

# RPI DEVELOPMENT APPLICATION SUPPORTING INFORMATION LYND RESOURCES PTY LTD WANDOO

MARCH 2020

LYN001

## Document Control Sheet

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## 1. Introduction

Lynd Resources Pty Ltd (Lynd Resources) proposes to undertake exploration drilling for minerals on EPM 27251 as part of the Wandoo Project located approximately 90km southwest of Chillagoe in North Queensland. The Wandoo Project makes up part of the overall Lynd Resources' North Queensland exploration project.

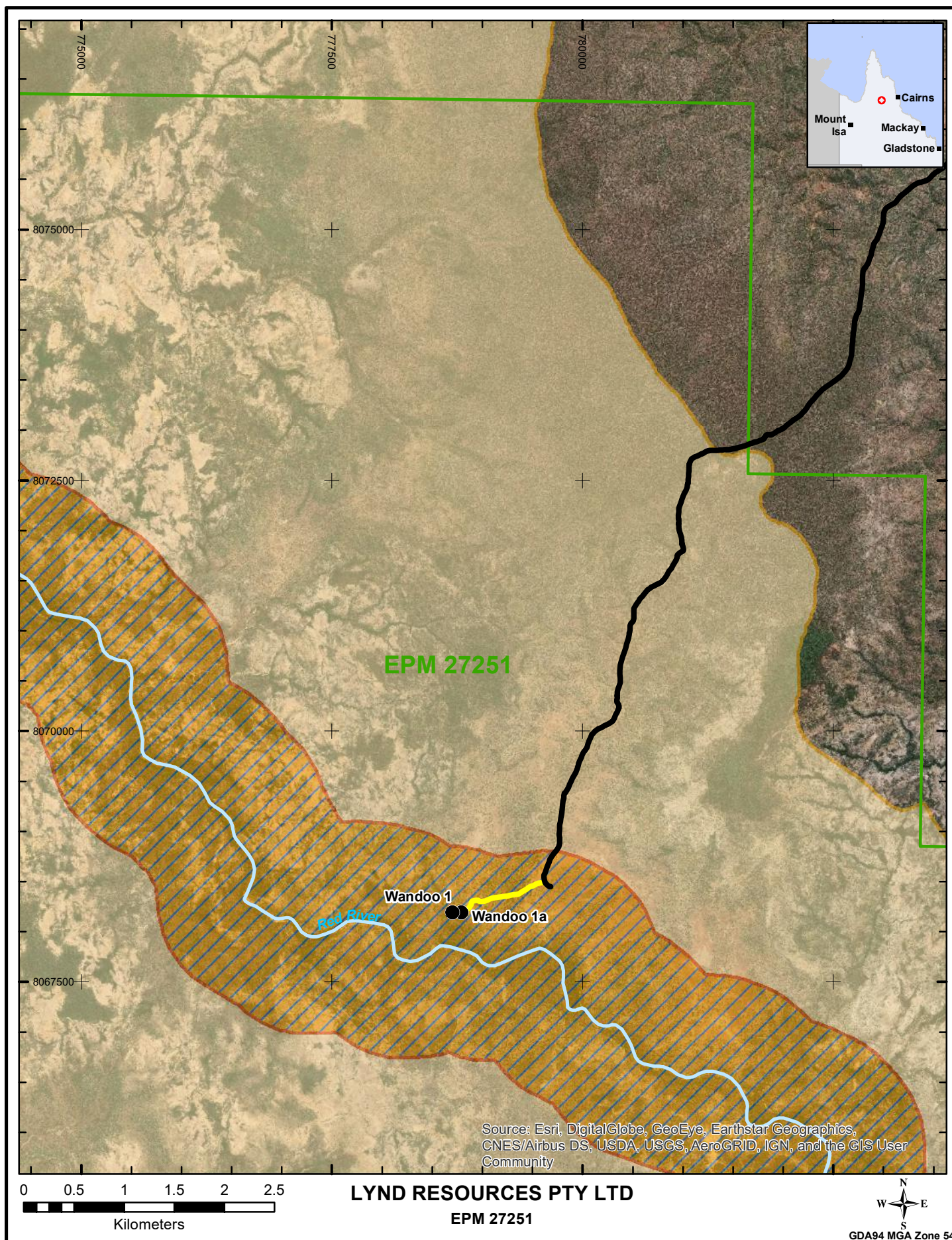
The Wandoo exploration project is situated within the Gulf Rivers Strategic Environmental Area (SEA) (**Figure 1**) and therefore Lynd Resources requires approval under s28 of the *Regional Planning Interests Act 2014* (RPI Act). Lynd Resources holds an existing Environmental Authority (EA) (EA0001772) and is therefore an eligible person under s28 of the RPI Act.

Pursuant to s34(2) of the RPI Act and s13 of *Regional Planning Interests Regulation 2014* (RPI Regulation), the assessment application is not notifiable as the proposed exploration activities will be carried out in a SEA and not a priority living area. However, in accordance with s34(4) of the RPI Act, the assessment application can become notifiable if the chief executive provides Lynd Resources with a notice requiring the application to be notifiable.

Pursuant to s12(2) of the RPI Regulation, the assessing agencies for a SEA are the Department of Environment and Science (DES) and the Department of Natural Resources, Mines and Energy (DNRME). The function of DES is to assess the expected impact of the activity on the ecological integrity of the environmental attributes for the area that relate to riparian processes, wildlife corridors or water quality. While the function of DNRME is to assess the expected impact of the activity on the hydrodynamics of, and interactions with, the environmental attributes for the area that relate to hydrologic or geomorphic processes or beneficial flooding.

This report will discuss the environment attributes and expected impacts of this proposed exploration project on the environmental attributes.





	<b>Exploration Activities</b> <b>Areas of Regional Interest</b> <b>Strategic Environmental Area</b>	<ul style="list-style-type: none"> <li>EPM Boundary</li> <li>Major Watercourse</li> <li>Pastoral Track</li> <li>Proposed Track (3m width)</li> <li>Proposed Drill Pad (20m x 20m)</li> </ul>	<b>Areas of Regional Interest</b> <ul style="list-style-type: none"> <li>Strategic Environmental Area</li> <li>Strategic Environmental Area - Designated Precinct</li> </ul>
<b>Figure 1</b> <b>Sheet No.</b> RTPL_ARD_LYNGEN_MAP_0002_B	<b>Drawn By:</b> Chris Schlebusch <b>Requested by:</b> Jacob Arnold <b>Date:</b> 3/03/2020		Data sources: Qld Department of Natural Resources, Mines & Energy Geoscience Australia, Esri

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## 1.1 The Applicant and Project Overview

Lynd Resources (ACN 610 450 498) is a wholly owned subsidiary of North Queensland Resources Pty Ltd (NQR) (ACN 610 450 185) which also has two other subsidiaries Gamboola Resources Pty Ltd and Yappar Resources Pty Ltd. In 2016/17, NQR acquired 100% of the mineral rights to a large tenement package in North Queensland.

In February 2018, NQR entered into a Strategic Alliance Agreement (SAA) with diversified global miner South32 to appraise a number of these exploration opportunities with significant potential across an area of 200km by 500km in North Queensland. The area comprises tenements (granted and under application), wholly owned by NQR as well as several subject to farm-in with third parties.

NQR has defined at least 50 exploration targets across an area it has identified as prospective for Tier 1 mineral deposits. The prospective area is concealed under 20 to 200 metres of cover and historically has had minimal exploration.

## 1.2 Property and Tenure Details

A summary of the property and tenure details situated within EPM 27251 are shown in **Table 1**.

**Table 1 Property and Tenure details within EPM 27251**

Category	Land Parcel 1	Land Parcel 2	Land Parcel 3
<b>Lot/Plan</b>	Lot 4716 on SP273457	Lot 4665 on PH1417	Lot 5309 on PH1681
<b>Property Name</b>	Red River Holding	Eresby	Torwood
<b>Tenure</b>	Lands Lease	Lands Lease	Lands Lease
<b>Landholder</b>	The Trust Company Limited (ACN 004 027 749)	Carolyn Joyce Curley	Carolyn Joyce Curley

EPM 27251 is situated within Lot 4716 on SP273457, Lot 4665 on PH1417 and Lot 5309 on PH1681, however all disturbance associated with exploration activities will occur solely within Lot 4665 on PH1417.

EPM 27251 was granted to Lynd Resources on 21 January 2020 for a period of five years expiring on 20 January 2025. It was granted over an area of 59 sub-blocks (approximately 19,268ha).

Standard EA EA0001772 was granted as a part of the approval for EPM 27251, requiring Lynd Resources to comply with the terms and conditions of the “*Eligibility criteria and standard conditions for exploration and mineral development projects – ESR/2016/1985*”, as produced by DES.

## 2. Proposed Activities

Lynd Resources propose to undertake the following resource activities under EPM 27251, which will fall within EPM 27251, Lot 4665 on PH1417 and the Gulf Rivers SEA:

1. Construction of an access track;
2. Establishment of two drill pads;
3. Establishment of a temporary fuel storage and laydown area; and
4. Establishment of a temporary mobile campsite for the drill and geological crews.

There will be two drillholes over the Wandoo project (Wandoo 1 and Wandoo 1a).

A summary of the proposed activities, their locations and expected disturbance levels are summarised in **Table 2**. Definitions of each activity are described in **Table 3**, in addition, schematics of the proposed drill pad, temporary mobile campsite and temporary fuel storage and laydown area are illustrated in **Figure 2**, **Figure 3** and **Figure 4**.

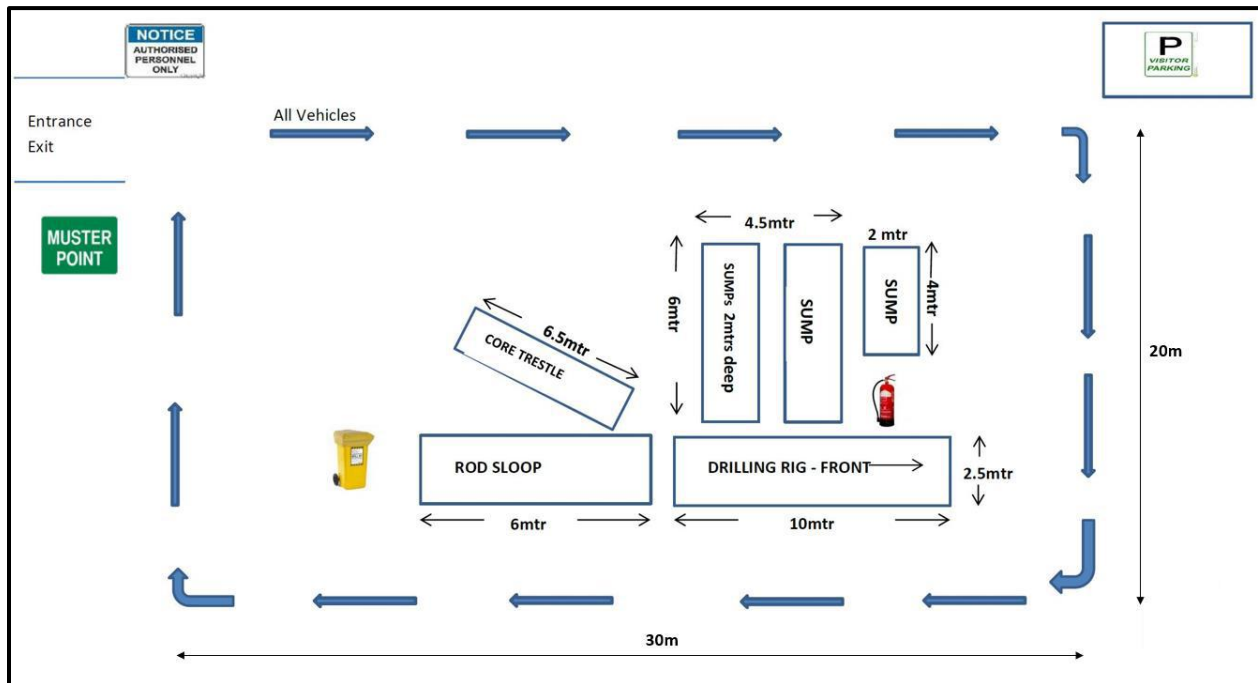
**Table 2 Summary of proposed activities and their estimated disturbance**

Activity	Number	Location	Total disturbance (ha)
<b>Access tracks</b>	As required	Lot 4665 on PH1417	0.31ha (3m wide tracks)
<b>Drill pads</b>	2	All pads located on Lot 4665 on PH1417: Wandoo 1: -17.45504°, 143.62396° Wandoo 1a: -17.45503°, 143.62478°	Initial: 0.12ha (2 x (20m x 30m))
<b>Temporary Fuel and Temporary Laydown Storage Area</b>	1	Lot 4665 on PH1417 -17.45263°, 143.63145°	0.04ha (20m x 20m)
<b>Temporary Mobile Campsite</b>	1	Lot 4665 on PH1417 -17.45255°, 143.63164°	0.04ha (20m x 20m)
<b>TOTAL DISTURBANCE FOR 2 TARGET SITES:</b>			<b>0.51ha</b>

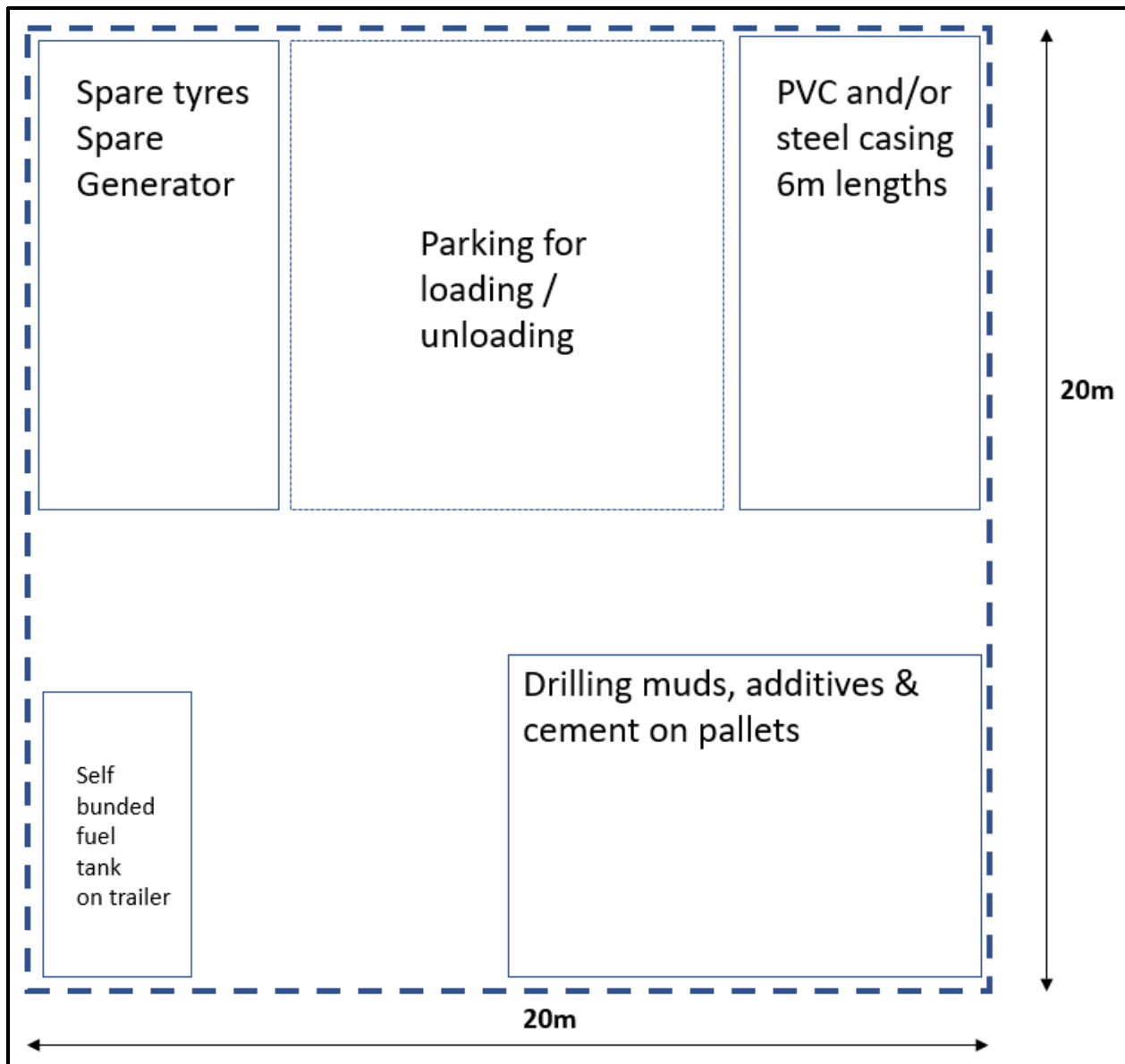


**Table 3 Definitions of resource activities**

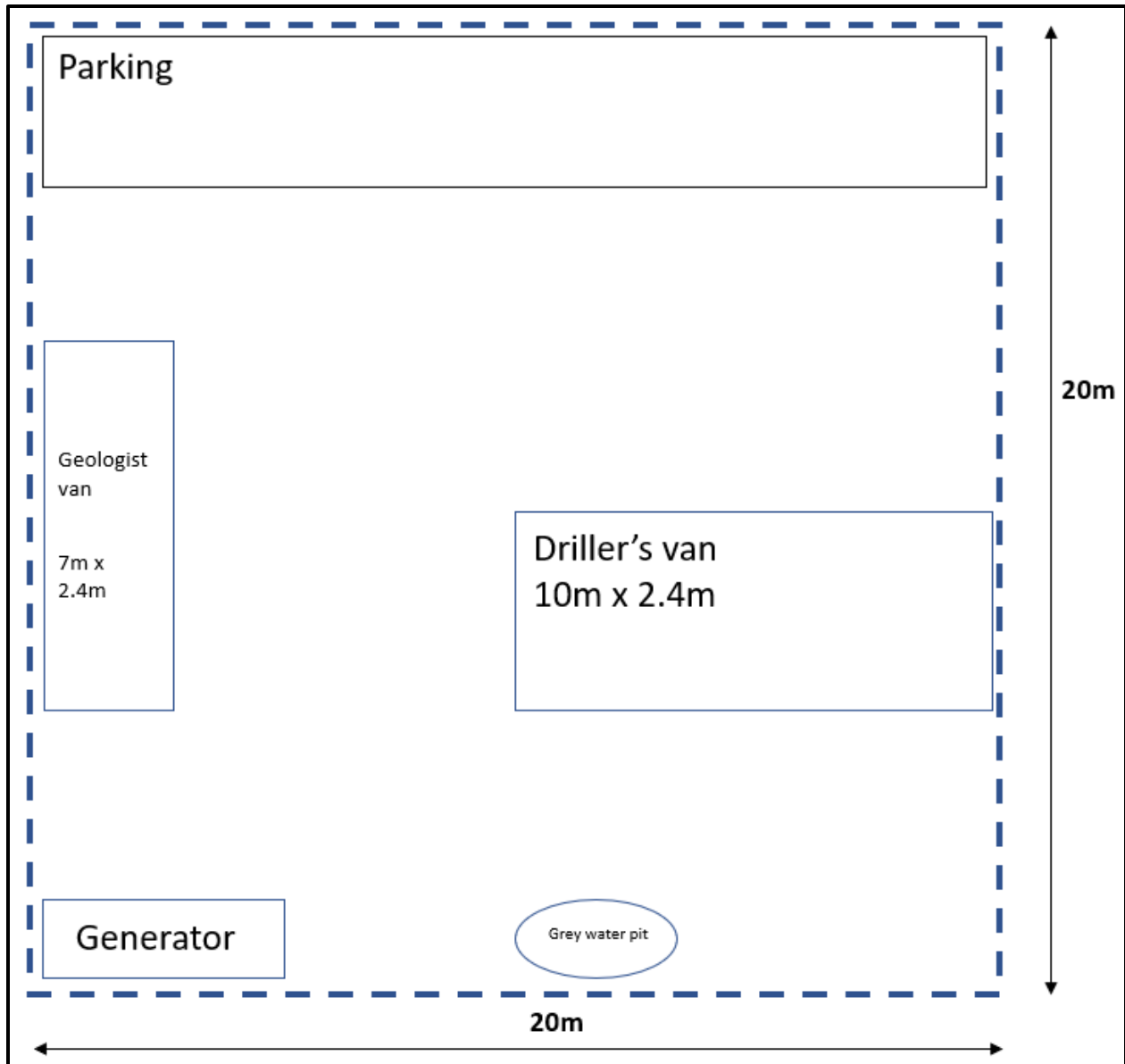
Resource Activity	Definition
Access tracks	A cleared track approximately 3m wide to facilitate vehicular access of drilling equipment and personnel.
Drill pads	As shown in <b>Figure 2</b> , the drill pad is a 20m x 30m (0.06ha) area used to provide a stable platform for the mud rotary and diamond tail drilling procedure.
Temporary Fuel and laydown storage area	As shown in <b>Figure 3</b> , the fuel and laydown storage area is a 20m x 20m (0.04ha) area to temporarily store drilling equipment and reservoirs of fuel required for drilling and transport.
Temporary Mobile campsite	As shown in <b>Figure 4</b> , the mobile campsite is a 20m x 20m (0.04ha) area for a temporary mobile campsite for drilling and geological crews.



**Figure 2 Schematic of the proposed drill pad**



*Figure 3 Schematic of the fuel and laydown storage area*



*Figure 4 Schematic of the mobile campsite*

## 2.1 Drilling Program

Exploration drilling undertaken during the Wandoo project will use a combined mud rotary and diamond tail drill method conducted by a qualified and experienced contractor. All drillholes are designed to target the Palaeozoic basement rocks beneath sedimentary rocks of the Karumba and Carpentaria Basins. Drilling at the proposed sites aim to test magnetic anomalies interpreted to be igneous and associated rocks similar to those that host the Cerro Rico de Potosi silver-tin deposit in Bolivia and possibly analogous to the Red Dome copper-gold deposit and Mt Leyshon/Mt Wright gold deposit.

The diamond core drilling will be either (NQ) 45.1mm or (HQ) 61.1mm in diameter and have target depths ranging from 250 to 300m. The target depths and diamond tails for the two initial drillholes are below in **Table 4**. Actual hole depths may exceed predicted depths. The on-duty geologist will inform if the target has been reached.

**Table 4 Details on drilling at two initial drillholes**

Site	Estimated Target Depth	Estimated Diamond Tail
Wandoo 1	300m	50m
Wandoo 1a	250m	50m

Some drillholes may intersect an artesian aquifer and as a result will be pre-collared by installation and pressure cementing casing of adequate strength, to sufficient depth, to enable well control procedures to be undertaken in the event of a blow-out. Conductor casing (either steel or UPVC) of the top part of the hole (~30-40m) and into approximately 20m of stable formation is anticipated, with casing set according to the Minimum Construction Requirements for Water Bores in Australia. UPVC or steel surface casing of the portion of the pre-collar to just below the aquifer will depend on local conditions. The use of steel casing during drilling with retrieval after hole completion being preferred.

The Gilbert River Formation is expected to be over-pressured in some areas. Due to this, drilling will proceed with caution with materials and equipment on-hand to cope with water pressures of around 480kpa or 70 PSI. Materials of the Carpentaria Basin are subject to collapse due to the presence of running sands, swelling clays and free-flowing sub-artesian and artesian aquifers.

Drillholes will be completely grouted following the completion of drilling to prevent groundwater leakage between aquifers and the surface according to the Minimum Construction Requirements for Water Bores in Australia.

Clearing and minor earthworks may be required to prepare drill pads at the proposed sites. The drill pad will contain the drill rig and associated vehicles in addition to the drill sumps to hold drilling waters.

Drill pads have been selected on both geological and environmental grounds. Lynd Resources has, where necessary, after determining the location of the geological anomaly also considered the corresponding environmental attribute(s) for that area. Geological anomalies are typically large enough that drill hole locations can be moved, without losing confidence in the quality of the drilling results. The exact locations may be modified slightly should an on-site review by the botanist-ecologist prior to disturbance determine that the initial site is unacceptable.

Clearing is likely to be undertaken with the following equipment:

- Grader/bulldozer; and
- wheeled loader / backhoe.

The vegetation clearing will use the “blade up” method where possible, so that vegetation is cleared while minimising disturbance to roots and topsoil. The preparation of the drill sites may involve topsoil disturbance (to create a safe, level site) and in this case, cleared vegetation will be stockpiled separately from topsoil. The excavation of drill sumps is likely to use a wheeled loader/backhoe but may also involve a tracked bulldozer. Excavated subsoil soils will be stockpiled separately from topsoil.

Drilling equipment is likely to include the following equipment:

- drill rig (3 or 4 axle body truck);
- support truck (3 or 4 axle body truck);
- water truck (3 or 4 axle body truck);
- light vehicles (4WD ute);
- mobile campsite; and
- caravan.

**Figure 5** shows the extent of the proposed Wandoo 1 and Wandoo 1a drill pads. Each drill pad included in the Wandoo project will be no larger than 20m x 30m (0.06ha).

The location of the Gulf Rivers SEA Designated Precinct was considered during the placement of drill pads and access tracks. The proposed Wandoo 1 and Wandoo 1a drill pads cannot be located outside the Designated Precinct, as the exploration targets identified (in magnetics data) only occur within this area.

An assessment of a government flown airborne electromagnetic (AEM) over the area identified what appears to be an anomalous conductor in the basement rocks that could represent mineralisation. A further review of open-file aeromagnetic data found that the AEM conductor also corresponds to an anomalous magnetic feature within the basement thus up-grading the potential for mineralisation at Wandoo. The planned drill sites correspond to locations below to depths that appears to be a steeply plunging magnetic conductor based on 3D modelling of the AEM and magnetic data. The anomaly at these locations are the shallowest and thus requiring less drilling and disturbance to test. At this stage only one drill hole is planned to test the anomaly, however, the second site might be used for a second drill hole if the first drill hole returns encouraging results. **Figure 6** illustrates the proposed drill hole locations against the magnetic image with AEM conductor.

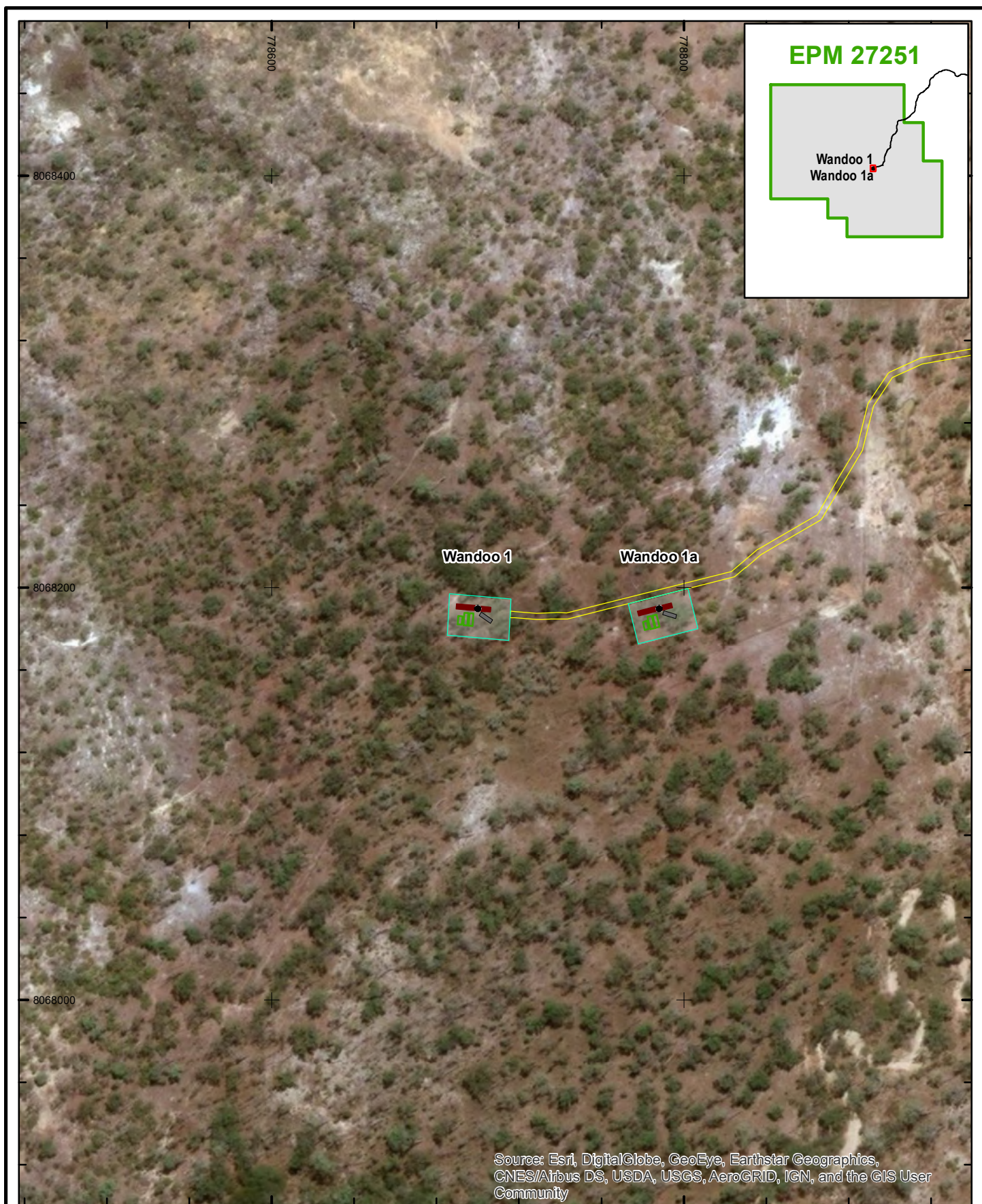
If the drill pads were moved outside the Designated Precinct, the drill hole length and inclination would be such that it would not be possible to test the target with the currently available technology. The anomalies identified below the ground surface (the exploration targets) cannot be moved, so, to assess these anomalies, drilling needs to occur within the Designated Precinct.



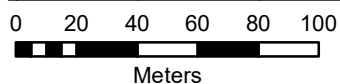
Site rehabilitation will be undertaken in accordance with the *Eligibility criteria and standard conditions for exploration and mineral development projects – Version 2 (2016)*. This includes, but not limited to:

- Condition B26: The holder of the environmental authority must backfill all excavations, drill holes or sampling sites as soon as practical following the completion of exploration activities.
- Condition B27: Condition B26 does not apply to any excavations, drill holes or sampling sites that are to remain after the completion of exploration activities, by agreement with the landowner.
- Condition B28: The holder of the environmental authority must rehabilitate areas disturbed by mining activities to a stable landform similar to that of surrounding undisturbed areas.
- Condition B29: The holder of the environmental authority must spread seeds or plant species that will promote vegetation of a similar species and density of cover to that of the surrounding undisturbed areas or vegetation that is appropriate for providing erosion control and stabilisation of the disturbed areas.

In regard to Condition B27, if the landowner requests that the drill hole be kept as a water bore, the appropriate approvals will be applied for in order to retain the drill hole as a water bore for the landholder.



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



**LYND RESOURCES PTY LTD**  
**EPM 27251**



### Wandoo 1 and Wandoo 1a Drill Pads

- Proposed Drillhole
- Proposed Track (3m width - to scale)
- Proposed Pad (20m x 30m)
- Vehicle (Drill Rig & Rod Sloop)
- Core Trestle
- Sump

**Figure 5**

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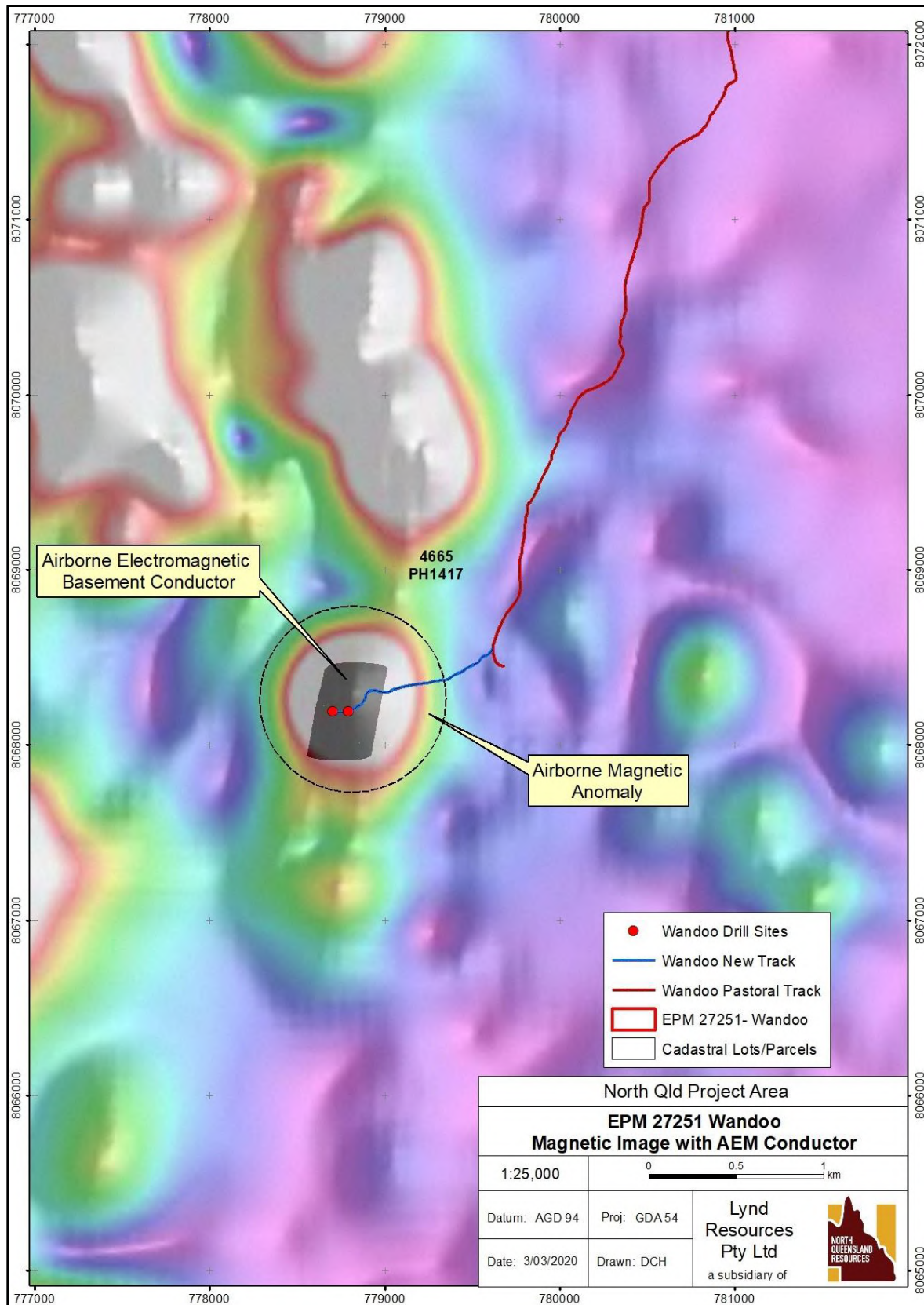
**Drawn By:** Chris Schlebusch

**Requested by:** Jacob Arnold

**Date:** 3/03/2020

Data sources:  
Qld Department of Natural Resources, Mines and Energy,  
Geoscience Australia, Esri





**Figure 6 Magnetic Image with AEM Conductor**

## 2.2 Access Tracks

An access track will be required to allow access for all drilling equipment and personnel to each of the two proposed drilling sites. The proposed access track will begin off the existing pastoral track to minimise the level of overall disturbance and disturbance to environmental attributes. The width of the proposed access tracks will be kept to a maximum of 3m wide to provide enough room for vehicular access.

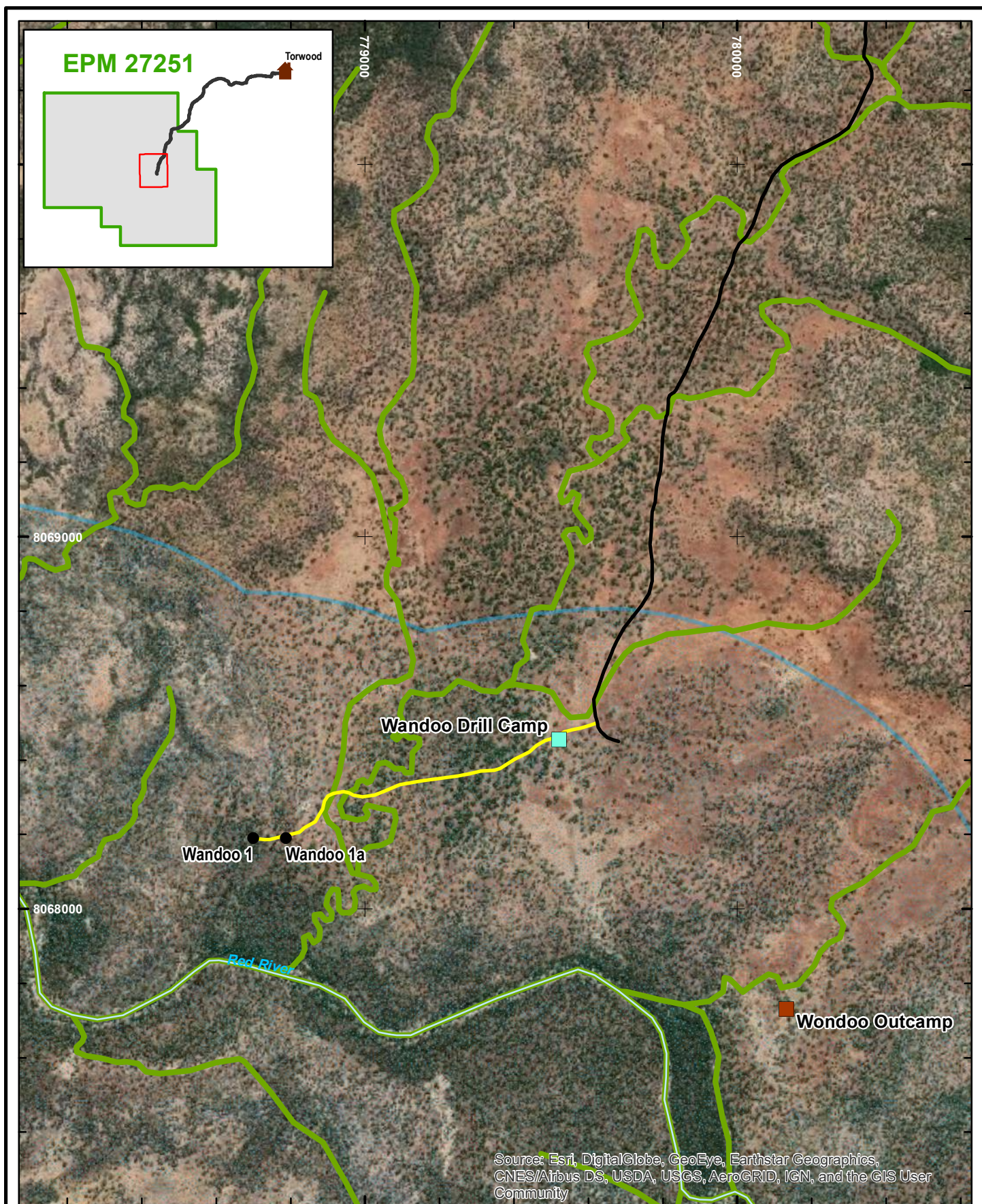
The track will be constructed by driving the grader (or bulldozer) along the route, with the blade up where possible, to minimise disturbance to topsoil.

As the Wandoo drill sites cannot be moved outside the Designated Precinct, the access track will also need to be situated within the Designated Precinct. Access to the drill sites has been minimised as far as practicable using an existing pastoral track (**Figure 7**). The access track has been planned on desktop and refined to minimise the amount of environmental harm or disturbance caused.

This alignment may be modified further during marking out or pre-clearing should the botanist-ecologist (who will be on-site during this time) determine that areas (once ground-truthed) require additional management.

All access tracks used for exploration purposes will be rehabilitated as soon as practical following the completion of drilling or geological interest in the area in accordance with the *Eligibility criteria and standard conditions for exploration and mineral development projects – Version 2 (2016)*.





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Meters

**LYND RESOURCES PTY LTD**  
**Wandoo EPM 27251**

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GDA94 MGA Zone 54



**EPM 27251  
Access Summary**

Drawn By: Chris Schleichsch  
Requested by: Jacob Arnold  
Date: 3/03/2020

- EPM Boundary
- ~ Major Watercourse
- MSES regulated vegetation [defined watercourse]
- MSES strategic environmental area [designated precinct]
- Pastoral Track

- Wandoo Drill Camp
- Wandoo Outcamp
- Proposed Track (3m width)
- Proposed Drill Pad (20m x 20m)

Data sources:  
Qld Department of Natural Resources, Mines and Energy,  
Geoscience Australia, Esri

**Figure 7**

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## 2.3 Campsites and Laydown Area

Campsites will be temporary and involve a mobile campsite and/or caravan (kitchen and shower facilities), but otherwise employees will swag out at the campsite.

The laydown area will consist of an existing cleared area, where possible, for temporary storage of consumables for drilling.

**Figure 8** shows the location and extent of the temporary campsite and temporary laydown and fuel storage area. Both the temporary campsite and temporary laydown and fuel storage area will be no larger than 20m x 20m (0.04ha) and have been located in an area clear of vegetation. The temporary campsite and temporary laydown and fuel storage areas will retain woody vegetation and grasses as far as practical and will not involve a bare earth cleared area.

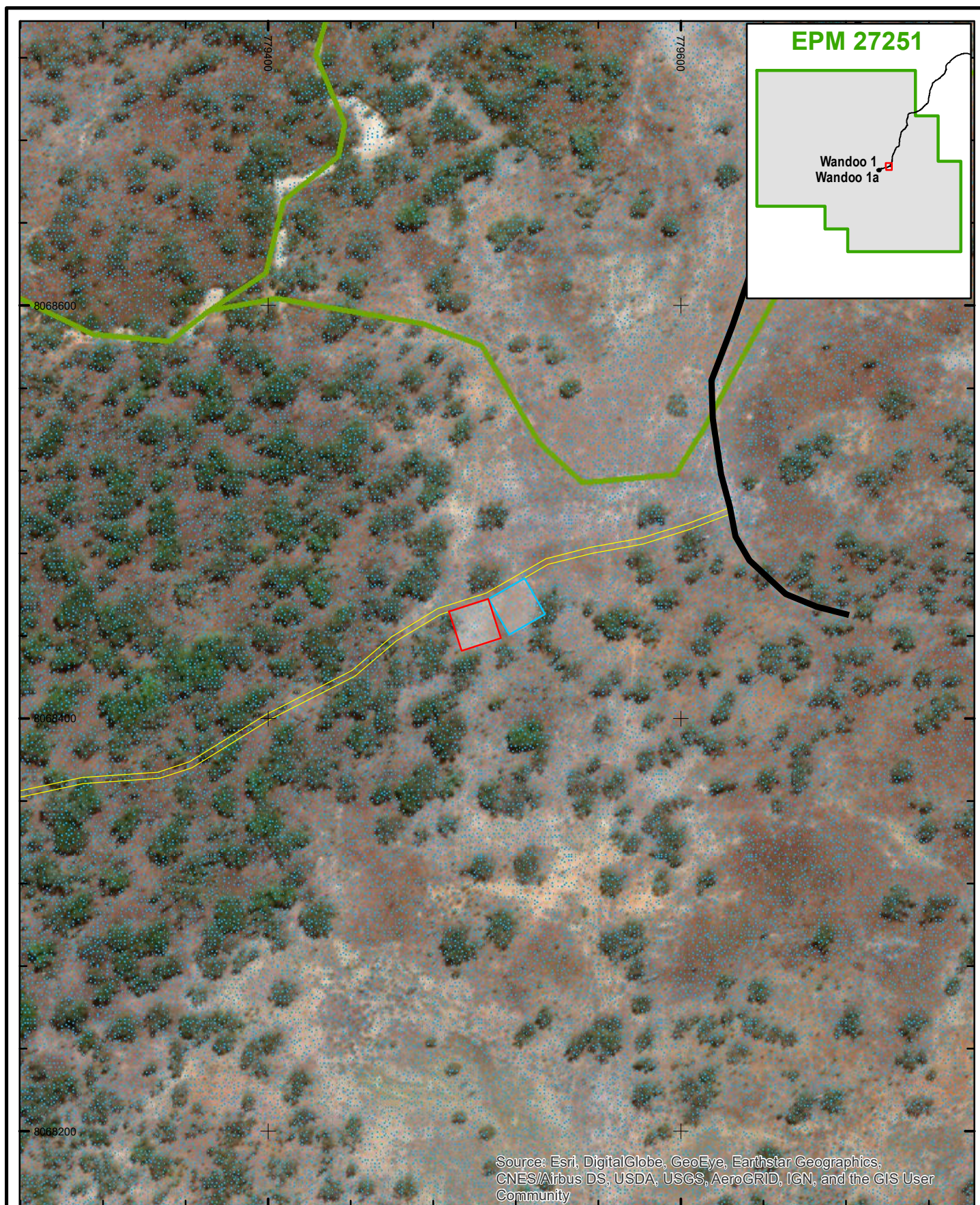
## 2.4 Water Supply

Water will be obtained by agreement with local landholders from water storages on the property. Water will be trucked to either the drill site or camp site, as required.

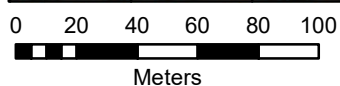
## 2.5 Timing

Exploration activities will occur in the dry season with activities concluding by mid-November to avoid conditions of high precipitation in the region. At this stage, depending on the approval timeframe, site activities will likely occur between July and mid-November. This allows time for on-the-ground ecological and cultural heritage assessment to be completed to ensure the most appropriate final locations are described. Following assessment of this application, Lynd Resources will immediately seek access to the site to commence the exploration programme. The rehabilitation of all disturbance will commence as soon as practical after the conclusion of drilling if the area is of no longer of geological interest and the access track is not needed by the landholder.





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



**LYND RESOURCES PTY LTD**  
**EPM 27251**



GDA94 MGA Zone 54



**EPM 27251  
Camp and Laydown**

Drawn By: Chris Schlebusch

Requested by: Jacob Arnold

Date: 3/03/2020

- Pastoral Track
- Proposed Track (3m width - to scale)
- Temporary Fuel and Laydown (20m x 20m)
- Temporary Mobile Campsite (20m x 20m)
- MSES strategic environmental area [designated precinct]
- MSES regulated vegetation [defined watercourse]

Data sources:  
Qld Department of Natural Resources, Mines and Energy,  
Geoscience Australia, Esri

**Figure 8**

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### 3. Gulf Rivers Environmental Attributes

The relevant environmental attributes for the Gulf Rivers SEA are described in section 9 of the RPI Regulation and are reproduced below.

- a) The natural hydrologic processes of the area characterised by –
  - i. Natural, unrestricted flows in and along watercourses and estuaries; and
  - ii. Overflow from watercourses onto the flood plains of the area, or the other way; and
  - iii. Natural flow paths of water across flood plains connecting waterholes, lakes and wetlands in the area; and
  - iv. Natural flow in and from groundwater and springs;
- b) The natural geomorphic processes of the area characterised by-
  - i. Natural erosion; and
  - ii. The transport and deposit of sediment by water throughout the catchments and along the watercourse systems and estuaries;
- c) The functioning riparian processes of the area characterised by native riparian vegetation associated with watercourses, estuaries, lakes and floodplains and wetlands;
- d) The functioning wildlife corridors of the area characterised by-
  - i. Natural habitat in the watercourse systems; and
  - ii. Permanent waterholes and springs;
- e) The natural water quality in the watercourse channels and aquifers and on flood plains in the area characterised by physical, chemical and biological attributes that support and maintain natural aquatic and terrestrial ecosystems.

Sub-sections 3.1 to 3.8 detail the existing environment, with potential impacts and mitigation strategies detailed in Section 4 of this Report.

#### 3.1 Riparian Process

The proposed access track to the two target drill holes will may involve minor clearing of riparian vegetation as two crossings of regulated vegetation (intersecting a defined watercourse) associated with minor drainage features will be encountered (**Figure 9**). As detailed in Sections 2.1 and 2.2 of this Report, Lynd Resources has endeavoured to avoid areas of regulated vegetation and limit creek crossings during the desktop assessment process. This has meant:

- Reviewing drill pad locations to ensure that, wherever practicable, holes are drilled outside of areas that may have the potential to be wetlands or watercourses.
- Refining proposed access tracks to avoid creek crossings or areas of significant vegetation. Where this has not been possible, Lynd Resources has sought to mitigate any impact by crossing lower order streams, minimising the width of the access track and committing to comply with recognised soil and erosion control standards. Section 4.5 contains more detail on this latter initiative.

There are no known estuaries or lakes that will be encountered as a result of the drill pads or access tracks.

A Regional Ecosystem (RE) environmental report was conducted for the drill sites which details the amount and types of RE within 2km of the drill holes (**Appendix 1**). **Table 5** provides a summary of search results received. A MSES environmental report was also conducted for the drill sites which details the amount and types of MSES within 2km of the drill holes (**Appendix 2**). **Table 6** provides a summary of search results received. As there is an approximate 90m separation distance between the two drill sites the 2km area of interest was centred on a location halfway between the two sites.

Both an Environmentally Sensitive Area map (**Appendix 3**) and a protected plants flora survey trigger map (**Appendix 4**) were also obtained for each drill site. No endangered regional ecosystems or protected plants were noted on these searches.

**Table 5 Summary of the drill site area by RE biodiversity status**

Drill Site	Biodiversity Status	Area (ha)	% of AOI
Wandoo 1 and 1a	Endangered	0.0	0.0
	Of concern	373.04	29.69
	No concern at present	883.51	70.31
	Total remnant vegetation	1,256.55	100.0

AOI: Area of Interest – A 2km buffer around the drill hole

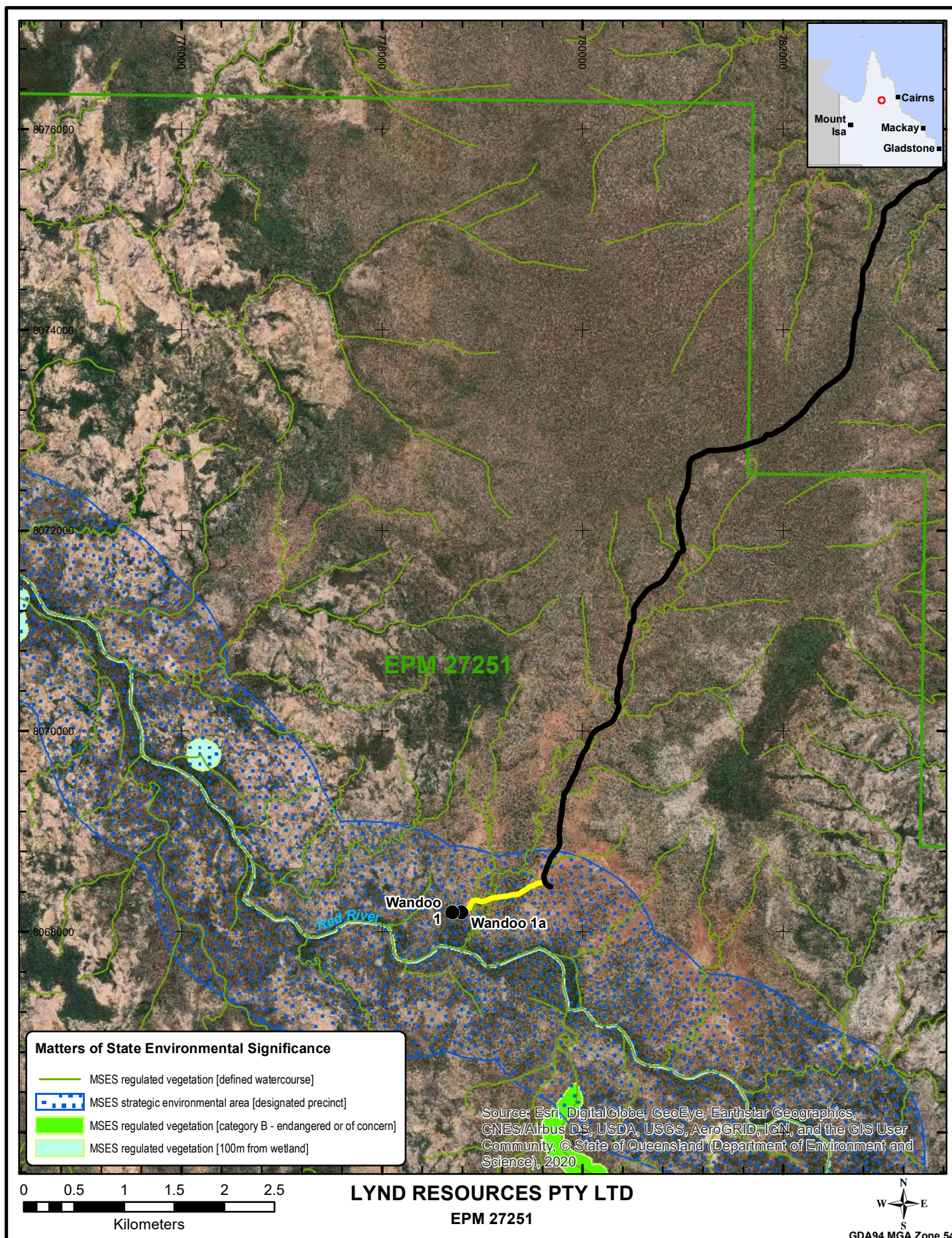
**Table 6 Summary of the area/distance of MSES near drill sites**

Drill Site	MSES	Area (ha)/ Distance (km)	% of AOI
Wandoo 1 and 1a	1b Protected Areas – nature refuges	460.82ha	36.7%
	Strategic Environmental Areas (SEA)	814.1ha	64.8%
	8e Regulated Vegetation – intersecting a watercourse	32.2km	Not applicable

AOI: Area of Interest – A 2km buffer around the drill hole

A summary of all REs which will be disturbed through access tracks and/or drill pads are described in **Table 7** with ‘of concern’ REs illustrated in **Figure 10**.





	<b>Exploration Activities</b> <b>Matters of State</b> <b>Environmental Significance</b> <b>(MSES)</b>	<ul style="list-style-type: none"> <li>EPM Boundary</li> <li>Pastoral Track</li> <li>Major Watercourse</li> <li>Proposed Drill Pad (20m x 20m)</li> <li>Proposed Track (3m width)</li> </ul>
<b>Figure 9</b> <b>Sheet No.</b> RTPL_ARD_LYN001_MAP_0003_B	<b>Drawn By:</b> Chris Schlebusch <b>Requested by:</b> Jacob Arnold <b>Date:</b> 3/03/2020	Data sources: Old Department of Natural Resources, Mines & Energy Geoscience Australia, Esri

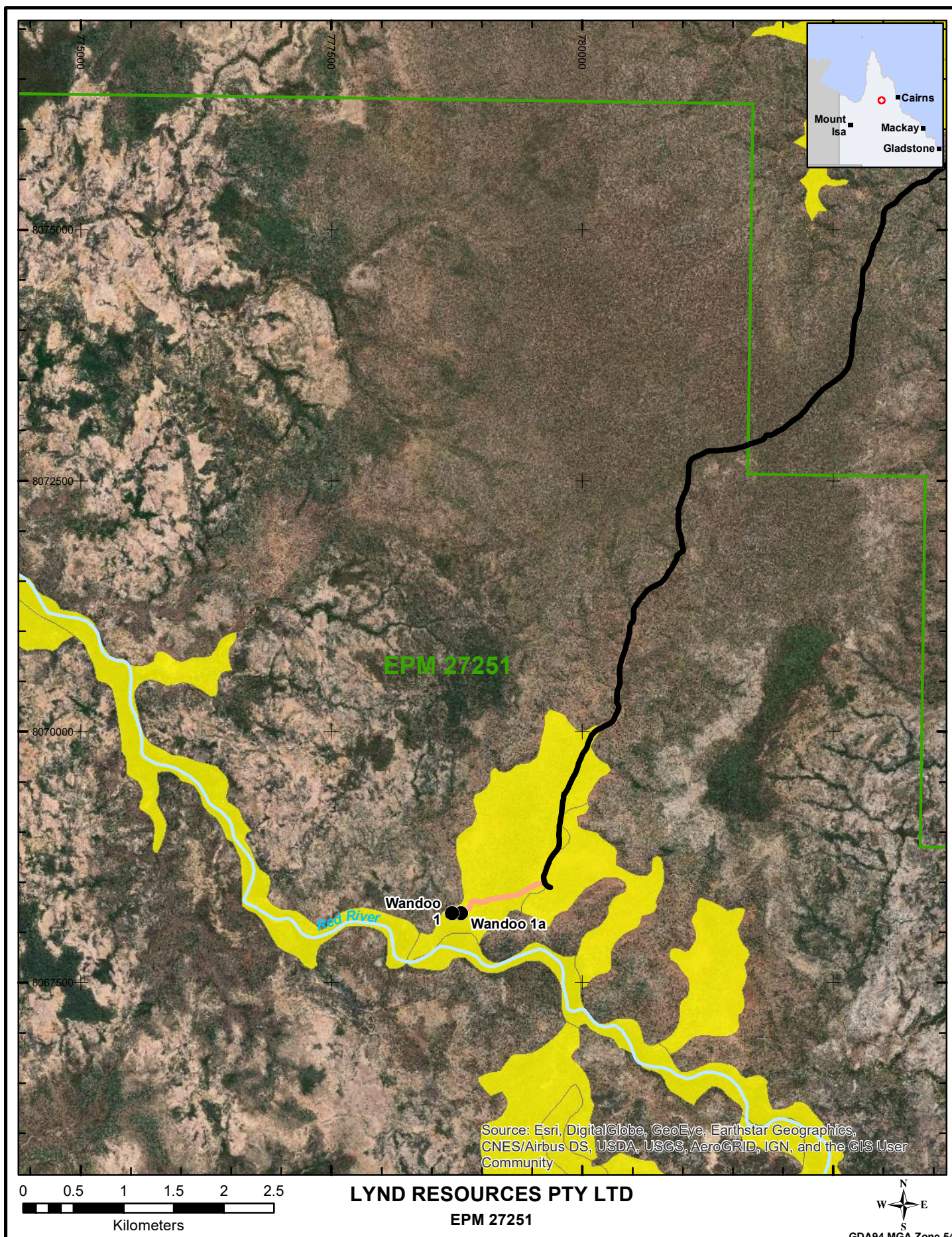
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**Table 7 Summary of Regional Ecosystems disturbed by exploration activities**

RE	Summary Description	Biodiversity Status	Vegetation Management Act Class	Structure Category
<b>2.3.17a</b>	<i>Eucalyptus microtheca</i> low open woodland to woodland, commonly with <i>Excoecaria parvifolia</i> and <i>Lysiphyllum cunninghamii</i> . A sparse lower tree or shrub layer may occur, including canopy species and <i>Atalaya hemiglauc</i> . The ground layer is tussock grasses, including <i>Astrebla spp.</i> , <i>Iseilema spp.</i> , and <i>Chloris pumilio</i> . Occurs on fringes of channels on Quaternary alluvial plains derived from fine-grained parent material. Fine alluvial soils and cracking clays. Riverine wetland or fringing riverine wetland. (BVG1M: 16a). <b>Special values:</b> Bioregional refuge for fauna, including macropods.	Of concern	Least concern	Sparse
<b>2.9.7a</b>	<i>Eucalyptus chlorophylla</i> open woodland to woodland, commonly with <i>Terminalia spp.</i> <i>Corymbia dallachiana</i> may occur in the canopy. A lower tree or shrub layer may occur, including <i>Erythrophleum chlorostachys</i> , <i>Dendrolobium arbuscula</i> and <i>Carissa lanceolata</i> . The ground layer is tussock grasses, including <i>Heteropogon contortus</i> , <i>Chrysopogon sp.</i> and <i>Bothriochloa bladhii</i> . Occurs on footslopes, rises and undulating plains of Cretaceous mudstones. Yellow to brown clays. (BVG1M: 18c)	Of concern	Least concern	Sparse





	<b>Exploration Activities Of Concern Regional Ecosystems (Biodiversity Status v11)</b>	<ul style="list-style-type: none"> <li>EPM Boundary</li> <li>Major Watercourse</li> <li>Pastoral Track</li> <li>Proposed Track (3m width)</li> <li>Proposed Drill Pad (20m x 20m)</li> </ul>	<ul style="list-style-type: none"> <li>Of Concern - Dominant</li> </ul>
<b>Figure 10</b> Sheet No. RTPL_ARD_LYN001_MAP_0004_B	Drawn By: Chris Schlebusch Requested by: Jacob Arnold Date: 3/03/2020	Data sources: Qld Department of Natural Resources, Mines & Energy Geoscience Australia, Esri	



### 3.2 Wildlife Corridors

Vegetation communities along watercourses and drainage features not only function as habitat for particular fauna but also as a movement corridor. According to the Vegetation Management Watercourse and Drainage Feature Mapping for the area, the proposed access tracks will only intersect two regulated vegetation (intersecting a watercourse) corridors. The two sections of regulated vegetation that are to be crossed may be used as habitat and movement corridors for fauna. Both drillholes are situated in REs predominately composed of RE 2.9.7a and also 2.3.17a.

There are no known Groundwater Dependent Ecosystems (GDE) mapped nearby to the proposed disturbance areas.

### 3.3 Water Quality

The exploration activities will occur in the upper catchment of the Staaten River sub-basin. The location of the proposed exploration is very remote with little to no data on the water quality of watercourses within the upper catchment of the Staaten Basin. Drainage from the Wandoo sites will flow into the Red River before it converges with Pelican Creek which then diverges into Pelican and Wyaaba Creeks. The watercourses then converge into Wyaaba Creek before flowing into the Staaten River which ultimately flows into the Gulf of Carpentaria. There are no open or closed DNRME gauging stations directly downstream of the Wandoo sites. There is currently only one open DNRME gauging station within the Staaten Basin. While this gauging station will not display the exact water quality characteristics of the surrounding the exploration sites, the Staaten River at Dorunda gauging station will provide some insight to the characteristics of the catchment.

Water quality characteristics and flow conditions can be observed in **Table 8** and **Table 9**. Water flow in the catchment is seasonal, exhibiting large flows throughout the wet season from December to April before flows decrease dramatically over the dry season.

**Table 8 Water Quality Characteristics at Site 918003A Staaten River at Dorunda (Queensland Government, 2020)**

Parameter	Count	Mean	Median
EC @ 25°C (µS/cm)	28	52.58	48.5
pH	28	6.9	6.91
Turbidity (NTU)	28	6.86	6
Total Nitrogen (mg/L)	25	0.42	0.38
Total Phosphorous (mg/L)	25	0.06	0.04

**Table 9 Water Flow Volume (ML) at Site 918003A Staaten River at Dorunda (Queensland Government, 2020)**

Month	Daily				Monthly
	Max	Min	Mean	Median	Mean
<b>January</b>	92107	0	11720	862	358168
<b>February</b>	98090	0	23382	9331	635999
<b>March</b>	98712	11	19667	7733	609675
<b>April</b>	93797	0	3682	583	108850
<b>May</b>	30996	0	508	55	15441
<b>June</b>	2917	0	74	2	2176
<b>July</b>	407	0	10	0	318
<b>August</b>	31	0	1	0	16
<b>September</b>	1	0	0	0	0
<b>October</b>	508	0	1	0	31
<b>November</b>	3162	0	20	0	589
<b>December</b>	72052	0	1313	0	39923
<b>All months</b>	<b>98712</b>	<b>0</b>	<b>4717</b>	<b>0</b>	<b>141722</b>

In terms of groundwater, the Wandoo project is situated on the Great Artesian Basin and Other Regional Aquifers Water Plan area. There are no known artesian springs located within 20km of the Wandoo sites. The nearest registered groundwater bore is bore RN157652 located approximately 31km from the Wandoo drill site, however, no groundwater quality data has been collected at this bore.

### 3.4 Hydrological Processes

The nearest Water Act defined watercourse is the Staaten River located approximately 36km north west of the Wandoo sites. There will not be any dams, lakes or springs located near the proposed exploration activities.

### 3.5 Geomorphic Processes

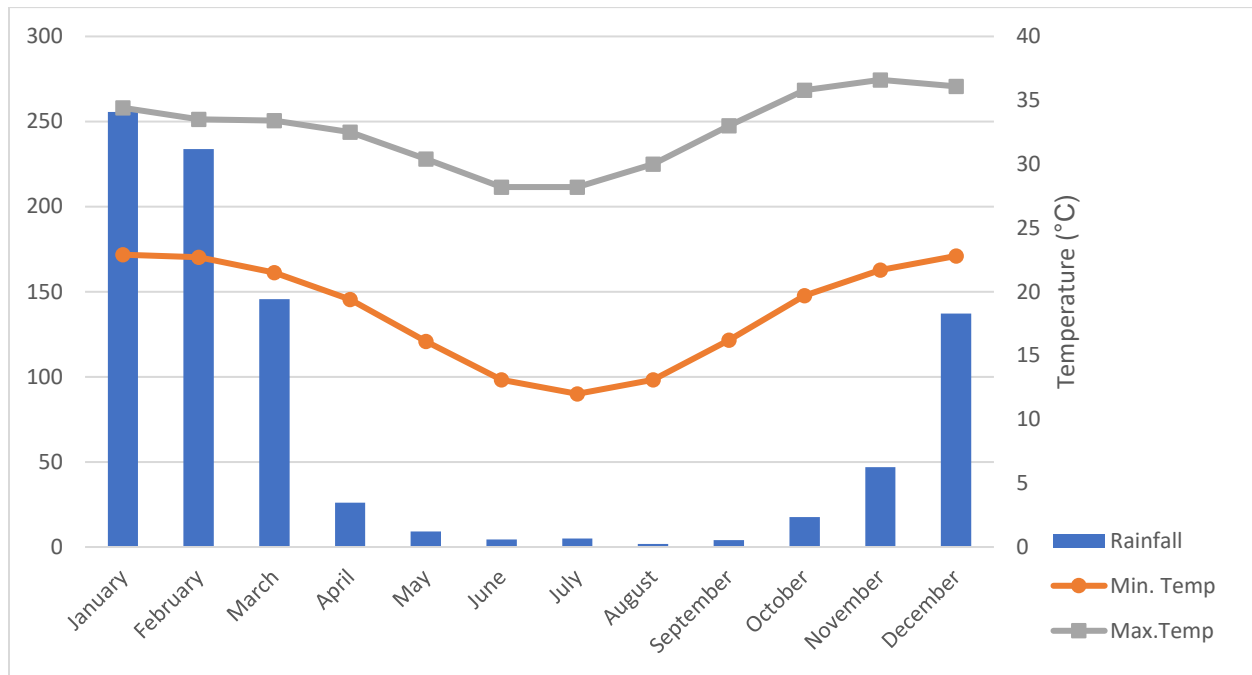
Drillholes will encounter sedimentary rocks of the Karumba and Carpentaria Basins before bottoming in Palaeozoic rocks, possibly volcanic or intrusive rocks. Several aquifers occur in the Karumba and Carpentaria Basin stratigraphy and are likely to be encountered, including weakly to moderately producing aquifers of the Gilbert River Formation, which is a sub-artesian to artesian aquifer.

### 3.6 Beneficial Flooding

The proposed areas of disturbance are not situated in the mapped rapid hazard assessment for floodplain areas which are potentially at threat of inundation.

### 3.7 Climate

The region is characterised by having a distinct wet and dry season, the mean annual rainfall for the region is 883.9mm with approximately 87% of the annual rainfall falling between December and March. Mean daily minimum temperatures range from between 12°C and 22.9°C, while mean maximum temperatures range from 28.2°C to 36.6°C (**Figure 11**).



Rainfall data taken from Abingdon Downs Station weather station located approximately 50km from the Wandoo sites using monthly rainfall data beginning in 1945. The temperature data is taken from the Georgetown Post Office weather station located approximately 95km from the Wandoo Sites. Monthly data used for mean maximum temperature is from 1909 to 2007, while mean minimum temperature is from 1894 to 2007.

**Figure 11 Monthly mean rainfall, minimum and maximum temperatures for the region (BOM, 2020)**

### 3.8 Land Use

The land use of the surrounding area is largely classified as grazing native vegetation in addition to an area of 'other minimal use' (being the Torwood Nature Refuge). Exploration activities will be located on land described as 'grazing native vegetation'.



## 4. Potential Impacts on Environmental Attributes

To address Section 9 of the RPI Regulation (as shown in Section 3 of this Report), sub-sections 4.1 to 4.5 below detail the required outcomes in relation to:

- Riparian process;
- Wildlife corridors;
- Water quality;
- Hydrologic processes and beneficial flooding; and
- Geomorphic processes.

The botanist-ecologist will prepare a summary report tabulating information about all regulated waterways and other MSESs encountered during track and pad layout. The report will include a description and specific details of the MSES, a description of alternative routes/locations (where there are any), a brief discussion of matters considered in determining the most appropriate route/location, and an outline of residual environmental impacts (if any). The report will be accompanied by spatially-referenced photographs and maps as relevant, and be available prior to site disturbance.

### 4.1 Riparian Process

The proposed exploration activities will impact on riparian vegetation as there are two crossings of regulated vegetation (intersecting a watercourse) associated with minor drainage features. The area of land disturbance caused to these areas of regulated vegetation is to be considered minor, as only 3m wide tracks will be created which will not cause widespread or irreversible damage to the riparian processes.

Desktop and preliminary investigations have considered riparian ecosystems and therefore, there is no current intention to have setback areas for this particular project. The proposed activities will not cause widespread or irreversible impacts to the riparian processes in the region as:

- exploration activities will be small-scale, of a temporary nature and conducted during the dry season;
- widespread areas of riparian vegetation will not be cleared;
- disturbance rehabilitation will occur immediately after works have been completed; and
- all activities and disturbance rehabilitation will be in accordance with the *Eligibility criteria and standard conditions for exploration and mineral development projects – Version 2 (2016)*.

### 4.2 Wildlife Corridors

The proposed routes for the access tracks will minimise isolation, fragmentation and edge effects as access tracks will only be 3m wide and have utilised existing pastoral tracks where possible. Wildlife corridors in the exploration area will largely involve two crossings of regulated vegetation (intersecting a watercourse) associated with minor drainage features. The disturbance to these corridors will only involve 3m wide sections of track and it is not considered that widespread irreversible disturbance of these corridors will occur.

Exploration activities for the Wandoo project will require crossing two regulated vegetation (intersecting a watercourse) corridors (**Figure 12**). **Figure 13** shows site-specific vegetation maps for each of the two regulated vegetation (intersecting a watercourse) corridors.

Criteria used to decide the location of access tracks and watercourse crossing points include:

- The distance from the nearest constructed property track or fence line to the crossing point,
- The nature of the vegetation between the start point and the crossing point – i.e. dense or open, Endangered, Of Concern, or Least Concern at Present Regional Ecosystems,
- The stream order at the crossing point – with reference to the amount or area of increased disturbance if the watercourse were crossed at a lower stream order,
- Vegetation at the crossing point – dense or open, woody or grassy, etc.,
- The entry and exit from the proposed crossing point – incised or gradual, sandy or rocky etc.,
- The nature of the watercourse at the crossing point – deep or shallow, incised channel or braided riffles,
- The position on the watercourse – on a bend or on a straight,
- Evidence or likelihood of high use by fauna – footprints, hollow bearing trees, nest or den sites etc.

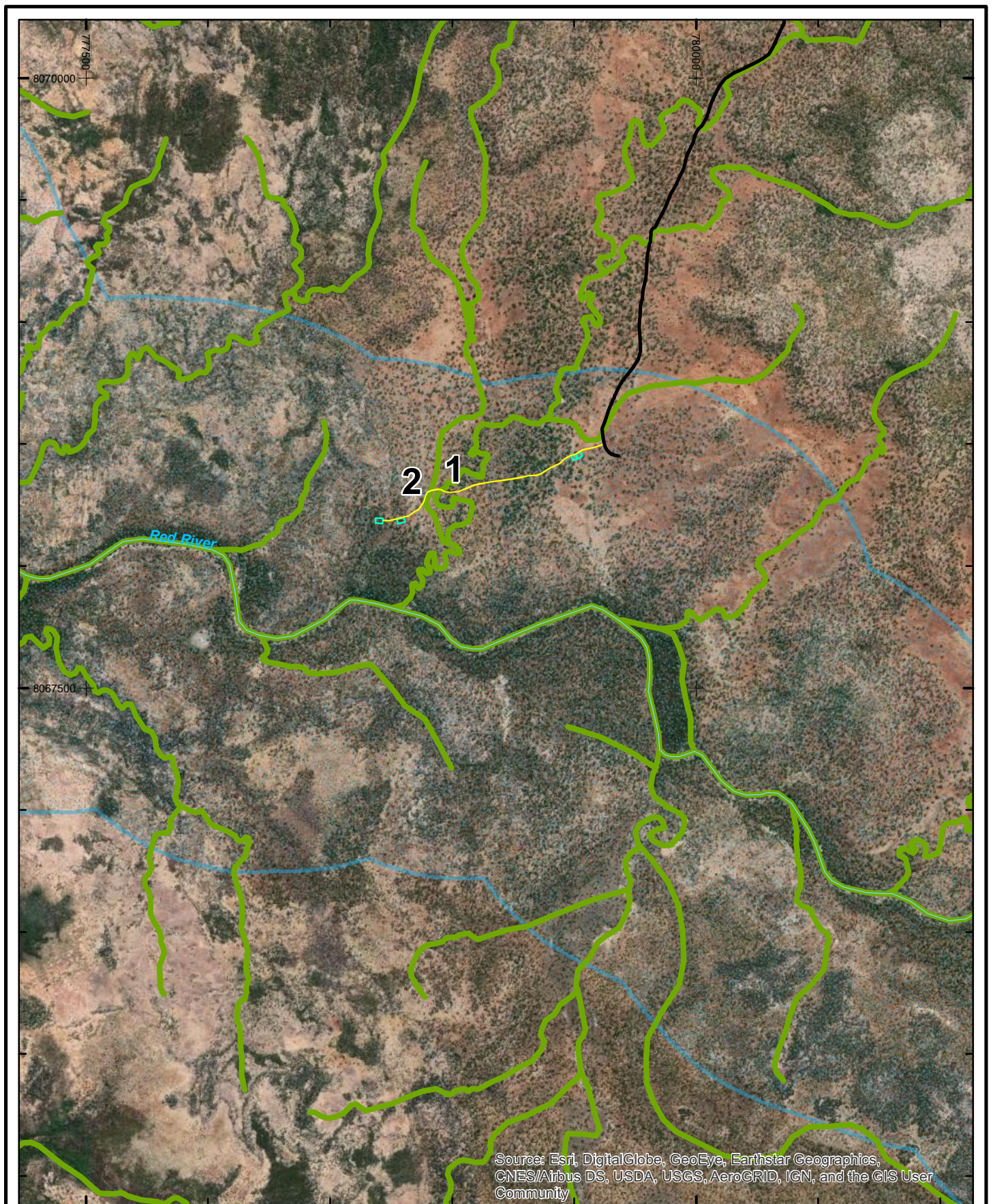
Applying these criteria to route selection for the 3m wide access tracks through the regulated vegetation (intersecting a watercourse) corridors ensures that they will not interfere with the ecological function of the riparian vegetation communities. Access tracks will be constructed by driving the grader (or bulldozer) along the route, with the blade up where possible, to minimise disturbance to topsoil, retaining most grasses, herbs and small shrubs while avoiding woody vegetation as much as possible and practical.

The access tracks were selected to start at the nearest existing track to each of the proposed drill sites and were designed to reduce the extent of environmental disturbance by avoiding dense vegetation and regulated vegetation corridors. Each crossing of a regulated vegetation corridor is at the lowest stream order practical, and/or where vegetation disturbance can be minimised. Although two regulated vegetation corridors will be crossed, detailed desktop assessment has identified routes that will minimise environmental disturbance.

All proposed disturbance will occur in REs that have a sparse structure category where mature trees may be avoided (**Table 7**). As track construction is usually 'blade up', the access track for exploration activities will not affect the connectivity and functionality of vegetation in the area, and the area will continue to provide habitat for fauna and facilitate movement of fauna.

Satellite imagery shows the two regulated vegetation corridors are not in densely vegetated riparian corridors, but in a sparse shrub and grass layer in a low open woodland (**Figure 13**). The 3m wide track through these corridors will not restrict fauna movement because the vegetation is sparse and mature trees in the low open woodland will be avoided. The unmodified structure of this vegetation association does not have canopy closure or a continuous or contiguous woody vegetation canopy cover; because no trees or large shrubs will be removed, there will be no modification of the woody vegetation canopy and consequently the structure and function of the corridor will be unaltered.





0 0.2 0.4 0.6 0.8 1  
Kilometers

# **LYND RESOURCES PTY LTD** **EPM 27251**

GDA94 MGA Zone 54



## **EPM 27251** **Access Track Crossings** **Summary**

**Drawn By:** Chris Schlebusch  
**Requested by:** Jacob Arnold  
**Date:** 3/03/2020

**Figure 12**  
**Sheet No.**

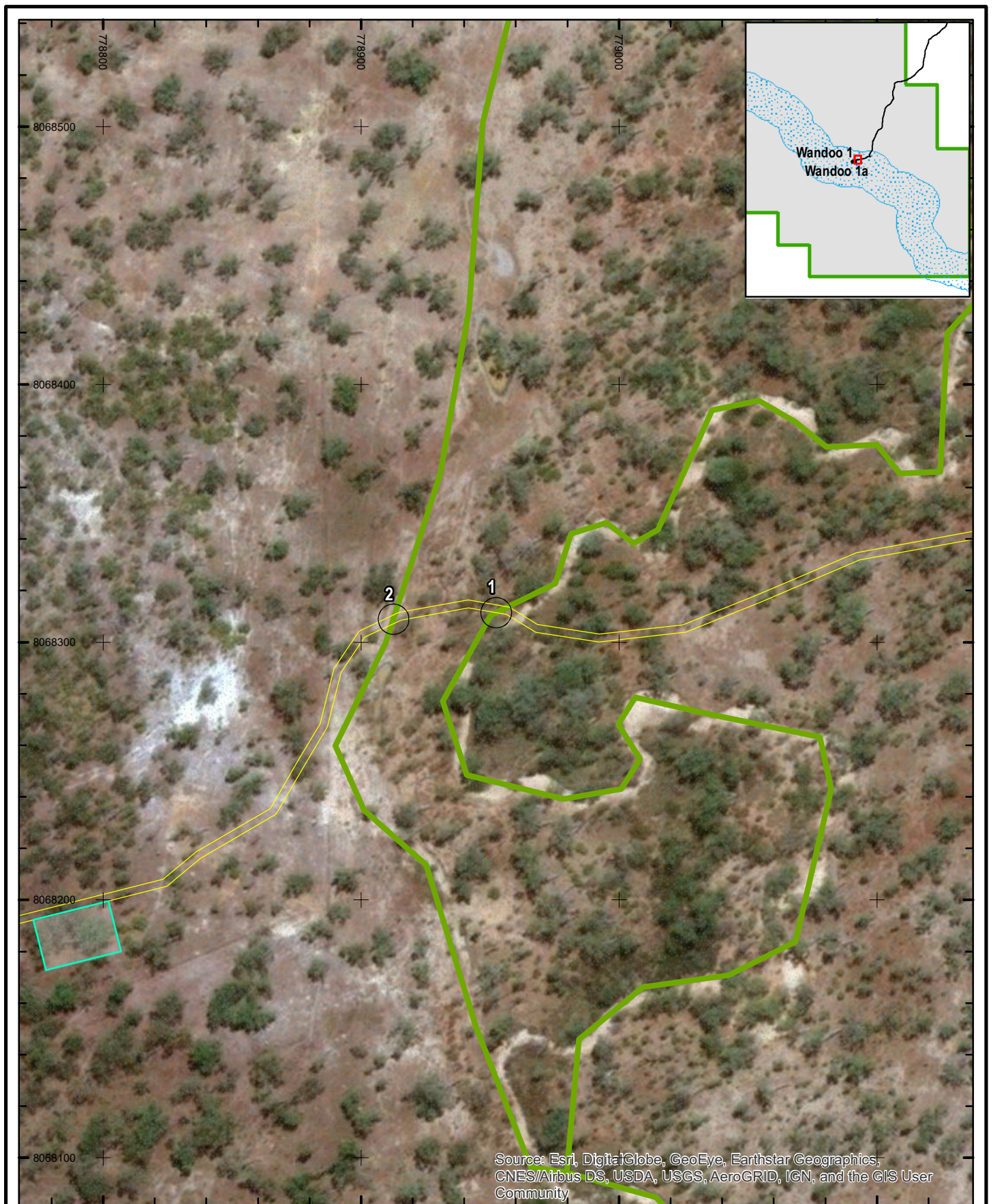
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- Major Watercourse
- Pastoral Track
- Proposed Track (3m width - to scale)
- Drill Pad or Laydown
- MSES regulated vegetation [defined watercourse]

MSES strategic environmental area [designated precinct]

Data sources:  
Qld Department of Natural Resources, Mines and Energy,  
Geoscience Australia, Esri





0 10 20 30 40 50  
Meters

**LYND RESOURCES PTY LTD**  
**EPM 27251**

N  
W E  
S  
GDA94 MGA Zone 54



**Wandoo  
Access Track  
Crossing 1 and 2**

**Drawn By:** Chris Schlebusch  
**Requested by:** Jacob Arnold  
**Date:** 3/03/2020

- ▬ EPM Boundary
- ▬ Proposed Track (3m width - to scale)
- ▬ Drill Pad or Laydown
- ▬ MSES regulated vegetation [defined watercourse]
- ▬ MSES strategic environmental area [designated precinct]

Data sources:  
Qld Department of Natural Resources, Mines and Energy,  
Geoscience Australia, Esri

**Figure 13**

**Sheet No.**

RTPL\_ARD\_LYNGEN\_MAP\_0009\_B

#### 4.2.1 Consideration of rare and threatened fauna

**Appendix 5** is a copy of the *Environment Protection and Biodiversity Conservation Act 1999* (C'wlth) (EPBC Act) Protected Matters Report for the site activities. This report lists threatened species or threatened species habitat that may, is likely to, or is known to occur, in the proposed Wandoo disturbance area.

The EPBC Act Protected Matters report lists two threatened fauna species or their habitat as likely to occur in the Wandoo exploration area. The Red Goshawk (*Erythrotriorchis radiatus*) is listed as Vulnerable under the EPBC Act and Endangered under the NC Act. The Red Goshawk inhabits tall open forests and woodlands and typically nests in trees that are taller than 20m. Consequently, mature trees greater than 20m, will not be cleared or damaged during exploration activities. The Ghost Bat (*Macroderma gigas*), is listed as Vulnerable under the EPBC Act and Endangered under the NC Act. Throughout the day, the Ghost Bat roosts in caves, rock crevices and old mines; the proposed exploration activities will not disturb caves, rock crevices or old mines.

The protected plant trigger search indicated there are no protected plants in or near the proposed disturbance areas. However, the EPBC Act Protected Matters Report has indicated that *Macropteranthes montana* which is listed as vulnerable under the EPBC Act is likely to occur within the exploration area. As a result, *Macropteranthes montana* will be surveyed for during track, pad and campsite marking. If found during the survey, these plants will be identified to ground staff and protected from harm or disturbance.

A Queensland Government Wildlife Online Extract was completed for the Wandoo disturbance area. The species list search displayed no records for the area (**Appendix 6**).

Although desktop assessment has been used to locate drill pads and access tracks, Lynd Resources will have an ecologist on site during track marking to ensure that disturbance to rare and threatened plant and animal species and their habitats is avoided, and that ecological interests are protected.

#### 4.2.2 Significant Residual Impact Test

The proposed exploration activities have been assessed against the significant residual impact test criteria for regulated vegetation (**Table 10**). Although the proposed clearing is 'within the defined distance of a watercourse', the proposed disturbance is considered to not have the potential for a significant residual impact. Although Criterion 3, 'clearing in a regional ecosystem within 5m of the defining bank' is met, Criterion 1 is not met, because the proposed clearing is not greater than 10m wide (**Table 11**). Consequently, it is considered that disturbance to each of the regulated vegetation corridors proposed to be crossed will not have a significant residual impact.



**Table 10 Significant residual impact test criteria for regulated vegetation as reproduced from the Significant Residual Impact guideline**

		Clearing in a regional ecosystem that is: <i>endangered, or of concern</i>	Clearing in the portion of a regional ecosystem that lies within a mapped wetland	Clearing in a regional ecosystem that is within the defined distance of a watercourse
1	<b>For clearing for linear infrastructure:</b> <ul style="list-style-type: none"> <li>greater than 25m wide in a grassland (structural category) regional ecosystem; or</li> <li>greater than 20m wide in a sparse (structural category) regional ecosystem; or</li> <li>greater than 10m wide in a dense to mid-dense (structural category) regional ecosystem.</li> </ul> <b>For clearing other than clearing for linear infrastructure:</b> <ul style="list-style-type: none"> <li>area greater than 5 ha where in a grassland (structural category) regional ecosystem; or</li> <li>area greater than 2 ha where in a sparse (structural category) regional ecosystem; or</li> <li>area greater than 0.5 ha where in a dense to mid-dense (structural category) regional ecosystem.</li> </ul>	✓	✓	✓
2	Clearing within 50m of the defining bank	N/A	✓	N/A
3	Clearing within 5m of the defining bank	N/A	N/A	✓

**Table 11 Significant residual impact test for proposed activities to regulated vegetation corridors associated with the Wandoo project**

		Clearing in a regional ecosystem that is: <i>endangered, or of concern</i>	Clearing in the portion of a regional ecosystem that lies within a mapped wetland	Clearing in a regional ecosystem that is within the defined distance of a watercourse
1	<b>For clearing for linear infrastructure:</b> <ul style="list-style-type: none"> <li>Greater than 25m wide in a grassland (structural category) regional ecosystem; or</li> <li>Greater than 20m wide in a sparse (structural category) regional ecosystem; or</li> <li>Greater than 10m wide in a dense to mid-dense (structural category) regional ecosystem</li> </ul> <b>Not applicable because access tracks are only 3m wide.</b> <b>For clearing other than clearing for linear infrastructure:</b> <ul style="list-style-type: none"> <li>Area greater than 5 ha where in a grassland (structural category) regional ecosystem; or</li> <li>Area greater than 2 ha where in a sparse (structural category) regional ecosystem; or</li> <li>Area greater than 0.5ha where in a dense to mid-dense (structural category) regional ecosystem.</li> </ul> <b>Not applicable because clearing regulated vegetation corridors will be linear (access tracks)</b>	✗	✗	✗
2	Clearing within 50m of the defining bank <b>Not applicable because clearing is not within 50m of the defining bank within a mapped wetland</b>	N/A	✗	N/A
3	Clearing within 5m of the defining bank	N/A	N/A	✓



#### 4.2.3 Management Strategies

A number of impact management strategies will be used during exploration activities. An ecologist will be on site during track marking, to ensure that disturbance to mature trees and threatened flora and fauna is avoided. Additional measures for crossing the regulated vegetation corridors include:

- Timing activities to take place in the dry season;
- Toolbox talks with exploration staff to raise the importance of protecting the natural environment;
- Minimise width of access tracks;
- Minimise vegetation clearing;
- Avoid areas of environmental significance;
- Retain mature trees;
- Retain rootstock where practical; and
- Rehabilitate crossing points at the completion of exploration activities at that site.

The impact constructing tracks and crossing points on each of the proposed regulated vegetation (intersecting a watercourse) corridors and within the Designated Precinct will be minimal. The connectivity between native terrestrial vegetation along and across the watercourse systems will not be altered or disturbed and will continue to be sufficient for the migration, shelter and habitat of fauna.

The watercourses are not permanent and will have little, if any flow at the time of the proposed activity (in the dry season), it is unlikely that the watercourses will be functioning as passage for aquatic/marine fauna. Even if sufficient flow is present when exploration activities are occurring, it is not expected that vehicles crossing the drainage lines will inhibit flow in the watercourse.

The proposed exploration activities will not compromise the spatial extent and species diversity, structure and density of native terrestrial and aquatic vegetation. The habitat will continue to provide shelter and connectivity for fauna, including passage into and along watercourses. As the access tracks are only 3m wide, and are not formed and graded, minimal edge effects will be created. Consequently, it is unlikely that habitat, feeding, roosting or nesting of fauna in areas adjacent to the track will be compromised.

Drilling at each of the drill sites is expected to be completed within two to five days. Rehabilitation of disturbance will commence immediately after the completion of exploration activities in the area, in accordance with the rehabilitation conditions set out in the *"Eligibility criteria and standard conditions for exploration and mineral development projects – Version 2"* document.

### 4.3 Water Quality

The proposed exploration activities will occur in the dry season with minimal if any precipitation falling resulting in reduced watercourse flows in the region. As illustrated in **Figure 11**, the mean average rainfall during proposed exploration activities occurring between July and November is minimal. During exploration activities, the physical, chemical and biological water quality immediately downstream of the activities will remain consistent with water quality immediately upstream of the activity. Therefore, there will be negligible impacts on the physical, chemical and biological attributes that support and maintain natural aquatic and terrestrial ecosystems in the area.

In regard to drilling, each drill hole is expected to be completed in 2 to 5 days. The drilling and casing methodology will be undertaken in a manner to case off any aquifers encountered in the overburden. There may be some additives added to the water recirculated in the drill hole to improve drilling conditions, including materials such as bentonite clay. The drill fluid is recirculated within the casing (once placed) in the upper part of the drill hole, and therefore there will be little, if any exchange with the near surface aquifers. Deeper in the hole, pore pressure in the basement rock are such that drilling fluids will not migrate out of the drill hole. Therefore, there should be no impact on groundwater quality from the drilling.

Upon completion of drilling, the drill hole will be backfilled to surface with grout (cement) so as to fully seal the drill hole. This will ensure that any aquifers encountered are fully sealed and there can be no connection between aquifers, nor surface seepage. Therefore, there should be no impact on aquifer pressure from the drilling. Suitably qualified and experienced drillers (for artesian conditions) will supervise the drilling.

All drill sites and associated sumps will be rehabilitated in accordance with the *Eligibility criteria and standard conditions for exploration and mineral development projects – Version 2 (2016)*. Due to the high evaporation rates in the region, drill water remaining in the sumps will likely evaporate within two to three weeks. Temporary fencing of the sumps will occur to prevent cattle or wildlife access. Once dry, rehabilitation of the site will occur with the bentonite clay material remaining at the bottom of the sumps to be covered with the stockpiled subsoil and topsoil. Timing of all activities will aid in minimising surface water impacts.

### 4.4 Hydrologic processes and beneficial flooding

The proposed access tracks will be constructed and used in the dry season and will have minimal influence on the gradient of the land to ensure the overflow or flow of surface water in or out of a watercourse will not be inhibited. As detailed in **Table 9**, mean monthly water flow at the DNRME water monitoring site 918003A Staaten River at Dorunda during the planned months of exploration between July and November is very low. This site is located within a higher order stream and significantly downstream of proposed activities. Therefore, it would be considered that watercourse flows will be minimal if at all throughout the exploration area during the time of exploration activities. Crossings of minor drainage features should not impact any waterflow. The exploration activities will not alter the natural patterns and levels of runoff, stream flow and connectivity with other elements of the river and flood plain system to the extent of causing significant adverse outcomes.

The proposed activities will not be situated near any major watercourses or floodplains that have the potential of being inundated. In addition, the proposed activities will not compromise beneficial flooding where the activity will alter natural flow paths and the natural extent of flooding across the floodplain.

## 4.5 Geomorphic processes

The proposed exploration activities will not have widespread or irreversible impact on the natural erosion and transport and deposit of sediment by water throughout the catchment. As activities will occur in the dry season when negligible precipitation is expected, and water flow is heavily reduced, the transport and deposit of sediment by water throughout the catchment will be minimal reducing the possibility of any widespread or irreversible impacts. The exploration activities will not compromise the preservation of the natural erosion, transport and deposition of sediments by water throughout the catchment. Whereby, activities will not alter the delivery of sediment to the river system from adjacent lands and the erosion of the bed, banks and floodplains to the extent of causing significant adverse outcomes.

Erosion and sediment control may be required for the access tracks, drill pads and other disturbance areas. Measures will be undertaken in accordance with the *Eligibility criteria and standard conditions for exploration and mineral development projects – Version 2 (2016)* and in line with the guiding principles contained within the International Erosion Control Association (IECA) Best Practice Erosion and Sediment Control (BPESC) manual.

For watercourse crossings, it will be the intention to:

- Select appropriate crossing areas (for example: lower order streams, areas with less significant vegetation or with less vegetation requiring clearing and streams with sand/gravel/rocky streambeds);
- Minimise any significant bank damage during the construction of any required access ramps;
- Minimise the risk of sediment-laden runoff from the access ramps being allowed to discharge directly into the watercourse without passing through an appropriate sediment trap or vegetative filter; and
- Minimise harm (including sediment accumulation) to the streambed.

To meet these key principles, following appropriate site selection, mitigation measures such as the following will be implemented as necessary:

- Minimise all vegetation clearing;
- Construct the crossing perpendicular to the channel;
- Install overland flow diversions to prevent run-off from the access road entering the watercourse directly;
- Stabilise access ramps and, if necessary, employ geotextile;
- Stabilise the streambed, if necessary, with a geogrid;
- Conduct regular inspections for erosion or channel scour; and
- Commence rehabilitation as soon as practicable after final use.

For the access tracks, drill pads and other disturbance areas, it will be the intention to:



- Select appropriate areas (for example: avoiding areas of environmental significance, retention of mature or habitat trees, minimise vegetation clearing, retain rootstock where practicable); and
- Ensure the effect of exploration activities are minimised on surrounding vegetation or watercourses.

To meet these key principles, following appropriate site selection, mitigation measures such as the following will be implemented as necessary:

- Minimise all vegetation clearing;
- Store topsoil and subsoil for use in rehabilitation;
- Ensure all fuel is appropriately banded;
- Store all exploration materials (drilling muds etc) on pallets;
- Construct all drill pads on flat surfaces;
- Stabilise access tracks wherever necessary and, if necessary, employ geotextile;
- Repair any damage caused by traffic as soon as practicable;
- Limit traffic along the access tracks;
- Direct all drilling muds to appropriately sized sumps;
- Conduct regular inspections for fuel discharge, and sedimentation and erosion, as a result of exploration activities; and
- Commence rehabilitation as soon as practicable after final use.

## 5. Regional Planning Interests Regulation 2014 Assessment Criteria

Schedule 2, Part 5 of the RPI Regulation provide criteria for the assessment or decision of the RPI application. The required outcome and prescribed solutions are detailed below in **Table 12**. This table provides a summary of the details described in this project against the assessment criteria.

**Table 12 Criteria for assessment or decision in a SEA**

Schedule 2 Part 5 of the RPI Regulation	Response
Required Outcome	Response
(14) The activity will not result in a widespread or irreversible impact on an environmental attribute of a strategic environmental area.	The proposed activities will not result in widespread or irreversible damage to the environmental attributes listed in s9 of the RPI Regulation for the Gulf Rivers SEA as described in Sections 4.1-4.5 of this report (and summarised in the response components of this table, below).
Prescribed Solution	Response
(15)(1) The application demonstrates either – (a) the activity will not, and is not likely to, have a direct or indirect impact on an environmental attribute of the strategic environmental area; or	<i>Note: this application addresses the requirement of section 15(1)(b).</i>
(b) all of the following – (i) if the activity is being carried out in a designated precinct in the strategic environmental area – the activity is not an unacceptable use for the precinct;	There will be proposed activities that will be carried out within a designated precinct. However, the proposed activities do not include any of the unacceptable uses listed in Schedule 2 Part 5 s15(2).
(ii) the construction and operation footprint of the activity on the environmental attribute is minimised to the greatest extent possible;	<ul style="list-style-type: none"> <li>• Desktop investigations have been conducted to refine the access tracks to the drill sites in order to minimise the operational footprint on environmental attributes.</li> <li>• Searches of Queensland (MSES, RE, ESA, Vegetation Management Watercourse and Drainage Features and Protected Plants Flora Survey Triggers) and Commonwealth (EPBC Act) databases have been undertaken.</li> <li>• Site access construction will be limited to a 3m wide track.</li> <li>• Drill pads are limited to 20m x 30m, with temporary fuel storage and laydown areas and temporary mobile campsite areas limited to 20m x 20m.</li> <li>• During on-site access road construction and drill pad location, all mature trees and areas of ecological significance will be avoided. A botanist-ecologist will be present during marking out to help determine the most appropriate route to take across or around MSES waterways. The botanist-ecologist will</li> </ul>

Schedule 2 Part 5 of the RPI Regulation	Response
	<p>prepare a summary report tabulating information about all regulated waterways and other MSESs encountered during track and pad layout. The report will include a description and specific details of the MSES, a description of alternative routes/locations (where there are any), a brief discussion of matters considered in determining the most appropriate route/location, and an outline of residual environmental impacts (if any). The report will be accompanied by spatially referenced photographs and maps as relevant, and be available prior to site disturbance.</p>
<p>(iii) the activity does not compromise the preservation of the environmental attribute within the strategic environmental area;</p>	<ul style="list-style-type: none"> <li>• Desktop investigations have been conducted to refine the access tracks to the drill sites in order to minimise the operational footprint on environmental attributes.</li> <li>• The exploration activities will have minimal impacts on the natural hydrologic processes of the area with waterflows related to watercourses, floodplains and groundwater will be minimal due to activities being conducted in the dry season when precipitation and waterflow is very low.</li> <li>• The activities will have minimal impacts on geomorphic processes of the area through limited impact to the natural erosion of the region, in addition to the movement of sediment by water throughout the catchment as waterflow will be minimal in the dry season.</li> <li>• Based upon a desktop assessment, it is considered that only minor disturbance to the wildlife corridors in the area will occur. Due to the small-scale and temporary nature of the exploration works, it is unlikely to create widespread or irreversible impact to the functioning of the wildlife corridors.</li> <li>• Although minor disturbance to the riparian area will occur, due to the small-scale and temporary nature of the exploration works and the fact that works will be conducted only during the dry season, it is considered unlikely that there will be widespread or irreversible impact to the functioning riparian processes. Mitigation measures will be employed as required.</li> </ul>



Schedule 2 Part 5 of the RPI Regulation	Response
	<ul style="list-style-type: none"> <li>• An ecological field assessment will be undertaken, and access track and drill site locations amended if required, as part of the impact minimisation process.</li> <li>• Water quality in the region that supports and maintains natural aquatic and terrestrial ecosystems will not be impacted as no major watercourses will be disturbed. With only minor drainage features being crossed with no flow likely to be present at this proposed time of year.</li> <li>• All drill site and associated sumps will be rehabilitated in accordance with the <i>Eligibility criteria and standard conditions for exploration and mineral development projects – Version 2 (2016)</i>. Due to the high evaporation rates in the region, drill water remaining in the sumps will likely evaporate within two to three weeks. Temporary fencing of the sumps will occur to prevent cattle or wildlife access. Once dry, rehabilitation of the site will occur with the bentonite clay material remaining at the bottom of the sumps to be covered with the stockpiled subsoil and topsoil. Timing of all activities will aid in minimising surface water impacts.</li> </ul>
(iv) if the activity is to be carried out in a strategic environmental area identified in a regional plan – the activity will contribute to the regional outcomes, and be consistent with the regional policies, stated in the regional plan.	The Far North Queensland Regional Plan 2009-2031 does not identify the Gulf River SEA.

## 6. Conclusion

Lynd Resources intends to conduct a small-scale exploration drilling programme within its granted EPM 27251. As part of this programme, two drill pads will be constructed. To access these sites, a 3m wide access track will be constructed.

Disturbance areas are detailed in **Table 2** of this Report and are summarised below:

- Drill pads - 0.12ha (2 x 20m x 30m)
- Access track – 0.31ha (3m wide tracks)
- Temporary fuel storage and laydown area – 0.04ha (20m x 20m)
- Temporary mobile campsite - 0.04ha (20m x 20m)

Therefore, the total disturbance for two target sites is 0.51ha. The vast majority of this is created by the access track to the drill sites which has been minimised to a 3m wide corridor to limit broader disturbance. The largest area of disturbance in any one location is 0.06ha (20m x 30m), which is the size of the drill pad.

In line with Section 15 (1)(b) of the RPI Regulation, it is not considered that the proposed activities will cause widespread or irreversible impacts to the SEA in the region, as:

- The activity is not being carried out in a designated precinct and is not considered an unacceptable use;
  - exploration activities will be small-scale, of a temporary nature and conducted during the dry season;
  - drilling at each site is expected to be completed within two to five days;
  - searches of appropriate State and Commonwealth databases have been undertaken and a desktop assessment has been included in the final selection of drill sites and preferred access routes;
  - the botanist-ecologist will be on-site during site marking to ensure that areas of ecological significance are avoided or impact to them is minimised;
  - widespread areas of riparian vegetation will not be cleared;
  - disturbance rehabilitation will occur as soon as possible after works have been completed; and
  - all activities and disturbance rehabilitation will be in accordance with the *Eligibility criteria and standard conditions for exploration and mineral development projects – Version 2 (2016)*.
-

## 7. References

Bureau of Meteorology (BOM) 2020, Monthly rainfall Abingdon Downs Station, accessed 26 February 2020, <[http://www.bom.gov.au/jsp/ncc/cdio/wData/wdata?p\\_nccObsCode=139&p\\_display\\_type=dataFile&p\\_stn\\_num=030000](http://www.bom.gov.au/jsp/ncc/cdio/wData/wdata?p_nccObsCode=139&p_display_type=dataFile&p_stn_num=030000)>.

BOM 2020, Monthly mean maximum temperature Georgetown Post Office, accessed 26 February 2020, <[http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p\\_nccObsCode=36&p\\_display\\_type=dataFile&p\\_startYear=&p\\_c=&p\\_stn\\_num=030018](http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=36&p_display_type=dataFile&p_startYear=&p_c=&p_stn_num=030018)>.

BOM 2020, Monthly mean minimum temperature Georgetown Post Office, accessed 26 February 2020, <[http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p\\_nccObsCode=38&p\\_display\\_type=dataFile&p\\_startYear=&p\\_c=&p\\_stn\\_num=030018](http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=38&p_display_type=dataFile&p_startYear=&p_c=&p_stn_num=030018)>.

Queensland Government 2020, 918003A Staaten River at Dorunda, accessed 26 February 2020, <<https://water-monitoring.information.qld.gov.au/>>.

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## RPI DEVELOPMENT APPLICATION SUPPORTING INFORMATION LYND RESOURCES PTY LTD

Appendix 1: Regional Ecosystem Report



**Queensland** Government

**Department of Environment and Science**

Environmental Reports

## **Regional Ecosystems**

### ***Biodiversity Status***

For the selected area of interest

Longitude: 143.62439 Latitude: -17.45502 with 2 kilometre radius

## Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the 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 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

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

<https://www.dnrme.qld.gov.au/>

Please direct queries about these reports to: [Queensland.Herbarium@dsiti.qld.gov.au](mailto:Queensland.Herbarium@dsiti.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: Area of interest details: Longitude: 143.62439 Latitude: -17.45502 with 2 kilometre radius**

Size (ha)	1,256.55
Local Government(s)	Mareeba Shire
Bioregion(s)	Gulf Plains
Subregion(s)	Holroyd Plain - Red Plateau
Catchment(s)	Staaten

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	0.0	0.0
Of concern	373.04	29.69
No concern at present	883.51	70.31
Total remnant vegetation	1,256.55	100.0

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 are usually distinguished by differences in dominant species, frequently in the shrub or ground layers and 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 2017) 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'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, Mines and Energy website.

<https://www.dnrme.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 per cent 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 per cent 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
2.10.2x3a	Mixed eucalypt woodland on plateaus, mesas and scarps on shallow soils	No concern at present	13.99	1.11
2.10.5a	Acacia shirleyi woodland and Triodia pungens hummock grassland on scarps and stony ledges	No concern at present	94.36	7.51
2.3.11	Eucalyptus microtheca +/- Excoecaria parvifolia, Atalaya hemiglauc, Grevillea striata low woodland on active Quaternary alluvial plains with cracking clay soils	No concern at present	33.47	2.66
2.3.17a	Eucalyptus microtheca +/- Excoecaria parvifolia, Lysiphyllum cunninghamii, Atalaya hemiglauc woodland fringing channels in fine-textured alluvial systems	Of concern	39.78	3.17
2.3.24b	Melaleuca spp. woodland-open forest on sands in channels and on levees	Of concern	69.52	5.53
2.3.55b	Seasonal swamps (wooded). Melaleuca viridiflora and/or M. clarksonii low woodland in closed depressions on Tertiary to Quaternary deposits in the north	No concern at present	5.27	0.42
2.5.17a	Melaleuca citrolens and/or M. stenostachya low open woodland on Tertiary outwash deposits and sand sheets in the east	No concern at present	6.28	0.5
2.7.1	Acacia shirleyi low open forest or Melaleuca tamariscina shrubland on laterised mudstones on skeletal soils	No concern at present	13.07	1.04
2.7.1x2a	Acacia shirleyi low open forest or Melaleuca tamariscina shrubland on laterised mudstones on skeletal soils	No concern at present	66.02	5.25
2.7.1x2b	Acacia shirleyi low open forest or Melaleuca tamariscina shrubland on laterised mudstones on skeletal soils	No concern at present	70.82	5.64
2.7.1x4	Acacia shirleyi low open forest or Melaleuca tamariscina shrubland on laterised mudstones on skeletal soils	No concern at present	38.63	3.07
2.7.1x5	Acacia shirleyi low open forest or Melaleuca tamariscina shrubland on laterised mudstones on skeletal soils	No concern at present	82.83	6.59

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
2.7.1x6	Acacia shirleyi low open forest or Melaleuca tamariscina shrubland on laterised mudstones on skeletal soils	No concern at present	16.45	1.31
2.7.1x7	Acacia shirleyi low open forest or Melaleuca tamariscina shrubland on laterised mudstones on skeletal soils	No concern at present	122.75	9.77
2.7.2x2c	Acacia shirleyi, Eucalyptus shirleyi, Corymbia setosa subsp. pedicellaris or Melaleuca acacioides woodland on low scarps on skeletal soils	No concern at present	167.36	13.32
2.7.2x2f	Acacia shirleyi, Eucalyptus shirleyi, Corymbia setosa subsp. pedicellaris or Melaleuca acacioides woodland on low scarps on skeletal soils	No concern at present	4.25	0.34
2.7.2x4	Acacia shirleyi, Eucalyptus shirleyi, Corymbia setosa subsp. pedicellaris or Melaleuca acacioides woodland on low scarps on skeletal soils	No concern at present	147.95	11.77
2.9.3x1a	Deciduous scrub and grasslands on deep cracking clays on mudstones	Of concern	62.92	5.01
2.9.7a	Eucalyptus chlorophylla woodland on lowlands on earths and clays	Of concern	200.82	15.98

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
2.10.2x3a	Pre-clearing 299000 ha; Remnant 2017 299000 ha	14d	None	High
2.10.5a	Pre-clearing 371000 ha; Remnant 2017 371000 ha	24a	None	High
2.3.11	Pre-clearing 679000 ha; Remnant 2017 675000 ha	16c	Floodplain (other than floodplain wetlands).	Low
2.3.17a	Pre-clearing 355000 ha; Remnant 2017 353000 ha	16a	Riverine wetland or fringing riverine wetland.	Low
2.3.24b	Pre-clearing 124000 ha; Remnant 2017 123000 ha	22c	Riverine wetland or fringing riverine wetland.	Low
2.3.55b	Pre-clearing 65000 ha; Remnant 2017 65000 ha	34c	Palustrine wetland (e.g. vegetated swamp).	High
2.5.17a	Pre-clearing 445000 ha; Remnant 2017 444000 ha	21b	None	Low
2.7.1	Pre-clearing 307000 ha; Remnant 2017 307000 ha	24a	None	Low
2.7.1x2a	Pre-clearing 307000 ha; Remnant 2017 307000 ha	24a	None	Low

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
2.7.1x2b	Pre-clearing 307000 ha; Remnant 2017 307000 ha	24a	None	Low
2.7.1x4	Pre-clearing 307000 ha; Remnant 2017 307000 ha	21b	None	Low
2.7.1x5	Pre-clearing 307000 ha; Remnant 2017 307000 ha	12b	None	Low
2.7.1x6	Pre-clearing 307000 ha; Remnant 2017 307000 ha	33b	None	Low
2.7.1x7	Pre-clearing 307000 ha; Remnant 2017 307000 ha	24a	None	Low
2.7.2x2c	Pre-clearing 304000 ha; Remnant 2017 303000 ha	14d	None	Medium
2.7.2x2f	Pre-clearing 304000 ha; Remnant 2017 303000 ha	19d	None	Medium
2.7.2x4	Pre-clearing 304000 ha; Remnant 2017 303000 ha	19d	None	Medium
2.9.3x1a	Pre-clearing 54000 ha; Remnant 2017 52000 ha	30b	None	No representation
2.9.7a	Pre-clearing 56000 ha; Remnant 2017 53000 ha	18c	None	Low

*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
2.10.2x3a	Supports locally uncommon plant species. 2.10.2x10a: Supports locally uncommon plant species. 2.10.2x3a: Supports plant species with restricted geographic ranges.
2.10.5a	Potential habitat for NCA listed species: <i>Drummondita calida</i> , <i>Labichea brassii</i> , <i>Leptospermum pallidum</i> 2.10.5a: Supports plant species with restricted geographic ranges.
2.3.11	Seasonal wetland. Important feeding and moulting sites for water birds. 2.3.11x2a: Seasonal wetland. Important feeding and moulting sites for water birds. 2.3.11x2b: Seasonal wetland. Important feeding and moulting sites for water birds. 2.3.11x2c: Seasonal wetland. Important feeding and moulting sites for water birds. 2.3.11x2d: Seasonal wetland. Important feeding and moulting sites for water birds. 2.3.11x3: Seasonal wetland. Important feeding and moulting sites for water birds.
2.3.17a	Bioregional refuge for fauna, including macropods. 2.3.17a: Bioregional refuge for fauna, including macropods.

Regional Ecosystem	Special Values
2.3.24b	Provincial refuge for some fauna and flora. <i>Pristis pristis</i> (freshwater sawfish) habitat. 2.3.24a: Important sites for feeding and movement of birds, fish and reptiles. 2.3.24b: Supports locally uncommon plant species. Provincial refuge for flora and fauna. 2.3.24c: Supports locally uncommon plant species. 2.3.24x12: Important sites for feeding and movement of birds, fish and reptiles. 2.3.24x3: Supports locally uncommon plant species. The only mappable occurrence of <i>Syzygium forte</i> subsp. <i>potamophilum</i> in the bioregion.
2.3.55b	Seasonal wetland. Important feeding and moulting sites for water birds. 2.3.55a: Seasonal wetland. Important feeding and moulting sites for water birds. 2.3.55b: Seasonal wetland. Important feeding and moulting sites for water birds. 2.3.55c: Seasonal wetland. Important feeding and moulting sites for water birds.
2.5.17a	None
2.7.1	Potential habitat for NCA listed species: <i>Macropteranthes montana</i> 2.7.1x2a: Supports plant species with restricted geographic ranges in the bioregion, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x2b: Supports plant species with restricted geographic ranges. 2.7.1x2c: Supports plant species with restricted geographic ranges. 2.7.1x3a: Supports plant species with restricted geographic ranges. 2.7.1x4: Supports plant species with restricted geographic ranges, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x5: Supports plant species with restricted geographic ranges, including <i>Macropteranthes montana</i> (V). 2.7.1x6: Supports plant species with restricted geographic ranges. 2.7.1x7: Supports plant species with restricted geographic ranges.
2.7.1x2a	Potential habitat for NCA listed species: <i>Macropteranthes montana</i> 2.7.1x2a: Supports plant species with restricted geographic ranges in the bioregion, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x2b: Supports plant species with restricted geographic ranges. 2.7.1x2c: Supports plant species with restricted geographic ranges. 2.7.1x3a: Supports plant species with restricted geographic ranges. 2.7.1x4: Supports plant species with restricted geographic ranges, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x5: Supports plant species with restricted geographic ranges, including <i>Macropteranthes montana</i> (V). 2.7.1x6: Supports plant species with restricted geographic ranges. 2.7.1x7: Supports plant species with restricted geographic ranges.
2.7.1x2b	Potential habitat for NCA listed species: <i>Macropteranthes montana</i> 2.7.1x2a: Supports plant species with restricted geographic ranges in the bioregion, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x2b: Supports plant species with restricted geographic ranges. 2.7.1x2c: Supports plant species with restricted geographic ranges. 2.7.1x3a: Supports plant species with restricted geographic ranges. 2.7.1x4: Supports plant species with restricted geographic ranges, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x5: Supports plant species with restricted geographic ranges, including <i>Macropteranthes montana</i> (V). 2.7.1x6: Supports plant species with restricted geographic ranges. 2.7.1x7: Supports plant species with restricted geographic ranges.



Regional Ecosystem	Special Values
2.7.1x4	<p>Potential habitat for NCA listed species: <i>Macropteranthes montana</i></p> <p>2.7.1x2a: Supports plant species with restricted geographic ranges in the bioregion, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x2b: Supports plant species with restricted geographic ranges. 2.7.1x2c: Supports plant species with restricted geographic ranges. 2.7.1x3a: Supports plant species with restricted geographic ranges. 2.7.1x4: Supports plant species with restricted geographic ranges, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x5: Supports plant species with restricted geographic ranges, including <i>Macropteranthes montana</i> (V). 2.7.1x6: Supports plant species with restricted geographic ranges. 2.7.1x7: Supports plant species with restricted geographic ranges.</p>
2.7.1x5	<p>Potential habitat for NCA listed species: <i>Macropteranthes montana</i></p> <p>2.7.1x2a: Supports plant species with restricted geographic ranges in the bioregion, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x2b: Supports plant species with restricted geographic ranges. 2.7.1x2c: Supports plant species with restricted geographic ranges. 2.7.1x3a: Supports plant species with restricted geographic ranges. 2.7.1x4: Supports plant species with restricted geographic ranges, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x5: Supports plant species with restricted geographic ranges, including <i>Macropteranthes montana</i> (V). 2.7.1x6: Supports plant species with restricted geographic ranges. 2.7.1x7: Supports plant species with restricted geographic ranges.</p>
2.7.1x6	<p>Potential habitat for NCA listed species: <i>Macropteranthes montana</i></p> <p>2.7.1x2a: Supports plant species with restricted geographic ranges in the bioregion, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x2b: Supports plant species with restricted geographic ranges. 2.7.1x2c: Supports plant species with restricted geographic ranges. 2.7.1x3a: Supports plant species with restricted geographic ranges. 2.7.1x4: Supports plant species with restricted geographic ranges, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x5: Supports plant species with restricted geographic ranges, including <i>Macropteranthes montana</i> (V). 2.7.1x6: Supports plant species with restricted geographic ranges. 2.7.1x7: Supports plant species with restricted geographic ranges.</p>
2.7.1x7	<p>Potential habitat for NCA listed species: <i>Macropteranthes montana</i></p> <p>2.7.1x2a: Supports plant species with restricted geographic ranges in the bioregion, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x2b: Supports plant species with restricted geographic ranges. 2.7.1x2c: Supports plant species with restricted geographic ranges. 2.7.1x3a: Supports plant species with restricted geographic ranges. 2.7.1x4: Supports plant species with restricted geographic ranges, including the threatened species <i>Macropteranthes montana</i> (V). 2.7.1x5: Supports plant species with restricted geographic ranges, including <i>Macropteranthes montana</i> (V). 2.7.1x6: Supports plant species with restricted geographic ranges. 2.7.1x7: Supports plant species with restricted geographic ranges.</p>

Regional Ecosystem	Special Values
2.7.2x2c	Potential habitat for NCA listed species: <i>Drummondita calida</i> , <i>Macropteranthes montana</i> 2.7.2x2a: Supports plant species with restricted geographic ranges. Occurs at the southern range extent of <i>Eucalyptus megasepala</i> . 2.7.2x2b: Supports plant species with restricted geographic ranges. 2.7.2x2c: Supports plant species with restricted geographic ranges. Occurs at the southern range extent of <i>Eucalyptus megasepala</i> . 2.7.2x2f: Supports plant species with restricted geographic ranges. 2.7.2x4: Supports plant species with restricted geographic ranges. 2.7.2x6: Supports locally uncommon plant species in the bioregion, including <i>Eucalyptus persiciens</i> . 2.7.2x9: Supports plant species with restricted geographic ranges.
2.7.2x2f	Potential habitat for NCA listed species: <i>Drummondita calida</i> , <i>Macropteranthes montana</i> 2.7.2x2a: Supports plant species with restricted geographic ranges. Occurs at the southern range extent of <i>Eucalyptus megasepala</i> . 2.7.2x2b: Supports plant species with restricted geographic ranges. 2.7.2x2c: Supports plant species with restricted geographic ranges. Occurs at the southern range extent of <i>Eucalyptus megasepala</i> . 2.7.2x2f: Supports plant species with restricted geographic ranges. 2.7.2x4: Supports plant species with restricted geographic ranges. 2.7.2x6: Supports locally uncommon plant species in the bioregion, including <i>Eucalyptus persiciens</i> . 2.7.2x9: Supports plant species with restricted geographic ranges.
2.7.2x4	Potential habitat for NCA listed species: <i>Drummondita calida</i> , <i>Macropteranthes montana</i> 2.7.2x2a: Supports plant species with restricted geographic ranges. Occurs at the southern range extent of <i>Eucalyptus megasepala</i> . 2.7.2x2b: Supports plant species with restricted geographic ranges. 2.7.2x2c: Supports plant species with restricted geographic ranges. Occurs at the southern range extent of <i>Eucalyptus megasepala</i> . 2.7.2x2f: Supports plant species with restricted geographic ranges. 2.7.2x4: Supports plant species with restricted geographic ranges. 2.7.2x6: Supports locally uncommon plant species in the bioregion, including <i>Eucalyptus persiciens</i> . 2.7.2x9: Supports plant species with restricted geographic ranges.
2.9.3x1a	None
2.9.7a	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
12b	Woodlands and open woodlands dominated by <i>Eucalyptus crebra</i> (sens. lat) (narrow-leaved red ironbark) and/or <i>Corymbia</i> spp. such as <i>C. clarksoniana</i> (grey bloodwood), <i>C. stockeri</i> , <i>C. setosa</i> (rough leaved bloodwood) or <i>C. peltata</i> (yellowjacket) on hilly terrain. (land zones 7, 10, 11) (GUP, EIU, DEU, CYP)	82.83	6.59
14d	Woodlands dominated by <i>Corymbia stockeri</i> (or <i>C. hylandii</i> ) and <i>Eucalyptus megasepala</i> (or <i>E. tetrodonta</i> (Darwin stringybark)) on sandstone, metamorphic and ironstone ranges. (land zones 10, 11, 12, 7) (CYP, GUP, EIU, [DEU])	181.36	14.43
16a	Open forest and woodlands dominated by <i>Eucalyptus camaldulensis</i> (river red gum) (or <i>E. tereticornis</i> (blue gum)) and/or <i>E. coolabah</i> (coolabah) (or <i>E. microtheca</i> (coolabah)) fringing drainage lines. Associated species may include <i>Melaleuca</i> spp., <i>Corymbia tessellaris</i> (carbeen), <i>Angophora</i> spp., <i>Casuarina cunninghamiana</i> (riveroak). Does not include alluvial areas dominated by herb and grasslands or alluvial plains that are not flooded. (land zone 3) (MGD, BRB, GUP, CHC, MUL, DEU, EIU, NWH, SEQ, [NET, WET]) (All bioregions except CYP and CQC)	39.78	3.17
16c	Woodlands and open woodlands dominated by <i>Eucalyptus coolabah</i> (coolabah) or <i>E. microtheca</i> (coolabah) or <i>E. largiflorens</i> (black box) or <i>E. tereticornis</i> (blue gum) or <i>E. chlorophylla</i> on floodplains. Does not include alluvial areas dominated by herb and grasslands or alluvial plains that are not flooded. (land zone 3) (All bioregions except WET, principally GUP, BRB, MUL).	33.47	2.66
18c	Woodlands and open woodlands dominated by <i>Eucalyptus chlorophylla</i> ( <i>E. microtheca</i> or <i>E. leptophleba</i> on heavy soils) frequently with <i>Corymbia</i> spp. (land zones 9, 5, 3, 12, [4]) (CYP, GUP, EIU, MGD, [NWH])	200.82	15.98
19d	Low open woodlands dominated by <i>Eucalyptus persistens</i> (or <i>E. normantonensis</i> (Normanton box), <i>E. tardecidens</i> , <i>E. protracta</i> ) with <i>Triodia</i> spp. dominated ground layer, mainly on hills and ranges. (land zones 7, 11, 12, 5, [4, 10]) (EIU, MGD, CHC, BRB, GUP, DEU)	152.2	12.11
21b	Low open woodlands and tall shrublands of <i>Melaleuca citrolens</i> or <i>M. stenostachya</i> or other <i>Melaleuca</i> spp. (land zones 5, 3, 7, 10, 11, 12) (GUP, CYP, EIU, DEU, BRB, [SEQ])	44.9	3.57
22c	Open forests dominated by <i>Melaleuca</i> spp. ( <i>M. argentea</i> (silver tea-tree), <i>M. leucadendra</i> (broad-leaved tea-tree), <i>M. dealbata</i> (swamp tea-tree) or <i>M. fluviatilis</i> ), fringing major streams with <i>Melaleuca saligna</i> or <i>M. bracteata</i> (black tea-tree) in minor streams. (land zone 3) (CYP, GUP, EIU, BRB, CQC, DEU, NWH, WET, [SEQ])	69.52	5.53
24a	Low woodlands to tall shrublands dominated by <i>Acacia</i> spp. on residuals. Species include <i>A. shirleyi</i> (lancewood), <i>A. catenulata</i> (bendee), <i>A. microsperma</i> (bowyakka), <i>A. clivicola</i> , <i>A. sibirica</i> , <i>A. rhodoxylon</i> (rosewood) and <i>A. leptostachya</i> (Townsville wattle). (land zones 7, 10, 5, 12, 11, [9, 3]) (MUL, CHC, BRB, GUP, EIU, MGD, DEU, NWH, [CYP])	367.03	29.21
30b	Tussock grasslands dominated by <i>Astrebla</i> spp. (mitchell grass) or <i>Dichanthium</i> spp. (bluegrass) often with <i>Iseilema</i> spp. on undulating downs or clay plains. (land zones 9, 3, 4, 8, [5]) (MGD, CHC, GUP, BRB, [EIU, DEU, NWH])	62.92	5.01

BVG (1 Million)	Description	Area (Ha)	% of AOI
33b	Hummock grasslands dominated by <i>Triodia pungens</i> or <i>T. longiceps</i> (giant grey spinifex) or <i>T. mitchellii</i> (buck spinifex) sandplains. (land zones 6, 7, 5, [3, 9]) (MUL, MGD, GUP, DEU, [BRB])	16.45	1.31
34c	Palustrine wetlands. Freshwater swamps on coastal floodplains dominated by sedges and grasses such as <i>Oryza</i> spp., <i>Eleocharis</i> spp. (spikerush) or <i>Baloskion</i> spp. (cord rush) / <i>Leptocarpus tenax</i> / <i>Gahnia sieberiana</i> (sword grass) / <i>Lepironia</i> spp. (land zones 3, 2, [1]) (CYP, GUP, BRB, SEQ, WET, [CQC])	5.27	0.42

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's CORVEG 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. 2012 (PDF))\* section 3.3.1 of:

<https://publications.qld.gov.au/dataset/redd/resource/>

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**

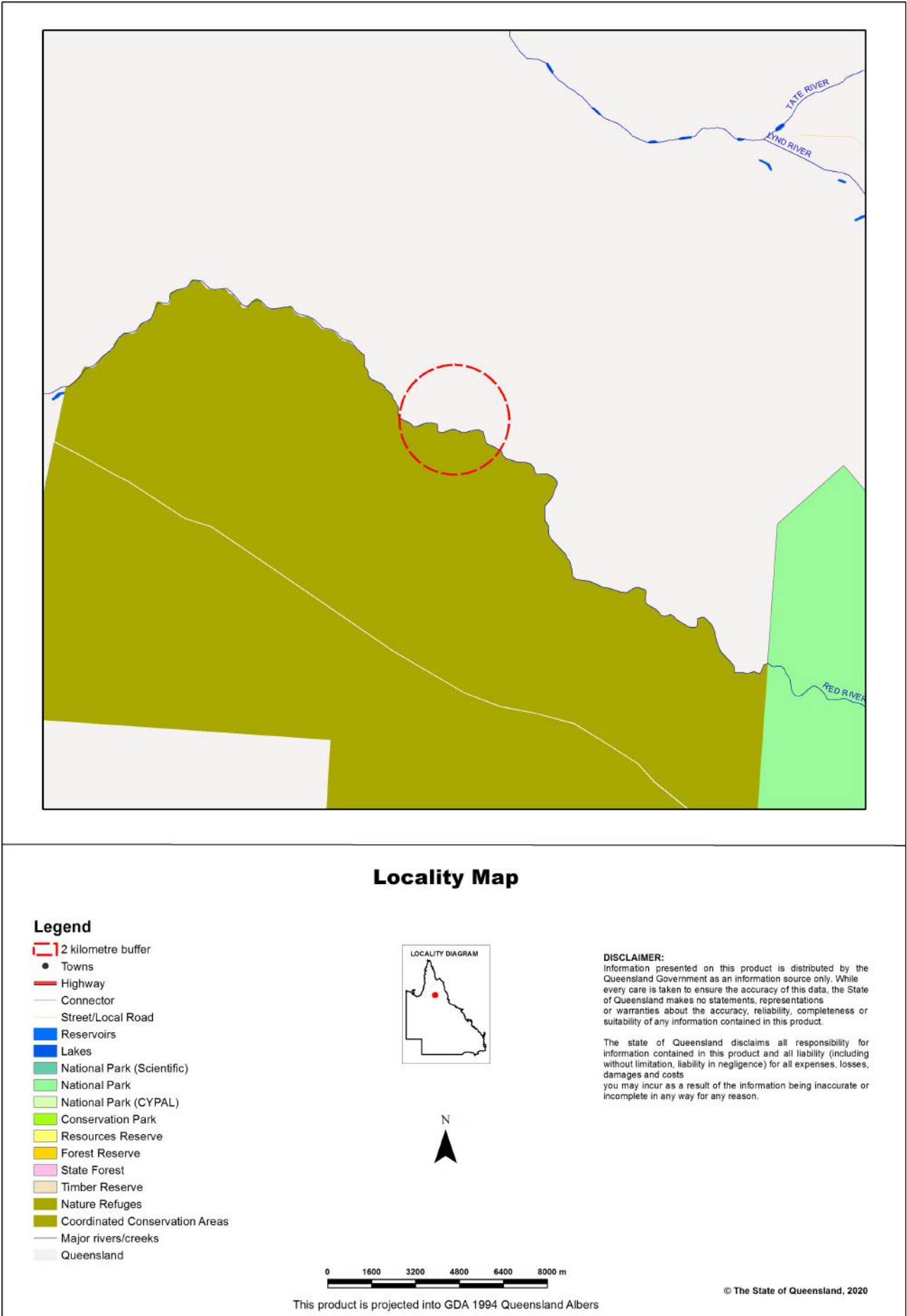
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
2.10.2x3a	Not currently available	Not currently available
2.10.5a	Not currently available	Not currently available
2.3.11	Not currently available	Not currently available
2.3.17a	Not currently available	Not currently available
2.3.24b	Not currently available	Not currently available
2.3.55b	Not currently available	Not currently available
2.5.17a	Not currently available	Not currently available



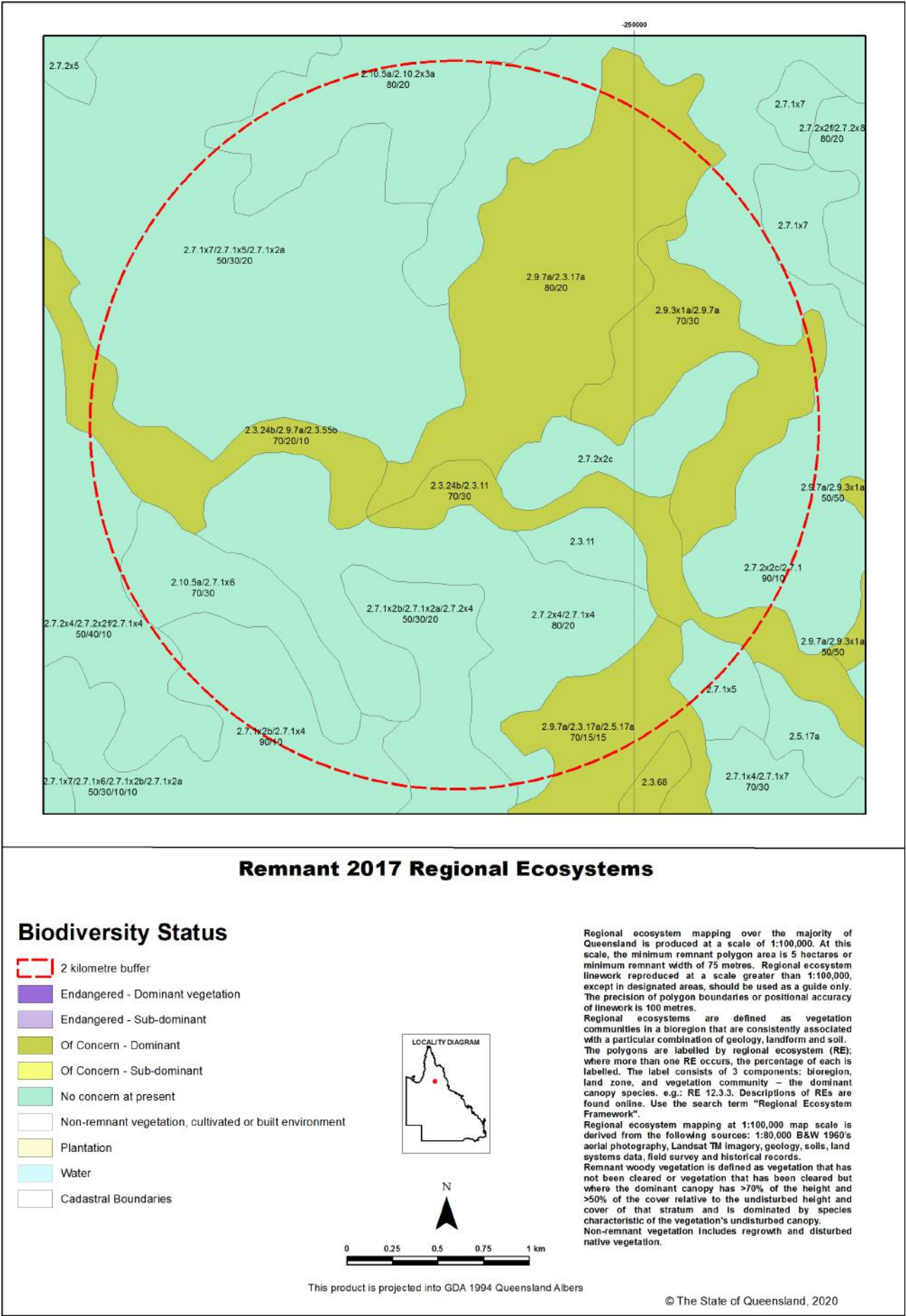
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
2.7.1	Not currently available	Not currently available
2.7.1x2a	Not currently available	Not currently available
2.7.1x2b	Not currently available	Not currently available
2.7.1x4	Not currently available	Not currently available
2.7.1x5	Not currently available	Not currently available
2.7.1x6	Not currently available	Not currently available
2.7.1x7	Not currently available	Not currently available
2.7.2x2c	Not currently available	Not currently available
2.7.2x2f	Not currently available	Not currently available
2.7.2x4	Not currently available	Not currently available
2.9.3x1a	Not currently available	Not currently available
2.9.7a	Not currently available	Not currently available

Maps

Map 1 - Location



Map 2 - Remnant 2017 regional ecosystems



**Pre-clearing Regional Ecosystems**

**Biodiversity Status**

- 2 kilometre buffer
- Endangered - Dominant vegetation
- Endangered - Sub-dominant
- Of Concern - Dominant
- Of Concern - Sub-dominant
- No concern at present
- Water
- Cadastral Boundaries

**Regional Ecosystem Mapping**

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".

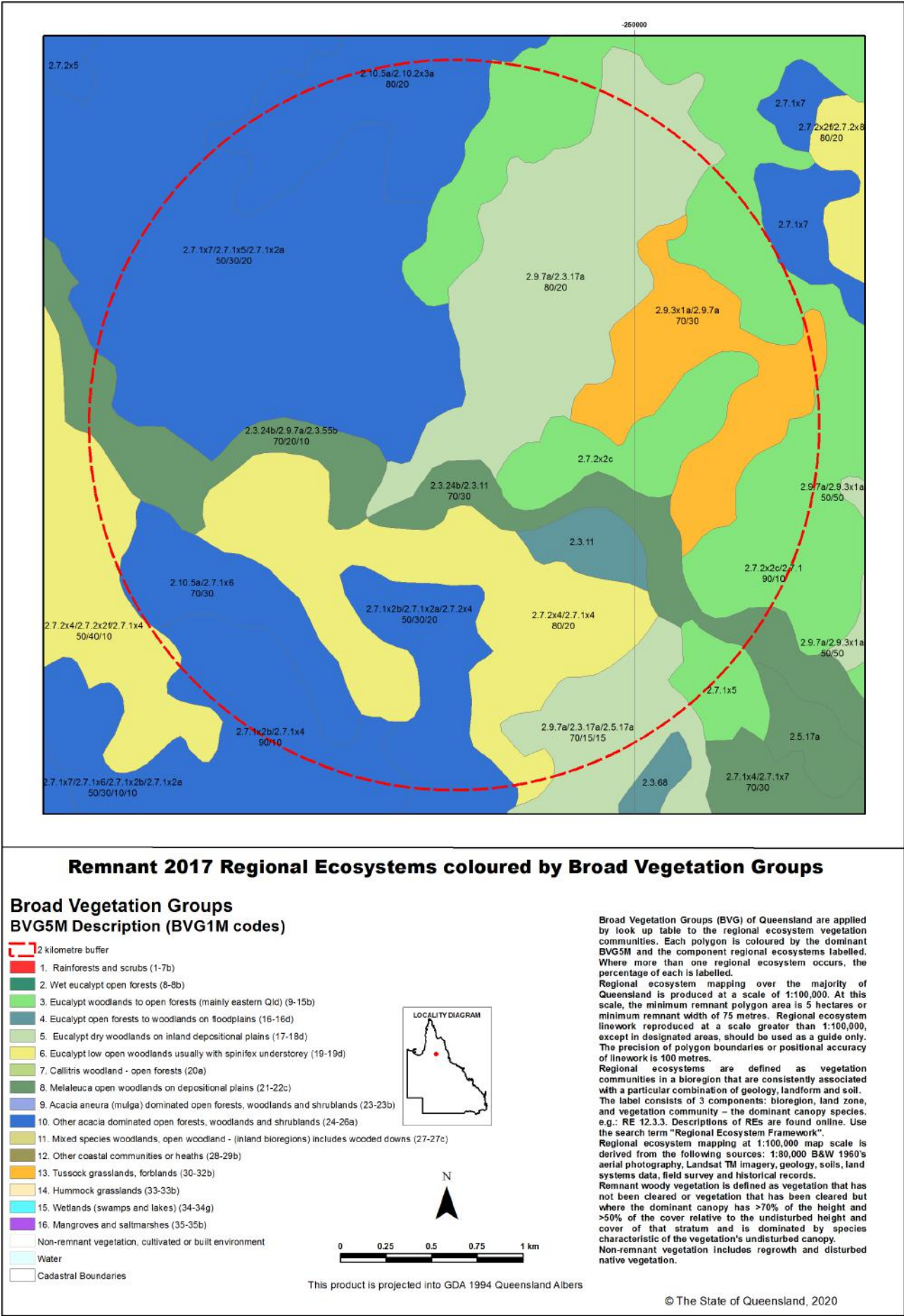
Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.

This product is projected into GDA 1994 Queensland Albers

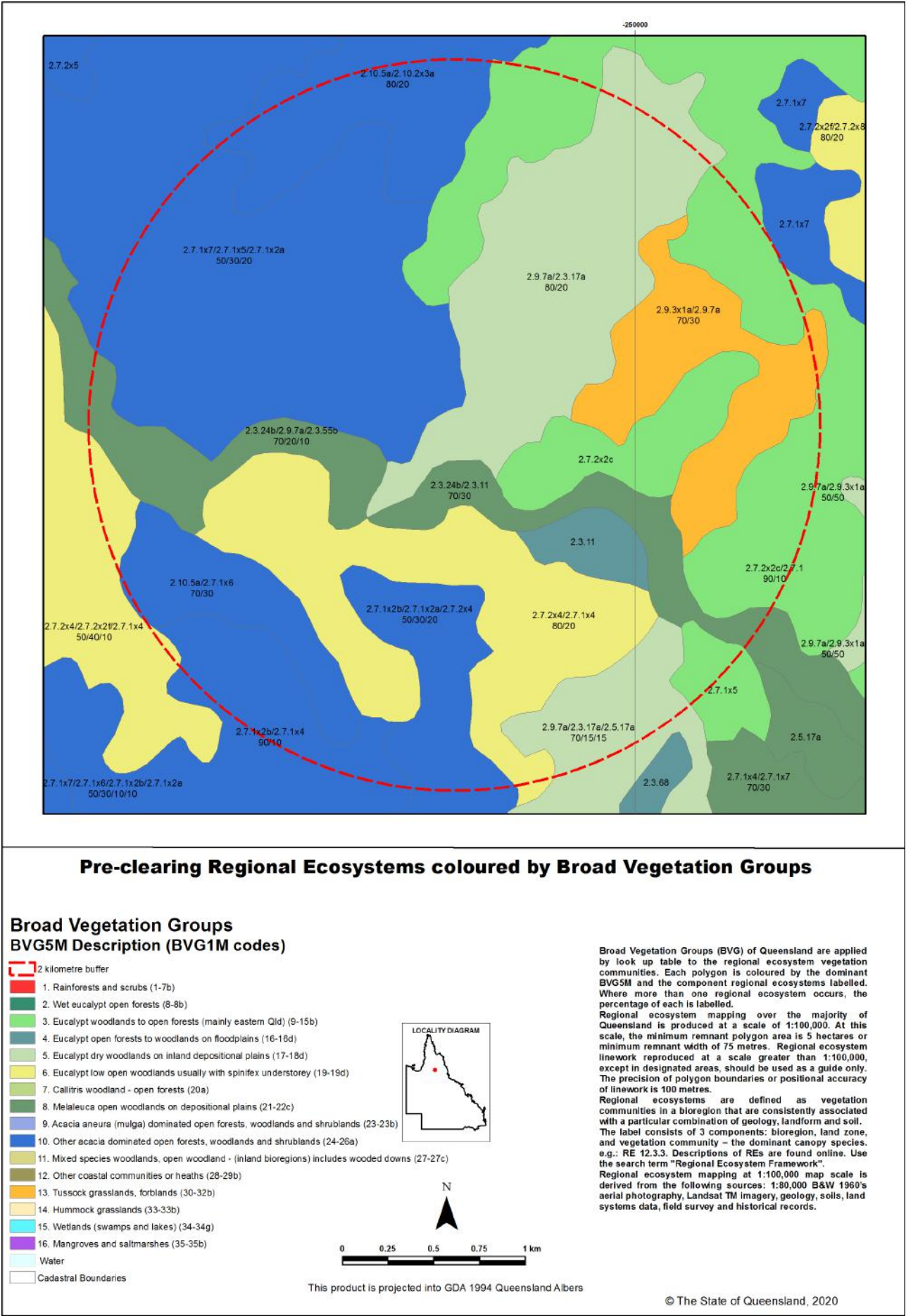
© The State of Queensland, 2020



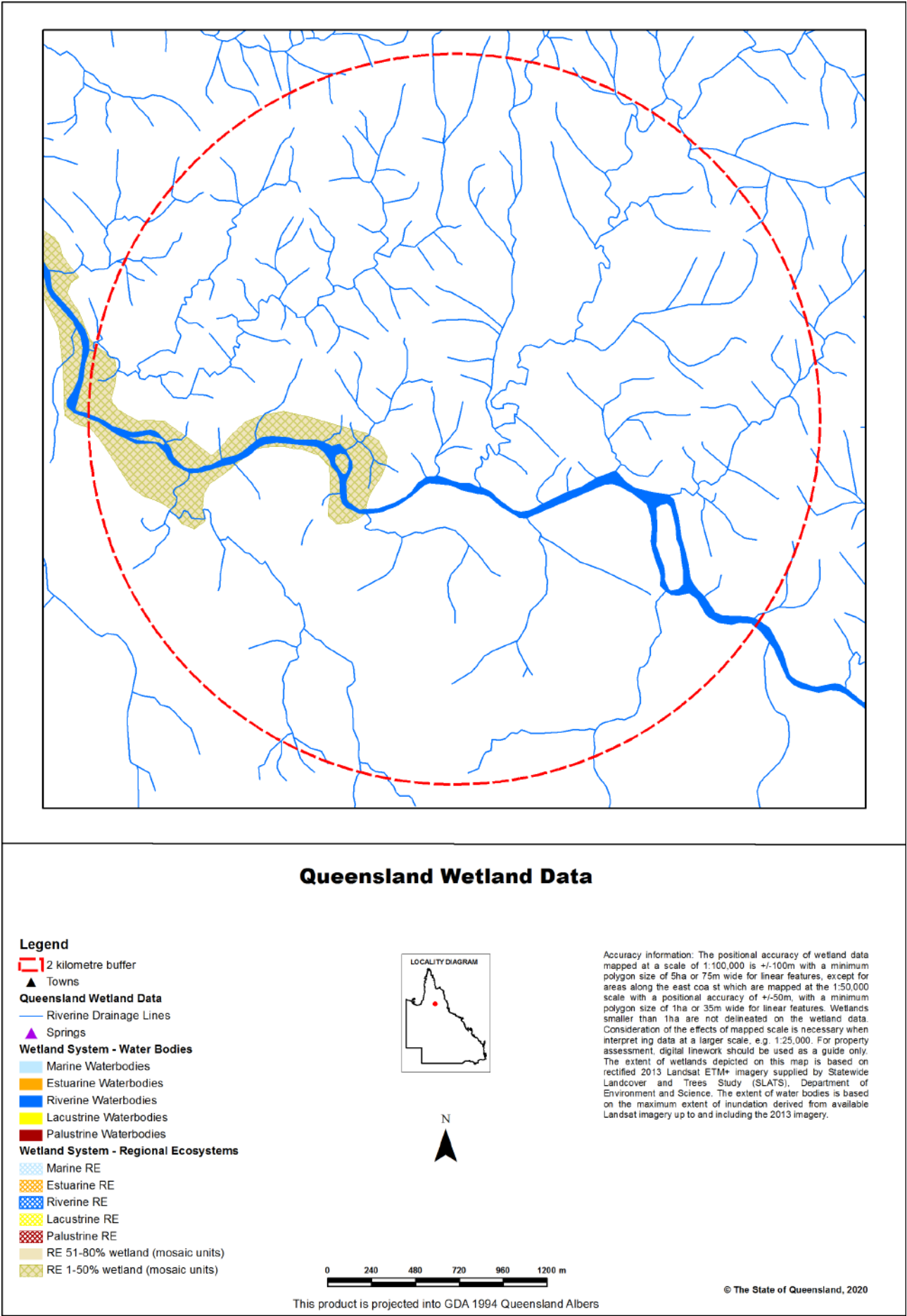
Map 4 - Remnant 2017 regional ecosystems by BVG (5M)



Map 5 - Pre-clearing regional ecosystems by BVG (5M)



Map 6 - Wetlands and waterways





## Links and Other Information Sources

The Department of Environment and Science'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://publications.qld.gov.au/dataset/redd/resource/>

The methodology for mapping regional ecosystems can be downloaded from:

<https://publications.qld.gov.au/dataset/redd/resource/>

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 Government Information System portal,

<http://dds.information.qld.gov.au/dds/>

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:

<http://www.dnrm.qld.gov.au/mapping-data/queensland-globe>

## References

Neldner, V.J., Niehus R.E., Wilson, B.A. McDonald, W.J.F., Ford, A.J. and Accad, A. (2017) The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 3.0. Queensland Herbarium, Department of Science, Information Technology, Innovation and the Arts.

<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. and Butler, D.W. (2017) *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland*. Version 4.0. Queensland Herbarium, Department of Science, Information Technology, Innovation and the Arts.

<https://publications.qld.gov.au/dataset/redd/resource/6dee78ab-c12c-4692-9842-b7257c2511e4>

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:

<http://dds.information.qld.gov.au/dds/>

- Biodiversity status of pre-clearing and 2017 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

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## Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
GDA94	- Geocentric Datum of Australia 1994
GIS	- Geographic Information System
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
VMA	- <i>Vegetation Management Act 1999</i>

## RPI DEVELOPMENT APPLICATION SUPPORTING INFORMATION LYND RESOURCES PTY LTD

Appendix 2: Matters of State Environmental Significance Report



**Queensland** Government

**Department of Environment and Science**

Environmental Reports

## **Matters of State Environmental Significance**

For the selected area of interest

Longitude: 143.62439 Latitude: -17.45502 with 2 kilometre radius



## Environmental Reports - General Information

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

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

Figures in tables may be affected by rounding.

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

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

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

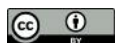


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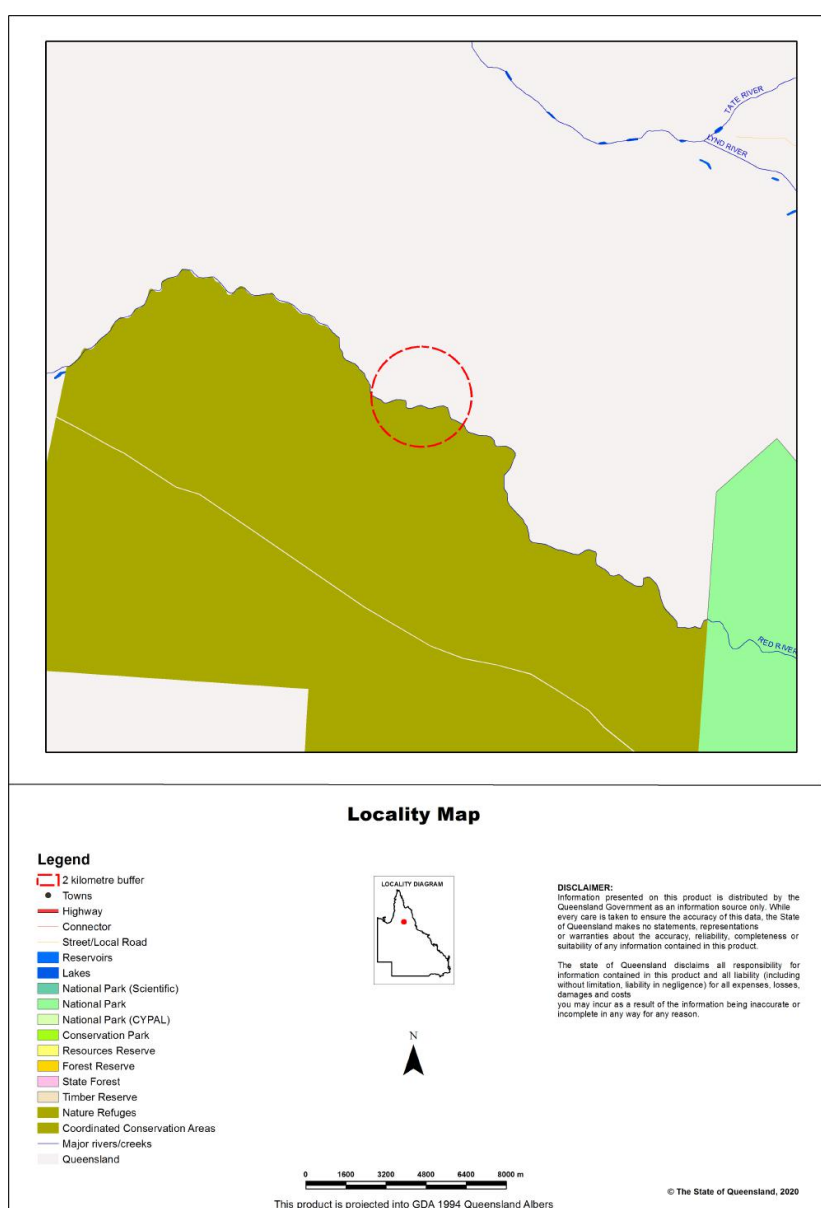
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## Assessment Area Details

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

**Table 1: Summary table, details for AOI Longitude: 143.62439 Latitude: -17.45502**

Size (ha)	1,256.55
Local Government(s)	Mareeba Shire
Bioregion(s)	Gulf Plains
Subregion(s)	Holroyd Plain - Red Plateau
Catchment(s)	Staaten



## Matters of State Environmental Significance (MSES)

### MSES Categories

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

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

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

The SPP defines matters of state environmental significance as:

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



## MSES Values Present

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

**Table 2: Summary of MSES present within the AOI**

1a Protected Areas- estates	0.0 ha	0.0 %
1b Protected Areas- nature refuges	460.82 ha	36.7%
2 State Marine Parks- highly protected zones	0.0 ha	0.0 %
3 Fish habitat areas (A and B areas)	0.0 ha	0.0 %
4 Strategic Environmental Areas (SEA)	814.1 ha	64.8%
5 High Ecological Significance wetlands on the map of Referable Wetlands	0.0 ha	0.0 %
6a High Ecological Value (HEV) wetlands	0.0 ha	0.0 %
6b High Ecological Value (HEV) waterways **	0.0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	0.0 ha	0.0 %
7b Special least concern animals	0.0 ha	0.0 %
7c i Koala habitat area - core (SEQ)	0.0 ha	0.0 %
7c ii Koala habitat area - locally refined (SEQ)	0.0 ha	0.0 %
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	0.0 ha	0.0 %
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	0.0 ha	0.0 %
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0.0 ha	0.0 %
8d Regulated Vegetation - Essential habitat	0.0 ha	0.0 %
8e Regulated Vegetation - intersecting a watercourse **	32.2 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	0.0 ha	0.0 %
9a Legally secured offset areas- offset register areas	0.0 ha	0.0 %
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0.0 ha	0.0 %

## Additional Information with Respect to MSES Values Present

### MSES - State Conservation Areas

#### 1a. Protected Areas - estates

(no results)

#### 1b. Protected Areas - nature refuges

Name
Torwood Nature Refuge

#### 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)

Regional planning interest type	Region	Status
Strategic Environmental Area - Designated Precinct	Gulf Rivers	Current - June 2014

#### 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

**Threatened (endangered or vulnerable) wildlife habitat suitability models**

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

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

**Threatened (endangered or vulnerable) wildlife species records**

(no results)

**Special least concern animal species records**

(no results)

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

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

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

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

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

## MSES - Regulated Vegetation

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

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

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

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

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

Not applicable

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

Not applicable

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

Not applicable

### 8d. Regulated Vegetation - Essential habitat

Not applicable

### 8e. Regulated Vegetation - intersecting a watercourse\*\*

A vegetation management watercourse is mapped as present

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

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)

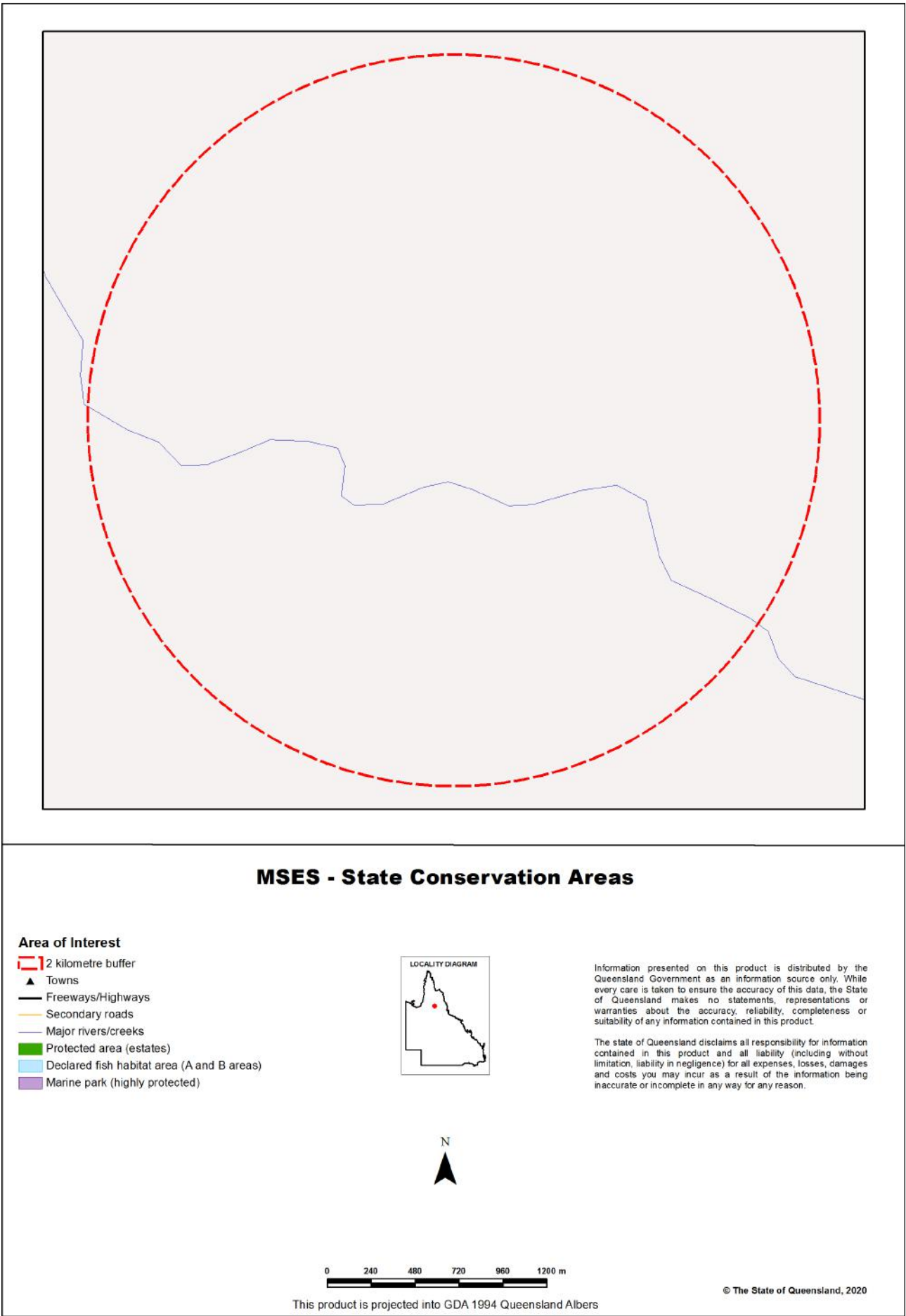
### 9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

(no results)

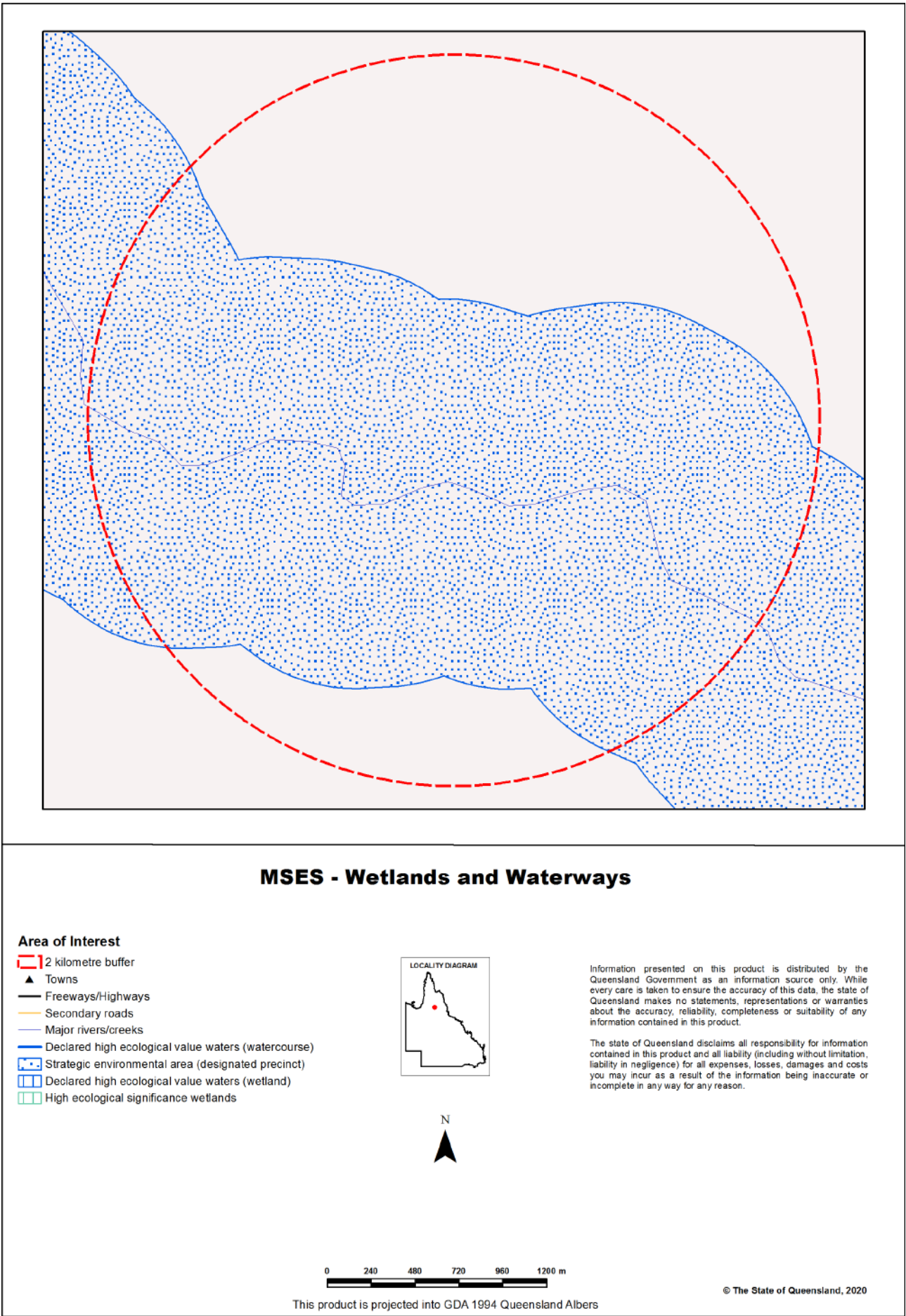
Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.



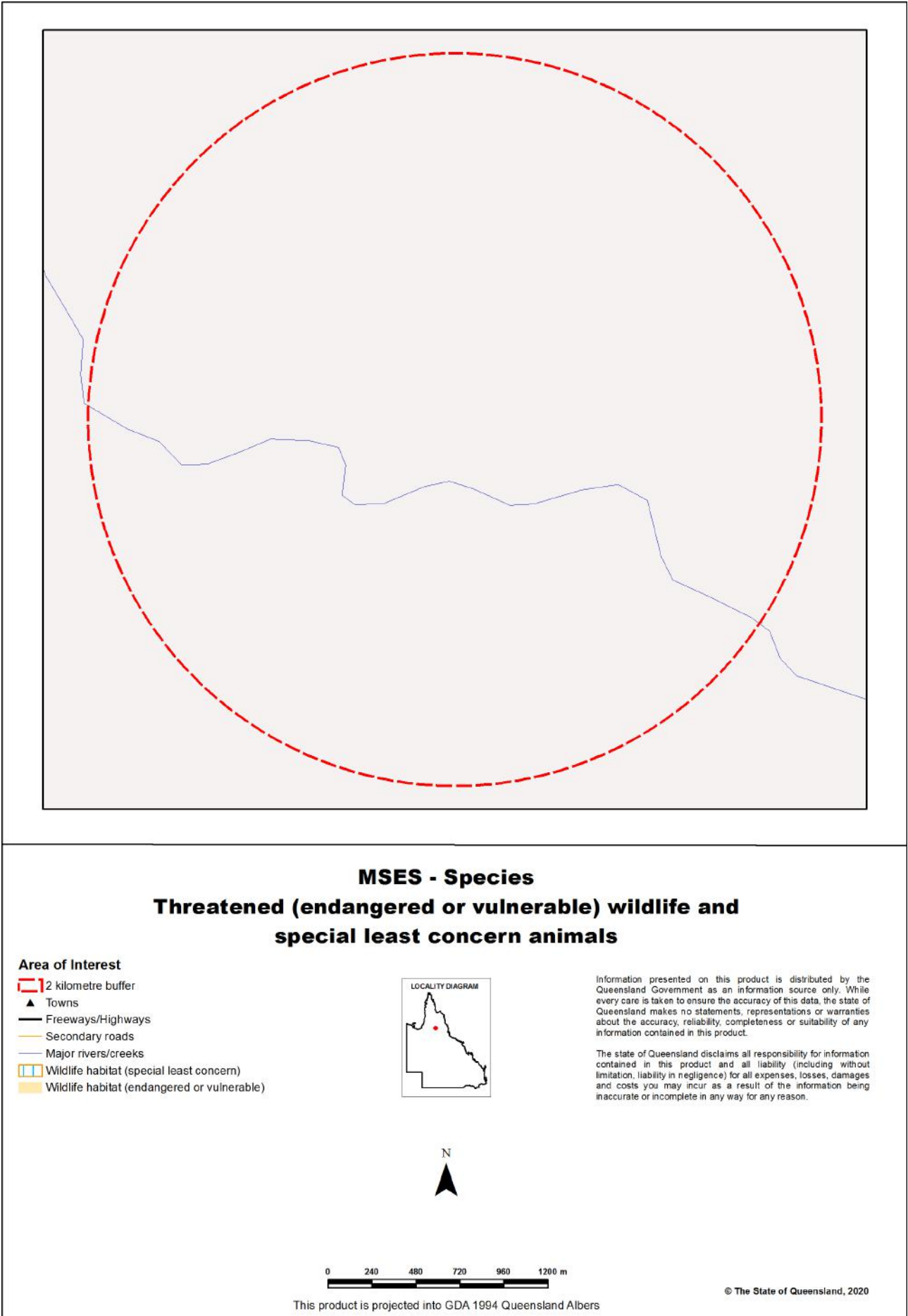
Map 1 - MSES - State Conservation Areas



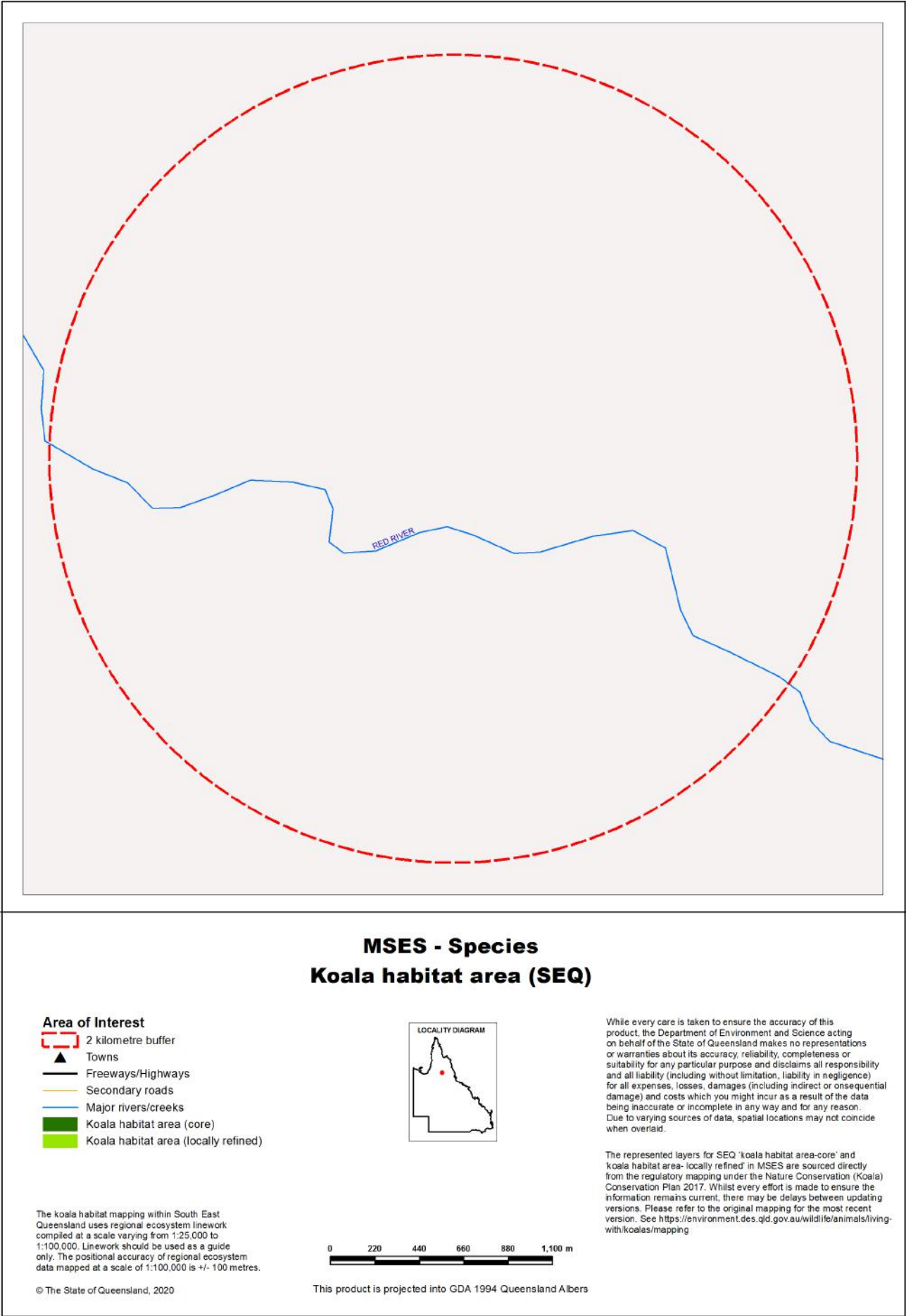
Map 2 - MSES - Wetlands and Waterways



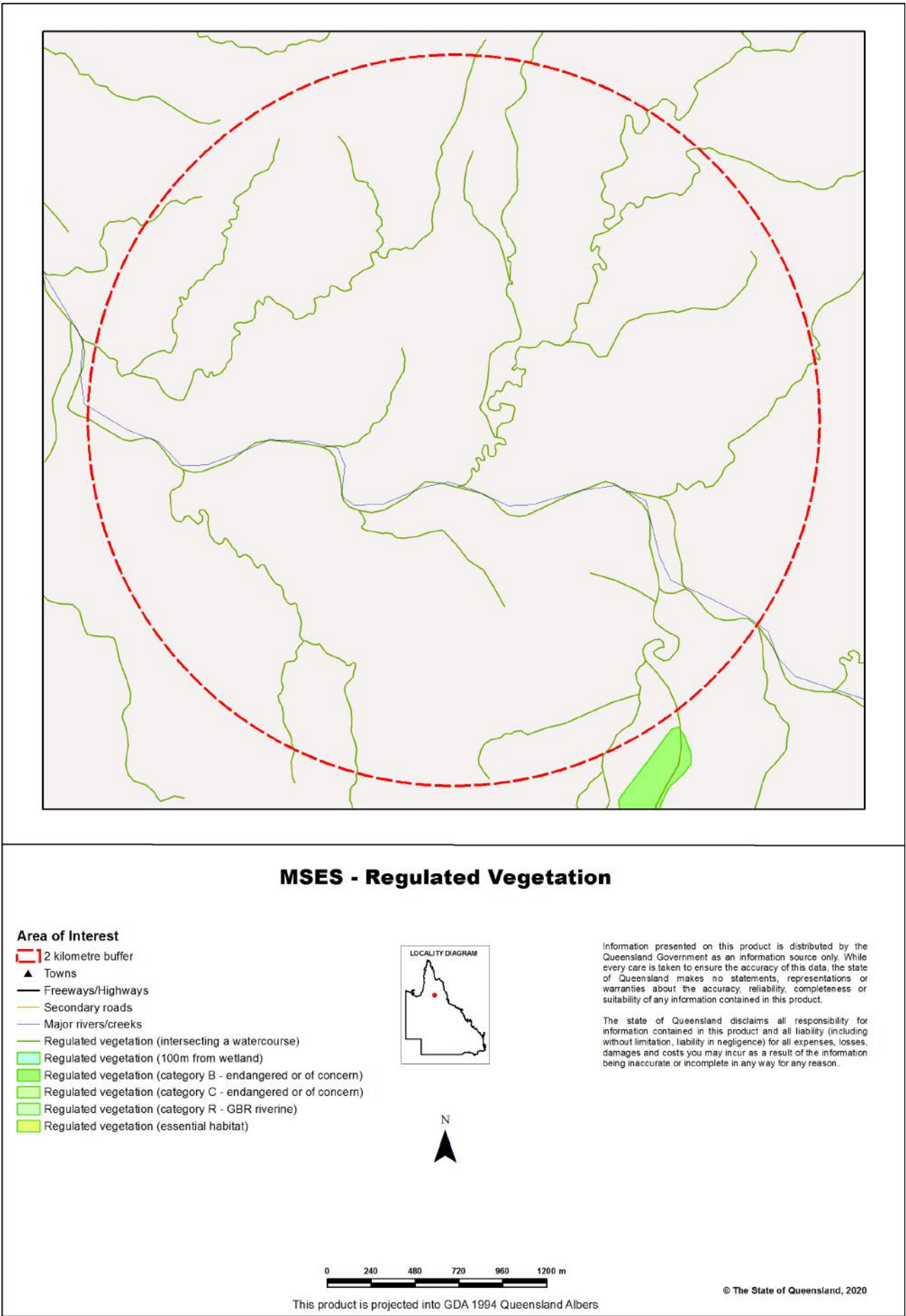
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



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

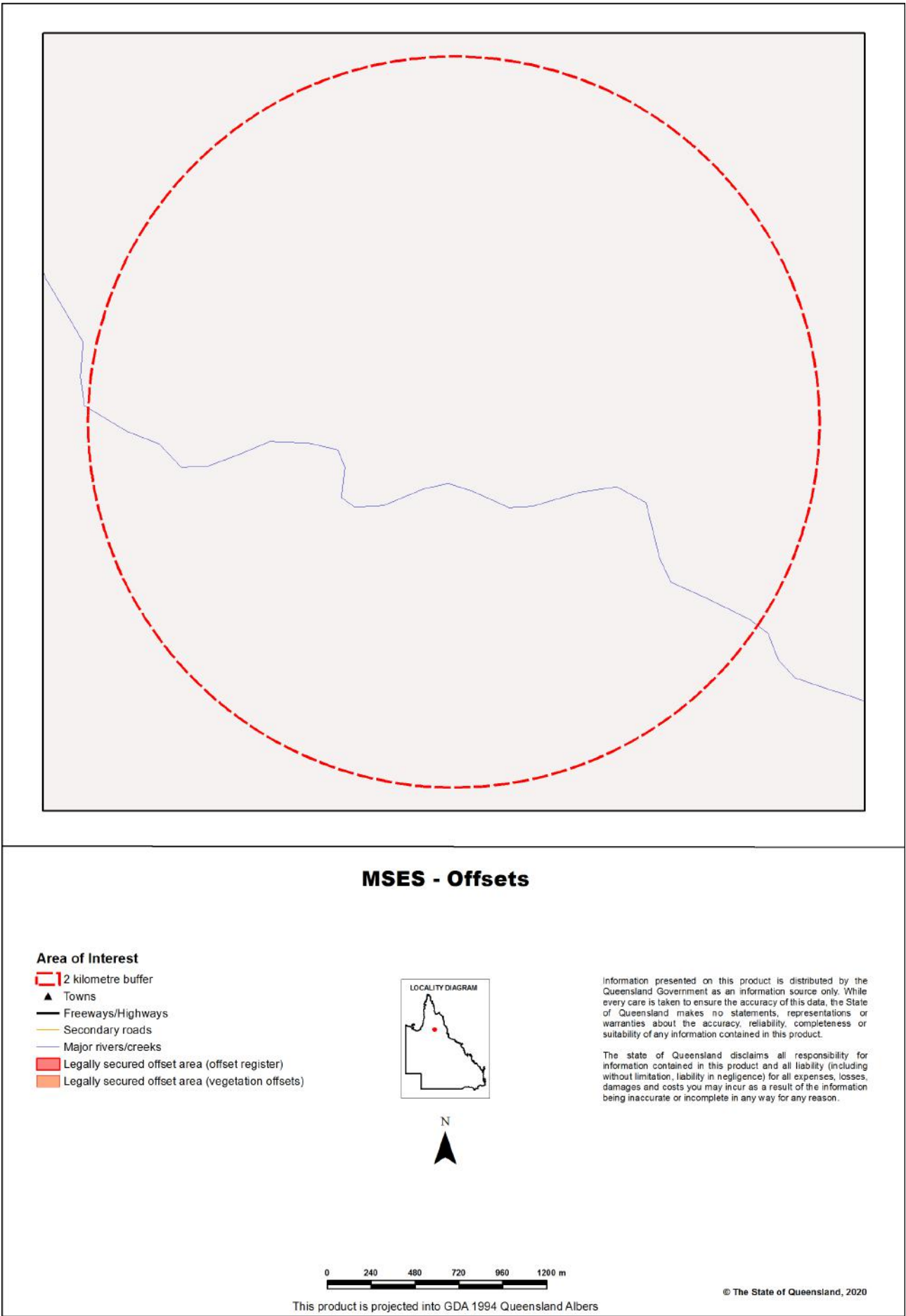


Map 4 - MSES - Regulated Vegetation





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

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

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

## Appendix 2 - Source Data

The datasets listed below are available on request from:

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

- Matters of State environmental significance

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

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

MSES layers	current QSpatial data ( <a href="http://qspatial.information.qld.gov.au">http://qspatial.information.qld.gov.au</a> )
Protected Areas-Estates and Nature Refuges	- Protected areas of Queensland - Nature Refuges - 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 (multiple locations) intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 4, 2015) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	-WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DES
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

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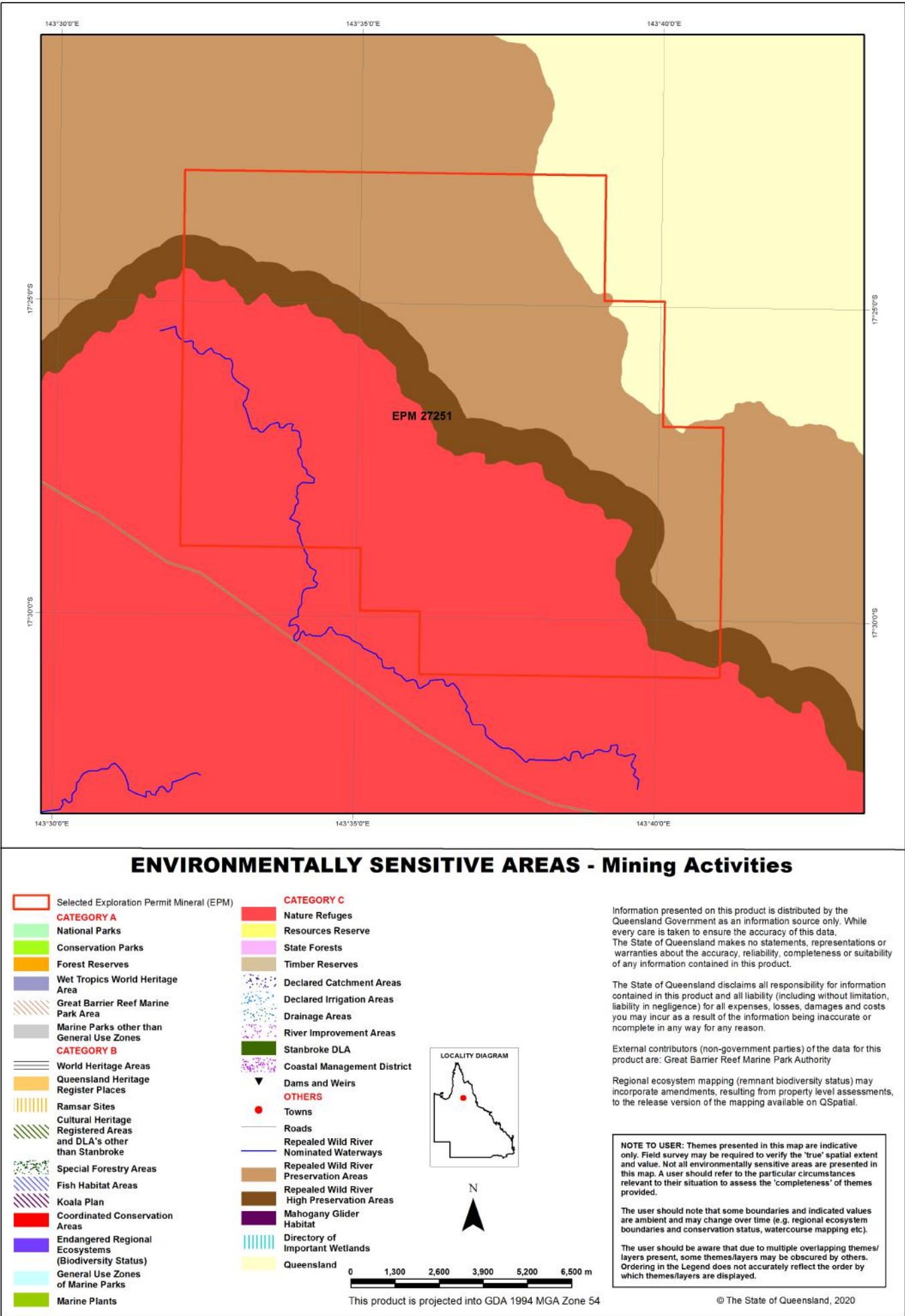
## Appendix 3 - Acronyms and Abbreviations

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

## RPI DEVELOPMENT APPLICATION SUPPORTING INFORMATION LYND RESOURCES PTY LTD

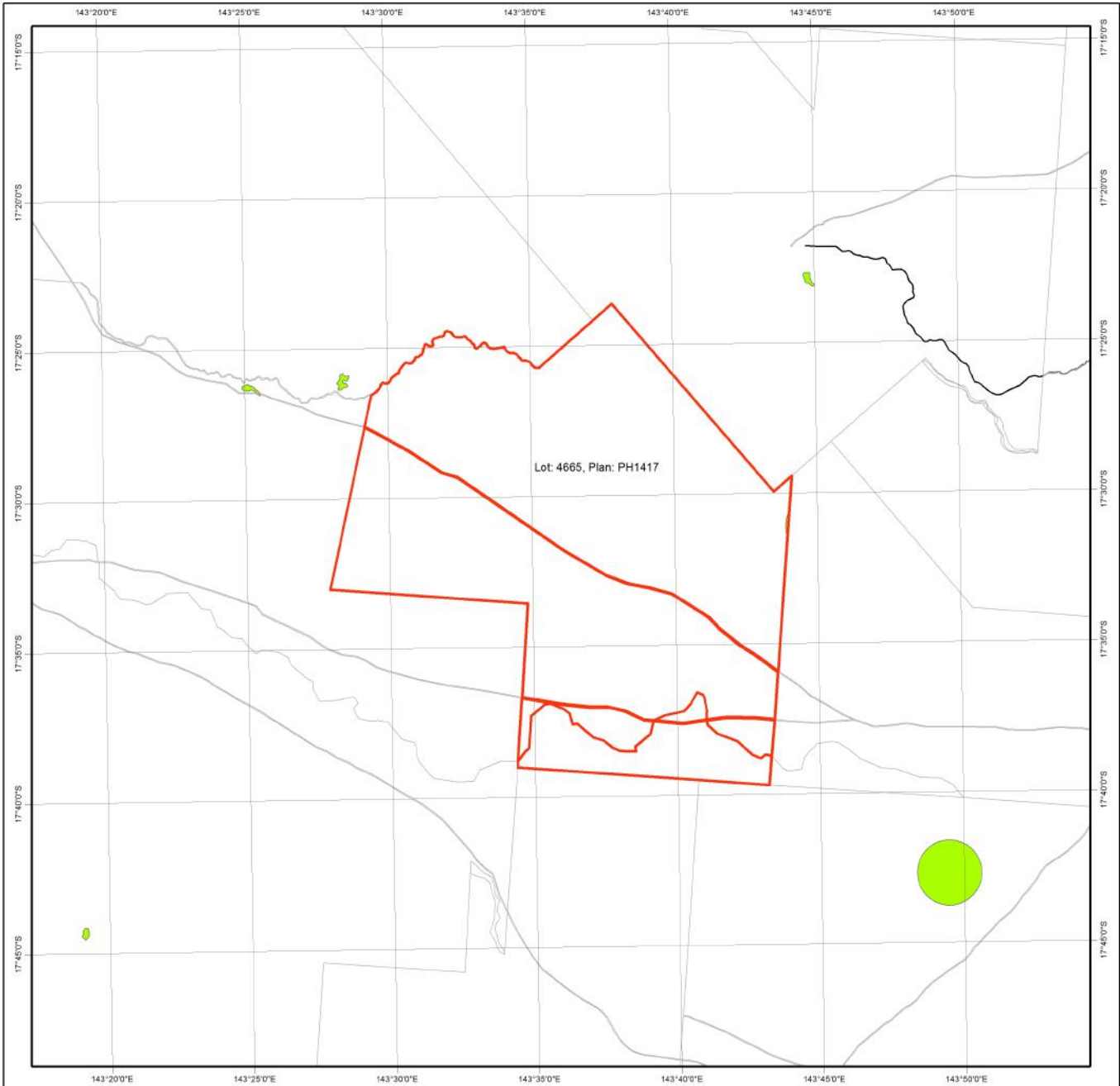
Appendix 3: EPM 27251 Environmentally Sensitive Areas Map





## RPI DEVELOPMENT APPLICATION SUPPORTING INFORMATION LYND RESOURCES PTY LTD

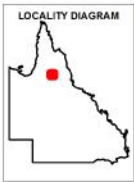
Appendix 4: Protected Plants Flora Survey Trigger Map



Protected Plants Flora Survey Trigger Map

Legend

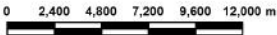
- Lot and Plan
- High risk area
- Cadastral line
- Property boundaries shown are provided as a locational aid only
- Freeways / motorways / highways
- Secondary roads / streets



This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

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 Environment and Science at [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au)



This product is projected into:  
GDA 1994 Queensland Albers

**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.

# 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 Environment and Science 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 Environment and Science 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 Environment and Science webpage on the [clearing of protected plants](#) for more information.

## RPI DEVELOPMENT APPLICATION SUPPORTING INFORMATION LYND RESOURCES PTY LTD

Appendix 5: EPBC Act Protected Matters Search Report





# EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

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

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

Report created: 25/02/20 12:51:44

[Summary](#)

[Details](#)

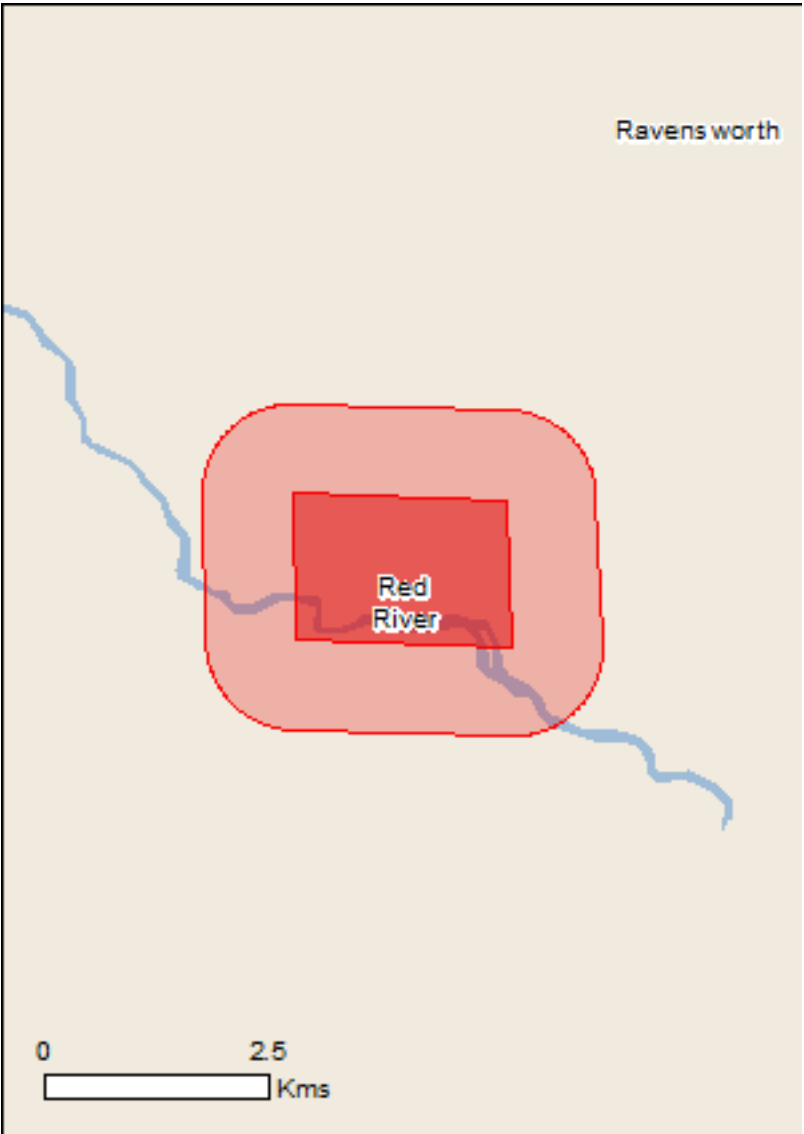
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

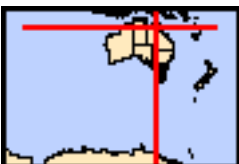
[Acknowledgements](#)



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

[Coordinates](#)

[Buffer: 1.0Km](#)



# Summary

## Matters of National Environmental Significance

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

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Importance:</a>	None
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	None
<a href="#">Listed Threatened Ecological Communities:</a>	None
<a href="#">Listed Threatened Species:</a>	9
<a href="#">Listed Migratory Species:</a>	11

## Other Matters Protected by the EPBC Act

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

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

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

<a href="#">Commonwealth Land:</a>	None
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	18
<a href="#">Whales and Other Cetaceans:</a>	None
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	None

## Extra Information

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

<a href="#">State and Territory Reserves:</a>	1
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Invasive Species:</a>	7
<a href="#">Nationally Important Wetlands:</a>	None
<a href="#">Key Ecological Features (Marine)</a>	None

# Details

## Matters of National Environmental Significance

Listed Threatened Species		[ Resource Information ]
Name	Status	Type of Presence
Birds		
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Erythrotriorchis radiatus</a> Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Erythrura gouldiae</a> Gouldian Finch [413]	Endangered	Species or species habitat may occur within area
<a href="#">Rostratula australis</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
<a href="#">Tyto novaehollandiae kimberli</a> Masked Owl (northern) [26048]	Vulnerable	Species or species habitat may occur within area
Mammals		
<a href="#">Macroderma gigas</a> Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Mesembriomys gouldii rattoides</a> Black-footed Tree-rat (north Queensland), Shaggy Rabbit-rat [87620]	Vulnerable	Species or species habitat may occur within area
<a href="#">Saccolaimus saccolaimus nudicluniatus</a> Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat may occur within area
Plants		
<a href="#">Macropteranthes montana</a> [9003]	Vulnerable	Species or species habitat likely to occur within area
Listed Migratory Species		[ Resource Information ]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		

Name	Threatened	Type of Presence
<a href="#">Cuculus optatus</a> Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
<a href="#">Hirundo rustica</a> Barn Swallow [662]		Species or species habitat may occur within area
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat may occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species	[ <u>Resource Information</u> ]	
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat may occur within area
<a href="#">Anseranas semipalmata</a> Magpie Goose [978]		Species or species habitat may occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Ardea alba</a> Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
<a href="#">Ardea ibis</a> Cattle Egret [59542]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Chrysococcyx osculans</a> Black-eared Cuckoo [705]		Species or species habitat may occur within area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat may occur within area
<a href="#">Hirundo rustica</a> Barn Swallow [662]		Species or species habitat may occur within area
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat may occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Species or species habitat may occur within area
<a href="#">Rostratula benghalensis (sensu lato)</a> Painted Snipe [889]	Endangered*	Species or species habitat may occur within area

Reptiles	
<a href="#">Crocodylus johnstoni</a>	
Freshwater Crocodile, Johnston's Crocodile, Johnston's River Crocodile [1773]	Species or species habitat may occur within area

### Extra Information

State and Territory Reserves	[ Resource Information ]
Name	State
Torwood	QLD

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

Name	Status	Type of Presence
Frogs		



Name	Status	Type of Presence
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Plants		
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913]		Species or species habitat likely to occur within area

# Caveat

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

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

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

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

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

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

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

- migratory and
- marine

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

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

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

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

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

## Coordinates

-17.446116 143.615902,-17.446689 143.637359,-17.446689 143.637359,-17.46069 143.638046,-17.460117 143.616245,-17.446116 143.615902

# 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.

## RPI DEVELOPMENT APPLICATION SUPPORTING INFORMATION

### LYND RESOURCES PTY LTD

Appendix 6: Wildlife Online Extract



# Queensland Government

## Wildlife Online Extract

Search Criteria: Species List for a Specified Point  
Species: All  
Type: All  
Status: All  
Records: All  
Date: All  
Latitude: -17.4536  
Longitude: 143.628  
Distance: 10  
Email: jacob.arnold@ardent-group.com.au  
Date submitted: Friday 28 Feb 2020 15:15:04  
Date extracted: Friday 28 Feb 2020 15:20:02

There were no records retrieved for your selection

### **Disclaimer**

As the DSITIA is still in a process of collating and vetting data, it is possible the information given is not complete. The information provided should only be used for the project for which it was requested and it should be appropriately acknowledged as being derived from Wildlife Online when it is used.

The State of Queensland does not invite reliance upon, nor accept responsibility for this information. Persons should satisfy themselves through independent means as to the accuracy and completeness of this information.

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