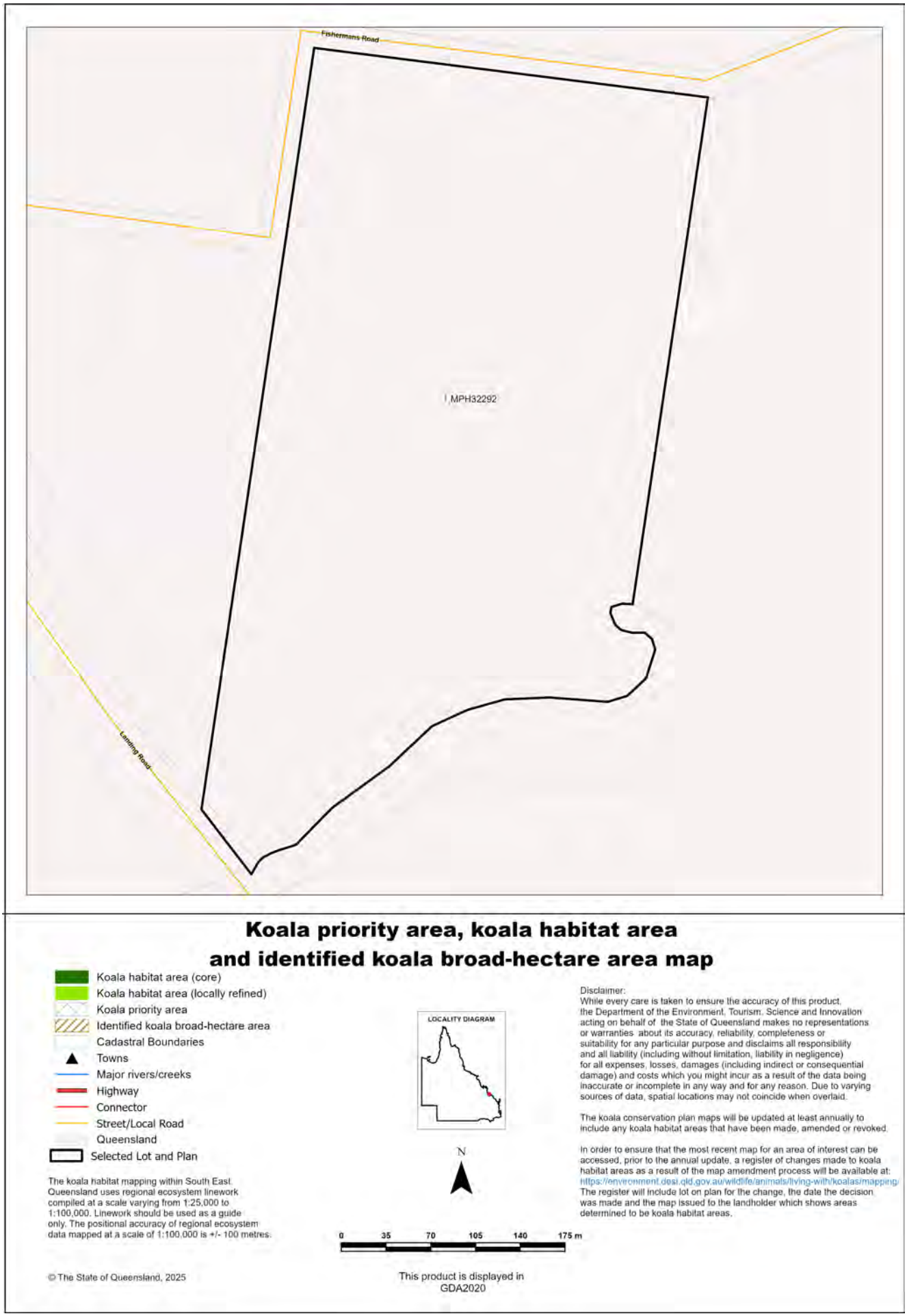
For further information on the koala protection framework:
Phone 13 QGOV (13 74 68)
Email koala.assessment@detsi.qld.gov.au
Visit https://environment.desi.qld.gov.au/wildlife/animals/living-with/koalas/mapping

7. Koala protection framework details for Lot: 1 Plan: MPH32292

7.1 Koala districts

Koala District C

7.2 Koala priority area, koala habitat area and identified koala broad-hectare map



7.3 Koala habitat regional ecosystems for core koala habitat areas

Koala habitat regional ecosystems for core koala habitat areas

Koala habitat area (core)
Towns
Highway
Connector
Street/Local Road
Major rivers/creeks
Queensland
Selected Lot and Plan

LOCALITY DIAGRAM

N

0 35 70 105 140 175 m

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Due to varying sources of data, spatial locations may not coincide when overlaid.

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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8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
Interference with overland flow	*Water Act 2000*	Department of Local Government, Water and Volunteers	Ph: 13 QGOV (13 74 68) www.dlgwv.qld.gov.au
Earthworks, significant disturbance	*Soil Conservation Act 1986*	Queensland Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development	Ph: 13 QGOV (13 74 68) www.nrmmrrd.qld.gov.au
Fire Permits	*Fire and Emergency Services Act 1990*	Queensland Fire Department	Ph: 13 QGOV (13 74 68) www.fire.qld.gov.au
Indigenous Cultural Heritage	*Aboriginal Cultural Heritage Act 2003* *Torres Strait Islander Cultural Heritage Act 2003*	Queensland Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism	Ph: 13 QGOV (13 74 68) www.tatsipca.qld.gov.au
Mining and environmentally relevant activities Infrastructure development (coastal) Heritage issues	*Environmental Protection Act 1994* *Coastal Protection and Management Act 1995* *Queensland Heritage Act 1992*	Queensland Department of the Environment, Tourism, Science and Innovation	Ph: 13 QGOV (13 74 68) www.detsi.qld.gov.au
Protected plants and protected areas	*Nature Conservation Act 1992* *Planning Act 2016*	Queensland Department of the Environment, Tourism, Science and Innovation	Ph: 1300 130 372 (option 4) palm@detsi.qld.gov.au www.detsi.qld.gov.au
Koala mapping and regulations	*Nature Conservation Act 1992*	Queensland Department of the Environment, Tourism, Science and Innovation	Ph: 13 QGOV (13 74 68) Koala.assessment@detsi.qld.gov.au
Interference with fish passage in a watercourse, mangroves Forestry activities	*Fisheries Act 1994* *Forestry Act 1959*	Queensland Department of Primary Industries	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
Matters of National Environmental Significance including listed threatened species and ecological communities	*Environment Protection and Biodiversity Conservation Act 1999*	Department of Climate Change, Energy, the Environment and Water (Australian Government)	Ph: 1800 803 772 www.dcceew.gov.au
Development and planning processes	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Queensland Department of State Development, Infrastructure and Planning	Ph: 13 QGOV (13 74 68) www.planning.qld.gov.au
Coordinated projects	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Office of the Coordinator-General	Ph: 13 QGOV (13 74 68) www.statedevelopment.qld.gov.au/coordinator-general
Wet Tropics World Heritage Area	*Wet Tropics World Heritage Protection and Management Act 1993*	Queensland Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au
Requirements on State controlled road	*Transport Infrastructure Act 1994*	Queensland Department of Transport and Main Roads	Ph: 13 QGOV (13 74 68) https://www.tmr.qld.gov.au
Local government requirements	*Local Government Act 2009* *Planning Act 2016*	Your relevant local government office	Local Government Contact Directory

WildNet Records
Conservation Significant Species List

For the selected area of interest Lot: 1 Plan: MPH32292
Current as at 24/06/2025 WildNetCSSpeciesList

Summary Information

The following table provides an overview of the area of interest: Lot: 1 Plan: MPH32292

Table 1. Area of interest details

Size (ha)	
15.49	
Local Government(s)	
Gladstone Regional	
Catchment(s)	
Calliope	
Bioregion(s)	**Subregion(s)**
Southeast Queensland	Burnett - Curtis Hills and Ranges

Protected Area(s)

No estates or reserves are located within the area of interest.

World Heritage Area(s)

No World Heritage Areas are located within the area of interest.

Ramsar Area(s)

No Ramsar Areas are located within the area of interest.

Introduction

This WildNet report is derived from a spatial layer that is generated from the WildNet database, managed by the Department of the Environment, Tourism, Science and Innovation. The layer, which is generated weekly, contains a subset of WildNet wildlife records that are not classed as erroneous or duplicate, that have a location precision equal to or less than 10000 metres and do not have a count of zero. It does not include aspatial data such as some baseline species lists created for some protected areas.

The WildNet dataset is constantly being enhanced and the taxonomic and status information revised. If a conservation significant species is not listed in this report, it does not mean it doesn't occur there and listed species may also no longer inhabit the area. It is recommended that you also access other internal and external data sources for species information in your area of interest.

The WildNet Application may provide additional information on species occurence within your area of interest.

Conservation significant species are species listed:

- as threatened or near threatened under the *Nature Conservation Act 1992*;
- as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* or
- migratory species protected under the following international agreements:
    - Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
    - China-Australia Migratory Bird Agreement
    - Japan-Australia Migratory Bird Agreement
    - Republic of Korea-Australia Migratory Bird Agreement

Table 2 lists the species recorded within the area of interest and its one kilometre buffer.

Map 1. Locality Map

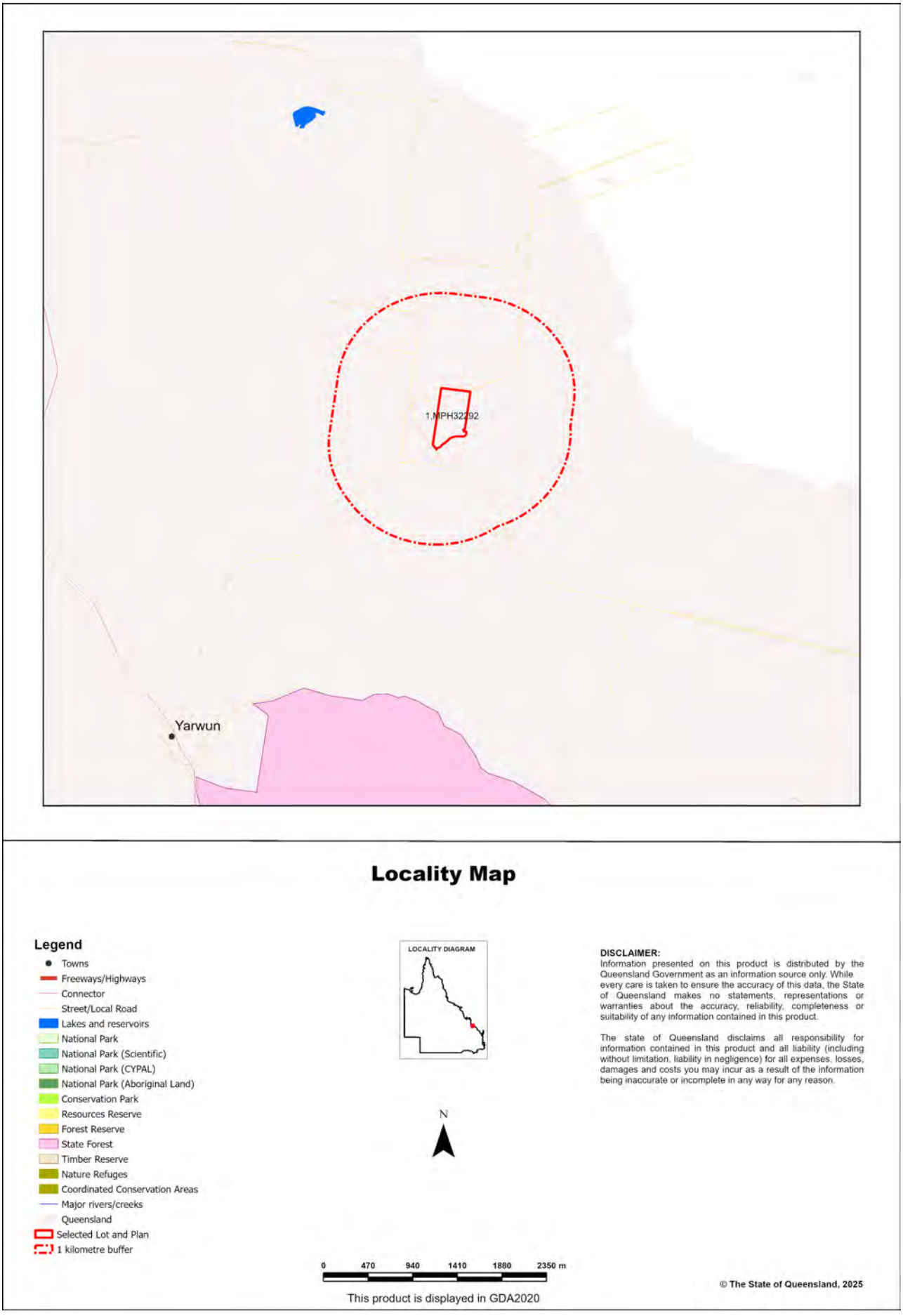

Table 2. Conservation significant species recorded within the area of interest and its one kilometre buffer

Taxon Id	Kingdom	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1736	Animalia	Aves	Cuculidae	*Cuculus optatus*	oriental cuckoo	SL		0	1	31/12/1997
1702	Animalia	Aves	Pandionidae	*Pandion haliaetus cristatus*	eastern osprey	SL		0	2	31/12/1997
1885	Animalia	Aves	Scolopacidae	*Actitis hypoleucos*	common sandpiper	SL		0	1	31/12/1997
1867	Animalia	Aves	Scolopacidae	*Limosa lapponica baueri*	Western Alaskan bar-tailed godwit	E	E	0	1	31/12/1997
1843	Animalia	Aves	Scolopacidae	*Numenius madagascariensis*	eastern curlew	CR	CE	0	2	31/12/1997
1845	Animalia	Aves	Scolopacidae	*Numenius phaeopus*	whimbrel	SL		0	1	31/12/1997
1853	Animalia	Aves	Scolopacidae	*Tringa nebularia*	common greenshank	E	E	0	1	31/12/1997
15513	Plantae	Equisetopsida	Amaryllidaceae	*Crinum pedunculatum*	river lily	SL		0	1	31/01/2003
16766	Plantae	Equisetopsida	Campanulaceae	*Lobelia purpurascens*	white root	SL		0	1	31/01/2003
14339	Plantae	Equisetopsida	Hydrocharitaceae	*Ottelia ovalifolia*	swamp lily	SL		0	1	31/01/2003
14327	Plantae	Equisetopsida	Menyanthaceae	*Nymphoides indica*	water snowflake	SL		0	1	31/01/2003
17505	Plantae	Equisetopsida	Orchidaceae	*Cymbidium canaliculatum*		SL		0	1	31/01/2003
15934	Plantae	Equisetopsida	Xanthorrhoeaceae	*Xanthorrhoea johnsonii*		SL		0	2	22/07/2010
16707	Plantae	Equisetopsida	Zamiaceae	*Macrozamia miquelii*		SL		0	1	31/01/2003

Taxon Id: Unique identifier of the taxon from the WildNet database.
NCA: Queensland conservation status of the taxon under the *Nature Conservation Act 1992* (Least Concern (C), Critically Endangered (CR), Endangered (E), Extinct (EX), Near Threatened (NT), Extinct in the Wild (PE), Special Least Concern (SL), and Vulnerable (V)).
EPBC: Australian conservation status of the taxon under the *Environment Protection and Biodiversity Conservation Act 1999* (Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Vulnerable (V), and Extinct in the Wild (XW)).
Specimens: The number of specimen-backed records of the taxon.
Records: The total number of records of the taxon.
Last record: Date of most recent record of the taxon.

Links and Support

Other sites that deliver species information from the WildNet database include:

- WildNet Application - public interface to find species information and species lists generated from the WildNet database.
- Biomaps - view biodiversity information, including WildNet records approved for publication, and generate reports
- Queensland Globe - view spatial information, including WildNet records approved for publication
- Qld WildNet Data API - access WildNet species information approved for publication such as notes, images and records etc.
- Wetland*Maps* - view species records, survey locations etc. approved for publication
- Wetland*Summary* - view wildlife statistics, species lists for a range of area types, and access WildNet species profiles
- WildNet wildlife records - published - Queensland - spatial layer of WildNet records approved for publication generated weekly
- Generalised distribution and densities of Queensland wildlife - Queensland species distributions and densities generalised to a 10 km grid resolution
- Conservation status of Queensland wildlife - access current lists of priority species for Queensland including nomenclature and status information
- Queensland Confidential Species - the list of species flagged as confidential in the WildNet database.

Please direct queries about this report to the WildNet Team WildNet@detsi.qld.gov.au.

Other useful sites for accessing Queensland biodiversity data include:

- Useful wildlife resources
- Queensland Government Data
- Atlas of Living Australia (ALA)
- Online Zoological Collections of Australian Museums (OZCAM)
- Australasian Virtual Herbarium (AVH)
- Protected Matters Search Tool

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WildNet Records
Introduced Species List

For the selected area of interest 15.49 Lot: 1 Plan: MPH32292
Current as at 24/06/2025 WildNetIntroducedSpeciesList

Summary Information

The following table provides an overview of the area of interest: Lot: 1 Plan: MPH32292

Table 1. Area of interest details

Size (ha)	
15.49	
Local Government(s)	
Gladstone Regional	
Catchment(s)	
Calliope	
Bioregion(s)	**Subregion(s)**
Southeast Queensland	Burnett - Curtis Hills and Ranges

Protected Area(s)

No estates or reserves are located within the area of interest.

World Heritage Area(s)

No World Heritage Areas are located within the area of interest.

Ramsar Area(s)

No Ramsar Areas are located within the area of interest.

Introduction

This WildNet report is derived from a spatial layer that is generated from the WildNet database, managed by the Department of the Environment, Tourism, Science and Innovation. The layer, which is generated weekly, contains a subset of WildNet wildlife records that are not classed as erroneous or duplicate, that have a location precision equal to or less than 10000 metres and do not have a count of zero. It does not include aspatial data such as some baseline species lists created for some protected areas.

The WildNet dataset is constantly being enhanced and the taxonomic and status information revised. If a species is not listed in this report, it does not mean it doesn't occur there and listed species may also no longer inhabit the area. It is recommended that you also access other internal and external data sources for species information in your area of interest.

The WildNet Application may provide additional information on species occurence within your area of interest.

Species data

Contextual location information is presented in Map 1.

A summary of the Introduced species recorded within the area of interest and its one kilometre buffer is presented in Tables 2 and 3.

Map 1. Locality Map

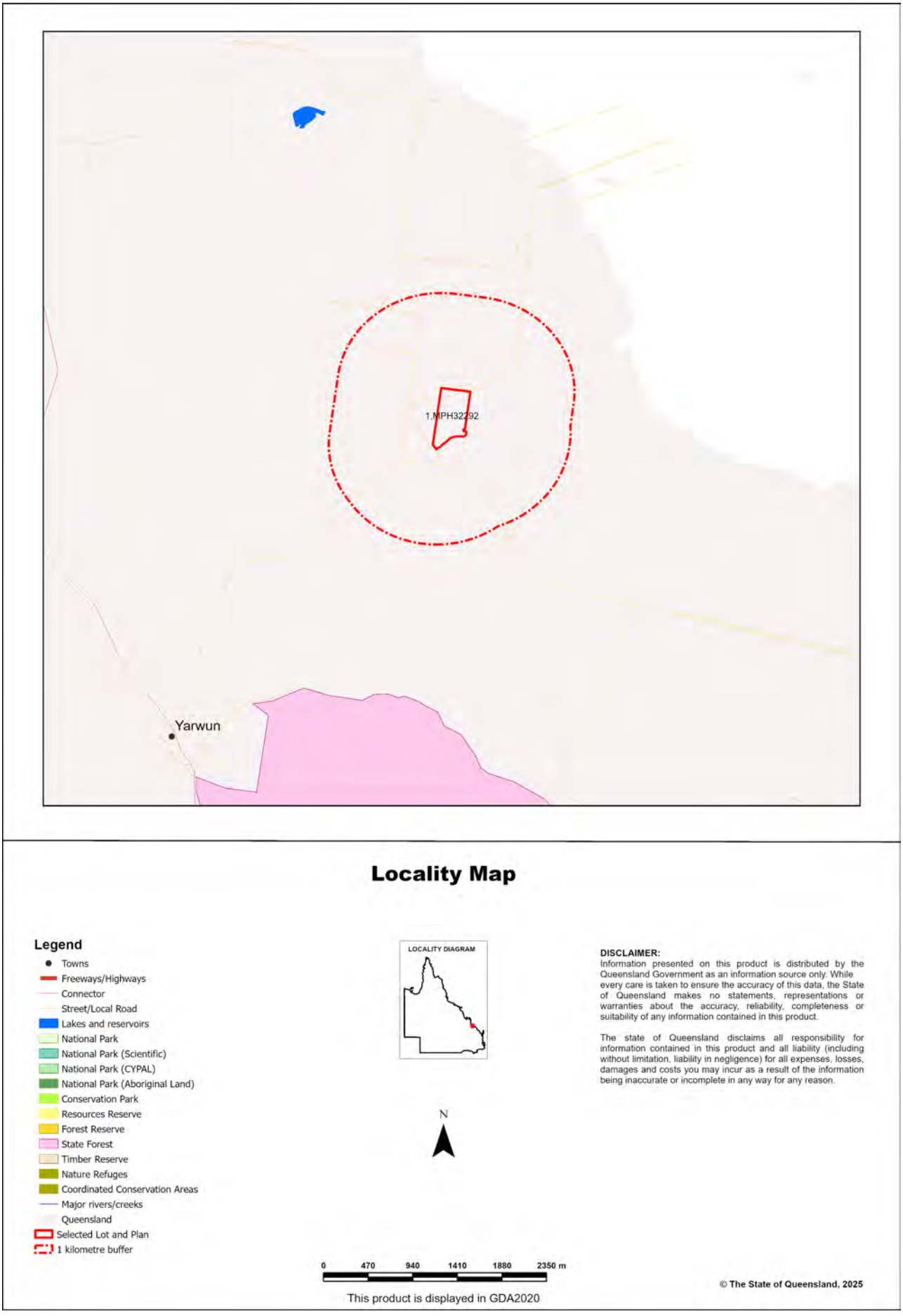

Table 2. Introduced animals recorded within the area of interest and its one kilometre buffer

Taxon Id	Kingdom	Class	Family	Scientific Name	Common Name	Specimens	Records	Last record	Establishment Code
27055	Animalia	Actinopterygii	Poeciliidae	*Gambusia holbrooki*	mosquitofish	0	2	31/01/1999	II
716	Animalia	Amphibia	Bufonidae	*Rhinella marina*	cane toad	0	4	31/12/1999	II
1056	Animalia	Mammalia	Felidae	*Felis catus*	cat	0	1	31/12/1997	II
834	Animalia	Mammalia	Leporidae	*Oryctolagus cuniculus*	rabbit	0	1	31/12/1999	II
764	Animalia	Mammalia	Muridae	*Mus musculus*	house mouse	0	1	31/12/1999	II
731	Animalia	Mammalia	Muridae	*Rattus rattus*	black rat	0	1	31/12/1997	II

Taxon Id: Unique identifier of the taxon from the WildNet database.
Specimens: The number of specimen-backed records of the taxon.
Records: The total number of records of the taxon.
Last record: Date of most recent record of the taxon.
Establishment: Code describing how the taxon is established in Queensland. The list of code description can be accessed from the WildNet Data API.

Table 3. Introduced plants recorded within the area of interest and its one kilometre buffer

Taxon Id	Kingdom	Class	Family	Scientific Name	Common Name	Specimens	Records	Last record	Establishment Code
19722	Plantae	Equisetopsida	Agavaceae	*Agave americana*		0	1	31/01/2003	NAQ
11849	Plantae	Equisetopsida	Amaranthaceae	*Alternanthera pungens*	khaki weed	0	1	31/01/2003	NAQ
17981	Plantae	Equisetopsida	Amaranthaceae	*Amaranthus viridis*	green amaranth	0	1	31/01/2003	NAQ
17051	Plantae	Equisetopsida	Amaranthaceae	*Gomphrena celosioides*	gomphrena weed	0	1	31/01/2003	NAQ
16720	Plantae	Equisetopsida	Anacardiaceae	*Mangifera indica*	mango	0	1	31/01/2003	NAQ
17935	Plantae	Equisetopsida	Apocynaceae	*Asclepias curassavica*	red-head cottonbush	0	1	31/01/2003	NAQ
17710	Plantae	Equisetopsida	Apocynaceae	*Catharanthus roseus*	pink periwinkle	0	1	31/01/2003	NAQ
15479	Plantae	Equisetopsida	Apocynaceae	*Cryptostegia grandiflora*	rubber vine	0	1	31/01/2003	NAQ
17050	Plantae	Equisetopsida	Apocynaceae	*Gomphocarpus physocarpus*	balloon cottonbush	0	1	31/01/2003	NAQ
11155	Plantae	Equisetopsida	Apocynaceae	*Nerium oleander*	oleander	0	1	31/01/2003	NAQ
22101	Plantae	Equisetopsida	Arecaceae	*Syagrus romanzoffiana*	Queen palm	0	1	31/01/2003	NAQ
11158	Plantae	Equisetopsida	Asteraceae	*Ageratum conyzoides*	billygoat weed	0	1	22/07/2010	NAQ
14051	Plantae	Equisetopsida	Asteraceae	*Ageratum houstonianum*	blue billygoat weed	0	1	31/01/2003	NAQ

15612	Plantae	Equisetopsida	Asteraceae	*Baccharis halimifolia*	groundsel bush	0	1	31/01/2003	NAQ
14045	Plantae	Equisetopsida	Asteraceae	*Bidens bipinnata*	bipinnate beggar's ticks	0	1	31/01/2003	NAQ
7691	Plantae	Equisetopsida	Asteraceae	*Bidens pilosa*		0	2	22/07/2010	NAQ
15574	Plantae	Equisetopsida	Asteraceae	*Carduus thoermeri*	nodding thistle	0	1	31/01/2003	NAQ
14001	Plantae	Equisetopsida	Asteraceae	*Cirsium vulgare*	spear thistle	0	1	31/01/2003	NAQ
15401	Plantae	Equisetopsida	Asteraceae	*Emilia sonchifolia*		0	2	22/07/2010	NAQ
35896	Plantae	Equisetopsida	Asteraceae	*Erigeron bonariensis*		0	1	31/01/2003	NAQ
15039	Plantae	Equisetopsida	Asteraceae	*Sonchus oleraceus*	common sowthistle	0	1	31/01/2003	NAQ
35909	Plantae	Equisetopsida	Asteraceae	*Symphyotrichum subulatum*		0	1	31/01/2003	NAQ
14987	Plantae	Equisetopsida	Asteraceae	*Tridax procumbens*	tridax daisy	0	1	31/01/2003	NAQ
9090	Plantae	Equisetopsida	Balsaminaceae	*Impatiens walleriana*	balsam	0	1	31/01/2003	NAQ
19352	Plantae	Equisetopsida	Cactaceae	*Opuntia stricta*		0	1	31/01/2003	NAQ
13988	Plantae	Equisetopsida	Caricaceae	*Carica papaya*	pawpaw	0	1	31/01/2003	NAQ
21934	Plantae	Equisetopsida	Crassulaceae	*Bryophyllum delagoense*		0	1	31/01/2003	NAQ
11062	Plantae	Equisetopsida	Cyperaceae	*Cyperus papyrus*	papyrus	0	1	31/01/2003	NAQ
17160	Plantae	Equisetopsida	Euphorbiaceae	*Euphorbia cyathophora*	dwarf poinsettia	0	1	31/01/2003	NAQ
18679	Plantae	Equisetopsida	Lamiaceae	*Leucas lavandulifolia*		0	1	31/01/2003	NAQ
10918	Plantae	Equisetopsida	Leguminosae	*Bauhinia variegata*		0	1	31/01/2003	NAQ
18779	Plantae	Equisetopsida	Leguminosae	*Crotalaria pallida*		0	1	31/01/2003	NAQ
9165	Plantae	Equisetopsida	Leguminosae	*Delonix regia*	poinciana	0	1	31/01/2003	NAQ
15461	Plantae	Equisetopsida	Leguminosae	*Desmodium triflorum*		0	1	31/01/2003	NAQ
15235	Plantae	Equisetopsida	Leguminosae	*Macroptilium atropurpureum*	siratro	0	1	31/01/2003	NAQ
9873	Plantae	Equisetopsida	Leguminosae	*Medicago polymorpha*	burr medic	0	1	31/01/2003	NAQ
12876	Plantae	Equisetopsida	Leguminosae	*Stylosanthes scabra*		0	1	22/07/2010	NAQ

12879	Plantae	Equisetopsida	Leguminosae	*Tamarindus indica*		1	1	28/11/2003	NAQ
14990	Plantae	Equisetopsida	Leguminosae	*Trifolium repens var. repens*	white clover	0	1	31/01/2003	NAQ
14927	Plantae	Equisetopsida	Malvaceae	*Abutilon grandifolium*		0	1	31/01/2003	NAQ
16195	Plantae	Equisetopsida	Malvaceae	*Sida cordifolia*		0	2	22/07/2010	NAQ
16146	Plantae	Equisetopsida	Malvaceae	*Sida rhombifolia*		0	3	22/07/2010	NAQ
15990	Plantae	Equisetopsida	Malvaceae	*Urena lobata*	urena weed	0	1	31/01/2003	NAQ
19941	Plantae	Equisetopsida	Nymphaeaceae	*Nymphaea caerulea*		0	1	31/01/2003	NAQ
9457	Plantae	Equisetopsida	Oxalidaceae	*Oxalis corniculata*		0	1	31/01/2003	NAQ
19740	Plantae	Equisetopsida	Papaveraceae	*Argemone ochroleuca*		0	1	31/01/2003	NAQ
16530	Plantae	Equisetopsida	Passifloraceae	*Passiflora foetida*		0	2	22/07/2010	NAQ
16532	Plantae	Equisetopsida	Passifloraceae	*Passiflora suberosa*	corky passion flower	0	1	31/01/2003	NAQ
12030	Plantae	Equisetopsida	Pinaceae	*Pinus elliottii*	slash pine	0	1	31/01/2003	NAQ
18225	Plantae	Equisetopsida	Plantaginaceae	*Mecardonia procumbens*		1	1	25/02/2014	NAQ
16183	Plantae	Equisetopsida	Plantaginaceae	*Scoparia dulcis*	scoparia	0	1	22/07/2010	NAQ
15541	Plantae	Equisetopsida	Poaceae	*Cenchrus echinatus*	Mossman River grass	0	1	31/01/2003	NAQ
15551	Plantae	Equisetopsida	Poaceae	*Chloris gayana*	rhodes grass	0	1	31/01/2003	NAQ
15527	Plantae	Equisetopsida	Poaceae	*Chloris virgata*	feathertop rhodes grass	0	1	31/01/2003	NAQ
15486	Plantae	Equisetopsida	Poaceae	*Cynodon dactylon*		0	1	31/01/2003	NAQ
11066	Plantae	Equisetopsida	Poaceae	*Digitaria didactyla*	Queensland blue couch	0	1	31/01/2003	NAQ
15378	Plantae	Equisetopsida	Poaceae	*Eragrostis tenuifolia*	elastic grass	0	1	31/01/2003	NAQ
10578	Plantae	Equisetopsida	Poaceae	*Hyparrhenia rufa*		0	2	22/07/2010	NAQ
15803	Plantae	Equisetopsida	Poaceae	*Hyparrhenia rufa subsp. rufa*		0	1	31/01/2003	NAQ
29093	Plantae	Equisetopsida	Poaceae	*Megathyrsus maximus*		0	1	31/01/2003	NAQ
27900	Plantae	Equisetopsida	Poaceae	*Megathyrsus maximus var. pubiglumis*		0	1	22/07/2010	NAQ

15242	Plantae	Equisetopsida	Poaceae	*Melinis minutiflora*	molasses grass	0	1	22/07/2010	NAQ
9154	Plantae	Equisetopsida	Poaceae	*Melinis repens*	red natal grass	0	2	22/07/2010	NAQ
15134	Plantae	Equisetopsida	Poaceae	*Paspalum dilatatum*	paspalum	0	1	31/01/2003	NAQ
15043	Plantae	Equisetopsida	Poaceae	*Sorghum halepense*	Johnson grass	0	1	31/01/2003	NAQ
2359	Plantae	Equisetopsida	Poaceae	*Urochloa mutica*		0	1	31/01/2003	NAQ
16359	Plantae	Equisetopsida	Portulacaceae	*Portulaca oleracea*	pigweed	0	1	31/01/2003	NAQ
14109	Plantae	Equisetopsida	Rosaceae	*Eriobotrya japonica*	loquat	0	1	31/01/2003	NAQ
21837	Plantae	Equisetopsida	Rutaceae	*Murraya paniculata 'Exotica'*		0	1	31/01/2003	NAQ
17496	Plantae	Equisetopsida	Solanaceae	*Datura stramonium*	common thornapple	0	1	31/01/2003	NAQ
13788	Plantae	Equisetopsida	Solanaceae	*Solanum nigrum*		0	2	22/07/2010	NAQ
16120	Plantae	Equisetopsida	Solanaceae	*Solanum seaforthianum*	Brazilian nightshade	0	1	31/01/2003	NAQ
16126	Plantae	Equisetopsida	Solanaceae	*Solanum torvum*	devil's fig	0	1	31/01/2003	NAQ
15983	Plantae	Equisetopsida	Sparrmanniaceae	*Triumfetta rhomboidea*	chinese burr	0	1	31/01/2003	NAQ
19905	Plantae	Equisetopsida	Verbenaceae	*Lantana camara*	lantana	0	3	22/07/2010	NAQ
13853	Plantae	Equisetopsida	Verbenaceae	*Lantana montevidensis*	creeping lantana	0	1	31/01/2003	NAQ
16143	Plantae	Equisetopsida	Verbenaceae	*Stachytarpheta jamaicensis*	Jamaica snakeweed	0	2	22/07/2010	NAQ
15951	Plantae	Equisetopsida	Verbenaceae	*Verbena bonariensis*	purpletop	0	1	31/01/2003	NAQ

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Links and Support

Other sites that deliver species information from the WildNet database include:

- WildNet Application - public interface to find species information and species lists generated from the WildNet database.
- Biomaps - view biodiversity information, including WildNet records approved for publication, and generate reports
- Queensland Globe - view spatial information, including WildNet records approved for publication
- Qld WildNet Data API - access WildNet species information approved for publication such as notes, images and records etc.
- Wetland*Maps* - view species records, survey locations etc. approved for publication
- Wetland*Summary* - view wildlife statistics, species lists for a range of area types, and access WildNet species profiles
- WildNet wildlife records - published - Queensland - spatial layer of WildNet records approved for publication generated weekly
- Generalised distribution and densities of Queensland wildlife - Queensland species distributions and densities generalised to a 10 km grid resolution
- Conservation status of Queensland wildlife - access current lists of priority species for Queensland including nomenclature and status information
- Queensland Confidential Species - the list of species flagged as confidential in the WildNet database.

Please direct queries about this report to the WildNet Team WildNet@detsi.qld.gov.au.

Other useful sites for accessing Queensland biodiversity data include:

- Useful wildlife resources
- Queensland Government Data
- Atlas of Living Australia (ALA)
- Online Zoological Collections of Australian Museums (OZCAM)
- Australasian Virtual Herbarium (AVH)
- Protected Matters Search Tool

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government, to the maximum extent permitted by law, 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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WildNet Records
Species List

For the selected area of interest 15.49 Lot: 1 Plan: MPH32292
Current as at 24/06/2025 WildNetSpeciesList

Summary Information
The following table provides an overview of the area of interest: Lot: 1 Plan: MPH32292

Table 1. Area of interest details

Size (ha)	
15.49	
Local Government(s)	
Gladstone Regional	
Catchment(s)	
Calliope	
Bioregion(s)	**Subregion(s)**
Southeast Queensland	Burnett - Curtis Hills and Ranges

Protected Area(s)

No estates or reserves are located within the area of interest.

World Heritage Area(s)

No World Heritage Areas are located within the area of interest.

Ramsar Area(s)

No Ramsar Areas are located within the area of interest.

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The WildNet Application may provide additional information on species occurence within your area of interest.

Species data

Contextual location information is presented in Map 1.

Table 2 lists the animals recorded within the area of interest and its one kilometre buffer.

Table 3 lists the plants recorded within the area of interest and its one kilometre buffer.

Table 4 lists the fungi recorded within the area of interest and its one kilometre buffer.

Table 5 lists the other species recorded within the area of interest and its one kilometre buffer.

Map 1. Locality Map

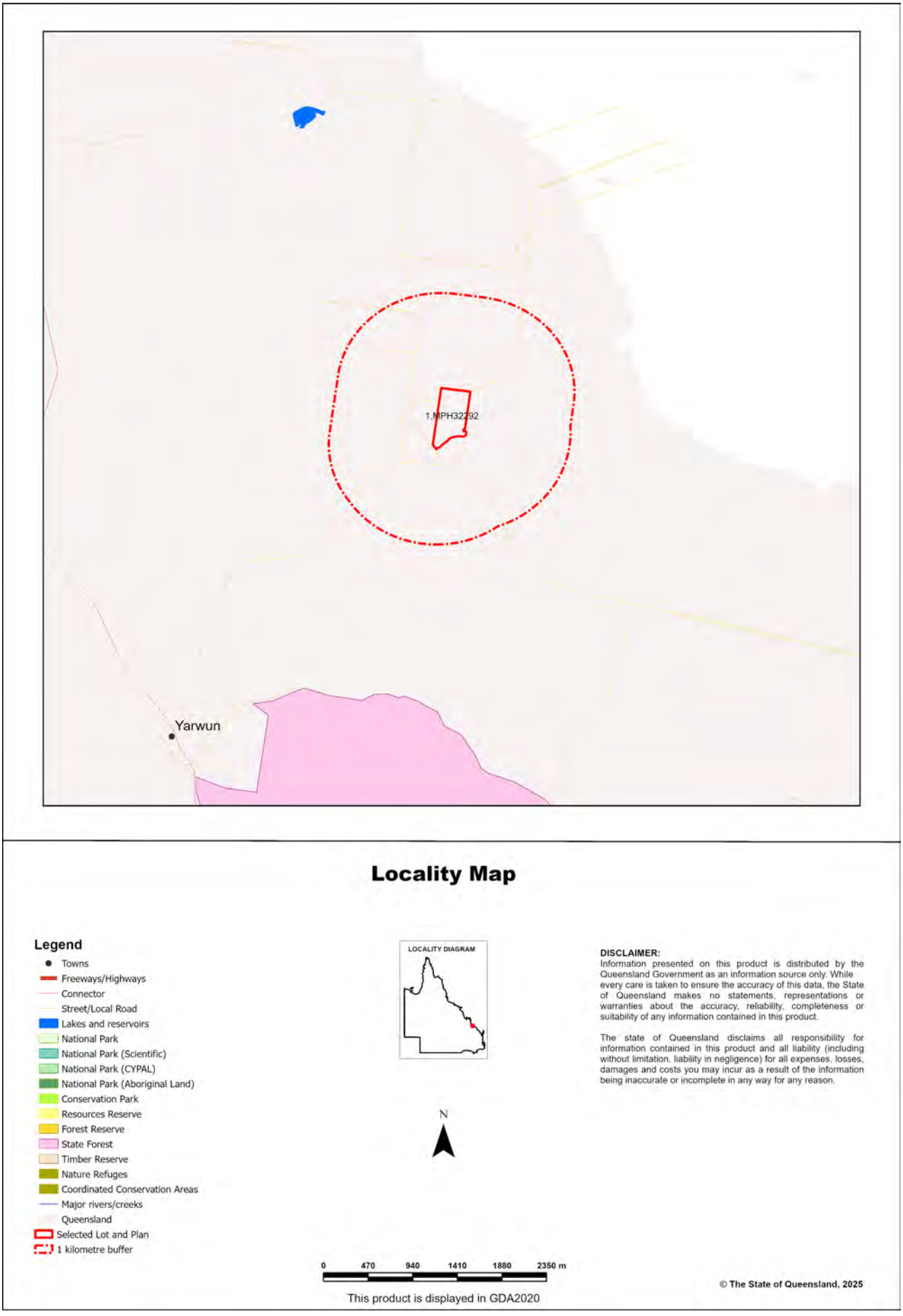

Table 2. Animals recorded within the area of interest and its one kilometre buffer

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
26896	Actinopterygii	Ambassidae	*Ambassis agassizii*	Agassiz's glassfish			0	5	31/03/1999
26910	Actinopterygii	Anguillidae	*Anguilla reinhardtii*	longfin eel			0	1	30/11/1998
26912	Actinopterygii	Apogonidae	*Glossamia aprion*	mouth almighty			0	5	31/03/1999
26920	Actinopterygii	Atherinidae	*Craterocephalus stercusmuscarum*	flyspecked hardyhead			0	7	31/03/1999
26925	Actinopterygii	Centropomidae	*Lates calcarifer*	barramundi			0	1	31/03/1999
26941	Actinopterygii	Clupeidae	*Nematalosa erebi*	bony bream			0	3	30/11/1998
26954	Actinopterygii	Eleotridae	*Hypseleotris compressa*	empire gudgeon			0	8	31/03/1999
26955	Actinopterygii	Eleotridae	*Hypseleotris galii*	firetail gudgeon			0	1	31/01/1999
18168	Actinopterygii	Eleotridae	*Mogurnda adspersa*	southern purplespotted gudgeon			0	1	31/01/1999
27020	Actinopterygii	Lutjanidae	*Lutjanus argentimaculatus*	mangrove jack			0	1	31/03/1999
27021	Actinopterygii	Megalopidae	*Megalops cyprinoides*	oxeye herring			0	1	31/01/1999
27029	Actinopterygii	Melanotaeniidae	*Melanotaenia splendida splendida*	eastern rainbowfish			0	5	31/03/1999
27035	Actinopterygii	Mugilidae	*Mugil cephalus*	sea mullet			0	5	31/01/1999
27055	Actinopterygii	Poeciliidae	*Gambusia holbrooki*	mosquitofish			0	2	31/01/1999
27059	Actinopterygii	Pseudomugilidae	*Pseudomugil signifer*	Pacific blue eye			0	1	31/12/1997
27064	Actinopterygii	Scatophagidae	*Scatophagus argus*	spotted scat			0	1	31/01/1999
27083	Actinopterygii	Terapontidae	*Amniataba percoides*	barred grunter			0	1	31/12/1997
27089	Actinopterygii	Terapontidae	*Leiopotherapon unicolor*	spangled perch			0	3	31/03/1999
27097	Actinopterygii	Terapontidae	*Terapon jarbua*	crescent grunter			0	1	31/01/1999
716	Amphibia	Bufonidae	*Rhinella marina*	cane toad			0	4	31/12/1999
608	Amphibia	Hylidae	*Litoria fallax*	eastern sedgefrog	C		0	1	31/12/1997
604	Amphibia	Hylidae	*Litoria nasuta*	striped rocketfrog	C		0	3	31/12/1999
600	Amphibia	Hylidae	*Litoria rubella*	ruddy treefrog	C		0	2	31/12/1997

29174	Amphibia	Hylidae	*Litoria wilcoxii*	eastern stony creek frog	C		0	2	31/12/1999
681	Amphibia	Limnodynastidae	*Limnodynastes peronii*	striped marshfrog	C		0	1	31/12/1999
684	Amphibia	Limnodynastidae	*Limnodynastes tasmaniensis*	spotted grassfrog	C		0	1	31/12/1999
673	Amphibia	Limnodynastidae	*Limnodynastes terraereginae*	scarlet sided pobblebonk	C		0	1	31/12/1997
680	Amphibia	Limnodynastidae	*Platyplectrum ornatum*	ornate burrowing frog	C		0	2	31/12/1999
1408	Aves	Acanthizidae	*Gerygone levigaster*	mangrove gerygone	C		0	1	31/12/1997
1730	Aves	Accipitridae	*Accipiter novaehollandiae*	grey goshawk	C		0	1	31/12/1997
1732	Aves	Accipitridae	*Aquila audax*	wedge-tailed eagle	C		0	1	31/12/1997
1718	Aves	Accipitridae	*Haliaeetus leucogaster*	white-bellied sea-eagle	C		0	1	31/12/1997
1720	Aves	Accipitridae	*Haliastur indus*	brahminy kite	C		0	1	31/12/1997
1707	Aves	Accipitridae	*Haliastur sphenurus*	whistling kite	C		0	2	31/12/1997
1714	Aves	Accipitridae	*Milvus migrans*	black kite	C		0	2	31/12/1997
1766	Aves	Alcedinidae	*Dacelo leachii*	blue-winged kookaburra	C		0	1	31/12/1997
1767	Aves	Alcedinidae	*Dacelo novaeguineae*	laughing kookaburra	C		0	2	31/12/1997
1760	Aves	Alcedinidae	*Todiramphus macleayii*	forest kingfisher	C		0	1	31/12/1997
1762	Aves	Alcedinidae	*Todiramphus sanctus*	sacred kingfisher	C		0	1	31/12/1997
1759	Aves	Alcedinidae	*Todiramphus sordidus*	Torresian kingfisher	C		0	2	31/12/1997
1998	Aves	Anatidae	*Anas superciliosa*	Pacific black duck	C		0	1	31/12/1997
2005	Aves	Anatidae	*Cygnus atratus*	black swan	C		0	1	31/12/1997
1279	Aves	Anhingidae	*Anhinga novaehollandiae*	Australasian darter	C		0	1	31/12/1997
1829	Aves	Ardeidae	*Ardea alba modesta*	eastern great egret	C		0	2	31/12/1997
1831	Aves	Ardeidae	*Ardea intermedia*	intermediate egret	C		0	1	31/12/1997
1839	Aves	Ardeidae	*Butorides striata*	striated heron	C		0	1	31/12/1997
1826	Aves	Ardeidae	*Egretta novaehollandiae*	white-faced heron	C		0	1	31/12/1997

1818	Aves	Ardeidae	*Nycticorax caledonicus*	nankeen night-heron	C		0	1	31/12/1997
1660	Aves	Artamidae	*Artamus leucorynchus*	white-breasted woodswallow	C		0	2	31/12/1997
1654	Aves	Artamidae	*Cracticus nigrogularis*	pied butcherbird	C		0	2	31/12/1997
1644	Aves	Artamidae	*Gymnorhina tibicen*	Australian magpie	C		0	2	31/12/1997
1196	Aves	Cacatuidae	*Calyptorhynchus banksii*	red-tailed black-cockatoo	C		0	1	31/12/1997
1636	Aves	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike	C		0	1	31/12/1997
1637	Aves	Campephagidae	*Coracina papuensis*	white-bellied cuckoo -shrike	C		0	2	31/12/1997
1975	Aves	Caprimulgidae	*Caprimulgus macrurus*	large-tailed nightjar	C		0	1	31/12/1997
1937	Aves	Charadriidae	*Charadrius ruficapillus*	red-capped plover	C		0	1	31/12/1997
1933	Aves	Charadriidae	*Vanellus miles novaehollandiae*	masked lapwing (southern subspecies)	C		0	1	31/12/1997
1294	Aves	Cisticolidae	*Cisticola exilis*	golden-headed cisticola	C		0	1	31/12/1997
18323	Aves	Columbidae	*Geopelia placida*	peaceful dove	C		0	2	31/12/1997
1793	Aves	Columbidae	*Ocyphaps lophotes*	crested pigeon	C		0	2	31/12/1997
1779	Aves	Coraciidae	*Eurystomus orientalis*	dollarbird	C		0	1	31/12/1997
1609	Aves	Corvidae	*Corvus orru*	Torresian crow	C		0	2	31/12/1997
1751	Aves	Cuculidae	*Centropus phasianinus*	pheasant coucal	C		0	1	31/12/1997
1736	Aves	Cuculidae	*Cuculus optatus*	oriental cuckoo	SL		0	1	31/12/1997
1738	Aves	Cuculidae	*Eudynamys orientalis*	eastern koel	C		0	2	31/12/1997
1740	Aves	Cuculidae	*Scythrops novaehollandiae*	channel-billed cuckoo	C		0	1	31/12/1997
1611	Aves	Dicaeidae	*Dicaeum hirundinaceum*	mistletoebird	C		0	1	31/12/1997
1366	Aves	Estrildidae	*Lonchura castaneothorax*	chestnut-breasted mannikin	C		0	2	31/12/1997
1342	Aves	Estrildidae	*Taeniopygia bichenovii*	double-barred finch	C		0	2	31/12/1997
1926	Aves	Haematopodidae	*Haematopus longirostris*	Australian pied oystercatcher	C		0	1	31/12/1997
1572	Aves	Hirundinidae	*Hirundo neoxena*	welcome swallow	C		0	2	31/12/1997

1886	Aves	Laridae	*Gelochelidon macrotarsa*	Australian tern	C		0	1	31/12/1997
1289	Aves	Locustellidae	*Cincloramphus timoriensis*	tawny grassbird	C		0	1	31/12/1997
1558	Aves	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren	C		0	1	31/12/1997
1694	Aves	Megapodiidae	*Alectura lathami*	Australian brush-turkey	C		0	1	31/12/1997
1539	Aves	Meliphagidae	*Entomyzon cyanotis*	blue-faced honeyeater	C		0	2	31/12/1997
1524	Aves	Meliphagidae	*Gavicalis fasciogularis*	mangrove honeyeater	C		0	1	31/12/1997
1497	Aves	Meliphagidae	*Lichmera indistincta*	brown honeyeater	C		0	2	31/12/1997
1500	Aves	Meliphagidae	*Manorina melanocephala*	noisy miner	C		0	1	31/12/1997
1504	Aves	Meliphagidae	*Meliphaga lewinii*	Lewin's honeyeater	C		0	1	31/12/1997
1507	Aves	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater	C		0	2	31/12/1997
1488	Aves	Meliphagidae	*Myzomela obscura*	dusky honeyeater	C		0	2	31/12/1997
1494	Aves	Meliphagidae	*Philemon corniculatus*	noisy friarbird	C		0	2	31/12/1997
1598	Aves	Monarchidae	*Myiagra alecto*	shining flycatcher	C		0	1	31/12/1997
1586	Aves	Monarchidae	*Myiagra rubecula*	leaden flycatcher	C		0	2	31/12/1997
1455	Aves	Motacillidae	*Anthus novaeseelandiae*	Australasian pipit	C		0	1	31/12/1997
1442	Aves	Oriolidae	*Oriolus sagittatus*	olive-backed oriole	C		0	1	31/12/1997
1444	Aves	Oriolidae	*Sphecotheres vieilloti*	Australasian figbird	C		0	2	31/12/1997
1449	Aves	Pachycephalidae	*Colluricincla harmonica*	grey shrike-thrush	C		0	1	31/12/1997
1702	Aves	Pandionidae	*Pandion haliaetus cristatus*	eastern osprey	SL		0	2	31/12/1997
1392	Aves	Pardalotidae	*Pardalotus striatus*	striated pardalote	C		0	2	31/12/1997
1284	Aves	Pelecanidae	*Pelecanus conspicillatus*	Australian pelican	C		0	1	31/12/1997
1261	Aves	Phalacrocoracidae	*Microcarbo melanoleucos*	little pied cormorant	C		0	1	31/12/1997
1263	Aves	Phalacrocoracidae	*Phalacrocorax sulcirostris*	little black cormorant	C		0	1	31/12/1997
1182	Aves	Psittaculidae	*Aprosmictus erythropterus*	red-winged parrot	C		0	1	31/12/1997

1136	Aves	Psittaculidae	*Platycercus adscitus*	pale-headed rosella	C		0	1	31/12/1997
1124	Aves	Psittaculidae	*Trichoglossus chlorolepidotus*	scaly-breasted lorikeet	C		0	2	31/12/1997
1125	Aves	Psittaculidae	*Trichoglossus moluccanus*	rainbow lorikeet	C		0	1	31/12/1997
1673	Aves	Rallidae	*Gallinula tenebrosa*	dusky moorhen	C		0	1	31/12/1997
1885	Aves	Scolopacidae	*Actitis hypoleucos*	common sandpiper	SL		0	1	31/12/1997
1867	Aves	Scolopacidae	*Limosa lapponica baueri*	Western Alaskan bar-tailed godwit	E	E	0	1	31/12/1997
1843	Aves	Scolopacidae	*Numenius madagascariensis*	eastern curlew	CR	CE	0	2	31/12/1997
1845	Aves	Scolopacidae	*Numenius phaeopus*	whimbrel	SL		0	1	31/12/1997
1853	Aves	Scolopacidae	*Tringa nebularia*	common greenshank	E	E	0	1	31/12/1997
1102	Aves	Strigidae	*Ninox boobook*	southern boobook	C		0	1	31/12/1997
1823	Aves	Threskiornithidae	*Platalea regia*	royal spoonbill	C		0	1	31/12/1997
1812	Aves	Threskiornithidae	*Threskiornis molucca*	Australian white ibis	C		0	1	31/12/1997
1800	Aves	Threskiornithidae	*Threskiornis spinicollis*	straw-necked ibis	C		0	1	31/12/1997
1276	Aves	Zosteropidae	*Zosterops lateralis*	silvereye	C		0	1	31/12/1997
1068	Mammalia	Canidae	*Canis familiaris (dingo)*	dingo			0	1	31/12/1997
811	Mammalia	Dasyuridae	*Planigale maculata*	common planigale	C		0	1	31/12/1999
793	Mammalia	Dasyuridae	*Sminthopsis murina*	common dunnart	C		0	1	31/12/1999
1056	Mammalia	Felidae	*Felis catus*	cat			0	1	31/12/1997
834	Mammalia	Leporidae	*Oryctolagus cuniculus*	rabbit			0	1	31/12/1999
901	Mammalia	Macropodidae	*Macropus giganteus*	eastern grey kangaroo	C		0	1	31/12/1999
988	Mammalia	Molossidae	*Mormopterus sp.*		C		0	2	31/12/1997
767	Mammalia	Muridae	*Hydromys chrysogaster*	water rat	C		0	1	31/12/1999
764	Mammalia	Muridae	*Mus musculus*	house mouse			0	1	31/12/1999
731	Mammalia	Muridae	*Rattus rattus*	black rat			0	1	31/12/1997

784	Mammalia	Peramelidae	*Isoodon macrourus*	northern brown bandicoot	C		0	1	31/12/1997
859	Mammalia	Phalangeridae	*Trichosurus vulpecula*	common brushtail possum	C		0	1	31/12/1997
984	Mammalia	Pteropodidae	*Pteropus alecto*	black flying-fox	C		0	1	31/12/1997
948	Mammalia	Vespertilionidae	*Chalinolobus picatus*	little pied bat	C		0	2	31/12/1997
567	Reptilia	Agamidae	*Diporiphora australis*	tommy roundhead	C		0	1	31/12/1997
556	Reptilia	Agamidae	*Pogona barbata*	bearded dragon	C		0	1	31/12/1997
58	Reptilia	Chelidae	*Emydura macquarii krefftii*	Krefft's river turtle	C		0	3	31/12/1999
36209	Reptilia	Diplodactylidae	*Amalosia queenslandia*	Queensland zigzag gecko	C		0	1	31/12/1999
429	Reptilia	Diplodactylidae	*Diplodactylus vittatus*	wood gecko	C		0	1	31/12/1997
486	Reptilia	Elapidae	*Furina diadema*	red-naped snake	C		0	1	31/12/1999
413	Reptilia	Gekkonidae	*Heteronotia binoei*	Bynoe's gecko	C		0	2	31/12/1999
294	Reptilia	Scincidae	*Carlia munda*	shaded-litter rainbow-skink	C		0	1	31/12/1999
297	Reptilia	Scincidae	*Carlia pectoralis sensu lato*		C		0	1	31/12/1999
302	Reptilia	Scincidae	*Carlia schmeltzii*	robust rainbow-skink	C		0	1	31/12/1997
277	Reptilia	Scincidae	*Carlia vivax*	tussock rainbow-skink	C		0	1	31/12/1997
188	Reptilia	Scincidae	*Concinnia martini*	dark bar-sided skink	C		0	1	31/12/1997
260	Reptilia	Scincidae	*Cryptoblepharus virgatus sensu lato*		C		0	2	31/12/1999
190	Reptilia	Scincidae	*Eulamprus quoyii*	eastern water skink	C		0	3	31/12/1999
173	Reptilia	Scincidae	*Glaphyromorphus punctulatus*	fine-spotted mulch-skink	C		0	1	31/12/1999
179	Reptilia	Scincidae	*Lampropholis adonis*	diamond-shielded sunskink	C		0	1	31/12/1997
184	Reptilia	Scincidae	*Lampropholis delicata*	dark-flecked garden sunskink	C		0	2	31/12/1999
150	Reptilia	Scincidae	*Lygisaurus foliorum*	tree-base litter-skink	C		0	2	31/12/1999
70	Reptilia	Varanidae	*Varanus semiremex*	rusty monitor	C		0	1	31/12/1997
61	Reptilia	Varanidae	*Varanus varius*	lace monitor	C		0	1	31/12/1997

Table 3. Plants recorded within the area of interest and its one kilometre buffer

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
12326	Equisetopsida	Acanthaceae	*Avicennia marina*		C		0	1	31/01/2003
17767	Equisetopsida	Acanthaceae	*Brunoniella australis*	blue trumpet	C		0	1	22/07/2010
19722	Equisetopsida	Agavaceae	*Agave americana*				0	1	31/01/2003
17978	Equisetopsida	Amaranthaceae	*Alternanthera nodiflora*	joyweed	C		0	1	31/01/2003
11849	Equisetopsida	Amaranthaceae	*Alternanthera pungens*	khaki weed			0	1	31/01/2003
17981	Equisetopsida	Amaranthaceae	*Amaranthus viridis*	green amaranth			0	1	31/01/2003
17051	Equisetopsida	Amaranthaceae	*Gomphrena celosioides*	gomphrena weed			0	1	31/01/2003
15513	Equisetopsida	Amaryllidaceae	*Crinum pedunculatum*	river lily	SL		0	1	31/01/2003
16720	Equisetopsida	Anacardiaceae	*Mangifera indica*	mango			0	1	31/01/2003
9484	Equisetopsida	Apocynaceae	*Alstonia constricta*	bitterbark	C		0	1	31/01/2003
19732	Equisetopsida	Apocynaceae	*Alyxia ruscifolia*		C		0	1	31/01/2003
17935	Equisetopsida	Apocynaceae	*Asclepias curassavica*	red-head cottonbush			0	1	31/01/2003
9698	Equisetopsida	Apocynaceae	*Carissa ovata*	currantbush	C		0	1	31/01/2003
17710	Equisetopsida	Apocynaceae	*Catharanthus roseus*	pink periwinkle			0	1	31/01/2003
15479	Equisetopsida	Apocynaceae	*Cryptostegia grandiflora*	rubber vine			0	1	31/01/2003
36295	Equisetopsida	Apocynaceae	*Cynanchum viminale*		C		0	1	31/01/2003
17050	Equisetopsida	Apocynaceae	*Gomphocarpus physocarpus*	balloon cottonbush			0	1	31/01/2003
8452	Equisetopsida	Apocynaceae	*Gymnanthera oblonga*		C		1	1	5/09/2022
11155	Equisetopsida	Apocynaceae	*Nerium oleander*	oleander			0	1	31/01/2003
16521	Equisetopsida	Apocynaceae	*Parsonsia lanceolata*	northern silkpod	C		0	1	31/01/2003
16526	Equisetopsida	Apocynaceae	*Parsonsia straminea*	monkey rope	C		0	1	31/01/2003
41442	Equisetopsida	Araliaceae	*Heptapleurum actinophyllum*		C		0	1	31/01/2003
22101	Equisetopsida	Arecaceae	*Syagrus romanzoffiana*	Queen palm			0	1	31/01/2003

11158	Equisetopsida	Asteraceae	*Ageratum conyzoides*	billygoat weed			0	1	22/07/2010
14051	Equisetopsida	Asteraceae	*Ageratum houstonianum*	blue billygoat weed			0	1	31/01/2003
15612	Equisetopsida	Asteraceae	*Baccharis halimifolia*	groundsel bush			0	1	31/01/2003
14045	Equisetopsida	Asteraceae	*Bidens bipinnata*	bipinnate beggar's ticks			0	1	31/01/2003
7691	Equisetopsida	Asteraceae	*Bidens pilosa*				0	2	22/07/2010
15565	Equisetopsida	Asteraceae	*Calotis cuneifolia*	burr daisy	C		0	1	31/01/2003
15567	Equisetopsida	Asteraceae	*Calotis hispidula*	bogan flea	C		0	1	31/01/2003
15574	Equisetopsida	Asteraceae	*Carduus thoermeri*	nodding thistle			0	1	31/01/2003
15537	Equisetopsida	Asteraceae	*Cassinia quinquefaria*		C		0	1	31/01/2003
8398	Equisetopsida	Asteraceae	*Chrysocephalum apiculatum*	yellow buttons	C		0	1	31/01/2003
14001	Equisetopsida	Asteraceae	*Cirsium vulgare*	spear thistle			0	1	31/01/2003
29560	Equisetopsida	Asteraceae	*Coronidium lanuginosum*		C		0	1	31/01/2003
22237	Equisetopsida	Asteraceae	*Cyanthillium cinereum*		C		0	2	22/07/2010
15401	Equisetopsida	Asteraceae	*Emilia sonchifolia*				0	2	22/07/2010
35896	Equisetopsida	Asteraceae	*Erigeron bonariensis*				0	1	31/01/2003
6539	Equisetopsida	Asteraceae	*Peripleura diffusa*		C		0	1	31/01/2003
6540	Equisetopsida	Asteraceae	*Peripleura hispidula*		C		0	2	22/07/2010
7090	Equisetopsida	Asteraceae	*Picris angustifolia subsp. carolorum-henricorum*		C		0	1	22/07/2010
15129	Equisetopsida	Asteraceae	*Pterocaulon redolens*		C		0	3	22/07/2010
12208	Equisetopsida	Asteraceae	*Sigesbeckia orientalis*	Indian weed	C		0	1	31/01/2003
15039	Equisetopsida	Asteraceae	*Sonchus oleraceus*	common sowthistle			0	1	31/01/2003
35909	Equisetopsida	Asteraceae	*Symphyotrichum subulatum*				0	1	31/01/2003
14987	Equisetopsida	Asteraceae	*Tridax procumbens*	tridax daisy			0	1	31/01/2003
14959	Equisetopsida	Asteraceae	*Vittadinia sulcata*	native daisy	C		0	1	31/01/2003

9090	Equisetopsida	Balsaminaceae	*Impatiens walleriana*	balsam			0	1	31/01/2003
19352	Equisetopsida	Cactaceae	*Opuntia stricta*				0	1	31/01/2003
16766	Equisetopsida	Campanulaceae	*Lobelia purpurascens*	white root	SL		0	1	31/01/2003
16011	Equisetopsida	Cannabaceae	*Trema tomentosa*		C		0	1	31/01/2003
17725	Equisetopsida	Capparaceae	*Capparis arborea*	brush caper berry	C		0	1	31/01/2003
13984	Equisetopsida	Capparaceae	*Capparis canescens*		C		0	1	31/01/2003
13988	Equisetopsida	Caricaceae	*Carica papaya*	pawpaw			0	1	31/01/2003
18014	Equisetopsida	Casuarinaceae	*Allocasuarina torulosa*		C		0	1	31/01/2003
9087	Equisetopsida	Casuarinaceae	*Casuarina cunninghamiana*		C		0	1	31/01/2003
16115	Equisetopsida	Chenopodiaceae	*Suaeda australis*		C		0	1	31/01/2003
31677	Equisetopsida	Chenopodiaceae	*Tecticornia indica*		C		0	1	31/01/2003
11105	Equisetopsida	Commelinaceae	*Commelina ensifolia*	scurvy grass	C		0	1	31/01/2003
17176	Equisetopsida	Convolvulaceae	*Evolvulus alsinoides*		C		0	1	31/01/2003
21934	Equisetopsida	Crassulaceae	*Bryophyllum delagoense*				0	1	31/01/2003
14661	Equisetopsida	Cyperaceae	*Cyperus cyperoides*		C		0	1	22/07/2010
17515	Equisetopsida	Cyperaceae	*Cyperus difformis*	rice sedge	C		0	1	22/07/2010
14656	Equisetopsida	Cyperaceae	*Cyperus exaltatus*	tall flatsedge	C		0	1	31/01/2003
13966	Equisetopsida	Cyperaceae	*Cyperus flaccidus*		C		0	2	22/07/2010
17521	Equisetopsida	Cyperaceae	*Cyperus gracilis*		C		0	2	22/07/2010
11062	Equisetopsida	Cyperaceae	*Cyperus papyrus*	papyrus			0	1	31/01/2003
9376	Equisetopsida	Cyperaceae	*Fimbristylis aestivalis*		C		0	2	22/07/2010
10137	Equisetopsida	Cyperaceae	*Fimbristylis bisumbellata*		C		0	1	22/07/2010
17107	Equisetopsida	Cyperaceae	*Fimbristylis dichotoma*	common fringe-rush	C		0	1	31/01/2003
17078	Equisetopsida	Cyperaceae	*Gahnia aspera*		C		0	1	31/01/2003

41286	Equisetopsida	Cyperaceae	*Machaerina articulata*		C		0	1	31/01/2003
14228	Equisetopsida	Cyperaceae	*Scleria mackaviensis*		C		0	2	22/07/2010
17160	Equisetopsida	Euphorbiaceae	*Euphorbia cyathophora*	dwarf poinsettia			0	1	31/01/2003
16753	Equisetopsida	Euphorbiaceae	*Macaranga tanarius*	macaranga	C		0	1	31/01/2003
16715	Equisetopsida	Euphorbiaceae	*Mallotus philippensis*	red kamala	C		0	1	31/01/2003
13239	Equisetopsida	Hemerocallidaceae	*Dianella brevipedunculata*		C		1	3	22/07/2010
17463	Equisetopsida	Hemerocallidaceae	*Dianella caerulea var. vannata*		C		0	1	31/01/2003
10281	Equisetopsida	Hemerocallidaceae	*Dianella longifolia*		C		0	1	22/07/2010
14339	Equisetopsida	Hydrocharitaceae	*Ottelia ovalifolia*	swamp lily	SL		0	1	31/01/2003
13895	Equisetopsida	Juncaceae	*Juncus polyanthemus*		C		0	1	31/01/2003
18679	Equisetopsida	Lamiaceae	*Leucas lavandulifolia*				0	1	31/01/2003
17703	Equisetopsida	Lauraceae	*Cassytha filiformis*	dodder laurel	C		0	1	31/01/2003
15339	Equisetopsida	Laxmanniaceae	*Eustrephus latifolius*	wombat berry	C		0	3	22/07/2010
14415	Equisetopsida	Laxmanniaceae	*Lomandra confertifolia subsp. pallida*		C		0	2	22/07/2010
12406	Equisetopsida	Laxmanniaceae	*Lomandra gracilis*		C		0	1	31/01/2003
16776	Equisetopsida	Laxmanniaceae	*Lomandra longifolia*		C		0	2	22/07/2010
18792	Equisetopsida	Laxmanniaceae	*Lomandra multiflora*		C		0	1	31/01/2003
15149	Equisetopsida	Lecythidaceae	*Planchonia careya*	cockatoo apple	C		0	3	22/07/2010
15827	Equisetopsida	Leguminosae	*Acacia aulacocarpa*		C		0	1	31/01/2003
15793	Equisetopsida	Leguminosae	*Acacia crassa subsp. longicoma*		C		1	1	6/03/2020
15796	Equisetopsida	Leguminosae	*Acacia decora*	pretty wattle	C		0	1	31/01/2003
21915	Equisetopsida	Leguminosae	*Acacia disparrima subsp. disparrima*		C		0	1	22/07/2010
15744	Equisetopsida	Leguminosae	*Acacia fasciculifera*	scaly bark	C		0	1	31/01/2003
15745	Equisetopsida	Leguminosae	*Acacia fimbriata*	Brisbane golden wattle	C		0	1	31/01/2003

15746	Equisetopsida	Leguminosae	*Acacia flavescens*	toothed wattle	C		0	2	22/07/2010
15765	Equisetopsida	Leguminosae	*Acacia leiocalyx*		C		0	1	31/01/2003
14066	Equisetopsida	Leguminosae	*Acacia leiocalyx subsp. leiocalyx*		C		0	1	22/07/2010
15772	Equisetopsida	Leguminosae	*Acacia maidenii*	Maiden's wattle	C		0	1	31/01/2003
15739	Equisetopsida	Leguminosae	*Acacia podalyriifolia*	Queensland silver wattle	C		0	1	31/01/2003
15694	Equisetopsida	Leguminosae	*Acacia salicina*	doolan	C		0	1	31/01/2003
10918	Equisetopsida	Leguminosae	*Bauhinia variegata*				0	1	31/01/2003
21834	Equisetopsida	Leguminosae	*Chamaecrista nomame*		C		0	2	22/07/2010
14693	Equisetopsida	Leguminosae	*Crotalaria brevis*		C		0	2	22/07/2010
15469	Equisetopsida	Leguminosae	*Crotalaria medicaginea*	trefoil rattlepod	C		0	1	31/01/2003
15471	Equisetopsida	Leguminosae	*Crotalaria montana*		C		0	2	22/07/2010
18779	Equisetopsida	Leguminosae	*Crotalaria pallida*				0	1	31/01/2003
9165	Equisetopsida	Leguminosae	*Delonix regia*	poinciana			0	1	31/01/2003
14642	Equisetopsida	Leguminosae	*Desmodium gangeticum*		C		0	1	22/07/2010
14644	Equisetopsida	Leguminosae	*Desmodium heterocarpon var. strigosum*		C		1	1	14/09/2020
15460	Equisetopsida	Leguminosae	*Desmodium rhytidophyllum*		C		0	2	22/07/2010
15461	Equisetopsida	Leguminosae	*Desmodium triflorum*				0	1	31/01/2003
15334	Equisetopsida	Leguminosae	*Erythrina vespertilio*		C		0	1	31/01/2003
13000	Equisetopsida	Leguminosae	*Flemingia parviflora*	flemingia	C		0	3	22/07/2010
15356	Equisetopsida	Leguminosae	*Glycine tabacina*	glycine pea	C		0	3	22/07/2010
41983	Equisetopsida	Leguminosae	*Heliodendron thozetianum*		C		0	1	31/01/2003
15294	Equisetopsida	Leguminosae	*Indigofera hirsuta*	hairy indigo	C		0	2	22/07/2010
15255	Equisetopsida	Leguminosae	*Isotropis filicaulis*		C		0	1	31/01/2003
15260	Equisetopsida	Leguminosae	*Jacksonia scoparia*		C		0	1	31/01/2003

15235	Equisetopsida	Leguminosae	*Macroptilium atropurpureum*	siratro			0	1	31/01/2003
9873	Equisetopsida	Leguminosae	*Medicago polymorpha*	burr medic			0	1	31/01/2003
14370	Equisetopsida	Leguminosae	*Neptunia gracilis forma gracilis*		C		0	1	31/01/2003
14257	Equisetopsida	Leguminosae	*Rhynchosia minima*		C		0	1	31/01/2003
12876	Equisetopsida	Leguminosae	*Stylosanthes scabra*				0	1	22/07/2010
12879	Equisetopsida	Leguminosae	*Tamarindus indica*				1	1	28/11/2003
27745	Equisetopsida	Leguminosae	*Tephrosia filipes*		C		0	1	31/01/2003
14990	Equisetopsida	Leguminosae	*Trifolium repens var. repens*	white clover			0	1	31/01/2003
14998	Equisetopsida	Leguminosae	*Uraria lagopodioides*		C		0	1	22/07/2010
30907	Equisetopsida	Leguminosae	*Vachellia bidwillii*		C		0	1	31/01/2003
14952	Equisetopsida	Leguminosae	*Vigna lanceolata*		C		0	1	31/01/2003
10196	Equisetopsida	Leguminosae	*Vigna vexillata var. angustifolia*		C		0	1	31/01/2003
21949	Equisetopsida	Leguminosae	*Zornia dyctiocarpa*		C		0	1	31/01/2003
14923	Equisetopsida	Leguminosae	*Zornia muriculata subsp. muriculata*		C		1	1	28/11/2003
41230	Equisetopsida	Linderniaceae	*Torenia crustacea*		C		0	1	22/07/2010
17991	Equisetopsida	Loranthaceae	*Amyema miquelii*		C		0	1	22/07/2010
13236	Equisetopsida	Loranthaceae	*Dendrophthoe glabrescens*		C		0	1	31/01/2003
11979	Equisetopsida	Lythraceae	*Ammannia multiflora*	jerry-jerry	C		0	1	22/07/2010
14927	Equisetopsida	Malvaceae	*Abutilon grandifolium*				0	1	31/01/2003
16955	Equisetopsida	Malvaceae	*Hibiscus heterophyllus*		C		0	1	31/01/2003
16195	Equisetopsida	Malvaceae	*Sida cordifolia*				0	2	22/07/2010
16196	Equisetopsida	Malvaceae	*Sida corrugata*		C		0	1	31/01/2003
22197	Equisetopsida	Malvaceae	*Sida hackettiana*		C		0	2	22/07/2010
16146	Equisetopsida	Malvaceae	*Sida rhombifolia*				0	3	22/07/2010

15990	Equisetopsida	Malvaceae	*Urena lobata*	urena weed			0	1	31/01/2003
42052	Equisetopsida	Meliaceae	*Didymocheton gaudichaudianus*		C		0	1	31/01/2003
16661	Equisetopsida	Meliaceae	*Melia azedarach*	white cedar	C		0	1	31/01/2003
16557	Equisetopsida	Meliaceae	*Owenia acidula*	emu apple	C		0	1	31/01/2003
14327	Equisetopsida	Menyanthaceae	*Nymphoides indica*	water snowflake	SL		0	1	31/01/2003
19858	Equisetopsida	Moraceae	*Ficus benjamina*		C		0	1	31/01/2003
17144	Equisetopsida	Moraceae	*Ficus opposita*		C		0	1	31/01/2003
13825	Equisetopsida	Moraceae	*Maclura cochinchinensis*	cockspur thorn	C		1	1	29/06/2006
3624	Equisetopsida	Moraceae	*Malaisia scandens*		C		0	1	31/01/2003
18035	Equisetopsida	Myrsinaceae	*Aegiceras corniculatum*	river mangrove	C		0	1	31/01/2003
42283	Equisetopsida	Myrtaceae	*Blakella tessellaris*		C		0	3	22/07/2010
42282	Equisetopsida	Myrtaceae	*Blakella torelliana*		C		0	1	31/01/2003
6531	Equisetopsida	Myrtaceae	*Corymbia citriodora*	spotted gum	C		0	1	31/01/2003
6534	Equisetopsida	Myrtaceae	*Corymbia clarksoniana*		C		0	1	31/01/2003
6445	Equisetopsida	Myrtaceae	*Corymbia intermedia*	pink bloodwood	C		0	2	22/07/2010
17290	Equisetopsida	Myrtaceae	*Eucalyptus acmenoides*		C		0	1	31/01/2003
17252	Equisetopsida	Myrtaceae	*Eucalyptus crebra*	narrow-leaved red ironbark	C		0	3	22/07/2010
17229	Equisetopsida	Myrtaceae	*Eucalyptus moluccana*	gum-topped box	C		0	1	31/01/2003
12503	Equisetopsida	Myrtaceae	*Eucalyptus platyphylla*	poplar gum	C		0	1	31/01/2003
17204	Equisetopsida	Myrtaceae	*Eucalyptus tereticornis*		C		0	3	22/07/2010
16780	Equisetopsida	Myrtaceae	*Lophostemon confertus*	brush box	C		0	1	31/01/2003
16730	Equisetopsida	Myrtaceae	*Lophostemon suaveolens*	swamp box	C		0	3	22/07/2010
31373	Equisetopsida	Myrtaceae	*Melaleuca citrina*		C		0	1	31/01/2003
16689	Equisetopsida	Myrtaceae	*Melaleuca leucadendra*	broad-leaved tea-tree	C		0	1	31/01/2003

13828	Equisetopsida	Myrtaceae	*Melaleuca nervosa*		C		0	3	22/07/2010
31375	Equisetopsida	Myrtaceae	*Melaleuca viminalis*		C		0	1	31/01/2003
16657	Equisetopsida	Myrtaceae	*Melaleuca viridiflora*		C		0	1	31/01/2003
16047	Equisetopsida	Myrtaceae	*Syzygium luehmannii*		C		0	1	31/01/2003
19941	Equisetopsida	Nymphaeaceae	*Nymphaea caerulea*				0	1	31/01/2003
16838	Equisetopsida	Oleaceae	*Jasminum didymum subsp. racemosum*		C		0	1	31/01/2003
16840	Equisetopsida	Oleaceae	*Jasminum simplicifolium subsp. australiense*		C		0	1	31/01/2003
13420	Equisetopsida	Onagraceae	*Ludwigia octovalvis*	willow primrose	C		0	1	31/01/2003
16731	Equisetopsida	Onagraceae	*Ludwigia peploides subsp. montevidensis*		C		0	1	31/01/2003
17505	Equisetopsida	Orchidaceae	*Cymbidium canaliculatum*		SL		0	1	31/01/2003
9457	Equisetopsida	Oxalidaceae	*Oxalis corniculata*				0	1	31/01/2003
19740	Equisetopsida	Papaveraceae	*Argemone ochroleuca*				0	1	31/01/2003
16530	Equisetopsida	Passifloraceae	*Passiflora foetida*				0	2	22/07/2010
16532	Equisetopsida	Passifloraceae	*Passiflora suberosa*	corky passion flower			0	1	31/01/2003
17808	Equisetopsida	Phyllanthaceae	*Breynia oblongifolia*		C		0	2	22/07/2010
11327	Equisetopsida	Phyllanthaceae	*Bridelia exaltata*		C		0	1	31/01/2003
16473	Equisetopsida	Phyllanthaceae	*Phyllanthus virgatus*		C		0	2	22/07/2010
16505	Equisetopsida	Picrodendraceae	*Petalostigma pubescens*	quinine tree	C		0	3	22/07/2010
12030	Equisetopsida	Pinaceae	*Pinus elliottii*	slash pine			0	1	31/01/2003
22387	Equisetopsida	Pittosporaceae	*Pittosporum spinescens*		C		0	1	31/01/2003
18225	Equisetopsida	Plantaginaceae	*Mecardonia procumbens*				1	1	25/02/2014
16183	Equisetopsida	Plantaginaceae	*Scoparia dulcis*	scoparia			0	1	22/07/2010
13707	Equisetopsida	Poaceae	*Aristida calycina*		C		0	1	31/01/2003
15650	Equisetopsida	Poaceae	*Aristida caput-medusae*		C		0	1	31/01/2003

18398	Equisetopsida	Poaceae	*Aristida holathera*		C		0	1	31/01/2003
9289	Equisetopsida	Poaceae	*Aristida queenslandica*		C		0	1	31/01/2003
11124	Equisetopsida	Poaceae	*Aristida queenslandica var. dissimilis*		C		0	1	22/07/2010
15634	Equisetopsida	Poaceae	*Arundinella nepalensis*	reedgrass	C		0	3	22/07/2010
10316	Equisetopsida	Poaceae	*Bothriochloa decipiens var. decipiens*		C		0	1	22/07/2010
14773	Equisetopsida	Poaceae	*Capillipedium parviflorum*	scented top	C		0	1	31/01/2003
14774	Equisetopsida	Poaceae	*Capillipedium spicigerum*	spicytop	C		0	2	22/07/2010
15541	Equisetopsida	Poaceae	*Cenchrus echinatus*	Mossman River grass			0	1	31/01/2003
15550	Equisetopsida	Poaceae	*Chloris divaricata var. divaricata*	slender chloris	C		0	1	31/01/2003
15551	Equisetopsida	Poaceae	*Chloris gayana*	rhodes grass			0	1	31/01/2003
15527	Equisetopsida	Poaceae	*Chloris virgata*	feathertop rhodes grass			0	1	31/01/2003
15531	Equisetopsida	Poaceae	*Chrysopogon fallax*		C		0	2	22/07/2010
15485	Equisetopsida	Poaceae	*Cymbopogon refractus*	barbed-wire grass	C		0	2	22/07/2010
15486	Equisetopsida	Poaceae	*Cynodon dactylon*				0	1	31/01/2003
11066	Equisetopsida	Poaceae	*Digitaria didactyla*	Queensland blue couch			0	1	31/01/2003
34493	Equisetopsida	Poaceae	*Dinebra decipiens var. decipiens*		C		0	1	22/07/2010
15405	Equisetopsida	Poaceae	*Enneapogon lindleyanus*		C		0	1	22/07/2010
15361	Equisetopsida	Poaceae	*Eragrostis elongata*		C		0	1	31/01/2003
15367	Equisetopsida	Poaceae	*Eragrostis leptostachya*		C		0	1	22/07/2010
15371	Equisetopsida	Poaceae	*Eragrostis parviflora*	weeping lovegrass	C		0	1	31/01/2003
15373	Equisetopsida	Poaceae	*Eragrostis sororia*		C		0	1	31/01/2003
15374	Equisetopsida	Poaceae	*Eragrostis spartinoides*		C		0	3	22/07/2010
15378	Equisetopsida	Poaceae	*Eragrostis tenuifolia*	elastic grass			0	1	31/01/2003
15320	Equisetopsida	Poaceae	*Heteropogon contortus*	black speargrass	C		0	3	22/07/2010

10578	Equisetopsida	Poaceae	*Hyparrhenia rufa*				0	2	22/07/2010
15803	Equisetopsida	Poaceae	*Hyparrhenia rufa subsp. rufa*				0	1	31/01/2003
15290	Equisetopsida	Poaceae	*Imperata cylindrica*	blady grass	C		0	1	31/01/2003
29093	Equisetopsida	Poaceae	*Megathyrsus maximus*				0	1	31/01/2003
27900	Equisetopsida	Poaceae	*Megathyrsus maximus var. pubiglumis*				0	1	22/07/2010
15242	Equisetopsida	Poaceae	*Melinis minutiflora*	molasses grass			0	1	22/07/2010
9154	Equisetopsida	Poaceae	*Melinis repens*	red natal grass			0	2	22/07/2010
13607	Equisetopsida	Poaceae	*Panicum effusum*		C		0	2	22/07/2010
18424	Equisetopsida	Poaceae	*Panicum simile*		C		0	1	22/07/2010
14345	Equisetopsida	Poaceae	*Paspalidium distans*	shotgrass	C		0	1	22/07/2010
15134	Equisetopsida	Poaceae	*Paspalum dilatatum*	paspalum			0	1	31/01/2003
15043	Equisetopsida	Poaceae	*Sorghum halepense*	Johnson grass			0	1	31/01/2003
10792	Equisetopsida	Poaceae	*Sorghum nitidum forma aristatum*		C		0	1	31/01/2003
15003	Equisetopsida	Poaceae	*Sporobolus virginicus*	sand couch	C		0	1	31/01/2003
14974	Equisetopsida	Poaceae	*Themeda triandra*	kangaroo grass	C		0	3	22/07/2010
2359	Equisetopsida	Poaceae	*Urochloa mutica*				0	1	31/01/2003
13155	Equisetopsida	Polygonaceae	*Persicaria decipiens*	slender knotweed	C		0	1	31/01/2003
16359	Equisetopsida	Portulacaceae	*Portulaca oleracea*	pigweed			0	1	31/01/2003
9659	Equisetopsida	Rhamnaceae	*Alphitonia excelsa*	soap tree	C		0	1	31/01/2003
14109	Equisetopsida	Rosaceae	*Eriobotrya japonica*	loquat			0	1	31/01/2003
5565	Equisetopsida	Rubiaceae	*Coelospermum reticulatum*		C		0	2	22/07/2010
27436	Equisetopsida	Rubiaceae	*Cyclophyllum coprosmoides*		C		0	1	31/01/2003
16334	Equisetopsida	Rubiaceae	*Psychotria daphnoides*		C		0	1	31/01/2003
2399	Equisetopsida	Rubiaceae	*Psydrax odorata*		C		0	1	31/01/2003

16135	Equisetopsida	Rubiaceae	*Spermacoce brachystema*		C		0	1	31/01/2003
16139	Equisetopsida	Rubiaceae	*Spermacoce multicaulis*		C		0	1	22/07/2010
21837	Equisetopsida	Rutaceae	*Murraya paniculata 'Exotica'*				0	1	31/01/2003
19727	Equisetopsida	Sapindaceae	*Alectryon tomentosus*		C		1	1	20/01/2022
17548	Equisetopsida	Sapindaceae	*Cupaniopsis anacardioides*	tuckeroo	C		0	1	31/01/2003
16885	Equisetopsida	Sapindaceae	*Jagera pseudorhus*		C		0	1	31/01/2003
8631	Equisetopsida	Scrophulariaceae	*Eremophila debilis*	winter apple	C		0	1	31/01/2003
16602	Equisetopsida	Scrophulariaceae	*Myoporum acuminatum*	coastal boobialla	C		0	1	31/01/2003
17496	Equisetopsida	Solanaceae	*Datura stramonium*	common thornapple			0	1	31/01/2003
13788	Equisetopsida	Solanaceae	*Solanum nigrum*				0	2	22/07/2010
16120	Equisetopsida	Solanaceae	*Solanum seaforthianum*	Brazilian nightshade			0	1	31/01/2003
16126	Equisetopsida	Solanaceae	*Solanum torvum*	devil's fig			0	1	31/01/2003
17049	Equisetopsida	Sparrmanniaceae	*Grewia latifolia*	dysentery plant	C		0	3	22/07/2010
15983	Equisetopsida	Sparrmanniaceae	*Triumfetta rhomboidea*	chinese burr			0	1	31/01/2003
12527	Equisetopsida	Typhaceae	*Typha domingensis*		C		0	1	31/01/2003
19905	Equisetopsida	Verbenaceae	*Lantana camara*	lantana			0	3	22/07/2010
13853	Equisetopsida	Verbenaceae	*Lantana montevidensis*	creeping lantana			0	1	31/01/2003
16143	Equisetopsida	Verbenaceae	*Stachytarpheta jamaicensis*	Jamaica snakeweed			0	2	22/07/2010
15951	Equisetopsida	Verbenaceae	*Verbena bonariensis*	purpletop			0	1	31/01/2003
41630	Equisetopsida	Violaceae	*Pigea stellarioides*		C		0	1	31/01/2003
15934	Equisetopsida	Xanthorrhoeaceae	*Xanthorrhoea johnsonii*		SL		0	2	22/07/2010
16707	Equisetopsida	Zamiaceae	*Macrozamia miquelii*		SL		0	1	31/01/2003

Table 4. Fungi recorded within the area of interest and its one kilometre buffer

No species found within the area of interest and its one kilometre buffer.

Table 5. Other species recorded within the area of interest and its one kilometre buffer

No species found within the area of interest and its one kilometre buffer.

Species table headings and codes
Taxon Id: Unique identifier of the taxon from the WildNet database.
NCA: Queensland conservation status of the taxon under the *Nature Conservation Act 1992* (Least Concern (C), Critically Endangered (CR), Endangered (E), Extinct (EX), Near Threatened (NT), Extinct in the Wild (PE), Special Least Concern (SL), and Vulnerable (V)).
EPBC: Australian conservation status of the taxon under the *Environment Protection and Biodiversity Conservation Act 1999* (Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Vulnerable (V), and Extinct in the Wild (XW)).
Specimens: The number of specimen-backed records of the taxon.
Records: The total number of records of the taxon.
Last record: Date of most recent record of the taxon.

Links and Support

Other sites that deliver species information from the WildNet database include:

- WildNet Application - public interface to find species information and species lists generated from the WildNet database.
- Biomaps - view biodiversity information, including WildNet records approved for publication, and generate reports
- Queensland Globe - view spatial information, including WildNet records approved for publication
- Qld WildNet Data API - access WildNet species information approved for publication such as notes, images and records etc.
- Wetland*Maps* - view species records, survey locations etc. approved for publication
- Wetland*Summary* - view wildlife statistics, species lists for a range of area types, and access WildNet species profiles
- WildNet wildlife records - published - Queensland - spatial layer of WildNet records approved for publication generated weekly
- Generalised distribution and densities of Queensland wildlife - Queensland species distributions and densities generalised to a 10 km grid resolution
- Conservation status of Queensland wildlife - access current lists of priority species for Queensland including nomenclature and status information
- Queensland Confidential Species - the list of species flagged as confidential in the WildNet database.

Please direct queries about this report to the WildNet Team WildNet@detsi.qld.gov.au.

Other useful sites for accessing Queensland biodiversity data include:

- Useful wildlife resources
- Queensland Government Data
- Atlas of Living Australia (ALA)
- Online Zoological Collections of Australian Museums (OZCAM)
- Australasian Virtual Herbarium (AVH)
- Protected Matters Search Tool

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government, to the maximum extent permitted by law, 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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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: 26-Aug-2025

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

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	8
Listed Threatened Species:	38
Listed Migratory Species:	17

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:	26
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	12
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
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area
Weeping Myall Woodlands	Endangered	Community may occur within area

Listed Threatened Species [Resource Information]

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

Scientific Name	Threatened Category	Presence Text
BIRD		

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Critically Endangered	Species or species habitat may occur within area
Epthianura crocea macgregori Capricorn Yellow Chat, Yellow Chat (Dawson) [67090]	Critically Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Limnodromus semipalmatus](#) Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area
[Limosa lapponica baueri](#) Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area
[Neochmia ruficauda ruficauda](#) Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
[Rostratula australis](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
[Turnix melanogaster](#) Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area
MAMMAL		
[Dasyurus hallucatus](#) Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
[Macroderma gigas](#) Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
[Petauroides volans](#) Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area
[Petaurus australis australis](#) Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Xeromys myoides		
Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat known to occur within area
PLANT		
Bosistoa transversa		
Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area
Cossinia australiana		
Cossinia [3066]	Endangered	Species or species habitat may occur within area
Cupaniopsis shirleyana		
Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat likely to occur within area
Cycas megacarpa		
[55794]	Endangered	Species or species habitat may occur within area
Cycas ophiolitica		
[55797]	Endangered	Species or species habitat may occur within area
Dichanthium setosum		
bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus raveretiana		
Black Ironbox [16344]	Vulnerable	Species or species habitat likely to occur within area
Macadamia integrifolia		
Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Samadera bidwillii](#) Quassia [29708]	Vulnerable	Species or species habitat may occur within area
REPTILE		
[Delma torquata](#) Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
[Egernia rugosa](#) Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area
[Furina dunmalli](#) Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area
[Hemiaspis damelii](#) Grey Snake [1179]	Endangered	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
[Anous stolidus](#) Common Noddy [825]		Species or species habitat known to occur within area
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Marine Species		
[Crocodylus porosus](#) Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
[Cuculus optatus](#) Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Migratory Wetlands Species		

Scientific Name	Threatened Category	Presence Text
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus		
Common Noddy [825]		Species or species habitat known to occur within area
Anseranas semipalmata		
Magpie Goose [978]		Species or species habitat may occur within area overfly marine area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Bubulcus ibis as Ardea ibis		
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Myiagra cyanoleuca		
Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus		
Osprey [952]		Species or species habitat known to occur within area
Pterodroma cervicalis		
White-necked Petrel [59642]		Species or species habitat may occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato)		
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area
Symposiachrus trivirgatus as Monarcha trivirgatus		
Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Reptile		
Crocodylus porosus		
Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area

Extra Information

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Blackwater to Gladstone Gas Pipeline Project	2011/6034	Controlled Action	Completed
Construct and operate 447km high pressure gas transmission pipeline	2009/4976	Controlled Action	Post-Approval
Construction of a Chlor-Alkali-Ethylene Di-Chloride (CA/EDC) Plant at the Gladst	2002/764	Controlled Action	Completed
Gas Pipeline with Alternative Pipleine to Supply Natural Gas Liquefaction Park	2008/4096	Controlled Action	Post-Approval
H2-Hub??? Gladstone - Export-class Green Hydrogen and Ammonia Complex	2021/9049	Controlled Action	Referral Decision
Queensland Curtis LNG Project - LNG Marine Facilities	2008/4401	Controlled Action	Post-Approval
Queensland Curtis LNG Project - Pipeline Network	2008/4399	Controlled Action	Post-Approval
The Arrow Gas Transmission Pipeline, Gladstone to Curtis Island	2009/5008	Controlled Action	Post-Approval
Not controlled action			
Gladstone Energy and Ammonia Project, Qld	2018/8305	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Project Sun Liquefied Natural Gas Plant and Pipeline	2008/3994	Not Controlled Action	Completed
Referral decision			
Gas Transmission Pipeline to supply Natural Gas Liquefaction Park	2008/4061	Referral Decision	Completed

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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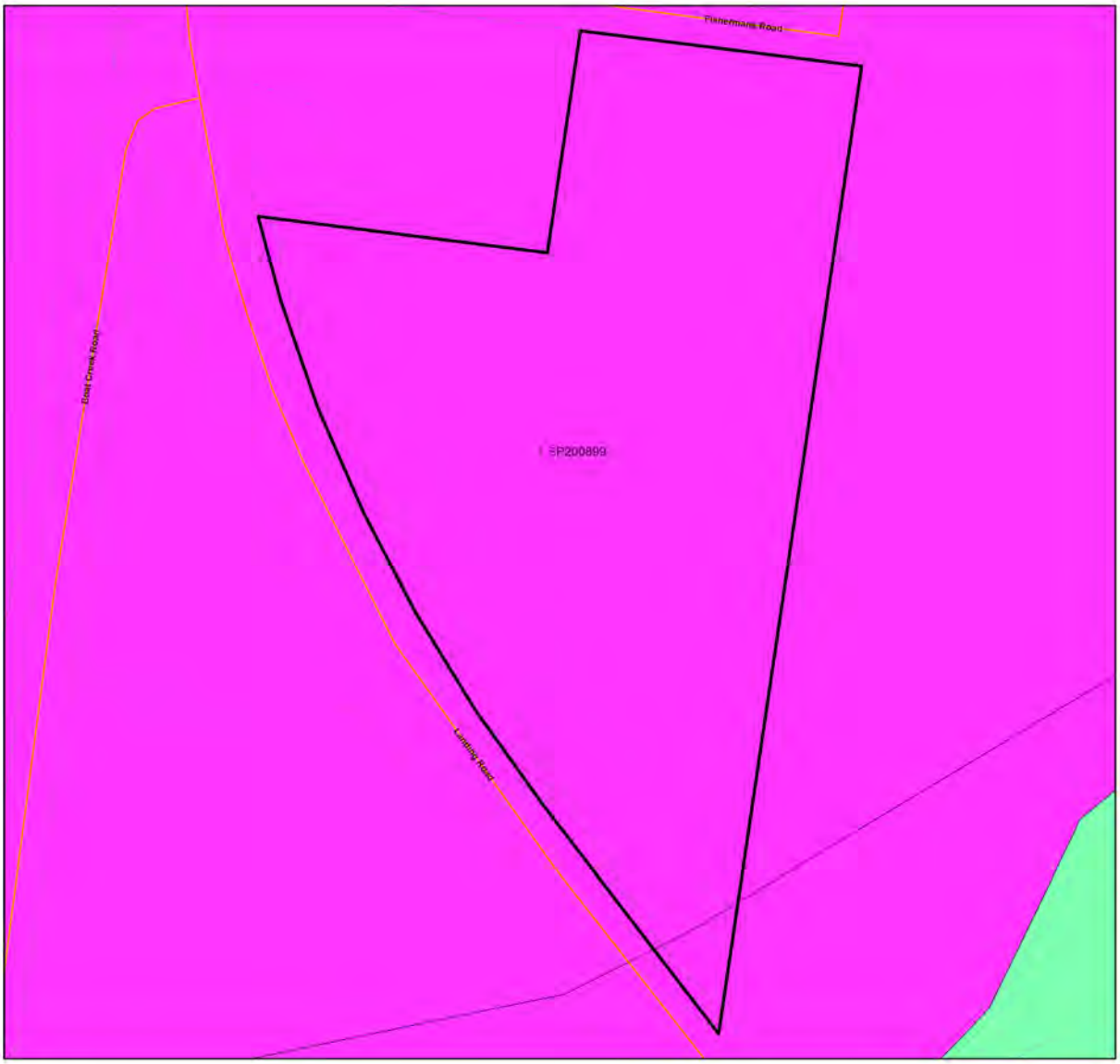

Vegetation Management Pre-clear Regional Ecosystem Map

- Highway
- Connector
- Street/Local Road
- Other land parcel boundaries
- Pre-clearing area containing Endangered RE
- Pre-clearing area containing Of Concern RE
- Pre-clearing area that is a Least Concern RE
- Water
- Selected Lot and Plan

LOCALITY DIAGRAM

N

0 19 38 57 76 95 m

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Pre-clearing regional ecosystem line-work reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only.

Digital data for the Pre-clearing regional ecosystem map is available from the Queensland Spatial Portal at http://www.spatial.information.qld.gov.au/

Land parcel boundaries shown are provided as a locational aid only.

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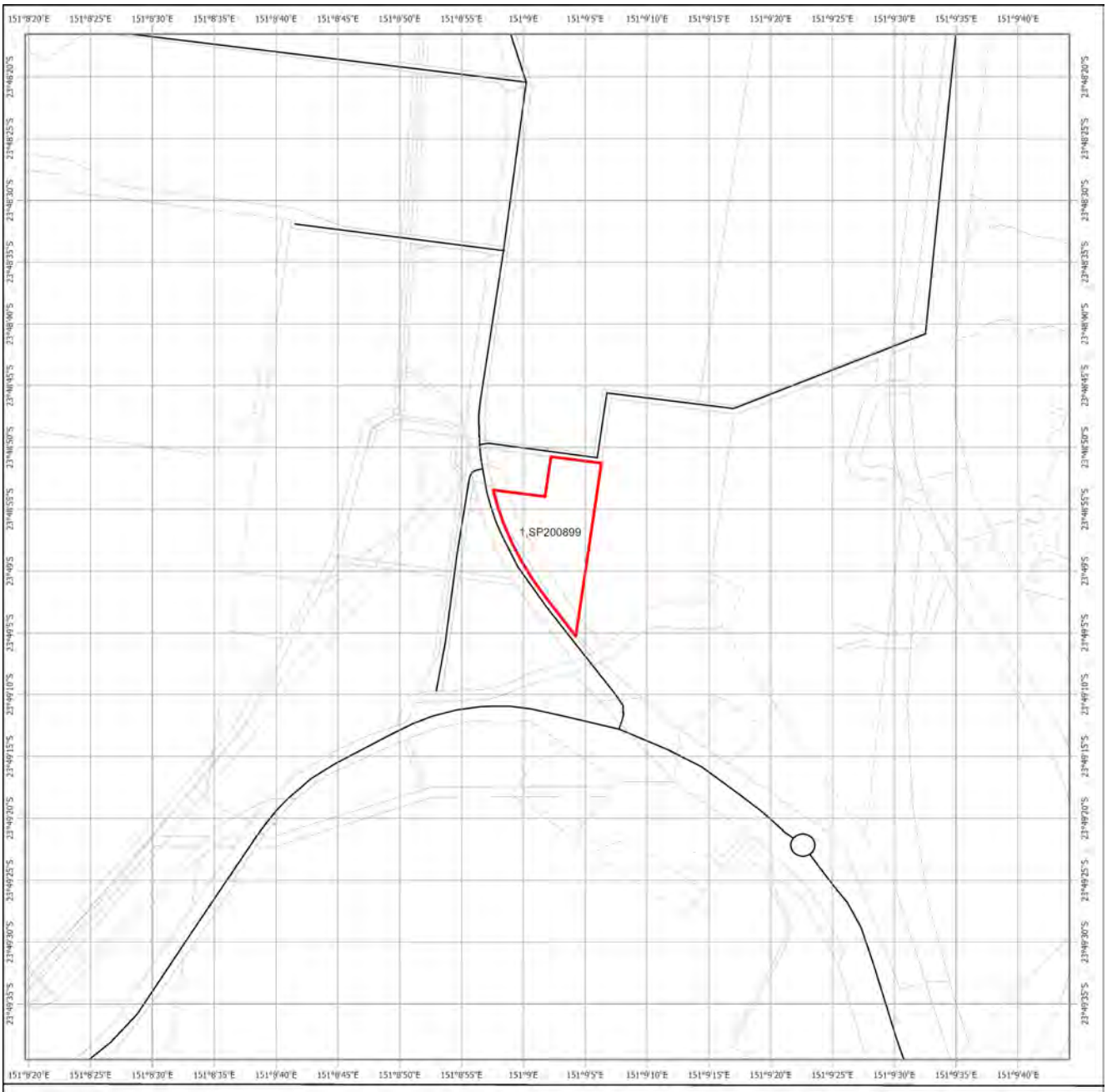

Protected Plants Flora Survey Trigger Map

High risk area
Other land parcel boundaries
Freeways / motorways / highways
Secondary roads / streets
Selected Lot and Plan

LOCALITY DIAGRAM

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of the Environment, Tourism, Science and Innovation at palm@detsi.qld.gov.au

N

0 100 200 300 400 500 m

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Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see section 89 of the Act.

Please see the Department of the Environment, Tourism, Science and Innovation webpage on the clearing of protected plants for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map
The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

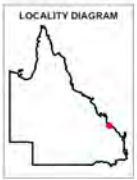
Species information
Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of the Environment, Tourism, Science and Innovation does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of the Environment, Tourism, Science and Innovation webpage on the clearing of protected plants for more information.

Regulated Vegetation Management Map

Queensland Government

Category A area (Vegetation offsets/compliance notices/VDecs)
Category B area (Remnant vegetation)
Category C area (High-value regrowth vegetation)
Category R area (Reef regrowth watercourse vegetation)
Category X area (Exempt clearing work on Freehold, Indigenous and Leasehold land)
Water
Other land parcel boundaries
Selected Lot and Plan

LOCALITY DIAGRAM



N

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Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.nrmmrrd.qld.gov.au or contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development.

Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at http://www.spatial.information.qld.gov.au/

Land parcel boundaries are provided as locational aid only.

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.

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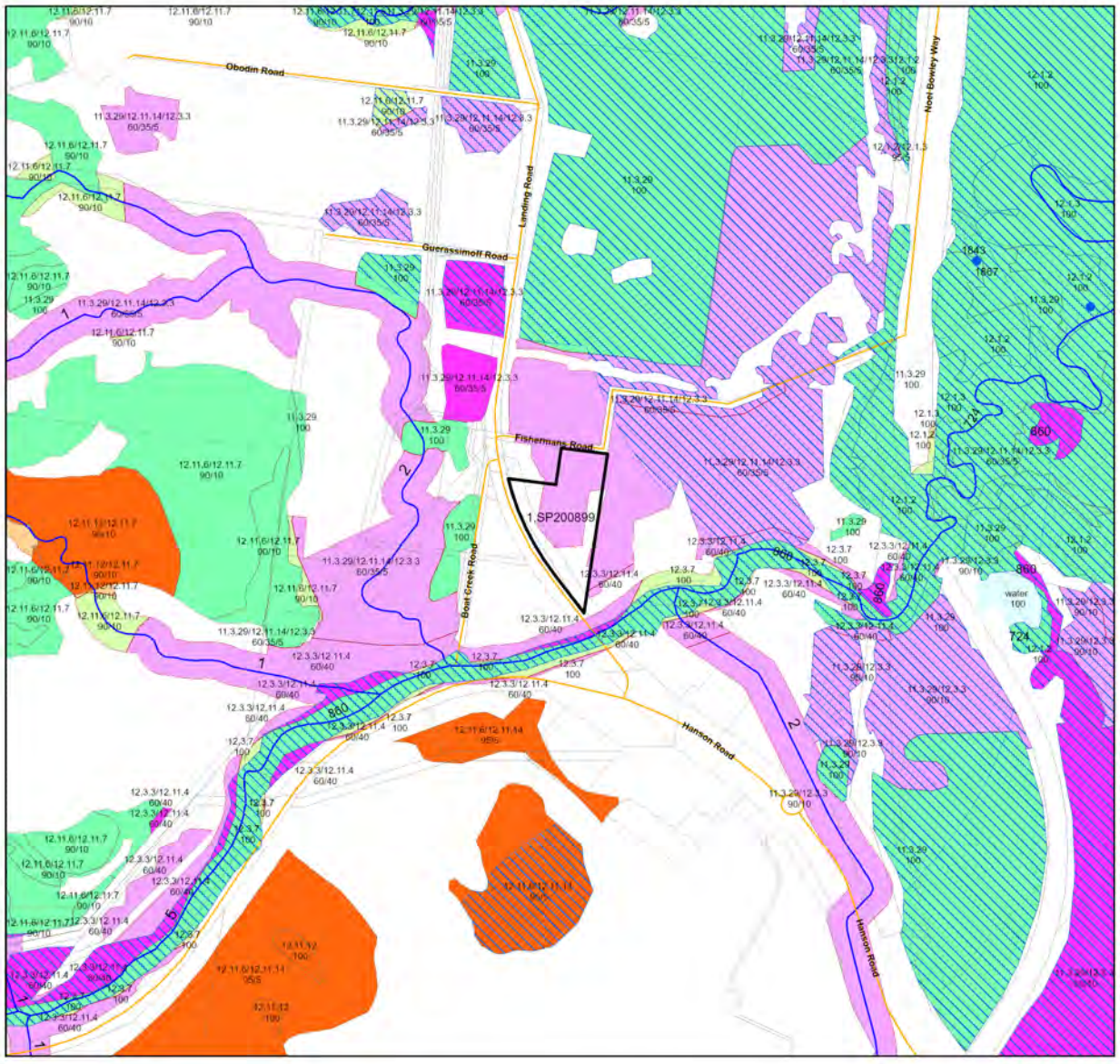

Vegetation Management Supporting Map

- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category C or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R area that is a least concern regional ecosystem
- Category X area
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map (Stream order shown as black number against stream where available)
- Highway
- Connector
- Street/Local Road
- National Parks, State Forest and other reserves
- Other land parcel boundaries
- Selected Lot and Plan

Queensland Government

LOCALITY DIAGRAM

N

0 120 240 360 480 600 m

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Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

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Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.nrmmrrd.qld.gov.au or contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at http://www.spatial.information.qld.gov.au/

Land parcel boundaries are provided as locational aid only.

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Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - State Code 16: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the *Planning Act 2016*; and
- Accepted development vegetation clearing codes made under the *Vegetation Management Act 1999*

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s on the accompanying essential habitat map.

This report identifies essential habitat in Category A, B and Category C areas.

The numeric labels on the essential habitat map can be cross referenced with the database below to determine which essential habitat factors might exist for a particular species.

Essential habitat is compiled from a combination of species habitat models and buffered species records.

The Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development website http://www.nrmmrrd.qld.gov.au has more information on how the layer is applied under the State Development Assessment Provisions - State Code 16: Native vegetation clearing and the *Vegetation Management Act 1999*.

Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated.

Essential habitat, for protected wildlife, means a category A area, a category B area or category C area shown on the regulated vegetation management map-

1. that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or
2. in which the protected wildlife, at any stage of its life cycle, is located.

Protected wildlife includes critically endangered, endangered, vulnerable or near-threatened native wildlife prescribed under the *Nature Conservation Act 1992*.

Essential habitat in Category A and/or Category B and/or Category C

No records

Vegetation management report

For Lot: 1 Plan: SP200899
26/08/2025

nrmmrrd.qld.gov.au

Queensland Government

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Recent changes

Updated mapping

Updated vegetation mapping was released on 22 November 2023 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, essential habitat, wetland and high-value regrowth mapping.

The Department of the Environment, Tourism, Science and Innovation have also updated their koala protection mapping to align with the Queensland Herbarium scientific updates.

The latest version (v10) of the Protected Plants Flora Survey Trigger Map (trigger map) was released on 6 September 2023.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:
Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of the Environment, Tourism, Science and Innovation who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of the Environment, Tourism, Science and Innovation who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:
- the vegetation management framework, which may include:

- exempt clearing work;
- accepted development vegetation clearing code;
- an area management plan;
- a development approval;

- the protected plant framework, which may include:

- the need to undertake a flora survey;
- exempt clearing;
- a protected plant clearing permit;

- the koala protection framework, which may include:

- exempted development;
- a development approval;
- the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

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1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 1 Plan: SP200899 are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
A	CTN2165	Easement	13,350
1	SP200899	Freehold	57,500

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

Does the property Lot: 1 Plan: SP200899 have a freehold tenure and is in the Wet Tropics of Queensland World Heritage Area?

No, this property is not located in the Wet Tropics of Queensland World Heritage Area.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 1 Plan: SP200899, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Gladstone Regional	Calliope	Southeast Queensland	Burnett - Curtis Hills and Ranges

2. Vegetation management framework (administered by the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development)

The *Vegetation Management Act 1999* (VMA), the Vegetation Management Regulation 2023, the *Planning Act 2016* and the Planning Regulation 2017, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem identified in the Vegetation Management Regional Ecosystem Description Database (VM REDD) as having a grassland structure; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at

https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/exemptions/.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at

https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/codes/

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at
https://vegetation-apps.dnrm.qld.gov.au

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development and then follow the conditions and requirements listed in the AMP.

https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/area-management-plans

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at

https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/development

2.5. Contact information for the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development

For further information on the vegetation management framework:

Phone 135VEG (135 834)

Email vegetation@resources.qld.gov.au

Visit https://www.resources.qld.gov.au/?contact=vegetation to submit an online enquiry.

3. Vegetation management framework for Lot: 1 Plan: SP200899

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property

Vegetation category	Area (ha)
Category C	3.07
Category X	2.68

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

There is no Property Map of Assessable Vegetation (PMAV) present on this property.

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at
https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
11.3.29	Least concern	C	1.84	Eucalyptus crebra, E. exserta, Melaleuca spp. woodland on alluvial plains	Sparse
12.11.14	Of concern	C	1.07	Eucalyptus crebra, E. tereticornis, Corymbia intermedia woodland on metamorphics +/- interbedded volcanics	Sparse
12.3.3	Endangered	C	0.15	Eucalyptus tereticornis woodland on Quaternary alluvium	Sparse
non-rem	None	X	2.68	None	None

Please note:
1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.
2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife,

means an area of vegetation shown on the Regulated Vegetation Management Map -

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or
2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C
No records

3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

No Class A

No Class B

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 1 Plan: SP200899.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:
https://www.qld.gov.au/environment/land/management/vegetation/maps/map-request

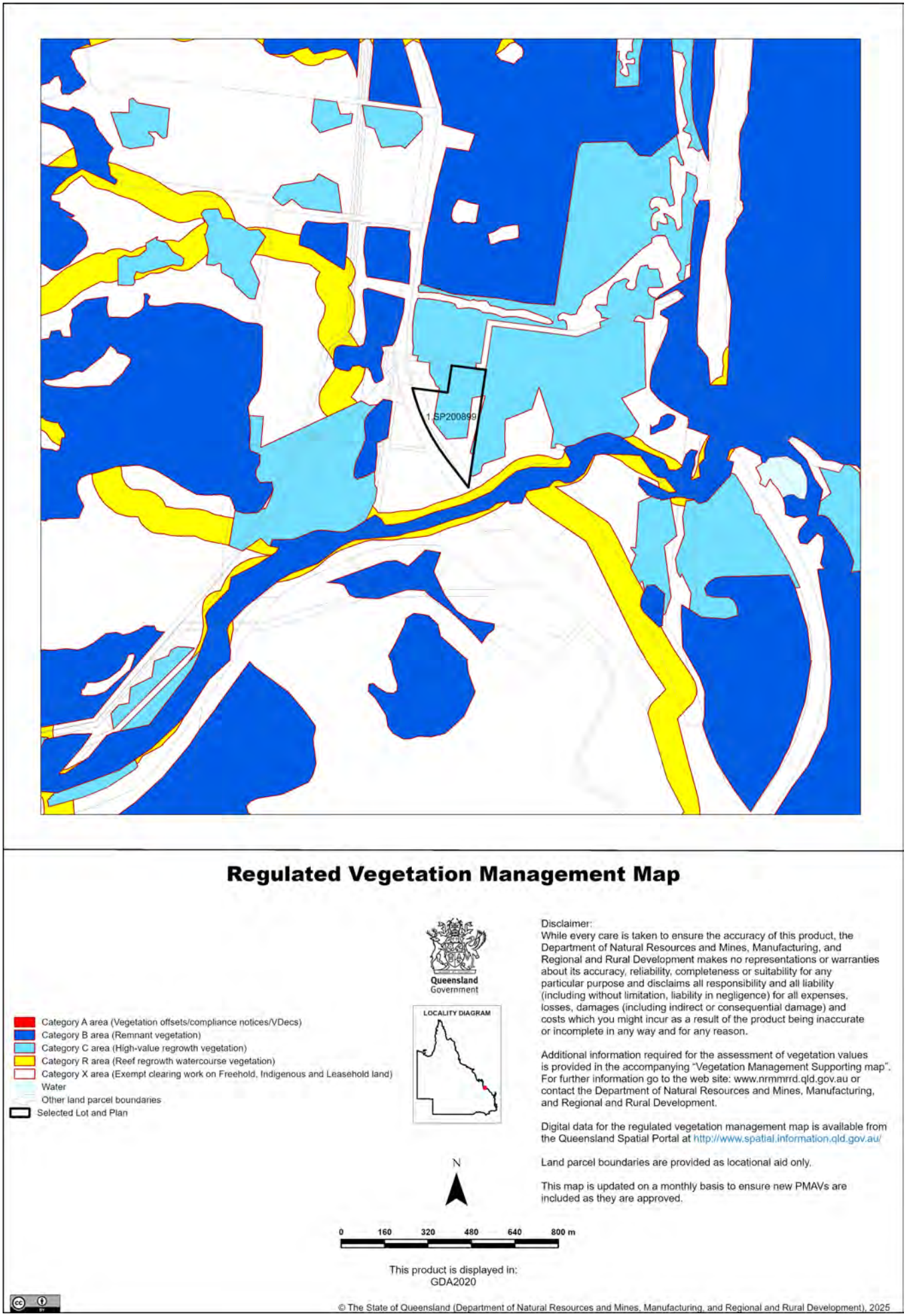
Regulated vegetation management map
The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new property maps of assessable vegetation (PMAV).

Vegetation management supporting map
The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

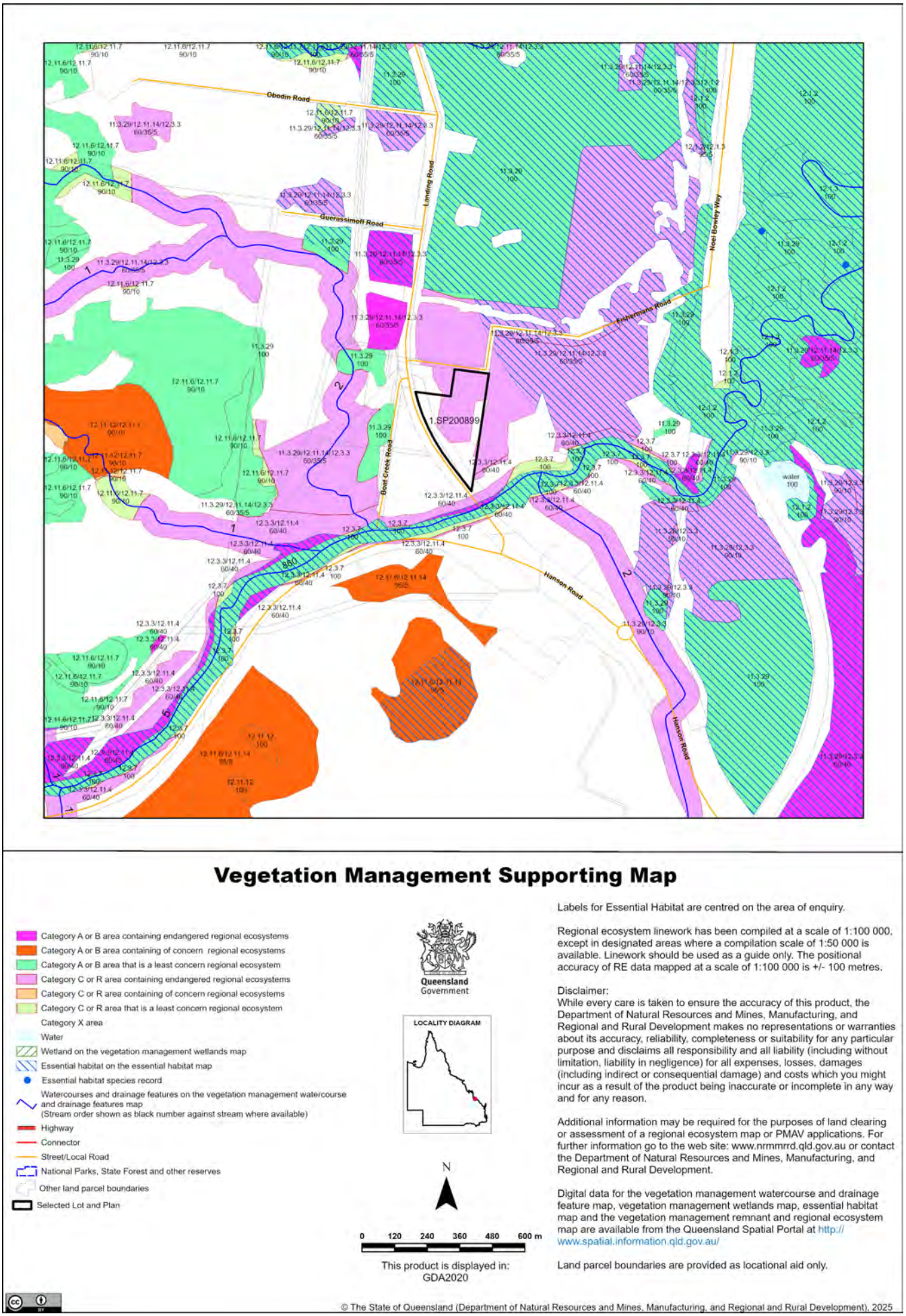
Coastal/non-coastal map
The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture
The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

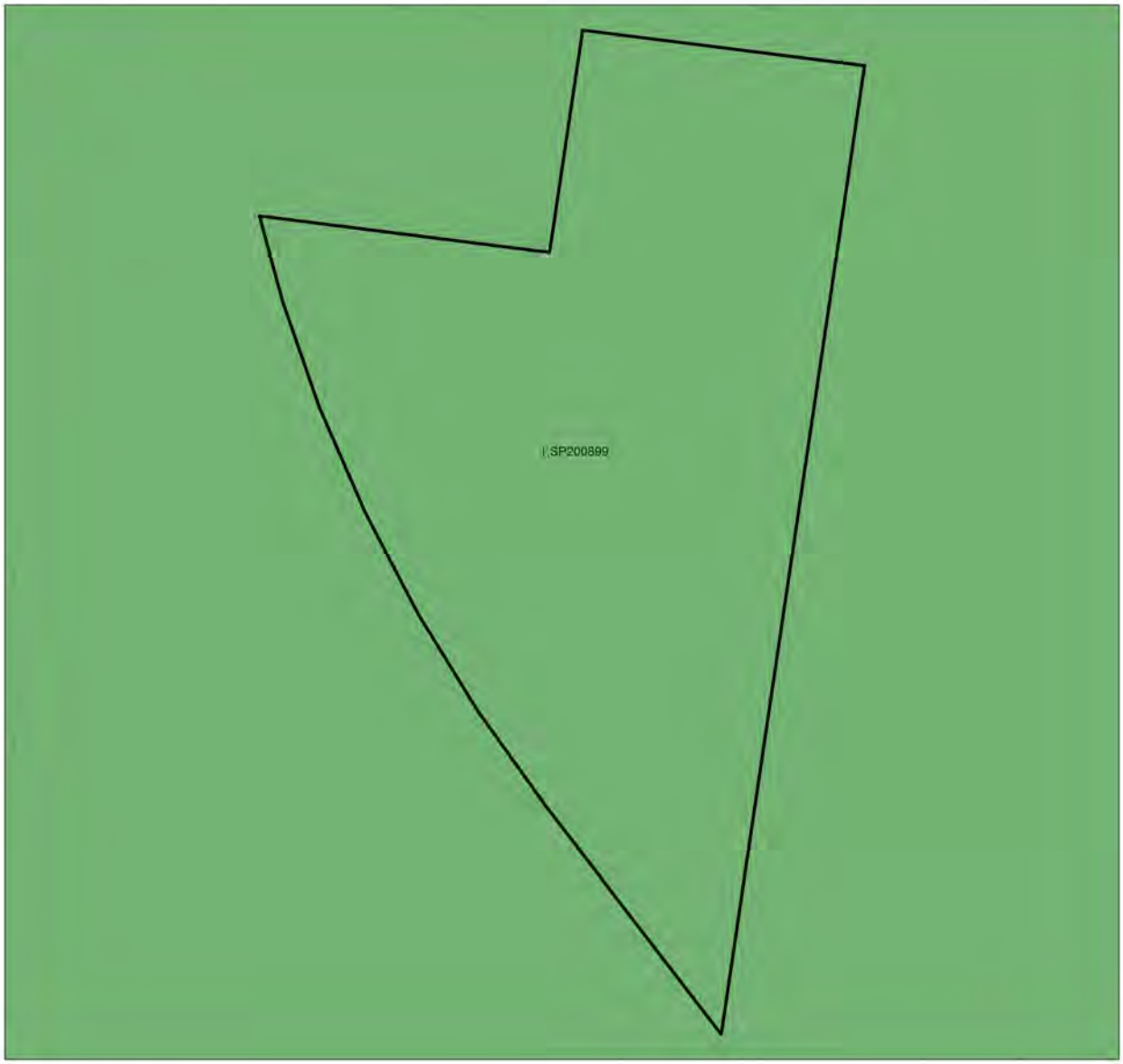
4.1 Regulated vegetation management map



4.2 Vegetation management supporting map



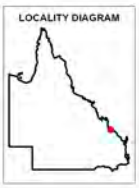
4.3 Coastal/non-coastal map



Coastal/Non Coastal Map

Coastal
Non Coastal
Other land parcel boundaries
Selected Lot and Plan

LOCALITY DIAGRAM



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Land parcel boundaries shown are provided as a locational aid only.

N

0 27.5 55 82.5 110 137.5 m

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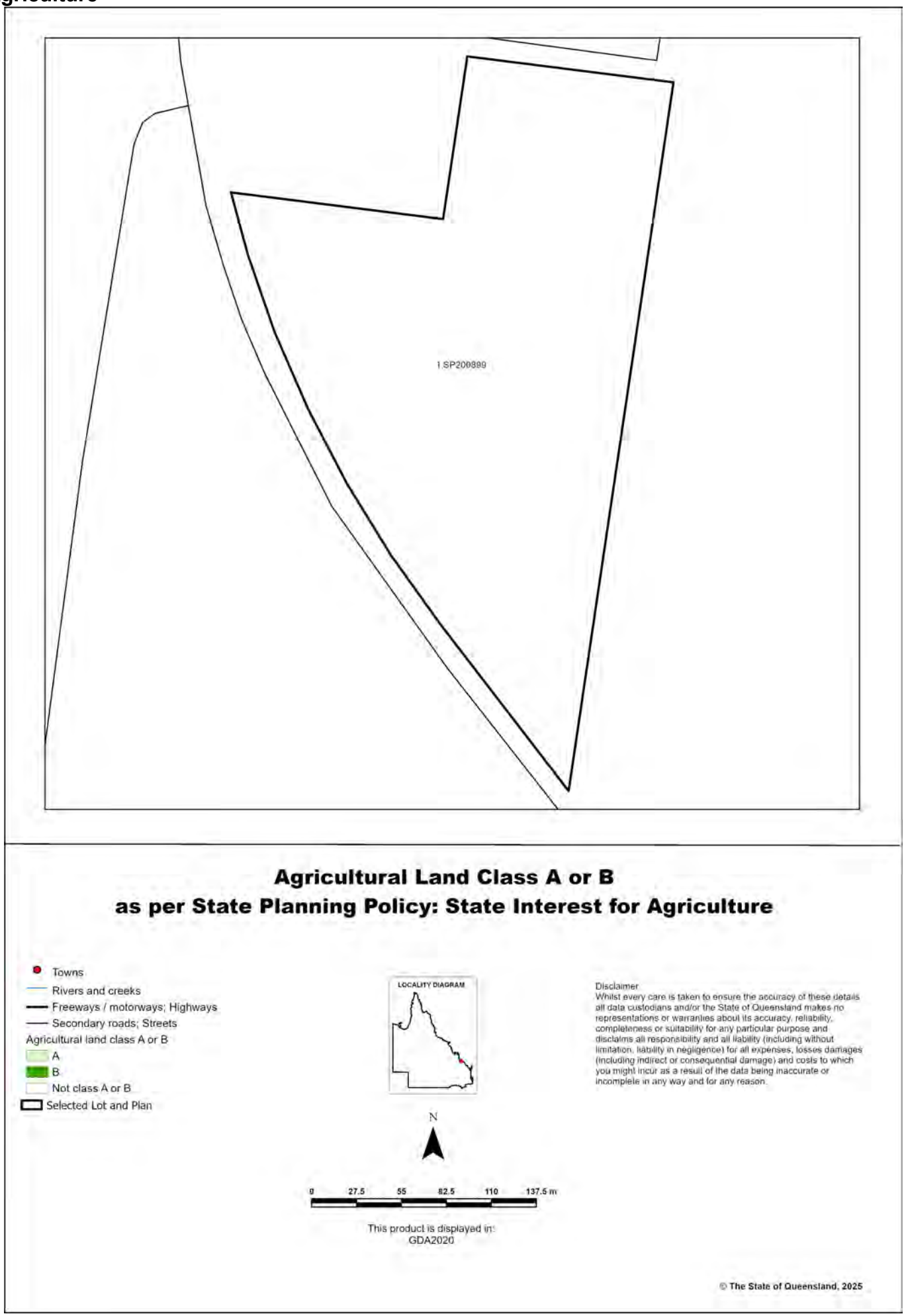
4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture



5. Protected plants framework (administered by the Department of the Environment, Tourism, Science and Innovation (DETSI))

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992* (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see Operational policy: When a protected plant in Queensland is considered to be 'in the wild') that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for threatened and near threatened plants. These are areas where threatened or near threatened plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the Flora survey guidelines. The main objective of a flora survey is to locate any threatened or near threatened plants that may be present in the clearing impact area.

If the flora survey identifies that threatened or near threatened plants are not present within the clearing impact area or clearing within 100m of Endangered, Vulnerable, Near-Threatened (EVNT) plants can be avoided, the clearing activity is exempt from a permit. An exempt clearing notification form must be submitted to the Department of the Environment, Tourism, Science and Innovation, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that threatened or near threatened plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the clearing permit application form.

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that threatened or near threatened plantsare present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DETSI

For further information on the protected plants framework:
Phone 1300 130 372 (and select option four)
Email palm@detsi.qld.gov.au
Visit https://www.qld.gov.au/environment/plants-animals/plants/protected-plants

5.5 Protected plants flora survey trigger map

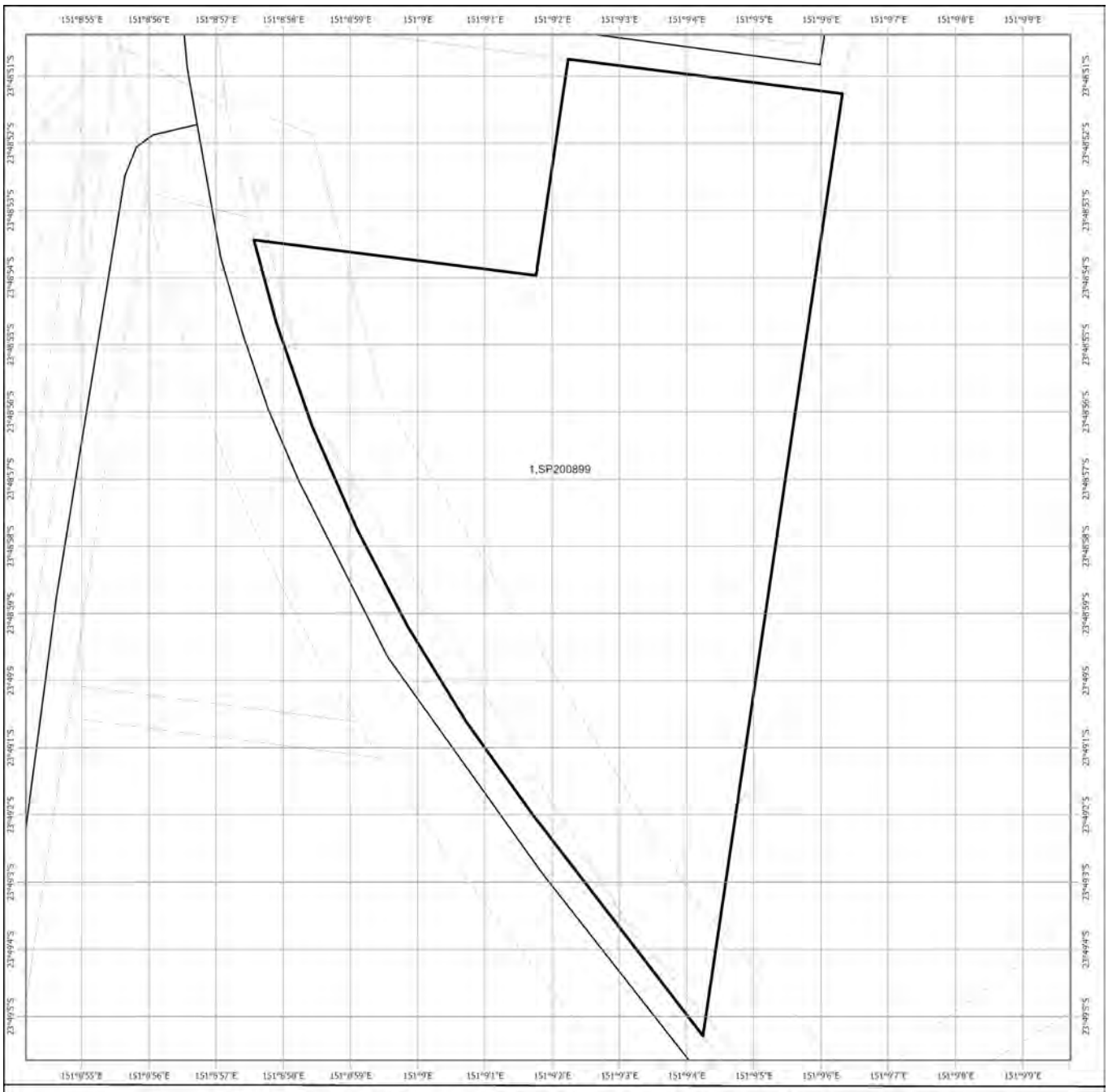
This map included may also be requested individually at: https://apps.des.qld.gov.au/map-request/flora-survey-trigger/.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of the Environment, Tourism, Science and Innovation does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of the Environment, Tourism, Science and Innovation webpage on the clearing of protected plants for more information.



Protected Plants Flora Survey Trigger Map

High risk area
Other land parcel boundaries
Freeways / motorways / highways
Secondary roads / streets
Selected Lot and Plan

LOCALITY DIAGRAM

N

0 18 36 54 72 90 m

This product is displayed in:
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This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of the Environment, Tourism, Science and Innovation at palm@detsi.qld.gov.au

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6. Koala protection framework (administered by the Department of the Environment, Tourism, Science and Innovation (DETSI))

The koala (*Phascolarctos cinereus*) is listed in Queensland as endangered by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the Nature Conservation (Animals) Regulation 2020, the Nature Conservation (Koala) Conservation Plan 2017, the *Planning Act 2016* and the Planning Regulation 2017.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.

Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the Planning Regulation 2017 for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document Spatial modelling in South East Queensland.

Section 7.2 shows any koala habitat area that exists on your property.

Under the Nature Conservation (Koala) Conservation Plan 2017, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document Guideline - Requests to make, amend or revoke a koala habitat area determination.

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the Planning Regulation 2017 (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

1. Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
2. Does not include destroying standing vegetation stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the Planning Regulation 2017. More information on exempted development can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:

  - the local government planning scheme makes the development assessable;
  - the premises includes an area that is both a koala priority area and a koala habitat area; and
  - the development does not involve interfering with koala habitat (defined above); and

- development in identified koala broad-hectare areas.

The Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the Nature Conservation (Koala) Conservation Plan 2017 prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DETSI

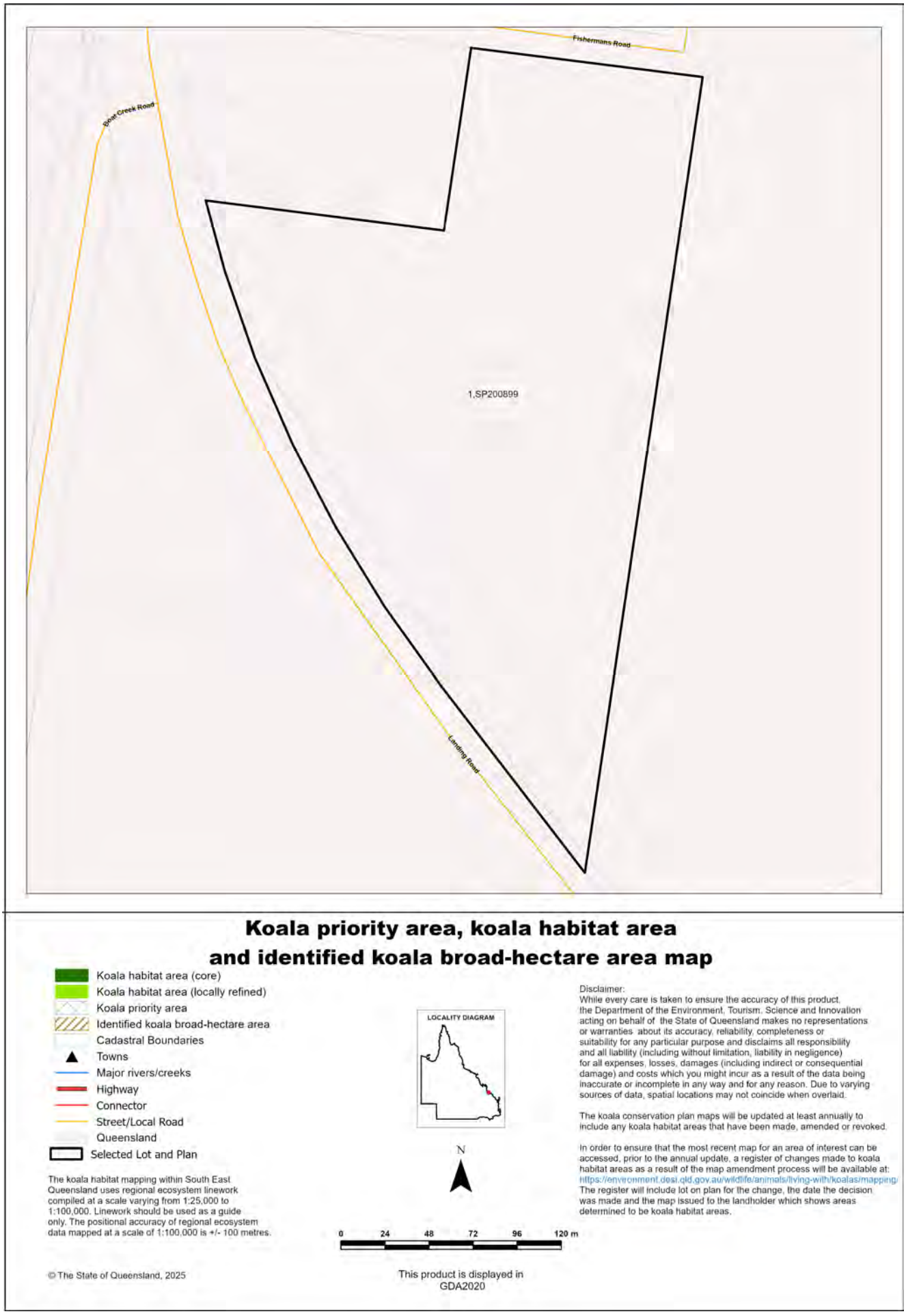
For further information on the koala protection framework:
Phone 13 QGOV (13 74 68)
Email koala.assessment@detsi.qld.gov.au
Visit https://environment.desi.qld.gov.au/wildlife/animals/living-with/koalas/mapping

7. Koala protection framework details for Lot: 1 Plan: SP200899

7.1 Koala districts

Koala District C

7.2 Koala priority area, koala habitat area and identified koala broad-hectare map



7.3 Koala habitat regional ecosystems for core koala habitat areas

Koala habitat regional ecosystems for core koala habitat areas

Koala habitat area (core)
Towns
Highway
Connector
Street/Local Road
Major rivers/creeks
Queensland
Selected Lot and Plan

LOCALITY DIAGRAM

N

0 24 48 72 96 120 m

This product is displayed in GDA2020

DISCLAIMER:

While every care is taken to ensure the accuracy of this product, the Department of the Environment, Tourism, Science and Innovation acting on behalf of the State of Queensland 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 you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.
Due to varying sources of data, spatial locations may not coincide when overlaid.

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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8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
Interference with overland flow	*Water Act 2000*	Department of Local Government, Water and Volunteers	Ph: 13 QGOV (13 74 68) www.dlgwv.qld.gov.au
Earthworks, significant disturbance	*Soil Conservation Act 1986*	Queensland Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development	Ph: 13 QGOV (13 74 68) www.nrmmrrd.qld.gov.au
Fire Permits	*Fire and Emergency Services Act 1990*	Queensland Fire Department	Ph: 13 QGOV (13 74 68) www.fire.qld.gov.au
Indigenous Cultural Heritage	*Aboriginal Cultural Heritage Act 2003* *Torres Strait Islander Cultural Heritage Act 2003*	Queensland Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism	Ph: 13 QGOV (13 74 68) www.tatsipca.qld.gov.au
Mining and environmentally relevant activities Infrastructure development (coastal) Heritage issues	*Environmental Protection Act 1994* *Coastal Protection and Management Act 1995* *Queensland Heritage Act 1992*	Queensland Department of the Environment, Tourism, Science and Innovation	Ph: 13 QGOV (13 74 68) www.detsi.qld.gov.au
Protected plants and protected areas	*Nature Conservation Act 1992* *Planning Act 2016*	Queensland Department of the Environment, Tourism, Science and Innovation	Ph: 1300 130 372 (option 4) palm@detsi.qld.gov.au www.detsi.qld.gov.au
Koala mapping and regulations	*Nature Conservation Act 1992*	Queensland Department of the Environment, Tourism, Science and Innovation	Ph: 13 QGOV (13 74 68) Koala.assessment@detsi.qld.gov.au
Interference with fish passage in a watercourse, mangroves Forestry activities	*Fisheries Act 1994* *Forestry Act 1959*	Queensland Department of Primary Industries	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
Matters of National Environmental Significance including listed threatened species and ecological communities	*Environment Protection and Biodiversity Conservation Act 1999*	Department of Climate Change, Energy, the Environment and Water (Australian Government)	Ph: 1800 803 772 www.dcceew.gov.au
Development and planning processes	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Queensland Department of State Development, Infrastructure and Planning	Ph: 13 QGOV (13 74 68) www.planning.qld.gov.au
Coordinated projects	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Office of the Coordinator-General	Ph: 13 QGOV (13 74 68) www.statedevelopment.qld.gov.au/coordinator-general
Wet Tropics World Heritage Area	*Wet Tropics World Heritage Protection and Management Act 1993*	Queensland Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au
Requirements on State controlled road	*Transport Infrastructure Act 1994*	Queensland Department of Transport and Main Roads	Ph: 13 QGOV (13 74 68) https://www.tmr.qld.gov.au
Local government requirements	*Local Government Act 2009* *Planning Act 2016*	Your relevant local government office	Local Government Contact Directory

WildNet Records
Conservation Significant Species List

For the selected area of interest Lot: 1 Plan: SP200899
Current as at 26/08/2025 WildNetCSSpeciesList

Summary Information

The following table provides an overview of the area of interest: Lot: 1 Plan: SP200899

Table 1. Area of interest details

Size (ha)	
5.75	
Local Government(s)	
Gladstone Regional	
Catchment(s)	
Calliope	
Bioregion(s)	**Subregion(s)**
Southeast Queensland	Burnett - Curtis Hills and Ranges

Protected Area(s)

No estates or reserves are located within the area of interest.

World Heritage Area(s)

No World Heritage Areas are located within the area of interest.

Ramsar Area(s)

No Ramsar Areas are located within the area of interest.

Introduction

This WildNet report is derived from a spatial layer that is generated from the WildNet database, managed by the Department of the Environment, Tourism, Science and Innovation. The layer, which is generated weekly, contains a subset of WildNet wildlife records that are not classed as erroneous or duplicate, that have a location precision equal to or less than 10000 metres and do not have a count of zero. It does not include aspatial data such as some baseline species lists created for some protected areas.

The WildNet dataset is constantly being enhanced and the taxonomic and status information revised. If a conservation significant species is not listed in this report, it does not mean it doesn't occur there and listed species may also no longer inhabit the area. It is recommended that you also access other internal and external data sources for species information in your area of interest.

The WildNet Application may provide additional information on species occurence within your area of interest.

Conservation significant species are species listed:

- as threatened or near threatened under the *Nature Conservation Act 1992*;
- as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* or
- migratory species protected under the following international agreements:
    - Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
    - China-Australia Migratory Bird Agreement
    - Japan-Australia Migratory Bird Agreement
    - Republic of Korea-Australia Migratory Bird Agreement

Table 2 lists the species recorded within the area of interest and its one kilometre buffer.

Map 1. Locality Map

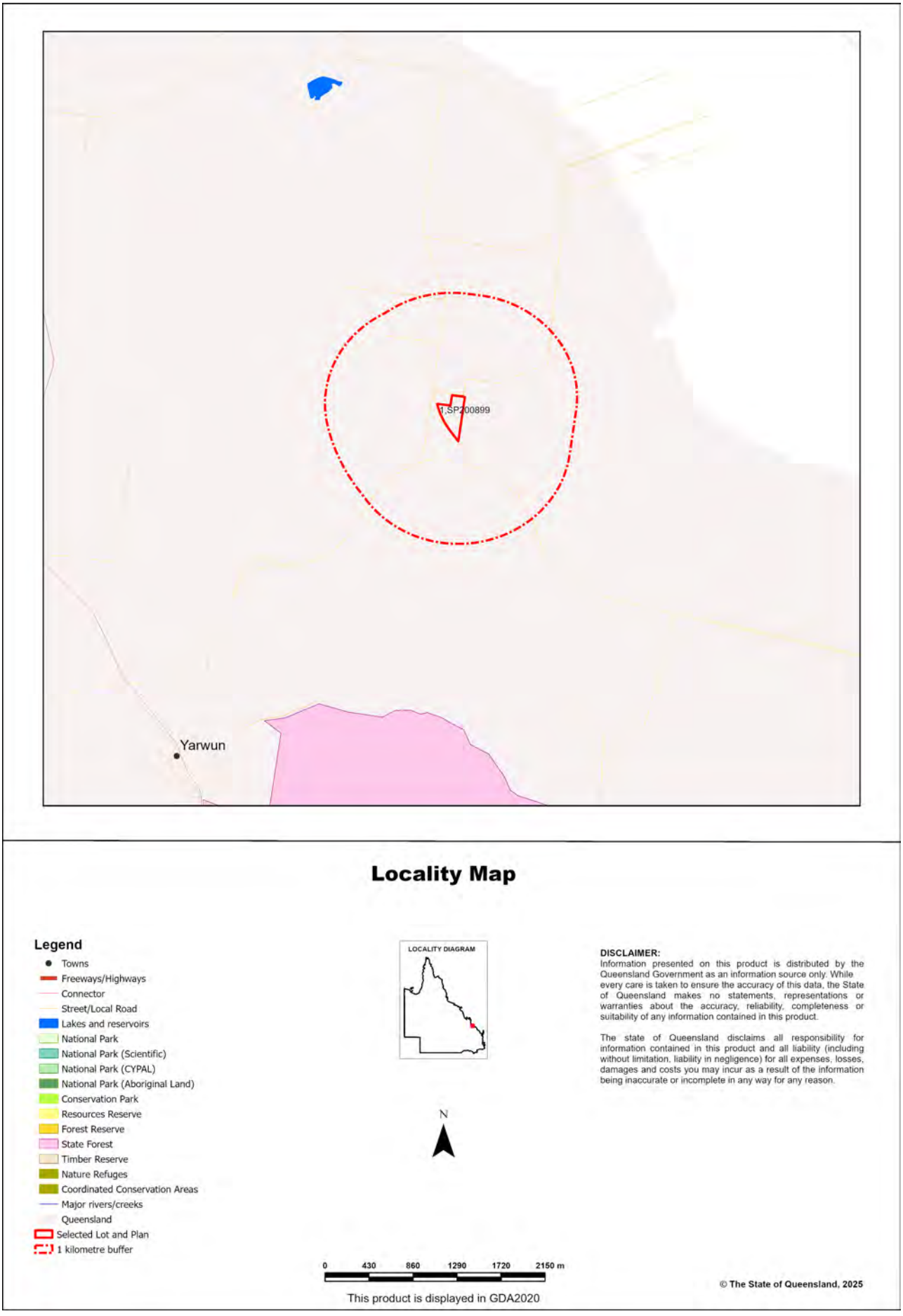

Table 2. Conservation significant species recorded within the area of interest and its one kilometre buffer

Taxon Id	Kingdom	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
15513	Plantae	Equisetopsida	Amaryllidaceae	*Crinum pedunculatum*	river lily	SL		0	1	31/01/2003
16766	Plantae	Equisetopsida	Campanulaceae	*Lobelia purpurascens*	white root	SL		0	1	31/01/2003
14339	Plantae	Equisetopsida	Hydrocharitaceae	*Ottelia ovalifolia*	swamp lily	SL		0	1	31/01/2003
14327	Plantae	Equisetopsida	Menyanthaceae	*Nymphoides indica*	water snowflake	SL		0	1	31/01/2003
17505	Plantae	Equisetopsida	Orchidaceae	*Cymbidium canaliculatum*		SL		0	1	31/01/2003
15934	Plantae	Equisetopsida	Xanthorrhoeaceae	*Xanthorrhoea johnsonii*		SL		0	1	31/01/2003
16707	Plantae	Equisetopsida	Zamiaceae	*Macrozamia miquelii*		SL		0	1	31/01/2003

Taxon Id: Unique identifier of the taxon from the WildNet database.
NCA: Queensland conservation status of the taxon under the *Nature Conservation Act 1992* (Least Concern (C), Critically Endangered (CR), Endangered (E), Extinct (EX), Near Threatened (NT), Extinct in the Wild (PE), Special Least Concern (SL), and Vulnerable (V)).
EPBC: Australian conservation status of the taxon under the *Environment Protection and Biodiversity Conservation Act 1999* (Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Vulnerable (V), and Extinct in the Wild (XW)).
Specimens: The number of specimen-backed records of the taxon.
Records: The total number of records of the taxon.
Last record: Date of most recent record of the taxon.

Links and Support

Other sites that deliver species information from the WildNet database include:

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- Qld WildNet Data API - access WildNet species information approved for publication such as notes, images and records etc.
- Wetland*Maps* - view species records, survey locations etc. approved for publication
- Wetland*Summary* - view wildlife statistics, species lists for a range of area types, and access WildNet species profiles
- WildNet wildlife records - published - Queensland - spatial layer of WildNet records approved for publication generated weekly
- Generalised distribution and densities of Queensland wildlife - Queensland species distributions and densities generalised to a 10 km grid resolution
- Conservation status of Queensland wildlife - access current lists of priority species for Queensland including nomenclature and status information
- Queensland Confidential Species - the list of species flagged as confidential in the WildNet database.

Please direct queries about this report to the WildNet Team WildNet@detsi.qld.gov.au.

Other useful sites for accessing Queensland biodiversity data include:

- Useful wildlife resources
- Queensland Government Data
- Atlas of Living Australia (ALA)
- Online Zoological Collections of Australian Museums (OZCAM)
- Australasian Virtual Herbarium (AVH)
- Protected Matters Search Tool

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WildNet Records
Introduced Species List

For the selected area of interest 5.75 Lot: 1 Plan: SP200899
Current as at 26/08/2025 WildNetIntroducedSpeciesList

Summary Information

The following table provides an overview of the area of interest: Lot: 1 Plan: SP200899

Table 1. Area of interest details

Size (ha)	
5.75	
Local Government(s)	
Gladstone Regional	
Catchment(s)	
Calliope	
Bioregion(s)	**Subregion(s)**
Southeast Queensland	Burnett - Curtis Hills and Ranges

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No estates or reserves are located within the area of interest.

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The WildNet Application may provide additional information on species occurence within your area of interest.

Species data

Contextual location information is presented in Map 1.

A summary of the Introduced species recorded within the area of interest and its one kilometre buffer is presented in Tables 2 and 3.

Map 1. Locality Map

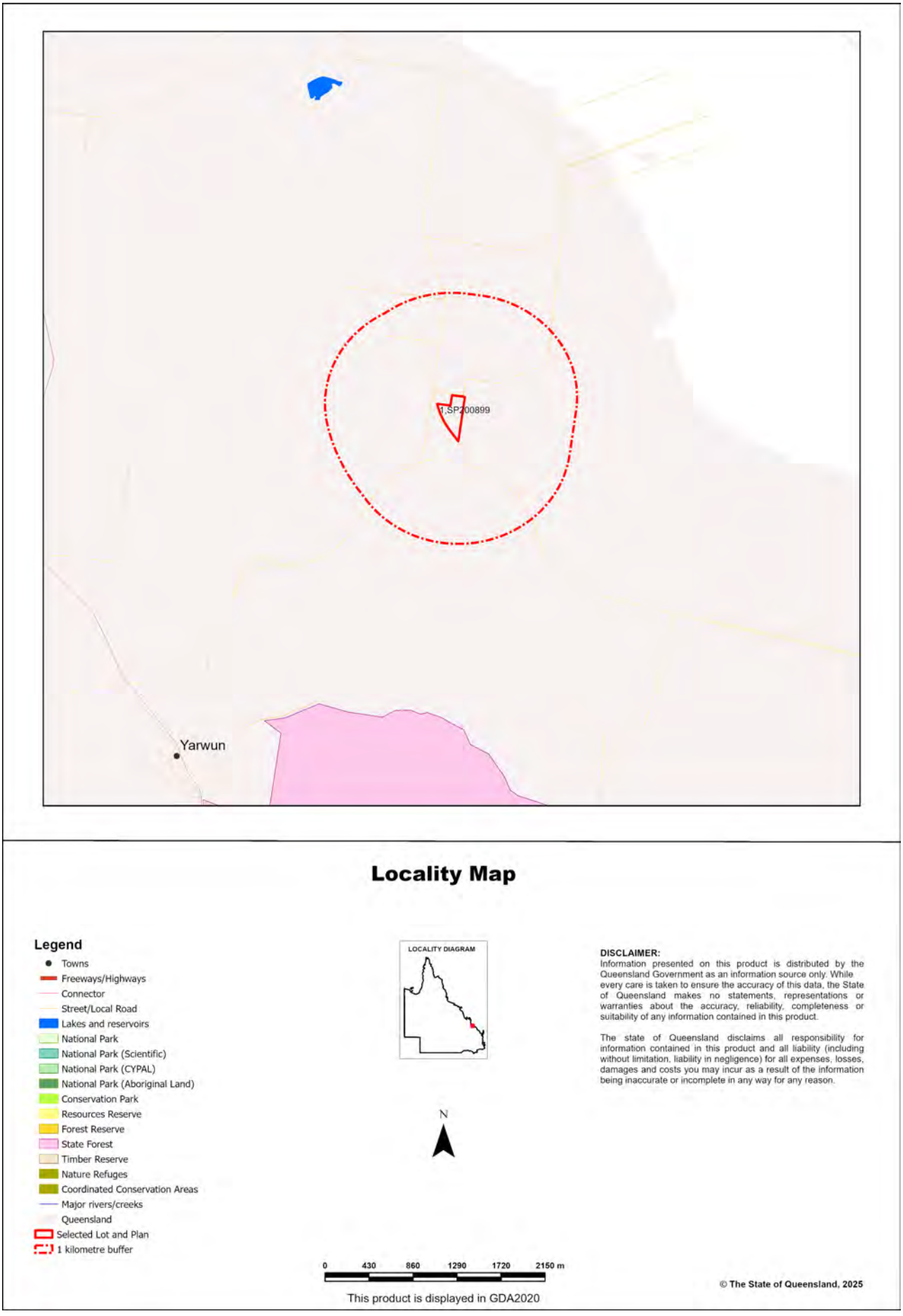

Table 2. Introduced animals recorded within the area of interest and its one kilometre buffer

Taxon Id	Kingdom	Class	Family	Scientific Name	Common Name	Specimens	Records	Last record	Establishment Code
27055	Animalia	Actinopterygii	Poeciliidae	*Gambusia holbrooki*	mosquitofish	0	2	31/01/1999	II
716	Animalia	Amphibia	Bufonidae	*Rhinella marina*	cane toad	0	3	31/12/1999	II
834	Animalia	Mammalia	Leporidae	*Oryctolagus cuniculus*	rabbit	0	1	31/12/1999	II
764	Animalia	Mammalia	Muridae	*Mus musculus*	house mouse	0	1	31/12/1999	II

Taxon Id: Unique identifier of the taxon from the WildNet database.
Specimens: The number of specimen-backed records of the taxon.
Records: The total number of records of the taxon.
Last record: Date of most recent record of the taxon.
Establishment: Code describing how the taxon is established in Queensland. The list of code description can be accessed from the WildNet Data API.

Table 3. Introduced plants recorded within the area of interest and its one kilometre buffer

Taxon Id	Kingdom	Class	Family	Scientific Name	Common Name	Specimens	Records	Last record	Establishment Code
19722	Plantae	Equisetopsida	Agavaceae	*Agave americana*		0	1	31/01/2003	NAQ
11849	Plantae	Equisetopsida	Amaranthaceae	*Alternanthera pungens*	khaki weed	0	1	31/01/2003	NAQ
17981	Plantae	Equisetopsida	Amaranthaceae	*Amaranthus viridis*	green amaranth	0	1	31/01/2003	NAQ
17051	Plantae	Equisetopsida	Amaranthaceae	*Gomphrena celosioides*	gomphrena weed	0	1	31/01/2003	NAQ
16720	Plantae	Equisetopsida	Anacardiaceae	*Mangifera indica*	mango	0	1	31/01/2003	NAQ
17935	Plantae	Equisetopsida	Apocynaceae	*Asclepias curassavica*	red-head cottonbush	0	1	31/01/2003	NAQ
17710	Plantae	Equisetopsida	Apocynaceae	*Catharanthus roseus*	pink periwinkle	0	1	31/01/2003	NAQ
15479	Plantae	Equisetopsida	Apocynaceae	*Cryptostegia grandiflora*	rubber vine	0	1	31/01/2003	NAQ
17050	Plantae	Equisetopsida	Apocynaceae	*Gomphocarpus physocarpus*	balloon cottonbush	0	1	31/01/2003	NAQ
11155	Plantae	Equisetopsida	Apocynaceae	*Nerium oleander*	oleander	0	1	31/01/2003	NAQ
22101	Plantae	Equisetopsida	Arecaceae	*Syagrus romanzoffiana*	Queen palm	0	1	31/01/2003	NAQ
14051	Plantae	Equisetopsida	Asteraceae	*Ageratum houstonianum*	blue billygoat weed	0	1	31/01/2003	NAQ
15612	Plantae	Equisetopsida	Asteraceae	*Baccharis halimifolia*	groundsel bush	0	1	31/01/2003	NAQ
14045	Plantae	Equisetopsida	Asteraceae	*Bidens bipinnata*	bipinnate beggar's ticks	0	1	31/01/2003	NAQ
7691	Plantae	Equisetopsida	Asteraceae	*Bidens pilosa*		0	1	31/01/2003	NAQ

15574	Plantae	Equisetopsida	Asteraceae	*Carduus thoermeri*	nodding thistle	0	1	31/01/2003	NAQ
14001	Plantae	Equisetopsida	Asteraceae	*Cirsium vulgare*	spear thistle	0	1	31/01/2003	NAQ
15401	Plantae	Equisetopsida	Asteraceae	*Emilia sonchifolia*		0	1	31/01/2003	NAQ
35896	Plantae	Equisetopsida	Asteraceae	*Erigeron bonariensis*		0	1	31/01/2003	NAQ
15039	Plantae	Equisetopsida	Asteraceae	*Sonchus oleraceus*	common sowthistle	0	1	31/01/2003	NAQ
35909	Plantae	Equisetopsida	Asteraceae	*Symphyotrichum subulatum*		0	1	31/01/2003	NAQ
14987	Plantae	Equisetopsida	Asteraceae	*Tridax procumbens*	tridax daisy	0	1	31/01/2003	NAQ
9090	Plantae	Equisetopsida	Balsaminaceae	*Impatiens walleriana*	balsam	0	1	31/01/2003	NAQ
19352	Plantae	Equisetopsida	Cactaceae	*Opuntia stricta*		0	1	31/01/2003	NAQ
13988	Plantae	Equisetopsida	Caricaceae	*Carica papaya*	pawpaw	0	1	31/01/2003	NAQ
21934	Plantae	Equisetopsida	Crassulaceae	*Bryophyllum delagoense*		0	1	31/01/2003	NAQ
11062	Plantae	Equisetopsida	Cyperaceae	*Cyperus papyrus*	papyrus	0	1	31/01/2003	NAQ
17160	Plantae	Equisetopsida	Euphorbiaceae	*Euphorbia cyathophora*	dwarf poinsettia	0	1	31/01/2003	NAQ
18679	Plantae	Equisetopsida	Lamiaceae	*Leucas lavandulifolia*		0	1	31/01/2003	NAQ
10918	Plantae	Equisetopsida	Leguminosae	*Bauhinia variegata*		0	1	31/01/2003	NAQ
18779	Plantae	Equisetopsida	Leguminosae	*Crotalaria pallida*		0	1	31/01/2003	NAQ
9165	Plantae	Equisetopsida	Leguminosae	*Delonix regia*	poinciana	0	1	31/01/2003	NAQ
15461	Plantae	Equisetopsida	Leguminosae	*Desmodium triflorum*		0	1	31/01/2003	NAQ
15235	Plantae	Equisetopsida	Leguminosae	*Macroptilium atropurpureum*	siratro	0	1	31/01/2003	NAQ
9873	Plantae	Equisetopsida	Leguminosae	*Medicago polymorpha*	burr medic	0	1	31/01/2003	NAQ
14990	Plantae	Equisetopsida	Leguminosae	*Trifolium repens var. repens*	white clover	0	1	31/01/2003	NAQ
14927	Plantae	Equisetopsida	Malvaceae	*Abutilon grandifolium*		0	1	31/01/2003	NAQ
16195	Plantae	Equisetopsida	Malvaceae	*Sida cordifolia*		0	1	31/01/2003	NAQ
16146	Plantae	Equisetopsida	Malvaceae	*Sida rhombifolia*		0	2	22/07/2010	NAQ

15990	Plantae	Equisetopsida	Malvaceae	*Urena lobata*	urena weed	0	1	31/01/2003	NAQ
19941	Plantae	Equisetopsida	Nymphaeaceae	*Nymphaea caerulea*		0	1	31/01/2003	NAQ
9457	Plantae	Equisetopsida	Oxalidaceae	*Oxalis corniculata*		0	1	31/01/2003	NAQ
19740	Plantae	Equisetopsida	Papaveraceae	*Argemone ochroleuca*		0	1	31/01/2003	NAQ
16530	Plantae	Equisetopsida	Passifloraceae	*Passiflora foetida*		0	1	22/07/2010	NAQ
16532	Plantae	Equisetopsida	Passifloraceae	*Passiflora suberosa*	corky passion flower	0	1	31/01/2003	NAQ
12030	Plantae	Equisetopsida	Pinaceae	*Pinus elliottii*	slash pine	0	1	31/01/2003	NAQ
18225	Plantae	Equisetopsida	Plantaginaceae	*Mecardonia procumbens*		1	1	25/02/2014	NAQ
15541	Plantae	Equisetopsida	Poaceae	*Cenchrus echinatus*	Mossman River grass	0	1	31/01/2003	NAQ
15551	Plantae	Equisetopsida	Poaceae	*Chloris gayana*	rhodes grass	0	1	31/01/2003	NAQ
15527	Plantae	Equisetopsida	Poaceae	*Chloris virgata*	feathertop rhodes grass	0	1	31/01/2003	NAQ
15486	Plantae	Equisetopsida	Poaceae	*Cynodon dactylon*		0	1	31/01/2003	NAQ
11066	Plantae	Equisetopsida	Poaceae	*Digitaria didactyla*	Queensland blue couch	0	1	31/01/2003	NAQ
15378	Plantae	Equisetopsida	Poaceae	*Eragrostis tenuifolia*	elastic grass	0	1	31/01/2003	NAQ
10578	Plantae	Equisetopsida	Poaceae	*Hyparrhenia rufa*		0	1	22/07/2010	NAQ
15803	Plantae	Equisetopsida	Poaceae	*Hyparrhenia rufa subsp. rufa*		0	1	31/01/2003	NAQ
29093	Plantae	Equisetopsida	Poaceae	*Megathyrsus maximus*		0	1	31/01/2003	NAQ
15242	Plantae	Equisetopsida	Poaceae	*Melinis minutiflora*	molasses grass	0	1	22/07/2010	NAQ
9154	Plantae	Equisetopsida	Poaceae	*Melinis repens*	red natal grass	0	2	22/07/2010	NAQ
15134	Plantae	Equisetopsida	Poaceae	*Paspalum dilatatum*	paspalum	0	1	31/01/2003	NAQ
15043	Plantae	Equisetopsida	Poaceae	*Sorghum halepense*	Johnson grass	0	1	31/01/2003	NAQ
2359	Plantae	Equisetopsida	Poaceae	*Urochloa mutica*		0	1	31/01/2003	NAQ
16359	Plantae	Equisetopsida	Portulacaceae	*Portulaca oleracea*	pigweed	0	1	31/01/2003	NAQ
14109	Plantae	Equisetopsida	Rosaceae	*Eriobotrya japonica*	loquat	0	1	31/01/2003	NAQ

21837	Plantae	Equisetopsida	Rutaceae	*Murraya paniculata 'Exotica'*		0	1	31/01/2003	NAQ
17496	Plantae	Equisetopsida	Solanaceae	*Datura stramonium*	common thornapple	0	1	31/01/2003	NAQ
13788	Plantae	Equisetopsida	Solanaceae	*Solanum nigrum*		0	1	31/01/2003	NAQ
16120	Plantae	Equisetopsida	Solanaceae	*Solanum seaforthianum*	Brazilian nightshade	0	1	31/01/2003	NAQ
16126	Plantae	Equisetopsida	Solanaceae	*Solanum torvum*	devil's fig	0	1	31/01/2003	NAQ
15983	Plantae	Equisetopsida	Sparrmanniaceae	*Triumfetta rhomboidea*	chinese burr	0	1	31/01/2003	NAQ
19905	Plantae	Equisetopsida	Verbenaceae	*Lantana camara*	lantana	0	2	22/07/2010	NAQ
13853	Plantae	Equisetopsida	Verbenaceae	*Lantana montevidensis*	creeping lantana	0	1	31/01/2003	NAQ
16143	Plantae	Equisetopsida	Verbenaceae	*Stachytarpheta jamaicensis*	Jamaica snakeweed	0	1	31/01/2003	NAQ
15951	Plantae	Equisetopsida	Verbenaceae	*Verbena bonariensis*	purpletop	0	1	31/01/2003	NAQ

Taxon Id: Unique identifier of the taxon from the WildNet database.
Specimens: The number of specimen-backed records of the taxon.
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Queensland Government

Department of the Environment, Tourism, Science and Innovation

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest
Lot: 1 Plan: SP200899

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 input coordinates.

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 field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the Queensland Herbarium & Biodiversity Science's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium & Biodiversity Science's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development website https://www.nrmmrrd.qld.gov.au/

Please direct queries about these reports to: Queensland.Herbarium@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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Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Details for area of interest:
Lot: 1 Plan: SP200899, with area 5.75 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Gladstone Regional	Calliope	Southeast Queensland	Burnett - Curtis Hills and Ranges

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.00	0.00
Of concern	0.00	0.00
No concern at present	0.00	0.00
Total remnant vegetation	0.00	0.00

Refer to **Map 2** for further information.

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and may be distinguished by differences in structure or sub-dominant species in the ecologically dominant layer. Vegetation communities with different dominant species in the ecologically dominant layer may be amalgamated in to a regional ecosystem if they are not mappable and predictable in the landscape at 1:100 000 scale. Vegetation communities may be mappable at a scale larger than 1:100 000. Vegetation communities within a regional ecosystem are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2023) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium & Biodiversity Science's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development website https://www.nrmmrrd.qld.gov.au/.

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 percent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 percent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (<1000 ha); or patch size (<100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

*****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.*

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
non-remnant	None	None	5.75	100.02

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
non-remnant	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
non-remnant	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at: https://publications.qld.gov.au/dataset/redd/resource/

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	5.75	100.02

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See: http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/

The descriptions are compiled using site survey data from the Queensland Herbarium & Biodiversity Science's QBEIS database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2023 (PDF)* section 3.3 of: https://www.qld.gov.au/__data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community. http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/

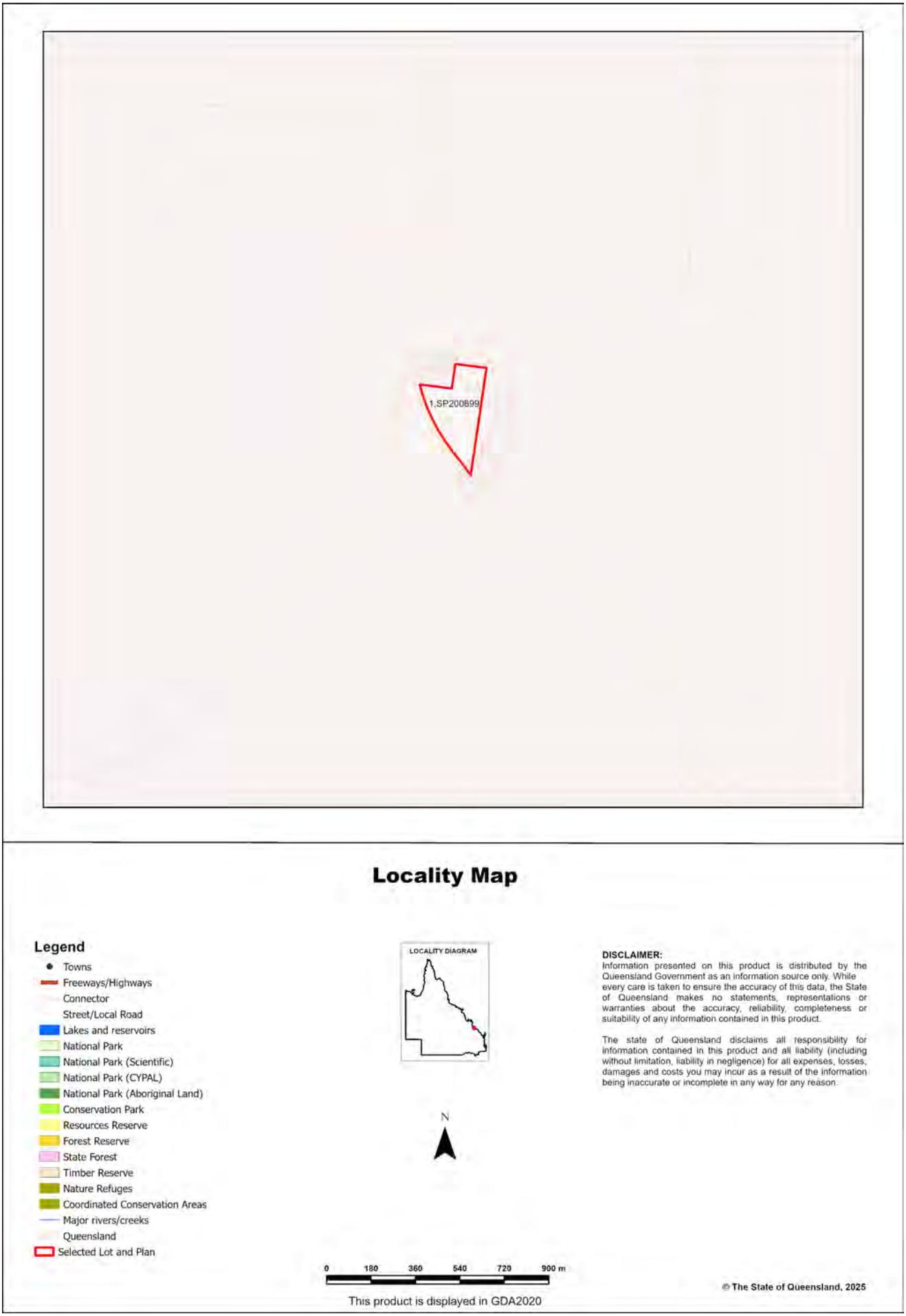
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

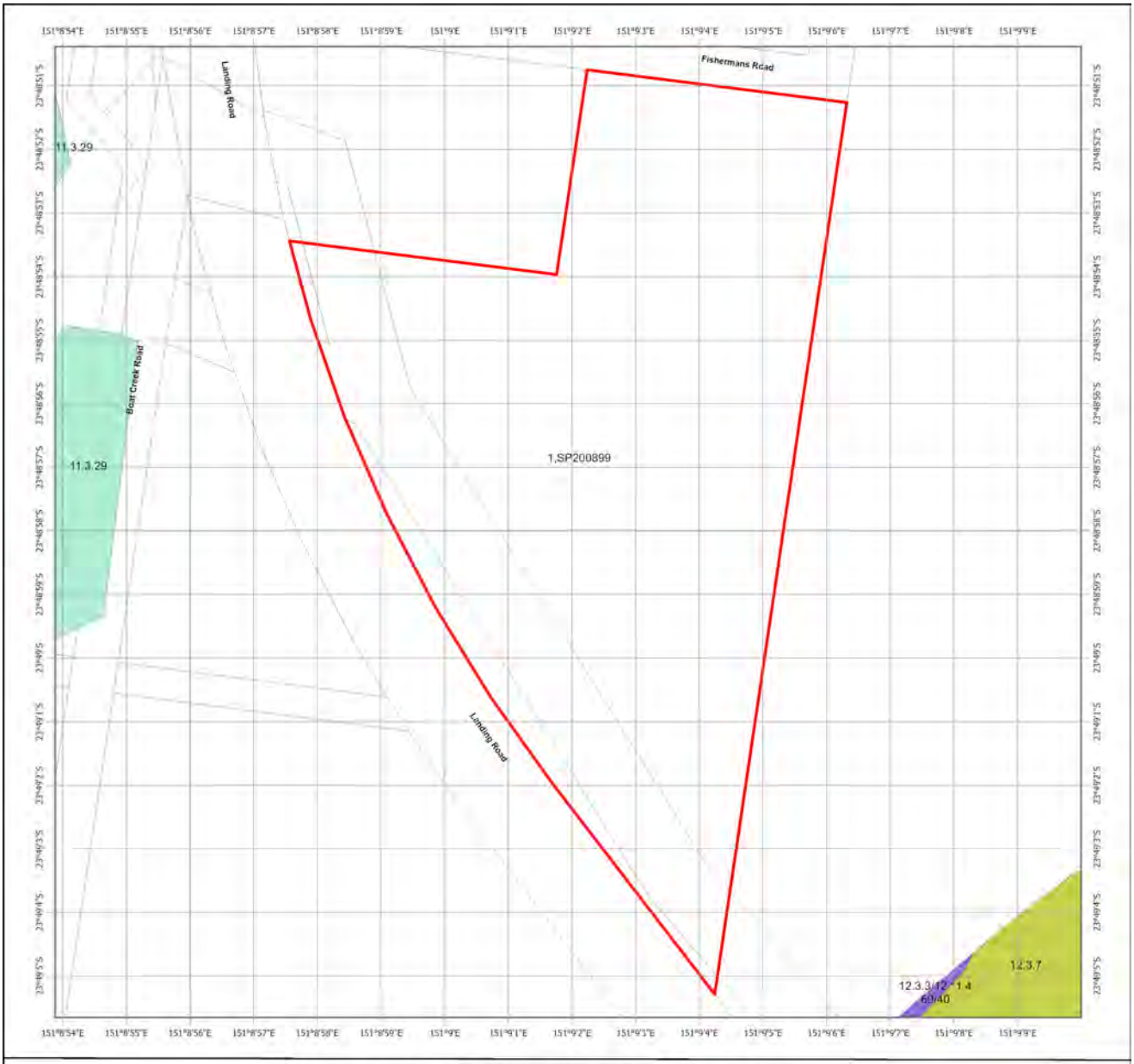
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
non-remnant	Not currently available	Not currently available

Maps

Map 1 - Location



Map 2 - Remnant 2021 regional ecosystems



Remnant 2021 Regional Ecosystems

Biodiversity Status

- Endangered - Dominant vegetation
- Endangered - Sub-dominant
- Of Concern - Dominant
- Of Concern - Sub-dominant
- No concern at present
- Non-remnant vegetation, cultivated or built environment
- Plantation
- Water
- Cadastral Boundaries
- Selected Lot and Plan

LOCALITY DIAGRAM

N

0 0.03 0.06 0.09 0.12 km

This product is projected into GDA2020

Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.
Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The polygons are labelled by regional ecosystem (RE); where more than one RE occurs, the percentage of each is labelled. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework".
Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.

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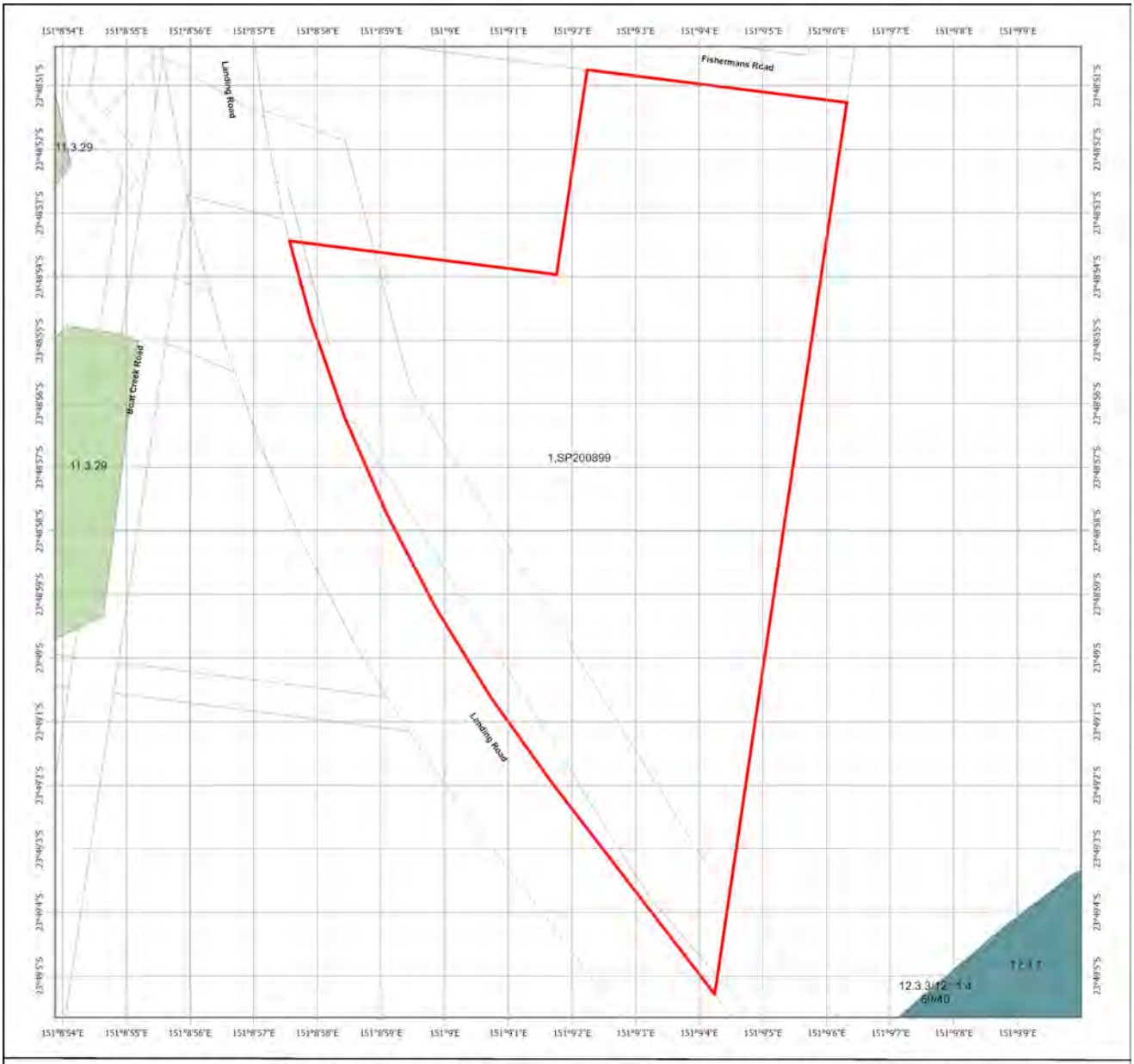
Map 3 - Pre-clearing regional ecosystems

Map 4 - Remnant 2021 regional ecosystems by BVG (5M)



Remnant 2021 Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups
BVG5M Description (BVG1M codes)

1. Rainforests and scrubs (1-7b)
2. Wet eucalypt open forests (8-8b)
3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
4. Eucalypt open forests to woodlands on floodplains (16-16d)
5. Eucalypt dry woodlands on inland depositional plains (17-18d)
6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
7. Callitris woodland - open forests (20a)
8. Melaleuca open woodlands on depositional plains (21-22c)
9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
12. Other coastal communities or heaths (28-29b)
13. Tussock grasslands, forblands (30-32b)
14. Hummock grasslands (33-33b)
15. Wetlands (swamps and lakes) (34-34g)
16. Mangroves and saltmarshes (35-35b)

Non-remnant vegetation, cultivated or built environment
Water
Cadastral Boundaries
Selected Lot and Plan

LOCALITY DIAGRAM

N

0 0.03 0.06 0.09 0.12 km

This product is displayed in GDA2020

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled. Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.
Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil.
The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework".
Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.
Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy.
Non-remnant vegetation includes regrowth and disturbed native vegetation.

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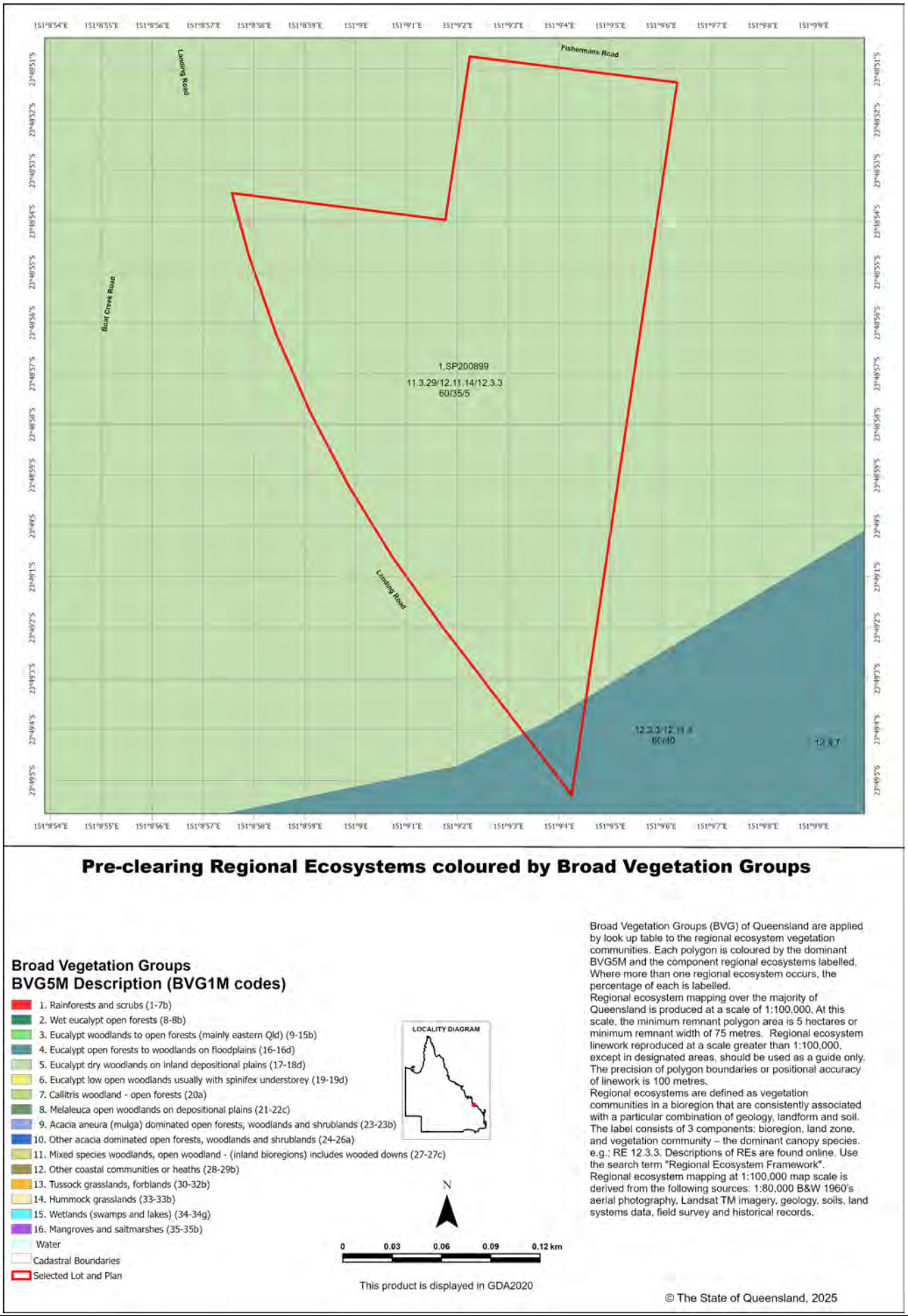
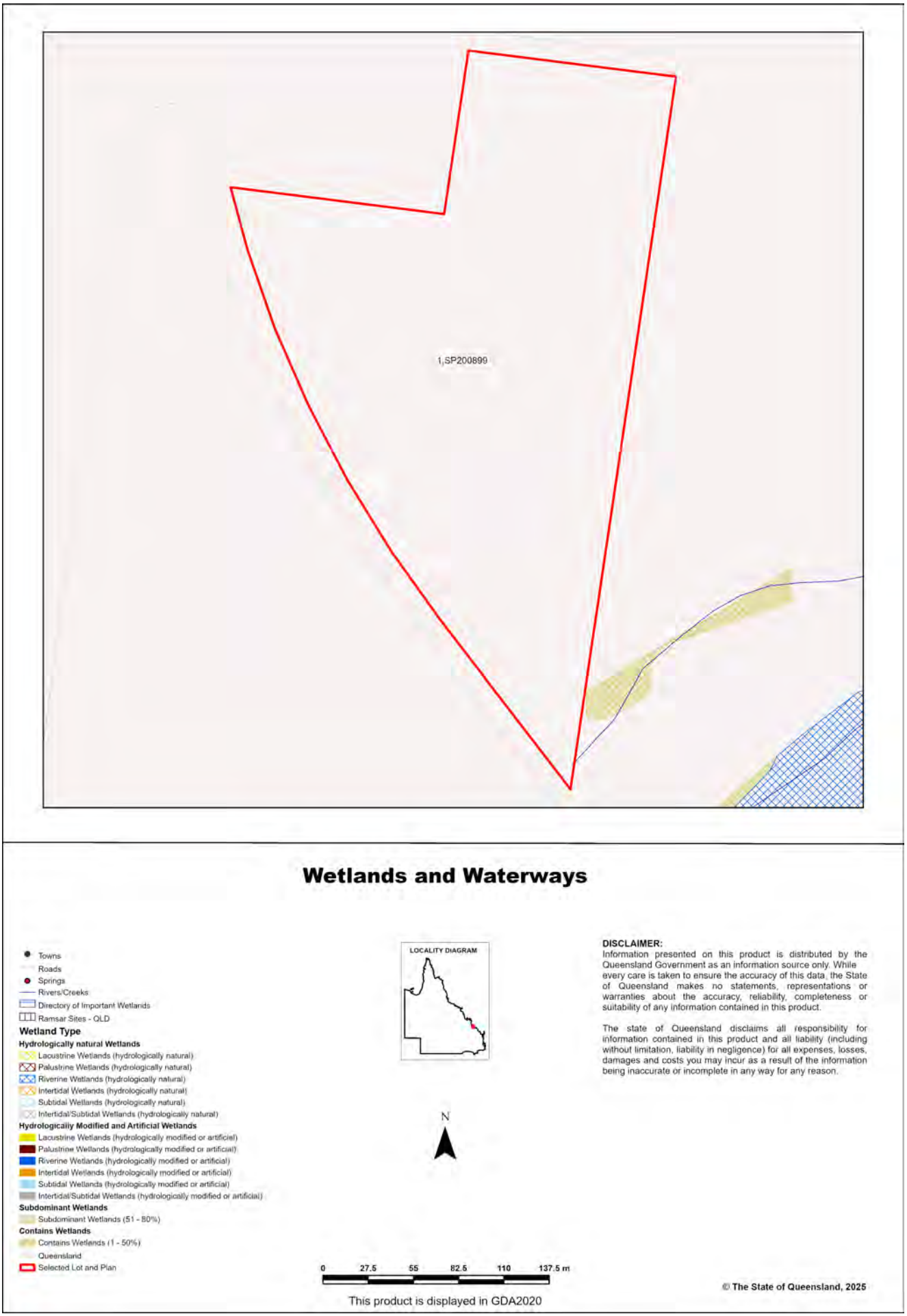
Map 5 - Pre-clearing regional ecosystems by BVG (5M)



Map 6 - Wetlands and waterways



Links and Other Information Sources

The Department of the Environment, Tourism, Science and Innovation's Website - http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/ provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from: https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/broad-vegetation

The methodology for mapping regional ecosystems can be downloaded from: https://www.qld.gov.au/__data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Technical descriptions for regional ecosystems can be obtained from: http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/

Benchmarks can be obtained from: http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Spatial Catalogue, Queensland Spatial Catalogue : Queensland Government (information.qld.gov.au)

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link: https://qldglobe.information.qld.gov.au/

References

Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F., Ford, A.J. and Accad, A. (2023). The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 6.0. Queensland Herbarium, Department of Environment and Science. (https://publications.qld.gov.au/dataset/redd/resource/78209e74-c7f2-4589-90c1-c33188359086)

Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F, Richter,D., Addicott, E.P. and Appelman, C.N. (2023) Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland. Version 7.0. Updated December 2023. Queensland Herbarium, Queensland Department of Environment, Science and Innovation, Brisbane. (https://www.qld.gov.au/__data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf).

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems.* Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:
http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/

- Regional Ecosystem Description Database

The datasets listed below are available for download from:
Queensland Spatial Catalogue : Queensland Government (information.qld.gov.au)

- Biodiversity status of pre-clearing and 2021 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas
- Pre-clearing broad vegetation groups of Queensland
- Remnant 2021 broad vegetation groups of Queensland

Appendix 2 - Acronyms and Abbreviations

AOI - Area of Interest
GIS - Geographic Information System
RE - Regional Ecosystem
REDD - Regional Ecosystem Description Database
VMA - *Vegetation Management Act 1999*

Queensland Government

Department of the Environment, Tourism, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Lot: 1 Plan: SP200899

Environmental Reports - General Information

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

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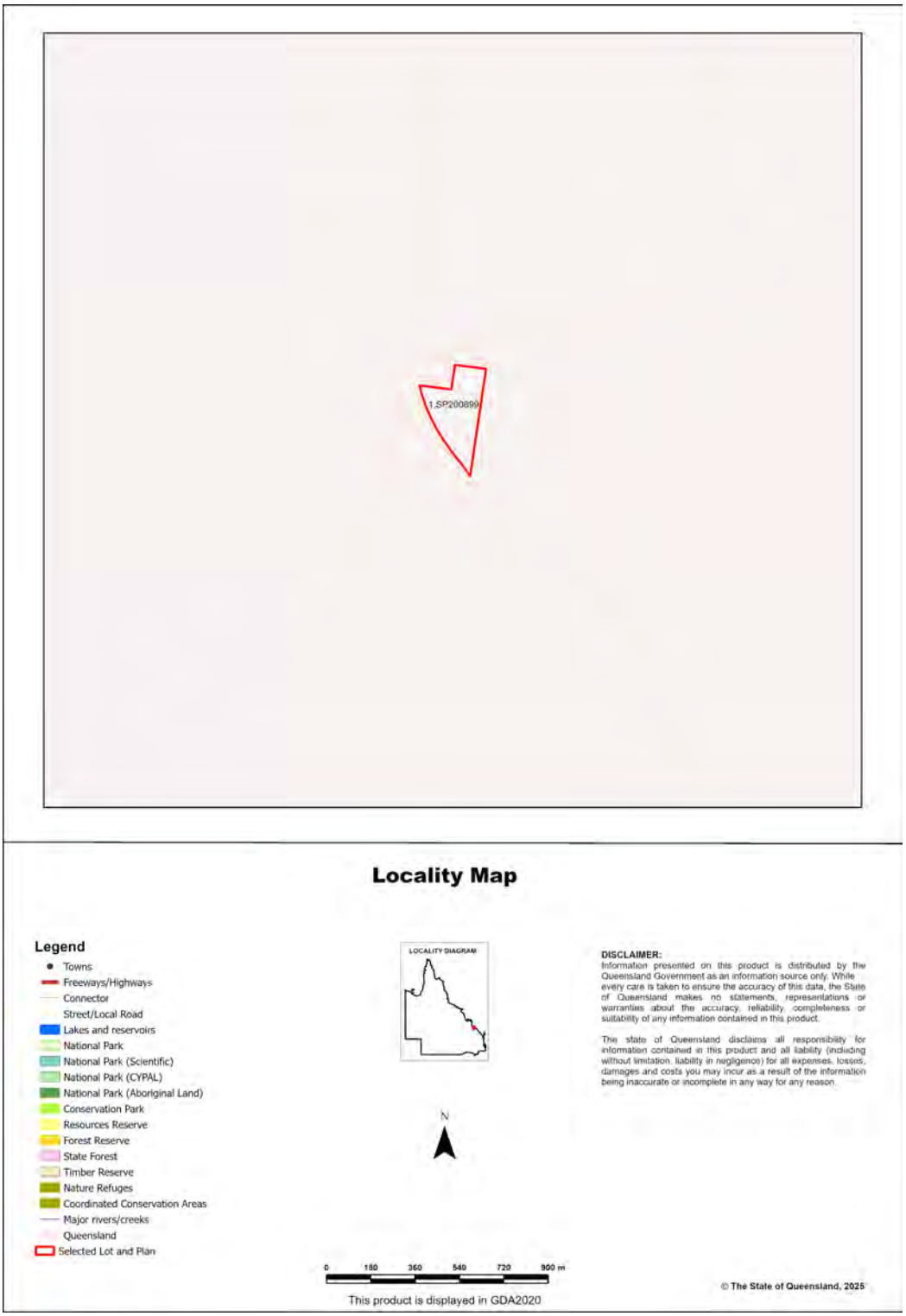
Assessment Area Details

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: Lot: 1 Plan: SP200899, with area 5.75 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Gladstone Regional	Calliope	Southeast Queensland	Burnett - Curtis Hills and Ranges



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	
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)	0 ha	0.0%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	3.07 ha	53.4%
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	0 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

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)

Not applicable

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

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.29/12.11.14/12.3.3	E-subdom	hvr_end

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

Not applicable

8d. Regulated Vegetation - Essential habitat

Not applicable

8e. Regulated Vegetation - intersecting a watercourse**

Not applicable

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.

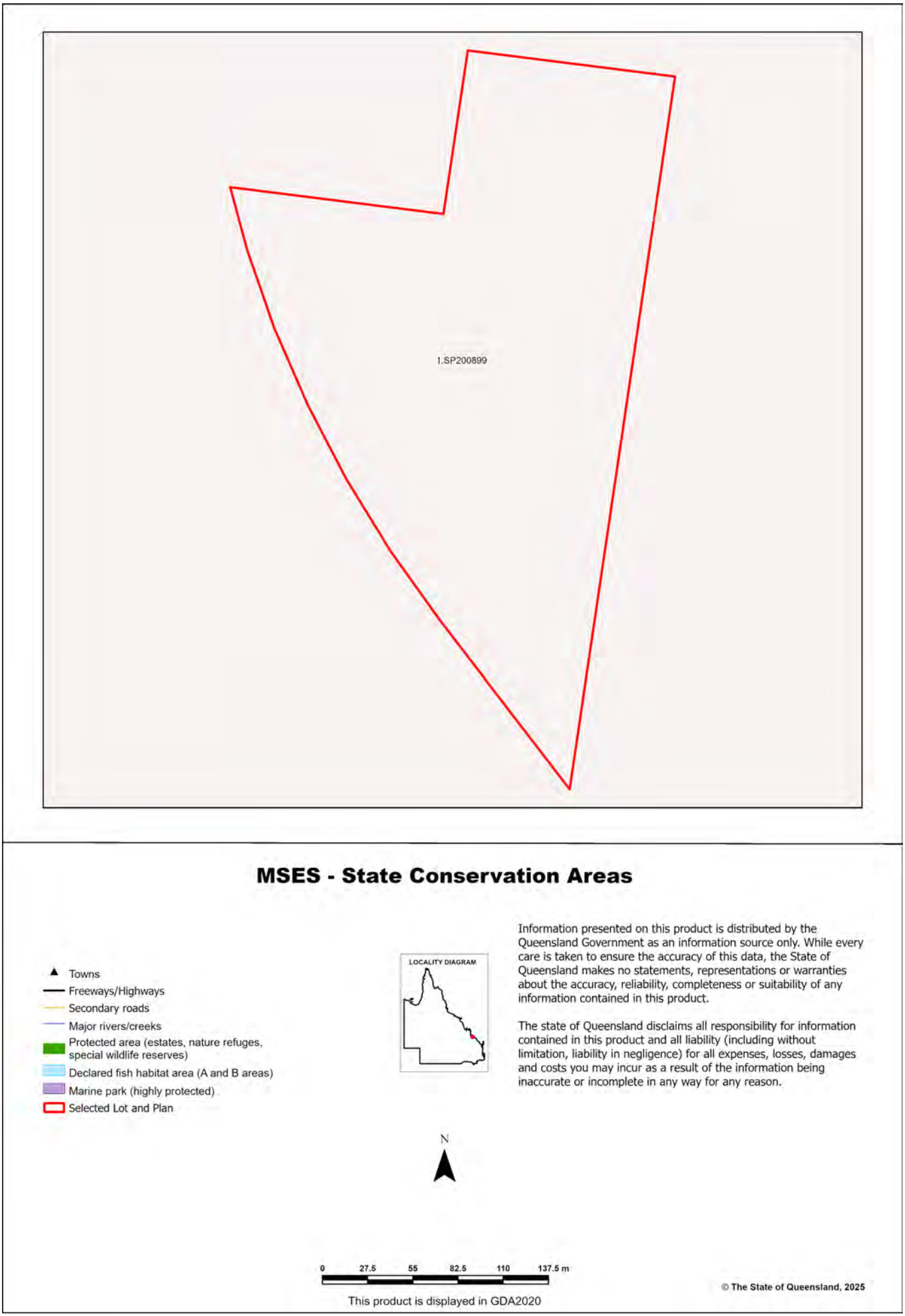
MSES - Offsets

9a. Legally secured offset areas - offset register areas
(No results)

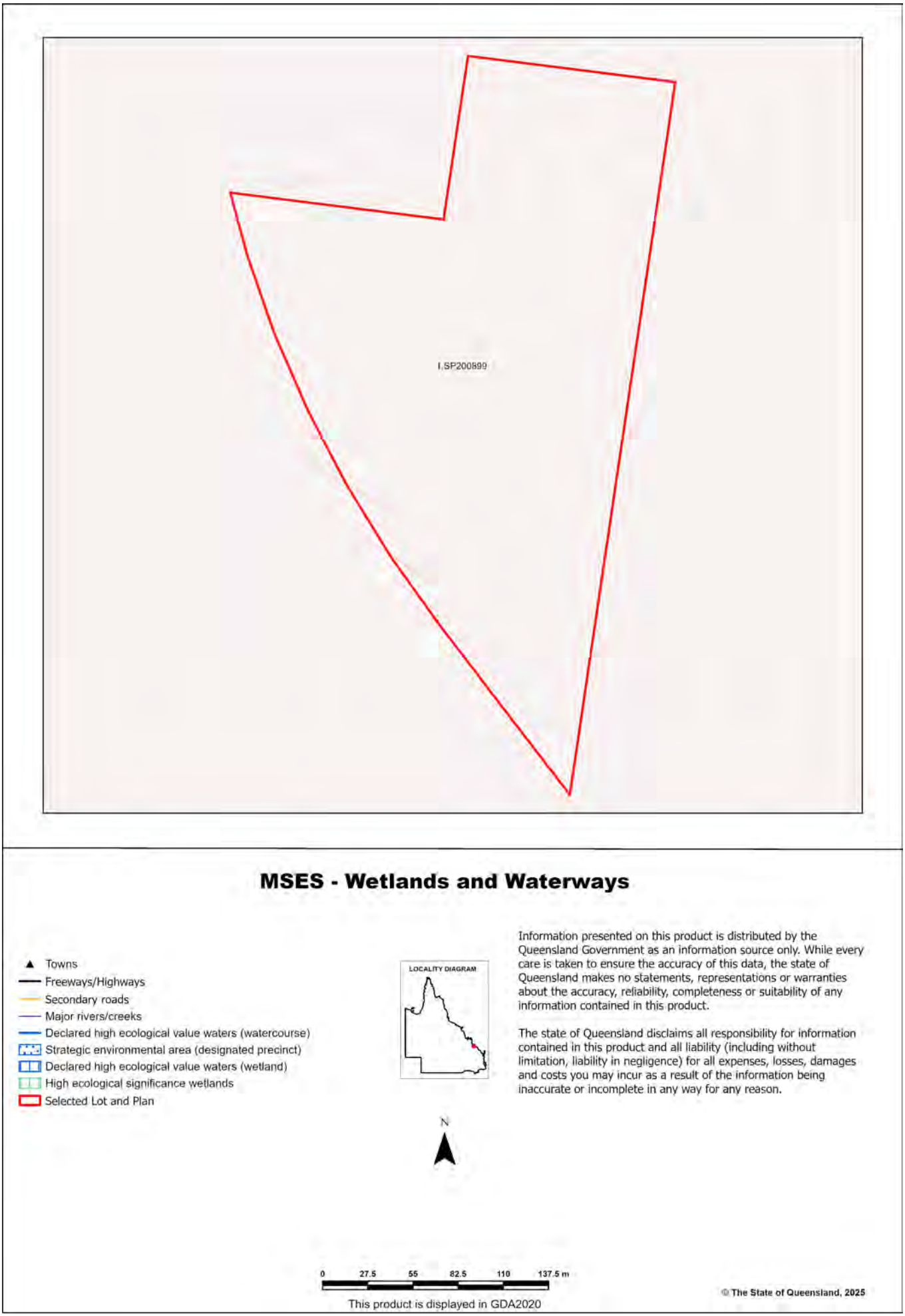
9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation
(No results)

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

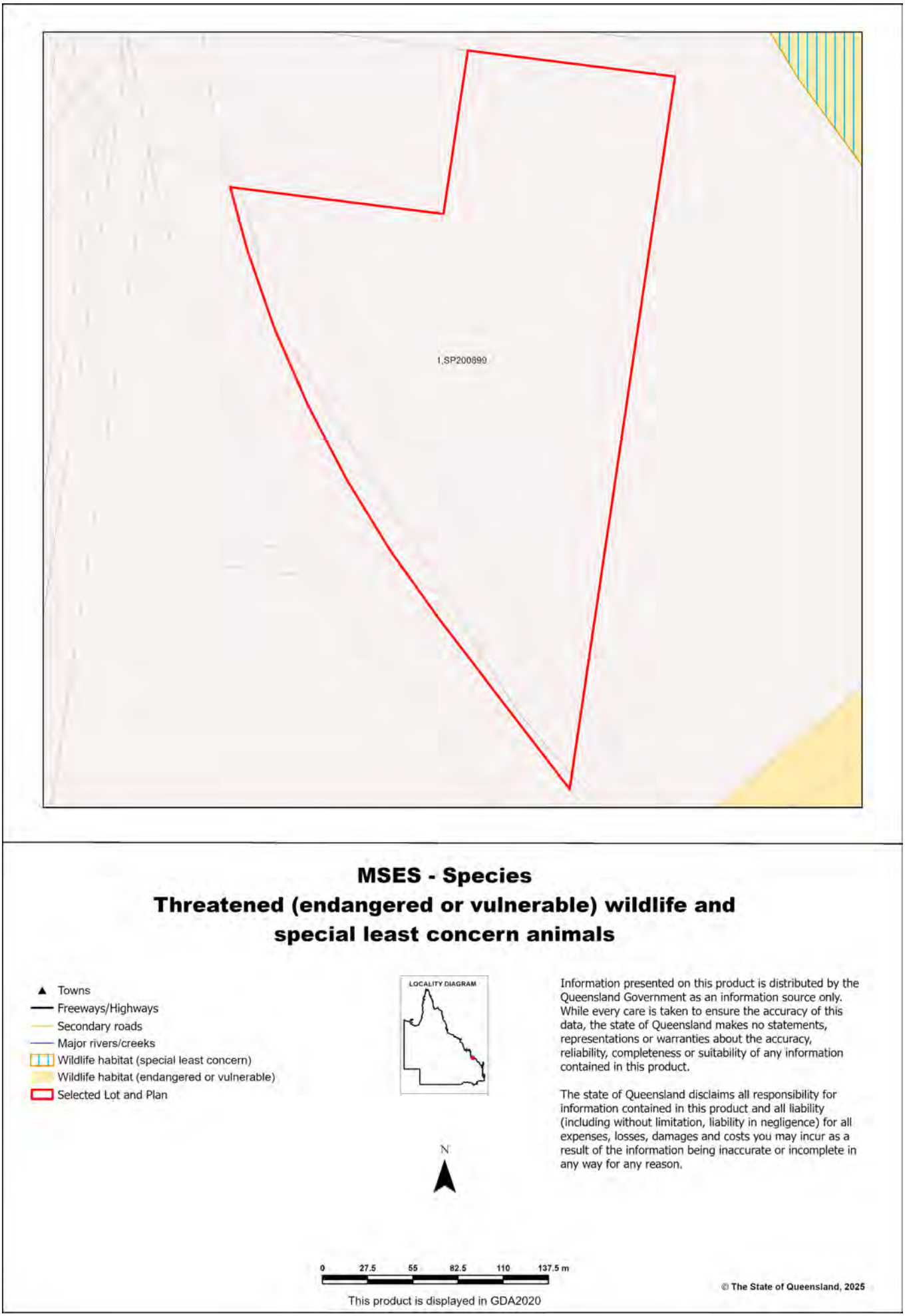
Map 1 - MSES - State Conservation Areas



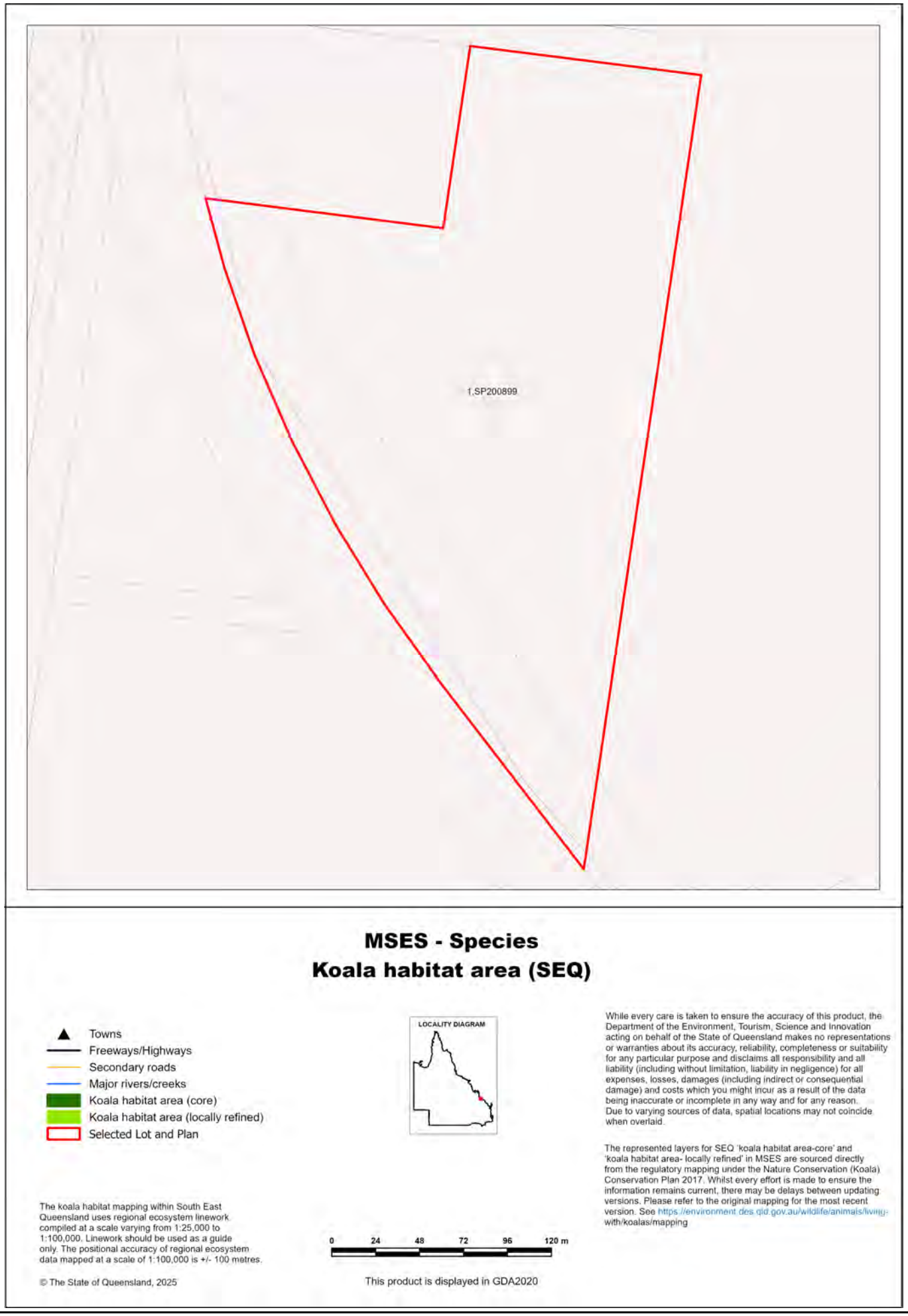
Map 2 - MSES - Wetlands and Waterways



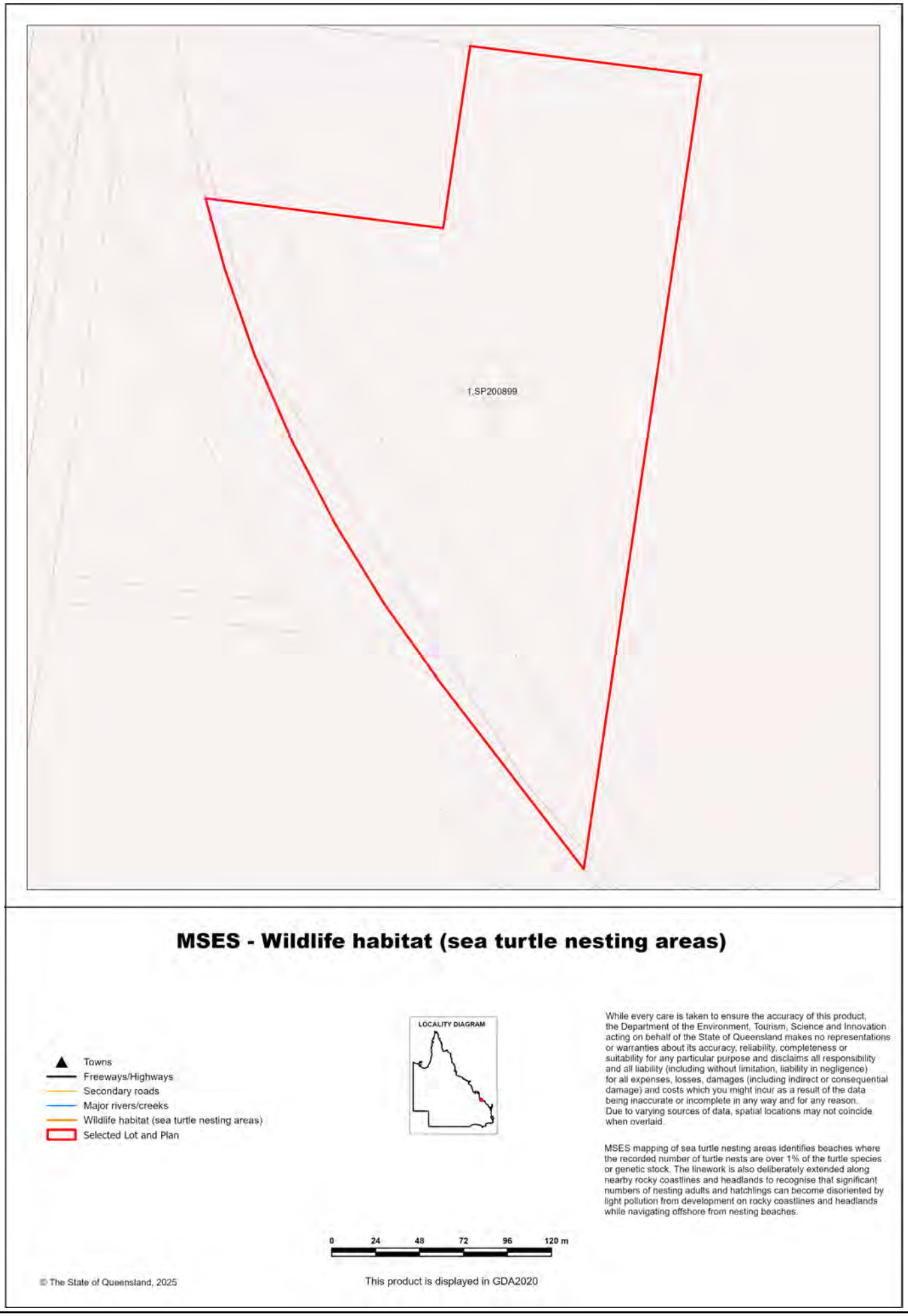
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



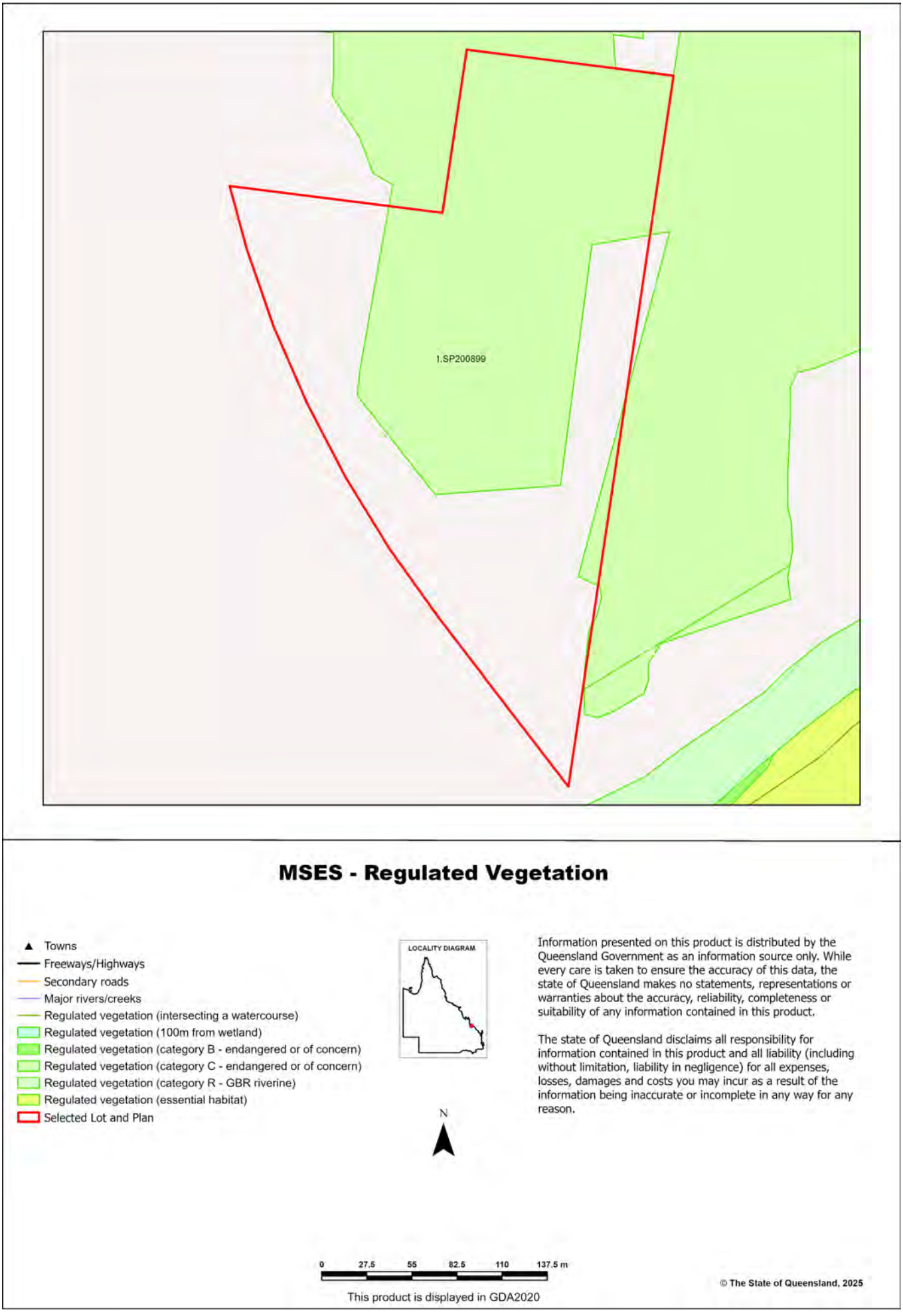
Map 3b - MSES - Species - Koala habitat area (SEQ)



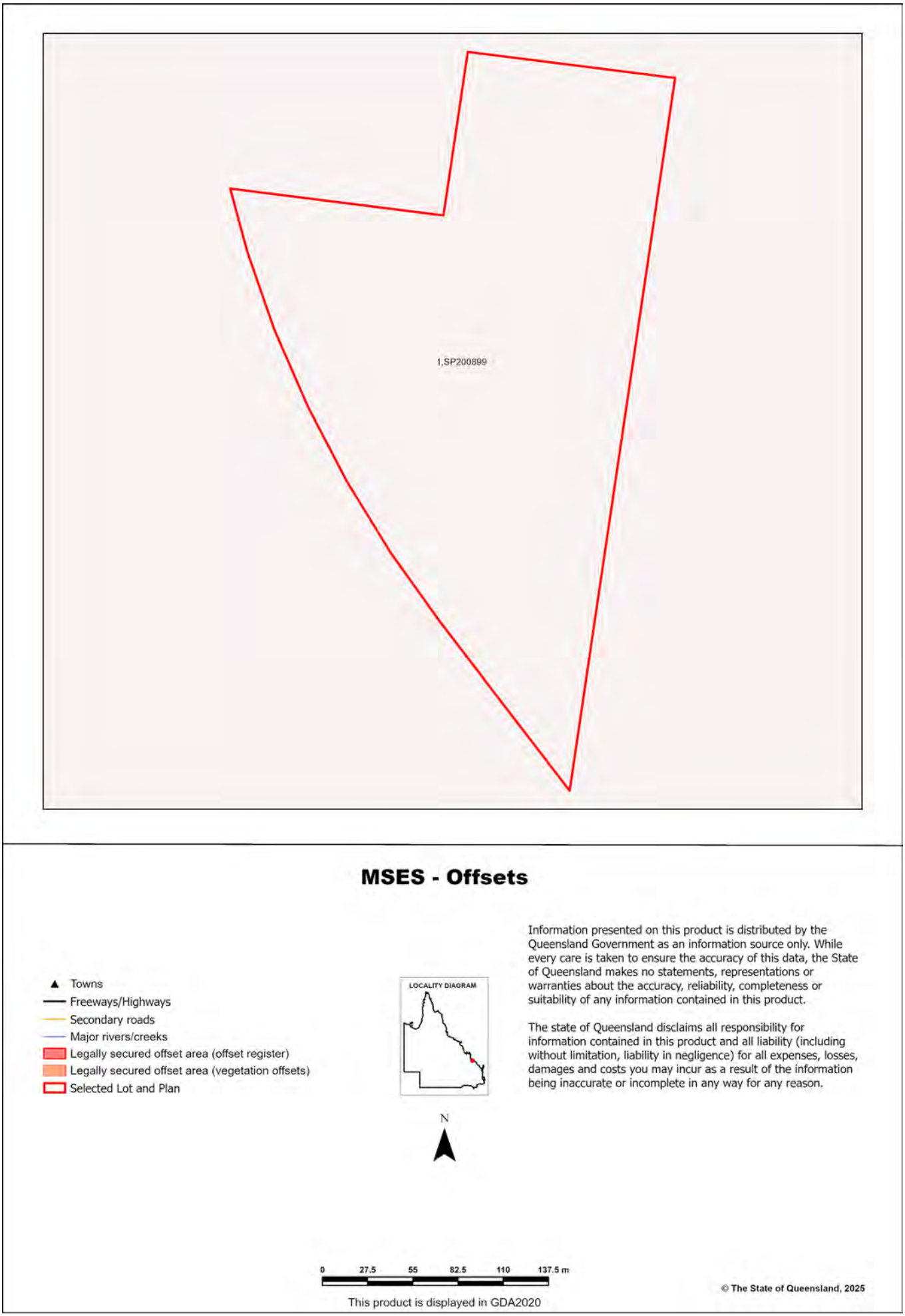
Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)



Map 4 - MSES - Regulated Vegetation



Map 5 - MSES - Offset Areas



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

Queensland Government

Department of the Environment, Tourism, Science and Innovation

Environmental Reports

Biodiversity and Conservation Values

Biodiversity Planning Assessments and Aquatic Conservation Assessments

For the selected area of interest

Lot: 1 Plan: SP200899

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 co-ordinates" option, the resulting assessment area encompasses an area extending from 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 field survey may be required to validate values on the ground.

Please direct queries about these reports to: biodiversity.planning@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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Summary Information

Tables 1 to 8 provide an overview of the AOI with respect to selected topographic and environmental values.

Table 1: Details for area of interest: Lot: 1 Plan: SP200899, with area 5.75 ha

Local Government(s)	
Gladstone Regional	
Bioregion(s)	**Subregion(s)**
Southeast Queensland	Burnett - Curtis Hills and Ranges
Catchment(s)	
Calliope	

The following table identifies available Biodiversity Planning Assessments (BPAs) and Aquatic Conservation Assessments (ACAs) with respect to the AOI.

Table 2: Available Biodiversity Planning and Aquatic Conservation Assessments

Biodiversity Planning Assessment(s)	Aquatic Conservation Assessment(s) (riverine)	Aquatic Conservation Assessment(s) (non-riverine)
Southeast Queensland v4.1	Great Barrier Reef Catchments v1.1	Great Barrier Reef Catchments v.1.3

Table 3: Remnant regional ecosystems within the AOI as per the Qld Herbarium's 'biodiversity status'

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.00	0.00
Of concern	0.00	0.00
No concern at present	0.00	0.00

The following table identifies the extent and proportion of the user specified area of interest (AOI) which is mapped as being of "State", "Regional" or "Local" significance via application of the Queensland Department of the Environment, Tourism, Science and Innovation's *Biodiversity Assessment and Mapping Methodology* (BAMM).

Table 4: Summary table, biodiversity significance

(No Records)

Table 5: Non-riverine wetlands intersecting the AOI

(No Records)

NB. The figures presented in the table above are derived from the relevant non-riverine Aquatic Conservation Assessment(s). Later releases of wetland mapping produced via the Queensland Wetland Mapping Program may provide more recent information in regards to wetland extent.

Table 6: Named waterways intersecting the AOI

(No Records)

Refer to **Map 1** for general locality information.

The following two tables identify the extent and proportion of the user specified AOI which is mapped as being of "Very High", "High", "Medium", "Low", or "Very Low" aquatic conservation value for riverine and non-riverine wetlands via application of the Queensland Department of the Environment, Tourism, Science and Innovation's *Aquatic Biodiversity Assessment and Mapping Method* (AquaBAMM).

Table 7: Summary table, aquatic conservation significance (riverine)

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	5.75	100.02

Table 8: Summary table, aquatic conservation significance (non-riverine)

(No Records)

Biodiversity Planning Assessments

Introduction

The Department of the Environment, Tourism, Science and Innovation (DETSI) attributes biodiversity significance on a bioregional scale through a Biodiversity Planning Assessment (BPA). A BPA involves the integration of ecological criteria using the *Biodiversity assessment and Mapping Methodology* (BAMM) and is developed in two stages: 1) **diagnostic criteria**, and 2) **expert panel criteria**. The diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion, while the expert panel criteria allows for the refinement of the mapped information from the diagnostic output by incorporating local knowledge and expert opinion.

The BAMM methodology has application for identifying areas with various levels of significance solely for biodiversity reasons. These include threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetlands or other types of habitat important for the maintenance of biodiversity or ecological processes. While natural resource values such as dryland salinity, soil erosion potential or land capability are not dealt with explicitly, they are included to some extent within the biodiversity status of regional ecosystems recognised by the DETSI. Biodiversity Planning Assessments (BPAs) assign three levels of overall biodiversity significance.

- **State significance** - areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales. In addition, areas flagged as being of State significance due to the presence of endangered, vulnerable and/or near threatened taxa, are identified as "State Habitat for EVNT taxa".
- **Regional significance** - areas assessed as being significant for biodiversity at the subregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance.
- **Local significance and/or other values** - areas assessed as not being significant for biodiversity at state or regional scales. Local values are of significance at the local government scale.

For further information on released BPAs and a copy of the underlying methodology, go to:

http://www.qld.gov.au/environment/plants-animals/biodiversity/planning/

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

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

The following table identifies the extent and proportion of the user specified AOI which is mapped as being of "State", "Regional" or "Local" significance via application of the BAMM.

Table 9: Summary table, biodiversity significance

(No Records)

Refer to **Map 2** for further information.

Diagnostic Criteria

Diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion. These criteria are diagnostic in that they are used to filter the available data and provide a "first-cut" or initial determination of biodiversity significance. This initial assessment is then combined through a second group of other essential criteria.

A description of the individual diagnostic criteria is provided in the following sections.

Criteria A. Habitat for EVNT taxa: Classifies areas according to their significance based on the presence of endangered, vulnerable and/or rare (EVNT) taxa. EVNT taxa are those scheduled under the *Nature Conservation Act 1992* and/or the *Environment Protection and Biodiversity Conservation Act 1999*. It excludes highly mobile fauna taxa which are instead considered in Criterion H and brings together information on EVNT taxa using buffering of recorded sites or habitat suitability models (HSM) where available.

Criteria B. Ecosystem value: Classifies on the basis of biodiversity status of regional ecosystems, their extent in protected areas (presence of poorly conserved regional ecosystems), the presence of significant wetlands; and areas of national importance such as the presence of Threatened Ecological Communities, World Heritage areas and Ramsar

sites. Ecosystem value is applied at a bioregional (**B1**) and regional (**B2**) scale.

Criteria C. Tract size: Measures the relative size of tracts of vegetation in the landscape. The size of any tract is a major indicator of ecological significance, and is also strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts.

Criteria D. Relative size of regional ecosystems: Classifies the relative size of each regional ecosystem unit within its bioregion (**D1**) and its subregion (**D2**). Remnant units are compared with all other occurrences with the same regional ecosystem. Large examples of a regional ecosystem are more significant than smaller examples of the same regional ecosystem because they are more representative of the biodiversity values particular to the regional ecosystem, are more resilient to the effects of disturbance, and constitute a significant proportion of the total area of the regional ecosystem.

Criteria F. Ecosystem diversity: Is an indicator of the number of regional ecosystems occurring within an area. An area with high ecosystem diversity will have many regional ecosystems and ecotones relative to other areas within the bioregion.

Criteria G. Context and connection: Represents the extent to which a remnant unit incorporates, borders or buffers areas such as significant wetlands, endangered ecosystems; and the degree to which it is connected to other vegetation.

A summary of the biodiversity status based upon the diagnostic criteria is provided in the following table.

Table 10: Summary of biodiversity significance based upon diagnostic criteria with respect to the AOI

(No Records)

Assessment of diagnostic criteria with respect to the AOI

The following table reflects an assessment of the individual diagnostic criteria noted above in regards to the AOI.

Table 11: Assessment of individual diagnostic criteria with respect to the AOI

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
A: Habitat for EVNT Taxa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1: Ecosystem Value (Bioregion)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B2: Ecosystem Value (Subregion)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C: Tract Size	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D1: Relative RE Size (Bioregion)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D2: Relative RE Size (Subregion)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F: Ecosystem Diversity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
G: Context and Connection	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Other Essential Criteria

Other essential criteria (also known as expert panel criteria) are based on non-uniform information sources and which may rely more upon expert opinion than on quantitative data. These criteria are used to provide a "second-cut" determination of biodiversity significance, which is then combined with the diagnostic criteria for an overall assessment of relative biodiversity significance. A summary of the biodiversity status based upon the other essential criteria is provided in the following table.

Table 12: Summary of biodiversity significance based upon other essential criteria with respect to the AOI

(No Records)

A description of each of the other essential criteria and associated assessment in regards to the AOI is provided in the following sections.

Criteria H. Essential and general habitat for priority taxa: Priority taxa are those which are at risk or of management concern, taxa of scientific interest as relictual (ancient or primitive), endemic taxa or locally significant populations (such as a flying fox camp or heronry), highly specialised taxa whose habitat requirements are complex and distributions are not well correlated with any particular regional ecosystem, taxa important for maintaining genetic diversity (such as complex spatial patterns of genetic variation, geographic range limits, highly disjunct populations), taxa critical for management or monitoring of biodiversity (functionally important or ecological indicators), or economic and culturally important taxa.

Criteria I. Special biodiversity values: areas with special biodiversity values are important because they contain multiple taxa in a unique ecological and often highly biodiverse environment. Areas with special biodiversity values can include the following:

- Ia - centres of endemism - areas where concentrations of taxa are endemic to a bioregion or subregion are found.
- Ib - wildlife refugia (Morton *et al*. 1995), for example, islands, mound springs, caves, wetlands, gorges, mountain ranges and topographic isolates, ecological refuges, refuges from exotic animals, and refuges from clearing. The latter may include large areas that are not suitable for clearing because of land suitability/capability.
- Ic - areas with concentrations of disjunct populations.
- Id - areas with concentrations of taxa at the limits of their geographic ranges.
- Ie - areas with high species richness.
- If - areas with concentrations of relictual populations (ancient and primitive taxa).
- Ig - areas containing REs with distinct variation in species composition associated with geomorphology and other environmental variables.
- Ih - an artificial waterbody or managed/manipulated wetland considered by the panel/s to be of ecological significance.
- Ii - areas with a high density of hollow-bearing trees that provide habitat for animals.
- Ij - breeding or roosting sites used by a significant number of individuals.
- Ik - climate change refuge.

The following table identifies the value and extent area of the Other Essential Criteria H and I within the AOI.

Table 13: Relative importance of expert panel criteria (H and I) used to access overall biodiversity significance with respect to the AOI

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
H: Core Habitat Priority Taxa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ia: Centres of Endemism	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ib: Wildlife Refugia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ic: Disjunct Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
Id: Limits of Geographic Ranges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ie: High Species Richness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If: Relictual Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ig: Variation in Species Composition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ih: Artificial Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ii: Hollow Bearing Trees	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ij: Breeding or Roosting Site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ik: Climate Refugia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NB. Whilst biodiversity values associated with Criteria I may be present within the site (refer to tables 12 and 15), for the New England Tableland and Central Queensland Coast BPAs, area and % area figures associated with Criteria Ia through to Ij cannot be listed in the table above (due to slight variations in data formats between BPAs).

Criteria J. Corridors: areas identified under this criterion qualify either because they are existing vegetated corridors important for contiguity, or cleared areas that could serve this purpose if revegetated. Some examples of corridors include riparian habitats, transport corridors and "stepping stones".

Bioregional and subregional conservation corridors have been identified in the more developed bioregions of Queensland through the BPAs, using an intensive process involving expert panels. Map 3 displays the location of corridors as identified under the Statewide Corridor network. The Statewide Corridor network incorporates BPA derived corridors and for bioregions where no BPA has been assessed yet, corridors derived under other planning processes. *Note: as a result of updating and developing a statewide network, the alignment of corridors may differ slightly in some instances when compared to those used in individual BPAs.*

The functions of these corridors are:

- **Terrestrial** Bioregional corridors, in conjunction with large tracts of remnant vegetation, maintain ecological and evolutionary processes at a landscape scale, by:

  - Maintaining long term evolutionary/genetic processes that allow the natural change in distributions of species and connectivity between populations of species over long periods of time;
  - Maintaining landscape/ecosystems processes associated with geological, altitudinal and climatic gradients, to allow for ecological responses to climate change;
  - Maintaining large scale seasonal/migratory species processes and movement of fauna;
  - Maximising connectivity between large tracts/patches of remnant vegetation;
  - Identifying key areas for rehabilitation and offsets; and

- **Riparian** Bioregional Corridors also maintain and encourage connectivity of riparian and associated ecosystems.

The location of the corridors is determined by the following principles:

- Terrestrial

  - Complement riparian landscape corridors (i.e. minimise overlap and maximise connectivity);
  - Follow major watershed/catchment and/or coastal boundaries;
  - Incorporate major altitudinal/geological/climatic gradients;

- Include and maximise connectivity between large tracts/patches of remnant vegetation;
- Include and maximise connectivity between remnant vegetation in good condition; and

- Riparian

- Located on the major river or creek systems within the bioregion in question.

The total extent of remnant vegetation triggered as being of "State", "Regional" or "Local" significance due to the presence of an overlying BPA derived terrestrial or riparian corridor within the AOI, is provided in the following table. For further information on how remnant vegetation is triggered due to the presence of an overlying BPA derived corridor, refer to the relevant landscape BPA expert panel report(s).

Table 14: Extent of triggered remnant vegetation due to the presence of BPA derived corridors with respect to the AOI

(No Records)

NB: area figures associated with the extent of corridor triggered remnant vegetation are only available for those bioregions where a BPA has been undertaken.

Refer to **Map 3** for further information.

Threatening process/condition (Criteria K) - areas identified by experts under this criterion may be used to amend (upgrade or downgrade) biodiversity significance arising from the "first-cut" analysis. The condition of remnant vegetation is affected by threatening processes such as weeds, ferals, grazing and burning regime, selective timber harvesting/removal, salinity, soil erosion, and climate change.

Assessment of Criteria K with respect to the AOI is not currently included in the "Biodiversity and Conservation Values" report, as it has not been applied to the majority of Queensland due to data/information limitations and availability.

Special Area Decisions

Expert panel derived "Special Area Decisions" are used to assign values to Other Essential Criteria. The specific decisions which relate to the AOI in question are listed in the table below.

Table 15: Expert panel decisions for assigning levels of biodiversity significance with respect to the AOI

Decision Number	Description	Panel Recommended Significance	Criteria Values
(No Records)			

Expert panel decision descriptions:

Decision Number	Description
(No Records)	

Aquatic Conservation Assessments

Introduction

The Aquatic Biodiversity Assessment and Mapping Method or AquaBAMM (Clayton *et al.* 2006), was developed to assess conservation values of wetlands in queensland, and may also have application in broader geographical contexts. It is a comprehensive method that uses available data, including data resulting from expert opinion, to identify relative wetland conservation/ecological values within a specified study area (usually a catchment). The product of applying this method is an Aquatic Conservation Assessment (ACA) for the study area.

An ACA using AquaBAMM is non-social, non-economic and identifies the conservation/ecological values of wetlands at a user-defined scale. It provides a robust and objective conservation assessment using criteria, indicators and measures that are founded upon a large body of national and international literature. The criteria, each of which may have variable numbers of indicators and measures, are naturalness (aquatic), naturalness (catchment), diversity and richness, threatened species and ecosystems, priority species and ecosystems, special features, connectivity and representativeness. An ACA using AquaBAMM is a powerful decision support tool that is easily updated and simply interrogated through a geographic information system (GIS).

Where they have been conducted, ACAs can provide a source of baseline wetland conservation/ecological information to support natural resource management and planning processes. They are useful as an independent product or as an important foundation upon which a variety of additional environmental and socio-economic elements can be added and considered (i.e. an early input to broader 'triple-bottom-line' decision-making processes). An ACA can have application in:

- determining priorities for protection, regulation or rehabilitation of wetlands and other aquatic ecosystems
- on-ground investment in wetlands and other aquatic ecosystems
- contributing to impact assessment of large-scale development (e.g. dams)
- water resource and strategic regional planning prcesses

For a detailed explanation of the methodology please refer to the summary and expert panel reports relevant to the ACA utilised in this assessment. These reports can be accessed at Wetland *Info*:

http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

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

Explanation of Criteria

Under the AquaBAMM, eight criteria are assessed to derive an overall conservation value. Similar to the Biodiversity Assessment and Mapping Methodology, the criteria may be primarily diagnostic (quantitative) or primarily expert opinion (qualitative) in nature. The following sections provide a brief description of each of the 8 criteria.

Criteria 1. Naturalness - Aquatic: This attribute reflects the extent to which a wetland's (riverine, non-riverine, estuarine) aquatic state of naturalness is affected through relevant influencing indicators which include: presence of exotic flora and fauna; presence of aquatic communities; degree of habitat modification and degree of hydrological modification.

Criteria 2. Naturalness - Catchment: The naturalness of the terrestrial systems of a catchment can have an influence on many wetland characteristics including: natural ecological processes e.g. nutrient cycling, riparian vegetation, water chemistry, and flow. The indicators utilised to assess this criterion include: presence of exotic flora and/or fauna; riparian, catchment and flow modification.

Criteria 3. Naturalness - Diversity and Richness: This criterion is common to many ecological assessment methods and can include both physical and biological features. It includes such indicators as species richness, riparian ecosystem richness and geomorphological diversity.

Criteria 4. Threatened Species and Ecosystems: This criterion evaluates ecological rarity characteristics of a wetland. This includes both species rarity and rarity of communities / assemblages. The communities and assemblages are best represented by regional ecosystems. Species rarity is determined by NCA and EPBC status with Endangered, Vulnerable or Near-threatened species being included in the evaluation. Ecosystem rarity is determined by regional ecosystem biodiversity status i.e. Endangered, Of Concern, or Not of Concern.

Criteria 5. Priority Species and Ecosystems: Priority flora and fauna species lists are expert panel derived. These are aquatic, semi-aquatic and riparian species which exhibit at least 1 particular trait in order to be eligible for consideration. For flora species the traits included:

- It forms significant macrophyte beds (in shallow or deep water).
- It is an important food source.
- It is important/critical habitat.
- It is implicated in spawning or reproduction for other fauna and/or flora species.
- It is at its distributional limit or is a disjunct population.
- It provides stream bank or bed stabilisation or has soil binding properties.
- It is a small population and subject to threatening processes.

Fauna species are included if they meet at least one of the following traits:

- It is endemic to the study area (>75 per cent of its distribution is in the study area/catchment).
- It has experienced, or is suspected of experiencing, a serious population decline.
- It has experienced a significant reduction in its distribution and has a naturally restricted distribution in the study area/catchment.
- It is currently a small population and threatened by loss of habitat.
- It is a significant disjunct population.
- It is a migratory species (other than birds).
- A significant proportion of the breeding population (>one per cent for waterbirds, >75 per cent other species) occurs in the waterbody (see Ramsar criterion 6 for waterbirds).
- Limit of species range.

See the individual expert panel reports for the priority species traits specific to an ACA.

Criteria 6. Special Features: Special features are areas identified by flora, fauna and ecology expert panels which exhibit characteristics beyond those identified in other criteria and which the expert panels consider to be of the highest ecological importance. Special feature traits can relate to, but are not solely restricted to geomorphic features, unique ecological processes, presence of unique or distinct habitat, presence of unique or special hydrological regimes e.g. spring-fed streams. Special features are rated on a 1 - 4 scale (4 being the highest).

Criteria 7. Connectivity: This criterion is based on the concept that appropriately connected aquatic ecosystems are healthy and resilient, with maximum potential biodiversity and delivery of ecosystem services.

Criteria 8. Representativeness: This criterion applies primarily to non-riverine assessments, evaluates the rarity and uniqueness of a wetland type in relation to specific geographic areas. Rarity is determined by the degree of wetland protection within "protected Areas" estate or within an area subject to the *Fisheries Act 1994*, *Coastal Protection and Management Act 1995*, or *Marine Parks Act 2004*. Wetland uniqueness evaluates the relative abundance and size of a wetland or wetland management group within geographic areas such as catchment and subcatchment.

Riverine Wetlands

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water. AquaBAMM, when applied to riverine wetlands uses a discrete spatial unit termed subsections. A subsection can be considered as an area which encompasses discrete homogeneous stream sections in terms of their natural attributes (i.e. physical, chemical, biological and utilitarian values) and natural resources. Thus in an ACA, an aquatic conservation significance score is calculated for each subsection and applies to all streams within a subsection, rather than individual streams as such.

Please note, the area figures provided in Tables 16 and 17, are derived using the extent of riverine subsections within the AOI. Refer to **Map 5** for further information. A summary of the conservation significance of riverine wetlands within the AOI is provided in the following table.

Table 16: Overall level/s of riverine aquatic conservation significance

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	5.75	100.02

The individual aquatic conservation criteria ratings for riverine wetlands within the AOI are listed below.

Table 17: Level/s of riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	0.00	0.00	0.00	0.00	5.75	100.02
2. Naturalness catchment	0.00	0.00	5.75	100.02	0.00	0.00	0.00	0.00
3. Diversity and richness	0.00	0.00	5.75	100.02	0.00	0.00	0.00	0.00
4. Threatened species and ecosystems	0.00	0.00	5.75	100.02	0.00	0.00	0.00	0.00
5. Priority species and ecosystems	5.75	100.02	0.00	0.00	0.00	0.00	0.00	0.00
6. Special features	0.00	0.00	5.75	100.02	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	0.00	0.00	5.75	100.02
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to riverine wetlands within the AOI.

Table 18: Expert panel decisions for assigning overall levels of riverine aquatic conservation significance

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
ca_r_fl_01	Creeks flowing off Mt Larcom	Calliope	6.3.1	3
ca_r_fl_02	Regional ecosystem 12.3.7	Calliope	5.2.1	4

4 is the highest rating/value

Expert panel decision descriptions:

Decision number	Description
ca_r_fl_01	Cherry Creek contains rare and threatened species including *Actephila sessilifolia, Atalaya rigida, Cupaniopsis shirleyana* and also has patches of rainforest dominated by Mueller's redheart (*Dissiliaria muelleri*). Mueller's redheart (*Dissiliaria muelleri*) is not currently listed as rare or threatened but has a very restricted distribution. The vegetation along these creeks is part of a large remnant area that contains significant patches of dry rainforest as well as the rocky outcrops of Mt Larcom that are habitat to rare and endemic species. This area was previously a national park proposal and is currently under threat from industrial development and lack of appropriate ecological management.
ca_r_fl_02	Regional ecosystem 12.3.7 is the southeast Queensland bioregion equivalent of 11.3.25 and 8.3.3. That is, it is one of the only ecosystems where you can find black ironbox (*Eucalyptus raveretiana*) providing important habitat for many fauna species.

Non-riverine Wetlands

Non-riverine wetlands include both lacustrine and palustrine wetlands, however, do not currently incorporate estuarine, marine or subterranean wetland types. A summary of the conservation significance of non-riverine wetlands within the AOI is provided in the following table. Refer to **Map 6** for further information.

Table 19: Overall level/s of non-riverine aquatic conservation significance

(No Records)

The following table provides an assessment of non-riverine wetlands within the AOI and associated aquatic conservation criteria values.

Table 20: Level/s of non-riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Naturalness catchment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. Diversity and richness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. Threatened species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6. Special features	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to non-riverine wetlands within the AOI.

Table 21: Expert panel decisions for assigning overall levels of non-riverine aquatic conservation significance.

Decision number	Special feature	Catchment	Criteria/Indicator/ Measure	Conservation rating (1-4)
(No Records)				

4 is the highest rating/value

Expert panel decision descriptions:

Decision number	Description
(No Records)	

Threatened and Priority Species

Introduction

This chapter contains a list of threatened and priority flora and/or fauna species that have been recorded on, or within 4km of the Assessment Area.

The information presented in this chapter with respect to species presence is derived from compiled databases developed primarily for the purpose of BPAs and ACAs. Data is collated from a number of sources and is updated periodically.

It is important to note that the list of species provided in this report, may differ when compared to other reports generated from other sources such as the State government's WildNet, Herbrecs or the federal government's EPBC database for a number of reasons.

Records for threatened and priority species are filtered and checked based on a number of rules including:

- Taxonomic nomenclature - current scientific names and status,
- Location - cross-check co-ordinates with location description,
- Taxon by location - requires good knowledge of the taxon and history of the record,
- Duplicate records - identify and remove,
- Expert panels - check records and provide new records,
- Flora cultivated records excluded,
- Use precise records less than or equal to 2000m,
- Use recent records greater than or equal to 1975 animals, greater than or equal to 1950 plants.

Threatened Species

Threatened species are those species classified as "Endangered" or "Vulnerable" under the *Environment Protection and Biodiversity Conservation Act 1999* or "Endangered", "Vulnerable" or "Near threatened" under the *Nature Conservation Act 1992*.

The following threatened species have been recorded on, or within approximately 4km of the AOI.

Table 22: Threatened species recorded on, or within 4km of the AOI

Species	Common name	NCA status	EPBC status	Migratory species*	Wetland species**	Identified flora/fauna
Aceratium sericoleopsis	silky aceratium	NT				FL
Bosistoa transversa	three-leaved bosistoa	C	V			FL
Calidris acuminata	sharp-tailed sandpiper	SL	V	Y	I	FA
Calidris ferruginea	curlew sandpiper	CR	CE	Y	I	FA
Charadrius mongolus	lesser sand plover	E	E	Y	I	FA
Cycas megacarpa		E	E			FL
Dugong dugon	dugong	V		Y	I	FA
Geophaps scripta scripta	squatter pigeon (southern subspecies)	V	V			FA
Hernandia bivalvis	cudgerie	NT				FL
Limnodromus semipalmatus	Asian dowitcher	SL	V	Y	I	FA

Species	Common name	NCA status	EPBC status	Migratory species*	Wetland species**	Identified flora/fauna
Limosa lapponica baueri	Western Alaskan bar-tailed godwit	V	E	Y	I	FA
Ninox strenua	powerful owl	V				FA
Numenius madagascariensis	eastern curlew	E	CE	Y	I	FA
Petauroides volans volans	southern greater glider	E	E			FA
Petaurus australis australis	yellow-bellied glider (southern subspecies)	V	V			FA
Phascolarctos cinereus	koala	E	E			FA
Pluvialis squatarola	grey plover	SL	V	Y	I	FA
Pteropus poliocephalus	grey-headed flying-fox	C	V			FA
Taphozous australis	coastal sheathtail bat	NT				FA
Tringa nebularia	common greenshank	SL	E	Y	I	FA
Xenus cinereus	terek sandpiper	SL	V	Y	I	FA
Xeromys myoides	water mouse	V	V		I	FA

NB. Please note that the threatened species listed in this section are based upon the most recently compiled DETSI internal state-wide threatened species dataset. This dataset may contain additional records that were not originally available for inclusion in the relevant individual BPAs and ACAs.

**JAMBA - Japan-Australia Migratory Bird Agreement; CAMBA - China-Australia Migratory Bird Agreement; ROKAMBA - Republic of Korea-Australia Migratory Bird Agreement; CMS - Convention on the Conservation of Migratory Species.*

***I - wetland indicator species; D - wetland dependent species.*

BPA Priority Species

A list of BPA priority species that have been recorded on, or within approximately 4km of the AOI is contained in the following table.

Table 23: Priority species recorded on, or within 4km of the AOI

Species	Common name	Identified flora/fauna
Chlamydosaurus kingii	frilled lizard	FA
Kuhlia rupestris	jungle perch	FA
Lampropholis adonis	diamond-shielded sunskink	FA
Melaleuca nervosa		FL
Melaleuca viridiflora		FL
Mogurnda adspersa	southern purplespotted gudgeon	FA

Species	Common name	Identified flora/fauna
Mormopterus norfolkensis	east coast freetail bat	FA
Mugil cephalus	sea mullet	FA
Ninox connivens	barking owl	FA
Notamacropus agilis	agile wallaby	FA
Notamacropus dorsalis	black-striped wallaby	FA
Petaurus australis australis	yellow-bellied glider (southern subspecies)	FA
Petrogale herberti	Herbert's rock-wallaby	FA
Pomatostomus temporalis	grey-crowned babbler	FA
Pteropus alecto	black flying-fox	FA
Scagacola cavernula	Rockhampton Carnivorous Snail	FA
Scoteanax rueppellii	greater broad-nosed bat	FA
Varanus semiremex	rusty monitor	FA
Varanus varius	lace monitor	FA

NB. Please note that the list of priority species is based on those species identified in the BPAs, however records for these species may be more recent than the originals used. furthermore, the BPA priority species databases are updated from time to time. At each update, the taxonomic details for all species are amended as necessary to reflect current taxonomic name and/or status changes.

ACA Priority Species

A list of ACA priority species used in riverine and non-riverine ACAs that have been recorded on, or within approximately 4km of the AOI are contained in the following tables.

Table 24: Priority species recorded on, or within 4 km of the AOI - riverine

Species	Common name	Identified flora/fauna
Ardea alba modesta	Eastern Great Egret	FA
Casuarina cunninghamiana		FL
Eucalyptus tereticornis		FL
Kuhlia rupestris	Jungle Perch	FA
Lates calcarifer	Barramundi	FA
Lomandra longifolia		FL
Megalops cyprinoides	Oxeye Herring/Tarpon	FA
Melaleuca leucadendra	broad-leaved tea-tree	FL
Melaleuca viminalis		FL
Mugil cephalus	Sea Mullet	FA
Nymphoides indica	water snowflake	FL

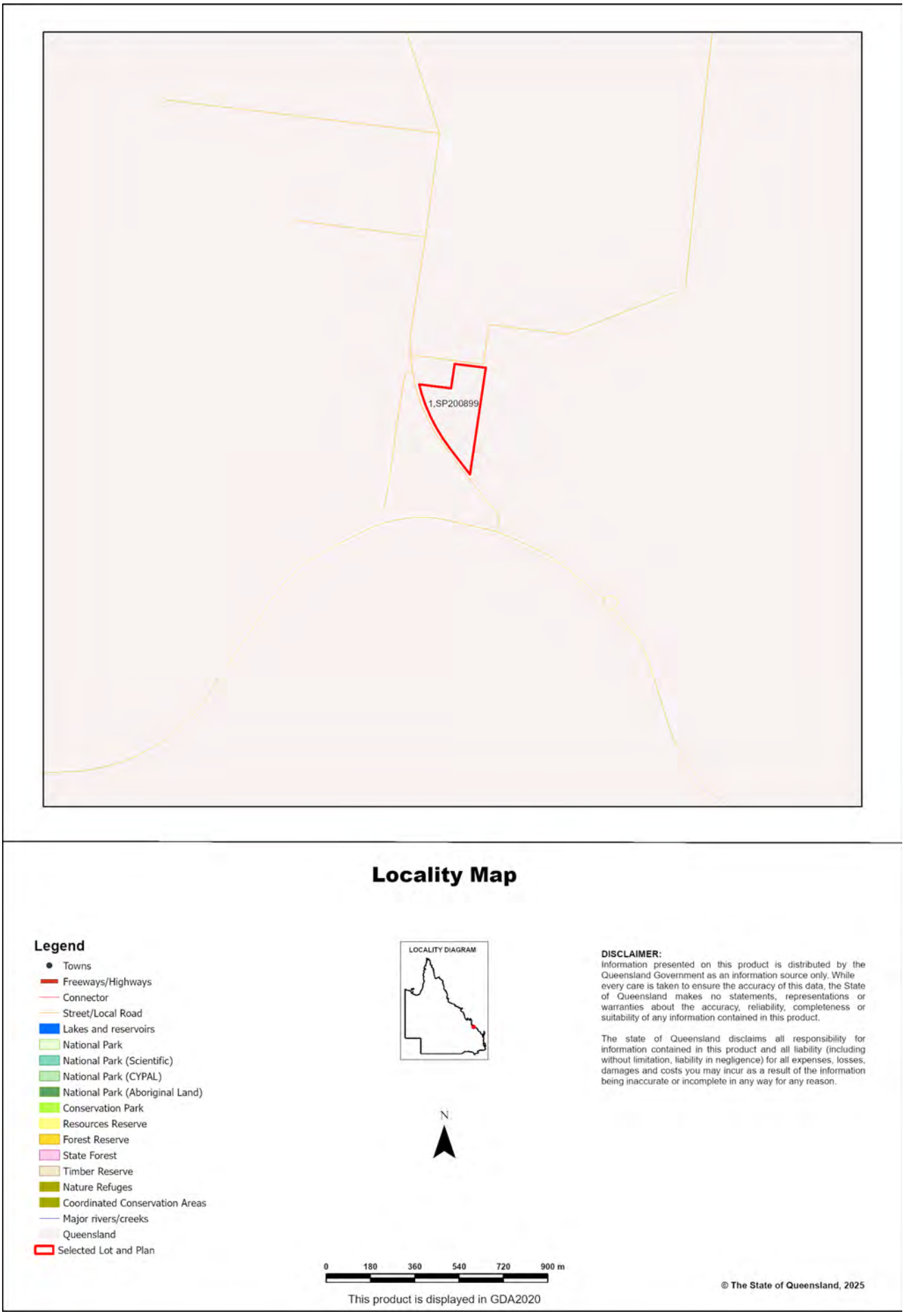
Table 25: Priority species recorded on, or within 4 km of the AOI - non-riverine

Species	Common name	Identified flora/fauna
Ardea alba modesta	Eastern Great Egret	FA
Cyperus exaltatus	tall flatsedge	FL
Eucalyptus tereticornis		FL
Lates calcarifer	Barramundi	FA
Machaerina articulata	jointed twigrush	FL
Megalops cyprinoides	Oxeye Herring/Tarpon	FA
Melaleuca leucadendra	broad-leaved tea-tree	FL
Melaleuca viminalis		FL
Mugil cephalus	Sea Mullet	FA
Nymphoides indica	water snowflake	FL

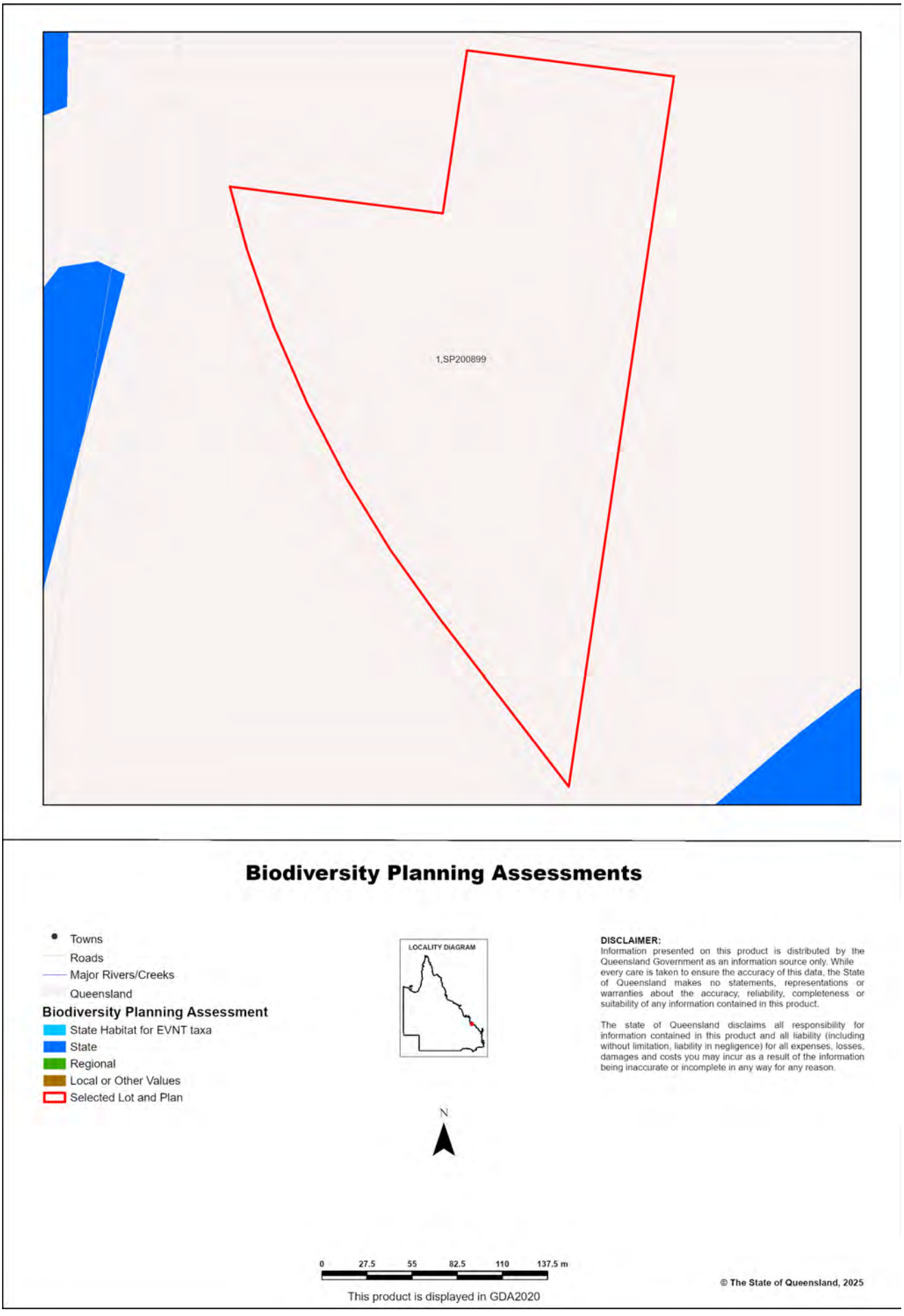
NB. Please note that the priority species records used in the above two tables are comprised of those adopted for the released individual ACAs. The ACA riverine and non-riverine priority species databases are updated from time to time to reflect new release of ACAs. At each update, the taxonomic details for all ACAs records are amended as necessary to reflect current taxonomic name and/or status changes.

Maps

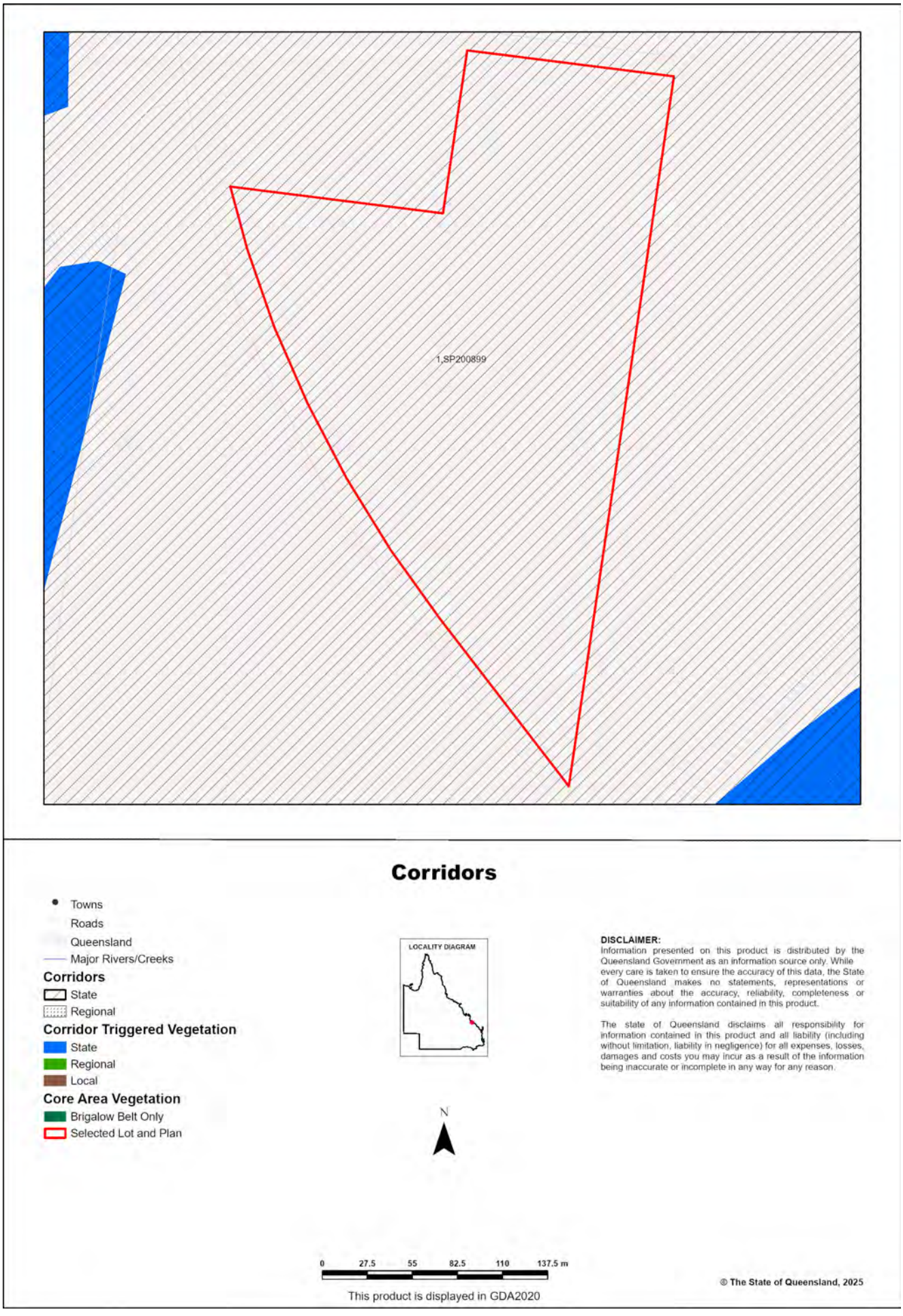
Map 1 - Locality Map



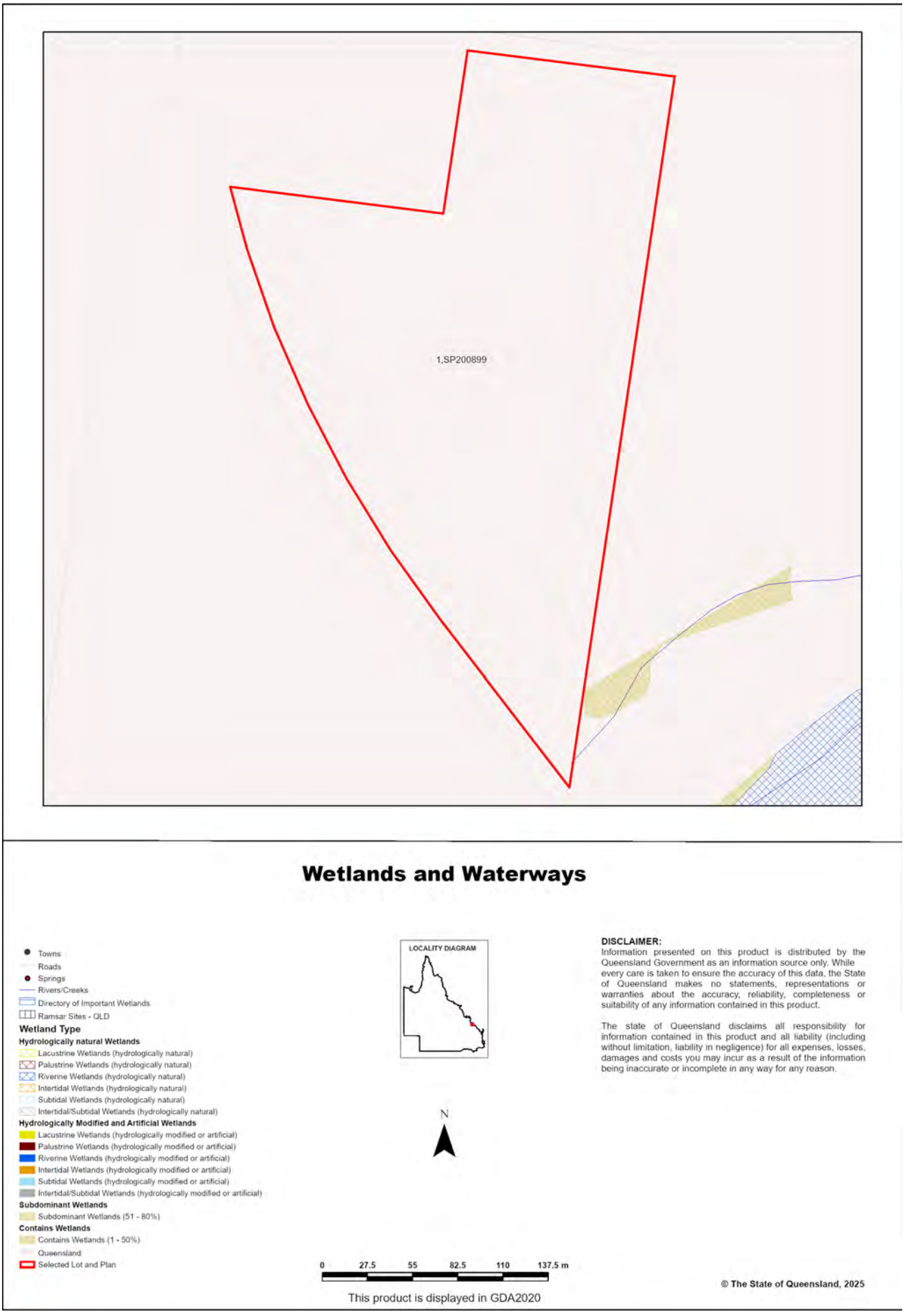
Map 2 - Biodiversity Planning Assessment (BPA)



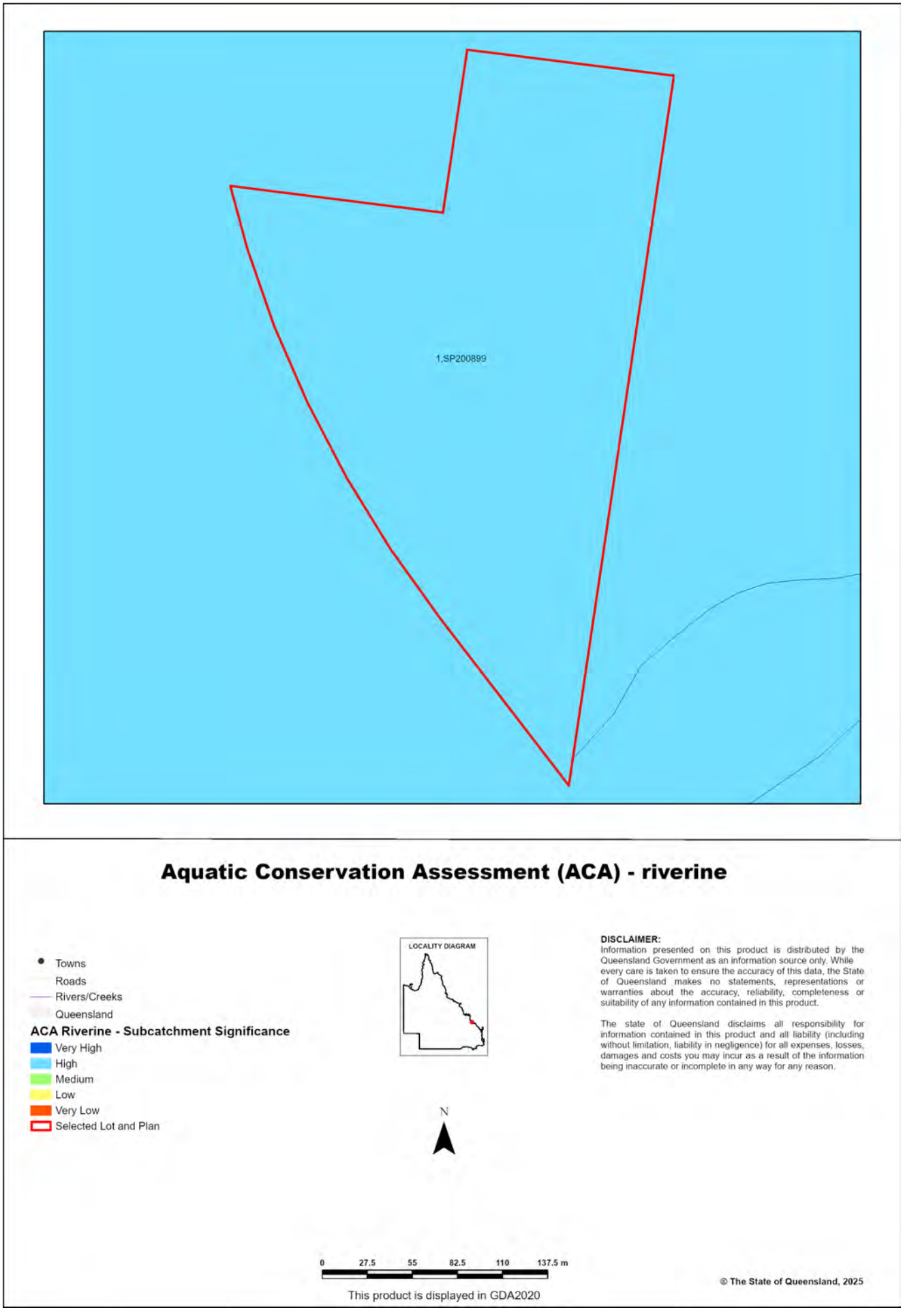
Map 3 - Corridors



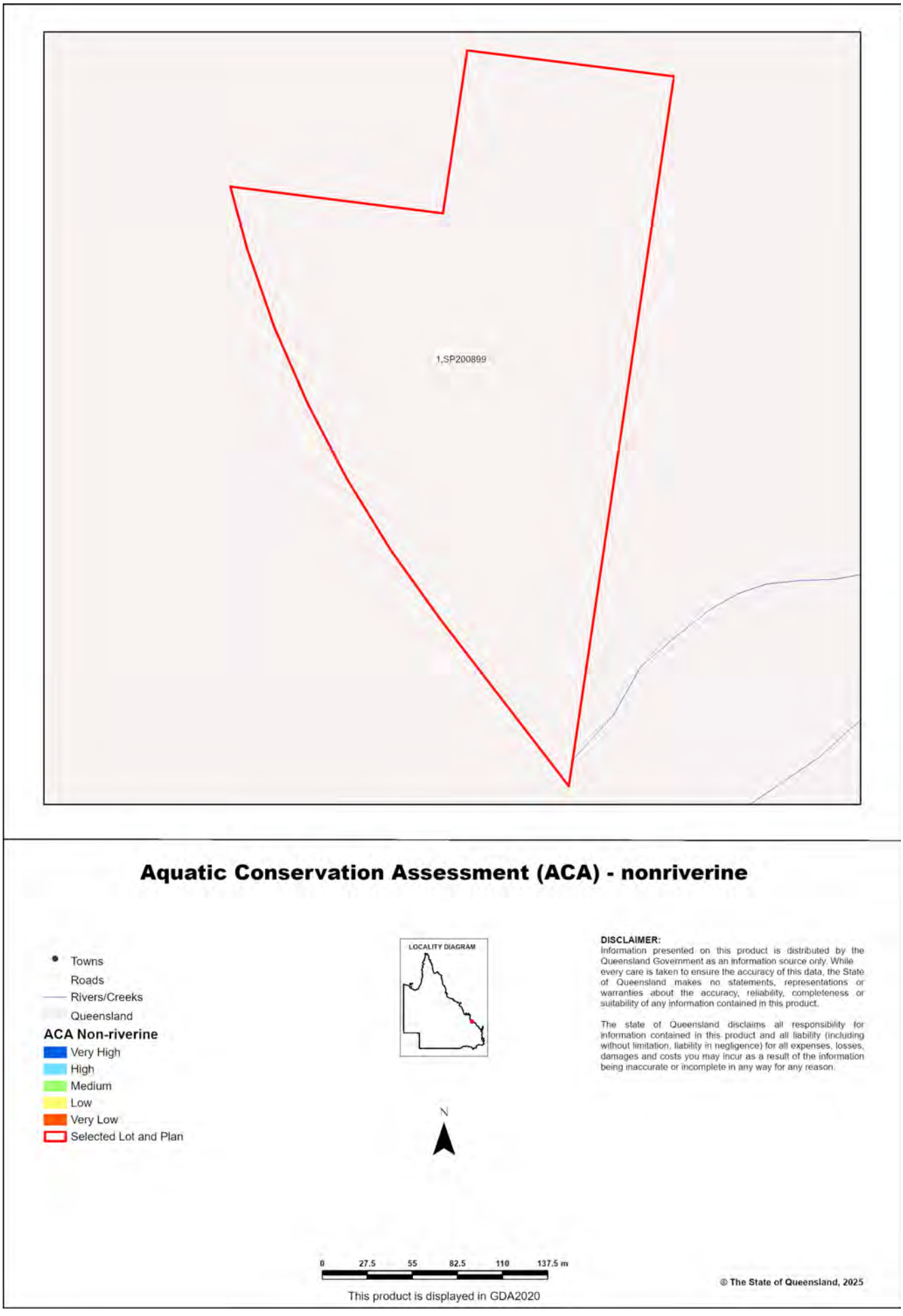
Map 4 - Wetlands and waterways



Map 5 - Aquatic Conservation Assessment (ACA) - riverine



Map 6 - Aquatic Conservation Assessment (ACA) - non-riverine



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Appendices

Appendix 1 - Source Data

Theme	Datasets
Aquatic Conservation Assessments Non-riverine*	Combination of the following datasets: Cape York Peninsula Non-riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Non-riverine v1.3 Lake Eyre and Bulloo Basins v1.1 QMDBB Non-riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Non-riverine ACA v1.1 Southern Gulf Catchments Non-riverine ACA v1.1 WBBGBRCC Non-riverine ACA v2.1
Aquatic Conservation Assessments Riverine*	Combination of the following datasets: Cape York Peninsula Riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Riverine v1.1 Lake Eyre and Bulloo Basins v1.1 QMDBB Riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Riverine ACA v1.1 Southern Gulf Catchments Riverine ACA v1.1 WBBGBRCC Riverine ACA v2.1
Biodiversity Planning Assessments*	Combination of the following datasets: Brigalow Belt BPA v2.1 Cape York Peninsula BPA v1.1 Central Queensland Coast BPA v1.3 Channel Country BPA v1.1 Desert Uplands BPA v1.3 Einasleigh Uplands BPA v1.1 Gulf Plains BPA v1.1 Mitchell Grass Downs BPA v1.1 Mulga Lands BPA v1.4 New England Tableland v3.1 Northwest Highlands v1.1 Southeast Queensland v4.1 Wet Tropics v1.1
Statewide BPA Corridors*	Statewide corridors v1.7
Threatened Species	An internal DETSI database compiled from Wildnet, Herbrecs, Corveg, the QLD Museum, as well as other incidental sources.
BPA Priority Species	An internal DETSI database compiled from Wildnet, Herbrecs, Corveg, the QLD Museum, as well as other incidental sources.
ACA Priority Species	An internal DETSI database compiled from Wildnet, Herbrecs, Corveg, the QLD Museum, as well as other incidental sources.

These datasets are available at:
http://dds.information.qld.gov.au/DDS

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
ACA	- Aquatic Conservation Assessment
AQUABAMM	- Aquatic Biodiversity Assessment and Mapping Methodology
BAMM	- Biodiversity Assessment and Mapping Methodology
BoT	- Back on Track
BPA	- Biodiversity Planning Assessment
CAMBA	- China-Australia Migratory Bird Agreement
DETSI	- Department of the Environment, Tourism, Science and Innovation
EPBC	- *Environment Protection and Biodiversity Conservation Act 1999*
EVNT	- Endangered, Vulnerable, Near Threatened
GDA2020	- Geocentric Datum of Australia 2020
GIS	- Geographic Information System
JAMBA	- Japan-Australia Migratory Bird Agreement
NCA	- *Nature Conservation Act 1992*
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
ROKAMBA	- Republic of Korea-Australia Migratory Bird Agreement

APPENDIX B:

Preliminary Likelihood of Occurrence Assessment

CQG Consulting

Likelihood of Occurrence Assessment							CQG's Verification
Threatened Ecological Community		EPBC Status		Habitat Description	PMST Search Likelihood of Occurrence	Associated REs mapped	Likelihood of Occurrence
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community		Endangered		It is characterised by the dominance of Casuarina glauca in the canopy, with an understory of rushes, sedges, forbs and grasses. Coastal Swamp Oak Forest is typically found on loose or alluvial soil on coastal flats, floodplains, drainage lines, lake margins, wetlands and estuarine fringes where soils are at least occasionally saturated, water-logged or inundated. Sometimes the ecological community can integrate with mangroves or saltmarsh communities (on the seaward site), or with Melaleuca species and eucalypts (more landward). Remnant patches retain mature trees and/or with diverse and good native understory, particularly those that are more closely connected with another area of native vegetation have very high conservation value. Associated with RE 12.1.1 and 12.3.20.	May occur.	No associated REs mapped	U
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland		Endangered		The Coastal Swamp Sclerophyll Forest community includes the plants, animals and other organisms typically associated with forested palustrine wetlands, or swamp forests, found in the temperate to subtropical coastal valleys of Australia's east coast. This community often has a layered canopy, dominated by Melaleucas and/or Eucalyptus robusta. In some areas the canopy may be dominated by other Melaleuca species including M. dealbata (SEQ bioregion) (rarely). This community occurs between the Great Dividing Range and the coastline from near Gladstone in QLD, through to the south coast of NSW where it is found on the mainland and islands near to the coast (within 20 km). It typically occurs in low-lying coastal alluvial areas with minimal relief, such as swamps, floodplain pockets, depressions, alluvial flats, back- barrier flats, fans, terraces, and behind fore-dunes. Its structure varies from open woodland to closed forest with a crown cover of at least 10% and typically no more than 70%. Associated with RE 12.2.7, 12.3.4/12.3.4a, 12.3.5, 12.3.6, 12.3.20	May occur.	No associated REs mapped	U
Lowland Rainforest of Subtropical Australia		Critically Endangered		This ecological community primarily occurs from Maryborough in Queensland to the Clarence River (near Grafton) in New South Wales (NSW). The ecological community also includes isolated areas between the Clarence River and Hunter River such as the Bellinger and Hastings valleys. The ecological community occurs in South Eastern Queensland Bioregion and NSW North Coast Bioregion. The ecological community occurs on basalt and alluvial soils, including sand and old or elevated alluvial soils as well as floodplain alluvia. It also occurs occasionally on enriched rhyolitic soils and basaltically enriched metasediments. Lowland Rainforest mostly occurs in areas <300 m above sea level. Aspect can result in the ecological community being found at >300 m altitude on north-facing slopes, but typically 300 m defines the extent of the lowlands. In addition, Lowland Rainforest typically occurs in areas with high annual rainfall (>1200 mm). Queensland State equivelants are 12.3.1; 12.5.13; 12.8.3; 12.8.4; 12.8.13; 12.11.1; 12.11.10; 12.12.1 and 12.12.16.	May occur.	No associated REs mapped	U
Poplar Box Grassy Woodland on Alluvial Plains		Endangered		The Poplar Box Grassy Woodland on Alluvial Plains ecological community is typically a grassy woodland with a canopy dominated by Eucalyptus populnea and understory mostly of grasses and other herbs. The ecological community mostly occurs in gently undulating to flat landscapes and occasionally on gentle slopes on a wide range of soil types of alluvial and depositional origin. This TEC is scattered across a broad distribution within an area that is roughly: south of Charters Towers (QLD); north of Leeton (NSW); west of Ipswich (QLD) and Armidale (NSW); and east of Longreach (QLD) and Hillston (NSW). This TEC occurs within the Brigalow Belt North, Brigalow Belt South, Southeast QLD, Cobar Peneplain, Darling Riverine Plains, NSW South Western Slopes and Riverina IBRA bioregions. In Queensland it is commonly associated with the following REs: 11.3.2; 11.3.17; 11.4.7; 11.4.12 & 12.3.10.	May occur.	No associated REs mapped	U
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions		Endangered		The subtropical eucalypt floodplain forest and woodland TEC is a floodplain forest community dominated by eucalyptus and other myrtaceous tree species. This community occurs in the NSW North Coast and SE QLD IBRA bioregions and on Curtis Island in the Brigalow Belt north IBRA Bioregion. It encompasses an area from just north of Newcastle, NSW in the south, to just north of Gladstone in QLD. It occurs in catchments of the eastern watershed of the Great Dividing Range, typically in their lower reaches at elevations up to 250 ASL. It occurs on alluvial landforms including river floodplains, riparian zones (i.e. along riverbanks, lake foreshores and creek lines), the floors of tributary gullies, floodplain pockets, alluvial flats, fans, terraces, and localised colluvial fans. It occurs on alluvial soils of varying textures including silts, clay loams, sandy loams, gravel and cobbles. It occurs as a tall closed-forest, tall open forest, closed forest with a canopy that has at least 20% crown cover. The canopy is dominated by Angophora, Corymbia, Eucalyptus, Lophostemon and/or Syncarpia tree species, but NOT dominated by Eucalyptus robusta. The mid-layer may be present, sparse or absent. Associated with RE 12.3.2, 12.3.2a, 12.3.3, 12.3.3a, 12.3.3b, 12.3.3d, 12.3.4a, 12.3.7, 12.3.7c, 12.3.7d, 12.3.10, 12.3.11, 12.3.11a, 12.3.11b, 12.3.12, 12.3.14, 12.3.15, 12.3.19.	Likely to Occur.	12.3.3 & 12.3.7	L
Weeping Myall Woodlands		Endangered		The Weeping Myall Woodlands occur in a range from open woodlands to woodlands, generally 4-12 m high, in which Weeping Myall (Acacia pendula) trees are the sole or dominant overstorey species. Other vegetation may also occur in the ecological community, though not as dominant species. These include Western Rosewood (Alectryon oleifolius subsp. elongatus); Poplar Box (Eucalyptus populnea); or Black Box (Eucalyptus largiflorens). The understorey of Weeping Myall Woodlands often includes an open layer of shrubs above an open ground layer of grasses and herbs, though the ecological community can exist naturally either as a shrubby or a grassy woodland. Although the species Acacia pendula occurs widely in Queensland, the Weeping Myall Woodlands ecological community is restricted to small patches that occur within two REs in Queensland. These are 11.3.2 and 11.3.28.	May occur.	No associated REs mapped	U
Subtropical and Temperate Coastal Saltmarsh		Vulnerable		The ecological community consists of organisms including and associated with saltmarsh in coastal regions of sub-tropical and temperate Australia. The community occurs within a relatively narrow margin of the Australian coastline, within the subtropical and temperate climatic zones in coastal areas under regular or intermittent tidal influence. The vegetation consists mainly of salt-tolerant vegetation (halophytes) including: grasses, herbs, sedges, rushes and shrubs. Succulent herbs, shrubs and grasses generally dominate and vegetation is generally of less than 0.5 m height. Associated with RE 12.1.2	Likely to Occur.	No associated REs mapped	U
Common Name	**Scientific name**	**EPBC Status**	**NC Status**	**Habitat Description**	**PMST Search Likelihood of Occurrence**	**ALA Records**	**Verified Likelihood of Occurrenace**
Birds							
Australian Painted Snipe	*Rostratula australis*	E, Ma	E	Inhabits well-vegetated shallows and margins of wetlands, dams, sewage ponds and other water courses; wet pastures, marshy areas, irrigation systems, lignum, tea-tree scrub and open timber (Geering et al., 2007; Pizzey and Knight 1999). Occurs mostly in south-eastern Australia but dispersive in response to rainfall. The species has a broad range of distribution throughout Australia but has a close association with brackish or freshwater terrestrial wetlands, especially temporary ones which have muddy margins (www.birdlife.org.au).	Likely to Occur.	No records within 5 km of Site.	U
Black-breasted Button-quail	*Turnix melanogaster*	V	V	Inhabits leaf-litter in drier rainforests, vine thickets; scrubby woodlands of eucalypts, she-oaks, bottle-brushes, brush box, Brigalow and other Acacias; thickets of lantana on rainforest fringes, hoop pine plantations; grain stubbles (Pizzey and Knight 1999). Its distribution is patchy in southeast QLD to northern NSW (Pizzey and Knight 1999).	Likely to Occur.	No records within 5 km of Site.	U
Common Sandpiper	*Actitis hypoleucos*	Mi, Ma	-	Shallow, pebbly, muddy or sandy edges of rivers and streams, coastal to far inland; dams, lakes, sewage ponds; margins of tidal rivers; waterways in mangroves or saltmarsh; mudflats; rocky or sandy beaches; causeways, riverside drains and street gutters (Pizzey and Knight 199	Known to occur.	2 records within 5 km of site, most recently i 2006. Habitat unlikely on sit	U
Coxen's Fig-Parrot	*Cyclopsitta diophthalma coxeni*	E	E	The distribution of the Coxen's Fig-Parrot is poorly known. Based on accepted records, the core distribution extends from Gympie in south-eastern QLD to Richmond River in north-eastern NSW. They occupy habitats that occur from sea level to approximately 900m above sea level. They occur in rainforest habitats including subtropical rainforest, dry rainforest, litorial and developing littoral rainforests and vine forests (SPRAT 2010).	May occur.	No records within 5 km of Site.	U
Curlew Sandpiper	*Calidris ferruginea*	CE, Mi, Ma	CR	Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms (Pizzey and Knight 1999). They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They generally roost on bare dry shingle, shell or sand beaches, sandpits and islets in or around coastal or near-coastal lagoons and other wetlands (SPRAT 2015).	Known to occur.	2 records within 5 km of Site, most recently in 2006. Habitat unlikely on site	U
Eastern Curlew	*Numenius madagascariensis*	CE, Mi, Ma	E	Inhabits estuaries, tidal mudflats, sandspits, saltmarshes, mangroves; occasionally fresh or brackish lakes; bare grasslands near water (Pizzey and Knight 1999). The Eastern Curlew breeds in northeast Asia and is a common summer migrant to Australian coastlines, although about 25% of the population remains all year round (Finn et al., 2001 and 2007; Geering et al., 2007).	Known to occur.	14 records within 5 km of Site, most recently in 2022. Habitat unlikely on site	U
Fork-tailed Swift	*Apus pacificus*	Mi, Ma	-	Almost exclusively aerial species, flying from less than 1m to at least 300m above the ground. In Australia, they mostly occur over inland plains but sometimes above foothills or in coastal areas. They often occur over cliffs and beaches and also over islands and sometimes well out to sea. They also occur over settled areas, including towns, urban areas and cities. They mostly occur over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh (SPRAT 2010).	Likely to Occur.	No records within 5 km of Site.	P
Greater Sand Plover	*Charadrius leschenaultii*	V, Mi, Ma	V	In Australia, the Greater Sand Plover occurs in coastal areas in all states, through the greatest numbers occur in northern Australia, especially the north-west. This species breeds in central Asia. In the nonbreeding ground in Australasia, the species is almost entirely coastal, inhabiting littoral and estuarine habitats. They mainly occur on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks, as well as sandy estuarine lagoons, inshore reefs, rock platforms, small rocky islands or sandy cays on coral reefs. They are also occasionally recorded on near-coastal saltworks and salt lakes, including marginal saltmarsh, and on brackish swamps. They seldom occur at shallow freshwater wetlands (SPRAT, 2023).	Likely to Occur.	3 records within 5 km of Site, most recently in 2019.	U
Grey Falcon	*Falco hypoleucos*	V	V	They Grey Falcon's habitat includes lightly treed inland plains; gibber deserts, sandridges, pastoral lands, timbered watercourses; seldom in driest deserts. Resident or nomadic visitor to inland parts of all mainland states (Pizzey an 1999).	Likely to Occur.	No records within 5 km of Site.	U
Latham's Snipe	*Gallinago hardwickii*	V, Mi, Ma	V	Latham's Snipe is a non-breeding visitor to south-eastern Australia, and is a passage migrant through northern Australia. This species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern SA. It occurs in permanent and ephemeral wetlands up to 2000m ASL, where they usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies). They can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity (SPRAT, 2023).	Likely to Occur.	No records within 5 km of Site.	P
Oriental Cuckoo	*Cuculus optatus*	Mi	-	Within Australia, this species uses a range of vegetated habitats such as monsoon rainforests, wet sclerophyll forest, open woodlands and appears quite often along edges of forests, or ecotones between forest types (DoE, 2015; Menkhorst et al,. 2017). This cuckoo species feeds arboreal, foraging for invertebrates on loose bark on the trunks and branches of trees, and among the foliage, including in mistletoes. It will forage from the ground, but requires shrubs or trees from which it sallies and returns to consume prey items. (DoE, 2015).	May occur.	No records within 5 km of Site.	U
Osprey	*Pandion haliaetus*	Mi, Ma	-	The Osprey is thinly distributed around the coast of Australia where they forage for fish in fresh, brackish, or saline waters of rivers, lakes, estuaries and inshore coastal waters (Schodde and Tidemann, 1993; NPWS, 2000). Nests are usually located near a suitable area of foraging habitat and are a bulky structure made from piled sticks, often positioned in a tall dead tree or artificial structures such as telecommunication towers or poles (Schodde and Tidemann, 1993; NPWS, 2000). Breeding pairs defend breeding territory against other Ospreys, and active nests are usually more than 1 km apart (NPWS, 2005).	Known to Occur.	No records within 5 km of Site.	L
Red Goshawk	*Erythrotriorchis radiatus*	V	E	Inhabits open forests, woodlands especially near rivers, wetlands and rainforest fringes in coastal and subcostal north and northeast Australia from the Kimberley (WA) to the QLD/NSW border (Pizzey and Knight 1999).	Likely to Occur.	No records within 5 km of Site.	U
Sharp-tailed Sandpiper	*Calidris acuminata*	Mi, Ma	SLC	The sharp-tailed sandpiper breeds in northern Siberia but migrates south to winter in Australia and New Zealand. In the non-breeding season they can be found in tidal mudflats, saltmarshes, mangroves; shallow fresh, brackish or saline inland wetlands; floodwaters, irrigated pastures and crops; sewage ponds and saltfields (Pizzey and Knight 1999).	Known to Occur.	4 records within 5 km of Site, most recently in 2024. Habitat unlikely on site	U
Squatter Pigeon (southern)	*Geophaps scripta scripta*	V	V	The known distribution of the Squatter Pigeon extends south from the Burdekin-Lynd divide in the southern region of Cape York Peninsula to the border Rivers region of northern NSW, and from the east coast to Hughenden, Longreach and Charleville. Their habitat is generally defined as open-forests to sparse, open woodlands and scrub that are mostly dominated by Eucalypts, Corymbia, Acacia or Callitris species. The habitat is generally remnant, regrowth or partly modified vegetation communities and within 3 km of water bodies or courses. Foraging occurs on well-drained, gravelly or loamy soils which support the open-forest to woodland communities with patchy, tussock-grassy understories (SPRAT, 2015).	Known to Occur.	6 records within 5 km of Site, most recently in 2025.	L
Star Finch (eastern) (southern)	*Neochmia ruficauda ruficauda*	E	E	Distribution is poorly known but it only occurs in central Queensland. It resides mainly in grasslands and grassy woodlands that are located close to body of fresh water. It also occurs in cleared or suburban areas such as along rode towns (SPRAT 2017).	Likely to Occur.	No records within 5 km of Site.	U
White-throated Needletail	*Hirundapus caudacutus*	V, Mi, Ma	V	Almost exclusively aerial from heights of less than 1m up to more than 1000m above the ground. Most often recorded above wooded areas, including open forest and rainforest and also are commonly recorded over heathland and cliffs (SPRAT, 2010). Exclusively aerial specie	May occur.	1 record within 5 km of Site, in 1999.	U
Capricorn Yellow Chat	*Epthianura crocea macgregori*	CE	E	The Capricorn yellow chat is known to occur at three localities - Curtis Island, Torilla Plain and the Fitzroy Delta and is most abundant at Torilla Plain.ased on current knowledge, habitat critical to the survival of the Capricorn yello wetlands and associated grasslands on seasonally inundated marine plains. These wetlands have shallow braided channels and depressions with a mosaic of dense sedge-beds, grasslands, tall samphire and areas of mud and/or shallow water. (DCCEEW 2021)	May occur.	No records within 5 km of Site.	U
Western Alaskan Bar-tailed Godwit	*Limosa lapponica baueri*	E	E	Bar-tailed godwits usually forage near the edge of water or in shallow water within tidal estuaries and harbours. Roosting tends to occur on large intertidal sandflats, spits, and banks. Less frequently, roosting occurs within mudflats, coastal lagoons, and bays (SPRAT 2024)	Known to Occur.	4 records within 5 km of Site, most recently ir 1999.	U
Common Greenshank	*Tringa nebularia*	E, Mi	E	The common greenshank forages at the edge of wetlands, in soft mud on mudflats, in channels, or within shallows around the edge of waterbodies. These locations are often situated near or among mangroves or other sparse, emer fringing vegetation such as sedges or saltmarsh. The bird occasionally feeds amongst seagrass beds (SPRAT 202	Likely to Occur.	4 records within 5 km of Site, most recently ir 2020.	P
Asian Dowitcher	*Limnodromus semipalmatus*	V, Mi	V	The species feeds on inter-tidal mudflats. Asian dowicher are carnivorous and feed primarily on small fish, insect larvae, and oligochaetes when breeding, and on polychaetes, insect larvae, and molluscs when migrating or overwintering. During the non-breeding season, the bird roosts in sheltered coastal environments such as estuarine and intertidal mudflats, lagoons, creeks and saltworks (DCCEEW 2024) .	May occur.	No records within 5 km of Site.	U
Red Knot	*Calidris canutus*	V, Mi	V	Whilst in Australia, the species mainly inhabits intertidal mudflats, sandflats, and sandy beaches of sheltered coasts, estuaries, bays, inlets, lagoons, and harbours. They are occasionally seen on terrestrial saline wetlands near the have been recorded on sewage ponds and saltworks (DCCEEW 2024	Known to Occur.	1 record within 5 km of Site, in 1989.	P
Bar-tailed Godwit	*Limosa lapponica*	E, Mi	E	Found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh. It has been sighted in coastal sewage farms and saltworks, salt lakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats (SPRAT 2025).	Known to Occur.	No records within 5 km of Site.	P
Pectoral Sandpiper	*Calidris melanotos*	Mi	SLC	In the non-breeding seasons (passage and wintering) inhabits wide range of habitats including freshwater and brackish marshes, coastal and inland wetlands (including up to 4,500 m in the Andes), saltmarshes, flooded agricultural fields and grasslands, sewage works and coastal lagoons. Only very rarely uses mudflats (Farmer *et al*. 2020).	May occur.	No records within 5 km of Site.	U
Common Noddy	*Anous stolidus*	Mi	SLC	The species occurs around isolated, bare or vegetated, pantropical and subtropical, inshore or oceanic islands or coral reefs with rocky cliffs or offshore stacks and coral or sand beaches (del Hoyo 1996, Higgins and Davies 1996).	Known to Occur.	No records within 5 km of Site.	P
Mammals							
Ghost Bat	*Macroderma gigas*	V	E	Ghost bats occur in a wide range of habitats from rainforest, monsoon and vine scrub, to open woodlands in arid areas. These habitats are used for foraging, while roost habitat is more specific. Favoured roosting sites of the ghost bat are undisturbed caves or mineshafts which have several openings. Ghost bats occur in tropical regions in Queensland, and along the ventral and northern coast, from Rockhampton north to Cape York (DEHP 2017).	Likely to Occur.	No records within 5 km of Site.	U
Greater Glider (southern and central)	*Petauroides volans*	E	E	The southern and central Greater Glider occurs in eastern Australia, where it has a broad distribution from around Proserpine in QLD, south through NSW and the ACT, to Wombat State Forest in central VIC. This species is largely restricted to eucalypt forests and woodlands of eastern Australia. It is typically found in highest abundance in taller, montane, moist eucalypt forests on fertile soils, with relatively old trees and abundance hollows. It is likely that only a proportion of forest in potential habitat areas is suitable for the species, as the structural attributes of the forest overstorey and forage quality it relies on vary considerably across the landscape (TSSC Conservation Advice, 2022).	Likely to Occur.	Records within 100 km of Site, most recently in 1999.	L
Grey-headed Flying-fox	*Pteropus poliocephalus*	V	-	The Grey-headed Flying-fox occurs in a range of habitats including subtropical and temperate rainforests, dry and wet sclerophyll forests, Banksia woodland, heaths and Melaleuca swamps (Duncan et al, 1999; NPWS, 2001).	May occur.	1 record within 5 km of Site in 1989.	P
Koala	*Phascolarctos cinereus*	E	E	The Koala is endemic to Australia. The biological species range extends from north-eastern QLD to the south-east corner of SA. Koalas naturally inhabit a range of temperate, subtropical and tropical forests, woodland and semi-arid community's dominated by Eucalyptus species. Their habitat can broadly be defined as any forest or woodland containing species that are a known Koala food tree, or shrubland with emergent food trees (SPRAT 2017).	Likely to Occur.	No records within 5 km of Site.	L
Northern Quoll	*Dasyurus hallucatus*	E	-	The northern quoll occurs across much of northern Australia, from south-eastern Queensland to the south-west Kimberley, with a disjunct population in the Pilbara. In the Northern Territory it is restricted to the Top End. The species occupies a diversity of habitats across its range which includes rocky areas, eucalypt forest and woodlands, rainforest, sandy lowlands and beaches, shrubland, grasslands and desert. The habitat generally encompasses some form of rocky area for denning purposes with surrounding vegetated habitats used for foraging and dispersal (SPRAT 2012).	Likely to Occur.	No records within 5 km of Site.	U
Yellow-bellied Glider (south-eastern)	*Petaurus australis australis*	V	V	The Yellow-bellied Glider is found in tall mature Eucalypt Forest and they feed on a range of sources including winter-flowering Eucalypts which provide nectar and pollen. They also feed upon the sap of Eucalypts in which they chew V-shaped incisions to collect the sap. Yellow-bellied Gliders den in large tree hollows (NPWS, 2000).	May occur.	5 records within 5 km of Site, most recently in 1999.	L
Water Mouse	*Xeromys myoides*	V	V	In central eastern Queensland, the diet is similar and is known to include grapsid crabs (e.g. Neoepisesarma mederi) (Ball 2004). The habitat of the Water Mouse is aquatic environments, including coastal saltmarsh, samphire shrublands, saline reed-beds and saline grasslands, mangroves, and coastal freshwater wetlands, and wet heathlands (DAWE 2021).	Known to Occur.	1 record within 5 km of Site in 2011.	U
Reptiles							
Collared Delma	*Delma torquata*	V	V	Under rocks and in soil cracks on heavy, stony and lightly timbered soils near Kenmore, Brookfield and Mt Crosby. Endemic to South-east Queensland. Also found in numerous disturbed habitats throughout Southeast Queensland (2000).	May occur.	No records within 5 km of Site.	U
Dunmall's Snake	*Furina dunmalli*	V	V	The distribution of the Dunmall's Snake extends from near the QLD border through the Brigalow Belt South and Nandewar bioregions, as far south as Ashford in NSW. In QLD this species occurs primarily in the Brigalow Belt region in the south-eastern interior of QLD. Records indicate sites at elevations between 200-500 m above sea level. The snake is very rare of secretive with limited records existing. It has been recorded at Archokoora, Oakey, Miles, Glenmorgan, Wallaville, Gladstone, Lake Broadwater, Mount Archer, Exhibition Range National Park, roadside reserves between Inglewood and Texas, Rosedale, Yeppoon and Lake Broadwater Conservation Park. It has been found in a broad range of habitats including forests and woodlands on black alluvial cracking clay and clay loams dominated by Brigalow; and other various Blue Spotted Gum, Ironbark, White Cypress and Bulloak open forests and woodland associations on sandstone derived soils (SPRAT).	May occur.	No records within 5 km of Site.	U
Grey Snake	*Hemiaspis damelii*	E	-	Queensland, records are known from near Goondiwindi and the adjacent Darling-Riverine Plain, from the Darling Downs and from the Lockyer Valley. Several isolated records also occur in the Rockhampton area. It favours woodlands, usually on heavier, cracking clay soils, particularly in association with water bodies. They shelter under rocks, logs and other debris as well as in soil cracks (SPRAT 2011).	May occur.	No records within 5 km of Site.	P
Yakka Skink	*Egernia rugosa*	V	V	Endemic to Queensland where its distribution is highly fragmented. Often associated with partly-buried rocks, logs or tree stumps, root cavities and abandoned animal burrows. It is also known to excavate deep burrow systems. The Yakka Skink can persist in cleared habitats if shelter sites such as raked log piles, deep gullies, tunnel erosion/sinkholes and rabbit warrens are available (DEHP 2017).	May occur.	No records within 5 km of Site.	P
Salt-water Crocodile, Estuarine Crocodile	*Crocodylus porosus*	Mi	V	The species mostly occurs in tidal rivers, coastal floodplains and channels, billabongs and swamps up to 150 km inland from the coast. The Salt-water Crocodile usually inhabits the lower (estuarine) reaches of rivers, while the upper reaches are inhabited by*Crocodylus johnstoni* (Fresh-water Crocodile); although, areas of overlap occur in some rivers. In Queensland, the species is usually restricted to coastal waterways and floodplain wetlands. Populations may also be found hundreds of kilometres upstream, such as in the Fitzroy River and the waterways of the southern Gulf of Carpentaria (SPRAT 2025)	Likely to Occur.	No records within 5 km of Site.	U
Plants							
Black Ironbox	*Eucalyptus raveretiana*	V	-	Eucalyptus raveretiana has a wide distribution in coastal and sub-coastal areas of QLD, from south of Townsville to Nebo, around Rockhampton and areas 100 km west of the city. It has been recorded from about 23 sites throughout its range, in two main areas. This species usually grows along water courses, and sometimes on river flats or open woodland. It is found in altitudinal ranges from 0-300 m and the climate of the area is sub-tropical. The species is said to be highly salt tolerant (SPRAT, 2020).	Likely to Occur.	No records within 5 km of Site.	P
Bluegrass	*Dichanthium setosum*	V	-	Dichanthium setosum has been reported from inland NSW to QLD. There are also reports from WA and TAS. The species is associated with heavy basaltic black soils and red-brown loams with clay subsoils (predominantly cracking clays or alluvium, often in gilgai). It is often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. The species may tolerate or benefit from disturbance, otherwise, disturbance is indicative of threatening processes in its habitat (SPRAT 2013).	Likely to Occur.	No records within 5 km of Site.	P
Cossinia	*Cossinia australiana*	E	E	Cossinia australiana is known from fragmented remnant patches of Araucarian vineforests or fine thickets on fertile soils in central and southern QLD. This species' distribution is from Rockhampton to Kingaroy, east of the Dividing Range, a distance of approximately 300km. At most sites it is recorded as uncommon, usually as scattered individuals. This species occurs from 20-520 m in altitude and appears to prefer ecotonal situations around dry rainforest edges, although it also occurs as scattered individual plants within closed forest communities (DES - Species Search).	May occur.	No records within 5 km of Site.	U
Quassia	*Samadera bidwillii*	V	V	Quassia is endemic to QLD and is currently known to occur in several localities including: Scawfell Island, Mackay, Goomboorian and north of Gympie. This species mainly occurs in lowland rainforest margins, but it can also be found in other forest types, such as open forest and woodland. Quassia is commonly found in areas adjacent to both temporary and permanent watercourses (SPRAT 2019).	May occur.	No records within 5 km of Site.	P
Three-leaved Bosistoa	*Bosistoa transversa*	V	-	Three-leaved Bosistoa is found from the Nightcap Range north of Lismore in north-east NSW to Mount Larcom (near Gladstone) in south-east QLD. The species is described in herbarium collection records as locally abundant at Natural Bridge-Springbrook NP and Coalstoun Lakes NP in QLD. This species typically grows in lowland subtropical rainforest. Has been found in closed forests on steep slopes, rainforests along creek lines, on reddish loam over basalt rock on very steep slopes and in notophyll vine forests (SPRAT 2019).	May occur.	1 record within 5 km of Site in 1988.	P
Wedge-leaf Tuckeroo	*Cupaniopsis shirleyana*	V	V	Cupaniopsis shirleyana is restricted to south-east Queensland, from Brisbane, north to Bundaberg. This species occurs at 20-550m in elevation and has been recorded in a variety of rainforest types including vine thicket and dry rai occurs on hillsides, mountain tops, lower slopes of valleys, stream beds and along riverbanks. It grows in a variety of soil types (DES - Species Se	Likely to Occur.	No records within 5 km of Site.	U
	Cycas megacarpa	E	E	Cycas megacarpa is endemic to south-east Queensland where it is found as far south as Woolooga to Bouldercombe in the north. Many surviving populations are small and greatly fragmented, with only a handful of adult plants. This species is typically found in woodland, open woodland and open forests, often in conjunction with a grassy understory. Cycas megacarpa is found in habitats dominated by Eucalyptus crebra and Corymbia citriodora as well as Corymbia erythrophloia, Eucalyptus melanophloia and Lophostemon confertus. There are also reports that it can be found on the edge of rainforest habitat (SPRAT, 2022).	May occur.	No records within 5 km of Site.	P
	Cycas ophiolitica	E	E	Cycas ophiolitica is endemic to Queensland, occurring from Marlborough to Rockhampton in central-eastern Queensland. It occurs in woodland or open eucalypt woodland (SPRAT, 2019).	May occur.	No records within 5 km of Site.	P
Macadamia Nut	*Macadamia integrifolia*	V	V	Macadamia Nut occurs from Mt Bauple, near Gympie, to Currumbin Valley in the Gold Coast hinterland, south-east Queensland. . It occurs as a scattered rare to occasional tree, and population sizes are difficult to estimate (Barry & Thomas, 1994). This species grows in remnant rainforest, including complex mixed notophyll forest, and prefers partially open areas such as rainforest edges (Ryan, 2006).	May occur.	No records within 5 km of Site.	U

Likelihood of Occurrence Ratings and Definitions

Likelihood of Occurrence Rating	Definition (from the Defence Environment Risk Tool)	Code
Known	Listed fauna - Habitat is present in the impact area and the species has been recorded in the impact area, or in connected habitat adjacent to the impact area, in the last 10 years	K
	Threatened flora - Habitat is present in the impact area and the species has been recorded in the impact area during the last 10 years.	
	TEC - Presence of TEC has been confirmed through ground-truthing during surveys undertaken in the last 2 years.	
Likely	Listed fauna - Habitat is present in the impact area and the species has been recorded in the impact area, or in connected habitat adjacent to the impact area, in the last 11 to 30 years; OR Habitat is present in the impact area and the species has been recorded within its dispersal range/limit from the impact area in the last 11 to 30 years, and there are no significant barriers to movement between the records and the impact area.	L
	Threatened flora - Habitat is present in the impact area, and the species has been recorded in the impact area in the last 11 to 30 years; OR Habitat is present in the impact area and adequate surveys to determine presence/ absence have not been undertaken, but the vegetation community composition indicates the species is probably present.	
	TEC - This likelihood category is not applicable to TECs. If there is the potential for a TEC to occur, the vegetation needs to be ground-truthed and presence or absence confirmed.	
Potential	Listed fauna - Habitat is present in the impact area and the species has been recorded in the impact area, or in connected habitat adjacent to the impact area, more than 31 years ago; OR Habitat is in the impact area, the impact area is within the species modelled distribution range, and the species may use the habitat at least occasionally or opportunistically; OR Habitat is in the impact area and it could be used in the future as climate refugia.	P
	Threatened flora - Habitat is present in the impact area and the species has been recorded in the impact area more than 31 years ago; OR Habitat is present in the impact area, the impact area is within the species modelled distribution, and adequate surveys have not been undertaken to prove the species is absent.	
	TEC – The TEC has been identified as potentially present from desktop search results but has yet to be groundtruthed to confirm presence.	
Unlikely	Listed fauna - Habitat is not present within the impact area or adjacent to the impact area and the impact area is within the species distribution; OR Habitat is present in the impact area and the species has been recorded within its dispersal range/limit from the impact area over 30 years ago, and there are no significant barriers to movement between the records and the impact area.	U
	Threatened flora - Habitat is not present within or adjacent to the impact area and robust targeted surveys have not been undertaken to prove if the species is absent.	
	TEC - This likelihood category is not applicable to TECs. If there is the potential for a TEC to occur, the vegetation needs to be ground-truthed and presence or absence confirmed.	
Confirmed absent	Listed fauna - This likelihood category is not applicable to fauna as it is very difficult to prove absence of a species identified in the PMST report as having the potential to occur.	A
	Threatened flora - Habitat is not within or adjacent to the impact area and robust targeted surveys have proven the species to be absent.	
	TEC - Recent ground-truthing of vegetation has determined that that the TEC is not present.	

APPENDIX C:

BioCondition Scores

Attribute	RE 11.3.29a		T1		
	Benchmark	Weighting (%)	Value	Sub-score	Score
Large trees					
Eucalypts	45 cm DBH	15	4 trees >45 cm DBH		10
	14 trees per ha		8 trees per ha		
Non-eucalypts	NA		NA		
	NA		NA		
Tree height (m)					
Canopy	21 m	5	12 m	3	3
Sub-canopy	11 m		5 m	3	
Recruitment of canopy species (%)	100%	5	100%		5
Canopy cover (%)					
Canopy	44%	5	71.10%	3	4
Subcanopy	10%		8.40%	5	
Shrub canopy cover (%)	2%	5	0.00%		0
Coarse wody debris (M/ha)	285 m/ha	5	80 m/ha		2
Native plant spp. Richness					
Trees	7 Spp	20	3 spp	2.5	7.5
Shrubs	7 Spp		3 spp	2.5	
Grass	8 Spp		5 spp	2.5	
Forbs/ other	17 Spp		4 spp	0	
Non-native plant cover (%)	0%	10	5%		10
Native perennial grass cover (%)	40%	5	7%		1
Organic litter cover (%)	30%	5	88.80%		3
Landscape context (fragmented)					
Patch size		10	49.6 ha of regrowth vegetation		5
Context		5	30.2% remnant and 69.8% regrowth		2
Connectivity		5	35.73% connected to remnant vegetation		4
Total Score		**100**			**56.50**
BioCondition Class					**3**

Attribute	RE 11.3.29a		T2		
	Benchmark	Weighting (%)	Value	Sub-score	Score
Large trees					
Eucalypts	45 cm DBH	15	2 trees >45 cm DBH		5
	14 trees per ha		4 trees per ha		
Non-eucalypts	NA		NA		
	NA		NA		
Tree height (m)					
Canopy	21 m	5	13 m	3	3
Sub-canopy	11 m		6 m	3	
Recruitment of canopy species (%)	100%	5	100%		5
Canopy cover (%)					
Canopy	44%	5	28.30%	5	4
Subcanopy	10%		27.70%	3	
Shrub canopy cover (%)	2%	5	4.60%		3
Coarse wody debris (M/ha)	285 m/ha	5	0 m/ha		0
Native plant spp. Richness					
Trees	7 Spp	20	6 spp	5	7.5
Shrubs	7 Spp		2 spp	2.5	
Grass	8 Spp		1 spp	0	
Forbs/ other	17 Spp		1 spp	0	
Non-native plant cover (%)	0%	10	80%		0
Native perennial grass cover (%)	40%	5	0%		0
Organic litter cover (%)	30%	5	69.60%		3
Landscape context (fragmented)					
Patch size		10	49.6 ha of regrowth vegetation		5
Context		5	77.0% remnant and 23.0% regrowth		5
Connectivity		5	29.79% connected to remnant vegetation		2
Total Score		**100**			**42.50**
BioCondition Class					**3**

APPENDIX D:

Regional Ecosystem Verification

Site	T1	T2
Location	-23.813325° 151.154045°	-23.814831° 151.150520°
Mapped RE	11.3.29 - *Eucalyptus crebra, E. exserta,* Melaleuca spp. woodland on alluvial plains (Least concern) 12.11.14 – *E. crebra, E. tereticornis, Corymbia intermedia* woodland on metamorphics +/- interbedded volcanics (Of concern) 12.3.3 – *E. tereticornis* woodland on Quaternary alluvium (Endangered)	11.3.29 - *Eucalyptus crebra, E. exserta,* Melaleuca spp. woodland on alluvial plains (Least concern) 12.11.14 – *E. crebra, E. tereticornis, Corymbia intermedia* woodland on metamorphics +/- interbedded volcanics (Of concern) 12.3.3 – *E. tereticornis* woodland on Quaternary alluvium (Endangered)
Vegetation Cover	Regrowth	Regrowth
Vegetation Structure	Open forest	Low woodland
Vegetation Description	Flat dominated by regrowth *E. crebra* at T1, with emergent remnant *E. crebra* and *Blakella dallachiana* interspersed. Sparse ground cover of native grasses with consistent leaf litter coverage. Minimal shrub layer present.	Flat dominated by regrowth *Melaleuca nervosa* at T3, with remnant *Blakella dallachiana* interspersed at T1 and *Lophostemon suaveolens* and *B. tessellaris* regrowth also observed at T2. Ground layer dominated by Thatch grass.
Dominant vegetation species and strata	*E. crebra* T1	*M. nervosa* T3
Dominant species Height	12 m	6 m
EDL Cover	71.1%	28.3%
Land Zone	3 - Recent Quaternary alluvial systems	3 - Recent Quaternary alluvial systems
RE Verification	Bioregion 11 - Yes. In Gladstone. Landzone 3 - Yes. Recent Quaternary alluvial systems Ecosystem 29a – *E. crebra* and *B. dallachiana* dominant	Bioregion 11 - Yes. In Gladstone. Landzone 3 - Yes. Recent Quaternary alluvial systems Ecosystem 29 – *E. crebra* and *M. nervosa* present.
TEC key characteristics observed	Nil	Nil
Protected Plants or Threatened Species Observed	No	No
Active Habitat Observed	No	No
Mapped essential Habitat	Yes	No
Koala Food Trees Present	Dallachy's gum – *B. dallachiana* Narrow-leaved ironbark – *E. crebra*	Dallachy's gum - *B. dallachiana* Moreton Bay ash – *B. tessellaris* Narrow-leaved ironbark - *E. crebra* Blue gum – *E. tereticornis* Swamp box – *L. suaveolens*
Restricted Invasive species / WoNS observed	No	No

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Site	T1	T2
Representative site photo		

Site	T3	T4
Location	-23.8183167, 151.1514154	-23.8178093, 151.1524762
Mapped RE	12.3.3 - *Eucalyptus tereticornis* woodland on Quaternary alluvium (Endangered) 12.11.4 - Semi-evergreen vine thicket on metamorphics +/- interbedded volcanics (Of concern)	12.3.7 - *Eucalyptus tereticornis, Casuarina cunninghamiana subsp. cunninghamiana* +/- Melaleuca spp. fringing woodland (Of concern)
Vegetation Cover	Remnant	Remnant
Vegetation Structure	Tussock grass	Tussock grass
Vegetation Description	Flat between Boat Creek and an unnamed waterway dominated by Guinea grass to 3 metres tall. Vegetation immediately adjacent to Boat Creek is remnant with the remainder of the flat non-remnant. Heavy rubber vine presence in trees on creek bank.	Flat between Boat Creek and an unnamed waterway dominated by Guinea grass to 3 metres tall. Vegetation immediately adjacent to Boat Creek is remnant with the remainder of the flat non-remnant. Heavy rubber vine presence in trees on creek bank.
Dominant vegetation species and strata	Guinea grass -*Megathyrsus maximus* – G1	Guinea grass -*Megathyrsus maximus*– G1
Dominant species Height	2.5 m	2.5 m
EDL Cover	100%	100%
Land Zone	3 - Recent Quaternary alluvial systems	3 - Recent Quaternary alluvial systems
RE Verification	Bioregion 12 - Yes. In the Gladstone area. Landzone 3 - Yes. Recent Quaternary alluvial systems Ecosystem 3 - Within 20 m of Boat Creek, yes. *E. tereticornis* scattered on creek bank. Beyond that, non-remnant.	Bioregion 12 - Yes. In the Gladstone area. Landzone 3 - Yes. Recent Quaternary alluvial systems Ecosystem 7 – Within 20 m of Boat Creek, yes. *E. tereticornis, C. cunninghamiana subsp. cunninghamiana* and *M. leucadendra* all present. Beyond that, non-remnant.
TEC key characteristics observed	No	No
Protected Plants or Threatened Species Observed	No	No
Active Habitat Observed	No	No
Mapped essential Habitat	Yes	No
Koala Food Trees Present	Dallachy's gum - *B. dallachiana* Moreton Bay ash - *B. tessellaris* Blue gum - *E. tereticornis*	Moreton Bay ash - *B. tessellaris* Blue gum - *E. tereticornis*
Restricted Invasive species / WoNS observed	Rubber vine - *Cryptostegia grandiflora*	Lantana - *Lantana camara* Rubber vine - *Cryptostegia grandiflora*

Site	T3	T4
Representative site photo		

APPENDIX E:

Species Lists

Flora Species List

Family	Scientific Name	Common Name	T1	T2	T3	T4
Apocynaceae	*Gomphocarpus physocarpus*	Balloon cottonbush		x		
Poaceae	*Heteropogon contortus*	Black speargrass	x			
Leguminosae	*Acacia leiocalyx*	Black wattle	x	x		
Hemerocallidaceae	*Dianella caerulea*	Blue flax lily	x	x		
Myrtaceae	*Eucalyptus tereticornis*	Blue gum		x	x	x
Nymphaeaceae	*Nymphaea caerulea*	Blue water lily				x
Typhaceae	*Typha orientalis*	Broad-leaved cambungi				x
Myrtaceae	*Melaleuca leucadendra*	Broad-leaved tea-tree			x	x
Rubiaceae	*Psydrax odorata*	Canthium	x			
Euphorbiaceae	*Ricinus communis*	Castor oil bush			x	x
Sapindaceae	*Cupaniopsis anacardioides*	Coastal tuckeroo			x	
Lecythidaceae	*Planchonia careya*	Cocky apple		x		
Poaceae	*Phragmites australis*	Common reed grass			x	
Juncaceae	*Juncus polyanthemus*	Common rush		x		
Myrtaceae	*Blakella dallachiana*	Dallachy's gum	x	x	x	
Solanaceae	*Solanum torvum*	Devil's fig			x	
Leguminosae	*Senna pendula var. glabrata*	Easter cassia			x	x
Poaceae	*Cenchrus purpureus*	Elephant grass				x
Leguminosae	*Hardenbergia violacea*	False sarsparilla	x			
Cyperaceae	*Fimbristylis dichotoma*	Fringe-rush	x			
Poaceae	*Megathyrsus maximus*	Guinea grass			x	x
Poaceae	*Themeda triandra*	Kangaroo grass	x			
Verbenaceae	*Lantana camara*	Lantana			x	
Laxmanniaceae	*Lomandra longifolia*	Lomandra			x	
Euphorbiaceae	*Macaranga tanarius*	Macaranga			x	
Anacardiaceae	*Mangifera indica*	Mango				x
Pteridaceae	*Acrostichum speciosum*	Mangrove fern				x
Rubiaceae	*Coelospermum reticulatum*	Medicine bush	x			
Myrtaceae	*Blakella tessellaris*	Moreton Bay ash		x	x	x
Moraceae	*Ficus macrophylla forma macrophylla*	Moreton Bay fig			x	
Myrtaceae	*Eucalyptus crebra*	Narrow-leaved ironbark	x	x		
Myrtaceae	*Melaleuca nervosa*	Paperbark	x	x		
Poaceae	*Sarga plumosum*	Plume sorghum			x	
Asteraceae	*Praxelis clematidea*	Prexelis		x		
Malvaceae	*Sida hackettiana*	Queenland hemp	x			
Myrtaceae	*Melaleuca viminalis*	Red bottlebrush			x	x
Casuarinaceae	*Casuarina cunninghamiana*	River sheoak			x	x
Apocynaceae	*Cryptostegia grandiflora*	Rubber vine			x	x
Moraceae	*Ficus opposita*	Sandpaper fig			x	x
Leguminosae	*Macroptilium atropurpureum*	Siratro			x	x
Myrtaceae	*Lophostemon suaveolens*	Swamp box		x		
Poaceae	*Hyparrhenia rufa*	Thatch grass	x	x		
Cyperaceae	*Cyperus alternifolius*	Umbrella sedge			x	
Malvaceae	*Urena lobata*	Urena burr		x	x	
Meliaceae	*Melia azedarach*	White cedar			x	x
Poaceae	*Aristida spuria*	White speargrass	x			
Scrophulariaceae	*Eremophila debilis*	Winter apple	x			
Poaceae	*Aristida utilis*	Wiregrass	x			

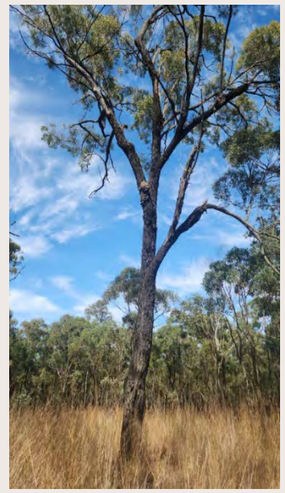
Fauna Species List

Family	Scientific Name	Common Name
Artamidae	*Gymnorhina tibicen*	Australian magpie
Campephagidae	*Coracina novaehollandiae*	Black-faced cuckoo-shrike
Alcedinidae	*Dacelo leachii*	Blue-winged kookaburra
Cuculidae	*Scythrops novaehollandiae*	Channel-billed cuckoo
Estrildidae	*Taeniopygia bichenovii*	Double-barred finch
Macropodidae	*Macropus giganteus*	Eastern grey kangaroo
Scincidae	*Ctenotus robustus*	Eastern striped skink
Alcedinidae	*Todiramphus macleayii*	Forest kingfisher
Cisticolidae	*Cisticola exilis*	Golden-headed cisticola
Rhipiduridae	*Rhipidura albiscapa*	Grey fantail
Meliphagidae	*Philemon citreogularis*	Little friarbird
Falconidae	*Falco cenchroides*	Nankeen kestrel
Psittaculidae	*Platycercus adscitus*	Pale-headed rosella
Columbidae	*Geopelia placida*	Peaceful dove
Cuculidae	*Centropus phasianinus*	Pheasant coucal
Meropidae	*Merops ornatus*	Rainbow bee-eater
Psittaculidae	*Trichoglossus moluccanus*	Rainbow lorikeet
Maluridae	*Malurus melanocephalus*	Red-backed fairy-wren
Cacatuidae	*Calyptorhynchus banksii*	Red-tailed black-cockatoo
Pachycephalidae	*Pachycephala rufiventris*	Rufous whistler
Meliphagidae	*Myzomela sanguinolenta*	Scarlet honeyeater
Accipitridae	*Circus assimilis*	Spotted harrier
Rallidae	*Porphyrio melanotus*	Swamp hen
Macropodidae	*Wallabia bicolor*	Swamp wallaby
Corvidae	*Corvus orru*	Torresian crow
Hirundinidae	*Hirundo neoxena*	Welcome swallow
Ardeidae	*Ardea pacifica*	White-necked heron

APPENDIX F:

Habitat Features

Significant Habitat Features, Fauna Sign and Food Sources

Name	Location	Status	Observations	Photos
Arboreal hollow Koala/ glider tree Arboreal termite mound	-23.8134438, 151.1546299	Active breeding: No	In *E. crebra*, arboreal termite mound also observed. DBH: 63 cm Height: 18.3 m	
Arboreal hollow Koala/ glider tree Scratches	-23.8144942, 151.1543148	Active breeding: No	Many hollows In large *B. Dallachiana*. Many fresh diggings nearby. Many large scratches also observed in trunk. DBH: 75 cm Height: 23 m	

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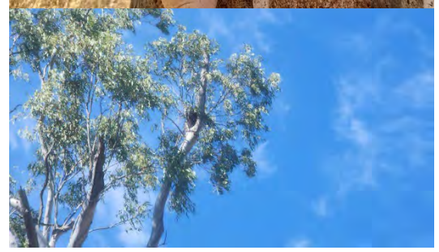
Name	Location	Status	Observations	Photos
Arboreal hollow Koala/ glider tree	-23.8164435, 151.1539514	Active breeding: No	In *E. crebra*. with dead hollow limb. DBH: 52 cm Height: 17.1 m	
Arboreal hollow Koala/ glider tree Scratches Stick nest	-23.8150898, 151.1537962	Active breeding: No	Scratches. *B. dallachiana*. Stick nest DBH: 75 cm Height: 24.9 m	 

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Name	Location	Status	Observations	Photos
Arboreal hollow Koala/ glider tree	-23.8145993, 151.1535561	Active breeding: No	In *E. crebra.* DBH: 60 cm Height 16 m	
Arboreal hollow Koala/ glider tree	-23.8137105, 151.1532483	Active breeding: No	*E. Crebra* DBH: 74 cm Height: 26 m	
Arboreal hollow Koala/ glider tree	-23.8131912, 151.1533894	Active breeding: No	Dead limb on *E. crebra*, old fire damage and many hollows observed. DBH: 56 cm Height: 16 m	

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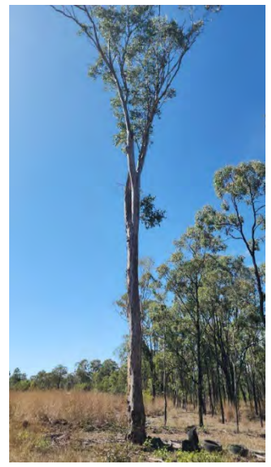
Name	Location	Status	Observations	Photos
Arboreal hollow Scratches	-23.8131035, 151.1536153	Active breeding: No	*B. dallachiana* with many small scratches DBH: 61 cm Height: 20 m	
Arboreal hollow Koala/ glider tree	-23.8174772, 151.1517192	Active breeding: No	*B. dallachiana* with arboreal hollow. DBH: 50 cm Height: 15 m	

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Name	Location	Status	Observations	Photos
Arboreal hollow Koala/ glider tree	-23.8177289, 151.1516055	Active breeding:	*B. dallachiana* DBH: 100 cm Height: 30 m	
Arboreal termite mound	-23.8132606, 151.1546177	Active breeding: No	In *Eucalyptus crebra*	
Arboreal termite mound	-23.813317, 151.1546148	Active breeding: No	In *E. crebra*	

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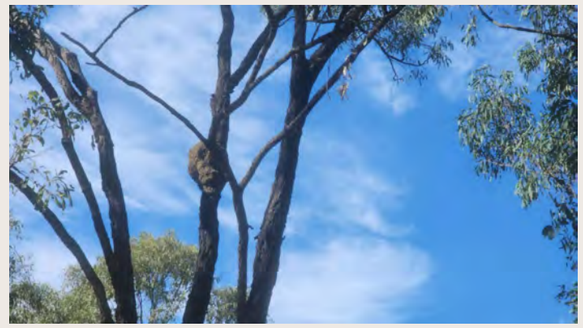
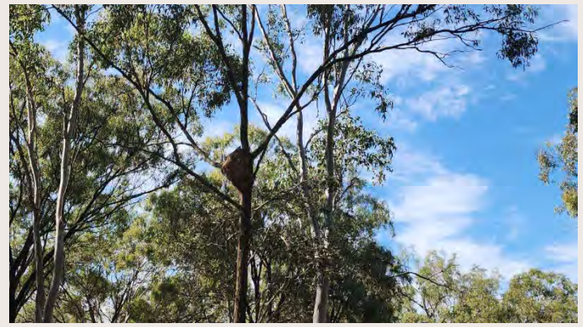
Name	Location	Status	Observations	Photos
Arboreal termite mound	-23.8138272, 151.1545884	Active breeding: No	In *E. crebra.*	
Arboreal termite mound	-23.8138408, 151.1545272	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8138419, 151.1545221	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8147818, 151.1543931	Active breeding: No	In *E. crebra*.	

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Name	Location	Status	Observations	Photos
Arboreal termite mound	-23.8148695, 151.1544067	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8150881, 151.1544699	Active breeding: No	On fence line.	
Arboreal termite mound	-23.8151244, 151.1544747	Active breeding: No	In *B. dallachiana*.	
Arboreal termite mound	-23.815127, 151.1544668	Active breeding: No	In *E. crebra*.	

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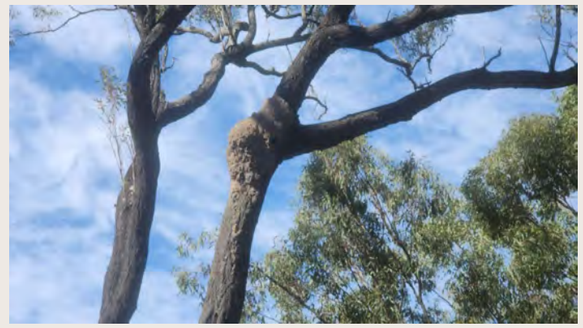
Name	Location	Status	Observations	Photos
Arboreal termite mound	-23.8155949, 151.1543183	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8159749, 151.1541721	Active breeding: No	In *B. dallachiana.*	
Arboreal termite mound	-23.8161093, 151.1541213	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.816212, 151.1541175	Active breeding: No	In *E. crebra*.	

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Name	Location	Status	Observations	Photos
Arboreal termite mound	-23.8162621, 151.1540545	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8164076, 151.1539927	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8164211, 151.1539968	Active breeding: No	In *E. crebra*.	

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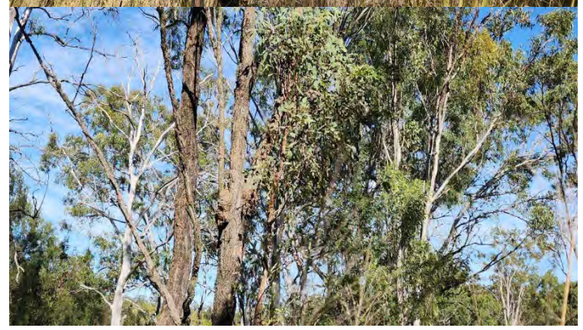
Name	Location	Status	Observations	Photos
Arboreal termite mound	-23.816432, 151.1538964	Active breeding:	In *E. crebra*.	
Arboreal termite mound	-23.8165458, 151.1539456	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8165127, 151.1534786	Active breeding: No	In *E. crebra*.	

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Name	Location	Status	Observations	Photos
Arboreal termite mound	-23.8163925, 151.1532144	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8155205, 151.1537437	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8153172, 151.1537321	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8152155, 151.1538083	Active breeding: No	In *E. crebra*.	

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Name	Location	Status	Observations	Photos
Arboreal termite mound	-23.8150894, 151.1537891	Active breeding: No	Two in side-by-side *E. crebra*.	
Arboreal termite mound	-23.814613, 151.1535634	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8143205, 151.1535041	Active breeding: No	In *E. crebra.*	
Arboreal termite mound	-23.8140933, 151.1534587	Active breeding: No	In *E. crebra.*	

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Name	Location	Status	Observations	Photos
Arboreal termite mound	-23.8139315, 151.1534404	Active breeding: No	In *E. crebra.*	
Arboreal termite mound	-23.8132143, 151.1527468	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8134319, 151.1528034	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8138366, 151.1529847	Active breeding: No	In *E. crebra*.	

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Name	Location	Status	Observations	Photos
Arboreal termite mound	-23.8138916, 151.1530165	Active breeding: No	In *E. crebra*.	
Arboreal termite mound	-23.8146834, 151.1520626	Active breeding: No	In *B. dallachiana*.	
Arboreal termite mound	-23.8154222, 151.1518975	Active breeding: No	In *E. crebra.*	
Arboreal termite mound	-23.8162783, 151.150822	Active breeding:	In *B. dallachiana*	

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Name	Location	Status	Observations	Photos
Arboreal termite mound	-23.816781, 151.1520026	Active breeding: No	In *E. crebra*	
Arboreal termite mound	-23.8169216, 151.1517651	Active breeding: No	In *Corymbia intermedia*.	
Arboreal termite mound	-23.8159366, 151.1503028	Active breeding:	In *C. intermedia*	
Arboreal termite mound	-23.814559, 151.1515581	Active breeding:	In *E. crebra.*	

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Name	Location	Status	Observations	Photos
Arboreal termite mound	-23.8145619, 151.1515609	Active breeding: No	In *E. crebra.*	
Arboreal termite mound	-23.8143546, 151.1517746	Active breeding: No	In *B. dallachiana*, with large opening	
Arboreal termite mound	-23.8144169, 151.152058	Active breeding: No	In *B. dallachiana.*	
Arboreal termite mound	-23.8141771, 151.1520433	Active breeding: No	In *E. crebra.*	

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Name	Location	Status	Observations	Photos
Burrow	-23.8138456, 151.1530013	Active breeding: No		
Dam	-23.8152446, 151.1518119	Active breeding: No	Pig prints all around, active bird life observed in area.	
Diggings	-23.8132684, 151.1545451	Active breeding: No	Small diggings, many in area. Likely echidna or bandicoot.	
Diggings	-23.8135259, 151.1545707	Active breeding: No	Small diggings, many in area, likely echidna or bandicoot.	

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Name	Location	Status	Observations	Photos
Diggings	-23.813824, 151.1545823	Active breeding: No	Small diggings, many in area, likely echidna or bandicoot.	
Diggings	-23.8165451, 151.1538913	Active breeding: No	Small diggings, many in area, likely echidna or bandicoot.	

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Name	Location	Status	Observations	Photos
Diggings	-23.8131365, 151.1539982	Active breeding: No		
Diggings	-23.8168984, 151.1514492	Active breeding: No		
Exfoliating bark	-23.8156503, 151.154367	Active breeding: No	In large *B. dallachiana.*	

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Name	Location	Status	Observations	Photos
Flowering trees	-23.8130618, 151.1545206	EPBC Status: Not Listed NCA Status: least concern	Mount Morgan wattle *(Acacia podalyrifolia)* In flower	
Flowering trees	-23.8155921, 151.1518058	EPBC Status: Not Listed NCA Status: least concern	Paperbark *(Melaleuca nervosa)* In flower	
Koala/ glider tree	-23.8140358, 151.153427	Active breeding: No	*E. crebra.* DBH: 45 cm Height: 13.9m	

Name	Location	Status	Observations	Photos
Koala/ glider tree	-23.8138415, 151.1534882	Active breeding: No	*E. crebra.* DBH: 49 cm Height: 13.6 m	
Koala/ glider tree	-23.8140189, 151.1531036	Active breeding: No	*E. crebra* DBH: 42 cm Height: 14.8 m	

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Name	Location	Status	Observations	Photos
Koala/ glider tree	-23.8155886, 151.1519067	Active breeding: No	*B. dallachiana.* DBH 48 cm Height: 18 m	
Koala/ glider tree	-23.8151425, 151.1508221	Active breeding: No	*E. tereticornis* DBH: 47 cm Height: 26 m	

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Name	Location	Status	Observations	Photos
Koala/ glider tree	-23.8169027, 151.1514517	Active breeding: No	*B. dallachiana* DBH: 49 cm Height: 19 m	
Koala/ glider tree	-23.8183025, 151.151824	Active breeding: No	*E. tereticornis* DBH: 49 cm Height: 15 m	

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Name	Location	Status	Observations	Photos
Koala/ glider tree	-23.8144338, 151.1534043	Active breeding: No	*E. Crebra* DBH: 44 cm Height: 17.9 m	
Koala/ glider tree	-23.8138823, 151.1533983	Active breeding: No	*E. crebra.* DBH: 53 cm Height: 13.8 m	

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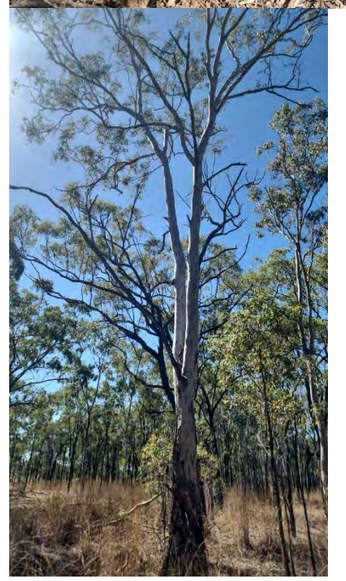
Name	Location	Status	Observations	Photos
Koala/ glider tree	-23.8133502, 151.1533129	Active breeding: No	Two 2. *E. Crebra* DBH: 67 cm / 60 cm Height: 17.3 m / 20.6 m	

Name	Location	Status	Observations	Photos
Koala/ glider tree Diggings	-23.8139998, 151.1531152	Active breeding: No	*B. dallachiana* with small diggings at base likely from an echidna. DBH: 58 cm Height: 16 m	 

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Name	Location	Status	Observations	Photos
Koala/ glider tree Scratches	-23.8149872, 151.1519626	Active breeding:	*B. dallachiana* with scratches. DBH: 64 cm Height: 19 m	

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Name	Location	Status	Observations	Photos
Koala/ glider tree Scratches	-23.815436, 151.1518831	Active breeding: No	Three *B. dallachiana* with scratches beside dam. DBH: 61 cm/ 50 cm/ 45 cm Height: 15.7 m/ 20.5 m/ 22.8 m	

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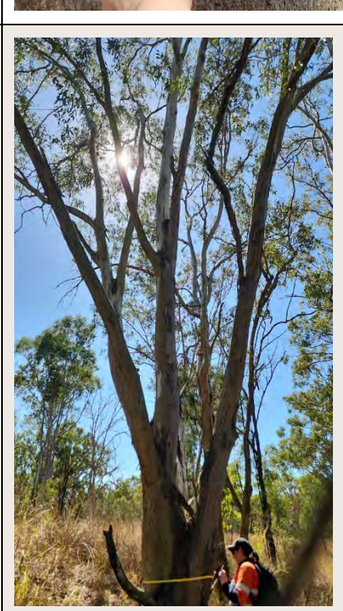
Name	Location	Status	Observations	Photos
Koala/ glider tree	-23.8155336, 151.152154	Active breeding: No	*B. dallachiana.* DBH 65 cm Height: 18 m	

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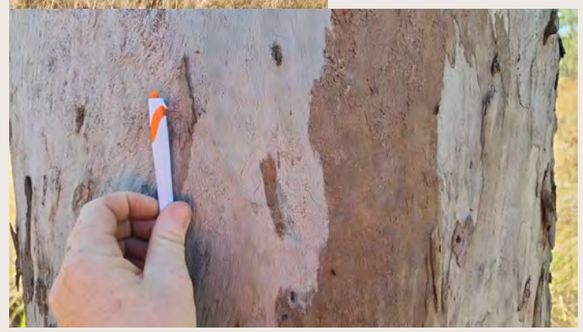
Name	Location	Status	Observations	Photos
Koala/ glider tree Scratches	-23.8155907, 151.1517006	Active breeding: No	*B. dallachiana* with scratches. DBH 62 cm Height: 22 m	

Name	Location	Status	Observations	Photos
Koala/ glider tree	-23.8156439, 151.151671	Active breeding:	*E. tereticornis* with scratches. DBH: 69 cm Height: 22 m	 

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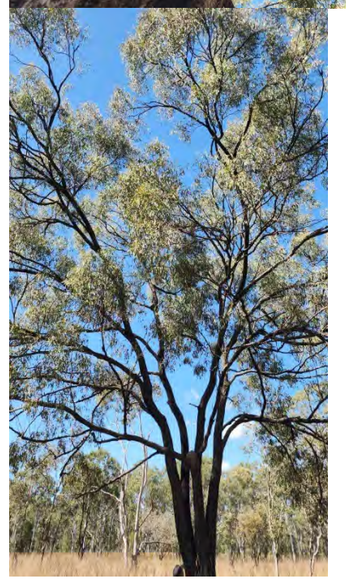
Name	Location	Status	Observations	Photos
Koala/ glider tree Arboreal termite mound	-23.815591, 151.1512796	Active breeding: No	*E. crebra* with arboreal termite mound. DBH: 57 cm Height: 18 m	 

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Name	Location	Status	Observations	Photos
Koala/ glider tree	-23.8156301, 151.1507933	Active breeding: No	*E. tereticornis* DBH: 55 cm Height: 26 m	
Koala/ glider tree	-23.8161177, 151.150877	Active breeding: No	*B. dallachiana.* DBH: 100 cm Height: 26 m	

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Name	Location	Status	Observations	Photos
Koala/ glider tree	-23.816379, 151.1512146	Active breeding: No	*B. dallachiana* DBH: 50 cm Height: 24 m	
Koala/ glider tree	-23.8165755, 151.1514987	Active breeding: No	*B. dallachiana* DBH: 61 cm Height: 25 m	

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Name	Location	Status	Observations	Photos
Koala/ glider tree	-23.8151781, 151.1500745	Active breeding:	*E. tereticornis* DBH: 70 cm Height: 22 m	
Koala/ glider tree	-23.8180829, 151.1517363	Active breeding: No	*E. tereticornis* DBH: 64 cm Height: 20 m	

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Name	Location	Status	Observations	Photos
Man-made structure	-23.8144762, 151.1530547	Active breeding: No	Discarded pipe, clear at entry indicating recent use.	
Scat	-23.8149516, 151.154414	Fresh	Dog – (*Canis familiaris)*	
Scat	-23.8149408, 151.154401	Old	Macropod	
Scat	-23.815065, 151.1537322	Old, many fresh also observed	Eastern grey kangaroo	

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Name	Location	Status	Observations	Photos
Scat	-23.8135489, 151.1532262	Fresh	Unknown species	
Scat	-23.8132368, 151.1533387	Old	Possum. Old dry no scent. Tapered end	
Scat	-23.8131784, 151.152894	Old	Possum	

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Name	Location	Status	Observations	Photos
Scat	-23.814215, 151.153147		– *Potentially Deer.*	
Scat Prints	-23.8151034, 151.1519368		– (*Pig) found all across site.*	
Scratches	-23.814257, 151.1545038	Active breeding: No	Small scratch marks on *Blakella dallachiana*.	

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Name	Location	Status	Observations	Photos
Scratches	-23.8145629, 151.1521249	Active breeding: No	On *B. dallachiana*.	
Scratches	-23.8178319, 151.15144	Active breeding: No	In *B. dallachiana.*	

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Name	Location	Status	Observations	Photos
Stag	-23.8133763, 151.1545721	Active breeding: No	Dead *E. crebra*	
Stag	-23.8135205, 151.1545746	Active breeding:		

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Name	Location	Status	Observations	Photos
Stag Exfoliating bark	-23.8146815, 151.154307	Active breeding: No	Large stag with active bees and exfoliating bark also observed.	
Stag	-23.8147254, 151.1543447	Active breeding: No		

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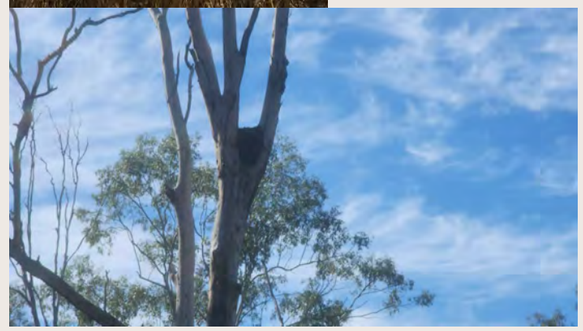
Name	Location	Status	Observations	Photos
Stag Arboreal termite mound	-23.8153897, 151.1542612	Active breeding: No	Arboreal termite mound with large opening also observed.	 

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Name	Location	Status	Observations	Photos
Stag	-23.8165034, 151.1536391	Active breeding: No		
Stag	-23.8140281, 151.1531068	Active breeding: No		

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Name	Location	Status	Observations	Photos
Stag	-23.8149829, 151.1519666	Active breeding: No		
Stag	-23.8151988, 151.1517507	Active breeding: No		

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Name	Location	Status	Observations	Photos
Stag Arboreal termite mound	-23.8160996, 151.1508899	Active breeding:	Two stags with arboreal termite mounds observed.	
Stag	-23.8184101, 151.1514898	Active breeding: No		

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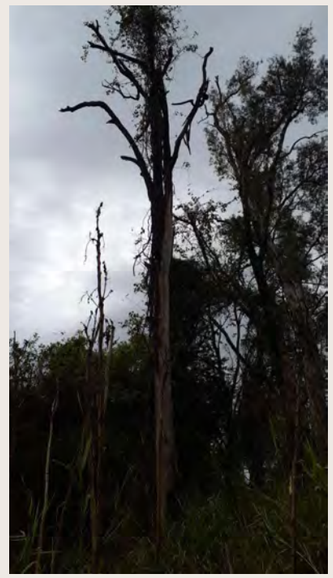
Name	Location	Status	Observations	Photos
Stag	-23.8178495, 151.1524596	Active breeding: No		
Stag	-23.8178522, 151.1524682	Active breeding: No		

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Name	Location	Status	Observations	Photos
Standing water	-23.8165575, 151.1539413	Active breeding: No		
Standing water	-23.8156249, 151.151694	Active breeding: No	Large patch of standing water, appears to be leakage/ overflow from dam wall.	
Standing water	-23.8179229, 151.152327	Active breeding: No		
Standing water	-23.817059, 151.1526058	Active breeding: No		

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Name	Location	Status	Observations	Photos
Standing water	-23.8174769, 151.1517372	Active breeding: No		
Standing water	-23.817949, 151.1513922	Active breeding: No	Very clean water.	

APPENDIX G:

Verified Likelihood of Occurrence Assessment

Likelihood of Occurrence Assessment								CQG's Verification
Threatened Ecological Community		EPBC Status		Habitat Description	PMST Search Likelihood of Occurrence	Associated REs mapped	Habitat Survey Results	Likelihood of Occurrence within Project Area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community		Endangered		It is characterised by the dominance of Casuarina glauca in the canopy, with an understory of rushes, sedges, forbs and grasses. Coastal Swamp Oak Forest is typically found on loose or alluvial soil on coastal flats, floodplains, drainage lines, lake margins, wetlands and estuarine fringes where soils are at least occasionally saturated, water-logged or inundated. Sometimes the ecological community can integrate with mangroves or saltmarsh communities (on the seaward site), or with Melaleuca species and eucalypts (more landward). Remnant patches retain mature trees and/or with diverse and good native understory, particularly those that are more closely connected with another area of native vegetation have very high conservation value. Associated with RE 12.1.1 and 12.3.20.	May occur.	No associated REs mapped	No vegetation showing TEC characteristics observed on Site.	A
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland		Endangered		The Coastal Swamp Sclerophyll Forest community includes the plants, animals and other organisms typically associated with forested palustrine wetlands, or swamp forests, found in the temperate to subtropical coastal valleys of Australia's east coast. This community often has a layered canopy, dominated by Melaleucas and/or Eucalyptus robusta. In some areas the canopy may be dominated by other Melaleuca species including M. dealbata (SEQ bioregion) (rarely). This community occurs between the Great Dividing Range and the coastline from near Gladstone in QLD, through to the south coast of NSW where it is found on the mainland and islands near to the coast (within 20 km). It typically occurs in low-lying coastal alluvial areas with minimal relief, such as swamps, floodplain pockets, depressions, alluvial flats, back- barrier flats, fans, terraces, and behind fore-dunes. Its structure varies from open woodland to closed forest with a crown cover of at least 10% and typically no more than 70%. Associated with RE 12.2.7, 12.3.4/12.3.4a, 12.3.5, 12.3.6, 12.3.20	May occur.	No associated REs mapped	No vegetation showing TEC characteristics observed on Site.	A
Lowland Rainforest of Subtropical Australia		Critically Endangered		This ecological community primarily occurs from Maryborough in Queensland to the Clarence River (near Grafton) in New South Wales (NSW). The ecological community also includes isolated areas between the Clarence River and Hunter River such as the Bellinger and Hastings valleys. The ecological community occurs in South Eastern Queensland Bioregion and NSW North Coast Bioregion. The ecological community occurs on basalt and alluvial soils, including sand and old or elevated alluvial soils as well as floodplain alluvia. It also occurs occasionally on enriched rhyolitic soils and basaltically enriched metasediments. Lowland Rainforest mostly occurs in areas <300 m above sea level. Aspect can result in the ecological community being found at >300 m altitude on north-facing slopes, but typically 300 m defines the extent of the lowlands. In addition, Lowland Rainforest typically occurs in areas with high annual rainfall (>1300 mm). Queensland State equivalents are 12.3.1; 12.5.13; 12.8.3; 12.8.4; 12.8.13; 12.11.1; 12.11.10; 12.12.1 and 12.12.16.	May occur.	No associated REs mapped	No vegetation showing TEC characteristics observed on Site.	A
Poplar Box Grassy Woodland on Alluvial Plains		Endangered		The Poplar Box Grassy Woodland on Alluvial Plains ecological community is typically a grassy woodland with a canopy dominated by Eucalyptus populnea and understory mostly of grasses and other herbs. The ecological community mostly occurs in gently undulating to flat landscapes and occasionally on gentle slopes on a wide range of soil types of alluvial and depositional origin. This TEC is scattered across a broad distribution within an area that is roughly: south of Charters Towers (QLD); north of Leeton (NSW); west of Ipswich (QLD) and Armidale (NSW); and east of Longreach (QLD) and Hillston (NSW). This TEC occurs within the Brigalow Belt North, Brigalow Belt South, Southeast QLD, Cobar Peneplain, Darling Riverine Plains, NSW South Western Slopes and Riverina IBRA bioregions. In Queensland it is commonly associated with the following REs: 11.3.2; 11.3.17; 11.4.7; 11.4.12 & 12.3.10.	May occur.	No associated REs mapped	No vegetation showing TEC characteristics observed on Site.	A
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions		Endangered		The subtropical eucalypt floodplain forest and woodland TEC is a floodplain forest community dominated by eucalyptus and other myrtaceous tree species. This community occurs in the NSW North Coast and SE QLD IBRA bioregions and on Curtis Island in the Brigalow Belt north IBRA Bioregion. It encompasses an area from just north of Newcastle, NSW in the south, to just north of Gladstone in QLD. It occurs in catchments of the eastern watershed of the Great Dividing Range, typically in their lower reaches at elevations up to 250 ASL. It occurs on alluvial landforms including river floodplains, riparian zones (i.e. along riverbanks, lake foreshores and creek lines), the floors of tributary gullies, floodplain pockets, alluvial flats, fans, terraces, and localised colluvial fans. It occurs on alluvial soils of varying textures including silts, clay loams, sandy loams, gravel and cobbles. It occurs as a tall closed-forest, tall open forest, closed forest with a canopy that has at least 20% crown cover. The canopy is dominated by Angophora, Corymbia, Eucalyptus, Lophostemon and/or Syncarpia tree species, but NOT dominated by Eucalyptus robusta. The mid-layer may be present, sparse or absent. Associated with RE 12.3.2, 12.3.2a, 12.3.3, 12.3.3a, 12.3.3b, 12.3.3d, 12.3.4a, 12.3.7, 12.3.7c, 12.3.7d, 12.3.10, 12.3.11, 12.3.11a, 12.3.11b, 12.3.12, 12.3.14, 12.3.15, 12.3.19.	Likely to Occur.	12.3.3 & 12.3.7	REs 12.3.3 and 12.3.7 confirmed on Site. Patches do not meet key diagnostic criteria for TEC	A
Weeping Myall Woodlands		Endangered		The Weeping Myall Woodlands occur in a range from open woodlands to woodlands, generally 4-12 m high, in which Weeping Myall (Acacia pendula) trees are the sole or dominant overstorey species. Other vegetation may also occur in the ecological community, though not as dominant species. These include Western Rosewood (Alectryon oleifolius subsp. elongatus); Poplar Box (Eucalyptus populnea); or Black Box (Eucalyptus largiflorens). The understorey of Weeping Myall Woodlands often includes an open layer of shrubs above an open ground layer of grasses and herbs, though the ecological community can exist naturally either as a shrubby or a grassy woodland. Although the species Acacia pendula occurs widely in Queensland, the Weeping Myall Woodlands ecological community is restricted to small patches that occur within two REs in Queensland. These are 11.3.2 and 11.3.28.	May occur.	No associated REs mapped	No vegetation showing TEC characteristics observed on Site.	A
Subtropical and Temperate Coastal Saltmarsh		Vulnerable		The ecological community consists of organisms including and associated with saltmarsh in coastal regions of sub-tropical and temperate Australia. The community occurs within a relatively narrow margin of the Australian coastline, within the subtropical and temperate climatic zones in coastal areas under regular or intermittent tidal influence. The vegetation consists mainly of salt-tolerant vegetation (halophytes) including: grasses, herbs, sedges, rushes and shrubs. Succulent herbs, shrubs and grasses generally dominate and vegetation is generally of less than 0.5 m height. Associated with RE 12.1.2	Likely to Occur.	No associated REs mapped	No vegetation showing TEC characteristics observed on Site.	A
Common Name	**Scientific name**	**EPBC Status**	**NC Status**	**Habitat Description**	**PMST Search Likelihood of Occurrence**	**ALA Records**	**Habitat Survey Results**	**Verified Likelihood of Occurrence**
Birds								
Australian Painted Snipe	*Rostratula australis*	E, Ma	E	Inhabits well-vegetated shallows and margins of wetlands, dams, sewage ponds and other water courses; wet pastures, marshy areas, irrigation systems, lignum, tea-tree scrub and open timber (Geering et al., 2007; Pizzey and Knight 1999). Occurs mostly in south-eastern Australia but dispersive in response to rainfall. The species has a broad range of distribution throughout Australia but has a close association with brackish or freshwater terrestrial wetlands, especially temporary ones which have muddy margins (www.birdlife.org.au).	Likely to Occur.	No records within 5 km of Site.	Limited suitable habitat observed on Site	U
Black-breasted Button-quail	*Turnix melanogaster*	V	V	Inhabits leaf-litter in drier rainforests, vine thickets; scrubby woodlands of eucalypts, she-oaks, bottle-brushes, brush box, Brigalow and other Acacias; thickets of lantana on rainforest fringes, hoop pine plantations; grain stubbles (Pizzey and Knight 1999). Its distribution is patchy in southeast QLD to northern NSW (Pizzey and Knight 1999).	Likely to Occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Common Sandpiper	*Actitis hypoleucos*	Mi, Ma	-	Shallow, pebbly, muddy or sandy edges of rivers and streams, coastal to far inland; dams, lakes, sewage ponds; margins of tidal rivers; waterways in mangroves or saltmarsh; mudflats; rocky or sandy beaches; causeways, riverside lawns, drains and street gutters (Pizzey and Knight 1999).	Known to occur.	2 records within 5 km of site, most recently in 2006.	Limited suitable habitat observed on Site	U
Coxen's Fig-Parrot	*Cyclopsitta diophthalma coxeni*	E	E	The distribution of the Coxen's Fig-Parrot is poorly known. Based on accepted records, the core distribution extends from Gympie in south-eastern QLD to Richmond River in north-eastern NSW. They occupy habitats that occur from sea level to approximately 900m above sea level. They occur in rainforest habitats including subtropical rainforest, dry rainforest, littoral and developing littoral rainforests and vine forests (SPRAT 2010).	May occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Curlew Sandpiper	*Calidris ferruginea*	CE, Mi, Ma	CR	Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms (Pizzey and Knight 1999). They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They generally roost on bare dry shingle, shell or sand beaches, sandpits and islets in or around coastal or near-coastal lagoons and other wetlands (SPRAT 2015).	Known to occur.	2 records within 5 km of Site, most recently in 2006.	Limited suitable habitat observed on Site	U
Eastern Curlew	*Numenius madagascariensis*	CE, Mi, Ma	E	Inhabits estuaries, tidal mudflats, sandspits, saltmarshes, mangroves; occasionally fresh or brackish lakes; bare grasslands near water (Pizzey and Knight 1999). The Eastern Curlew breeds in northeast Asia and is a common summer migrant to Australian coastlines, although about 25% of the population remains all year round (Finn et al., 2001 and 2007; Geering et al., 2007).	Known to occur.	14 records within 5 km of Site, most recently in 2022.	Limited suitable habitat observed on Site	U
Fork-tailed Swift	*Apus pacificus*	Mi, Ma	-	Almost exclusively aerial species, flying from less than 1m to at least 300m above the ground. In Australia, they mostly occur over inland plains but sometimes above foothills or in coastal areas. They often occur over cliffs and beaches and also over islands and sometimes well out to sea. They also occur over settled areas, including towns, urban areas and cities. They mostly occur over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh (SPRAT 2010).	Likely to Occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Greater Sand Plover	*Charadrius leschenaultii*	V, Mi, Ma	V	In Australia, the Greater Sand Plover occurs in coastal areas in all states, through the greatest numbers occur in northern Australia, especially the north-west. This species breeds in central Asia. In the nonbreeding ground in Australasia, the species is almost entirely coastal, inhabiting littoral and estuarine habitats. They mainly occur on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks, as well as sandy estuarine lagoons, inshore reefs, rock platforms, small rocky islands or sandy cays on coral reefs. They are also occasionally recorded on near-coastal saltworks and salt lakes, including marginal saltmarsh, and on brackish swamps. They seldom occur at shallow freshwater wetlands (SPRAT, 2023).	Likely to Occur.	3 records within 5 km of Site, most recently in 2019.	No suitable habitat observed on Site.	U
Grey Falcon	*Falco hypoleucos*	V	V	They Grey Falcon's habitat includes lightly treed inland plains; gibber deserts, sandridges, pastoral lands, timbered watercourses; seldom in driest deserts. Resident or nomadic visitor to inland parts of all mainland states (Pizzey and Knight 1999).	Likely to Occur.	No records within 5 km of Site.	Limited suitable habitat observed on Site	U
Latham's Snipe	*Gallinago hardwickii*	V, Mi, Ma	V	Latham's Snipe is a non-breeding visitor to south-eastern Australia, and is a passage migrant through northern Australia. This species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern SA. It occurs in permanent and ephemeral wetlands up to 2000m ASL, where they usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies). They can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity (SPRAT, 2023).	Likely to Occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Oriental Cuckoo	*Cuculus optatus*	Mi	-	Within Australia, this species uses a range of vegetated habitats such as monsoon rainforests, wet sclerophyll forest, open woodlands and appears quite often along edges of forests, or ecotones between forest types (DoE, 2015; Menkhorst et al,. 2017). This cuckoo species feeds arboreal, foraging for invertebrates on loose bark on the trunks and branches of trees, and among the foliage, including in mistletoes. It will forage from the ground, but requires shrubs or trees from which it sallies and returns to consume prey items. (DoE, 2015).	May occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Osprey	*Pandion haliaetus*	Mi, Ma	-	The Osprey is thinly distributed around the coast of Australia where they forage for fish in fresh, brackish, or saline waters of rivers, lakes, estuaries and inshore coastal waters (Schodde and Tidemann, 1993; NPWS, 2000). Nests are usually located near a suitable area of foraging habitat and are a bulky structure made from piled sticks, often positioned in a tall dead tree or artificial structures such as telecommunication towers or poles (Schodde and Tidemann, 1993; NPWS, 2000). Breeding pairs defend breeding territory against other Ospreys, and active nests are usually more than 1 km apart (NPWS, 2005).	Known to Occur.	Records within 1 km of Site	Potential habitat present on the bank of Boat Creek and unnamed waterway observed on Site.	K
Red Goshawk	*Erythrotriorchis radiatus*	V	E	Inhabits open forests, woodlands especially near rivers, wetlands and rainforest fringes in coastal and subcostal north and northeast Australia from the Kimberley (WA) to the QLD/NSW border (Pizzey and Knight 1999).	Likely to Occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Sharp-tailed Sandpiper	*Calidris acuminata*	Mi, Ma	SLC	The sharp-tailed sandpiper breeds in northern Siberia but migrates south to winter in Australia and New Zealand. In the non-breeding season they can be found in tidal mudflats, saltmarshes, mangroves; shallow fresh, brackish or saline inland wetlands; floodwaters, irrigated pastures and crops; sewage ponds and saltfields (Pizzey and Knight 1999).	Known to Occur.	4 records within 5 km of Site, most recently in 2024.	No suitable habitat observed on Site.	U
Squatter Pigeon (southern)	*Geophaps scripta scripta*	V	V	The known distribution of the Squatter Pigeon extends south from the Burdekin-Lynd divide in the southern region of Cape York Peninsula to the border Rivers region of northern NSW, and from the east coast to Hughenden, Longreach and Charleville. Their habitat is generally defined as open-forests to sparse, open woodlands and scrub that are mostly dominated by Eucalypts, Corymbia, Acacia or Callitris species. The habitat is generally remnant, regrowth or partly modified vegetation communities and within 3 km of water bodies or courses. Foraging occurs on well-drained, gravelly or loamy soils which support the open-forest to woodland communities with patchy, tussock-grassy understories (SPRAT, 2015).	Known to Occur.	6 records within 5 km of Site, most recently in 2025.	Suitable habitat present across the Site.	L
Star Finch (eastern) (southern)	*Neochmia ruficauda ruficauda*	E	E	Distribution is poorly known but it only occurs in central Queensland. It resides mainly in grasslands and grassy woodlands that are located close to body of fresh water. It also occurs in cleared or suburban areas such as along rode sides in towns (SPRAT 2017).	Likely to Occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
White-throated Needletail	*Hirundapus caudacutus*	V, Mi, Ma	V	Almost exclusively aerial from heights of less than 1m up to more than 1000m above the ground. Most often recorded above wooded areas, including open forest and rainforest and also are commonly recorded over heathland and coastal cliffs (SPRAT, 2010).	May occur.	1 record within 5 km of Site, in 1999.	Exclusively aeiral species	U
Capricorn Yellow Chat	*Epthianura crocea macgregori*	CE	E	The Capricorn yellow chat is known to occur at three localities - Curtis Island, Torilla Plain and the Fitzroy Delta and is most abundant at Torilla Plain based on current knowledge, habitat critical to the survival of the Capricorn yellow chat is wetlands and associated grasslands on seasonally inundated marine plains. These wetlands have shallow braided channels and depressions with a mosaic of dense sedge-beds, grasslands, tall samphire and areas of mud and/or shallow water. (DCCEEW 2021)	May occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Western Alaskan Bar-tailed Godwit	*Limosa lapponica baueri*	E	E	Bar-tailed godwits usually forage near the edge of water or in shallow water within tidal estuaries and harbours. Roosting tends to occur on large intertidal sandflats, spits, and banks. Less frequently, roosting occurs within mudflats, estuaries, coastal lagoons, and bays (SPRAT 2024).	Known to Occur.	4 records within 5 km of Site, most recently in 1999.	No suitable habitat observed on Site.	U
Common Greenshank	*Tringa nebularia*	E, Mi	E	The common greenshank forages at the edge of wetlands, in soft mud on mudflats, in channels, or within shallows around the edge of waterbodies. These locations are often situated near or among mangroves or other sparse, emergent or fringing vegetation such as sedges or saltmarsh. The bird occasionally feeds amongst seagrass beds (SPRAT 2025).	Likely to Occur.	4 records within 5 km of Site, most recently in 2020.	No suitable habitat observed on Site.	U
Asian Dowitcher	*Limnodromus semipalmatus*	V, Mi	V	The species feeds on inter-tidal mudflats. Asian dowicher are carnivorous and feed primarily on small fish, insect larvae, and oligochaetes when breeding, and on polychaetes, insect larvae, and molluscs when migrating or overwintering. During the non-breeding season, the bird roosts in sheltered coastal environments such as estuarine and intertidal mudflats, lagoons, creeks and saltworks (DCCEEW 2024) .	May occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Red Knot	*Calidris canutus*	V, Mi	V	Whilst in Australia, the species mainly inhabits intertidal mudflats, sandflats, and sandy beaches of sheltered coasts, estuaries, bays, inlets, lagoons, and harbours. They are occasionally seen on terrestrial saline wetlands near the coast and have been recorded on sewage ponds and saltworks (DCCEEW 2024).	Known to Occur.	1 record within 5 km of Site, in 1989.	No suitable habitat observed on Site.	U
Bar-tailed Godwit	*Limosa lapponica*	E, Mi	E	Found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh. It has been sighted in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats (SPRAT 2025).	Known to Occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Pectoral Sandpiper	*Calidris melanotos*	Mi	SLC	In the non-breeding seasons (passage and wintering) inhabits wide range of habitats including freshwater and brackish marshes, coastal and inland wetlands (including up to 4,500 m in the Andes), saltmarshes, flooded agricultural fields and grasslands, sewage works and coastal lagoons. Only very rarely uses mudflats (Farmer *et al*. 2020).	May occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Common Noddy	*Anous stolidus*	Mi	SLC	The species occurs around isolated, bare or vegetated, pantropical and subtropical, inshore or oceanic islands or coral reefs with rocky cliffs or offshore stacks and coral or sand beaches (del Hoyo et al. 1996, Higgins and Davies 1996).	Known to Occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Mammals								
Ghost Bat	*Macroderma gigas*	V	E	Ghost bats occur in a wide range of habitats from rainforest, monsoon and vine scrub, to open woodlands in arid areas. These habitats are used for foraging, while root habitat is more specific. Favoured roosting sites of the ghost bat are undisturbed caves or mineshafts which have several openings. Ghost bats occur in tropical regions in Queensland, and along the ventral and northern coast, from Rockhampton north to Cape York (DEHP 2017).	Likely to Occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Greater Glider (southern and central)	*Petauroides volans*	E	E	The southern and central Greater Glider occurs in eastern Australia, where it has a broad distribution from around Proserpine in QLD, south through NSW and the ACT, to Wombat State Forest in central VIC. This species is largely restricted to eucalypt forests and woodlands of eastern Australia. It is typically found in highest abundance in taller, montane, moist eucalypt forests on fertile soils, with relatively old trees and abundance hollows. It is likely that only a proportion of forest in potential habitat areas is suitable for the species, as the structural attributes of the forest overstorey and forage quality it relies on vary considerably across the landscape (TSSC Conservation Advice, 2022).	Likely to Occur.	No reliable records within of 50 km Site.	Suitable foraging and denning trees observed across the Site.	P
Grey-headed Flying-fox	*Pteropus poliocephalus*	V	-	The Grey-headed Flying-fox occurs in a range of habitats including subtropical and temperate rainforests, dry and wet sclerophyll forests, Banksia woodland, heaths and Melaleuca swamps (Duncan et al, 1999; NPWS, 2001).	May occur.	1 record within 5 km of Site in 1989.	No suitable habitat observed on Site.	P
Koala	*Phascolarctos cinereus*	E	E	The Koala is endemic to Australia. The biological species range extends from north-eastern QLD to the south-east corner of SA. Koalas naturally inhabit a range of temperate, subtropical and tropical forests, woodland and semi-arid community's dominated by Eucalyptus species. Their habitat can broadly be defined as any forest or woodland containing species that are a known Koala food tree, or shrubland with emergent food trees (SPRAT 2017).	Likely to Occur.	No records within 5 km of Site.	Suitable foraging trees observed across Site, with opportunity for easy passage in the northern portion of the Site.	L
Northern Quoll	*Dasyurus hallucatus*	E	-	The northern quoll occurs across much of northern Australia, from south-eastern Queensland to the south-west Kimberley, with a disjunct population in the Pilbara. In the Northern Territory it is restricted to the Top End. The species occupies a diversity of habitats across its range which includes rocky areas, eucalypt forest and woodlands, rainforest, sandy lowlands and beaches, shrubland, grasslands and desert. The habitat generally encompasses some form of rocky area for denning purposes with surrounding vegetated habitats used for foraging and dispersal (SPRAT 2012).	Likely to Occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Yellow-bellied Glider (south-eastern)	*Petaurus australis australis*	V	V	The Yellow-bellied Glider is found in tall mature Eucalypt Forest and they feed on a range of sources including winter-flowering Eucalypts which provide nectar and pollen. They also feed upon the sap of Eucalypts in which they chew V-shaped incisions to collect the sap. Yellow-bellied Gliders den in large tree hollows (NPWS, 2000).	May occur.	5 records within 5 km of Site, most recently in 1999.	Suitable foraging and denning trees observed however no evidence of foraging (feeding incisions and vegetation struture not suitable)	U
Water Mouse	*Xeromys myoides*	V	V	In central eastern Queensland, the diet is similar and is known to include grapsid crabs (e.g. Neopiesarma mederi) (Ball 2004). The habitat of the Water Mouse is aquatic environments, including coastal saltmarsh, samphire shrublands, saline reed-beds and saline grasslands, mangroves, and coastal freshwater wetlands, and wet heathlands (DAWE 2021).	Known to Occur.	1 record within 5 km of Site in 2011.	No suitable habitat observed on Site.	U
Reptiles								
Collared Delma	*Delma torquata*	V	V	Under rocks and in soil cracks on heavy, stony and lightly timbered soils near Kenmore, Brookfield and Mt Crosby. Endemic to South-east Queensland. Also found in numerous disturbed habitats throughout Southeast Queensland (Cogger 2000).	May occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Dunmall's Snake	*Furina dunmalli*	V	V	The distribution of the Dunmall's Snake extends from near the QLD border through the Brigalow Belt South and Nandewar bioregions, as far south as Ashford in NSW. In QLD this species occurs primarily in the Brigalow Belt region in the south-eastern interior of QLD. Records indicate sites at elevations between 200-500 m above sea level. The snake is very rare of secretive with limited records existing. It has been recorded at Archokoora, Oakey, Miles, Glenmorgan, Wallaville, Gladstone, Lake Broadwater, Mount Archer, Exhibition Range National Park, roadside reserves between Inglewood and Texas, Rosedale, Yeppoon and Lake Broadwater Conservation Park. It has been found in a broad range of habitats including forests and woodlands on black alluvial cracking clay and clay loams dominated by Brigalow; and other various Blue Spotted Gum, Ironbark, White Cypress and Bulloak open forests and woodland associations on sandstone derived soils (SPRAT).	May occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Grey Snake	*Hemiaspis damelii*	E	-	Queensland, records are known from near Goondiwindi and the adjacent Darling-Riverine Plain, from the Darling Downs and from the Lockyer Valley. Several isolated records also occur in the Rockhampton area. It favours woodlands, usually on heavier, cracking clay soils, particularly in association with water bodies. They shelter under rocks, logs and other debris as well as in soil cracks (SPRAT 2011).	May occur.	No records within 5 km of Site.	Potential habitat present on the bank of Boat Creek and unnamed waterway observed on Site.	P
Yakka Skink	*Egernia rugosa*	V	V	Endemic to Queensland where its distribution is highly fragmented. Often associated with partly-buried rocks, logs or tree stumps, root cavities and abandoned animal burrows. It is also known to excavate deep burrow systems. The Yakka Skink can persist in cleared habitats if shelter sites such as raked log piles, deep gullies, tunnel erosion/sinkholes and rabbit warrens are available (DEHP 2017).	May occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Salt-water Crocodile, Estuarine Crocodile	*Crocodylus porosus*	Mi	V	The species mostly occurs in tidal rivers, coastal floodplains and channels, billabongs and swamps up to 150 km inland from the coast. The Salt-water Crocodile usually inhabits the lower (estuarine) reaches of rivers, while the upper reaches are inhabited by *Crocodylus johnstoni* (Fresh-water Crocodile); although, areas of overlap occur in some rivers. In Queensland, the species is usually restricted to coastal waterways and floodplain wetlands. Populations may also be found hundreds of kilometres upstream, such as in the Fitzroy River and the waterways of the southern Gulf of Carpentaria (SPRAT 2025)	Likely to Occur.	No records within 5 km of Site.	No suitable habitat observed on Site.	U
Plants								
Black Ironbox	*Eucalyptus raveretiana*	V	-	Eucalyptus raveretiana has a wide distribution in coastal and sub-coastal areas of QLD, from south of Townsville to Nebo, around Rockhampton and areas 100 km west of the city. It has been recorded from about 23 sites throughout its range, in two main areas. This species usually grows along water courses, and sometimes on river flats or open woodland. It is found in altitudinal ranges from 0-300 m and the climate of the area is sub-tropical. The species is said to be highly salt tolerant (SPRAT, 2020).	Likely to Occur.	No records within 5 km of Site.	Not observed on Site.	U
Bluegrass	*Dichanthium setosum*	V	-	Dichanthium setosum has been reported from inland NSW to QLD. There are also reports from WA and TAS. The species is associated with heavy basaltic black soils and red-brown loams with clay subsoils (predominantly cracking clays or alluvium, often in gilgai). It is often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. The species may tolerate or benefit from disturbance, otherwise, disturbance is indicative of threatening processes in its habitat (SPRAT 2013).	Likely to Occur.	No records within 5 km of Site.	Not observed on Site.	U
Cossinia	*Cossinia australiana*	E	E	Cossinia australiana is known from fragmented remnant patches of Araucarian vineforests or fine thickets on fertile soils in central and southern QLD. This species' distribution is from Rockhampton to Kingaroy, east of the Dividing Range, a distance of approximately 300km. At most sites it is recorded as uncommon, usually as scattered individuals. This species occurs from 20-520 m in altitude and appears to prefer ecotonal situations around dry rainforest edges, although it also occurs as scattered individual plants within closed forest communities (DES - Species Search).	May occur.	No records within 5 km of Site.	Not observed on Site.	U
Quassia	*Samadera bidwillii*	V	V	Quassia is endemic to QLD and is currently known to occur in several localities including: Scawfell Island, Mackay, Goomboorian and north of Gympie. This species mainly occurs in lowland rainforest margins, but it can also be found in other forest types, such as open forest and woodland. Quassia is commonly found in areas adjacent to both temporary and permanent watercourses (SPRAT 2019).	May occur.	No records within 5 km of Site.	Not observed on Site.	U
Three-leaved Bosistoa	*Bosistoa transversa*	V	-	Three-leaved Bosistoa is found from the Nightcap Range north of Lismore in north-east NSW to Mount Larcom (near Gladstone) in south-east QLD. The species is described in herbarium collection records as locally abundant at Natural Bridge-Springbrook NP and Coalstoun Lakes NP in QLD. This species typically grows in lowland subtropical rainforest. Has been found in closed forests on steep slopes, rainforests along creek lines, on reddish loam over basalt rock on very steep slopes and in notophyll vine forests (SPRAT 2019).	May occur.	1 record within 5 km of Site in 1988.	Not observed on Site.	U
Wedge-leaf Tuckeroo	*Cupaniopsis shirleyana*	V	V	Cupaniopsis shirleyana is restricted to south-east Queensland, from Brisbane, north to Bundaberg. This species occurs at 20-550m in elevation and has been recorded in a variety of rainforest types including vine thicket and dry rainforest. It occurs on hillsides, mountain tops, lower slopes of valleys, stream beds and along riverbanks. It grows in a variety of soil types (DES - Species Search).	Likely to Occur.	No records within 5 km of Site.	Not observed on Site.	U
	Cycas megacarpa	E	E	Cycas megacarpa is endemic to south-east Queensland where it is found as far south as Woolooga to Bouldercombe in the north. Many surviving populations are small and greatly fragmented, with only a handful of adult plants. This species is typically found in woodland, open woodland and open forests, often in conjunction with a grassy understory. Cycas megacarpa is found in habitats dominated by Eucalyptus crebra and Corymbia citriodora as well as Corymbia erythrophloia, Eucalyptus melanophloia and Lophostemon confertus. There are also reports that it can be found on the edge of rainforest habitat (SPRAT, 2022).	May occur.	No records within 5 km of Site.	Not observed on Site.	U
	Cycas ophiolitica	E	E	Cycas ophiolitica is endemic to Queensland, occurring from Marlborough to Rockhampton in central-eastern Queensland. It occurs in woodland or open eucalypt woodland (SPRAT, 2019).	May occur.	No records within 5 km of Site.	Not observed on Site.	U
Macadamia Nut	*Macadamia integrifolia*	V	V	Macadamia Nut occurs from Mt Bauple, near Gympie, to Currumbin Valley in the Gold Coast hinterland, south-east Queensland. . It occurs as a scattered rare to occasional tree, and population sizes are difficult to estimate (Barry & Thomas, 1994). This species grows in remnant rainforest, including complex mixed notophyll forest, and prefers partially open areas such as rainforest edges (Ryan, 2006).	May occur.	No records within 5 km of Site.	Not observed on Site.	U

Likelihood of Occurrence Ratings and Definitions

Likelihood of Occurrence Rating	Definition (from the Defence Environment Risk Tool)	Code
Known	Listed fauna - Habitat is present in the impact area and the species has been recorded in the impact area, or in connected habitat adjacent to the impact area, in the last 10 years	K
	Threatened flora - Habitat is present in the impact area and the species has been recorded in the impact area during the last 10 years.	
	TEC - Presence of TEC has been confirmed through ground-truthing during surveys undertaken in the last 2 years.	
Likely	Listed fauna - Habitat is present in the impact area and the species has been recorded in the impact area, or in connected habitat adjacent to the impact area, in the last 11 to 30 years; OR	L
	Habitat is present in the impact area and the species has been recorded within its dispersal range/limit from the impact area in the last 11 to 30 years, and there are no significant barriers to movement between the records and the impact area.	
	Threatened flora - Habitat is present in the impact area, and the species has been recorded in the impact area in the last 11 to 30 years; OR	
	Habitat is present in the impact area and adequate surveys to determine presence/ absence have not been undertaken, but the vegetation community composition indicates the species is probably present.	
	TEC - The TEC has been identified as potentially present within the Impact Area from desktop search results but has yet to be groundtruthed to confirm presence.	
Potential	Listed fauna - Habitat is present in the impact area and the species has been recorded in the impact area, or in connected habitat adjacent to the impact area, more than 31 years ago; OR	P
	Habitat is in the impact area, the impact area is within the species modelled distribution range, and the species may use the habitat at least occasionally or opportunistically; OR	
	Habitat is in the impact area and it could be used in the future as climate refugia.	
	Threatened flora - Habitat is present in the impact area and the species has been recorded in the impact area more than 31 years ago; OR	
	Habitat is present in the impact area, the impact area is within the species modelled distribution, and adequate surveys have not been undertaken to prove the species is absent.	
	TEC – The TEC has been identified as potentially present within vegetation immediately adjacent to the Impact Area from desktop search results but has yet to be groundtruthed to confirm presence.	
Unlikely	Listed fauna - Habitat is not present within the impact area or adjacent to the impact area and the impact area is within the species distribution; OR	U
	Habitat is present in the impact area and the species has been recorded within its dispersal range/limit from the impact area over 30 years ago, and there are no significant barriers to movement between the records and the impact area.	
	Threatened flora - Habitat is not present within or adjacent to the impact area and robust targeted surveys have not been undertaken to prove if the species is absent.	
	TEC – Desktop searches do not indicate the likely presence of this TEC	
Confirmed absent	Listed fauna - This likelihood category is not applicable to fauna as it is very difficult to prove absence of a species identified in the PMST report as having the potential to occur.	A
	Threatened flora - Habitat is not within or adjacent to the impact area and robust targeted surveys have proven the species to be absent.	
	TEC - Recent ground-truthing of vegetation has determined that that the TEC is not present.	

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Technical Memorandum

Revision	Date	Prepared by	Reviewed by	Client Reviewer
Rev 0	16/10/2025	Sarah Grady, Rebbekah Hearn	Patrice Brown	N/A
Rev 1	11/11/2025	Nikki Cannon	Rebbekah Hearn	
To:		Scott Barnes, Grenof Water Technologies Pty Ltd		
From:		Sarah Grady, CQG Consulting		
CQG Project No.:		25054		
Client Reference:		Project Hydrogen		
CQG Project Manager:		Scott Lucke		
Name of Document:		Targeted Fauna Assessment Technical Memorandum		

1 Introduction

1.1 Project Background

Grenof Water Technologies Pty Ltd (Grenof) is proposing to develop a chlor-alkali facility (Project Halogen or the Project) in the Gladstone State Development Area (GSDA) to mitigate sovereign risk associated with essential chemicals including chlorine (single domestic producer with aging infrastructure) and caustic soda (reliance on foreign supply), which are vital for Australia's industrial, economic and public health sectors. These products are currently imported into Gladstone for industrial use.

Economic Development Queensland (EDQ) has been assisting Grenof with identifying an appropriate location to develop the facility, with Lot 1 on SP200899 and Lot 1 on MPH32292 as the preferred site due to the existing access to suitable transport routes to Gladstone industries and the Port.

Previous investigations identified the need to conduct targeted fauna surveys to confirm the presence of threatened species and their habitat. This report provides the results of targeted fauna surveys undertaken to identify key fauna values present on the property.

1.2 Site Description

The 'Project Area' (i.e., the wider area of land in which the Project is located and which has been investigated for the purposes of this report) is comprised of two neighbouring lots (Lot 1 on MPH32292 and Lot 1 on SP200899) located on Landing Road and Fishermans Road in Yarwun, within the Gladstone State Development Area (GSDA). The Project Area consists of approx. 21 hectares (ha) and is situated approx. 10 kilometres (km) north-west of Gladstone in Central Queensland (refer to Attachment A, Figure A.1).

The 'Impact Area' (i.e., the footprint of the proposed Stage 1 development) covers 7.65 ha in the northern portion of the Project Area (refer to Attachment A, Figure A.1).

CQG understands that clearing for the Project will be restricted to the Impact Area for Stage 1 which is subject to a Material Change of Use (MCU) application under the GSDA Planning Scheme.

1.3 Objectives

CQG Consulting (CQG) was engaged by Grenof to conduct targeted fauna surveys for matters of national environmental significance (MNES) listed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwth) (EPBC Act) and matters of state environmental significance (MSES) listed under Queensland legislation. Targeted species have been identified as known, likely or as having the potential to occur within the Project Area.

The objective of the assessment is to determine if these species or their habitat are present within the Project Area.

2 Previous Studies

The following previous relevant investigations have been undertaken for the Project, which have informed this assessment including:

- Rapid ecology survey on 2 July 2025 to verify vegetation mapping, weeds species and habitat at a high level prior to a planned burn off of the Project Area (email summary provided to Grenof and EDQ on 18 July 2025);
- A preliminary likelihood of occurrence assessment was undertaken to assess the likely presence of MNES listed under the EPBC Act identified in desktop searches; and
- Habitat Assessment to characterise the ecological values of the Project Area, potential impacts on threatened species, ecological communities and regulated vegetation and to identify mitigation measures and assess the likelihood of significant residual impacts. A *Preliminary Significant Impact Assessment* (CQG 2025) was developed based on this information.

This technical memorandum is considered an addendum to these previous reports and is not to replicate the information contained in them. This technical memorandum should be read in conjunction with those reports and will refer to their content where relevant.

3 Survey Methodology

Targeted fauna surveys were undertaken across the Project Area in accordance with the *Terrestrial Vertebrate Fauna Survey Guidelines for Queensland V 4.0)* (Eyre et al 2022) between 29 September 2025 and 3 October 2025. This included diurnal bird searches, nocturnal fauna surveys including call play back and spotlighting and deployment of unmanned cameras traps. Koala spot assessment technique (SAT) surveys were undertaken in accordance with *The Spot Assessment Technique: a tool for determining localised levels of habitat use by Koalas Phascolarctos cinereus* (Phillips and Callaghan 2011).

Attachment A, Figure A.2 shows the location of the camera traps and SAT survey sites.

An overview of survey methodology is provided in Attachment B.

Information regarding the project team who undertook the survey is provided in Table 3.1.

Table 3.1: Project Team

Personnel, Qualifications & Role	Relevant Experience & Project Role
Rebbekah Hearn Principal Ecologist *B Sc (Biol), Cert III Cons. & Land Mgmt*	Principal ecologist with over 18 years' experience: • Coordinated and completed numerous ecological surveys; • Lead author for significant impact assessments; and • Compiled and reviewed (technical and QA) ecology survey reports for multiple proposed developments in Central and North Queensland. Role: Survey coordinator, survey methodology technical input and reporting.
Sarah Grady Principal Ecologist *B Env Sc (Biodiversity Cons.)*	Senior ecologist with over 20 years' experience: • Completed and coordinated numerous ecology field surveys across Queensland and New South Wales, including targeted fauna and flora surveys; and • Compiled technical reports and impact assessment for multiple projects. Role: Field team lead, data interpretation and reporting.
Michael Whitehead Ecologist *B Env Sc (Int. Land & Water Mgmt)*	• Conducted several ecological surveys, preclearance and fauna spotter catcher services and invasive species surveys; and • Development of ArcGIS Survey123 forms and field technology. Role: Field team member, data compilation.

3.1 Survey timing and weather

The Project Area is within the South East Queensland (SEQ) Bioregion. The *Terrestrial Vertebrate Fauna Survey Guidelines for Queensland V 4.0)* (Eyre et al 2022) identifies the optimal timing for fauna surveys within this bioregion as Spring (mid-September to mid-December) when temperatures begin to warm up. The targeted fauna surveys were undertaken within this optimal period.

Weather at the time of the surveys was warm and dry, with average daily temperatures between 23°C and 27°C, reflecting a steady warming trend through the week. No notable rainfall was recorded and conditions were generally fine and sunny, consistent with the Gladstone region's typical early Spring climate.

Survey timing is also driven by breeding seasons and times of the year when target species are likely to be more active and detectable. Target species and their breeding seasons included:

- Koala (*Phascolarctos cinereus*) - breeding season between August and February;
- Squatter pigeon (*Geophaps scripta scripta*) – can breed year round, depending on abundance of resources; and
- Osprey (*Pandion haliatus*) – breed between April and September.

3.2 Survey Limitations

The fauna surveys were completed over a five-day period during optimal survey timeframes, providing a valuable but time-limited snapshot of species presence and activity. Seasonal timing may have reduced detectability for some non-target migratory and cryptic species. Warm, dry conditions during the survey period may also have limited some species activity.

Although multiple methods were implemented, some low-density or cryptic species may have remained undetected. Overall, the results are considered representative of the main habitat types but should be interpreted in the context of seasonal and methodological constraints.

Invasive grass height and cover over much of the Project Area was very high limiting survey capacity and coverage in some locations.

4 Field Survey Results

Targeted fauna surveys were undertaken across the Project Area between 29 September and 3 October 2025. Survey results are summarised in Table 4.1.

Table 4.1: Summary of results

Survey Method	Results Summary
Diurnal surveys	Conducted over five days at various times of day (refer to Attachment B). Thirty-six bird species were recorded during the surveys including an Osprey flying overhead. A list of species encountered is provided in Attachment C.
Nocturnal surveys	Completed over three nights using spotlighting, thermal camera searches and call playback (refer to Attachment B). Four mammal species were identified during the spotlighting and thermal searches with Bush stone curlews and Southern boobook owls heard calling.
Kolala SAT surveys	Three Koala SAT surveys were conducted across the Project Area (survey sites shown in Attachment A, Figure A.2). No Koala or identifiable scratches or scats were recorded during the surveys.
Camera traps	Cameras deployed for four nights. Over 14,000 photos captured with 112 containing identifiable fauna (refer to Attachment D).

5 Revised Final Significant Impact Assessment

Based on the findings of this targeted fauna survey, the likelihood of occurrence assessment (LOA) and preliminary significant impact assessment (SIA) have been updated as outlined in the *Preliminary Significant Impact Assessment* (CQG 2025a). Table 5.1 lists a summary of the revised findings.

The assessment found that habitat present within the Project Areas is supports a number of least concern and special least concern species (as listed under the *Nature Conservation Act 1992* (Qld) (NCA). This includes abundant bird life, macropods and smaller terrestrial and arboreal fauna such as Northern Brown bandicoot, Echidna, Brushtail possums and Squirrel gliders. Refer to Attachment D for a photo log highlighting survey findings.

Table 5.1: Summary of revised LOA and SIA findings

Matter	LOA Findings	SIA Outcome	Project Actions
MNES			
Threatened fauna	Koala are unlikely to inhabit the Project Area as habitat is not suitable, no evidence of presence was recorded despite targeted methodology, and no historic records occur within proximity. Squatter pigeon are likely to be present within the Project Area.	No significant residual impact likely (no change from the Preliminary SIA)	Implement mitigation measures as outlined in the Preliminary SIA.
Migratory and marine fauna	Osprey are known to occur within and adjacent to the Project Area and were recorded during the survey.	No significant residual impact likely (no change from the Preliminary SIA)	Implement mitigation measures as outlined in the Preliminary SIA.

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Matter	LOA Findings	SIA Outcome	Project Actions
MSES			
Protected wildlife habitat	Habitat quality within the Project Area is highly degraded and unlikely to support endangered, vulnerable or near threatened species listed under the NCA. No threatened species were recorded.	No significant residual impact likely	Implement mitigation measures as outlined in the Preliminary SIA.

6 Conclusion

Overall, the findings of this preliminary assessment indicate that, with implementation of the appropriate avoidance and mitigation strategies outlined in the *Preliminary Significant Impact Assessment* (CQG 2025) (including pre-clearance surveys, delineation of no-go zones, implementation of fauna spotter/catchers, progressive rehabilitation, erosion and sediment control and biosecurity management) the Project is not expected to significantly impact threatened species, migratory species or other matters protected under State or Commonwealth legislation.

Yours sincerely,

Sarah Grady
Principal Ecologist
CQG Consulting

Attachments:

Attachment A: Maps

Attachment B: Survey Methodology

Attachment C: Species List

Attachment D: Photograph Log

References

Eyre TJ, Ferguson DJ, Smith GC, Mathieson MT, Venz MF, Hogan, LD, Hourigan CL, Kelly, AL & Rowland, J. 2022. Terrestrial Vertebrate Fauna Survey Assessment Guidelines for Queensland, Version 4.0. Brisbane: Department of Environment and Science, Queensland Government.

Phillips, S. & Callaghan, J. 2011. The Spot Assessment Technique: a tool for determining localised levels of habitat use by Koalas, Phascolarctos cinereus, Australian Koala Foundation, Brisbane.

CQG 2025. Project Halogen Preliminary Significant Impact Assessment.

Limitations

This report has been prepared for the use of the client, Grenof Water Technologies Pty Ltd, for the purpose of this commission only.

CQG[1] takes no responsibility and disclaims all liability for any loss or damage that any party may suffer as a result of using or relying on any such information or recommendations contained in this report.

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- Reliance on the report by a third party, or use of the report other than for the purpose stated.

The report relates only to the project described herein and must be reviewed by a competent expert before being used for any other purpose. CQG accepts no responsibility for other use of the data.

This report does not provide a complete assessment of the environmental status of the site but is limited to the scope defined herein.

Should further information become available regarding the conditions of the Study Area, CQG reserves the right to review the report in the context of the additional information.

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This report is based on information issued and supplied to CQG by others as well as publicly available information.

[1] *CQ Environmental Pty Ltd (ABN 61 107 574 514) trading as CQG Consulting (CQG)*

Attachment A:

Maps

Legend

- Site Location
- Impact Area

Roads

- Minor Road

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure A.1

Grenof Water Technologies Pty Ltd

Project Halogen - Special Industry

Site Location

CQG Consulting
180 Quay Street, Rockhampton Q 4700
PO Box 8384, Allenstown 4700
Ph: +61 7 4922 9252 Fax: +61 7 4922 0195

Project No: 25054
Map No: 25054-26
Revision: RevA
10 November 2025

Layer Credits- © OpenStreetMap (and) contributors, CC-BY-SA; QSpatial; CQG

Legend

- Site Location
- Impact Area

CQG Survey Results

- Koala SAT Locations
- Camera Locations
- Koala SAT Location Tracks

Roads

- Minor Road

N

Scale 1:3,000 (A3)

0 45 90 135

Metres

Coordinate System: GDA2020 MGA Zone 56

Figure A.2

Grenof Water Technologies Pty Ltd

Project Halogen - Special Industry

Survey Locations

CQG Consulting
180 Quay Street, Rockhampton Q 4700
PO Box 8384, Allenstown 4700
Ph: +61 7 4922 9252 Fax: +61 7 4922 0195

Project No: 25054
Map No: 25054-27
Revision: RevA
10 November 2025

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Attachment B:

Survey Methodology

Attachment B: Survey Methodology and Implementation

Table B.1: Survey Methodology

Survey Method	Description	Effort / Implementation
Diurnal surveys	Conducted during daylight hours to detect diurnal birds, reptiles and mammals through direct observation, auditory cues, and sign (tracks, scats, diggings, burrows). Methods follow the *Terrestrial Vertebrate Fauna Survey Assessment Guidelines for Queensland, v4.0* (Eyre et al 2022) (Fauna Survey Guidelines v4.0) combining point-count and opportunistic searches to record species activity across habitat types.	Undertaken over five days (29 September to 3 October 2025) at various times of day, incorporating both fixed-point surveys and incidental observations across representative habitats within the study area.
Nocturnal surveys	Undertaken after dusk to detect nocturnal and crepuscular species (e.g. gliders, owls, bats, frogs). Surveys follow Fauna Survey Guidelines v4.0 methods including spotlighting, thermal imaging, call playback and listening periods and were conducted along transects on foot or by vehicle.	Completed on three nights during the survey period using spotlighting and thermal camera searches. Call playback was conducted at selected locations under low-wind, low-noise conditions.
Koala Spot Assessment Technique (SAT) surveys	Standardised method for determining localised habitat use by Koalas (Phascolarctos cinereus) as described by Phillips & Callaghan (2011). Plots (typically 2 m radius) are centred on feed trees and 30 trees are assessed for the presence of Koala scats to calculate a Koala Activity Level (KAL) index, indicating relative habitat utilisation.	Three SAT plots were completed in representative eucalypt habitat zones within the study area. Each plot comprised 30 trees systematically searched for Koala scats and scored in accordance with the SAT protocol.
Camera traps	Passive infrared cameras deployed to record cryptic or nocturnal fauna activity. Placement follows Fauna Survey Guidelines v4.0 recommendations to target animal pathways, den sites or habitat features, using 24-hour operation cycles.	Cameras deployed for four nights at suitable microhabitats within the survey area. Units were programmed for continuous motion-trigger recording and retrieved post-survey for image analysis and species verification.

Attachment C:

Species List

	Fauna Species List												
	Species			Survey Number									
	Family	Scientific Name	Common Name	1	2	3	4	5	6	7	8	9	10
Bird Point/ Area Count	Meliphagidae	*Lichmera indistincta*	Brown Honey Eater	1			1		1	1	6	2	4
	Psittaculidae	*Trichoglossus moluccanus*	Rainbow Lorikeet	3	6		2		1	12	3	3	
	Corvidae	*Corvus orru*	Torresian Crow	1					2		1		1
	Anhingidae	*Anhinga novaehollandiae*	Australasian Darter		1	1							
	Phasianidae	*Synoicus ypsilophorus*	Brown Quail		6	6					4		
	Estrildidae	*Lonchura castaneothorax*	Chestnut Breasted Manikin		2								
	Phalacrocoracidae	*Microcarbo melanoleucos*	Little Pied Cormorant		1	1							
	Anseranatidae	*Anseranas semipalmata*	Magpie Goose		1	1						1	
	Cacatuidae	*Calyptorhynchus banksii*	Redtailed Black Cockatoo		3	3							
	Hirundinidae	*Hirundo neoxena*	Welcome Swallow		3	6	1						
	Ardeidae	*Egretta novaehollandiae*	White Faced Heron		3								
	Meliphagidae	*Melithreptus albogularis*	White Throated Honeyeater		2				1	1			
	Rhipiduridae	*Rhipidura leucophrys*	Willie Wagtail		1	2			1				
	Strigidae	*Ninox boobook*	Southern Boobook		1								
	Meliphagidae	*Philemon corniculatus*	Noisy friar bird			1	3			1		1	2
	Alcedinidae	*Todiramphus macleayii*	Forest Kingfisher			1			2		1		
	Ardeidae	*Ardea intermedia*	Intermediate Egret			1							
	Alcedinidae	*Dacelo novaeguineae*	Laughing kookaburra			1		2					
	Ardeidae	*Egretta novaehollandiae*	Whitefaced			3							
	Cuculidae	*Scythrops novaehollandiae*	Channelled billed cuckoo			1				2	1		1
	Burhinidae	*Burhinus grallarius*	Bush stone Curlew			1		1					
	Strigidae	*Ninox boobook*	Southern Boobook			1							
	Maluridae	*Malurus melanocephalus*	Red backed Fairywren				2		4	1	2	1	2
	Campephagidae	*Lalage leucomela*	Varied Triller				1		1		1		
	Phalacrocoracidae	*Phalacrocorax varius*	Pied Cormrent				1						
	Rhipiduridae	*Rhipidura rufifrons*	Rufisher Tail				1						
	Meliphagidae	*Philemon citreogularis*	Little Friar Bird						1	1			
	Accipitridae	*Haliastur sphenurus*	Whistling Kite						2	1			
	Artamidae	*Strepera graculina*	Pied Currawong							1			
	Cuculidae	*Eudynamys orientalis*	Pacific koel							1	1		
	Columbidae	*Geopelia placida*	Peaceful Doves								3		
	Columbidae	*Ocyphaps lophotes*	Crested Pigeon								1		
	Campephagidae	*Coracina novaehollandiae*	Blackfaced Cuckoo								2		2
	Cuculidae	*Centropus phasianinus*	Phesant Coucal									1	
	Pandionidae	*Pandion haliaetus*	Osprey										1
	Monarchidae	*Grallina cyanoleuca*	Magpie Lark										1
	Herpetofauna Count												
	Eugongylidae	*Cryptoblepharus pulcher*	Elegant Snake-eyed Skink	1	2								
	Bufonidae	*Rhinella marina*	Cane Toad	4	1								
	Camera Trap Data			1	4	6	8	9	11	12			
Camera Trap Data	Phalangeridae	*Trichosurus vulpecula*	Brushtailed Possum			X	X						
	Macropodidae	*Macropus giganteus*	Eastern Grey Kangaroo	X				X	X	X			
	Macropodidae	*Macropus parryi*	Whiptailed wallaby					X		X			
	Tachyglossidae	*Tachyglossus aculeatus*	Short-beaked echidna					X					
	Peramelidae	*Isoodon macrourus*	Northern Brown Bandicoot		X								
	Spotlighting			1	2	3	4						
Spotlighting	Macropodidae	*Macropus giganteus*	Eastern Grey Kangaroo		X		X						
	Macropodidae	*Macropus parryi*	Whiptailed wallaby			X							
	Pteropodidae	*Pteropus scapulatus*	Little Red Flying Fox	X	X	X	X						
	Petauridae	*Petaurus breviceps*	Sugar glider				X						

Attachment D:

Photograph Log

Attachment D: Photograph Log

Photo 1.1: Little Pied Cormorant (*Microcarbo melanoleucos*)

Photo 1.2: White-faced heron (*Egretta novaehollandiae*)

Photo 1.3: Sugar glider (*Petaurus breviceps*)

Photo 1.4: Nankeen kestrel (*Falco cenchroides*)

Photo 1.5: Eastern Grey Kangaroo (*Macropus giganteus*)

Photo 1.6: Forest kingfisher (*Todiramphus macleayii*)

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Photo 1.7: Habitat feature – Breeding place - Nest

Photo 1.8: Habitat feature – Arboreal termite mound with Kingfisher nest

Photo 1.9: Female Red-backed fairywren (*Malurus melanocephalus*)

Photo 1.10: Eastern Great Egret (*Ardea modesta*)

Photo 1.11: Noisy Friarbird (*Philemon corniculatus*)

Photo 1.12: Little friarbird (*Philemon citreogularis*)

<table>
<tr>
<td>
Photo 1.13: Laughing Kookaburra (*Dacelo novaeguineae*)</td>
<td>
Photo 1.14: Queensland Black Orchid (*Cymbidium canaliculatum*)</td>
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Photo 1.15: Scat - Possum</td>
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<td>

Photo 1.16: Fauna tracks – Possum/Glider scratch marks</td>
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Photo 1.17: Fauna tracks – Fauna scratch marks</td>
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Photo 1.18: Fauna tracks –scratch marks</td>
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2 Camera Traps

Photo 2.1: Northern brown bandicoot (*Isoodon macrourus*)

Photo 2.2: Common Brushtail Possum (*Trichosurus vulpecula*)

Photo 2.3: Eastern short-beaked echidna (*Tachyglossus aculeatus aculeatus*)

Photo 2.4: Eastern Grey Kangaroo (*Macropus giganteus*)

Photo 2.5: Whiptail wallaby (*Notamacropus parryi*)

Photo 2.6: Common Brushtail Possum (*Trichosurus vulpecula*)

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Photo 2.7: Eastern Grey Kangaroo (*Macropus giganteus*)	Photo 2.8: Eastern Grey Kangaroo (*Macropus giganteus*)	Photo 2.9: Northern brown bandicoot (*Isoodon macrourus*)

3 Thermal Camera

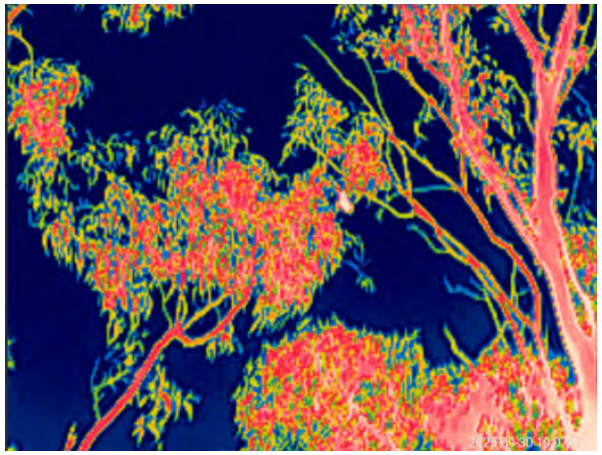	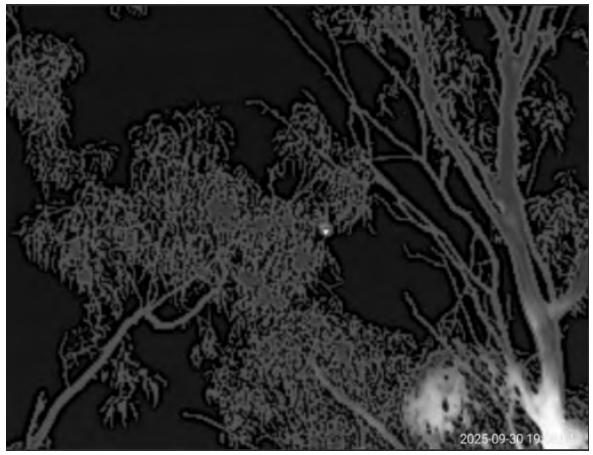	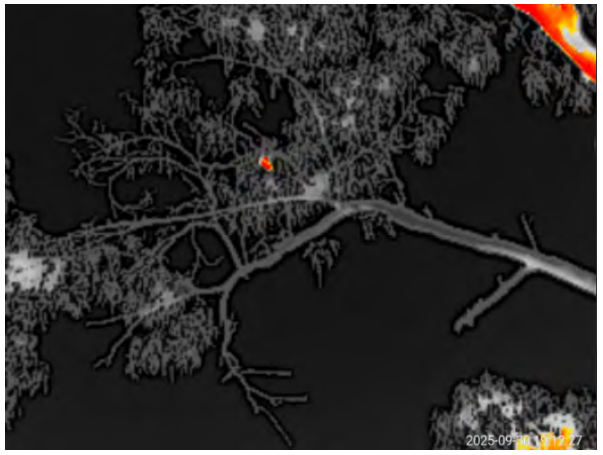
Photo 3.1: Flying Fox	Photo 3.2: Flying Fox	Photo 3.3: Flying Fox

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