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DIANNE COPPER MINE



Terrestrial Ecology Report

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Mineral Projects Pty Ltd

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1. INTRODUCTION

Dianne Copper Mine (DCM) is located within the Cook Shire on the Cape York Peninsula in north Queensland, about 130 km northwest of Cairns and 100 km southwest of Cooktown. The site is located in the Hodgkinson Basin of the Einasleigh Uplands bioregion (Figure 1). The region has historically been extensively fossicked for gold.

DCM was developed in the 1970s, targeting a high-grade (~30%) copper deposit. The mine operated until 1982, when it was placed into 'care and maintenance', which is still the status to date. However, following recent, successful exploration activities at DCM, Mineral Projects Pty Ltd (Mineral Projects) aims to recommence operations. The current environmental authority (EA; EPML00881213, dated 31 July 2023), covering six separate mining leases (Figure 2), has not undergone a significant amendment in several years. Furthermore, the locations of approved, historical works are not well defined under the EA.

C&R Consulting Pty Ltd (C&R) were commissioned by Mineral Projects to complete a terrestrial ecology assessment as part of the supporting studies for a major EA amendment application to allow further development of DCM, with the aim to re-commence extractive activities on site.

1.1 SCOPE

The scope of the terrestrial ecology study includes the following:

- Identify the current environmental values within the study area;
- Review of relevant legislative requirements associated with the project;
- Review of relevant literature of previous terrestrial ecology studies conducted in the region to determine the background setting;
- Assess the composition of terrestrial flora and fauna communities and species within the proposed disturbance area by preparing an inventory of plant and vertebrate animal species present on the site after conducting baseline seasonal surveys in the dry season, early wet season and wet season;
- Evaluate the likelihood of occurrence of critically endangered, endangered, vulnerable or near-threatened (EVNT) species within the area of – or likely to be impacted by – the proposed disturbance by identifying species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or the Queensland *Nature Conservation Act 1992* (NC Act), that are, or are likely to be, within the disturbance footprint;
- Identify any species that require further assessment against EPBC Act significant impact assessment guidelines and address the NC Act or EPBC Act significant impact criteria for any relevant species;
- Assess the potential impacts from the project on ecological values in the context of relevant legislation;
- Identify impacts that the proposed project and future mining activities may have on environmental values;
- Identify mitigation measures that may be relevant to the disturbance activity (e.g. construction and ongoing operation of the facility) to avoid impact on listed species. Where avoidance is not possible, measures should be devised to minimise or mitigate adverse impacts arising from the construction and operation of the project; and
- Assess whether an offset is likely to be required as a result of disturbance.

The report structure is as follows:

- Section 2 – summary of historical and proposed project activities;
- Section 3 – description of the regional setting, including the environmental values (EVs) of note to the Palmer River catchment;
- Section 4 – presentation of relevant legislation, policies and regulations;
- Section 5 – an overview of the methods used to determine the terrestrial ecology values of the project site, including the desktop assessment and detailed field survey methods;
- Sections 6.2 and 6.4 – results of the terrestrial ecology study based on the desktop assessment and field survey; and
- Section 7 – discussion of the potential impacts to terrestrial ecology values identified within the project site and outline of the best-practice mitigation measures to ensure the risk of these impacts is reduced.

1.2 SURVEY LIMITATIONS

The terrestrial ecology survey results are an accurate and true representation of the sites at the time of the surveys, limited by the area surveyed, site conditions, and seasonal variations at the time of each survey.

The results do not guarantee the absence of conservation significant species¹ listed under state or Commonwealth legislation. Many fauna species are highly mobile, seasonally variable, occur at low density, or may only utilise a site intermittently. The species recorded during the current study are not considered exhaustive.

Field survey data collection to inform mapping was conducted using a hand-held iPad unit with aerial imagery. The accuracy of the iPad is generally less than 6 m and is not intended to be relied on for design purposes. In accordance with Neldner et al. (2023), regional ecosystem (RE) mapping has been undertaken to a mapping scale of 1:25,000.

The survey targeted threatened and migratory fauna and threatened flora. Further, although a general species list was compiled, the assessment did not aim to compile a detailed inventory of all species present.

The timing of the surveys was in accordance with relevant state and Commonwealth fauna survey guidelines.

¹Conservation significant species: protected fauna and flora, as listed in federal and/or state regulations.

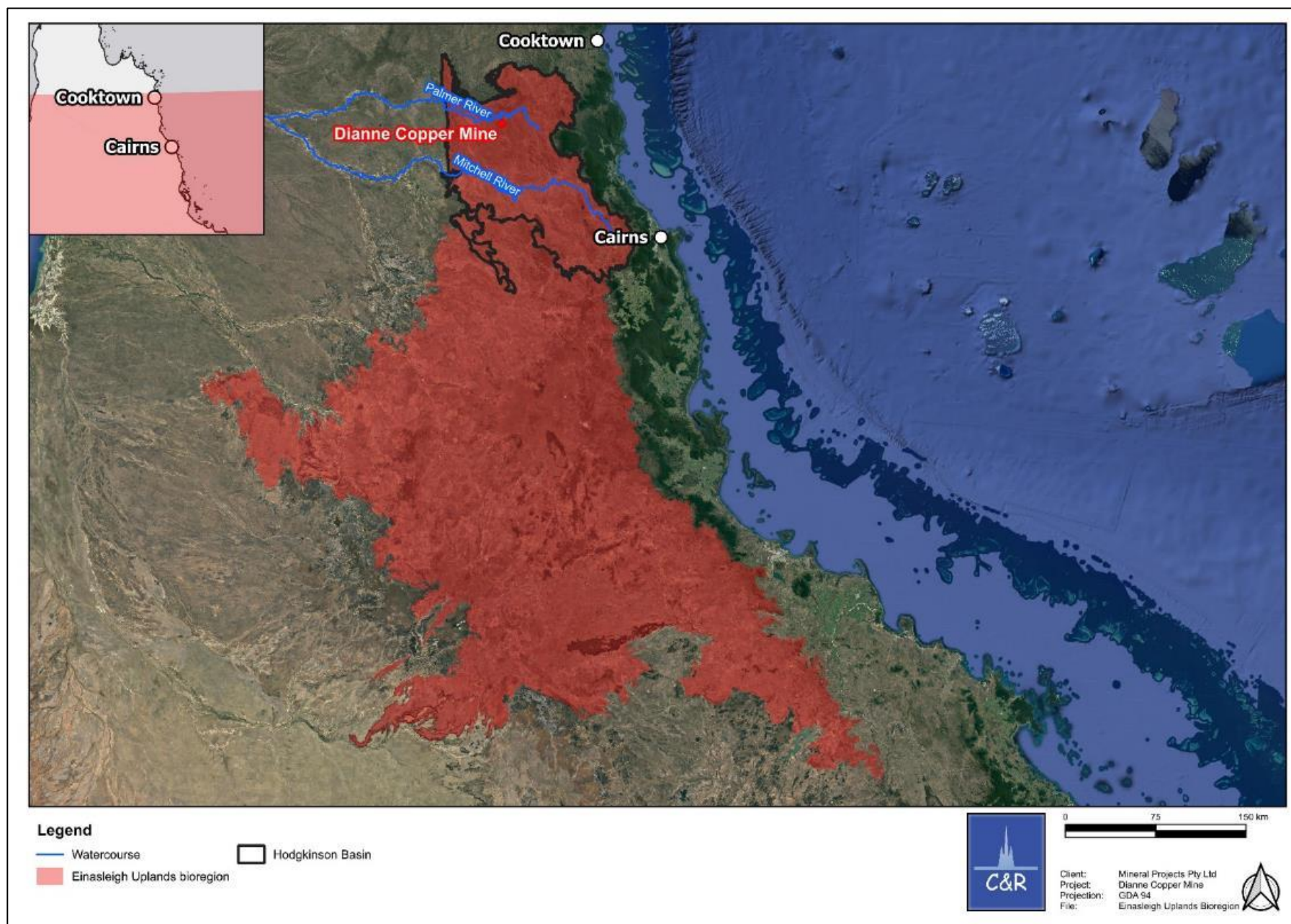


Figure 1: Dianne Copper Mine location.

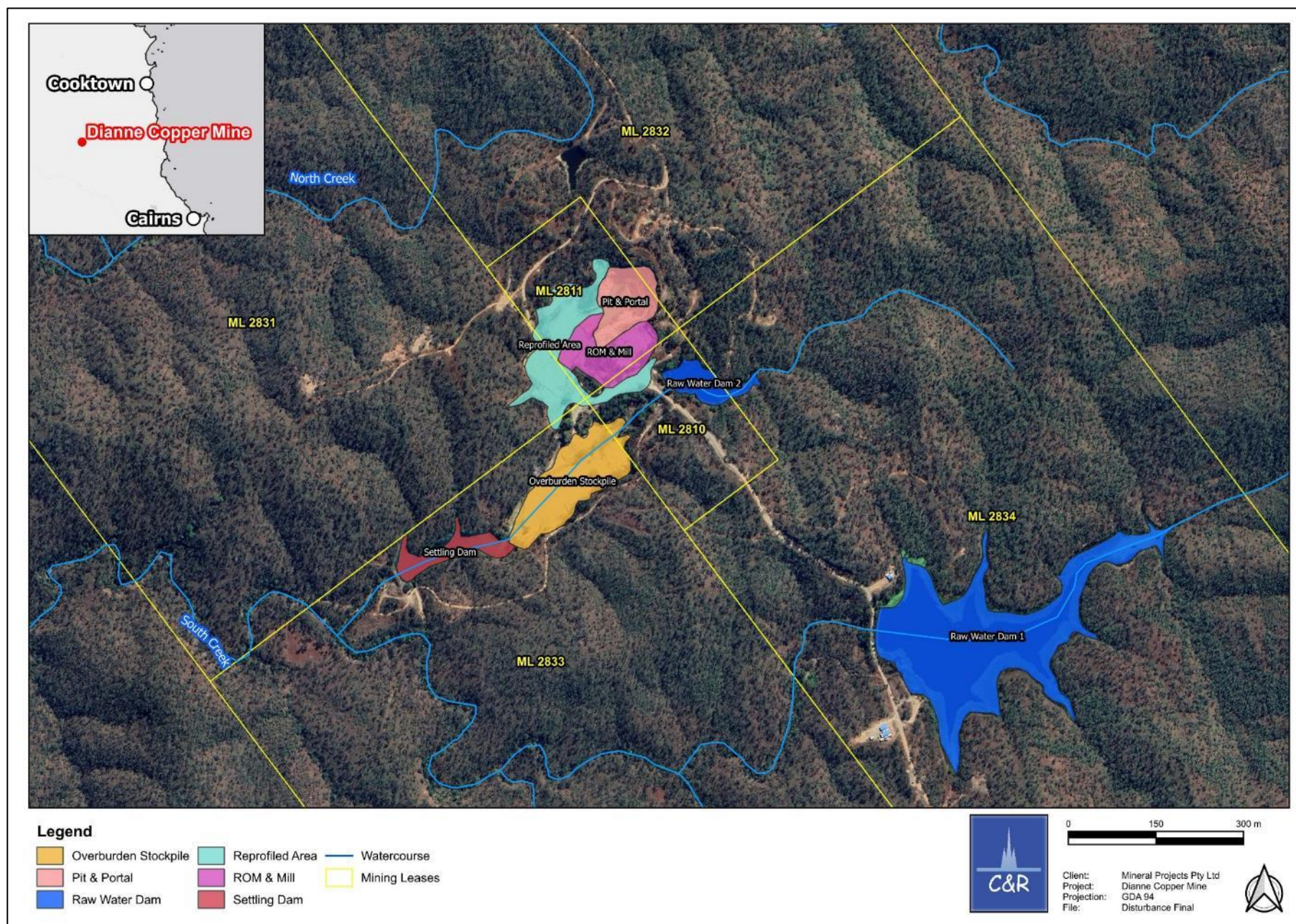


Figure 2: Existing disturbance footprint across the Dianne Copper Mine.

2. PROJECT DESCRIPTION

2.1 HISTORICAL ACTIVITIES

Historical DCM operations are encompassed by six mining leases that cover an area of 518 ha (Table 1). DCM started as an open-cut pit in 1979 before progressing underground via bord-and-pillar mining techniques. The current disturbance footprint includes an open-cut void and portal, mine-water management dams (including raw water dams and a settling dam containing mine-affected water), access roads/tracks and waste rock dump (Figure 2).

Table 1: Mining leases associated with the DCM operations.

Mining lease	Date granted	Expiry date	Area (ha)
ML 2810	24/04/1974	30/04/2028	5.67
ML 2811*	24/04/1974	30/04/2028	5.67
ML 2831	02/08/1973	30/04/2028	129.50
ML 2832	15/11/1973	30/04/2028	123.83
ML 2833	15/11/1973	30/04/2028	129.50
ML 2834	15/11/1973	30/04/2028	123.83
Total			518.00

*The access road that connects the site to Whites Creek Road is associated with this mining lease.

The mine has been in a state of 'care and maintenance' since the early 1980s. Although no extraction activities are currently being undertaken on site, existing disturbance from historical activities still influences the surrounding environment. The main source of potential contaminants to the receiving environment is from leached waters associated with the waste rock dump. The dump is located within a small valley (Figure 2) and was reconfigured in 2020 to reinstate a drainage line around the dump itself instead of flowing through it.

The settling dam is located downstream of almost all disturbance areas associated with the mine, including the waste rock dump (Figure 2). The only authorised release point to the receiving environment (RP1) is situated within the spillway of the settling dam. The spillway is currently ungauged and likely releases passively throughout the wet season once the dam is full.

Historically, the settling dam was found to be seeping underneath the dam wall and into the receiving environment. However, remediation works completed in 2020–2021 reduced the head pressure of water held within the dam (by pumping mine-affected water from the settling dam to the pit) and installing a sump at the foot of the dam wall. The sump has an automated pump installed to return seepage back to the settling dam when required.

2.2 PROPOSED ACTIVITIES

The recommencement activities at DCM will involve the following:

- The extraction and processing of up to 900,000 tonnes per annum (tpa) of copper ore from a single open-cut pit via a truck and shovel operation (i.e. excavator and haul methods). Although copper will be the main target, additional minerals – including zinc and silver – will also be targeted.

- The pit will be situated over the old/existing open-cut and portal void, reaching a total depth of about 110 m (Figure 3).
- Initial processing of the extracted ore will be undertaken via a two-phase crushing, screening and agglomeration circuit prior to stacking on heap leach pads for copper extraction (Figure 4).
- The heap leach pads – with an overall area of approximately 3 ha – will be lined with high-density polyethylene (HDPE) sheeting to prevent any seepage to underlying soils and groundwater systems. The heap leach and electrowinning processing stage is a closed circuit: The heap leach pads are irrigated with an acidic solution. The copper-rich runoff (pregnant liquor) is captured and treated using electrowinning that extracts the copper onto sheets charged as cathodes in an electrical circuit (Figure 4). Once the extraction process is completed, the remaining liquor is treated through a solvent extraction process so that the acid can be recycled through the heap leach process again (Figure 4).
- The heap leach area includes overflow dams to ensure that no solutions are released to the receiving environments (Figure 3).
- The copper cathode product will be transported to the Port of Townsville (PoT) via road (in 20 t trucks) for export to international markets. Up to 16 truck movements are required per week (on average).
- The construction and/or upgrade of various mine infrastructure (Figure 3), including:
 - Run-of-mine (ROM) area;
 - Access roads and tracks;
 - Temporary accommodation camp and associated sewage treatment plant (STP), with up to 40 staff working on site during the operational phase;
 - Water management infrastructure, including the development of diversion bunds/drains around the entire new, operational footprint (including the heap leach area) and the remediation of the existing settling dam to develop the new release dam;
 - Workshop and administration buildings;
 - Power infrastructure (solar and diesel combination), including the development of bunded fuel storage areas; and
 - A small landfill pit for general (non-mining) waste.

The project has a mine life of approximately four years, commencing in late 2024. An additional six months is required for closure and rehabilitation. During this time, further exploration activities within the area will also be conducted.

The proposed total disturbance area is approximately 50 ha, which includes utilising 16.12 ha of existing disturbance areas (Figure 3).

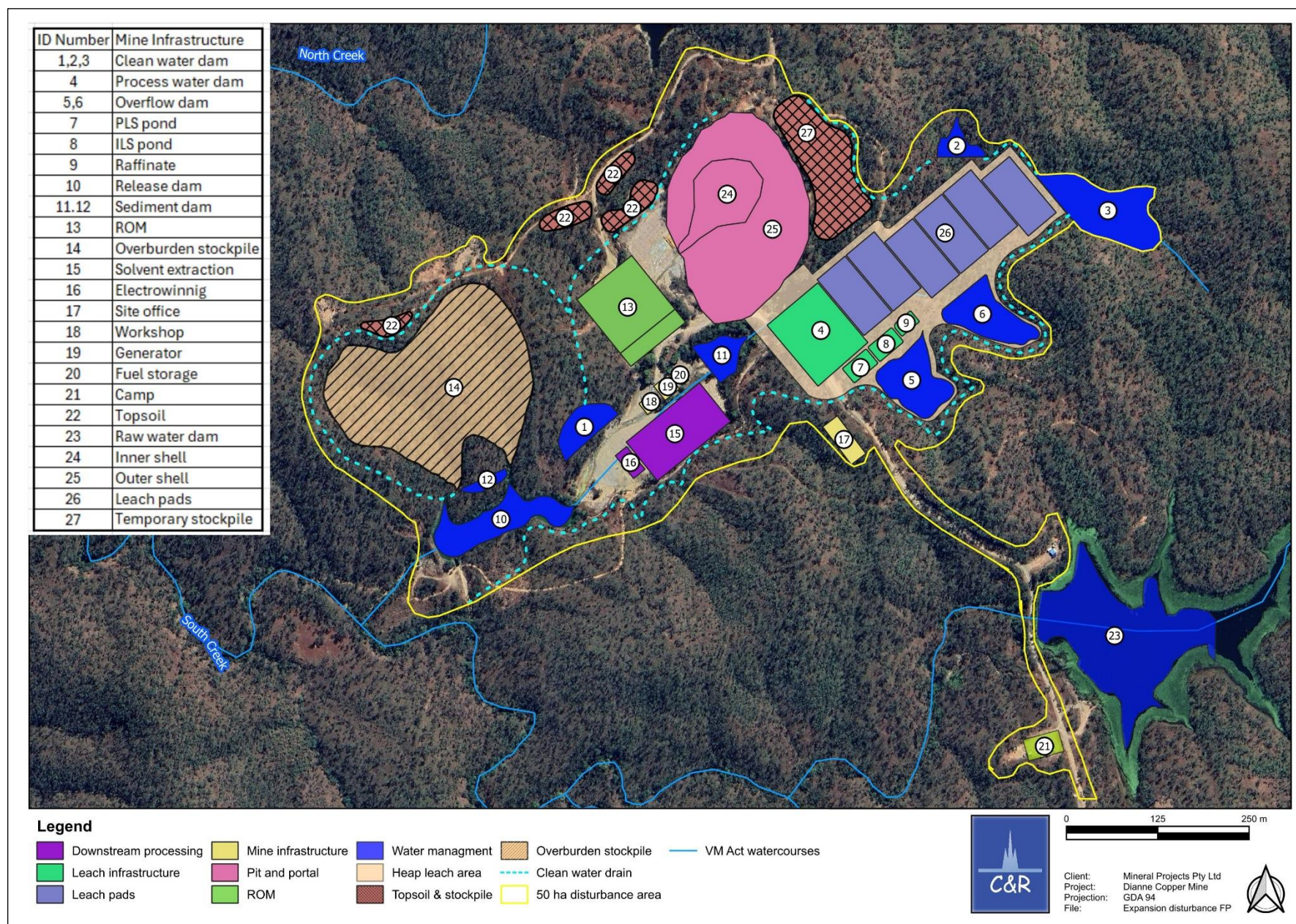


Figure 3: Proposed disturbance areas associated with the project.

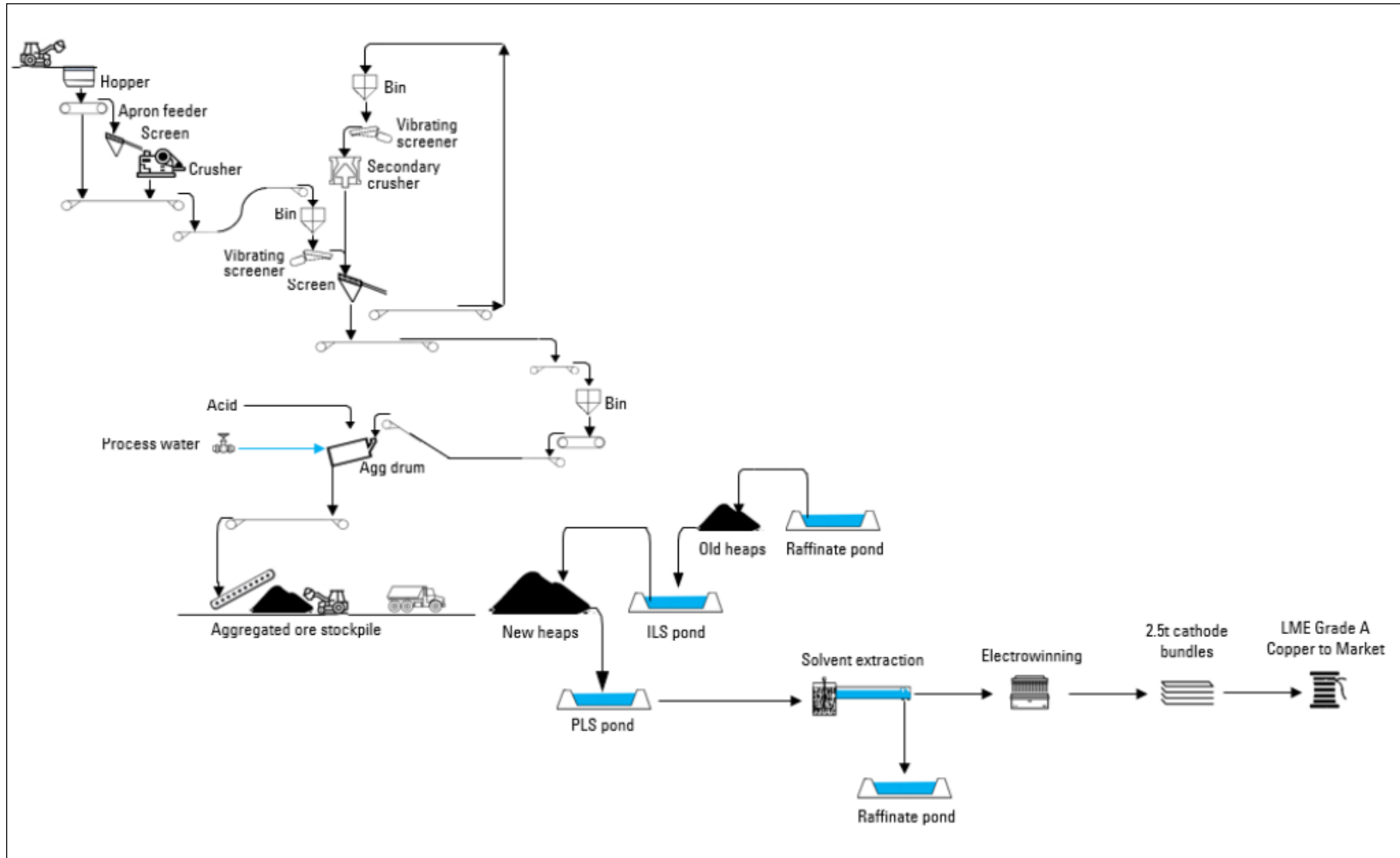


Figure 4: Indicative flowchart detailing the proposed mineral processing activities.

3. REGIONAL SETTING

3.1 CLIMATE

Rainfall in Queensland's seasonally dry tropics is notoriously inconsistent in its intensity, duration and location. The climate of the area is dominated by intense rainfall events during the wet season (November to April). These rainfall events are often highly variable in their spatial and temporal distribution, with much of the rain falling in distinct, spatially separated cells across the landscape.

The nearest Bureau of Meteorology (BoM) rainfall gauge (28013, Maitland Downs Station; BoM, 2024a) is located about 24 km southeast of the project site. At gauge 28013, the median annual rainfall total over the 1965–2023 period was 922.1 mm. However, annual rainfall displays very high variability, ranging from 333.2 mm (1966) to 1,879.0 mm (1981). Most precipitation tends to fall in January and February (Figure 5), with moderate to high falls also common in March and December. Typically, little rain falls throughout the dry season, with an occasional shower in May, June or October.

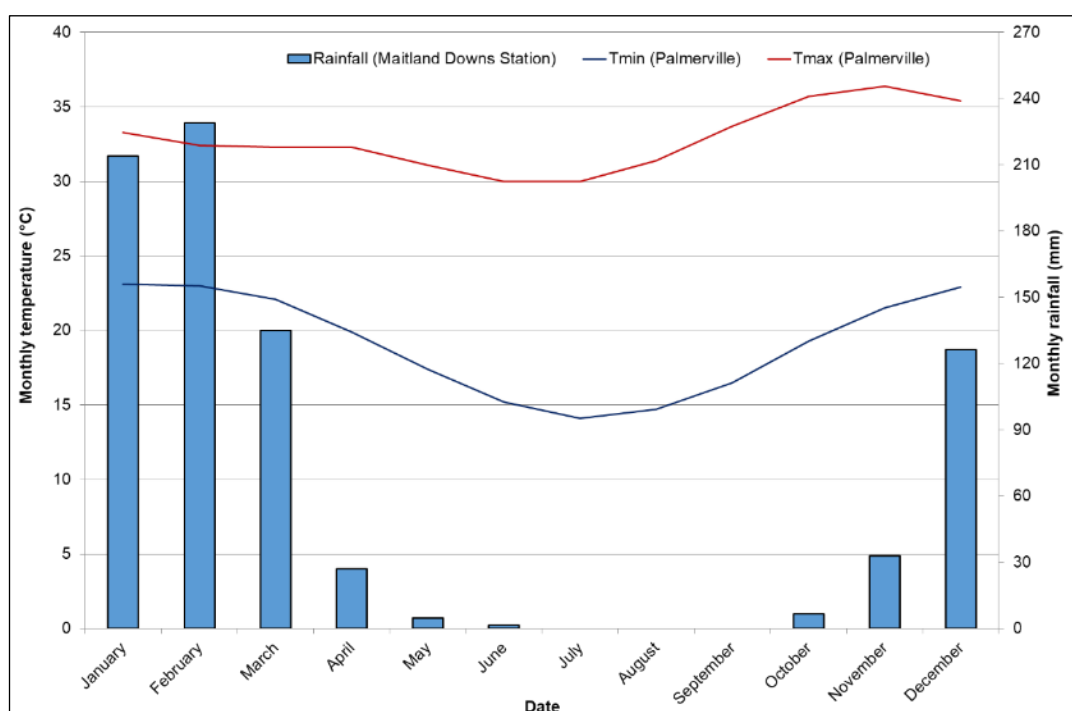


Figure 5: Long-term historical median monthly rainfall (BoM station 28013) and temperature (BoM station 28004).

The region is characterised by hot weather throughout the year. At Palmerville (BoM weather station 28004; BoM, 2024a) median monthly maximum temperatures (T_{max}) are generally above 30°C (Figure 5). The hottest daytime temperatures are typically during the monsoonal build-up before the beginning of the wet season (October–December; Figure 5). Conversely, median monthly minimum temperatures (T_{min}) more closely mirror the rainfall patterns, with the highest values (22°C – 23°C) observed between December and March, coinciding with the wettest months (Figure 5).

Evaporation tends to exceed rainfall for almost all days of the year except during intense rainfall events. The extended dry season causes baking and crusting of surface soils. These

processes will reduce the infiltration capacity of surface soils unless suitable pre-wetting is provided by gentle rain prior to the wet season. During the onset of the wet season, in the absence of gentle, pre-wetting rains, more than 90% of rainfall can eventuate as runoff throughout catchments.

Rainfall over the twelve months prior to the development of this report (i.e. June 2023 to May 2024, the reporting period) was higher in comparison to the long-term annual median (907.2 mm) over the equivalent interval (June to May), with a recorded total of 1,404.5 mm for the year. Figure 6 presents monthly rainfall over the reporting period, compared to the historical, monthly median recorded at the Maitland Downs station (BoM station 28013). Rainfall during the 2023–2024 wet season was nearly double the long-term median rainfall as a result of severe tropical cyclone (TC) Jasper. TC Jasper formed in the Coral Sea and made landfall near Wujal Wujal on 13 December 2023, before stalling over the Cape York Peninsula for several days, bringing large amounts of rainfall to the region (BoM, 2024b). December 2023 was the wettest month (582.5 mm), with January and February 2024 also recording rainfall totals above the long-term median (Figure 6).

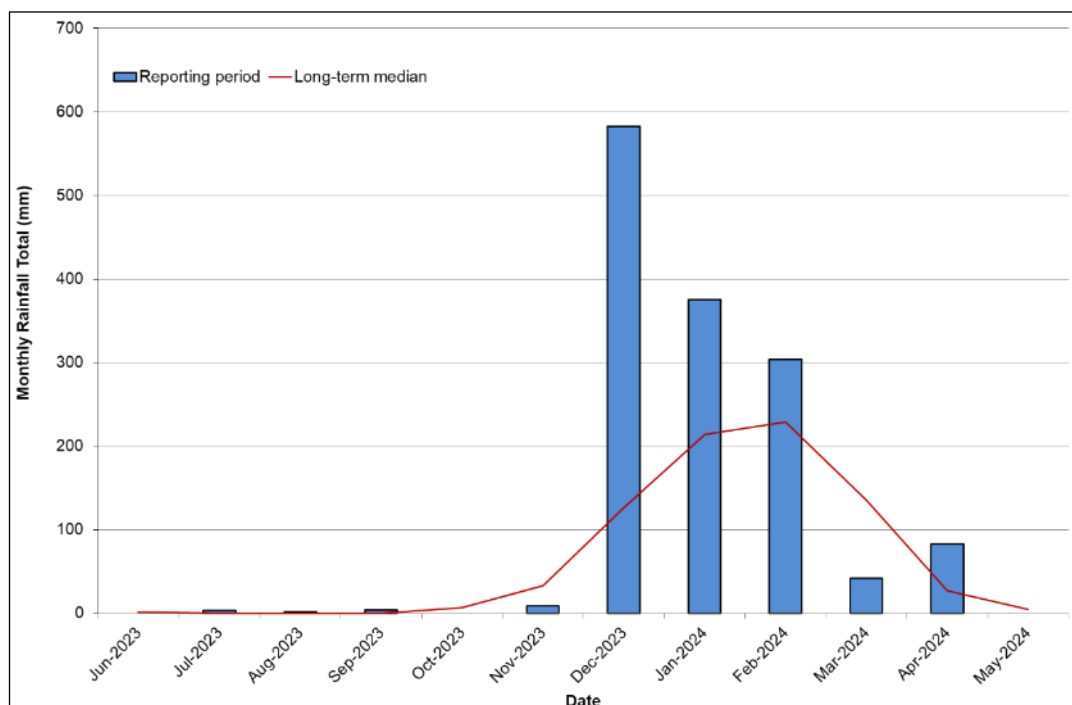


Figure 6: Rainfall over the reporting period and the long-term historical monthly median (BoM station 28013).

3.2 HYDROLOGY

The project site lies within the Palmer River sub-basin, which is part of the Mitchell River basin, draining west into the Gulf of Carpentaria (Figure 1). The Palmer River sub-basin covers approximately 8,424 km², and the Mitchell River basin about 71,622 km². The main watercourse associated with the project site is an unnamed tributary of Gum Creek, herein referred to as 'South Creek' (Figure 2). A second unnamed tributary of Gum Creek traverses the northern sections of the project site and will be herein referred to as 'North Creek' (Figure 2). Both these tributaries flow into Gum Creek, which joins Granite Creek before entering the Palmer River.

Watercourses within the region record peak flows within the wet season. Many smaller systems only flowing while rains persist (ephemeral streams). Conversely, others like Gum Creek flow for extended periods, fed by groundwater outputs following the cessation of the

wet season. Similar to Gum Creek, South Creek is an intermittent system, with minor flows sustained for an extended period after the wet season via groundwater seepage from the highly fractured rock within the upper reaches. Conversely, North Creek is considered ephemeral. It is likely that all three systems dry out entirely over the dry season, although pools are expected to persist year-round in some areas.

South Creek receives flows from the existing disturbance areas associated with the historical mining operations via the settling dam. The settling dam has the potential to passively release during flood events. Additionally, seepage has been documented below the settling dam wall. A sump and return pump system has been set up at the base of the wall to capture seepage and return it to the settling dam. However, the effectiveness of the system to capture all seepage is unknown. Further, the connectivity of the shallow subsurface seepage to the downstream receiving environment is undetermined.

The Gum Creek catchment area is a relatively small catchment in the Palmer River sub-basin, situated within the hills to the south of the main channel of the Palmer River. The hills restrict the drainage lines in terms of width. Most drainage lines of Gum Creek are deeply incised and steep, creating fast-flowing waters during the wet season.

3.3 GEOLOGY AND GEOMORPHOLOGY

The area is characterised by rocky hills and steep valleys, controlling the morphology of the local watercourses. The primary geological formation in the region is the Hodgkinson Formation, which is several kilometres thick – and forms the bulk of Queensland's Hodgkinson Province, the northern part of the Tasman Fold Belt (Horn et al., 1995). The province is bounded to the west by the Palmerville Fault.

The Hodgkinson Province consists of Paleozoic, turbiditic siliciclastics with subordinate limestone, chert, and mafic volcanics. These rocks are mostly unfossiliferous, except for the limestone and chert. The oldest rocks are Ordovician, siliciclastic rocks that are located along the western margin of the province, adjacent to the Palmerville Fault (Horn et al., 1995).

The Hodgkinson Province is overlain by restricted Carboniferous to Triassic, non-marine successions, comprising conglomerate, coal measures, volcanic rocks and sandstone, including rocks of the Ngarrabullgan and Lakefield basins (Horn et al., 1995). The Hodgkinson Province has been folded and faulted by several deformation events.

The primary soil type found around DCM is a tenosol, specifically Fu25 (Northcote, 1960–1968). This type of soil is generally found in low, hilly to hilly lands closely dissected by numerous, small streams. Undulating areas occur marginally and there are some areas of high hills with very steep slopes and common rock outcrops. The dominant soils are very shallow, gravelly, bleached loams (Um2.12), with lesser areas of similar loams (Um2.21, Um4.1, and Um4.21). Smaller areas of similar, sandy loams (such as Uc2 and Uc4) occur locally. Associated throughout the unit are areas of shallow, gravelly duplex soils (namely Dy3.41, Dr2.41, and Dr3.41), particularly on lesser slopes. In some valley floors, there are small areas of Dy3.43 soils. Small areas of basic volcanic rocks in the unit have deeper, red, friable clays (i.e. Uf6.31). At the northern margin of the project site, the unit may be capped by small sandstone mesas of unit Ca35.

This surface geology and soils lead to the stream beds of the targeted watercourses being dominated by coarse sands, gravel and cobble, interspersed with bedrock throughout the reaches. The systems often present steep gradients, generating fast-flowing water in the wet season.

3.4 LAND USE

Large portions of the Palmer River catchment area have historically been targeted for gold mining, including the Gum Creek catchment. Although alluvial gold mining still occurs within Gum Creek, it is no longer the dominant land use within the region, superseded by cattle grazing. Despite this, small-scale gold hunters are still irregularly observed in the area, with evidence of their recent activities (small diggings) often observed. Although some station homesteads occur in the Gum Creek catchment, there are no major settlements.

DCM is the only known hard rock mining operation within the Gum Creek catchment area.

4. RELEVANT LEGISLATION, GUIDELINES AND REGULATORY REQUIREMENTS

The legislation, policies and regulations relevant to the management of terrestrial ecology in relation to the project are discussed in sections 4.1 to 4.8 and include:

- The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- The Queensland *Nature Conservation Act 1992* (NC Act);
- The Queensland *Environmental Protection Act 1994* (EP Act);
- The Queensland *Vegetation Management Act 1999* (VM Act)
- The Queensland *Biosecurity Act 2014*;
- The Commonwealth Department of Sustainability, Environment, Water, Population and Communities (DSEWPoC, 2012) environmental offsets policy;
- The Queensland environmental offsets framework; and
- The Queensland biodiversity planning assessment.

4.1 COMMONWEALTH ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The EPBC Act is the Commonwealth Government's primary environmental legislation. The Act provides a legal framework to protect and manage matters of national environmental significance (MNES). Further, the EPBC Act establishes a process for environmental assessment and approval of proposed actions that have, will have or are likely to have a significant impact on MNES or Commonwealth land.

The nine MNES defined under the EPBC Act include:

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

Under the EPBC Act, a referral to DCCEEW and approval from the federal environment minister is required if the action has the potential to cause a 'significant impact' on MNES. The determination is made with reference to the *Significant impact guidelines 1.1 – Matters of national environmental significance* (Department of the Environment [DoE], Water, Heritage and the Arts [DEWHA], 2013) and other EPBC Act policy statements, including significant impact guidelines and conservation advice for individual threatened species, groups of species and threatened ecological communities (TECs). Environmental offsets can

also be used under the EPBC Act to maintain or enhance the health, diversity and productivity of the environment as it relates to matters protected by the EPBC Act.

Several MNES were identified – through the desktop assessment – as having the potential to occur within the area. These matters were assessed through a likelihood of occurrence assessment and significant impact assessment. The findings are discussed further within sections 6.2, 6.4 and 7 of this report.

4.1.1 THREATENED ECOLOGICAL COMMUNITIES

The EPBC Act identifies and protects TECs. Types of TECs listed under the EPBC Act include woodland, grassland, shrubland, forest, wetland, marine, ground spring and cave communities. TECs are listed under the EPBC Act in the following categories:

- *Extinct in the wild*;
- *Critically endangered*;
- *Endangered*; and
- *Vulnerable*.

The potential presence of TECs within the project site is discussed in Section 0 of this report.

4.1.2 CONSERVATION SIGNIFICANT SPECIES

Conservation significant species are listed under the EPBC Act in the following categories:

- *Extinct*;
- *Extinct in the wild*;
- *Critically endangered*;
- *Endangered*; and
- *Vulnerable*.

Conservation significant species are discussed further in sections 6.2 and 6.4 of this report.

4.1.3 MIGRATORY SPECIES

Migratory species are animals that either:

- migrate to Australia and its external territories; or
- pass through or over Australian waters during their annual migrations.

These animals include birds, mammals (e.g. whales) and reptiles. Australia has signed international conventions and agreements to protect many migratory species, including the following:

- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
- China–Australia Migratory Bird Agreement (CAMBA)
- Japan–Australia Migratory Bird Agreement (JAMBA)
- Republic of Korea–Australia Migratory Bird Agreement (ROKAMBA)
- Agreement on the Conservation of Albatrosses and Petrels (ACAP)

Listed migratory species also include any native species identified in an international agreement that the minister has approved. The minister may approve this type of agreement if they are satisfied that it is relevant to conserving migratory species.

Several migratory species were identified – through the desktop assessment – as having the potential to occur within the area. These matters were assessed through a likelihood of occurrence assessment. The findings are discussed further within Section 6.4 of this report.

4.1.4 WEEDS OF NATIONAL SIGNIFICANCE

Thirty-two (32) weeds of national significance (WoNS) have been identified by the Australian Government using an assessment process that prioritised these weeds based on their invasiveness, potential for spread and environmental, social and economic impacts. For the 32 WoNS, customised and targeted management plans have been developed.

Several WoNS have the potential to occur within the project site. Weeds are discussed further within Section 6.3.4 of this report.

4.2 QUEENSLAND NATURE CONSERVATION ACT 1992

The objective of the NC Act is “*the conservation of nature*”, as outlined in section 4 of the NC Act. In support of the NC Act, the *Nature Conservation (Animals) Regulation 2020* and the *Nature Conservation (Plants) Regulation 2020* list ‘protected fauna’ and ‘protected flora’ species, respectively. These are referred to as ‘conservation significant species’ within this report.

As per sections 88 and 89 of the NC Act, it is an offense to take or use protected wildlife outside a ‘protected area’ unless exemptions apply, or an approval is obtained from DESI.

Conservation significant species are listed under the NC Act in the following categories:

- *Extinct in the wild*;
- *Endangered*;
- *Vulnerable*;
- *Near-threatened*; and
- *Special least concern* (SLC; *least concern* species of special cultural significance).

The NC Act also regulates environmental impacts on protected plants and animals through the protected plants framework and species management program requirements. With regards to protected flora, the NC Act was amended in 2014 to create a new, risk-based approach to regulate the clearing of protected plants. As a result of this amendment, only high-risk clearing requires assessment. Clearing permits are only required for clearing threatened or near-threatened plants and their supporting habitat.

Conservation significant species with the potential to occur within the project sites have been discussed within this report (Section 6.2 [flora] and Section 6.4 [fauna]).

4.3 QUEENSLAND ENVIRONMENTAL PROTECTION ACT 1994

The objective of the EP Act is to protect Queensland’s environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (ecologically sustainable development; refer to section 3 of the EP Act).

The EP Act provides the key legislative framework for the protection of the environment in Queensland. Section 319 of the EP Act imposes a 'general environmental duty', which specifies that a person must not undertake any activity that may harm the environment without taking reasonable and practical measures to prevent or minimise the harm.

There are also several issue-specific environmental protection policies (EPPs) that the project will need to comply with. These include – but are not necessarily limited to – the *Environmental Protection Regulation 2019*, the *Environmental Protection (Air) Policy 2019*, the *Environmental Protection (Noise) Policy 2019* and the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019*.

4.3.1 ENVIRONMENTALLY RELEVANT ACTIVITIES

In co-ordination with the Planning Act 2016, the EP Act provides for licensing and approval of environmentally relevant activities (ERAs). ERAs are activities that require specific regulation because of the likelihood that they could cause environmental harm. To carry out an ERA, an EA must be obtained prior to commencing the activity. A full list of all the prescribed ERAs can be found in schedule 2 of the *Environmental Protection Regulation 2019*.

The project will require approval for ERAs.

4.4 QUEENSLAND VEGETATION MANAGEMENT ACT 1999

The VM Act is a part of a planning framework for the management of native vegetation across Queensland. The purpose of the VM Act is to regulate the clearing of vegetation in a way that:

1. Conserves remnant vegetation;
2. Conserves vegetation in declared areas;
3. Ensures that clearing does not cause land degradation;
4. Prevents the loss of biodiversity;
5. Maintains ecological processes;
6. Manages the environmental effects of the clearing to achieve the matters mentioned in (a) to (e); and
7. Reduces greenhouse gas emissions (refer to s3(1) of the VM Act).

The VM Act protects and regulates the clearing of native vegetation, including 'remnant' vegetation (shown as Category B area on the regulated vegetation management map) on freehold land, indigenous land and sState tenures. The VM Act also protects and regulates the clearing of areas designated for offsets or compliance. *The Vegetation Management Regulation 2012* prescribes the status of each RE identified within Queensland. Potential impacts to REs are discussed in section 7.1.

4.4.1 REGULATED VEGETATION

The VM Act protects and regulates the clearing of native vegetation including 'remnant' and 'high value regrowth' (HVR) vegetation (shown as Category B and C on the Regulated Vegetation Management Map) on freehold land, Indigenous land and State tenures. Potential impacts to regulated vegetation are discussed in section 7.1.

The VM Act also protects Category R vegetation; that is native woody vegetation on freehold land, Indigenous land or leasehold land granted for agriculture or grazing purposes, located

within 50 m of a watercourse in the Burdekin, Mackay, Whitsunday and wet tropics Great Barrier Reef catchments.

4.4.2 REGIONAL ECOSYSTEMS

REs are vegetation communities in a bioregion that are typically associated with a particular combination of geology, landform and soil (Sattler and Williams, 1999). The RE classification scheme is used to incorporate biodiversity into planning and management through the provisions of the VM Act.

Under the VM Act, REs are assigned a vegetation management class (VM class) and biodiversity status. The VM class is listed in the *Vegetation Management Regulation 2012* and is used in the regulation of clearing. Biodiversity status is relevant for a variety of planning and management applications and is based on an assessment of the condition of remnant vegetation in addition to the VM class determined under the VM Act.

Vegetation communities or REs are listed under the VM Act in the following categories:

- *Endangered;*
- *Of concern;* and
- *No concern at present / least concern.*

4.4.3 ESSENTIAL HABITAT

Essential habitat is regulated under the VM Act and is vegetation in which threatened species listed under the NC Act have been known to occur. Clearing of essential habitat is assessed through the development assessment process under the Planning Act 2016. Where clearing cannot be reasonably avoided or minimised, an offset may be required under the *Environmental Offsets Act 2014* (EO Act).

4.5 QUEENSLAND BIOSECURITY ACT 2014

The *Biosecurity Act 2014* is administered by the Department of Agriculture and Fisheries (DAF). The Act provides management measures to protect agricultural and tourism industries and the environment from pests, diseases and contaminants. Under the Act, everyone has a 'general biosecurity obligation' to manage biosecurity risks that are under their control and that they know about or should be reasonably expected to know about. Under this obligation, individuals and organisations must take all reasonable and practical steps to prevent or minimise each biosecurity risk.

Under the Act, invasive plants and animals are categorised as either a 'prohibited matter' or a 'restricted matter' and replace the 'declared' status under the superseded *Land Protection (Pest and Stock Route Management) Act 2002*. The *Biosecurity Act 2014* also requires every local government in Queensland to develop a biosecurity plan for their area.

4.6 COMMONWEALTH ENVIRONMENTAL OFFSET POLICY

The Commonwealth (DSEWPac, 2012) environmental offsets policy relates to the potential for significant, residual impacts to MNES. DSEWPac (2012) discusses the role of offsets in impact assessments. Further, it outlines the consideration process undertaken by DCCEEW to determine the suitability of a proposed offset package. The DSEWPC (2012) policy defines an offset package as a "*suite of actions that a proponent undertakes in order to compensate for the residual significant impact of a project*". An offset can be in the form of a direct offset or other compensatory measure.

Suitable offset packages must include direct offsets, with at least 90% of the offset requirements met by direct offsets. Direct offsets are actions that result in a measurable conservation gain for the impacted, protected matter. The remaining (less than 10% of) offset requirements within an offsets package can be provided as compensatory measures. Compensatory measures are actions that will benefit the impacted, protected matter without directly offsetting the impact (e.g. funding for research).

The potential for MNES to occur on the project site is discussed in Section 0.

4.7 QUEENSLAND ENVIRONMENTAL OFFSETS ACT 2014

The environmental offsets framework in Queensland includes the EO Act, the *Environmental Offsets Regulation 2014* (EO Regulation) and the *Queensland Environmental Offsets Policy* (EO Policy; Department of Environment and Science [DES], 2023b). This framework provides for environmental offsets to counterbalance significant, residual impacts of particular activities on specific matters of national, state or local environmental significance and to establish a framework in relation to environmental offsets.

The EO Policy (DES, 2023b) requires offsets for a broad range of activities, including mining projects. Offsets are required when an applicant has demonstrated that – despite all efforts to avoid or minimise impacts on matters of state environmental significance (MSES) – there is still residual impact. MSES (as outlined in schedule 2 of the EO Regulation) include:

- Regulated vegetation, including:
 - Endangered and of-concern REs;
 - REs that intersect areas shown as wetlands on the vegetation management wetlands map;
 - REs located within a prescribed distance from the defined banks of a watercourse; or
 - Essential habitat;
- Areas that provide connectivity;
- Mapped wetlands and watercourses, including:
 - Wetland protection areas, or areas of high ecological significance as shown on the map of referable wetlands;
 - High ecological value waters (as defined under the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019*); and
 - High preservation areas within a wild river area;
- Designated precincts in strategic environmental areas;
- Protected wildlife habitat;
- Koala habitat in southeast Queensland;
- Protected areas (national parks, regional parks and nature refuges);
- Highly protected zones of state marine parks;
- Fish habitat areas;
- Waterways providing fish passage;
- Marine plants; and
- Legally secured offsets.

A self-assessment using the *Significant residual impact guideline – Queensland environmental offsets policy* (Department of Environment and Heritage Protection [DEHP], 2014) is required to determine whether the project will have a significant, residual impact on

MSES. An environmental offset condition may be imposed under various state assessment frameworks (such as the Planning Act 2016 and EP Act for an activity prescribed under the EO Act), if the project will – or is likely to have – a significant, residual impact on a prescribed environmental matter that is a MSES.

Offsets can be delivered as proponent-driven offsets, by financial settlement offset or a combination of both delivery options. A proponent-driven offset means that the authority holder (or proponent) is responsible for undertaking the delivery of the offset, which may be delivered as a 'land-based' offset or as a direct benefit management plan (DBMP), or a combination. A DBMP is a strategy that delivers an offset through priority management actions that address threats to – and provide substantial benefits for – the impacted, prescribed environmental matter, including on a landscape scale. A DBMP may also be used to deliver a conservation outcome from a financial settlement offset.

The project has the potential to have residual impacts on the following significant environmental values:

- Protected wildlife habitat;
- Remnant vegetation; and
- REs on watercourses.

Assessment of potential impacts on MSES has been addressed in report section 0.

4.8 BIODIVERSITY PLANNING ASSESSMENT MAPPING

Biodiversity significance is attributed by DESI on a bioregional scale through a biodiversity planning assessment (BPA). BPAs assign three levels of overall biodiversity significance (DES, 2024):

1. State significance – areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales. Additionally, “*state habitat for EVNT taxa*” has been mapped based on the presence of endangered, vulnerable and/or near-threatened taxa.
2. Regional significance – areas assessed as being significant for biodiversity at the subregional scale. These areas have lower significance for biodiversity than areas assessed as being of state significance.
3. Local significance and/or other values – areas assessed as not being significant for biodiversity at state or regional scales. Local values are of significance at the local government scale.

DES (2024) used records from 1950 (flora) and 1975 (fauna) – and with a minimum georeferencing precision of 2,000 m.

5. METHODS

5.1 DESKTOP REVIEW AND PRELIMINARY HABITAT ASSESSMENT

A desktop review was undertaken to characterise and identify potential flora and fauna species, communities and habitat values that may be present within the study area.

The desktop assessment included a review of literature, searches of publicly available datasets, existing reports and online mapping. Data sources included – but were not limited to – the following:

- The Queensland Herbarium (2024) Regional Ecosystem Description Database (REDD) and RE maps;
- Topographic data;
- Aerial photographs and satellite imagery;
- Existing species lists;
- Database searches:
 - WildNet (Wildlife Online) database (DESI, 2024c) to identify flora and fauna species previously recorded within or surrounding the study area. A copy of the search data is provided in Appendix A;
 - DCCEEW (2024d) Protected Matters Search Tool (PMST) to identify MNES that may occur within the study area. Search parameters utilised a centroid point placed within the project site, with a 50 km buffer. A copy of the search data is provided in Appendix B;
 - Wetlands mapping (DESI, 2024b);
 - Queensland Government maps of Queensland biosecurity zones;
 - DES (2023a) flora survey trigger map to identify the high-risk areas for protected plants, and determine whether a flora survey and a clearing permit is required. The flora survey trigger map for the site and its immediate surrounds is shown in Appendix C;
 - Atlas of Living Australia (ALA, 2024) database to identify locations of previously recorded flora and fauna species within and adjacent to the study area;
 - International Union for the Conservation of Nature (IUCN);
 - JAMBA, CAMBA, and other international treaties for the conservation of migratory species;
- Internet searches;
- Previous reports;
- Previous EPBC referrals relating to projects within the 50 km search radius applied through the PMST search described above;
- Review of relevant state and national fauna and flora survey guidelines; and
- Review of all relevant legislation – as outlined in Section 4 of this report – and species distribution maps from various current field guides and applications.

This assessment considered not only the immediate study area but also applied an extended search radius using central coordinates of the study area as the reference point. Table 2 outlines the consulted data sources and the search parameters used to interrogate each data source.

Table 2: Data sources consulted and respective search parameters.

Online search data source	Coordinates / reference point	Search buffer
PMST (DCCEEW, 2024d)	The 'rectangle' tool was used to encompass the study site in its entirety and an additional search buffer was applied.	50 km
WildNet (including Biomaps; DESI, 2024c)	Latitude: -16.1002; Longitude: 144.5200	50 km
ALA (2024)	General area searches and species searches	10 km*
Regulated vegetation maps / REs	ML2810, ML2811, ML2831, ML2832, ML2833 and ML2834	NA
Flora survey trigger map (DES, 2023a)	ML2810, ML2811, ML2831, ML2832, ML2833 and ML2834	NA
Vegetation management property report (Queensland Government, 2023b)	ML2810, ML2811, ML2831, ML2832, ML2833 and ML2834	NA
MSES (Queensland Government, 2023a)	Latitude: -16.1002; Longitude: 144.5200	NA

*10 km is the maximum search buffer that can be applied through the ALA.

NA – Not applicable.

Information collected as part of the desktop assessment was used to develop a list of target EVNT species, to inform the field survey methodology and allow for:

- A preliminary assessment of current and potential impacts on significant vertebrate fauna populations and habitats;
- Collation of a list of recorded fauna and flora species within the site; and
- The pre-determination of likely appropriate survey sites based on RE mapping, habitat types and other relevant information.

The desktop review provided adequate background information to develop and design an appropriate survey methodology for the fauna and flora surveys.

An assessment of the likelihood of occurrence of EVNT fauna species, including migratory species, was also undertaken as part of the desktop assessment, with results refined following the field work (details provided in Section 6).

5.2 LIKELIHOOD OF OCCURRENCE ASSESSMENT

Database searches identified significant flora and fauna species that may occur within the project site and surrounding area. An initial likelihood assessment of species potentially occurring in the project site was conducted prior to the field surveys. A likelihood assessment was then refined following the field assessments, considering known habitat and ecological requirements of the species against the vegetation and habitat types identified during the field surveys.

Each species was assessed against the following categories:

- **Known:** Species was positively identified and recorded in the project area during the field assessment; or previous, reliable records occur within the project area.
- **High:** Species was not recorded during the field survey or previously. However, there are known records within the nearby surrounding area and suitable habitat exists in the project area.

- **Moderate:** Species was not recorded during the field survey or previously. However, known records occur in the surrounding area but habitat in the project area is marginal or degraded.
- **Low:** Habitat in the project area might be suitable or marginal. However, the species was not recorded during the field survey, and no known records of the species exist within the surrounding area.
- **None:** No suitable habitat within the project area and no records of the species in the surrounding area, or the species distribution does not overlap the site. This is usually applied to marine species or seabirds for terrestrial sites.

This process is used as a guide and is not to be used as indicating species presence or absence other than where observed presence is indicated. The results of the likelihood-of-occurrence assessment are presented in Section 6 of this report.

5.3 SIGNIFICANT IMPACT ASSESSMENT

A significant impact assessment was undertaken to determine impacts on any EVNT or migratory species protected under the EPBC Act in accordance with the *Significant impact guidelines 1.1 – Matters of national environmental significance* (DEWHA, 2013; Appendix D) for those species with a moderate to high likelihood of occurrence within the project area.

5.4 GENERAL FIELD SURVEY APPROACH

Four field surveys undertaken by suitably qualified ecologists and botanists were completed during the 2023 dry season, 2024 early wet season and 2024 wet season in accordance with relevant state and Commonwealth flora and fauna survey guidelines. The surveys were completed within the recommended timeframe for the various target flora and fauna species, including threatened flora, fauna and migratory species. A summary of survey timing has been provided in Table 3.

Table 3: Survey timing.

Survey	Start date	End date	Target taxa	No. of suitably qualified ecologists/botanists
2023 dry season	6/11/23	12/11/23	EVNT fauna Migratory fauna Preliminary flora assessment	2 ecologists 1 botanist 2 first-nation rangers
2024 early wet season	30/1/24	3/2/24	Migratory birds EVNT fauna	2 ecologists
2024 wet season survey #1	24/3/24	28/3/24	Migratory birds EVNT fauna	2 ecologists
2024 wet season #2	29/4/24	4/5/24	EVNT flora EVNT fauna Migratory birds Vegetation assessment (RE mapping)	3 ecologists 1 botanist 2 first-nation rangers

5.5 FLORA SURVEY METHODS

One of the primary objectives of the study was to assess the likely occurrence of EVNT species within the study area. If EVNT species are likely to be present, then this will govern the type of flora investigation to be conducted on site.

The Queensland Government has adopted a risk-based approach to the regulation of protected plants under the NC Act. The protected plants framework focuses regulatory, educational and compliance effort on activities that pose a high risk to plant biodiversity. Under the framework, when a non-exempt clearing activity is proposed within a high-risk area, the proponent of that activity is required to complete a flora survey prior to commencement of clearing. High-risk areas are shown in flora survey trigger maps which are available from DES (2023a). Section 3 of the *Flora survey guidelines – Protected plants* (DES, 2020) determines the need for a flora survey and flora survey report. The statutory requirements within DES (2020) are outlined under their section 3.1. These requirements are as follows:

- Section 139: *A person may check the flora survey trigger map before starting any clearing to find out if any part of the area to be cleared is within a high risk area;*
- Section 141: *If any part of an area to be cleared is within a high risk area, a flora survey must be undertaken of the clearing impact area before the clearing starts; and*
- Section 140(1): *A flora survey is a survey of a clearing impact area ... undertaken to identify whether threatened plants or near threatened plants are present within the clearing impact area.*

The flora survey trigger map (Appendix C) shows that no high-risk areas are present on – or in the immediate surrounds of – the study area. Therefore, no survey is required, in accordance with the *Flora survey guidelines – Protected plants* (DES, 2020). Despite this, for due diligence purpose, a floral species inventory was created for the site. The method used to obtain this species list was via meandering survey and targeted habitat searching.

Additional to the meandering survey, the REs were also assessed for the study area. The RE assessment was carried out in accordance with the *Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland* (Neldner et al., 2023). Aerial imagery and RE mapping were used to identify suitable sites and areas of interest for the assessment of vegetation communities. Site selection aimed to capture numerous representations of each mapped RE within the study area, as well as adequate spatial separation of sites. The location of survey sites was refined in the field to capture the most representative datasets. The RE assessment was carried out to confirm that the Queensland Government mapping of the site is correct/accurate and to provide a detailed habitat assessment of the site. The extent and distribution of REs was assessed via field traverse assessing vegetation to a quaternary level² and was supplemented with the use of drones. A total of 81 quaternary observations were made within the proposed disturbance area. The location of these field observation sites and the tracks of the field traverses can be observed in Figure 7. Descriptions of each of the sites is presented in Appendix F.

² Quaternary level mapping is an RE assessment as per *Methodology for surveying and mapping regional ecosystems and vegetation communities in Queensland* (Neldner et al., 2023). Quaternary site data are used primarily as a record of field traverses and to verify RE/vegetation mapping. These sites are generally collected throughout the field survey and entered on spreadsheets or databases. Quaternary sites may be collected at regular intervals along a traverse, and/or made where REs / vegetation communities change.

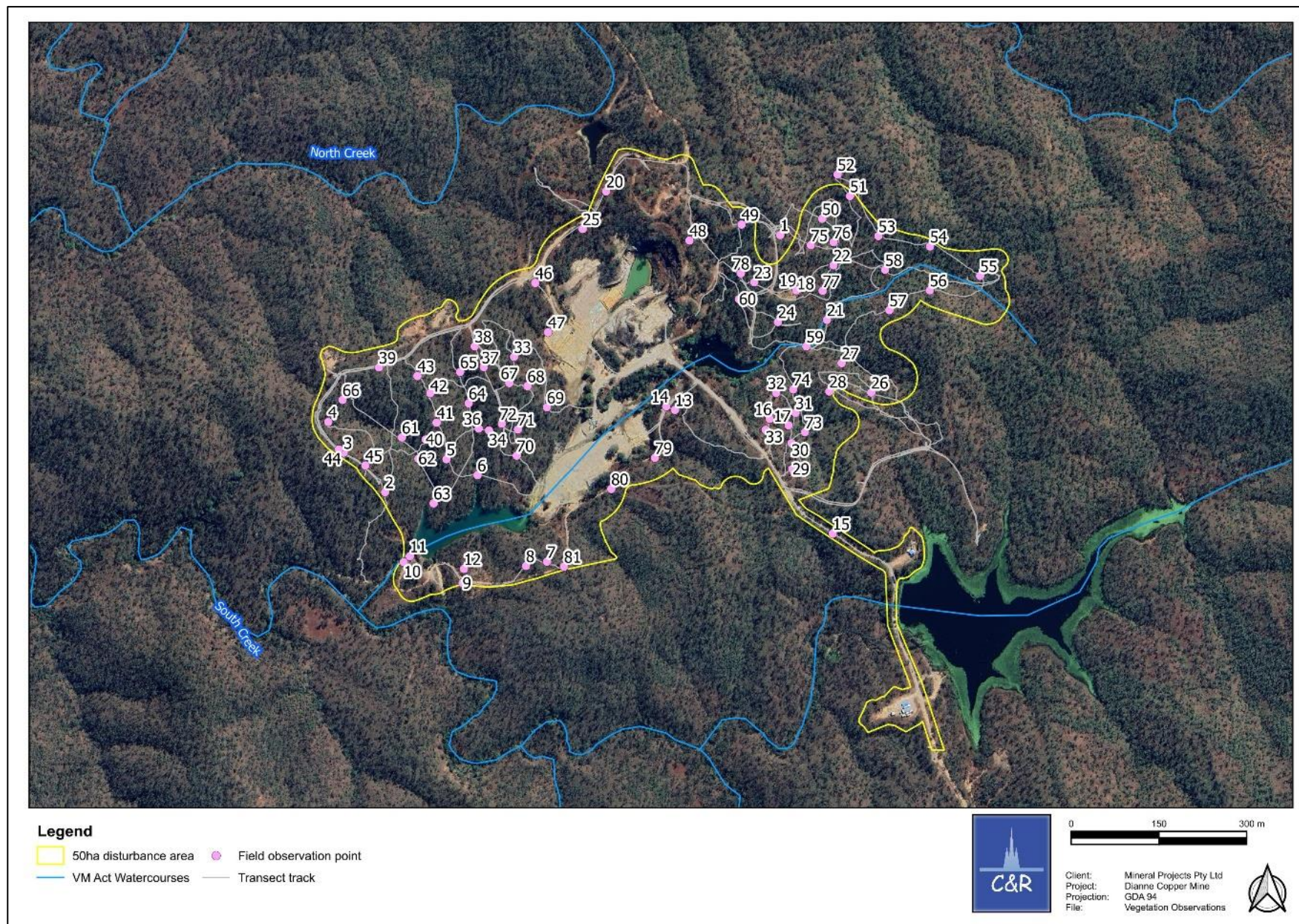


Figure 7: Field observation sites.

5.6 FAUNA SURVEY METHODS

Targeted fauna surveys for EVNT and migratory species were conducted over four surveys between November 2023 and May 2024, comprising the following:

- Habitat assessments to identify any potential habitat for EVNT fauna species;
- Deployment of camera traps;
- Deployment of ultrasonic bat detectors for EVNT microbats;
- Bird surveys;
- Opportunistic observations and records of all faunal taxa; and
- Spotlighting, including call playback for owls.

Observation times started at 6:00am until 6:00pm, with bird surveys generally focusing on early morning (6:00am–12:00pm) and late afternoon hours (3:00pm–6:00pm). During the middle of the day, other assessments such as nest searches, habitat assessments, vegetation surveys and incidental recordings were conducted. Nocturnal surveys were generally undertaken between 6:00pm and 9:00pm. A summary of overall survey effort has been included in Table 4

Table 4: Summary of fauna survey effort.

Fauna survey method	Survey effort
Bird surveys (water watches and active searches)	268.25 person hours
Camera traps	368 camera trap nights over 82 sites
Ultrasonic bat detectors	35 bat detector nights over 10 sites
Spotlighting	74.5 person hours
Call playback	10 call playback events over 7 nights
Habitat assessments	82 sites

5.6.1 FAUNA SURVEY SITES

The study site was initially stratified into habitat types based on the results of the desktop assessment, specifically the RE mapping and review of aerial photography. However, the RE mapping identified only one heterogeneous RE across most of the study site, as well as areas of non-remnant land and areas of water.

Consequently, the selection and location of survey sites utilised a number of methods including:

- Overlaying a 100 m × 100 m grid over the site, and establishing surveys sites at each 100 m intersection;
- Focusing on water sources such as dams and watercourses; and
- Identifying patches of suitable habitat for particular target EVNT species.

5.6.2 FAUNA HABITAT ASSESSMENT

Habitat assessments characterising fauna habitat values – including microhabitat features suitable for roosting, nesting, breeding, foraging and dispersal – were undertaken at approximately each 100 m intersection across the 100 m × 100 m grid, or where significant

habitat features were identified (e.g. large hollows, etc.). At each habitat assessment site or observation point, details were collected on the type of habitat, including RE type and status, description of the habitat values and features present, any incidental observations made, and an assessment of any historical impacts or threats to the condition of the habitat (e.g. fire scars, presence of weeds and pests, grazing impacts). The location of habitat assessment sites has been presented in Figure 8.

5.6.3 DEPLOYMENT OF CAMERA TRAPS

Each 100 m intersection of the 100 m × 100 m overlay grid was selected as an indicative site for camera monitoring prior to the commencement of the surveys, with the actual camera site location refined in the field based on site-specific habitat values.

In addition, camera monitoring sites were also established in patches of habitat assessed as suitable for movement or foraging of EVNT fauna species, such as along access tracks and drainage lines, around water sources such as dams, and in pockets of suitable habitat for specific species (e.g. open woodland habitat with a grassy understory and bare patches suitable for foraging for species such as the buff-breasted button-quail).

A total survey effort of 368 camera trapping nights over 82 sites was completed over the four surveys. Camera trapping sites are shown in Figure 9.

5.6.4 DEPLOYMENT OF ULTRASONIC BAT DETECTORS FOR MICROBATS

Ultrasonic bat detectors were deployed to ensure representation across all habitat types within the site, including woodland areas dominated by ironbark species, woodlands dominated by bloodwood species, and habitat along ridge tops and within large gullies, within non-remnant areas and adjacent to watercourses and dams (Figure 10). Potential flyways were selected, where possible, to maximise the potential to record microbat species. A total of 35 bat detector nights over 10 nights of survey was completed during the baseline fauna surveys.

Bat calls were analysed by Balance! Environmental, specialising in the analysis of ultrasonic Microchiropteran bat call identification.

The data from the Anabat (an ultrasonic bat recorder) were processed in three steps using Anabat Insight (version 1.9.7; Titley Scientific, Brisbane):

1. All WAV files were scanned with a generic noise filter to separate files containing only non-bat background noise from those with potentially identifiable bat calls;
2. WAV files that passed the noise filter (i.e. contained bat calls) were then processed through a decision-tree analysis to group calls with similar pulse characteristics (e.g. characteristic frequency, slope, duration) and apply tentative species labels;
3. Each “species” group was then reviewed manually to verify and/or correct species labels by comparing call spectrograms and derived metrics with those of regionally relevant reference calls and published call descriptions (Reinhold et al., 2001; Milne, 2002).

Species attribution was also guided by considering probability of occurrence based on published distributional information (Churchill, 2008; van Dyck et al., 2013) and/or records held in ALA (2024).

5.6.5 BIRD SURVEYS

Bird surveys were designed to sample for EVNT and migratory bird species. Water source watches were undertaken at the permanent dams within and in proximity to the site in the early morning (between 6:00am and 12:00pm) and late afternoon (3:00pm–6:00pm).

Active searches, including nest searches – walking dam margins and suitable habitat to flush birds and searches for signs of presence (e.g. quail platelets) – were undertaken surrounding each permanent water source, along drainage lines and in patches of suitable habitat.

A total survey effort of 268.25 person hours was completed over the four surveys between November 2023 and May 2024. The locations of water watch sites and active searches are presented in Figure 11.

5.6.6 SPOTLIGHTING, INCLUDING CALL PLAYBACK FOR OWLS

Spotlighting surveys were completed between 6:00pm and 9:00pm via slow vehicle transects along existing access tracks and roads, and around dams and water sources, as shown in Figure 12. Spotlighting by foot was deemed a safety risk due to the very steep, rocky nature of the landscape.

Call playback for owls was undertaken at the beginning and during the spotlighting surveys at various locations, where habitat was assessed as suitable for owls.

A total survey effort of 74.5 person hours was completed during the baseline surveys, including 10 call playback events over seven nights, targeting owls.

5.6.7 OPPORTUNISTIC OBSERVATIONS AND RECORDS OF ALL FAUNAL TAXA

The presence of all vertebrate species encountered within or in close proximity to the site was recorded as an incidental sighting.

When moving to, from or between survey sites at night, roads were traversed in a vehicle at low speed. Any fauna (predominantly reptiles, frogs and nocturnal birds) detected within headlights was recorded as an incidental sighting.

The presence of evidence or activity – including tracks, scratches, diggings, burrows, dens and nests – were recorded, wherever possible. Photographic records were taken, where possible.

5.6.8 TARGETED EVNT AND MIGRATORY SPECIES SURVEYS

Based on the results of the desktop assessment described in Section 5.1, targeted surveys focused specifically on determining the presence, site usage and habitat value of the project site for the species listed in Table 5.

The targeted surveys were informed by the likelihood assessment for EVNT species classified as having a moderate or higher likelihood of occurrence from the desktop assessment (see Section 6.4.1). The exception to this was the buff-breasted button-quail, which was assessed as unlikely to be encountered within the study area, based on recent research. However, given the conservation status of this species (critically endangered under both the EPBC Act and NC Act), it was targeted during all surveys as per Table 5.

The baseline ecological survey scope was designed to comply with federal survey guidelines but included targeted habitat assessments for the species listed in Table 5, to allow a scientific assessment of their habitat requirements and whether these species may be impacted by the proposed project. This list was further refined based on the outcomes of the field survey.

Table 5: Targeted species survey requirements and approach.

Species	Recommended method	Study Approach
Gouldian finch (<i>Erythrura gouldiae</i>)	Targeted searches (targeted waterholes during dry seasons and flocks of black-faced woodswallows in early wet season) – 12 hours over 4 days. Area searches (habitat assessment and active searching) – 20 hours over 5 days in areas less than 50 ha.	The study approach exceeded the recommended methods for this species. Four separate surveys targeting Gouldian finch were undertaken in November 2023, January/February 2024, March 2024 and April/May 2024, representing late dry, early wet and wet seasons. Total targeted search (water watch) survey effort = 170.75 hours over 16 days. Total area search effort = 97.5 hours over 12 days. Habitat assessments were also undertaken to identify potential habitat, including assessment of potential forage species and searches for potential nesting sites.
White-throated needletail (<i>Hirundapus caudacutus</i>)	There are no formal survey guidelines for this species. However, the draft referral guideline (DoE, 2015) suggests the following: Surveys should include timed area counts of all bird species. For aerial birds, counts per hour can be used on multiple days during the migration period. The number passing through is calculated from the length of the migration passage at the site. Numbers should be calculated for the population passing through a site, not just from individuals resident within it. Observations of birds coming in to roost in tall trees along ridge tops should be made as late as possible in the evening.	The survey approach satisfied the recommended methods for this species A total bird survey effort of 268.25 hours over 16 days was completed over the four surveys, including early morning, midday and late-afternoon surveys. Observers were positioned in such a manner to observe birds coming in to roost in the late afternoon (between 3:00pm and 6:00pm). Habitat assessments were also undertaken to identify potential habitat.
Australian painted snipe (<i>Rostratula australis</i>)	Area searches or transects through suitable wetlands; detection by sighting and flushing. Targeted stationary observations at dawn and dusk of suitable foraging locations within wetlands – 10 hours over 5 days.	The survey approach exceeded the recommendations for detecting this species

Species	Recommended method	Study Approach
	Land-based area searches or line transects – 10 hours over 3 days for sites of less than 50 ha.	Four separate surveys targeting Australian painted snipe were undertaken in November 2023, January/February 2024, March 2024 and April/May 2024, representing late dry, early wet and wet seasons. Total targeted stationary observations at dawn and dusk = 170.75 hours over 16 days. Total land-based area search effort = 97.5 hours over 12 days. Habitat assessments were also undertaken to identify potential habitat.
Buff-breasted button-quail (<i>Turnix olivii</i>)	Area searches of favored habitat during the wet season. Detection primarily by direct observation of flushing birds and listening for booming call. Flushing in areas with relatively open understory may be effective. Land-based area searches – 25 hours over 5 days in areas less than 50 ha.	The survey approach well exceeded the recommended method for this species, with a total land-based area search effort of 97.5 hours over 12 days Walking transects singly and in parallel rows to flush birds from the grassy understory (at all times when walking through the site). Habitat assessments were undertaken to identify potential habitat. Searches for signs of activity were undertaken (e.g. searches for platelets and potential nest sites).
Large-eared horseshoe bat (<i>Rhinolophus robertsi</i>)	No formal survey guidelines exist for this species. General survey guidelines for threatened bats adopt a minimum of 16 detector nights over a minimum of 4 nights.	The survey approach exceeded the general survey guidelines for threatened microbats A total survey effort of 35 detector nights over 10 nights were completed across seven survey sites. Habitat assessments were also undertaken to identify any potential roosting habitat for this species.
Northern quoll (<i>Dasyurus hallucatus</i>)	Remote cameras can be used throughout the year where terrain is difficult to access, using chicken as bait.	The survey approach met the recommended guidelines for the survey of this species.

Species	Recommended method	Study Approach
	Transects of ten baited remote motion sensor cameras spaced at least 100 m apart for four nights are recommended. For linear habitat critical to the survival of the species (e.g. gorges, major drainage lines, breakaways less than 100 m wide), one camera per 100 m is recommended.	Cameras baited with oats, peanut butter and honey, dried sardines and chicken were established in a 100 m × 100 m grid pattern over the site to achieve the recommended camera trapping methodology. In addition, camera trapping was also undertaken in linear patches of habitat, such as drainage lines and gravel tracks, with cameras established at least every 100 m along linear habitat. 74.5 person hours of spotlighting was undertaken. Habitats were also assessed for habitat critical to the survival of the species.
Short-beaked echidna (<i>Tachyglossus aculeatus</i>)	There are no formal survey guidelines for this species.	Habitats were assessed for the potential for short-beaked echidna to occur. Searches for signs of echidna activity – including tracks, scats, diggings in termite mounds – were undertaken.
Migratory species (terrestrial) Fork-tailed swift (<i>Apus pacificus</i>) Red-rumped swallow (<i>Cecropis daurica</i>) Oriental cuckoo (<i>Cuculus optatus</i>) Grey wagtail (<i>Motacilla cinerea</i>) Satin flycatcher (<i>Myiagra cyanoleuca</i>) Spectacled monarch (<i>Symposiachrus trivirgatus</i>) Osprey (<i>Pandion haliaetus</i>)	No formal survey guidelines exist for these species but some guidance is provided in the <i>Referral guideline for 14 birds listed as migratory species under the EPBC Act</i> (DoE, 2015), as follows: For oriental cuckoo and the migrant flycatchers – area surveys are recommended. For swifts, including the white-throated needletail and fork-tailed swift – surveys from elevated viewpoints if possible and in the later afternoon / evening. For ospreys – area searches and transect surveys by vehicle and on foot to detect birds or nests.	A total bird survey effort of 268.25 hours over 16 days was completed over the four surveys, including early morning, midday and late afternoon, water watch surveys, area searches, and nest searches. Observers were positioned in such a manner to observe birds coming in to roost in the late afternoon (between 3:00pm and 6:00pm). Habitat assessments were also undertaken to identify potential habitat.

Species	Recommended method	Study Approach
	For the red-rumped swallow or grey wagtail – It is not considered that surveys will yield useful results at this time because of the small numbers of these birds visiting Australia, their non-threatened status, their large populations globally, and the improbability of a significant proportion of their population being present at the site. Consequently, changes to that site are not expected to have any significance to the conservation status of the species either in Australia or globally.	
Migratory species (Wetland) Common sandpiper (<i>Actitis hypoleucos</i>) Sharp-tailed sandpiper (<i>Calidris acuminata</i>) Pectoral sandpiper (<i>Calidris melanotos</i>) Latham's snipe (<i>Gallinago hardwickii</i>)	<i>EPBC Act policy statement 3.21 – Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species</i> (Department of the Environment and Energy [DoEE], 2017). Four surveys for roosting and foraging shorebirds during the period when most shorebirds are present in the area. Surveys should be conducted when habitat conditions are suitable for migratory shorebirds. Typically, this will be when water is present with a minimally vegetated, exposed margin. Surveys should not be undertaken during periods of high rainfall or strong winds. Surveys should not be undertaken when activities are taking place which cause disturbance to the birds.	A total bird survey effort of 268.25 hours over 16 days was completed over the four surveys, including early morning, midday and late afternoon, water watch surveys, area searches, and nest searches. Surveys were undertaken during November 2023, January/February 2024, March 2024 and April/May 2024. Surveys included water watch surveys and active searches, including walking margins of dams to flush shorebirds from vegetation. Observers were positioned in such a manner to observe birds coming in to roost in the late afternoon (between 3:00pm 6:00pm). Habitat assessments were also undertaken to identify potential habitat.

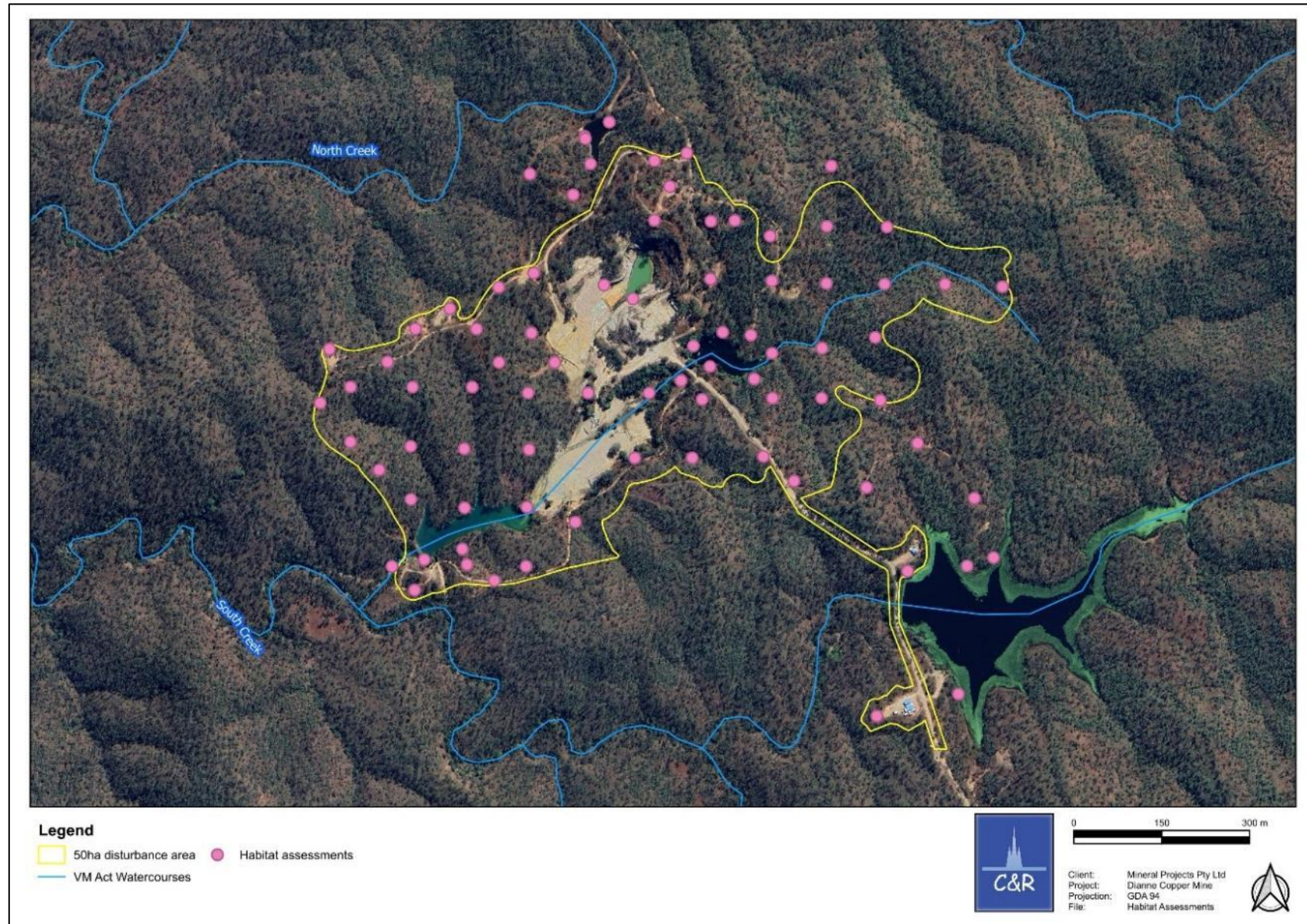


Figure 8: Fauna habitat assessment sites.

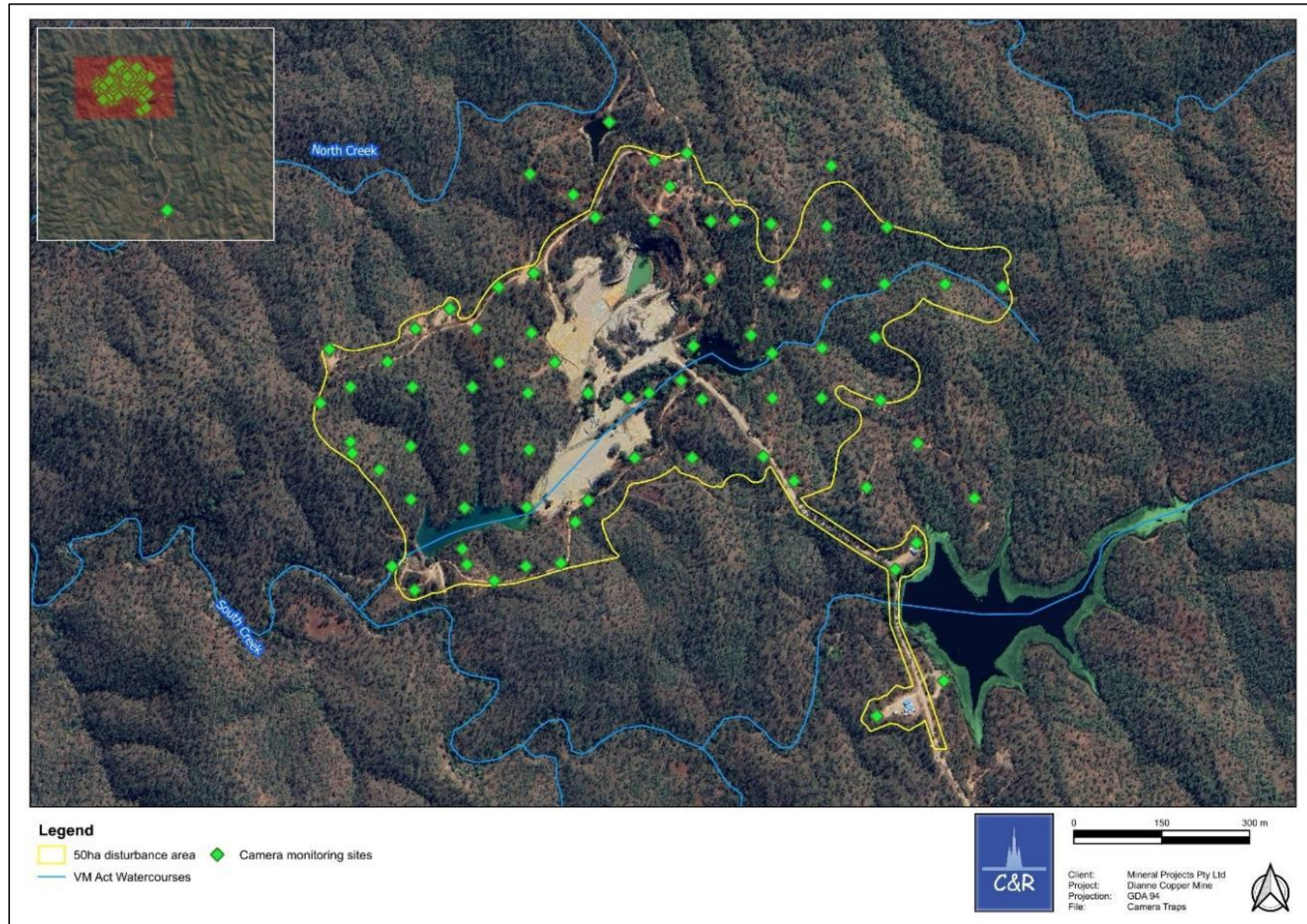


Figure 9: Camera trapping sites.

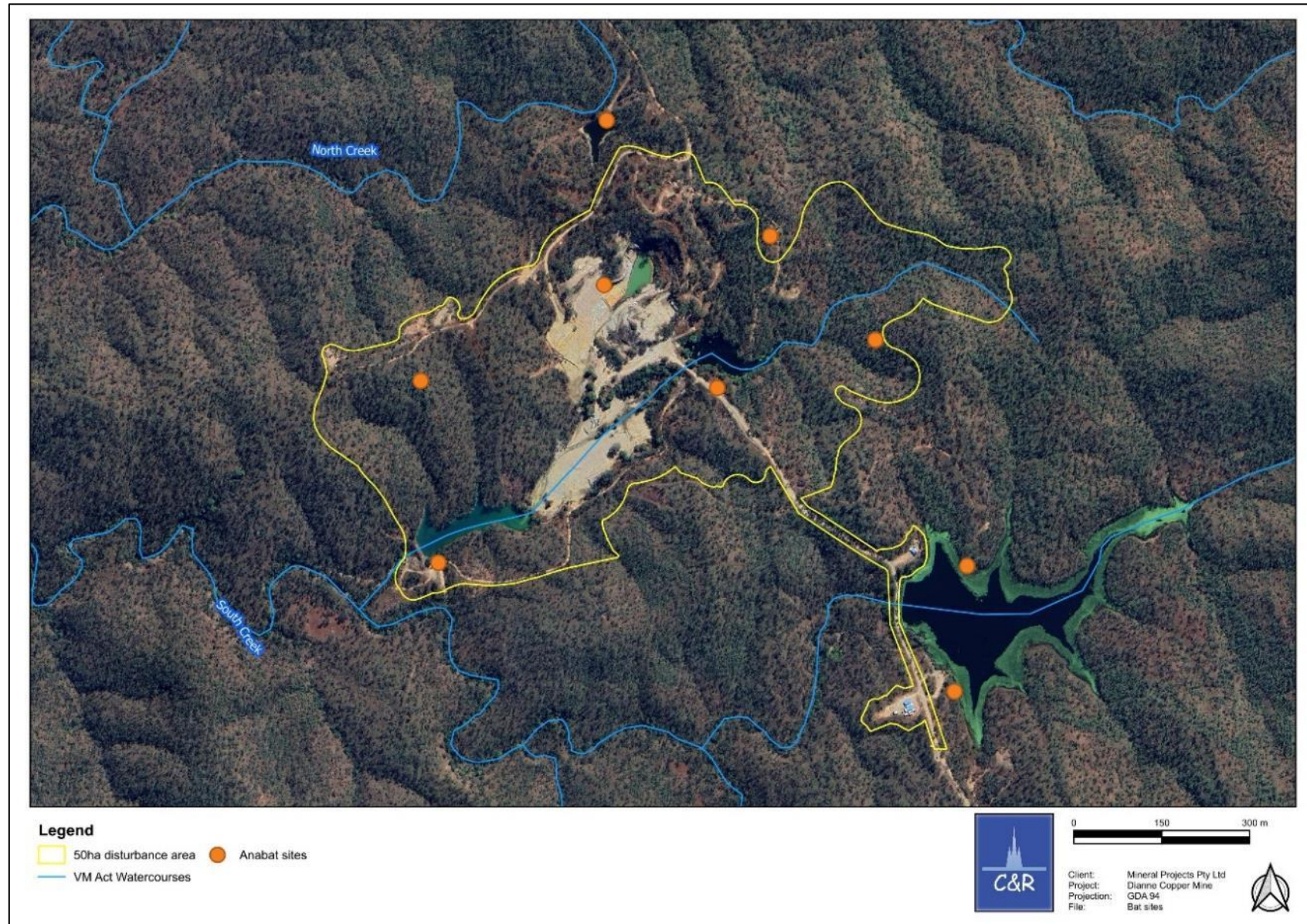


Figure 10: Ultrasonic bat detector sites.

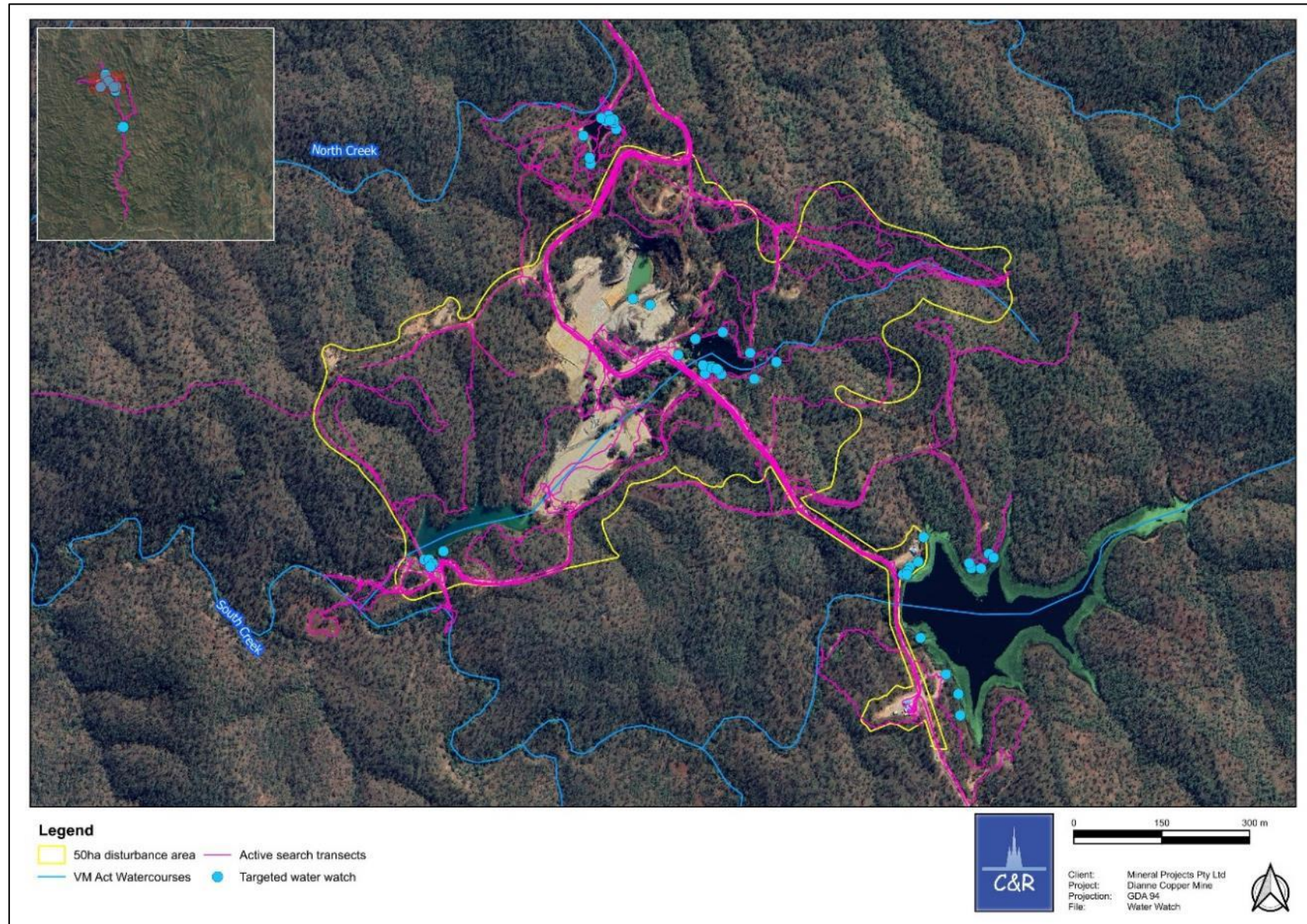


Figure 11: Location of avifauna water watch sites and meandering transects.

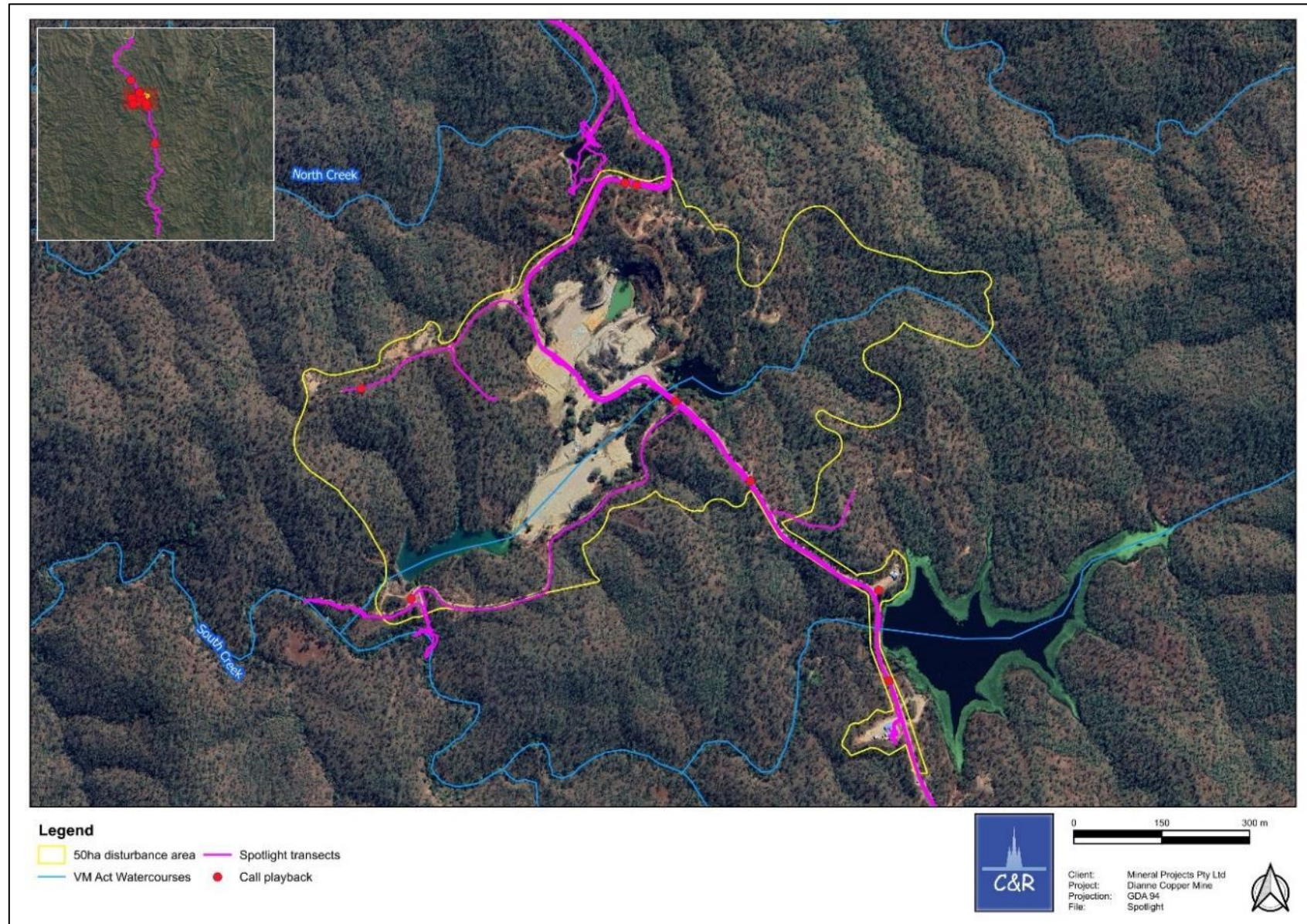


Figure 12: Spotlighting and call play back locations.

5.6.9 ASSESSING HABITAT CRITICAL TO THE SURVIVAL OF THREATENED FAUNA SPECIES

In order to assess potential impacts to threatened fauna species, should they occur within the study area, an assessment of habitat critical to the survival of each species was undertaken for those species with a moderate or higher likelihood of occurrence, as well as the critically endangered buff-breasted button-quail.

5.6.9.1 *Gouldian Finch*

Habitat critical to the survival of Gouldian finches is yet to be defined and will be informed by further research into its habitat utilisation (O'Malley, 2006a). In the meantime, the recovery plan for the species (O'Malley, 2006a) identifies significant populations of Gouldian finches, where the species is assumed to likely persist if threatening processes can be minimised. These sites represent areas where populations of adults and juvenile birds (indicative of breeding events) have been recorded consistently over the recent past, either as part of on-going population monitoring programs or based on incidental sightings recorded on the Gouldian finch national database.

Although the current distribution of Gouldian finches includes areas within north and far-north Queensland, the key sites for Gouldian finches identified in the national recovery plan (O'Malley, 2006a) only encompass the Northern Territory and Western Australia, where large flocks of birds have been recorded within the last decade and known breeding habitat exists. Breeding habitat is characterised by rocky hills with hollow-bearing, smooth-barked gums (e.g. Brazill-Boast et al., 2013). This species is an obligate user of tree hollows for nesting, with highly specialised nest requirements. Nests are usually found at heights of 6–13 m above the ground, in tree hollows in either salmon gum (*Eucalyptus tintinnans*) or snappy gum (*E. brevifolia*; Magrath et al., 2008, Brazill-Boast et al., 2010). In Queensland, reintroduced Gouldian finches have been observed nesting in poplar gum (*Eucalyptus platyphylla*), a close relative of salmon gum (SLR, 2023), and ghost gum (*Corymbia dallachiana*; O'Malley, 2006b). Nest (hollow) availability and the nest proximity to food and water are critically important factors.

The birds inhabit areas within two to four kilometres of small waterholes or springs that persist throughout the dry season. Proximity to water is critical because this species needs to drink several times a day.

Dry season feeding habitat is dominated by annual spear grasses or native sorghum (*Sarga* species). In the wet season, birds shift to feeding on scattered patches of cockatoo grass (*Alloteropsis semialata*), golden beard grass (*Chrysopogon fallax*) or spinifex-dominated communities (*Triodia bitextura*; *T. acutispicula*; *T. bynoei*; *T. schinzii*). Other important wet-season grasses include giant spear grass (*Heteropogon triticeus*), white grass (*Sehima nervosum*), ricegrass (*Xerochloa laniflora*) and kangaroo grass (*Themeda triandra*).

The habitat features within the project site were assessed against the abovementioned habitat requirements of the Gouldian finch to inform potential areas of habitation within the project site.

5.6.9.2 *Australian Painted Snipe*

Due to relatively scarce records and unpredictable movements, very little is known about the specific habitat requirements of the Australian painted snipe. The habitat varies across its range, so it is not possible to generate one detailed description or definition of habitat critical to survival. The recovery plan for the Australian painted snipe (Commonwealth of Australia, 2022) uses the following habitat definitions as a guide to habitat critical to the survival of the Australian painted snipe:

- *Any natural wetland habitat where the species is known or likely to occur (especially with suitable breeding habitat) within the indicative distribution map provided in Commonwealth of Australia (2022).*
- *Any location outside the above area that may be periodically occupied by Australian painted snipe when wetland conditions are favourable.*

The project site was assessed against these definitions to determine the extent of habitat critical to the survival of this species within the site and to identify potential impacts of the project.

5.6.9.3 *Buff-Breasted Button-Quail*

Habitat critical to survival has not been defined for the buff-breasted button-quail. However, its core habitat is considered to include patches of short and sparse grassland, on a terrain of small stones (often on the lower slopes of hills and ridges), and sometimes in open glades amongst Melaleuca, Acacia, Alphitonia or Tristania, in rainforest or open Eucalyptus woodland (Garnett and Crowley, 2000; Rogers, 1995; Squire, 1990; White, 1922). Photos captured in the 1920s show that the sites near Coen in far north Queensland – where the species definitely occurred – consisted of open, stringy bark forests with an understory of perennial grasses (Conservation Partners, 2024).

These definitions of habitat were applied to the habitat features within the project site.

5.6.9.4 *White-Throated Needletail*

Habitat critical to the survival of the white-throated needletail has not been defined. In Australia, the species is mostly aerial, occurring over most habitat types, but most commonly recorded over wooded areas, including forests and rainforest (Higgins, 1999). Roosting habitat includes dense foliage in the forest canopy or tree hollows (Tarburton, 1993). This species does not breed in Australia.

5.6.9.5 *Northern Quoll*

Habitat critical to the survival of the northern quoll is defined in the EPBC Act referral guideline (DoE, 2016) as:

- *Rocky habitats such as ranges, escarpments, mesas, gorges, breakaways, boulder fields, major drainage lines or treed creek lines; and/or*
- *Structurally diverse woodland or forest areas containing large diameter trees, termite mounds or hollow logs.*

This definition was applied to the habitat features within the project site to assess habitat critical to the survival of the species. Although the project site was devoid of the rocky habitat required for denning and breeding, open woodland areas that connect rocky sites in the surrounding landscape – particularly where they exist on high relief – may be used as dispersal (particularly by males during the mating season) and foraging habitat.

The referral guideline (DoE, 2016) defines foraging or dispersal habitat as “any land comprising predominantly native vegetation in the immediate area (i.e. within 1 km) of shelter habitat, quoll records or land comprising predominately native vegetation that is connected to shelter habitat within the range of the species”.

This definition was applied to the habitat features within the project site. Because a detailed assessment of quoll habitat surrounding the project site was outside the scope of this study, a precautionary approach was adopted, assuming rocky habitat may exist in close proximity to the project site. The modelled potential-habitat mapping provided by the Queensland Government (2024a) was used to consider potential habitat of the northern quoll at the regional scale.

5.6.9.6 *Large-Eared Horseshoe Bat*

Habitat critical to the survival of the large-eared horseshoe bat has not been defined. However, the species is known from rainforests, riparian forests, eucalypt open forests and woodlands (Churchill, 2008). The species is thought to roost mainly in tree hollows and vegetation, under creek banks and road culverts, in rockpiles, and in relatively shallow caves in drier times (DCCEEW, 2024k). In open forest and woodland, the bats prefer to forage amongst the thicker vegetation in gullies and along creeks, although they have been observed at the edge of grassy clearings in rainforest and road edges (Churchill, 2008; Pavey, 1999, 2002; Pavey and Kutt, 2008).

The project site was assessed against these habitat requirements to determine the extent of important habitat for this species within the site.

5.6.9.7 *Mertens' Water Monitor*

Habitat critical to the survival of Mertens' water monitor includes all areas where this species persists following the establishment of cane toads. It also includes areas within its recorded distribution that provide connectivity among remnant subpopulations. Specifically, such areas comprise natural and artificial water bodies that connect remnant subpopulations and have open water, food resources, basking sites – and shelter opportunities, such as hollows between rocks and in burrows that have been dug into the banks of waterways (Mayes, 2006; Thompson et al., 2008).

Habitat within the project area was assessed against these habitat requirements to identify important areas of habitat for Mertens' water monitor within or near the project area.

6. RESULTS

6.1 WEATHER

Four surveys were undertaken between November 2023 and May 2024, with a summary of weather conditions during each survey presented in this section.

6–12 November 2023 dry season fauna and flora survey: Conditions during the survey were generally hot and humid during the day, with clear sunny mornings and overcast afternoons. The minimum overnight temperature recorded at the nearby Palmerville weather station during the survey was 18.9°C, whereas the maximum temperature was 37.5°C. Although no rainfall was registered at Palmerville, a very light shower occurred on the afternoon of 7 November. Very windy conditions were experienced on the evenings of 8 and 9 November.

30 January – 3 February early wet season fauna survey (migratory birds): Conditions during the survey were hot and humid, with a minimum temperature of 24.6°C and maximum temperature of 34.0°C recorded at the Palmerville weather station. However, the in-situ thermometer at the site documented temperatures of over 40°C during the middle part of the day. Mornings were generally fine and calm, with a light breeze picking up throughout the day. Storms built up during most afternoons, with heavy rainfall and storm activity interrupting afternoon bird surveys on 31 January and 1 February. A total of 23.6 mm of rainfall was recorded at the nearby Palmerville weather station during the survey.

24–28 March wet season fauna survey (migratory birds): Temperatures during the survey ranged from 23.2°C to 34.0°C. Mornings were generally hot and humid, and often overcast. Days were generally sunny and storms occurred most late afternoons and evenings. A total of 6 mm of rainfall was recorded at the Palmerville weather station on 26 March.

29 April – 4 May wet season flora and fauna survey: Conditions during the survey were generally fine and hot during the day, with temperatures ranging from 17.5°C overnight to approximately 33.0°C during the day. Conditions were humid, with cloud cover building during the afternoon. However, no rain fell during the survey period.

Overall, based on the weather conditions preceding each survey, the timing was considered adequate for a representative dry season survey in November 2023, early wet season survey in January/February 2024 and wet season survey in March and April/May 2024.

6.2 REGIONAL ECOSYSTEM COMMUNITIES

The certified RE map for the site is presented in Figure 13. The RE descriptions within the site are provided in Table 6. None of the REs present within the study area have an *endangered* or *of-concern* vegetation management status. Further, all REs are classified as *least concern*.

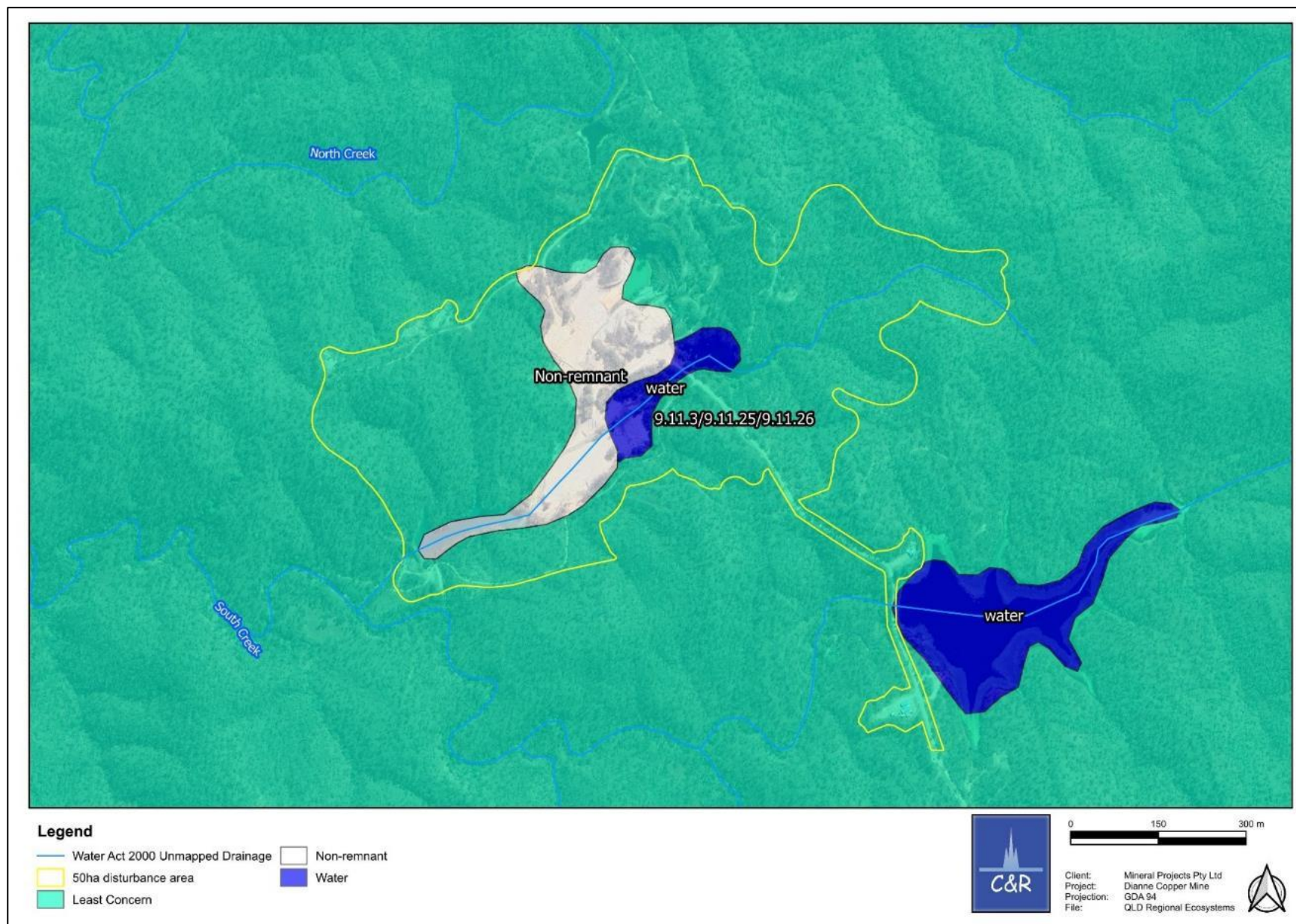


Figure 13: Regional ecosystem map.

Table 6: Regional ecosystems (REs) within the study area.

RE ID and percentage of heterogeneous area	Regional ecosystem description	VMA class	Biodiversity status
9/11/3a (60%)	Woodland to low, open woodland of <i>Eucalyptus cullenii</i> (Cullen's ironbark) +/- <i>Corymbia clarksoniana</i> (Clarkson's bloodwood) +/- <i>Erythrophleum chlorostachys</i> (Cooktown ironwood) +/- <i>C. erythrophloia</i> (red bloodwood) +/- <i>C. dallachiana</i> (Dallachy's gum). <i>Eucalyptus crebra</i> (narrow-leaved ironbark) can be dominant in some areas. A variety of other <i>Eucalyptus</i> spp., <i>Corymbia</i> spp. and <i>Melaleuca</i> spp. can occur as subdominants throughout the range of this community. There can be an open sub-canopy containing canopy species, <i>M. stenostachya</i> (fibre-barked tea-tree), <i>Grevillea glauca</i> (bushman's clothes peg) and other <i>Grevillea</i> spp. The shrub layer can be absent to mid-dense and include <i>Denhamia cunninghamii</i> (yellowberry bush), <i>Gardenia vilhelmii</i> (breadfruit), <i>Petalostigma</i> spp., <i>Persoonia falcata</i> and <i>Grevillea</i> spp. The ground layer is grassy and dominated by <i>Themeda triandra</i> (kangaroo grass), <i>Heteropogon</i> spp. (speargrass), <i>Aristida</i> spp. and <i>Schizachyrium</i> spp. (firegrass). Occurs on flats, hills and ranges of metamorphic ranges. Not a wetland.	Least concern	No concern at present
9/11/3b (20%)	Low, open woodland to woodland of <i>Eucalyptus cullenii</i> (Cullen's ironbark) +/- <i>Corymbia hylandii</i> (Hyland's bloodwood) +/- <i>C. clarksoniana</i> (Clarkson's bloodwood). The sub-canopy is generally open, with canopy species and <i>Terminalia</i> spp. A sparse to mid-dense shrub layer includes <i>Petalostigma banksii</i> (smooth-leaved quinine), <i>Denhamia cunninghamii</i> (yellowberry bush), <i>Gardenia vilhelmii</i> (breadfruit), <i>Carissa lanceolata</i> (currantbush) and <i>Melaleuca</i> spp. The mid-dense to dense ground layer is dominated by <i>Heteropogon contortus</i> (black speargrass), <i>Aristida</i> spp., <i>Schizachyrium fragile</i> (firegrass) and <i>Themeda triandra</i> (kangaroo grass). On metamorphic hills and ranges. Not a wetland.	Least concern	No concern at present
9/11/25 (15%)	Low woodland to low, open woodland of <i>Eucalyptus tardecidens</i> (box) or <i>E. chlorophylla</i> +/- <i>Corymbia</i> spp. +/- <i>E. cullenii</i> (Cullen's ironbark) +/- <i>Melaleuca</i> spp. A sparse sub-canopy can include canopy species, <i>Melaleuca</i> spp. or <i>Terminalia</i> spp. The shrub layer is sparse to open and can include <i>Petalostigma</i> spp., <i>Melaleuca stenostachya</i> (fibre-barked tea-tree), <i>Denhamia cunninghamii</i> (yellowberry bush), <i>Acacia</i> spp. and <i>Santalum lanceolatum</i> (sandalwood). The ground layer can vary from mainly bare soil and rock to a dense cover of grasses, including <i>Heteropogon contortus</i> (black speargrass), <i>Aristida</i> spp. and <i>Themeda triandra</i> (kangaroo grass). Occurs on rolling, low hills to steep hills. Not a wetland.	Least concern	No concern at present
9/11/26a (5%)	Woodland of <i>Eucalyptus leptophleba</i> and <i>E. platyphylla</i> (poplar gum) +/- <i>Corymbia tessellaris</i> (Moreton Bay ash). The sub-canopy tree layer is very sparse and includes canopy species and <i>Melaleuca</i> spp. The very sparse shrub layer includes <i>Melaleuca</i> spp., juvenile canopy species and <i>Planchonia careya</i> (cocky apple). The grassy ground layer is mid-dense and dominated by <i>Heteropogon contortus</i> (black speargrass), <i>H. triticeus</i> (giant speargrass), <i>Mnesithea rottboellioides</i> (northern canegrass) and <i>Themeda triandra</i> (kangaroo grass). Occurs on low, rolling hills. Not a wetland.	Least concern	No concern at present

6.3 FLORA

6.3.1 FLORA DESKTOP REVIEW RESULTS

The desktop assessment identified 16 conservation significant flora species – through WildNet and PMST searches within a 50 km radius from the site, and analysis of RE data. An assessment of the likelihood of occurrence of conservation significant species is presented in Table 7.

Table 7: Endangered, vulnerable or near-threatened flora species considered likely or with potential to occur in the study area.

Scientific name	Common name	EPBC status	NC Act status	Record	Known/preferred habitat	Likelihood
<i>Acacia guyeri</i>		–	Near-threatened	Approximately 21 km to the northeast of the site (DESI, 2024c). RE 9.11.3, which occurs on site, is a potential habitat for the species.	The species grows in skeletal soils on rocky ridges in disturbed areas and eucalypt woodland. Commonly associated plants include <i>Eucalyptus cullenii</i> , <i>Lamprolobium fruticosum</i> , and a range of different Eucalyptus and Corymbia species.	Moderate. Suitable habitat is present within the study area proximal records within 30 km.
<i>Dianella incollata</i>		–	Near-threatened	Approximately 26 km to the north of the site (DESI, 2024c). RE 9.11.3, which occurs on site, is a potential habitat for the species.	Habitat information is limited for the species. However, it is likely to occupy a similar ecological niche to other dianellas (<i>Dianella caerulea</i> var. <i>vannata</i> , <i>Dianella longifolia</i> var. <i>stupata</i>) found in the area near creeks, on heaths and in sparse woodlands – in a variety of habitats, from heaths to open eucalypt forest and rainforest.	Moderate. Suitable habitat is present within the study area proximal records within 30 km.
<i>Hibbertia cymosa</i>		–	Near-threatened	Approximately 43 km to the northeast of the site (DESI, 2024c).	Habitat information is limited for the species. This species is only known from the type of location where the species grows near a small creek adjacent to <i>Eucalyptus tetradonta</i> / <i>Corymbia</i> spp. woodland on sandy soil.	Low. Limited information exists on the species habitat requirements. However, the floristic assemblage, in which it is found, is not present on the site.

Scientific name	Common name	EPBC status	NC Act status	Record	Known/preferred habitat	Likelihood
<i>Cucumis costatus</i>		–	Near-threatened	Approximately 44 km to the north of the site (DESI, 2024c). RE 9.11.3, which occurs on site, is a potential habitat for the species.	The species is found in an altitudinal range from 70 m to 300 m. It grows in gallery forest or eucalypt woodland, and depauperate, deciduous vine thicket on low rocky hills, on basalt or metamorphics.	Moderate. Suitable habitat is present within the study area proximal records within 50 km.
<i>Homoranthus tropicus</i>		–	Near-threatened	Approximately 27 km to the northeast of the site (DESI, 2024c).	This species grows in heath or low, open woodland of <i>Melaleuca stenostachya</i> on shallow, rocky soils of sandstone ranges and footslopes.	Low. Very limited, suitable habitat exists within the site. <i>Melaleuca stenostachya</i> is present on the site but is observed as isolated individuals.
<i>Dendrobium bigibbum</i> / <i>Vappodes phalaenopsis</i>	Cooktown orchid	Vulnerable	Vulnerable	Species or species habitat may occur in feature area (DCCEEW, 2024d; DESI, 2024c).	Grows on the branches of small trees in scrubby habitats, such as semi-deciduous vine forest and vine thickets, where fire cannot penetrate. It is abundant in patches of monsoon forest on stony soil, which cannot support a dense grass cover. It is also found in beach scrubs with rainforest elements, gallery forest lining small streams, on rock faces, on mangroves and in heaths.	Low. Very limited suitable habitat exists within the site. Almost all of the site has the ability to support a dense grass cover, which is likely subject to frequent fires.

Scientific name	Common name	EPBC status	NC Act status	Record	Known/preferred habitat	Likelihood
<i>Stenanthemum argenteum</i>		–	Vulnerable	Approximately 26 km to the north of the site (DESI, 2024c). RE 9.11.3, which occurs on site, is a potential habitat for the species.	This species grows on steep sandstone hills and cliffs in woodland and is only known from Mount Mulligan and Mount Janet.	Low/moderate. Only known from two locations – and from sandstone hills and cliffs that are not present on the site. RE 9.11.3, which is present on site, is listed as a preferred habitat.
<i>Hardenbergia</i> sp. (Mt Mulligan J.R.Clarkson 5775)		–	Vulnerable	Approximately 41 km to the northwest of the site (DESI, 2024c).	This species grows in heath or low, open woodland of <i>Melaleuca stenostachya</i> on shallow, rocky soils of sandstone ranges and footslopes.	Low. Very limited suitable habitat exists within the site. <i>Melaleuca stenostachya</i> is present on the site but is observed as isolated individuals.
<i>Acmenosperma pringlei</i>		–	Vulnerable	Approximately 41 km to the north of the site (DESI, 2024c).	Granite boulders covered with blue-green algae, interspersed with vine thicket.	None. No suitable habitat exists within the site.
<i>Arthraxon hispidus</i>	Hairy-joint grass	Vulnerable	Vulnerable	Species or species habitat may occur – but in buffer area only (DCCEEW, 2024d). No records within 50 km of the site.	Hairy-joint grass is found in or on the edges of rainforest and in wet eucalypt forest, often near creeks or swamps as well as woodland.	Low. No suitable habitat exists within the site.

Scientific name	Common name	EPBC status	NC Act status	Record	Known/preferred habitat	Likelihood
<i>Dendrobium carronii</i> listed as <i>Cepobaculum carronii</i>		Vulnerable	–	Species or species habitat may occur – but in buffer area only (DCCEEW, 2024d). No records within 50 km of the site. Closest ALA (2024) record is over 100 km away.	This species grows in well-lit areas from sea level to 600 m altitude, in humid areas of gallery forest, hillside scrub and low-lying areas subject to periodic inundation. It often grows on the papery bark of the broad-leaved paperbark (<i>Melaleuca viridiflora</i>). The species has also been recorded on swamp box (<i>Lophostemon suaveolens</i>) and other paperbarks (<i>Melaleuca</i> spp.; Lavarack and Gray, 1992; Jones, 2006). Plants usually form small clumps. Flowering occurs from August to October (Lavarack and Cribb, 1983).	Low. Very limited, suitable habitat exists within the site. <i>Melaleuca</i> species are present on the site, however only as isolated individuals. A small stand of <i>Melaleuca viridiflora</i> dominant woodland is present to the west of the site. No <i>Dendrobium carronii</i> were observed in this area. <i>Cymbidium canaliculatum</i> is common throughout the site.

Scientific name	Common name	EPBC status	NC Act status	Record	Known/preferred habitat	Likelihood
<i>Dendrobium johannis</i>	Chocolate tea tree orchid	Vulnerable	–	Species or species habitat may occur – but in buffer area only (DCCEEW, 2024d). No records within 50 km of the site. Closest ALA (2024) record is 80 km away.	<i>Dendrobium johannis</i> grows in open, humid habitats, on slopes in open woodland, close to swamps and in pockets of monsoon forests (Jones, 2006). It has been recorded growing on broad-leaved paperbark (<i>Melaleuca viridiflora</i>), in a melaleuca woodland and in semi-evergreen vine thickets.	Low. Very limited, suitable habitat exists within the site. <i>Melaleuca</i> species are present on the site, however only as isolated individuals. A small stand of <i>Melaleuca viridiflora</i> dominant woodland is present to the west of the site. No <i>Dendrobium johannis</i> were observed in this area. <i>Cymbidium canaliculatum</i> is common throughout the site.
<i>Dichanthium setosum</i>	Bluegrass	Vulnerable	–	Species or species habitat may occur – but in buffer area only (DCCEEW, 2024d). Closest ALA (2024) record is 600 km away.	<i>Dichanthium setosum</i> occurs in heavy soils (predominantly cracking clays or alluvium, often in gilgai), in woodland or open woodland usually dominated by <i>Acacia</i> (brigalow) and/or <i>Eucalyptus</i> species. The climate is tropical to subtropical and markedly seasonal, with the habitat drying out for part of the year.	None. No suitable habitat exists within the site or within close proximity to the site.

Scientific name	Common name	EPBC status	NC Act status	Record	Known/preferred habitat	Likelihood
<i>Phaius australis</i>	Lesser swamp-orchid	Endangered	Endangered	Species or species habitat may occur in feature area (DCCEEW, 2024d). However, the closest ALA (2024) record is over 150 km away.	<i>Phaius australis</i> grows in areas where soils are almost always damp but not flooded for lengthy periods. Sands are generally the underlying soil type. <i>P. australis</i> are usually found in coastal habitats between swamps and forests, or in suitable areas further inland. This includes swampy sclerophyll forests dominated by melaleucas, swampy forests that often have sclerophyll emergents, or fringing open forest and melaleuca swamp forest associated with rainforest species. This species occurs at higher altitudes in northern Queensland.	None. No suitable habitat exists within the site.
<i>Tomophyllum walleri</i>		Vulnerable	Vulnerable	Species or species habitat may occur – but in buffer area only (DCCEEW, 2024d).	Sporadically recorded at high elevations in the wet tropics. Grows as an epiphyte on tree trunks or canopy branches, or as a lithophyte on granite or rhyolite in complex notophyll vine forest, or in low, windswept rainforest above an altitude of 1,000 m.	None. No suitable habitat exists within the site.

6.3.2 FLORA SURVEY RESULTS

The full flora species inventory observed during the survey is provided in Appendix E. A total of 155 *least concern* flora species have been recorded from the development footprint corridors as a result of the survey.

SLC species are defined in schedule 2 of the *Nature Conservation (Plants) Regulation 2020*. SLC flora are afforded some protection to manage their harvest and commercial trade. The following SLC species were observed within the site:

- *Cymbidium canaliculatum*;
- *Santalum lanceolatum*;
- *Brachychiton albidus*; and
- *Xanthorrhoea johnsonii*.

Some of these species are widespread across the study area and in the greater region, particularly *Cymbidium canaliculatum* and *Brachychiton albidus*. The SLC status is not a reflection of rarity but rather the commercial value of these species in the nursery trade or agriculturally.

No threatened flora species are known to occur within the study area and field surveys have not identified any threatened flora species. The flora survey trigger map (DES, 2023a) does not identify the project site as being within a high-risk area. Suitable habitat does exist for several of the listed species: *Acacia guymeri*, *Cucumis costatus* and *Dianella incollata*. A conscious effort was made to target habitat where these species were likely to occur.

Acacia guymeri is a single or multi-stemmed shrub 1.5–2.5 m tall. If present on site, *Acacia guymeri* would be observed within a shrub layer within the site. Across large portions of the site, the midstory/shrub layer is very sparse or completely absent. No individuals of *Acacia guymeri* were observed within the site.

Cucumis costatus is a slender, trailing or climbing herb up to 70 cm long, sprouting annually from perennial rootstock. Its designation as species which may occur on the site was based on the RE listing suggesting that RE 9.11.3 is the preferred habitat for the species. Additionally, there are two publicly available records within 50 km of the site. Neither of these records are located in RE 9.11.3. Further analysis of the 18 publicly available records show that only one is located in RE 9.11.3. No individuals of *Cucumis costatus* were observed within the site.

Dianella incollata is an erect herb forming dense clumps. Its flowers are blue. Conversely, fruit are green, turning purple as they mature. Its designation as species which may occur on the site was based on the RE listing suggesting that RE 9.11.3 is the preferred habitat for the species. Proximal records show that the species is recorded approximately 26 km from the site. Suitable habitat does exist within the site, particularly at the bottom of the valleys in the west of the site. Extensive surveying targeted these regions. Although *Dianella incollata* was not encountered, other *Dianella* species (*Dianella nervosa* and *Dianella longifolia*) – which occupy a similar ecological niche – were observed as isolated individuals (Figure 14). *Dianella incollata* was not observed as part of this investigation.



Figure 14: Dianellas found within the project footprint.

Five remnant vegetation communities were recorded within the study area. All vegetation communities are classed as *least concern* vegetation under the VM Act. Both riparian communities have elements of RE 9.3.14a which has an *of concern* biodiversity status. Only riparian community 2 (Section 6.3.2.2) is likely to have an extent large enough to be actually classified as 9.3.14a. All other vegetation within the project footprint has a *no concern at present* status. All of these vegetation communities are discussed in detail in sections 6.3.2.1 to 6.3.2.5. Examples of the vegetation communities are provided in Figure 15 to Figure 20. The location and extent of the vegetation communities within the project site are presented in Figure 21.

6.3.2.1 Riparian Community 1

This vegetation type is consistent with a heterogeneous community of RE 9.11.3a (85%) and RE 9.3.14a (15%). The community is observed as a small drainage channel in the upper reaches of the catchment. The drainage channel flows from east to west through the middle of the site, with limited alluvium present. As the creek extends downstream, there is more alluvial development and riparian vegetation becomes more pronounced (riparian community 2; Section 6.3.2.2). Along this portion of the minor drainage line, most of the fringing vegetation in this habitat type is analogous with the adjacent woodland (woodland community 1; Section 6.3.2.3). There is an infrequent occurrence of vegetation synonymous with riparian zones, including northern swamp mahogany (*Lophostemon grandiflorus*), bluegum (*Eucalyptus tereticornis*), river sheoak (*Casuarina cunninghamiana*) and sedges (*Cyperus* spp.). Due to the lack of extent of both alluvial land zone and riparian vegetation, this area has been mapped as 9.11.3a. Figure 15 and Figure 16 show examples of riparian community 1.



Figure 15: Riparian community 1 showing limited riparian extent.



Figure 16: Riparian community 1 showing limited riparian extent.

6.3.2.2 *Riparian Community 2*

The creek line in the far western extent of the site had a more established riparian zone, consisting of similar species as described in riparian community 1 (Section 6.3.2.1), but with additional riparian trees such as auri (*Acacia auriculiformis*), Leichhardt tree (*Nauclea orientalis*) and Cape fig (*Ficus nodosa*). Water was present during the surveys. The riparian community is consistent with a heterogeneous community of 9.3.14a (90%) and 9.11.3a (10%). Figure 17 shows an example of riparian community 2.



Figure 17: Example of the riparian 2 community.

6.3.2.3 *Woodland Community 1*

This vegetation type was comprised of a low, open woodland dominated by Cullen's ironbark (*Eucalyptus cullenii*), Clarkson's bloodwood (*Corymbia clarksoniana*), Cooktown ironwood (*Erythrophleum chlorostachys*) and Dallachy's gum (*Corymbia dallachiana*), consistent with RE 9.11.3a. Within this vegetation type, the understory was dominated by a dense coverage of black spear grass (*Heteropogon contortus*), giant spear grass (*Heteropogon triticeus*), kangaroo grass (*Themeda triandra*), northern kerosene grass (*Aristida hygrometrica*) and silky oil grass (*Cymbopogon bombycinus*). In areas that have historically been disturbed, particularly in the west of the project footprint, the introduced grader grass (*Themeda quadrivalvis*) was dominant. Woody vegetation was mature, but with a relatively small, average diameter at breast height (DBH) of approximately 20 cm. This result is consistent with the benchmark data for this RE, which averages a DBH of 24 cm for eucalypts. Figure 18 shows an example of the woodland community 1 vegetation type.



Figure 18: Example of the woodland community 1 vegetation type.

6.3.2.4 *Woodland Community 2*

This habitat type was found to consist of the same species as woodland community 1 (RE 9.11.3a; Section 6.3.2.3). However, Clarkson's bloodwood was noticeably more dominant than Cullen's ironbark in this patch. This may provide slightly different habitat values for fauna species as discussed in Section 6.4. Figure 19 shows an example of the woodland community 2 vegetation type.



Figure 19: Example of the woodland community 2 vegetation type.

6.3.2.5 *Regrowth*

A small area of regrowth vegetation, consistent with RE 9.11.3a, likely cleared in the late 1980s, was identified in the southwestern corner of the site. This area has shown significant signs of recovery since it was cleared. However, trees are less mature, having a smaller DBH and overall height. The area is currently dominated by Clarkson's bloodwood, Cullen's ironbark, silver wattle (*Acacia holosericea*), *Acacia calyculata* and *Acacia multisiliqua*. The groundcover within this habitat type was much more open than surrounding habitat types. Figure 20 shows an example of the regrowth vegetation type.



Figure 20: Example of the regrowth vegetation type.

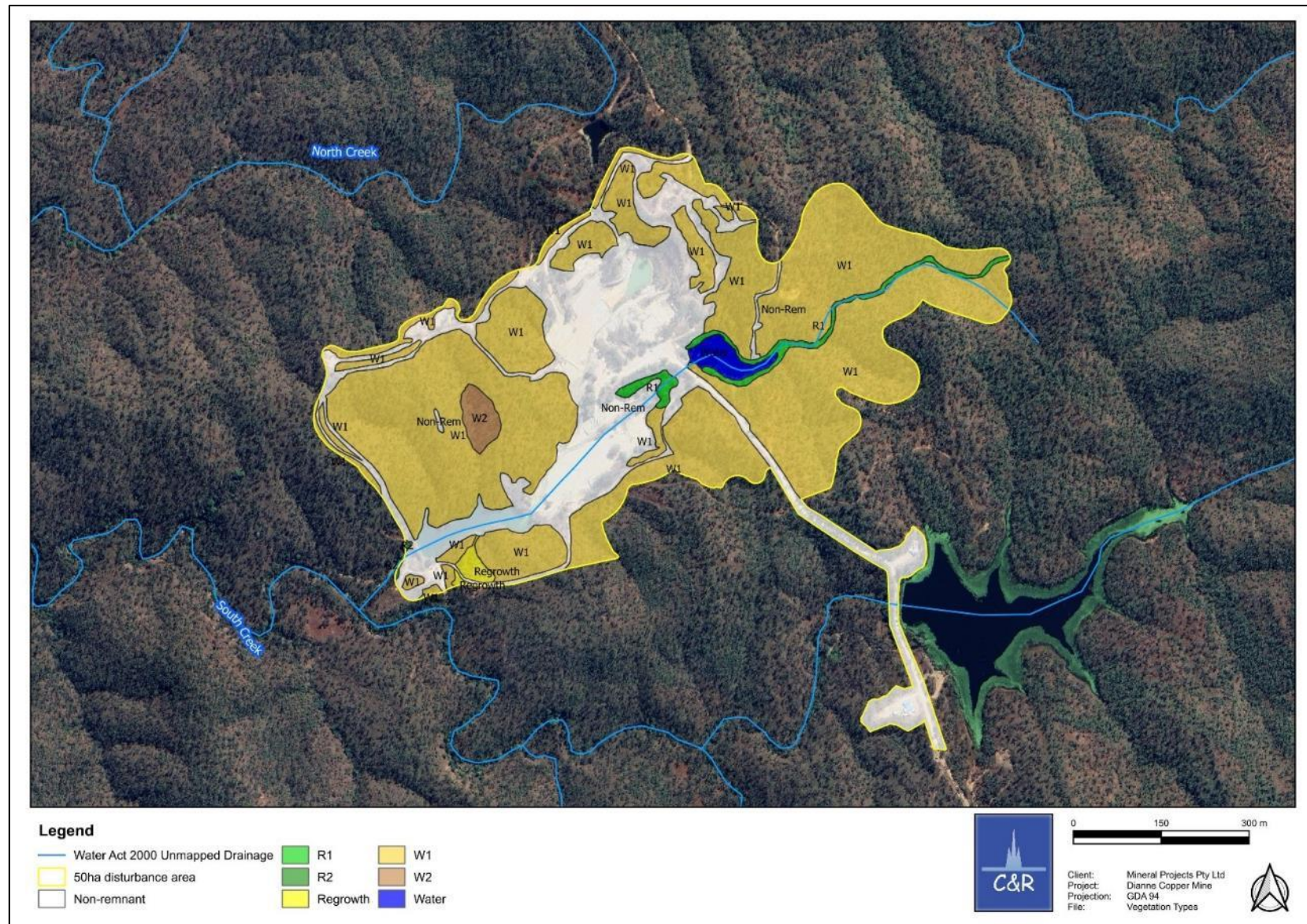


Figure 21: Vegetation communities within the study area.

6.3.3 FLORA SPECIES OF CONSERVATION SIGNIFICANCE ASSESSMENT

The site does not fall within a high-risk area as identified on the flora survey trigger map (DES, 2023a; Appendix C). Searches across the study area failed to detect the presence of any plants of conservation significance. Additionally, no threatened flora species have been recorded within a radius of 20 km from the site. It is unlikely that the project will impact on any flora species of conservation significance.

6.3.4 WEEDS OF MANAGEMENT CONCERN

In Queensland, weeds are declared under the *Biosecurity Act 2014*. No weeds listed as prohibited or restricted under this Act were found within the proposed development footprint or wider study area.

Several introduced flora species were identified during the field survey, including:

- *Cryptostegia grandiflora*;
- *Ageratum conyzoides*;
- *Argyreia nervosa*;
- *Ricinus communis*;
- *Clitoria ternatea*;
- *Indigofera tinctoria*;
- *Stylosanthes humilis*;
- *Stylosanthes scabra*;
- *Cenchrus ciliaris*;
- *Chloris gayana*;
- *Digitaria ciliaris*;
- *Echinochloa colona*;
- *Melinis repens*;
- *Themeda quadrivalvis*; and
- *Urochloa mosambicensis*.

Only rubber vine is declared as a category 3, restricted, invasive plant under the *Biosecurity Act 2014*. Currently, rubber vine is limited to isolated patches to the north of the historical pit. Category 3, restricted matter weed species must not be distributed. This signifies that they must not be given as a gift, sold, traded or released into the environment unless the distribution or disposal is authorised under a regulation or a permit. However, unlike category 1 and 2 prohibited matter species, there is no requirement to notify Biosecurity Queensland of their occurrence. By far the most common invasive species is grader grass, which is observed as co-dominant groundcover in a large proportion of the woodland areas. By law, everyone has a general biosecurity obligation to take reasonable and practical steps to minimise the risks associated with invasive plants and animals under their control.

6.4 FAUNA

6.4.1 FAUNA DESKTOP RESULTS

6.4.1.1 *Threatened Fauna*

The desktop assessment identified 35 conservation significant fauna species with the potential to occur within the site, including fifteen (15) birds, three (3) amphibians, one (1) insect, fifteen (15) mammals and one (1) reptile. These species and their respective conservation status under the EPBC Act and NC Act are detailed in Table 8. Species highlighted in blue are those identified to have a moderate or higher likelihood of occurrence in the project site. These species were the focus of the targeted habitat assessments and surveys. The list of potential conservation significant fauna likely to occur within the project site was further refined, based on the ecological and habitat values identified during the field survey, with results described in Section 6.4.2.

Table 8: Threatened fauna identified – through the desktop assessment – with potential to occur within the study area. An assessment is included of the likelihood of occurrence of each species based on habitat values present. Rows describing fauna that have a moderate or higher likelihood of occurrence are marked in blue. Conservation status abbreviations: CE = critically endangered; E = endangered; M = migratory; Ma = migratory marine species; NT = near-threatened; SLC = special least concern; V = vulnerable.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Calidris ferruginea</i>	Curlew sandpiper	CE; M	E	Curlew sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms (DCCEEW, 2024h). They are also recorded inland, although less often, including around non-perennial and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They do not breed in Australia.	Low. The habitat at the site is not suitable because it does not contain coastal/intertidal habitat, and the dams within and near the site do not have sandy or muddy margins required for foraging. There are no records within 5 km of the site.
<i>Casuaris casuaris johnsonii</i>	Southern cassowary	E	E	Cassowaries require a high diversity of fruiting trees to provide a year-round supply of fleshy fruits. Although occurring primarily in rainforest, they also use woodlands, melaleuca swamps, mangroves and even beaches – both as intermittent food sources and as connecting habitat between more suitable sites, but mostly when close to patches of rainforest. Further, on Cape York, they now occur in two separate populations: a southern population in the vine forests of the McIlwraith and Iron ranges and a northern population in the less extensive vine forests north of Shelburne Bay (Queensland Government, 2024c).	Low. The site is lacking a diversity of fruiting trees which would provide a year-round supply of fleshy fruits, and does not contain – or occur in proximity to – any rainforest habitat preferred by this species.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Charadrius leschenaultii</i>	Greater sand plover	M; Ma; V	V	The greater sand plover occurs in coastal areas in all states, although the greatest numbers occur in northern Australia, especially the northwest (Marchant and Higgins, 1993). In the non-breeding grounds in Australasia, the species is almost entirely coastal, inhabiting littoral and estuarine habitats. They mainly occur on sheltered, sandy, shelly or muddy beaches with large, intertidal mudflats or sandbanks, as well as on sandy, estuarine lagoons, and inshore reefs, rock platforms, small, rocky islands or sand cays on coral reefs (Bamford, 1988; Blakers et al., 1984).	Low. The site does not contain the preferred, coastal habitat of this species.
<i>Erythrotriorchis radiatus</i>	Red goshawk	V	E	The red goshawk inhabits tropical, grassy woodlands mostly in undulating, stony lands. It nests in large trees, frequently the tallest in a tall stand (DCCEEW, 2024i). Nest trees are invariably within 1 km of permanent water. They typically utilise emergent trees along major watercourses for nesting.	Low. There is some potential for flyover and utilisation of the site for foraging from time to time. However, no nesting habitat is present. Consequently, it is considered likely that the site would only be used transiently.
<i>Erythrura gouldiae</i>	Gouldian finch	E	E	Since 2005, birds have been sighted on at least three sites on Cape York Peninsula, on the Atherton Tablelands, and at several sites in and around Boodjamulla National Park (Garnett et al., 2011). Gouldian finches feed almost exclusively on grass seed. They depend on a relatively small number of grass species which seed at different times throughout the year. When breeding, they use small patches of open woodland, usually on ridges dominated by cavity-bearing, smooth-barked trees such as white northern gum (<i>Eucalyptus brevifolia</i>) in the west and salmon gum (<i>E. tintinnans</i>) in the east (Tidemann et al., 1992), with an understory of grasses such as sorghum (<i>Sarga</i> spp.), <i>Schizachyrium</i> spp. and spinifex (<i>Triodia</i> spp.), and usually within 2–4 km of perennial waterholes or springs (Dostine et al., 2001; O'Malley, 2006a).	Moderate. The site does not contain the preferred nesting habitat of this species, lacking any smooth-barked, hollow-bearing trees such as <i>E. brevifolia</i> , with an understory of <i>Sorghum</i> spp. However, it is possible that the site may be used for foraging and water resources outside of the breeding season and during the dry season, when other non-perennial water sources have dried up. Some preferred forage grasses have been recorded on site, including cockatoo grass (<i>Alloteropsis semialata</i>), golden beard grass (<i>Chrysopogon fallax</i>), giant spear grass (<i>Heteropogon triticeus</i>) and kangaroo grass (<i>Themeda triandra</i>).

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Falco hypoleucos</i>	Grey falcon	V	V	This species inhabits open woodlands and grasslands, and the lightly timbered plains over tropical and temperate Australia. It nests in tall trees near or beside major watercourses. The grey falcon is a highly nomadic species.	Low. This species is typically considered to occur in areas with less than 500 mm of annual rainfall. No nesting habitat is present within the site and no previous records exist within 50 km of the site. Consequently, it is considered likely that the site would only be used transiently, if at all.
<i>Gallinago hardwickii</i> ³	Latham's snipe, Japanese snipe	M; Ma; V	V	Latham's snipe feed in soft mudflats or shallow water, typically during the night, early morning or evening (DCCEEW, 2024b). The species roosts singly and in aggregations. They shelter during the day in small wetlands – including urban water bodies and saltmarshes – as well as creek edges, where there is adequate shallow, flooded or inundated substrate. Latham's snipe also use crops and pasture. They are mostly found among dense cover comprising sedges, grasses, lignum, reeds, and rushes.	Moderate. The species may occur around the dams within the site.
<i>Hirundapus caudacutus</i>	White-throated needletail	V	V	In Australia, the white-throated needletail is mostly aerial, from heights of less than 1 m up to more than 1,000 m above the ground (Coventry, 1989; Tarburton, 1993). Although white-throated needletails occur over most types of habitat, they are recorded most often above wooded areas, including open forest and rainforest, and may also fly below the canopy between trees or in clearings (Higgins, 1999).	Moderate. This almost entirely aerial species may occur in the airspace over the project site. However, no project impacts are expected. No important populations are recognised in the area, and no breeding occurs in Australia.

³ The conservation status of Latham's snipe (*Gallinago hardwickii*) was recently upgraded to *vulnerable* under the EPBC Act (effective from 5 January 2024) and the NC Act (effective from 1 September 2024). See C&R (2024b) for further details on the species.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Neochmia phaeton evangelinae</i>	Crimson finch (white-bellied)	E	–	The crimson finch (white-bellied) is found only on the Cape York Peninsula in northern Queensland (Schodde and Mason, 1999). There, it occurs in four separate subpopulations, located near Aurukun, near Pormpuraaw, at Magnificent Creek (near Kowanyama), and in Lakefield National Park, where it has been recorded along the Normanby River and in surrounding areas to the north, and along the Laura River to the south (Garnett and Crowley, 2000; Dorricott and Garnett, 2007). The species occurs in rank grasses and other vegetation that grows near bodies of fresh water such as rivers and swamps. It is especially common in habitats that are associated with pandanus or dune swales.	Low. None of the four known subpopulations occur in the vicinity of the site and no previous records exist within 50 km of the site. The site lacks pandanus and dune swale habitat favoured by this species.
<i>Numenius madagascariensis</i>	Eastern curlew, far eastern curlew	CE	E	During the non-breeding season in Australasia, the eastern curlew mainly forages around sheltered, intertidal sandflats or mudflats that are open and without vegetation or seagrass. The species often also forages near mangroves, on salt flats or saltmarsh, around rockpools, amongst rubble on coral reefs, and on ocean beaches near the tideline.	Low. The site does not contain the preferred coastal habitat of this species.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Psephotus chrysopterygius</i>	Golden-shouldered parrot	E	E	The golden-shouldered parrot occurs in the headwaters of the Morehead River and adjacent, westward-flowing streams (Morehead population) and the upper tributaries of the Staaten River (Staaten population; Garnett and Crowley, 2002). The Staaten population is currently thought to be contained in an area of about 300 km ² west of the Lynd River in the headwaters of Cockburn, Back and White Horse creeks. Nests are excavated in tall, conical mounds of termites, primarily <i>Amitermes scopulus</i> , on grassy areas within tea-tree or eucalypt savannas. After breeding, the birds disperse through open <i>E. tetradonta</i> (Darwin stringybark) woodland, concentrating their feeding activity on the super-abundant seeds of <i>Schizachyrium</i> spp. (fire grasses), on which they need to forage for less than two hours a day (Garnett and Crowley, 2002; Crowley et al., 2004). After the first wet-season rains, they form flocks in association with breeding <i>Artamus cinereus</i> (black-faced woodswallow), so predation by <i>Cracticus nigrogularis</i> (pied butcherbird) is less likely (Crowley et al., 2004).	Low. The site lacks the tall, conical termite nests of <i>Amitermes scopulus</i> – occurring within heathland or within tea-tree or woodland savannas – which are required for breeding and nesting. Further, no <i>E. tetradonta</i> woodland occurs in proximity to the site.
<i>Rostratula australis</i>	Australian painted snipe	E	E	The Australian painted snipe is usually found in the surrounds and shallows of freshwater or brackish wetlands that are either permanently or temporarily filled (Morcombe, 2003) and generally with a good cover of grasses, rushes and reeds, low scrub, <i>Muehlenbeckia</i> spp. (lignum), open timber or samphire. It is a cryptic bird that is hard to see and often overlooked.	Moderate. Vegetation surrounding the permanent dams, particularly Dam 4, may provide habitat for this species.
<i>Tringa nebularia</i>	Common greenshank	E; M; Ma	E	The common greenshank forages at the edge of wetlands, in soft mud on mudflats, in channels, or within shallows around the edge of waterbodies (DCCEEW, 2024m). These locations are often situated near or among mangroves or other sparse, emergent or fringing vegetation such as sedges or saltmarshes. The bird occasionally feeds amongst seagrass beds.	Low. The site does not contain the preferred wetland or mudflat habitats preferred by this species.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Turnix olivii</i>	Buff-breasted button-quail	E	CE	The buff-breasted button-quail is definitively known from just seven specimens in the Coen area of central Cape York. It is one of the least known birds in Australia. There has been a considerable effort to locate populations of the buff-breasted button-quail (Garnett and Crowley, 2000; Webster et al., 2024), including searches conducted at many known and potential locations – from Iron Range, around Coen, Mount Molloy and Mareeba, and from Atherton to Georgetown – as part of broad-scale surveys funded by Birds Queensland to determine the status of the species. Although three pairs were anecdotally recorded during these searches, it is now believed that these birds were misidentified painted button-quails (Webster et al., 2024) and no confirmed sightings of the buff-breasted button-quail have indeed been made since the 1920s. Where it was recorded near Coen in the 1920s, the habitat consisted of open stringybark forests with an understory of native, perennial grasses (Webster et al., 2024). Potential habitat has also been described as patches of short and sparse grassland, on a terrain of small stones (often on the lower slopes of hills and ridges), and sometimes in open glades amongst Melaleuca, Acacia, Alphitonia or Tristania, in rainforest or open Eucalyptus woodland (Garnett and Crowley, 2000; Rogers, 1995; Squire, 1990; White, 1922).	Low. Because little is known about the ecology of this species, a precautionary approach has been adopted and the species has been targeted as though it was likely to occur. The groundcover within the project area is possibly too dense for foraging and nesting for this species, and lacks the glades of Melaleuca, Acacia, Alphitonia or Tristania. Further, the only verified records of this species are from 100 years ago, near Coen in central Cape York. There have been extensive surveys and research conducted throughout the wet tropics, Einasleigh Uplands and Cape York bioregions in recent years, with no specimens identified. Several anecdotal records in the southern Cape York region are considered to be misidentified painted button-quails (Webster et al., 2024).
<i>Tyto novaehollandiae kimberli</i>	Masked owl (northern)	V	V	In northern Australia, the masked owl has been recorded from riparian forest, rainforest, open forest, Melaleuca swamps and the edges of mangroves, as well as along the margins of sugar cane fields (Higgins, 1999). It requires a large home range and an abundance of large trees with large hollows in patches of closed forest for nesting.	Low. The site is lacking the necessary roosting and breeding habitat of this species, with very few hollow-bearing trees present. The site does not contain closed forest habitat.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Litoria dayi</i>	Australian lacelid; lace-eyed tree frog; Day's big-eyed frog	V	V	This species occurs throughout the wet tropics bioregion from Paluma to Cooktown, at altitudes between 0 m and 1,200 m (McDonald, 1992). It is a rainforest species, endemic to the wet tropics bioregion (Williams and Hero, 1998, 2001), associated specifically with rainforests and rainforest margins. In montane areas, the species prefers fast-flowing, rocky streams. However, they also frequent slower watercourses where ample vegetation exists along the margins. At low elevations, it favours rock soaks, narrow, non-perennial streams and rock outcrops in larger watercourses. It may also be found on rocks, boulders and vegetation in – or adjacent to – streams.	Low. The site does not contain rainforest and does not occur on rainforest margins. The small drainage features throughout the site are not the preferred watercourse habitat of this species.
<i>Litoria nyakalensis</i>	Mountain mistfrog; Nyakala frog	CE	CE	The mountain mistfrog formerly occurred across two-thirds of the wet tropics region – from Douglas Creek near Cardwell to Alexandra Creek, Thornton Peak, northeast Queensland – at altitudes between 380 and 1,020 m (McDonald, 1992). Adult mountain mistfrogs were last recorded in April 1990, and tadpoles and metamorphs were last recorded in November 1990 on the Carbine Tableland. The species is a rainforest specialist, endemic to the wet tropics bioregion (Williams and Hero, 1998, 2001). It is found in upland rainforest and wet sclerophyll forest along fast-flowing streams where there is white water from riffles and cascades (McDonald, 1992). It is usually found perched on rocks or overhanging vegetation adjacent to the water.	Low. The site does not contain the preferred rainforest or wet sclerophyll habitat of this species. There are no fast-flowing streams with white water, riffles and cascades present.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Taudactylus rheophilus</i>	Tinkling frog	CE	CE	The tinkling frog was restricted to four mountaintops – from Thornton Peak to Mt Bellenden Ker, northern Queensland – at altitudes of 940 to 1,400 m (Hero et al., 1998; McDonald, 1992). It has undergone a sudden range contraction and had apparently disappeared by October 1991. After a period of apparent absence, five individuals were heard calling in a small, high-altitude tributary of the Mulgrave River, and a further seven individuals were heard calling and one captured in a small, high-altitude tributary of the Mitchell River, Mt Carbine (Marshall, 1998). Further records of the species from the southeastern slope of Mt Bellenden Ker include a single juvenile in February 1998 (Hero et al., 1998) and three to five individuals in December 2000 at approximately 1,400 m (Freeman, 2000). It is a montane specialist, endemic to the wet tropics bioregion (Williams and Hero, 1998, 2001), occurring along rocky streams in upland rainforest. It is usually found under rocks and logs beside fast-flowing streams and prefers seepage and trickle areas near streams (McDonald, 1992).	Low. The site does not contain montane, rocky streams and rainforest habitat preferred by this species.
<i>Trisyntopa scatophaga</i>	Antbed parrot moth	E	E	The antbed parrot moth has been collected from only one location approximately 15 km north of Coen and 4 km east of Mt Croll, in the Kulla-McIlwraith Range National Park, in far north Queensland (ALA, 2024). The moth occurs exclusively in association with <i>Psephotus chrysoterygius</i> (golden-shouldered parrot), whereby the nestlings' excreta is eaten by larvae of the moth within the bird's nest (Turner, 1923; Higgins, 1999). The parrot is endemic to southern and central Cape York Peninsula, where it creates nests excavated in termite mounds in grassy areas within tea-tree (<i>Melaleuca</i> spp.) or <i>Eucalyptus chlorophylla</i> (shiny-leaved box) savannas (Garnett et al., 2011).	Low. This species occurs exclusively in association with the golden-shouldered parrot, which is also considered unlikely to occur within the project site.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Bettongia tropica</i>	Northern bettong	E	E	The northern bettong is endemic to northeastern Queensland. It has a small, fragmented distribution and only occurs within a thin strip of sclerophyll forest along the western margin of rainforest in the ecotone between savanna woodland and rainforest. Habitat of the northern bettong includes a range of eucalypt forest types, from tall and wet forest dominated by <i>Eucalyptus grandis</i> (flooded gum) and tall forest dominated by <i>Eucalyptus resinifera</i> (red mahogany) – abutting the rainforest – to medium height and drier woodlands dominated by <i>Corymbia citriodora</i> (lemon-scented gum) and <i>Corymbia platyphylla</i> (poplar gum; Winter et al., 1992). Northern bettongs are heavily dependent on truffles (specialised fungi) as a food source during the wetter parts of the year. Truffles, belonging to about 36 species of fungus, generally comprise about 45% of the diet of northern bettongs.	Low. The species has not been recorded within 50 km of the site, and the habitat within the site is not the preferred habitat of this species. No truffles, which are an important wet season food source, have been recorded within the site.
<i>Dasyurus hallucatus</i>	Northern quoll	E	–	The northern quoll is most abundant in rocky eucalypt woodlands but occurs in a variety of habitats. The most successful breeding occurs near creek lines, and dens are usually in hollow tree trunks.	Low–Moderate. There is no suitable denning or breeding habitat within the site to support this species. However, the site may provide foraging and dispersal habitat between patches of high-quality habitat.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Dasyurus maculatus gracilis</i>	Spotted-tailed quoll (north Queensland)	E	E	The north Queensland subspecies is now believed to be limited to two remaining populations: one concentrated around the Windsor Tablelands, Mount Carbine Tableland, Thornton Peak, Mount Finnegan and associated smaller ranges; and the other focused on the Atherton Tablelands and associated mountain ranges (Long and Nelson, 2016). It is mostly restricted to the relatively cool, wet and climatically stable upland closed-forests (mostly above 900 m altitude) in the upper catchments of rivers draining east and west of the eastern escarpment in the wet tropics bioregion of northeastern Queensland (Long and Nelson, 2016). Simple and complex notophyll vine forest, simple microphyll vine-fern forest and simple microphyll vine-fern thicket are typical vegetation types of this habitat (Long and Nelson, 2016). The subspecies utilises dens for resting and for raising young. Dens have been found in tree hollows, logs, rock crevasses and even among building materials. Maternal dens often have long entrances.	Low. The site does not contain the tall, closed forest or vine forest preferred by this species. There is a lack of suitable denning sites, with very few hollow-bearing trees or hollow logs within the site. No significant rock crevices have been found within the site.
<i>Hipposideros diadema reginae</i>	Diadem leaf-nosed bat	–	NT	This subspecies is endemic to Queensland, occurring from Cape York Peninsula south to Townsville and inland to Chillagoe, with records from Iron Range, Hinchinbrook Island, Cape Melville, Chillagoe, Cairns and Coen (Pavey, 1998). It roosts throughout the year in caves and disused mines, preferring those with large chambers, high-domed ceilings and multiple entrances (Hall and Richards, 1985; Pavey, 1998). It has also been recorded roosting in buildings and culverts (Churchill, 2008). This species occurs in a variety of habitat types, including lowland rainforest, melaleuca forests, eucalypt woodland, deciduous vine thickets, and open woodland, where suitable roosts are available throughout its range.	Low. There are records within 50 km of the site and there is suitable foraging and flyover habitat. However, the species is unlikely to roost or breed within the site because no suitable roosting/breeding habitat is present.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Hipposideros semoni</i>	Semon's leaf-nosed bat	V	E	Semon's leaf-nosed bats roost in caves, old mines, cracks in rocks and under rock overhangs and in trees. They prefer very dark places. They do not appear to roost together in colonies. They mainly occur in rainforests but have also been recorded from streams and rivers adjacent to rainforest (Churchill, 2008).	Low. The site does not contain the preferred habitat for this species.
<i>Macroderma gigas</i>	Ghost bat	V	E	This species inhabits caves, rock crevices and disused mine shafts.	Low. There is no suitable roosting or breeding habitat within the site to support this species. There are no known records within 5 km of the site.
<i>Mesembriomys gouldii rattoides</i>	Black-footed tree-rat	V	–	In north Queensland, this species mostly occurs in eucalypt forests and woodlands, especially where hollows are relatively plentiful. The black-footed tree rat is a nocturnal rodent that dens mostly in tree hollows, but occasionally in dense foliage (notably of pandanus), and occasionally in buildings. It forages on the ground and in trees, and individuals may make movements of at least 500 m from roost sites to foraging areas (Friend et al., 1992). The diet comprises mostly fruits (including <i>Pandanus spiralis</i>) and seeds, but also includes some invertebrates, flowers and grass (Rankmore and Friend, 2008).	Low. The site is lacking suitable denning habitat (i.e. a lack of hollow-bearing trees) and foraging species, such as pandanus.
<i>Petauroides minor</i>	Greater glider (northern)	V	V	The greater glider is typically found in highest abundance in taller, montane, moist eucalypt forests on fertile soils, with relatively old trees and abundant, large hollows. Both live and standing dead trees are used for denning. However, the species prefers to use live hollow-bearing trees when adequate numbers are available. It favours forests with a diversity of eucalypt species due to seasonal variation in growth and nutrient content of its preferred tree species. Size of trees is also important for Queensland greater gliders, with trees >30 cm DBH preferentially selected for foraging and >50 cm DBH for denning.	Low. The site is lacking the large trees and large hollows required to support this species.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Petaurus australis brevirostrum</i> (wet tropics subspecies)	Yellow-bellied glider (wet tropics)	E	E	The yellow-bellied glider (southeastern) occurs in eucalypt-dominated woodlands and forests, including both wet and dry sclerophyll forests. Abundance is highly dependent on habitat suitability, which is in turn determined by forest age and floristics (Woinarski et al., 2014). The subspecies shows a preference for large patches of mature, old-growth forest that provide suitable trees for foraging and shelter. There is also a clear preference for forests with a high proportion of winter-flowering and smooth-barked eucalypts (Woinarski et al., 2014).	Low. The site does not contain the eucalypt-dominated forests and woodlands required for foraging or denning for this species. There are no records within 5 km of the site.
<i>Phascolarctos cinereus</i>	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)	E	E	Restricted to eucalypt forests and woodlands and in the northern and western extents of its range, leaf moisture is likely a limiting factor. Therefore, it is most likely confined to riparian areas in the northern and western parts of its range, particularly during the dry season.	Low. The site is located outside of the known and likely distribution of this species, with the nearest record approximately 125 km to the south. Although the site contains open eucalypt woodland, koala and signs of koala activity were searched for during the four surveys, and no evidence of koala (old or current) was found.
<i>Pteropus conspicillatus</i>	Spectacled flying-fox	E	E	The spectacled flying-fox occurs in northeastern Queensland, north of Cardwell with past records from Brisbane and Chillagoe (Hall and Richards, 2000). It is restricted to tropical rainforest areas (Webb and Tidemann, 1996). One study showed that the spectacled flying-fox roosts within 6.5 km of rainforest, although a roost 16 km from rainforest has also been observed. The species was long assumed to feed primarily on rainforest species (Richards, 1990) but individuals regularly feed on a wide variety of non-rainforest species, including eucalypts (<i>Eucalyptus</i> spp., <i>Corymbia</i> spp.) in tall, open forests adjoining rainforest communities and in tropical woodland and savanna ecosystems.	Low. No roosts have been identified within or close to the site and the site generally does not contain the preferred roosting habitat for this species. It is possible that the site could be used for seasonal foraging when eucalypts and corymbias are in flower.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Rhinolophus robertsi</i>	Large-eared horseshoe bat	V	–	The large-eared horseshoe bat occurs only in northern Queensland, from the Iron Range southwards to Townsville and west to the karst regions of Chillagoe and Mitchell-Palmer. It is found in lowland rainforest, along creeks lined by gallery forest, within open eucalypt forest, melaleuca forest with rainforest understorey, open savannah woodland and tall, riparian woodland of melaleuca, bluegum (<i>E. tereticornis</i>) and Moreton Bay ash (<i>Corymbia tessellaris</i> ; Churchill, 2008; Pavey and Kutt, 2008). Daytime roosting habitat for this species includes caves and underground mines located in rainforest, and open eucalypt forest and woodland. Roosts have also been observed in road culverts. It is suspected that the species uses basal hollows of large trees, dense vegetation, rockpiles and areas beneath creek banks.	Moderate. It is possible that this species may utilise the site for foraging and flyover. However, its preferred roosting habitat is lacking within the site.
<i>Saccolaimus saccolaimus nudicluniatus</i>	Bare-rumped sheathtail bat	V	E	The bare-rumped sheathtail bat occurs mostly in lowland areas, typically in a range of woodland, forest and open environments. The habitat adjacent to the roost in the Jerona Fauna Sanctuary at Ayr in north Queensland was in poplar gum (<i>Eucalyptus platyphylla</i>) woodland, typical of the alluvial plains adjacent to the lower Burdekin and Houghton rivers, near Townsville. At Iron Range, Queensland, roosts were located in Darwin stringybark woodland (<i>E. tetradonta</i>) with Clarkson's bloodwood (<i>Corymbia clarksoniana</i>) and Moreton Bay ash (<i>C. tessellaris</i>) subdominant. The species has been suggested to forage over habitat edges such as the edge of rainforest and in forest clearings (Churchill, 2008). There is no information available on foraging habitat shifts between the dry and wet seasons. The small number of confirmed roosts located in Australia have all been in tree hollows.	Low. The site does not contain the preferred roosting tree species and lacks an abundance of hollow-bearing trees for roosting purposes.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Sminthopsis archeri</i>	Chestnut dunnart	–	NT	Habitat for this species consists of tall stringybark woodlands and tall forests situated in red earth and in heathlands.	Low. Habitat within the site does not include forests situated in red earths or heathlands, as preferred by this species.
<i>Tachyglossus aculeatus</i>	Short-beaked echidna	–	SLC	The short-beaked echidna lives in forests and woodlands, heath, grasslands and arid environments. It is found throughout Australia.	High. This species occurs in a broad variety of habitat types and is considered likely to utilise the project site at times.
<i>Egernia rugosa</i>	Yakka skink	V	V	The yakka skink is known to occur in open, dry sclerophyll forest, woodland and scrub (Brigalow Belt Reptiles Workshop, 2010; Cogger, 2000). The core habitat of this species is within the Mulga Lands and Brigalow Belt South bioregions. It occurs in a wide variety of vegetation types within the following Queensland RE land zones (LZ; Brigalow Belt Reptiles Workshop, 2010): • LZ 3 – Alluvium (river and creek flats); • LZ 4 – Clay plains not associated with current alluvium; • LZ 5 – Old loamy and sandy plains; • LZ 7 – Ironstone jump-ups; • LZ 9 – Undulating country on fine-grained sedimentary rocks; and • LZ 10 – Sandstone ranges. It is commonly found in cavities under and between partly buried rocks, logs or tree stumps, root cavities and abandoned animal burrows (Brigalow Belt Reptiles Workshop, 2010). The species often takes refuge in large, hollow logs and has been known to excavate deep burrow systems, sometimes under dense ground vegetation (Cogger, 2000). This species is not generally found in rocky habitats.	Low. The site does not contain the preferred habitat of this species, and no evidence of yakka skink was found during the surveys.

6.4.1.2 *Essential Habitat*

Essential habitat is vegetation where a species that is listed as EVNT under the NC Act has been recorded, or an area surrounding a confirmed sighting with a buffer of 1 km from the sighting. Essential habitat mapping is used to regulate vegetation clearing in such a way as to prevent the loss of biodiversity.

The biological and/or non-biological habitat requirements of a species are covered by specifying essential habitat factors and can include, but are not limited to:

- Vegetation – the species or types of vegetation with which the EVNT species is associated;
- RE – the RE(s) with which the EVNT species is most commonly associated;
- Land zone – the underlying geology associated with an RE;
- Altitude – the range of altitudes at which the EVNT species is found;
- Soils – the type of soil on which the EVNT species is most commonly found; and
- Position in landscape – a precise description of the landscape features the EVNT species is commonly associated with (e.g. creek bank, levees, lower slopes, hillsides and ridges).

No essential habitat mapping for EVNT fauna or flora exists over the site.

6.4.1.3 *Migratory Species*

In addition to the threatened fauna that are also migratory (Table 8), the desktop assessment identified 16 migratory species with the potential to occur within the project site (excluding those species that are strictly marine), including three (3) shorebirds, one (1) reptile and twelve (12) terrestrial bird species. These species are detailed in Table 9, together with an assessment of the likelihood of occurrence of each species based on the habitat values present. Species highlighted in blue are those identified to have a moderate or higher likelihood of occurrence. These species were the focus of the targeted habitat assessments and surveys. As with the conservation significant species outlined in Table 8, the likelihood assessment for migratory species was further refined following the field survey, based on the ecological and habitat values identified within the project area.

Table 9: Migratory fauna with potential to occur within the site. Rows describing fauna that have a moderate or higher likelihood of occurrence are marked in blue. Conservation status abbreviations: E = endangered; M = migratory; Ma = migratory marine species; SLC = special least concern; V = vulnerable.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Apus pacificus</i>	Fork-tailed swift	M; Ma	SLC	The fork-tailed swift occurs from low to very high airspace over varied habitat, rainforest to semi-desert.	Moderate. This almost exclusively aerial species occurs over a very broad range of habitat types.
<i>Cecropis daurica</i>	Red-rumped swallow	M; Ma	SLC	This species predominately forages over wetlands, including swamps, rivers, dams or open areas such as golf courses or cane fields, where insects are taken on the wing. They have been recorded feeding in mixed flocks with other aerial insectivores. As with most swallows and martins, red-rumped swallows often perch on bare branches or wires. Non-breeding habitat only in Australia.	Moderate. This largely aerial species may forage over open areas, such as the dams within the site.
<i>Crocodylus porosus</i>	Estuarine crocodile	M; Ma	V	The estuarine crocodile mostly occurs in tidal rivers, coastal floodplains and channels, billabongs and swamps up to 150 km inland from the coast. It usually inhabits the lower (estuarine) reaches of rivers. In Queensland, the species is usually restricted to coastal waterways and floodplain wetlands. Preferred nesting habitat includes elevated, isolated freshwater swamps that do not experience the influence of tidal movements (Webb et al., 1987). Floating rafts of vegetation also provide important nesting habitat (Webb et al., 1987). In the Northern Territory, most nest sites are found on the northwest banks of rivers and are usually exposed to the midday sun but shaded in the early morning and late evening.	Low. The site does not contain the preferred habitat of the estuarine crocodile.
<i>Cuculus optatus</i>	Oriental cuckoo	M	SLC	Non-breeding habitat only in Australia. This species prefers monsoonal rainforest, vine thickets, wet sclerophyll forest or open Casuarina, Acacia or Eucalyptus woodlands. Frequently at edges or ecotones between habitat types.	Moderate. This species may occur within the eucalypt woodlands across the site. However, no individuals were recorded during the surveys and no records are known within 50 km of the site.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Hirundo rustica</i>	Barn swallow	M	SLC	The preferred habitat of the barn swallow is open country with low vegetation, such as pasture, meadows and farmland, preferably with nearby water. This swallow avoids heavily wooded or precipitous areas and densely built-up locations. The presence of accessible, open structures such as barns, stables or culverts to provide nesting sites – and exposed locations such as wires, roof ridges or bare branches for perching – are also important in the bird's selection of its breeding range.	Low. The site does not contain the preferred habitat of this species.
<i>Monarcha frater</i>	Black-winged monarch	M; Ma	SLC	The black-winged monarch is a summer breeding migrant to Australia, with a migration route between the northeast coast of Australia (between Cooktown and Cape York Peninsula) and New Guinea, where it is assumed to overwinter. There is some evidence that a small number of adults may overwinter in Australia. It is a rainforest species but will use mixed, tropical, open eucalypt forests and woodlands that are adjacent to areas of rainforest. These woodlands contain understorey elements similar to those found in rainforest habitats.	Low. The site does not contain the preferred rainforest habitat, or any tropical, open eucalypt forests and woodlands adjacent to areas of rainforest.
<i>Monarcha melanopsis</i>	Black-faced monarch	M	SLC	The black-faced monarch mainly occurs in rainforest ecosystems, including semi-deciduous vine-thickets, complex notophyll vine-forest, tropical (mesophyll) rainforest, subtropical (notophyll) rainforest, mesophyll (broadleaf) thicket/shrubland, warm temperate rainforest, dry (monsoon) rainforest and (occasionally) cool temperate rainforest (Blakers et al., 1984). Other areas in which the black-faced monarch may be found include gullies in mountain areas or coastal foothills.	Low. The site does not contain the preferred rainforest / vine thicket habitat of this species. No black-faced monarchs were recorded during the surveys.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Motacilla cinerea</i>	Grey wagtail	M; Ma	SLC	The grey wagtail is a scarce but regular visitor to northern Australia, generally arriving during the last 10 days of October and departing around March. The species has a strong association with water. In their normal breeding range, grey wagtails are found across a variety of wetlands, especially water courses, but also on the banks of lakes and marshes, as well as artificial wetlands such as sewage farms, reservoirs and fish ponds. This association with water extends into non-breeding habitats, with all confirmed Australian records being associated with water, especially creeks, rivers and waterfalls. On migration, they may forage on rocky, tidal flats. Non-breeding summer visitor to Australia.	Moderate. This species could occur in association with the dams and watercourses within the site.
<i>Motacilla flava</i>	Yellow wagtail	M	SLC	This species occupies a range of damp or wet habitats with low vegetation, including damp meadows, marshes, waterside pastures, sewage farms, bogs and grassy tundra. In the north of its range, it is also found in large forest clearings. Has not been observed during the project surveys.	Low. The site does not contain the preferred habitat of this species.
<i>Myiagra cyanoleuca</i>	Satin flycatcher	M	SLC	Eucalypt forest and woodlands, at high elevations when breeding. Satin flycatchers are particularly common in tall, wet sclerophyll forest, often in gullies or along water courses. In woodlands, the species prefers open, grassy woodland types. During migration, habitat preferences expand, with the species recorded in most wooded habitats except rainforests. Wintering birds in northern Queensland will use rainforest / gallery forest interfaces. Further, birds have been recorded wintering in mangroves and paperbark swamps.	Known. The species was recorded during early wet and wet season surveys in 2024.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Rhipidura rufifrons</i>	Rufous fantail	M	SLC	The rufous fantail mainly inhabits wet sclerophyll forests, often in gullies dominated by eucalypts such as tallow-wood (<i>Eucalyptus microcorys</i>), mountain grey gum (<i>E. cypellocarpa</i>), narrow-leaved peppermint (<i>E. radiata</i>), mountain ash (<i>E. regnans</i>), alpine ash (<i>E. delegatensis</i>), blackbutt (<i>E. pilularis</i>) or red mahogany (<i>E. resinifera</i>). A dense, shrubby understorey is usually associated, often including ferns. Rufous fantails also occur in subtropical and temperate rainforests (Higgins et al., 2006).	Low. Although it is possible that the species could occur within the narrow, riparian habitat associated with minor drainage lines and dams in the site, its preferred habitat and species, with which it is commonly associated, are lacking.
<i>Symposiachrus trivirgatus</i> as <i>Monarcha trivirgatus</i>	Spectacled monarch	M	SLC	This species occupies dense vegetation, mainly in rainforest but also in moist or wet sclerophyll forest and occasionally in other densely vegetated habitats such as mangroves, drier forest, woodlands, parks and gardens.	Low. Its preferred habitat is lacking within the site.
<i>Actitis hypoleucos</i>	Common sandpiper	M; Ma	SLC	The common sandpiper is found along all coastlines of Australia. In many inland areas, it is widespread in small numbers (DCCEEW, 2024f). The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity. The common sandpiper is mostly found around muddy margins or rocky shores and rarely on mudflats. It has been recorded in estuaries and deltas of streams, as well as on banks farther upstream, around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags.	Moderate. The species may occur around the dams within the site at times.

Species name	Common name	Conservation status		Habitat	Likelihood of occurrence
		EPBC Act	NC Act		
<i>Calidris acuminata</i>	Sharp-tailed sandpiper	M	SLC	The sharp-tailed sandpiper spends the non-breeding season in Australia, with small numbers occurring regularly in New Zealand. Most of the population migrates to Australia, mostly to the southeast. They are widespread in both inland and coastal locations – and in both freshwater and saline habitats. The species prefers muddy edges of shallow, fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains, bore swamps, salt pans and hypersaline salt lakes inland. They tend to occupy coastal mudflats mainly after non-perennial, terrestrial wetlands have dried out, moving back during the wet season.	Moderate. The species may occur around the dams within and near the site.
<i>Calidris melanotos</i>	Pectoral sandpiper	M	SLC	In Queensland, most records for the pectoral sandpiper occur around Cairns. There are scattered records elsewhere, mainly from east of the Great Divide between Townsville and Yeppoon. In Australasia, the pectoral sandpiper prefers shallow, fresh to saline wetlands. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. It is usually found in coastal or near-coastal habitat but occasionally further inland (Higgins and Davies, 1996).	Moderate. Although the preferred habitat is coastal, this species may also use inland lakes and waterbodies, such as the dams within the site.
<i>Pandion haliaetus</i>	Eastern osprey	M; Ma	SLC	Eastern ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia, as well as offshore islands. They are mostly found in coastal areas but occasionally travel inland along major rivers, particularly in northern Australia (Marchant and Higgins, 1993). The species requires extensive areas of open, fresh, brackish or saline water for foraging (Marchant and Higgins, 1993). Eastern ospreys frequent a variety of wetland habitats, including inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, swamps, broad rivers, reservoirs, and large lakes and waterholes.	Moderate. The species may occur over the dams in the site at times.

6.4.1.4 Pest Animals

The desktop assessment identified eleven (11) introduced animal species previously recorded within 50 km of the project site. These include feral cats, feral pigs and dogs/dingoes, all of which are listed as restricted under the *Biosecurity Act 2014*. All species listed in Table 10 are considered likely to occur within the site.

Table 10: Invasive species identified – through the desktop assessment – with potential to occur within the site.

Scientific name	Common name	Status under <i>Biosecurity Act 2014</i>
<i>Felis catus</i>	Feral cat	Categories 3, 4, 6
<i>Sus scrofa</i>	Feral pig	Categories 3, 4, 6
<i>Rhinella marina</i>	Cane toad	–
<i>Passer domesticus</i>	House sparrow	–
<i>Bos indicus</i>	Zebu	–
<i>Bos</i> sp.	Cattle	–
<i>Canis familiaris</i>	Dog	Categories 3, 4, 5, 6
<i>Canis familiaris (dingo)</i>	Dingo	Categories 3, 4, 5, 6
<i>Equus caballus</i>	Horse	–
<i>Rattus rattus</i>	Black rat	–
<i>Hemidactylus frenatus</i>	House gecko	–

Under the *Biosecurity Act 2014*, categories 3, 4, 5 and 6 (and 7, although not of relevance to the species identified in Table 10) relate to restricted matter that is in a person's possession, under their control. These categories are also about not-feeding restricted matter. Table 11 outlines definitions for categories 3 to 6.

Table 11: Definitions of *Biosecurity Act 2014* categories.

Category	<i>Biosecurity Act 2014</i> definition
3	Includes weeds, pest animals and noxious fish (e.g. gambusia, dingoes, yellow crazy ants). You must not distribute this restricted matter. This means it must not be given as a gift, sold, traded or released into the environment unless the distribution or disposal is authorised in a regulation or under a permit. Deliberate human distribution or disposal contrary to the legislation is a key source of spread into other areas of the state.
4	Includes specific weeds, pest animals and noxious fish such as the bitou bush, feral pig or giant cichlid. You must not move this restricted matter to ensure that it does not spread into other areas of the state.
5	Includes weeds, pest animals and noxious fish such as Mexican feather grass, rabbits and carp. You must not possess or keep this restricted matter under your control. These pests have a high risk of negatively impacting on the environment. You may only keep this restricted matter under a permit of the <i>Biosecurity Act 2014</i> or another Act.

Category	Biosecurity Act 2014 definition
6	Includes invasive animals such as feral deer, foxes, rabbits and wild dogs and noxious fish such as carp, gambusia and tilapia. You must not feed this category of restricted matter. Feeding this restricted matter may cause their numbers to increase and negatively impact the economy or the environment. Feeding for the purpose of preparing for or undertaking a control program is exempted.

As noted in Table 10, several restriction categories apply to some restricted matter. In such cases, the requirements of all relevant restriction categories need to be followed for these restricted matter listings (see Table 11).

Both feral cats and feral pigs were recorded during the field survey.

6.4.1.5 *Connectivity*

Connectivity relates to species capacity to disperse through the landscape between suitable patches of habitat. Connectivity therefore has important implications for species persistence (Eyre et al., 2015). A landscape with high connectivity is one in which a particular fauna species can readily move between suitable areas of habitat. A landscape with low connectivity means that populations become largely isolated (Eyre et al., 2015).

Although not mapped within any state biodiversity or riparian corridors, the site maintains high connectivity to the surrounding landscape, with vast tracts of remnant vegetation mapped to the north, south, east and west.

6.4.1.6 *Watercourse and Fish Habitat Information*

Several minor drainage lines flow through the site, including one unnamed, green (low-risk) watercourse (South Creek) identified on the *Queensland waterways for waterway barrier works* mapping (Queensland Government, 2024b). This creek traverses the southwestern corner of the site and receives water during flow events from the sediment dam. A more detailed assessment of this watercourse and other aquatic values has been provided in the aquatic ecology technical report (C&R, 2024a).

6.4.2 FAUNA FIELD SURVEY RESULTS

6.4.2.1 *Fauna Habitat*

Although the ground-truthed RE mapping delineated only two REs within the site (REs 9.11.3a and 9.3.14a) – as well as non-remnant areas and water, the variety in the composition and structure of vegetation provides dissimilar habitat values in different areas. Consequently, the site was stratified into six habitat types aligning with the vegetation communities described in Section 6.3.2, as described in Table 12. The distribution and extent of each habitat type is shown in Figure 22.

Table 12: Habitat types within the site.

Habitat description	Photos
Habitat type 1 (riparian vegetation) This habitat type, consistent with a heterogeneous community of RE 9.11.3a and RE 9.3.14a, comprised a small drainage channel flowing from east to west through the middle of the site. Limited alluvium was present, as well as a more defined riparian community along the creek line in the western extent of the site. Along the minor drainage line, most of the fringing vegetation in this habitat type is analogous with the adjacent woodland. There is an infrequent occurrence of vegetation synonymous with riparian zones, including northern swamp mahogany (<i>Lophostemon grandiflorus</i>), bluegum (<i>Eucalyptus tereticornis</i>), river sheoak (<i>Casuarina cunninghamiana</i>) and sedges (<i>Cyperus</i> spp.) within the understory. Very sparse, small hollows and spouts were identified. However, this habitat type was generally found to lack larger, hollow-bearing limbs, hollow logs or other areas suitable for shelter and breeding for fauna. The creek line in the western extent of the site had a more established riparian zone. That zone consisted of similar species as described above but with additional riparian trees such as auri (<i>Acacia auriculiformis</i>), Leichhardt tree (<i>Nauclea orientalis</i>) and Cape fig (<i>Ficus nodosa</i>). Water was present during the surveys. Habitat type 1 would provide potential movement and dispersal corridors – albeit narrow and limited in extent – for species such as the northern quoll (<i>Dasyurus hallucatus</i>), which could move through the landscape between patches of suitable habitat which may occur outside of the project site.	
Habitat type 2 (ironbark woodland) Habitat type 2 was found to comprise a low, open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>), Clarkson's bloodwood (<i>Corymbia clarksoniana</i>), Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) and Dallachy's gum (<i>Corymbia dallachiana</i>), consistent with RE 9.11.3a. Within this habitat type, the understory was dominated by black spear grass (<i>Heteropogon contortus</i>), giant spear grass (<i>Heteropogon triticeus</i>), kangaroo grass (<i>Themeda triandra</i>), northern kerosene grass (<i>Aristida hygrometrica</i>) and silky oil grass (<i>Cymbopogon bombycinus</i>). In areas that have historically been disturbed, particularly in the west of the project footprint, the introduced grader grass (<i>Themeda quadrivalvis</i>) was dominant. This habitat type was found to be generally lacking any large hollows, with very occasional small spouts and hollows observed. Vegetation was found to be tall, but with a relatively small, average DBH of approximately 20 cm. The vegetation was thus consistent with the RE benchmark data for this RE, which averages a DBH of 24 cm for eucalypts.	

Habitat description	Photos
Habitat values included foraging opportunities for woodland species, roosting and perching opportunities for birds, mammals and reptiles, and nesting habitat for a variety of species. In areas where the groundcover was found to be patchy, active searches within this habitat type were also undertaken for the buff-breasted button-quail and other EVNT species, including transects on foot designed to flush birds from long grass, and searches for signs of activity, such as quail foraging platelets.	
Habitat type 3 (bloodwood-dominated woodland) This habitat type was found to consist of the same species as habitat type 3 (RE 9.11.3a). However, Clarkson's bloodwood was noticeably more dominant than Cullen's ironbark in this patch. This patch was stratified as a separate habitat type, given that bloodwoods tend to form hollows at a younger age and smaller size than ironbarks in the surrounding W1 habitat type. Although hollows were still found to be generally lacking in this habitat type, there is potential for this patch to support hollow-dependent species over time. Similarly to habitat type 3, existing values within this patch included foraging opportunities for woodland species, roosting and perching opportunities for birds, mammals and reptiles, and nesting habitat for a variety of species. In areas where the groundcover was found to be patchy, active searches within this habitat type were also undertaken for the buff-breasted button-quail and other EVNT species, including transects on foot designed to flush birds from long grass, and searches for signs of activity, such as quail foraging platelets and quoll latrines.	
Habitat type 4 (regrowth) A small area of regrowth vegetation, consistent with RE 9.11.3a, likely cleared in the late 1980s, was identified in the southwestern corner of the site. This area has shown significant signs of recovery since it was cleared and is currently dominated by Clarkson's bloodwood, Cullen's ironbark, silver wattle (<i>Acacia holosericea</i>), <i>Acacia calyculata</i> and <i>Acacia multisiliqua</i>. The groundcover within this habitat type was much more open than surrounding habitat types. The open patches between grass tussocks were assessed as potential habitat for small, granivorous birds particularly. These birds favour open areas for foraging on fallen seed. Such species include finches, pigeons, and potentially species such as the critically endangered buff-breasted button-quail. This habitat type was generally lacking any other significant habitat features, such as hollow-bearing limbs or hollow logs, rocky outcrops or other areas potentially providing shelter for fauna.	

Habitat description	Photos
Habitat type 5 (non-remnant) This habitat type comprised areas of non-remnant vegetation, cleared historically during the operation of DCM. Within these areas, habitat values were very limited to sparse regrowth and shrubs, some patches with mid-dense groundcover, and open areas which could be used for foraging by aerial predators such as raptors and insectivorous birds. These areas could also be utilised by microbats feeding on insects, particularly along the edges of remnant and non-remnant vegetation and where non-remnant areas occurred close to drainage lines. The non-remnant areas were not assessed as likely to support any EVNT fauna species.	
Habitat type 6 (wetlands/dams) Habitat type 6 consisted of four dams within (or adjacent to) the site, including: • Dam 1 (which will become the site of the release dam); • Dam 2 (proposed process water dam); • Dam 3 (within the proposed mine and dump area); and • Dam 4 (raw water dam) . The location of these dams can be seen in Figure 23. Two additional dams are in close proximity to the site (dams 5 and 6). All six were the focus of several water watch surveys for EVNT and migratory bird species. Utilisation by other fauna coming to drink was also assessed. Dams provide a permanent water source for a number of species and may be a critical source of water during dry seasons. A brief description of each dam has been included below. <u>Dams within the site:</u> <u>Dam 1</u> Historically built over the primary watercourse running east to west through the site, this dam forms a large and deep water body with steep, rocky banks, except at the inlet where there are some exposed, muddy margins. The dam is surrounded by woodland vegetation. Although several species of woodland birds were observed in the habitat around the dam, the water source itself is generally not used by fauna. No animals were seen coming to drink, bathe or forage over the water. This is likely due to the low pH levels of the water, making it generally unsuitable for fauna. This dam will be reworked into the release dam for the operation. <u>Dam 2</u>	 Dam 1

Habitat description	Photos
Dam 2 is the largest and most vegetated dam within the site. This dam will become the process water dam for the proposed operation. During the dry season survey, when the water had receded to expose muddy banks, several species of frogs were recorded. Wetland birds – including ducks, grebes, ibis and egrets – were also commonly observed. By the early wet season, Dam 2 was filled to capacity, with no exposed margins. Steep edges were covered with grass and sedges. By late May, the dam had partially dried, revealing shallow, vegetated banks. The dam is surrounded by open woodland on the steep, rocky slopes, with riparian trees such as <i>Lophostemon grandiflorus</i> around the water's edge. This dam will be filled in as part of the proposed project. However, Dam 4 and Dam 5 – which will remain – provide similar habitat values for fauna. <u>Dam 3</u> Dam 3 – the original mine pit – has become a very deep water body with steep, rocky benches and banks. Vegetation is minimal, with the exception of <i>Typha</i> sp. growing along the waters' edge. One side of this dam features an old concrete pad with vertical sides. Given the steep banks and lack of vegetation, this dam holds little habitat value for fauna. Only <i>least concern</i> species commonly recorded in disturbed habitat were observed in this area, including bar-shouldered doves and Australian magpies. Dam 3 will become part of the mine and dump area. <u>Dam 4</u> The largest of the permanent dams in close proximity (adjacent) to the site, Dam 4 was found to provide a range of habitat features. These include a diversity of aquatic plants and numerous stags (a tree with all live branches removed, leaving branch stubs and trunk only) standing in the water, providing perching and roosting opportunities for birds and sun bathing props for the Mertens' water monitor (<i>Varanus mertensi</i>). The margins were well vegetated and woodland habitat surrounded the water body. Despite the good condition of the habitat within and surrounding Dam 4, it was noted that this dam was not heavily utilised by fauna during any of the four surveys. Dam 4 will be utilised as the raw water dam for the proposed operation. <u>Dams in close proximity to the site:</u> <u>Dam 5</u> Dam 5, located to the north of the site, is a semi-permanent dam, holding water for most of the year. During the dry season survey, this dam consisted of a small puddle approximately 2 m wide. However, by the early wet season, the dam was at capacity. When full, this dam has steep edges, with limited foraging opportunities for wading birds. However, as the water began to recede, exposed muddy margins provided suitable foraging habitat. Brown-backed honeyeaters were observed nesting in vegetation over this dam. Mertens' water monitor was also confirmed within the dam on two occasions. Located off site, this dam is not expected to be impacted by the proposed project.	 Dam 2  Dam 3

Habitat description	Photos
<u>Dam 6</u> Located approximately 1.5 km to the south of the site, Dam 6 was surveyed and found to provide habitat for a range of water birds, woodland birds, water rats and the endangered Mertens' water monitor. This dam contained several large, hollow stags within the water body itself and around the edges of the dam. Muddy margins offered suitable foraging habitat for wading birds. Recently burnt areas surrounding the dam provided foraging opportunities for a wide range of fauna. Because Dam 6 is located off site, it will not be impacted by the proposed project.	 Dam 4  Dam 5

Habitat description	Photos
	 Dam 6

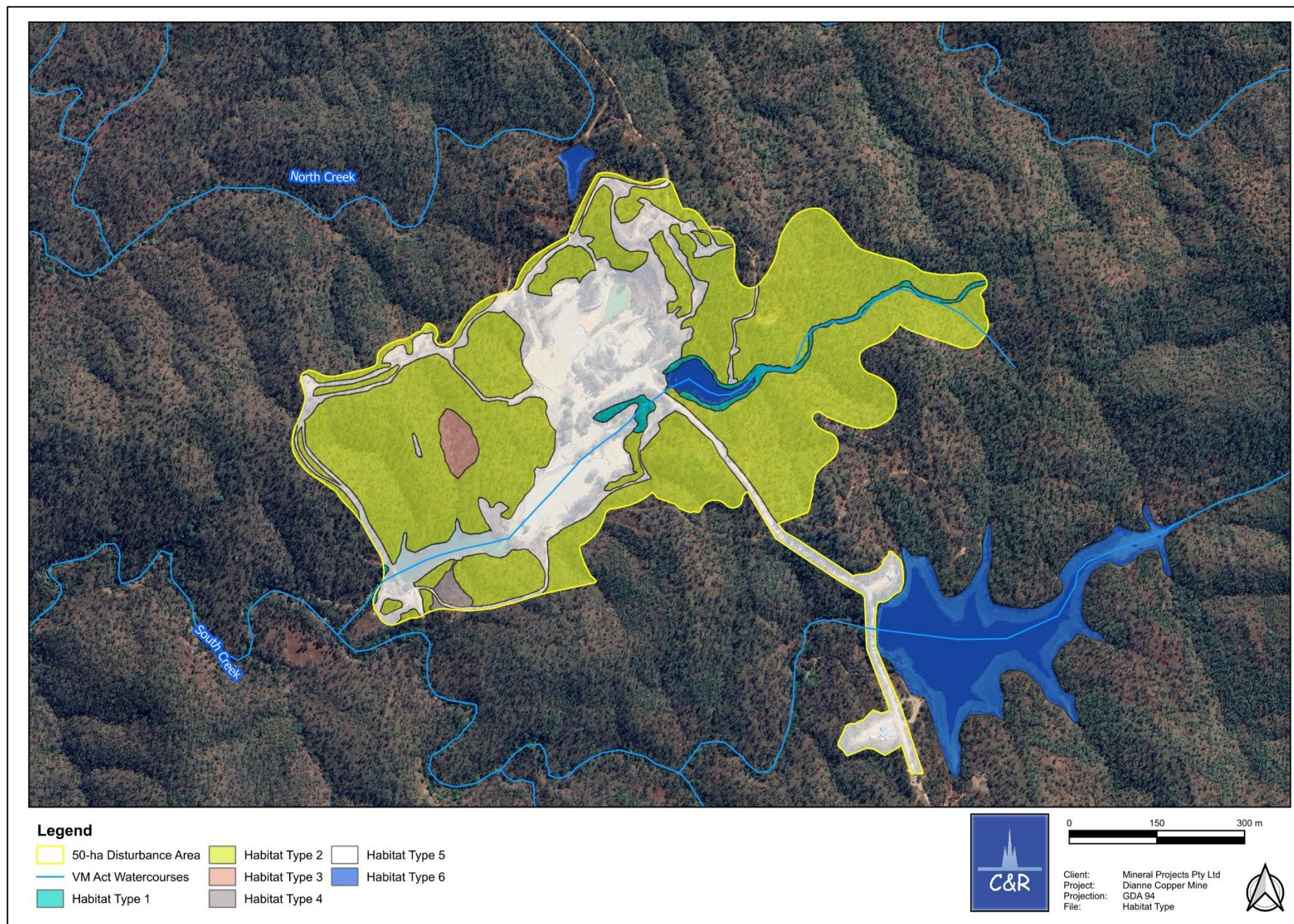


Figure 22: Distribution and extent of each habitat type within the study area.

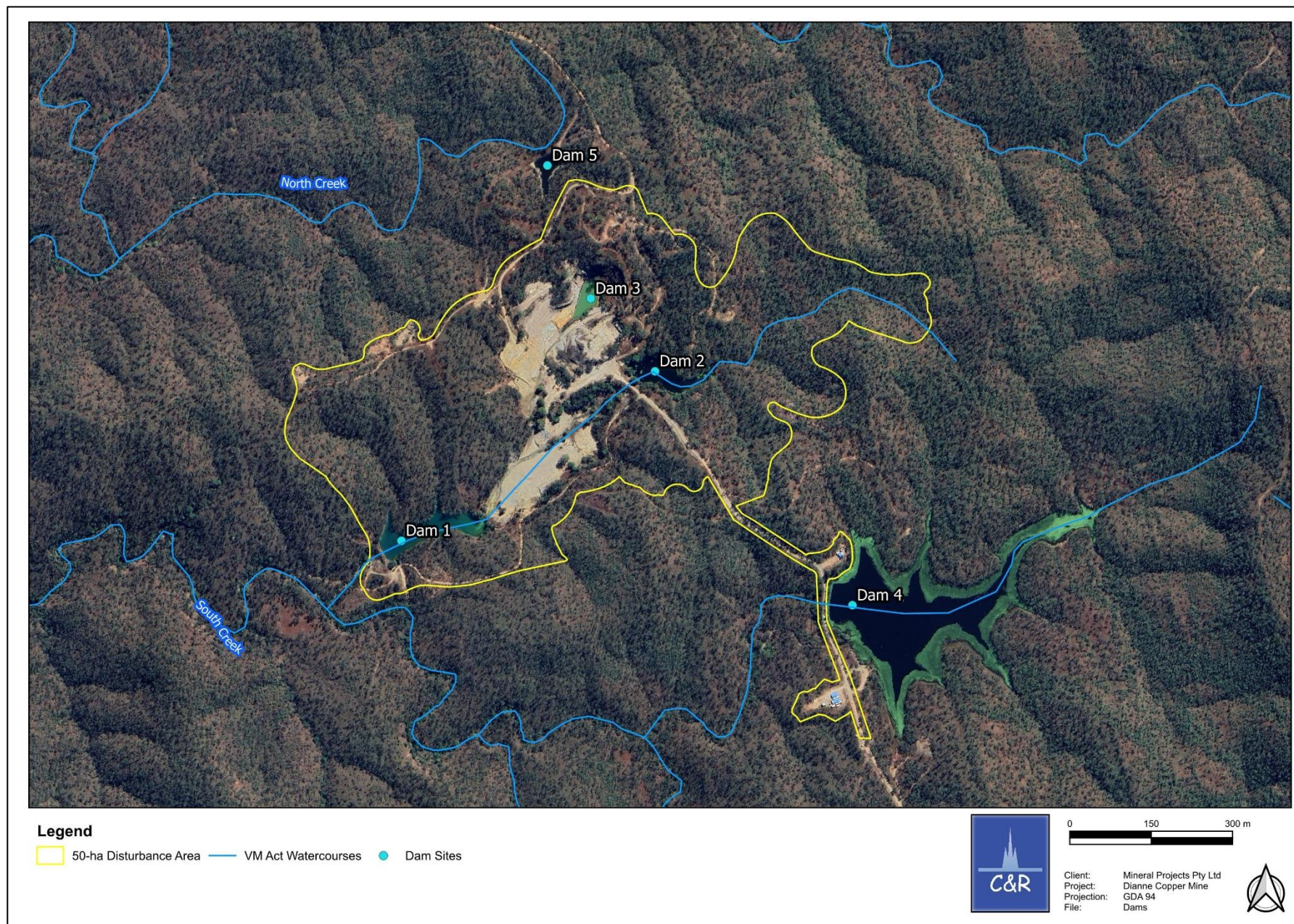


Figure 23: Location of dams in and within close proximity to the site.

6.4.2.2 Fauna Species Diversity

A total of 160 terrestrial fauna species were recorded during the survey, including 110 birds, 17 reptiles, seven (7) amphibians and 26 mammal species. A complete fauna species inventory has been presented in Appendix G. A discussion of each major taxon has been provided in sections 6.4.2.3 to 6.4.2.6. Only one species of conservation significance was recorded during the survey. Mertens' water monitor (*Varanus mertensi*) was observed on several occasions at Dam 4 and Dam 5 – and at Dam 6, located approximately 1.5 km south of the project site.

It is possible that some other EVNT species could occur in the area, as identified through the species likelihood of occurrence assessment (Section 6.4.1.1, Table 8).

6.4.2.3 Birds

A total of 270 person hours of bird survey was conducted over 16 days and four surveys, identifying a total of 110 bird species. One listed migratory species, the satin flycatcher (*Myiagra cyanoleuca*) was observed at Dam 1, Dam 4 and Dam 5 on a number of occasions throughout the early wet and wet season surveys. No bird species listed as threatened were identified. Bird species were observed across a variety of habitat types, including open savannah woodlands, along ridges and gullies with simple, riparian vegetation, in areas with a dense, grassy understory, at the numerous, large wetlands and dams, and within cleared areas. Dams 2, 4 and 6 were found to have the greatest diversity of bird species. This included water birds such as the royal spoonbill (*Platalea regia*), Australasian darter (*Anhinga novaehollandiae*), comb-crested jacana (*Irediparra gallinacea*), cormorants (*Phalacrocorax* spp.), and green pygmy goose (*Nettapus pulchellus*), as well as other woodland birds such as azure kingfisher (*Ceyx azureus*), forest kingfisher (*Todiramphus macleayi*), red-backed fairywren (*Malurus melanocephalus*), scarlet honeyeater (*Myzomela sanguinolenta*) and noisy friarbird (*Philemon corniculatus*).

Species commonly observed in more densely vegetated gullies and around dam margins included Australasian figbird (*Sphecotheres vieillotii*), yellow honeyeater (*Lichenostomus flavus*), white-throated honeyeater (*Melithreptus albogularis*) and brown-backed honeyeater (*Ramsayornis modestus*; Figure 24). White-bellied cuckoo-shrike (*Coracina papuensis*), little bronze-cuckoo (*Chalcites minutillus*), white-throated gerygone (*Gerygone albogularis*) and pale-headed rosella (*Platycercus adscitus*) were also commonly observed in open woodland areas.



Figure 24: Brown-backed honeyeaters nesting in vegetation overhanging Dam 5.

Nocturnal bird species such as the Australian owlet nightjar (*Aegotheles cristatus*), Australian boobook (*Ninox novaeseelandiae*) and tawny frogmouth (*Podargus strigoides*) were observed foraging and in flight during spotlighting surveys. The barking owl (*Ninox connivens*) was heard calling in the vicinity of Dam 4 on two occasions.

Raptor species such as the whistling kite (*Haliastur sphenurus*), nankeen kestrel (*Falco cenchroides*) and peregrine falcon (*Falco peregrinus*) were frequently observed across the site. Others such as the brown goshawk (*Accipiter fasciatus*) and collared sparrowhawk (*Accipiter cirrocephalus*; Figure 25) were recorded foraging in woodland areas where small prey such as the double-barred finch (*Taeniopygia bichenovii*) was abundant.



Figure 25: Collared sparrowhawk (*Accipiter cirrocephalus*) at Dam 1.

No red goshawks were observed and no evidence of nests or breeding activity was detected within the site. Foraging habitat was present throughout the vegetated areas and plentiful prey items (e.g. small birds) were available, as described above. The site was not assessed as habitat critical to the survival of this species due to the lack of emergent trees in the vicinity of watercourses which are required for nesting.

The white-throated needletail (*Hirundapus caudacultus*) was assessed as having a moderate likelihood of occurrence over the site. However, it is an almost entirely aerial species that does not breed in Australia. Consequently, the potential impacts of the proposed project are likely to be negligible for this species, and the site was not assessed as habitat critical to the survival of this species. The following sections provide an overview of the assessment of habitat critical to the survival of threatened birds that could occur in the area.

Site-Specific Assessment of Habitat Critical to the Survival of the Gouldian Finch

Although some finch species were observed, including the black-throated finch (northern) (*Poephila cincta atropygialis*) and double-barred finches, no Gouldian finches (*Erythrura gouldiae*) were recorded during any of the surveys. Some suitable foraging habitat exists for this species within the site, with a diversity of annual and perennial, native forage grasses recorded and permanent water within the dams (Table 8). However, the site is not considered habitat critical to the survival of this species. The lack of hollows required for nesting would be a limiting factor for the Gouldian finch within the site. Further, no significant populations of the species are known from the general area, and key populations of this species are only recognised in the Northern Territory and Western Australia, where breeding is known to occur.

Figure 26 shows to extent of potential foraging and watering habitat for the Gouldian finch within the project site, which includes 33.34 ha of woodland and riparian habitat.

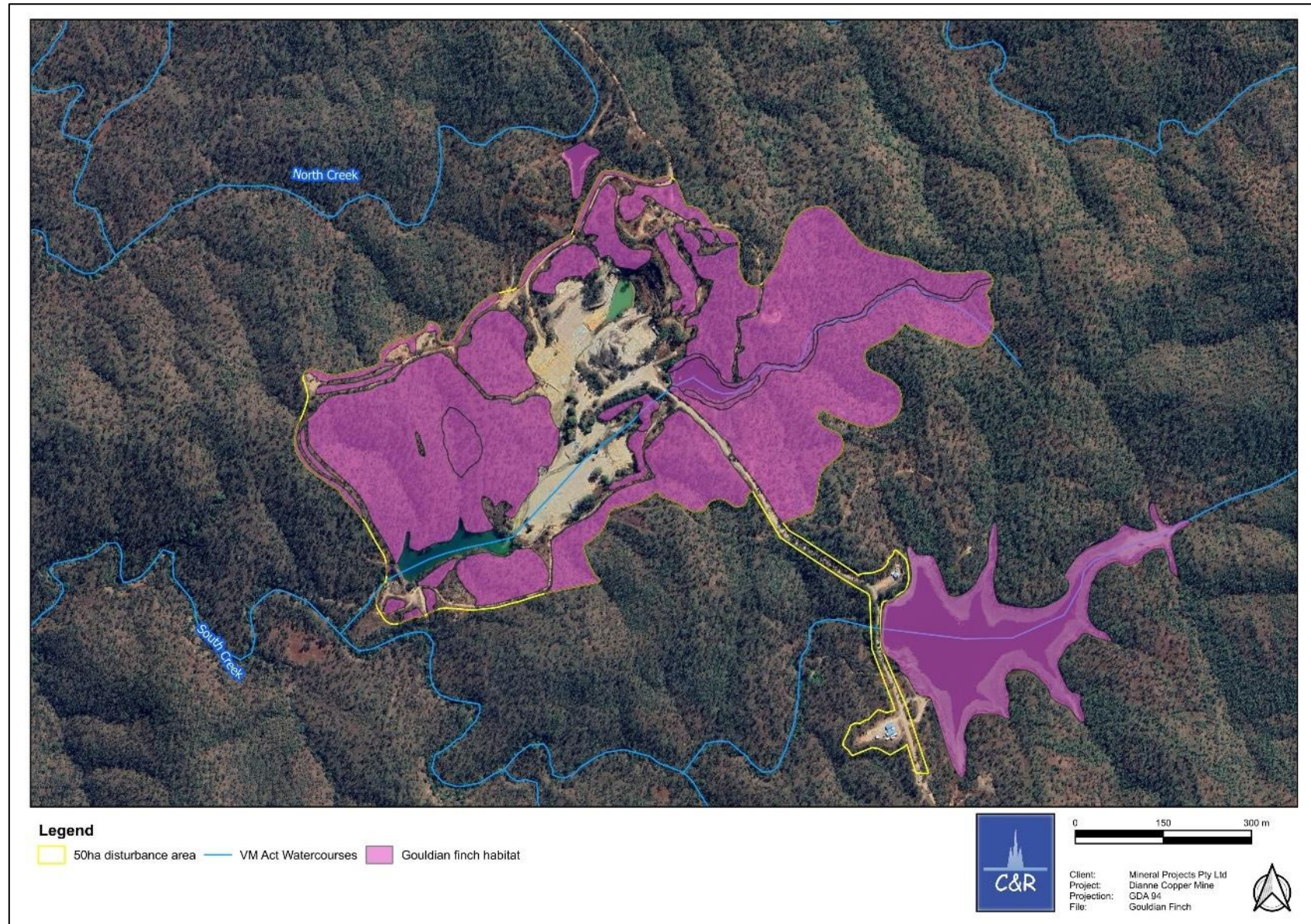


Figure 26: Potential habitat for the Gouldian finch.

Site-Specific Assessment of Habitat Critical to the Survival of the Buff-Breasted Button-Quail

There has been a considerable effort to locate populations of the buff-breasted button-quail in recent years (Garnett and Crowley, 2000, Webster et al., 2024). These searches were conducted at the known and potential locations, including sites in the Iron Range, around Coen, Mount Molloy and Mareeba, and from Atherton to Georgetown, as part of broad-scale surveys coordinated by Conservation Partners in collaboration with First Nations people, BirdLife Australia, Research and Recovery of Endangered Species (The University Of Queensland [UQ]) and Cape York Natural Resource Management (NRM) to determine the status of the species. No confirmed sightings of the species with tangible evidence were made during any of the targeted searches, and it is considered that this species may already be extinct (Conservation Partners, 2024).

For decades, bird watchers and conservation scientists had rest assured that a population of the buff-breasted button-quail occurred across the northern region of the Atherton Tablelands in north Queensland (Conservation Partners, 2024). However, new evidence strongly suggests that birds in this region were actually being confused with the more common painted button-quail. It is now thought that the buff-breasted button-quail has probably never occurred near the Atherton Tablelands (Conservation Partners, 2024). One indisputable fact is that there has been no tangible evidence produced of the existence of the buff-breasted button-quail for over 100 years (Conservation Partners, 2024).

Photos captured in the 1920s show that the Coen sites – where the species definitely occurred – consisted of open, stringy bark forests with an understory of perennial grasses (Conservation Partners, 2024). Recent visits to these same places have revealed that they are now thick with mid-story trees and most of the perennial grasses have gone. Grazing pressure and changed fire patterns is believed to have driven this change. It is assumed that this is why buff-breasted button-quail have now disappeared from these locations.

Given the extensive search efforts since 2018 in the southern Cape York region (including several sites surrounding the project area) with no recorded sightings, and a lack of stringy bark forest within the site itself, this species was assessed as unlikely to be encountered within the project site. No buff-breasted button-quails were identified. However, painted button-quails (*Turnix varius*) were recorded on one of the remote cameras in the western part of the site and observed at close range at Dam 4 (Figure 27). The painted button-quail is distinguished by the pale spotting on the forehead, darker and more variegated black, rufous-brown, grey and white upper body and wing-coverts, and dark red eyes compared to the bright-yellow eyes of the buff-breasted button-quail.

Nonetheless, woodland habitat within the site meets the definition provided in the Species Profile and Threats (SPRAT) database (DCCEEW, 2024e). As a result, 33.34 ha of woodland and riparian habitat has been mapped as potential habitat for the species, if it should occur in the area (Figure 28).



Figure 27: Painted button-quail (*Turnix varius*) recorded on a remote camera in woodland in the western part of the site.

Site-Specific Assessment of Habitat Critical to the Survival of the Australian Painted Snipe

The project area is within the indicative distribution map for the Australian painted snipe provided in the report by the Commonwealth of Australia (2022). However, suitable habitat for this species within the site was restricted mostly to the margins and vegetation along the banks of Dam 4, where a mosaic of low, patchy vegetation – including rank, emergent tussocks of grass, sedges, rushes and reeds – occurred (Marchant and Higgins, 1993). Some marginal foraging habitat around Dam 2 and Dam 5 also exists on a temporary basis in the late wet season, when water levels have dropped enough to expose the shallow edges of these dams. By applying a 5 m buffer around dams 2, 4 and 5 (to capture the extent of suitable vegetation and habitat around these water sources), a total area of 1.61 ha of potential foraging habitat – defined as habitat critical to the survival of the species – has been mapped within and immediately adjacent to the project site (Figure 29).

Given that there is no clearing or disturbance proposed around Dam 4 and Dam 5, the project will result in the loss of only 0.21 ha of foraging habitat around Dam 2. No nesting habitat was identified at any of the dams within or in the vicinity of the project area.

Site-Specific Assessment of Habitat Critical to the Survival of the White-Throated Needletail

The project area is within the indicative distribution map for the white-throated needletail provided in the SPRAT database for the species (DCCEEW, 2024j). However, considering that habitat use in Australia is restricted to foraging on insects and limited roosting in hollow-bearing trees, habitat critical to the survival of this species is considered unlikely to be present within the project site (no breeding and very limited roosting). The loss of approximately 33 ha of potential foraging habitat (over remnant woodland and riparian communities) is not considered significant enough to impact the persistence of this species, given the broad range and vast extent of suitable habitat types in the surrounding landscape.

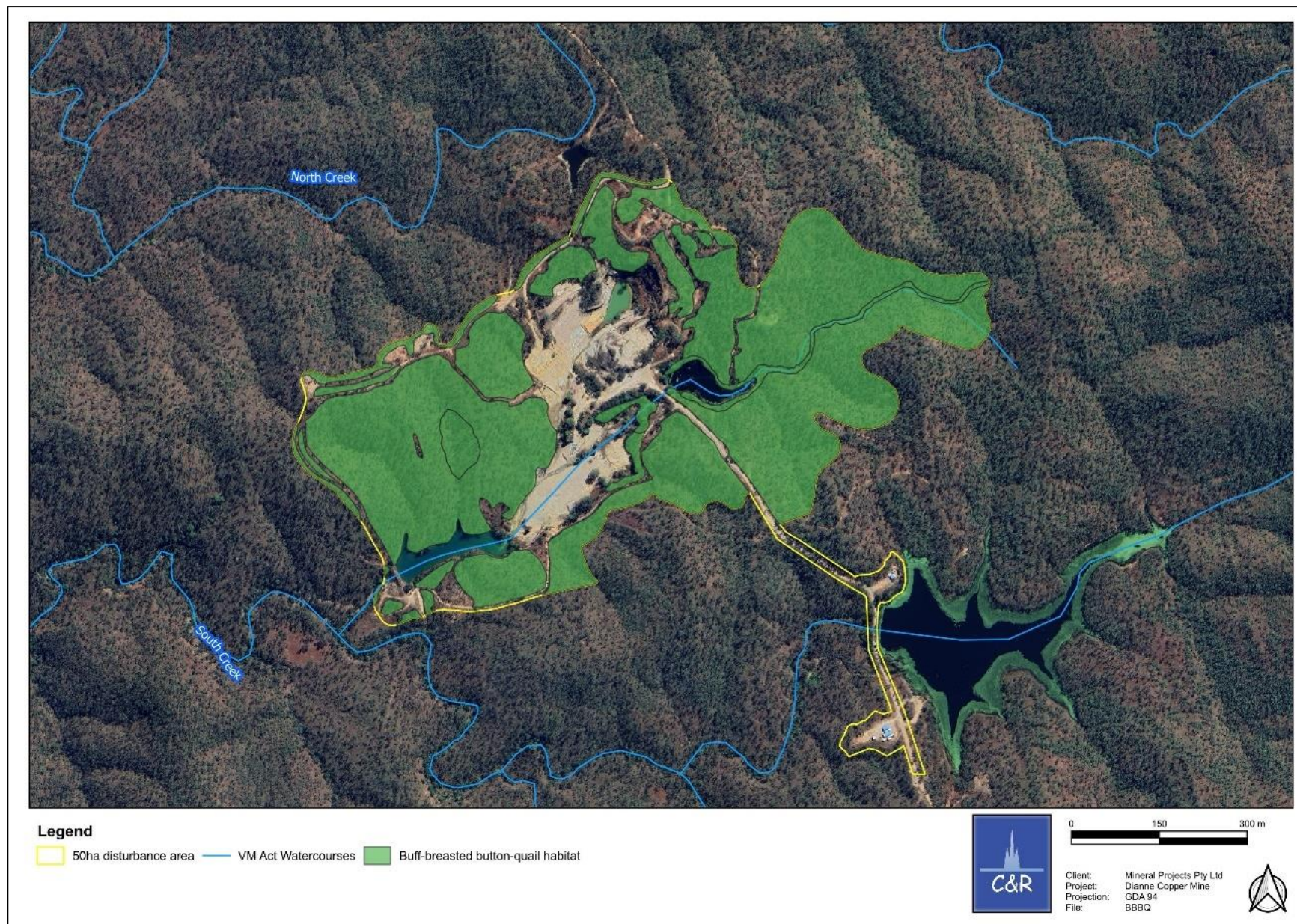


Figure 28: Potential habitat for the buff-breasted button-quail.

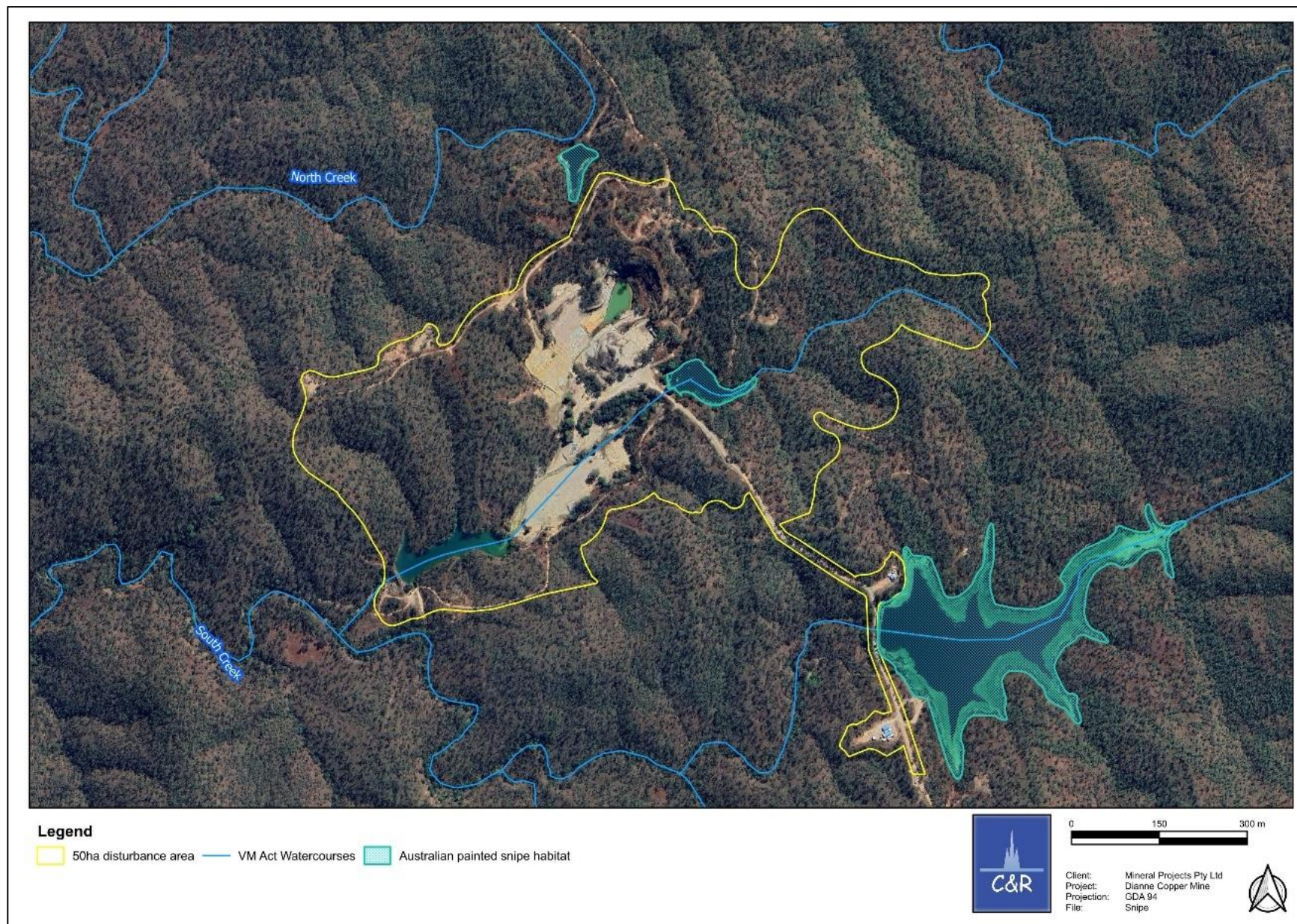


Figure 29: Habitat critical to survival for the Australian painted snipe, including open waters (dams 2, 4 and 5) and vegetated dam margins.

6.4.2.4 *Reptiles*

A total of 17 reptiles were identified within or in close proximity to the site during the surveys. This included 16 *least concern* reptile species, and one endangered species, the Mertens' water monitor (*Varanus mertensi*; Figure 30).



Figure 30: Mertens' water monitor, recorded at dams 4, 5 and 6.

Eight skink species were recorded, including five *Carlia* species, two *Cryptoblepharus* species and one *Ctenotus* species. Four snake species were also identified, including the black-headed python (*Aspidites melanocephalus*; Figure 31). Three geckoes were documented, including the introduced Asian house gecko (*Hemidactylus frenatus*). One species of legless lizard (*Lialis burtonis*) was also recorded.



Figure 31: Black-headed python (*Aspidites melanocephalus*) recorded during the surveys.

Mertens' water monitor was recorded at both dams outside of the project site (dams 5 and 6), as well as Dam 4 (proposed raw water dam) – but not at dams 1, 2 and 3 within the project area. This semi-aquatic species seldom ventures greater than 5–10 m from the edge of the water, except when transiting among core aquatic activity areas (Mayes, 2006). It is adept at climbing on rocks and trees near water. It often basks on branches overhanging the water or on rocks in the middle of streams.

The following section provides an overview of the assessment of habitat critical to the survival of Mertens' water monitor within the project site.

Site-Specific Assessment of Habitat Critical to the Survival of the Mertens' Water Monitor

As described in Section 5.6.9.7, habitat critical to the survival of the Mertens' water monitor includes all areas where this species is persisting following the establishment of cane toads, as well as areas within its recorded distribution that provide connectivity among remnant subpopulations.

In accordance with the definition above, the project area itself contains 0.55 ha of habitat associated with Dam 2. Further, Dam 4 – which is outside of the mine construction footprint but proposed for use as the raw water supply – covers an area of approximately 7.7 ha of habitat that would be considered critical to the survival of the Mertens' water monitor. In addition, the drainage lines and creeks traversing the site, covering 0.94 ha, may also provide connectivity between dams and other surrounding water sources.

With records to the immediate north and south of the project area, it is likely that these waterbodies provide connectivity among remnant subpopulations across the broader landscape.

The absence of suitable habitat for basking at dams 1 and 3 – as well as the low pH at Dam 1 – may explain the lack of records at these sites. Both dams are within non-remnant, highly disturbed areas and were not assessed as habitat critical to the survival of this species.



At dams 4, 5 and 6 where the species was frequently recorded, it was observed swimming between – and climbing out of the water onto – dead trees and stags that were scattered throughout the water.

Habitat for the Mertens' water monitor within and near the project site is displayed in Figure 32.

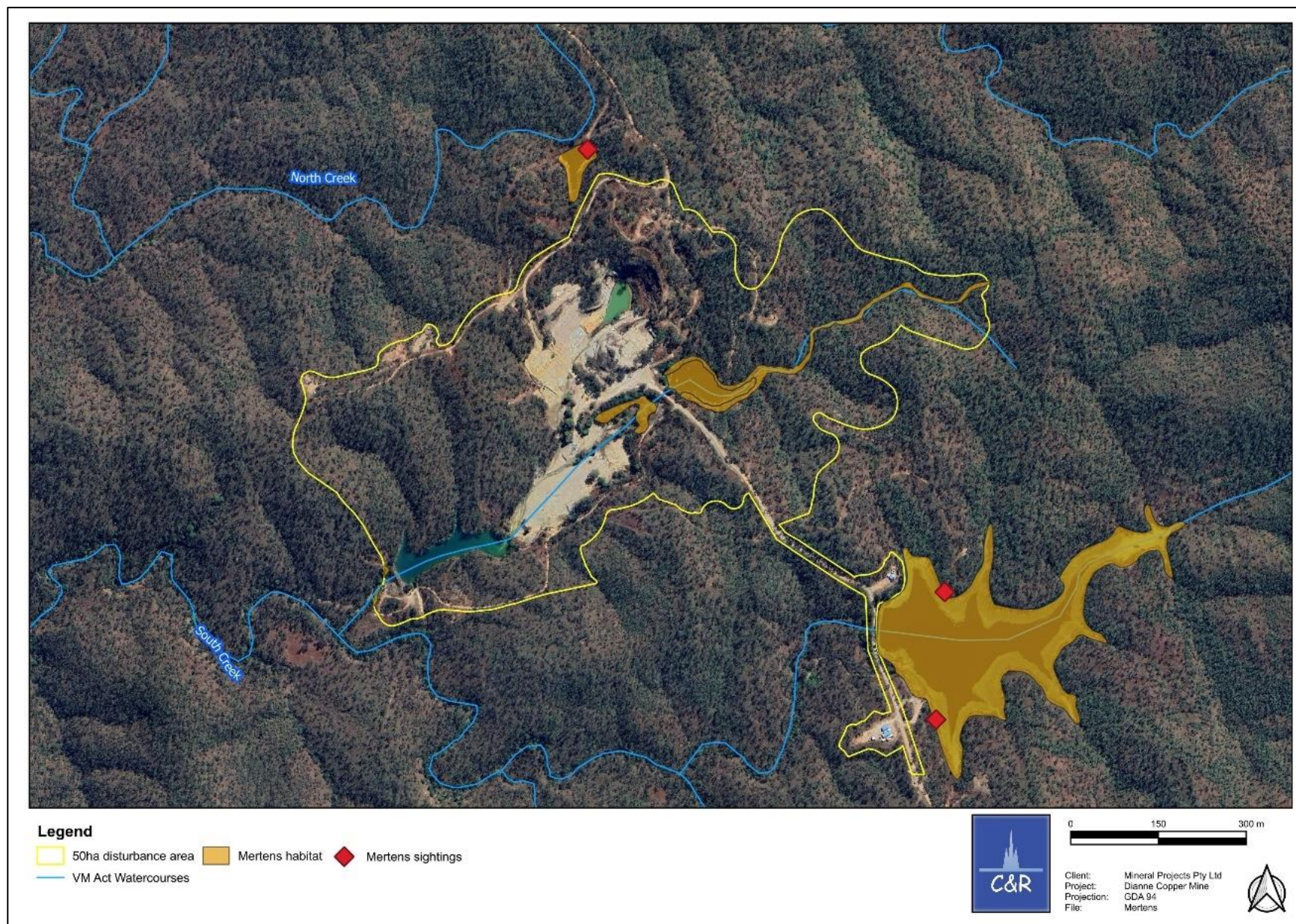


Figure 32: Habitat for the Mertens' water monitor.

6.4.2.5 *Amphibians*

Seven amphibian species were identified during the surveys, including five treefrogs, one burrowing frog and the introduced cane toad (*Rhinella marina*).

Amphibian habitat across the study area would vary on a seasonal basis due to the non-perennial nature of the watercourses and drainage lines. However, the dams and wetlands would provide more permanent habitat. Similarly, several species of frogs were recorded around the mine camp (e.g. northern laughing treefrog: Figure 33), with access to water in outdoor sinks and in the ablution facilities.

The desktop searches identified three threatened frog species with the potential to occur within the site. However, all three of these species are wet sclerophyll / upland rainforest specialists requiring fast-flowing, rocky streams with rocky outcrops and overhanging vegetation. This habitat does not occur within the site. No amphibian species of conservation significance were recorded during the survey, nor are any considered likely to occur in the project site.



Figure 33: Northern laughing treefrog (*Litoria rothii*) recorded at Dam 2, Dam 4 and at the mine camp.

6.4.2.6 *Mammals*

Overall, mammal diversity within the site across all surveys was very low, despite over 74 person hours of spotlighting, 368 camera trapping nights, and extensive active searches over four seasonal surveys. Only three small-medium, native species were recorded within the site, including the rakali (Australian water-rat; *Hydromys chrysogaster*), the northern brown bandicoot (*Isodon macrourus*; Figure 34) and the brushtail possum (*Trichosurus vulpecula*).



Figure 34: Northern brown bandicoot (*Isoodon macrourus*) recorded at numerous locations throughout the site on remote cameras.

Desktop searches identified that koalas are potentially in the project area. The site is outside of the current, predicted distribution of the species as shown in the SPRAT database mapping (DCCEEW, 2024e), with the nearest (and most northern) record of the species located approximately 125 km to the south. Nonetheless, the site contains and is surrounded by vast tracts of remnant eucalypt woodlands which could be utilised by koalas if they do occur in the area.

Consequently, habitat assessments and targeted searches for koala were undertaken, including searching for signs of occurrence, such as scats, scratch marks and urine stains on the trunks of eucalypt trees. Further, koalas were looked for while traversing the site on foot and by vehicle, and during spotlighting. No signs of koala occurrence were identified during the surveys.

With the exception of the brushtail possum, which was identified by its scats, no other arboreal mammals were recorded. Further, no scratch marks were identified on the larger, smooth-barked trees within the site.

Two additional, native mammal species were recorded within 10 km of the site:

- The eastern grey kangaroo (*Macropus giganteus*) east of Fiery Creek to the southeast of the site; and
- The little red flying-fox (*Pteropus scapulatus*), along the Palmer River in flowering melaleucas during spotlighting.

No evidence of large macropods was identified within the site. Dingoes were observed on several occasions within the site and captured on several remote cameras. Three dingo scats were collected for analysis to determine prey species, which included skink (unknown species), feral pig, northern brown bandicoot and grass. At least one *Rattus* sp. was captured on remote cameras, although this rodent could not be identified to species level due to the quality of the image.

A total of 13 microchiropteran bat species (microbats) were confirmed during the surveys, as well as the undifferentiated *Nyctophilus* genus. Two *Nyctophilus* species, *N. geoffroyi* and *N. bifax*, potentially occur in the study area.

Two additional, unresolved call groups potentially represent two further species. These include *Pipistrellus adamsi* whose characteristic frequency overlaps with that of *Miniopterus orianae oceanensis*. However, the pulses are generally of shorter duration, with a distinctive, hooked “body” with up-swept tail. Numerous calls were reliably attributed to *M. o. oceanensis*. Conversely, several calls had features intermediate between the two species and were thought to possibly belong to *P. adamsi*.

The second possible species was *Scotorepens sanborni*. Calls of this species are almost identical to those of *S. greyii* but usually at slightly higher frequency. Numerous calls were allocated to *S. greyii* but many could also represent either species.

No microbat species listed as threatened under the EPBC Act or NC Act were identified during the surveys. Roosting and breeding habitat for microbats was very limited within the site. No caves or rock crevices were present, and very few tree hollows recorded.

Several introduced species were also recorded within the site, including the feral pig (*Sus scrofa*), feral cat (*Felis catus*), cattle (*Bos taurus*) and brumbies (*Equus caballus*).

The northern quoll was initially assessed through the desktop assessment as having a moderate likelihood of occurrence within the site. Consequently, habitat assessments, active searches and targeted surveys were undertaken for this species, outlined subsequently.

Site-Specific Assessment of Habitat Critical to the Survival of the Northern Quoll

The habitat assessments determined that the site is unlikely to provide critical denning and breeding habitat for northern quoll due to the lack of rocky areas and outcrops, very few tree hollows or hollows logs, and sparse termite mounds and goanna burrows. All of these may be used for shelter by this species (DCCEEW, 2024h).

However, the referral guideline for northern quoll (DoE, 2016) defines foraging or dispersal habitat as any land comprising predominantly native vegetation in the immediate area (i.e. within 1 km) of shelter habitat, quoll records, or land comprising predominately native vegetation that is connected to shelter habitat within the range of the species. This definition was applied to the habitat features within the project site and areas defined as foraging and/or dispersal habitats. Approximately 33 ha of remnant woodland and riparian vegetation within the site was assessed as potential dispersal and foraging habitat for this species (Figure 35).

Northern quolls were targeted during fauna surveys. Camera traps spaced in transects approximately 100 m apart targeted potential movement and dispersal corridors. The camera traps were baited with a combination of universal bait (peanut butter, honey, oats and vanilla), dried sardines and chicken (fresh and dried). A total of 368 camera trapping nights were undertaken and no northern quolls were detected. Signs of quolls – such as scats and latrines – were also searched for.

Site-Specific Assessment of Habitat Critical to the Survival of the Large-Eared Horseshoe Bat

The habitat assessments determined that the site is unlikely to provide critical roosting and breeding habitat for the large-eared horseshoe bat due to the lack of hollows, rocky areas (crevices and caves), and outcrops, culverts, overhanging banks of creeks, and other areas potentially used by this species for roosting and breeding. It is possible that the woodland and riparian habitat may be used for foraging and flyover at times, and the dams may be used for drinking and foraging for insects on the wing over water bodies. No large-eared horseshoe bats were identified through ultrasonic bat call recordings during any of the surveys.



Habitat for the large-eared horseshoe bat within and near the project site is displayed in Figure 36.

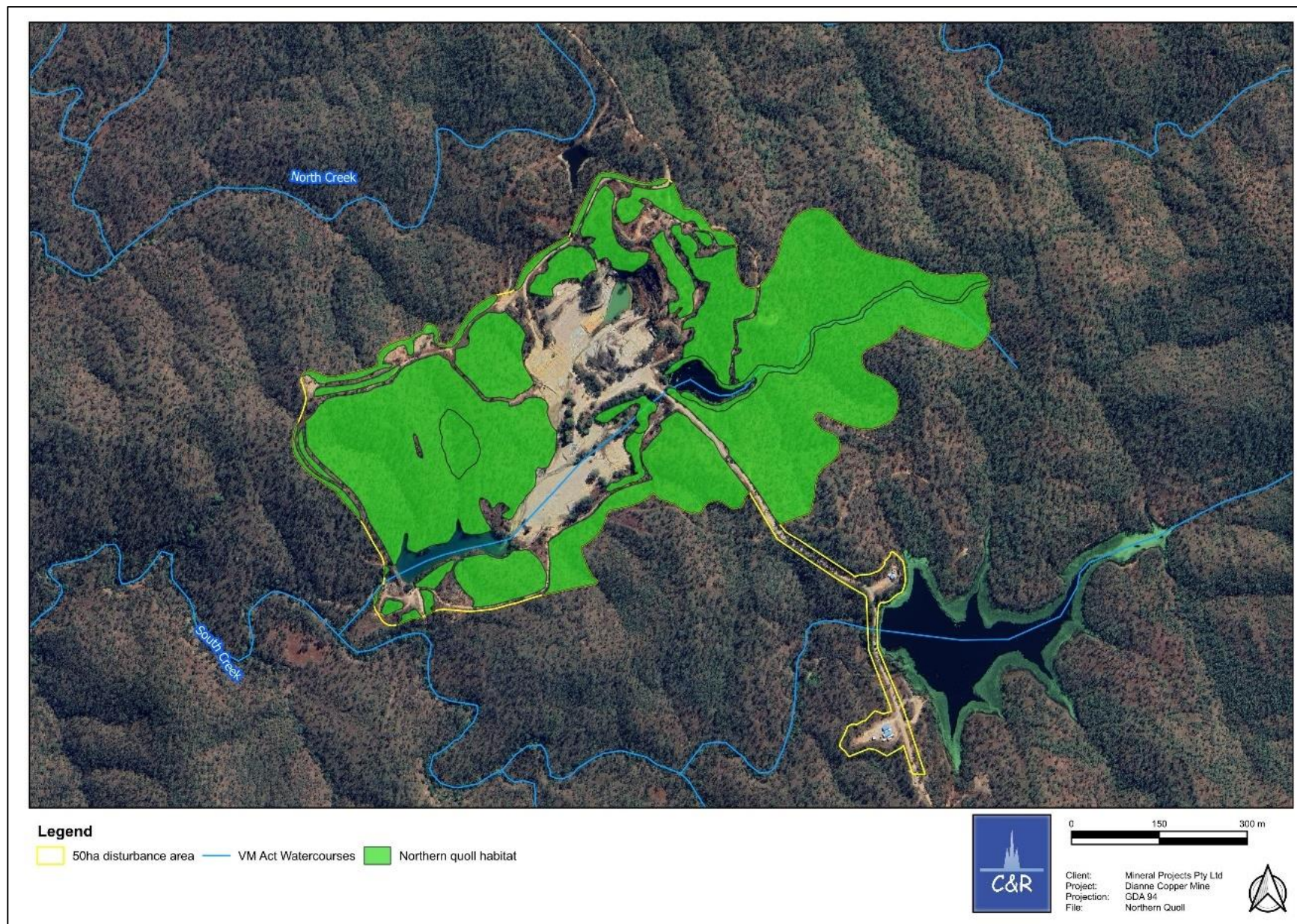


Figure 35: Potential habitat for northern quoll.

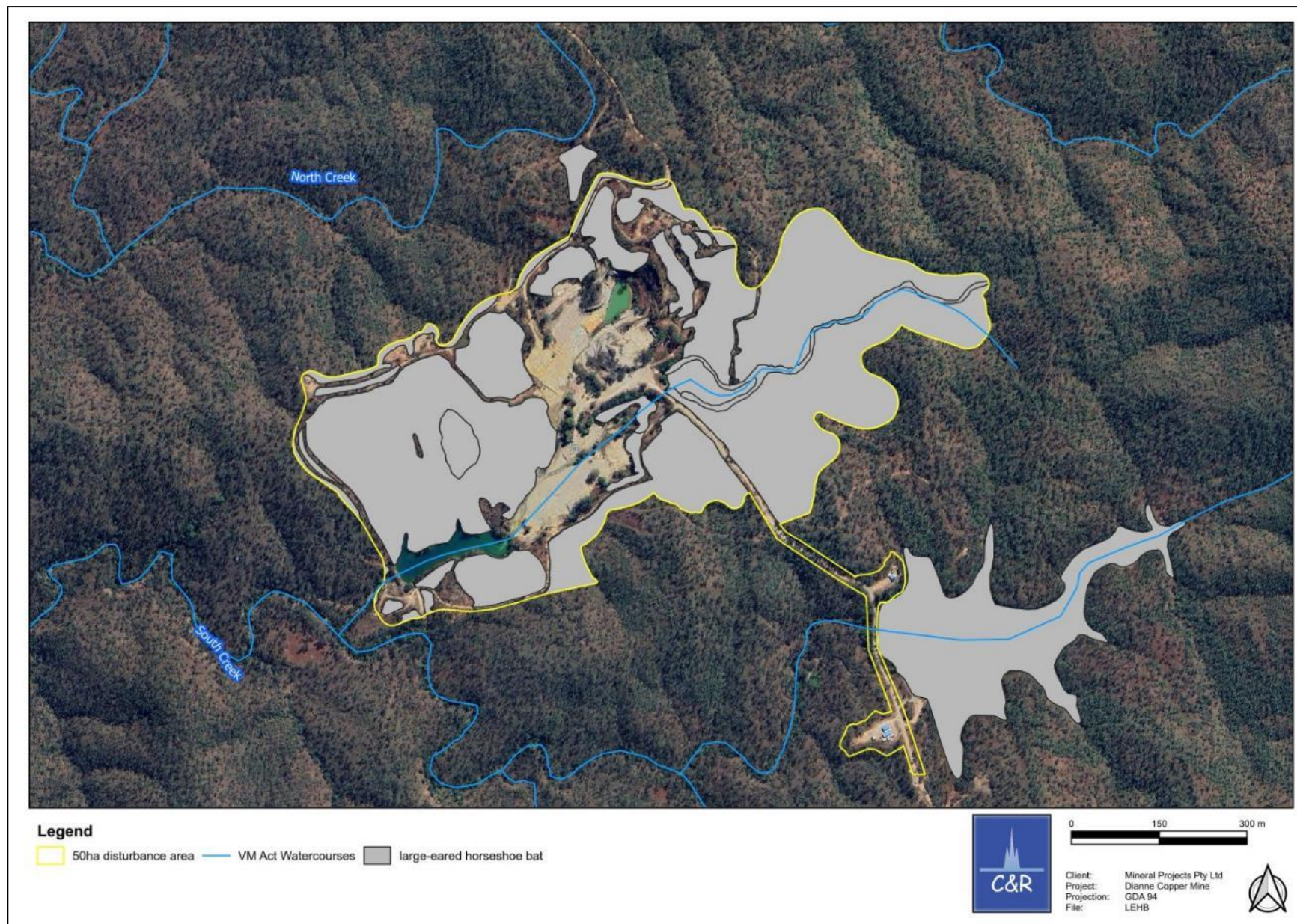


Figure 36: Potential habitat for the large-eared horseshoe bat.

7. POTENTIAL IMPACTS

7.1 POTENTIAL FLORA IMPACTS

7.1.1 VEGETATION CLEARING

Direct impacts to terrestrial flora communities from the proposed DCM expansion project are limited to the clearing or modification of vegetation. The overall, approximate extent of surface disturbance (clearing) associated with the project is 50 ha, including extraction and processing areas, waste rock emplacement, water management infrastructure and site access. The 50 ha project area (Table 13) includes approximately:

1. 16.12 ha mapped as non-remnant (i.e. has historically been cleared for the previous mining operations);
2. 33.09 ha mapped as remnant, with:
 - 32.15 ha comprised of woodland habitat consistent with RE 9.11.3a;
 - 0.94 ha of riparian vegetation consistent with REs 9.3.14a/9.11.3a; and
3. 0.28 ha identified as regrowth vegetation consistent with RE 9.11.3a.

All of the REs within the 50 ha project area have a biodiversity status of *no concern at present* and a VM Act status of *least concern*. The clearing required for this project is unlikely to change the biodiversity status or VM Act status of any of the REs present. All the native vegetation communities / REs to be cleared occur widely in the surrounding landscape and subregion. Therefore, the clearing of the 33.09 ha of remnant vegetation across the project area is unlikely to cause a significant reduction in the extent of these vegetation communities within the region. Note: An assessment of the potential for a significant, residual impact to the MSES (regulated vegetation intersecting a watercourse) is detailed in Section 7.1.3.

Table 13: Clearing extent of habitat types within the project site.

Habitat type	Vegetation structure category	Extent of clearing (ha)
Habitat type 1 (riparian)	Sparse to mid-dense	0.94
Habitat type 2 (ironbark dominated 9.11.3a)	Sparse	31.62
Habitat type 3 (bloodwood dominated 9.11.3a)	Sparse	0.53
Habitat type 4 (regrowth vegetation)	Very sparse	0.28
Habitat type 5 (non-remnant vegetation)	Open/cleared	16.12 (already cleared)
Habitat type 6*	Open water	0.55
Total		50.04

*Dams 1 and 3 are within mapped non-remnant areas and have been included in the non-remnant calculation above (Figure 23). A total vegetation area of 0.55 ha will be cleared at Dam 2. It is not expected that vegetation clearing will be required at Dam 4. Dams 5 and 6 are located outside of the project footprint.

7.1.2 CONSERVATION SIGNIFICANT FLORA

Although habitat for conservation significant flora is recognised within the development footprint, no conservation significant flora species were identified during the field survey (refer to Section 6.3.3). It is unlikely that any direct impacts to conservation significant flora will occur as a result of the proposed DCM expansion project. Rehabilitation will have to occur as a standard practice for mining activities.

7.1.3 REGULATED VEGETATION POTENTIAL IMPACTS TO MATTERS OF STATE ENVIRONMENTAL SIGNIFICANCE

No *endangered* or *of concern* REs were identified within the development footprint as part of the desktop review or during the onground verification of vegetation communities.

The only MSES identified within the study area was regulated vegetation intersecting a watercourse, with a 1st-order watercourse mapped within the project area. The extent of the regulated vegetation intersecting a watercourse is defined by a separation distance from the defining bank of the watercourse, in accordance with the table and diagrams presented in Schedule 2, clause 2, subsections (5) and (6) of the EO Regulation. The EO Regulation takes into account the bioregion that the watercourse occurs within, the order of the watercourse and the RE present.

In this instance, the site is located in the Hodgkinson Basin (9.3) subregion of the Einasleigh Uplands bioregion. Under the EO Regulation, all remnant vegetation within 10 m of the defined bank of a 1st-order watercourse within this bioregion is considered regulated vegetation. When this separation distance is combined with the length of the watercourse that it is still vegetated (i.e. not historically cleared for the previous operations), it is estimated that up to 1.042 ha of remnant vegetation intersecting a watercourse may be affected by the proposed development. The RE present on the site (9.11.3) has a sparse, structural category. The footnotes within the *Significant residual impact test – criteria Table 1* of the *Significant residual impact guideline – Queensland environmental offsets policy* (DEHP, 2014) states that ‘for a prescribed activity to have a significant residual impact on a regional ecosystem that is within the defined distance of watercourses, criteria 1 and 3 must be exceeded’.

Criterion 3 limits clearing within 5 m of the defining bank. However, clearing is likely to occur within 5 m of the defining bank throughout much of the disturbance area, suggesting that the proposed project exceeds this criterion. Criterion 1 limits clearing to <2 ha in REs with a sparse structural category in the REDD database (Queensland Herbarium, 2024). The estimated area – of remnant vegetation intersecting a watercourse to be removed by the development – is approximately 1.042 ha, far lower than the limit of 2 ha. Therefore, the proposed development will not exceed criterion 1. Based on this assessment, the proposed project will not have a significant, residual impact on the identified MSES occurring within the project boundary.

7.1.4 THREATENED ECOLOGICAL COMMUNITIES

No TECs were identified through either the desktop assessment or during the onground verification of vegetation communities. Therefore, TECs are not of concern to the project.

7.2 POTENTIAL FAUNA IMPACTS

The most significant impacts on fauna values from the project will occur during vegetation clearance and works associated with the establishment of project infrastructure. Potential impacts to threatened and migratory species during construction and operation include:

1. Vegetation clearance and habitat removal;

2. Fragmentation and edge effects;
3. Habitat disturbance and degradation (including impacts to water quality and dust emissions);
4. Fauna injury and/or mortality; and
5. Impacts from increased noise, vibration and lighting.

7.2.1 VEGETATION CLEARANCE AND ASSOCIATED HABITAT LOSS

7.2.1.1 *Impacts*

The most significant impact of the proposed project on terrestrial fauna will be loss of habitat through the clearing of vegetation. For the purposes of the current assessment, a worst-case scenario has been assumed, whereby all remnant and regrowth vegetation within the disturbance footprint (Figure 13) will potentially be removed. In that scenario, a total area of approximately 33 ha of remnant (and regrowth) vegetation would be cleared.

The removal of vegetation cover has the potential to reduce the available shelter, nesting, breeding and foraging habitat for *least concern*, *threatened* and *migratory* fauna species.

Table 13 outlines the proposed extent of clearance of each habitat type within the project footprint.

7.2.1.2 *Mitigation and Management Measures*

Due to the potential for vegetation clearing and associated habitat loss to have adverse impacts on threatened and migratory species, the measures listed below are recommended to avoid or minimise the extent and severity of these impacts:

1. Avoid any unnecessary clearing.
2. Mine infrastructure should be sited within already cleared or disturbed areas as far as practicably possible, including the use of existing access tracks for vehicle and machinery access. Where possible, maximise the use of degraded or less sensitive environmental areas when micro-siting infrastructure.
3. Where clearing is required, the clearing should be restricted to the minimum area required to allow effective completion of the construction elements and subsequent operation of the mine. This will allow vegetation and habitats to be retained within the project area, where possible.
4. Vegetation clearing should be undertaken in a sequential manner to allow fauna to relocate into areas of adjacent habitat.
5. Areas to be cleared should be surveyed in advance, marked-out and authorised by a suitably qualified person (ecologist) prior to clearing, to ensure no significant areas are inadvertently disturbed and no excessive clearing occurs. This includes the identification of animal breeding places.
6. All areas of temporary disturbance should be rehabilitated as soon as possible. Progressive rehabilitation of disturbed areas should be undertaken within 6 months of the completion of operations, in accordance with the progressive rehabilitation and closure plan (PRCP).
7. Where construction requires felling of vegetation, habitat features such as logs, hollows and coarse, woody debris should be retained on the site – and as close to where it was felled as possible without increasing fire hazards in the immediate vicinity of work areas. This will allow some habitat features to remain present.
8. Pre-clearance surveys – and relocation of animals prior to vegetation clearing – should be undertaken. Fauna salvage and relocation should continue for the duration of habitat clearance and construction. Where animal breeding places are identified and are to be

removed, a species management program for tampering with animal breeding places will be required. Such a permit may be '*high-risk*' for *threatened* or colonial breeding species, or '*low-risk*' for other *least concern* wildlife.

9. Pre-clearance searches of any denning, roosting or nesting habitat prior to and during construction should be undertaken. If active dens are found, any clearing (and earthworks) should cease until dens, roosts or nests are cleared.
10. Licensed and experienced fauna spotter-catchers should be present during all clearing activities.
11. Where required, any significant, residual impacts on environmental values should be adequately compensated through the provision of suitable offsets.

7.2.2 FRAGMENTATION AND EDGE EFFECTS

7.2.2.1 *Impacts*

The clearance of native vegetation can adversely affect native fauna species through fragmentation of habitat and populations. Fragmentation can reduce gene flow between small, isolated populations, reduce the potential for species to adapt to environmental change, and cause loss or severe modification of the interactions between species.

Edge effects associated with clearing vegetation and site disturbance are an important consideration given the increased potential for weeds, vegetation with high fire loads and pest species (including cane toads) to further penetrate into native vegetation. In addition, the risk of ignition and spread of fire is increased through the use of machinery and equipment that generate sparks, use of flammable chemicals, and changes to the structure or composition of vegetation.

7.2.2.2 *Mitigation and Management Measures*

Clearing of vegetation has the potential to fragment habitats of species and exacerbate adverse impacts through edge effects, in particular, the introduction and spread of weeds and feral animals.

To evaluate the potential for significant fragmentation and edge effects from the project, an assessment of regional habitat in the surrounding landscape was undertaken by applying a 50 km buffer around the project footprint, and analysing the extent and connectedness of remnant vegetation of a similar composition and structure to that within the project site. Given the size of the proposed project and the extent of contiguous, remnant vegetation in the surrounding landscape (Figure 37), significant fragmentation or barriers to movement are considered unlikely.

Measures that should be considered to minimise the level of fragmentation, lessen the severity of edge effects and reduce impacts to fauna habitat include the following:

- Infrastructure should be designed and positioned to support the continued movement of fauna species, such as siting along the existing edges of currently disturbed areas as far as possible.
- Measures should be taken to re-establish connectivity to the greatest, realistic extent following construction through rehabilitation in accordance with the PRCP.
- Work areas should be provided with adequate fire-fighting equipment and on-site staff should be adequately trained to use such equipment in the event of a bushfire.
- Vegetation clearance procedures should be implemented that minimise the potential to:
 - Introduce and/or spread weeds; or
 - Increase the risk of subsequent disturbance, including by feral animals and fire.

- Site-based environmental management plans should be prepared and should include development and implementation of specific measures to address weeds, feral animals and fire. Such measures should include the following:
 - Appropriate weed control measures such as washing machinery before entering the site and spraying roadways to ensure that the spread of weeds is restricted during construction and throughout the ongoing operation of the mine;
 - Areas of standing water should be kept to a minimum so as not to promote conditions for cane toads which can negatively impact species such as the northern quoll;
 - Monitoring and control of cane toads, wild dogs, feral cats and other pest animals should be considered;
 - Rehabilitation with fire-promoting species should not be undertaken.
- The project team should identify and map clear no-go zones to avoid unauthorised disturbance of areas of sensitive vegetation and habitat.
- Habitat features such as logs should be relocated to nearby areas, where practicable, to provide microhabitat for fauna.

Given the scale and nature of the project, it is considered unlikely that the proposed project will disrupt important movement corridors for fauna at a regional scale.

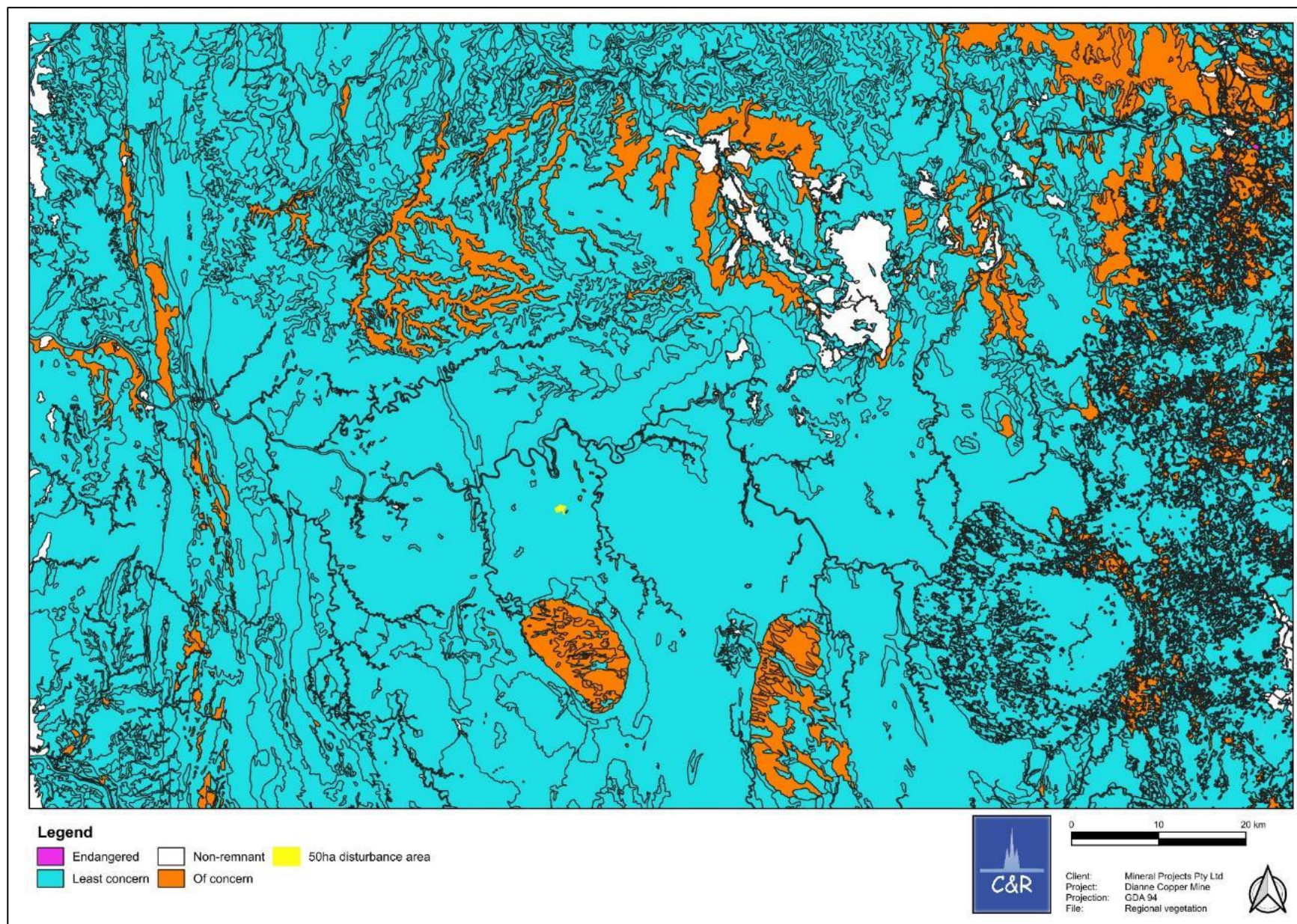


Figure 37: Assessment of landscape connectivity surrounding the project site.

7.2.3 HABITAT DISTURBANCE AND DEGRADATION (INCLUDING IMPACTS TO WATER QUALITY AND DUST EMISSIONS)

7.2.3.1 *Impacts*

In addition to the direct impacts associated with vegetation clearance, activities associated with the construction and operation of the mine have the potential to impact water quality and the local airshed.

Construction and operation activities have the potential to generate dust emissions. The main sources of dust will be during vegetation and soil clearing, construction activities – including moving, dumping and shaping material – and wheel-generated dust from unsealed access roads.

Excessive deposition of dust on leaves of plants can suppress growth and photosynthesis and result in reduced habitat quality for fauna. High levels of airborne dust particles can potentially irritate the respiratory systems of fauna and result in ingestion of dust-coated seeds and other foods. Excessive deposition of dust on open water bodies may also degrade water quality, and overall habitat quality for fauna.

Changes to hydrology (e.g. through installation of infrastructure that comprise obstacles to surface flows or additional stormwater run-off) can potentially impact the extent of local catchments, run-off characteristics, intensity of flood flows and stability of waterways.

Elevated levels of erosion transport of sediments across the site may result in biodiversity losses in affected areas. Scouring and/or waterlogging can also have deleterious impacts to local environments.

Inappropriate disposal of liquid and solid wastes, including spills and leaks from transfers (fuel, chemicals) and inadequate storage could result in point-source contamination of surrounding land, including habitats of threatened and migratory species. Direct, adverse impacts include toxic impacts on vegetation (resulting in degradation or loss), direct, toxic impacts on fauna (from contact, inhalation or ingestion) or indirect impacts on threatened and migratory species from habitat loss. Direct, adverse impacts on surface and groundwater quality are also possible.

7.2.3.2 *Mitigation and Management Measures*

The following measures are recommended to avoid or minimise the extent and severity of impacts to water and air quality resulting from project-related activities:

- Routine inspections of water bodies and watercourses is to be undertaken by site environmental representatives.
- Surface water quality monitoring is to be undertaken in accordance with the project EA. A receiving environment monitoring program (REMP) is in place and will continue to be implemented for the life of the project. Water quality objectives will be updated for the project to align with site-specific values when sufficient data are available and as required. The project water management plan will be updated and implemented.
- Regular groundwater monitoring is to be undertaken to monitor for changes in groundwater values over time. A groundwater monitoring program has been established to provide a baseline understanding of groundwater characteristics and will continue to be implemented for the life of the project.
- Existing dams are to be upgraded, and all water releases are to meet objectives in the EA.
- All chemicals, including hydrocarbons, will be managed in accordance with standard operating procedures for transport, handling and storage.

- Refuelling should be undertaken at a designated locations, which should be located away from ecologically sensitive areas (e.g. fauna habitat areas, creek lines).
- Solid waste should be transported to approved facilities outside the project area
- Spill management procedures should be developed and implemented. Spill kits and appropriately trained staff should be available at all times on site.
- Vegetation clearing near or within waterways or drainage features will be avoided when rain is falling or imminent to minimise the potential for sediment-laden runoff.
- Sediment traps will be installed and maintained in accordance with the project erosion and sediment control plan. This plan will identify all practices to be implemented prior to, during and after construction to minimise the potential for erosion to occur. Practices relate to timing of clearing activities, sediment and erosion control measures to be implemented, performance criteria and corrective actions. Monitoring and reporting protocols will be detailed within this plan.
- Monitor the efficacy of erosion control measures such that measures can be continually improved throughout the life of the mine.
- Access roads and exposed areas should be watered, if required, to minimise wheel-generated dust and dust lift-off.
- All vehicles, plant and equipment will be maintained and serviced regularly.
- All vehicles, plant and machinery will be cleaned regularly and are not to be overloaded. Project-generated dust will be managed in accordance with the project environmental management plan.
- The total amount of exposed area should be minimised through progressive clearing and rehabilitation.
- Maximum speed limits on non-sealed roads should be designated and should be adhered to at all times.
- Physical barriers such as bunds and/or wind breaks should be constructed around any dust-generating stockpiles.
- Water spraying of nearby, sensitive vegetation should occur if visible dust sedimentation is observed.
- Following construction of any embankments, top sides and external batters should be either topsoiled and seeded, or hydro-mulched.

7.2.4 DISTURBANCE, INJURY OR MORTALITY OF FAUNA

7.2.4.1 *Impacts*

Clearing of vegetation, soil stripping, earth works, vehicle movements and general mine operations have the potential to result in injury or mortality of fauna, particularly ground-dwelling fauna (e.g. reptiles) that may be crushed by machinery or struck by vehicles.

Vehicles may damage or destroy vegetation and fauna habitat whilst moving around the project area. This can be exacerbated if access roads are not an appropriate width and/or if vehicles deviate from established access roads. Vehicles and machinery may also kill or injure fauna on impact.

Increased activity by people within the construction and mine operation area and surrounds has the potential to disturb fauna. Fauna that roost or forage in adjacent areas are particularly vulnerable. Impacts can include disruption to foraging and roosting efficiency, or deterring animals from using particular areas that may have been used prior to the works beginning (resulting in the effective reduction in habitat availability).

Although a local impact on fauna may occur, the impact on fauna populations within the broader landscape is considered minimal. Nonetheless, the following mitigation measures (Section 7.2.4.2) are recommended to minimise potential impacts.

7.2.4.2 Mitigation and Management Measures

Mitigation measures to reduce the likelihood of injury or mortality to fauna – including aquatic and semi-aquatic fauna such as the Mertens' water monitor – include the following:

- All personnel working in the project area should be informed through environmental inductions and daily toolbox meetings of the presence of wildlife and the potential for them to be encountered, with a focus on the potential presence of threatened species.
- Fauna spotter-catchers should be used during all vegetation clearing activities to capture and relocate fauna prior to clearing/disturbance.
- Any injured, sick and dead vertebrate fauna will be recorded before, during and after construction and operation.
- All sick or injured wildlife will be taken to a veterinary surgeon as soon as practicably possible for assessment – or handed to a licensed and experienced wildlife carer, if no veterinary treatment is required.
- Appropriate procedures for managing injured wildlife should be developed and included in the project environmental management plans, accounting for the remote location of the project area.
- Pre-clearance surveys to identify shelters and breeding places potentially utilised by threatened and migratory species, colonial breeders and other *least concern* fauna should be undertaken prior to disturbance.
- No unauthorised off-track driving should occur.
- Drive to conditions and adhere to speed limits.

To prevent fauna from falling into and becoming trapped in excavations, one or more of the following strategies should be adopted:

- Check and safely remove and relocate any trapped fauna prior to the commencement of works each morning.
- Insert a large, rough-barked log (or rough plank) angled across (from top to bottom) each excavation to serve as an escape route for trapped fauna.
- Ensure all excavations have ramped edges or ends (45° angle).

7.2.5 NOISE, VIBRATION AND LIGHTING

7.2.5.1 Impacts

Noise and vibration levels greater than existing, ambient noise and vibration levels are expected during the construction and operation of the project. Sources of noise are likely to consist of noise in short, intense pulses from mobile plant and equipment, and more prolonged noise, with consistent vibration, pitch and volume from equipment such as generators and pumps, in addition to noise from vehicles.

Ground vibration induced by blasting, ore and waste rock truck movements, stockpiling, screening or crushing activities have the potential to disrupt wildlife habitats, alter fauna behaviour and affect ecological processes.

The presence and intensity of artificial light in the project area will increase during construction and operation of the mine. Artificial light can affect both nocturnal and diurnal animals by disrupting patterns, with quality of light (e.g. wavelength, colour), intensity and duration potentially evoking different responses. Impacts from increased light levels include

disorientation from – or attraction toward – artificial sources of light, mortality from collisions with structures and vehicles, and effects on light-sensitive cycles of species (e.g. breeding and migration for fauna and flowering in plants). An artificial increase in lighting may also increase the abundance and efficiency of predators. This could result in fauna avoiding some areas due to an increased, perceived risk of predation – or fauna may become more vulnerable to being preyed upon.

7.2.5.2 Mitigation and Management Measures

The implementation of a project environmental management plan will allow for best-practice environmental management to mitigate potential impacts resulting from noise, vibration and lighting. Such mitigation should include the following:

- Plant (machinery) with efficient muffler designs should be used.
- Vehicles, plant and equipment should be serviced regularly and maintained in accordance with manufacturer's specifications.
- Reversing alarms on plant should be adjusted to limit the acoustic range to the immediate danger area.
- Plant and equipment of appropriate size/capacity should be used for the task.
- The use of quieter engines and newer, quieter equipment is recommended.
- Works undertaken outside of daylight hours should be minimised, where practicable, or directional lighting that is directed away from environmentally sensitive areas should be used.

7.2.6 MATTERS OF STATE ENVIRONMENTAL SIGNIFICANCE (FAUNA)

With the exception of the threatened and migratory fauna already documented within this report (refer to Appendix D), and including proposed mitigation to minimise project-related impacts to these species and their potential habitat, no other MSES relating to native fauna or wildlife habitats have been identified within the project area.

8. SPECIES-SPECIFIC MITIGATION MEASURES

This section outlines some species-specific mitigation measures to minimise potential impacts to threatened fauna species for which habitat critical to its survival has been identified within the project area. It is recommended that species management plans are developed for each of the species outlined in Table 14 to Table 19 to manage potential impacts during construction and operation of the project.

Table 14: Mitigation and management measures for Gouldian finch.

Goal (impact)	Management measure
Reduce the loss of habitat	- Clearly define and demarcate the extent of vegetation clearing prior to commencement of works to ensure no clearing occurs outside of approved clearing limits. - The clearing footprint should be shown on site plans and maps to restrict access and prevent unapproved clearing. - Vegetation clearing should be staged and undertaken in a sequential manner to allow birds to fly to other habitat areas when habitat is being cleared. - Minimise disturbance to water sources (e.g. Dam 4) to that necessary to construct the required project infrastructure. There should be no vegetation clearing around Dam 4, Dam 5 or Dam 6.
Reduce the fragmentation of habitat	- The area of direct impact should be minimised as far as possible throughout the design and development of the mine plan. - Where practicable, spoil and/or stockpiling will be preferentially located in areas of previous disturbance rather than within potential Gouldian finch habitat. - Manage non-mined areas to maintain habitat values for the Gouldian finch. - Progressive rehabilitation of habitat areas should be undertaken as soon as practicably possible. - All temporarily disturbed habitat areas will be rehabilitated as soon as possible following completion of activities in that location.
Avoid injury or death during vegetation clearing and other project works	- Incorporate information about the Gouldian finch and its management requirements into site inductions, toolboxes and pre-start talks, particularly when working in or around Gouldian finch habitat areas. - Identification posters for all threatened species with the potential to occur in the project area will be displayed in prominent positions at the work site. - Vegetation clearing should be staged and undertaken in a sequential manner to allow birds to fly to other habitat areas when habitat is being cleared. The overall direction of sequential clearing will be as much as possible away from threatening processes (e.g. mining operations / roads / cleared land) to direct fauna towards areas of retained habitat.

Goal (impact)	Management measure
	- Pre-clearance surveys are to be conducted by a suitably qualified ecologist in all areas of potential Gouldian finch habitat prior to the commencement of clearing to identify and map significant areas for Gouldian finch. - Where active nests or other sensitive habitat areas are identified during the pre-clearing surveys, specific actions will be implemented to address these areas. - Suitably qualified and experienced fauna spotter-catchers will be present during vegetation clearing activities. - No tampering with Gouldian finch breeding places is to occur without the relevant approvals/permits. Any removal of nests will be required to be undertaken in accordance with the requirements of the approvals. - Any Gouldian finch deaths or injuries will be recorded and managed in accordance with relevant guidelines and/or approval conditions. - No mine-related equipment or infrastructure with the potential to entangle fauna (e.g. bundled mesh fencing) will be left in sensitive areas such as water sources, dams or potential Gouldian finch foraging areas.
Prevent the introduction or spreads of weeds and pests	- Develop and implement a project pest management plan. - Controls should focus on managing declared weeds and pest animals during construction and operations. - Weed hygiene controls (e.g. vehicle wash downs) should be adopted to prevent introduction of new weeds to the site. - The establishment of new tracks through potential Gouldian finch habitat should be minimised to prevent transport of weeds and weed seeds into sensitive areas.
Minimise risk of wildfire in potential Gouldian finch habitat areas	- Maintain firebreaks around active work areas to minimise the risk associated with uncontrolled fires. Where possible, the existing network of tracks should be maintained to manage fire rather than creating new firebreaks. - Prior to site entry, all staff and contractors should be made aware of fire safety and risks.

Table 15: Mitigation and management measures for Australian painted snipe.

Goal (impact)	Management measure
Reduce the loss of habitat	- Clearly define and demarcate the extent of vegetation clearing prior to commencement of works to ensure no clearing occurs outside of approved clearing limits. - The clearing footprint should be shown on site plans and maps to restrict access and prevent unapproved clearing. - Minimise disturbance to water sources (e.g. Dam 4) to that necessary to construct required project infrastructure. There should be no significant vegetation clearing around Dam 4, Dam 5 or Dam 6.
Reduce fragmentation of habitat	The area of direct impact should be minimised as far as possible throughout the design and development of the mine plan.

Goal (impact)	Management measure
	Manage non-mined areas to maintain habitat values for the Australian painted snipe.
Avoid injury or death during vegetation clearing and other project works	- Incorporate information about the Australian painted snipe and its management requirements into site inductions, toolboxes and pre-start talks, particularly when working in the vegetation around the dams which could provide habitat for this species. - Identification posters for all threatened species with the potential to occur in the project area will be displayed in prominent positions at the work site. - Pre-clearance surveys are to be conducted by a suitably qualified ecologist in all areas of potential Australian painted snipe habitat prior to the commencement of clearing to identify and map significant areas for this species. - If active nests or other sensitive habitat areas are identified during the pre-clearing surveys, specific actions will be implemented to address these areas. - Suitably qualified and experienced fauna spotter-catchers will be present during vegetation clearing activities. - Any deaths or injuries will be recorded and managed in accordance with relevant guidelines and/or approval conditions. - No mine-related equipment or infrastructure with the potential to entangle fauna (e.g. bundled mesh fencing) will be left in or around Australian painted snipe habitat, such as water sources and dams.
Prevent the introduction or spreads of weeds and pests	- Develop and implement a project pest management plan. - Controls should focus on managing declared weeds and pest animals during construction and operations. - Weed hygiene controls (e.g. vehicle wash downs) should be adopted to prevent introduction of new weeds to the site.

Table 16: Mitigation and management measures for buff-breasted button-quail.

Goal (impact)	Management measure
Reduce the loss of habitat	- Clearly define and demarcate the extent of vegetation clearing prior to commencement of works to ensure no clearing occurs outside of approved clearing limits. - The clearing footprint should be shown on site plans and maps to restrict access and prevent unapproved clearing. - Minimise disturbance to water sources (e.g. Dam 4) to that necessary to construct required project infrastructure. There should be no significant vegetation clearing around Dam 4, Dam 5 or Dam 6.
Reduce fragmentation of habitat	- The area of direct impact should be minimised as far as possible throughout the design and development of the mine plan. - Manage non-mined areas to maintain habitat values for the buff-breasted button-quail.

Goal (impact)	Management measure
Avoid injury or death during vegetation clearing and other project works	• Incorporate information about the buff-breasted button-quail and its management requirements into site inductions, toolboxes and pre-start talks, particularly when working in the vegetation around the dams which could provide habitat for this species. • Identification posters for all threatened species with the potential to occur in the project area will be displayed in prominent positions at the work site. • Pre-clearance surveys are to be conducted by a suitably qualified ecologist in all areas of potential buff-breasted button-quail habitat prior to the commencement of clearing to identify and map significant areas for this species. • If active nests or other sensitive habitat areas are identified during the pre-clearing surveys, specific actions will be implemented to address these areas. • Suitably qualified and experienced fauna spotter-catchers will be present during vegetation clearing activities. • Any deaths or injuries will be recorded and managed in accordance with relevant guidelines and/or approval conditions. • No mine-related equipment or infrastructure with the potential to entangle fauna (e.g. barbed wire, bundled mesh fencing) will be left in or around sensitive habitat areas, such as water sources and dams. • If a suspected buff-breasted button-quail is found injured or dead, works should cease immediately and the specimen should be provided to the Queensland Museum for identification as soon as possible.
Prevent the introduction or spreads of weeds and pests	• Develop and implement a project pest management plan. • Controls should focus on managing declared weeds and pest animals during construction and operations. • Weed hygiene controls (e.g. vehicle wash downs) should be adopted to prevent introduction of new weeds to the site.
Minimise risk of wildfire in potential buff-breasted button-quail habitat areas	• Maintain firebreaks around active work areas to minimise the risk associated with uncontrolled fires. Where possible, the existing network of tracks should be maintained to manage fire rather than creating new firebreaks. • Prior to site entry, all staff and contractors should be made aware of fire safety and risks.

Table 17: Mitigation and management measures for white-throated needletail.

Goal (impact)	Management measure
Minimise collision with overhead wires	• Ensure that any overhead powerlines are fitted with high visibility markers.
Minimise the loss of potential roosting habitat due to tree hollow clearing	• All tree hollows in cleared areas should be salvaged, where feasible, and relocated into adjacent, retained vegetation. • Educate all personnel and machinery operators of the need to salvage and store or redistribute tree hollows.

Goal (impact)	Management measure
Prevent the introduction or spreads of weeds and pests	• Develop and implement a project pest management plan. • Controls should focus on managing declared weeds and pest animals during construction and operations. • Weed hygiene controls (e.g. vehicle wash downs) should be adopted to prevent introduction of new weeds to the site.
Minimise the risk of entrapment	• No mine-related equipment or infrastructure with the potential to entangle fauna (e.g. barbed wire, mesh, floating surface debris) will be left in sensitive areas such as water sources and dams.

Table 18: Mitigation and management measures for Mertens' water monitor.

Goal (impact)	Management measure
Minimise loss of habitat	• Clearly define and demarcate the extent of vegetation clearing prior to commencement of works to ensure no clearing occurs outside of approved clearing limits. • The clearing footprint should be shown on site plans and maps to restrict access and prevent unapproved clearing. • Minimise disturbance to water sources (e.g. Dam 4) to that necessary to construct required project infrastructure. There should be no significant vegetation clearing or disturbance around Dam 4, Dam 5 or Dam 6.
Minimise the loss of potential basking habitat surrounding water sources due to tree clearing	• Minimise the extent of clearing of trees and stags used for basking around water sources.
Prevent the introduction or spreads of weeds and pests	• Develop and implement a project pest management plan. • Controls should focus on managing declared weeds, including aquatic weeds, and pest animals during construction and operations. • Weed hygiene controls (e.g. vehicle wash downs) should be adopted to prevent introduction of new weeds to the site.
Minimise the risk of entrapment	• No mine-related equipment or infrastructure with the potential to entangle fauna (e.g. mesh, floating surface debris) will be left in or adjacent to water sources and dams.
Minimise risk of wildfire in potential Mertens' water monitor habitat	• Maintain firebreaks around active work areas to minimise the risk associated with uncontrolled fires. Where possible, the existing network of tracks should be maintained to manage fire rather than creating new firebreaks. • Prior to site entry, all staff and contractors should be made aware of fire safety and risks.

Table 19: Mitigation and management measures for large-eared horseshoe bat.

Goal (impact)	Management measure
Minimise loss of habitat	- Clearly define and demarcate the extent of vegetation clearing prior to commencement of works to ensure no clearing occurs outside of approved clearing limits. - The clearing footprint should be shown on site plans and maps to restrict access and prevent unapproved clearing. - Minimise disturbance to water sources (e.g. Dam 4) to that necessary to construct required project infrastructure. There should be no significant vegetation clearing around Dam 4, Dam 5 or Dam 6.
Minimise the loss of potential roosting habitat due to tree hollow clearing	- All tree hollows in cleared areas should be salvaged, where feasible, and relocated into adjacent, retained vegetation. - Educate all personnel and machinery operators of the need to salvage and store or redistribute tree hollows.
Prevent the introduction or spreads of weeds and pests	- Develop and implement a project pest management plan. - Controls should focus on managing declared weeds and pest animals during construction and operations. - Weed hygiene controls (e.g. vehicle wash downs) should be adopted to prevent introduction of new weeds to the site.
Minimise the risk of entrapment	- No mine-related equipment or infrastructure with the potential to entangle fauna (e.g. barbed wire, mesh, floating surface debris) will be left in sensitive areas such as water sources and dams. - Where possible, avoid the use of barbed wire for the top strand of fencing to minimise potential for microbats to become snagged or entangled.
Minimise risk of wildfire in potential large-eared horseshoe bat habitat areas	- Maintain firebreaks around active work areas to minimise the risk associated with uncontrolled fires. Where possible, the existing network of tracks should be maintained to manage fire rather than creating new firebreaks. - Prior to site entry, all staff and contractors should be made aware of fire safety and risks.

9. CONCLUSIONS

The terrestrial ecology assessment for flora and fauna was composed of two major sections:

- A literature review that determined:
 - the relevant legislation, guidelines, policies and regulations pertinent to mine development and operations;
 - the regional setting; and
 - background existing terrestrial ecology values for the area; and
- A detailed survey of terrestrial habitats and fauna and flora occurring within – and adjacent to – the project site.

The project site is located in the Palmer River catchment area of the Mitchell River within the Hodgkinson Basin of the Einasleigh Uplands bioregion in far north Queensland. Two freshwater reaches are associated with the site: North Creek and South Creek. Both reaches converge with Gum Creek downstream of the project site. No wetlands of state or national significance occur within the project site or within the 20 km of the downstream reaches. Additionally, no *endangered* or *of concern* REs or essential habitat are mapped for the site.

The local area has been targeted over the years for gold prospecting, with alluvial gold mines still operating in the upper reaches of Gum Creek. The entire area has also been used for cattle grazing, with feral cattle still roaming the project site. These land uses – combined with historical operations associated with DCM that was established in the late 1970s – suggest that terrestrial habitats within the region are slightly to moderately disturbed with respect to disturbances and invasive species.

Evidence of historical impacts on the outlined environmental values was observed in the results of the current study. Habitat condition across the project site was generally found to be *moderate*. Much of the study area has been highly modified by historical mine practices. Additionally, the frequent occurrence – and, in many cases, understory dominance – of grader grass (*Themeda quadrivalvis*) has reduced the quality of habitat.

Three different REs comprising six different habitat types were observed within the development footprint. None of these REs are regarded as *endangered* or *of concern*. A total of 155 *least concern* and four (4) SLC flora species have been recorded from the development footprint as a result of the survey. No conservation significant flora were observed within the development footprint.

Regulated vegetation that are likely to impact MSES identified on site are limited to vegetation that intersects vegetation management water courses. However, the extent of these impacts is limited and found to negate any requirement for environmental offsets.

A total of 160 terrestrial fauna species were recorded during the survey, including 110 birds, 17 reptiles, seven (7) amphibians and 26 mammal species. One species of conservation significance was recorded during the survey. Mertens' water monitor (*Varanus mertensi*) was recorded on several occasions at dams 4, 5 and 6, all of which occur outside of the project footprint. Site-specific assessment of habitat critical to the survival of fauna species considered to have a moderate likelihood of occurring on the site have been conducted for the following species:

- Gouldian finch;
- Buff-breasted button-quail;
- Australian painted snipe;
- White-throated needletail;

- Mertens' water monitor;
- Northern quoll; and
- Large-eared horsehoe bat.

Additionally, even though the Buff-breasted button-quail was assessed as unlikely to be encountered based on recent research (Webster et al., 2024) and a lack of confirmed sightings since the 1920s, considering its critically endangered status, an assessment was also made of habitat critical to the survival of this species.

Offsets maybe required due to the presence of potential habitat for the above species. However, given the nature of the proposed project in the immediate vicinity of an existing disturbed site and in the context of the broader region, the risks to the identified terrestrial ecology values from most of the identified hazards can be appropriately mitigated within the design phase of the project through the adoption of current best-practice measures, which are outlined in this report. Therefore, it is concluded that significant impacts to threatened or migratory species from the project are unlikely due to:

- The amount of habitat/vegetation clearing required for the project is relatively small, suggesting a low risk of population decline in terms of abundance and extent for any identified threatened and migratory species.
- A range of effective avoidance and mitigation measures will be implemented to protect individuals of each listed species observed within the area. Additionally, a program of ongoing monitoring and adaptive management will be implemented to track and respond appropriately if any adverse impacts not expected are identified.
- On-site observations, species records and modelled habitat suggest there are large areas of contiguous suitable habitat surrounding the project area, limiting the potential to fragment and isolate impacted communities.
- Invasive weeds (grader grass) and pest animals (cane toads, feral cattle, etc.) are already present on site. Weed and pest prevention and control measures will be implemented to prevent new weed and pest incursions and to avoid direct risks to key species and altered fire regimes.
- The risk of injury and mortality from mine operations is considered low, but will be monitored and actioned accordingly.

Provided that the species-specific mitigation measures are delivered, the key habitat values for threatened and migratory species will continue to be present within and adjacent to the project site, suggesting the development and operations of the DCM expansion will not prevent the use of the local area by these species.

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Appendix A – Wildnet extract



Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point

Species: All

Type: All

Queensland status: All

Records: All

Date: All

Latitude: -16.0996

Longitude: 144.5157

Distance: 40

Email: ben@candrconsulting.com.au

Date submitted: Monday 15 Apr 2024 11:22:37

Date extracted: Monday 15 Apr 2024 11:30:04

The number of records retrieved = 1171

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Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	<i>Rhinella marina</i>	cane toad	Y			20/1
animals	amphibians	Hylidae	<i>Cyclorana alboguttata</i>	greenstripe frog		C		8
animals	amphibians	Hylidae	<i>Cyclorana brevipes</i>	superb collared frog		C		11
animals	amphibians	Hylidae	<i>Cyclorana novaehollandiae</i>	eastern snapping frog		C		3
animals	amphibians	Hylidae	<i>Litoria bicolor</i>	northern sedgefrog		C		3
animals	amphibians	Hylidae	<i>Litoria caerulea</i>	common green treefrog		C		11
animals	amphibians	Hylidae	<i>Litoria gracilenta</i>	graceful treefrog		C		17
animals	amphibians	Hylidae	<i>Litoria inermis</i>	bumpy rocketfrog		C		12/3
animals	amphibians	Hylidae	<i>Litoria nasuta</i>	striped rocketfrog		C		2
animals	amphibians	Hylidae	<i>Litoria pallida</i>	pallid rocketfrog		C		4
animals	amphibians	Hylidae	<i>Litoria rothii</i>	eastern laughing treefrog		C		8
animals	amphibians	Hylidae	<i>Litoria rubella</i>	ruddy treefrog		C		15
animals	amphibians	Limnodynastidae	<i>Limnodynastes convexiusculus</i>	marbled frog		C		1
animals	amphibians	Limnodynastidae	<i>Platyplectrum ornatum</i>	ornate burrowing frog		C		15/3
animals	amphibians	Myobatrachidae	<i>Crinia deserticola</i>	chirping froglet		C		4
animals	amphibians	Ranidae	<i>Papurana daemeli</i>	Australian woodfrog		C		3/2
animals	birds	Acanthizidae	<i>Gerygone magnirostris</i>	large-billed gerygone		C		2
animals	birds	Acanthizidae	<i>Gerygone olivacea</i>	white-throated gerygone		C		29
animals	birds	Acanthizidae	<i>Gerygone palpebrosa</i>	fairy gerygone		C		1
animals	birds	Acanthizidae	<i>Smicronis brevirostris</i>	weebill		C		7
animals	birds	Accipitridae	<i>Accipiter cirrocephalus</i>	collared sparrowhawk		C		2
animals	birds	Accipitridae	<i>Accipiter fasciatus</i>	brown goshawk		C		8
animals	birds	Accipitridae	<i>Aquila audax</i>	wedge-tailed eagle		C		10
animals	birds	Accipitridae	<i>Circus assimilis</i>	spotted harrier		C		1
animals	birds	Accipitridae	<i>Erythroriorchis radiatus</i>	red goshawk		E	E	1
animals	birds	Accipitridae	<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle		C		2
animals	birds	Accipitridae	<i>Haliastur sphenurus</i>	whistling kite		C		26
animals	birds	Accipitridae	<i>Hieraaetus morphnoides</i>	little eagle		C		1
animals	birds	Accipitridae	<i>Lophoictinia isura</i>	square-tailed kite		C		1
animals	birds	Accipitridae	<i>Milvus migrans</i>	black kite		C		35
animals	birds	Aegothelidae	<i>Aegotheles cristatus</i>	Australian owl-nightjar		C		2
animals	birds	Alcedinidae	<i>Ceyx azureus</i>	azure kingfisher		C		6
animals	birds	Alcedinidae	<i>Dacelo leachii</i>	blue-winged kookaburra		C		29
animals	birds	Alcedinidae	<i>Dacelo novaeguineae</i>	laughing kookaburra		C		25
animals	birds	Alcedinidae	<i>Todiramphus macleayii</i>	forest kingfisher		C		5
animals	birds	Alcedinidae	<i>Todiramphus sanctus</i>	sacred kingfisher		C		3
animals	birds	Anatidae	<i>Anas gracilis</i>	grey teal		C		4
animals	birds	Anatidae	<i>Anas superciliosa</i>	Pacific black duck		C		11
animals	birds	Anatidae	<i>Aythya australis</i>	hardhead		C		8
animals	birds	Anatidae	<i>Chenonetta jubata</i>	Australian wood duck		C		4
animals	birds	Anatidae	<i>Cygnus atratus</i>	black swan		C		1
animals	birds	Anatidae	<i>Dendrocygna arcuata</i>	wandering whistling-duck		C		2
animals	birds	Anatidae	<i>Dendrocygna eytoni</i>	plumed whistling-duck		C		1
animals	birds	Anatidae	<i>Malacorhynchus membranaceus</i>	pink-eared duck		C		2
animals	birds	Anatidae	<i>Nettapus coromandelianus</i>	cotton pygmy-goose		C		2
animals	birds	Anatidae	<i>Nettapus pulchellus</i>	green pygmy-goose		C		6

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Anatidae	<i>Radjah radjah</i>	radjah shelduck		C		5
animals	birds	Anhingidae	<i>Anhinga novaehollandiae</i>	Australasian darter		C		14
animals	birds	Anseranatidae	<i>Anseranas semipalmata</i>	magpie goose		C		6
animals	birds	Apodidae	<i>Aerodramus terraereginae</i>	Australian swiftlet		C		32
animals	birds	Ardeidae	<i>Ardea alba modesta</i>	eastern great egret		C		10
animals	birds	Ardeidae	<i>Ardea intermedia</i>	intermediate egret		C		9
animals	birds	Ardeidae	<i>Ardea pacifica</i>	white-necked heron		C		2
animals	birds	Ardeidae	<i>Bubulcus ibis</i>	cattle egret		C		3
animals	birds	Ardeidae	<i>Egretta garzetta</i>	little egret		C		5
animals	birds	Ardeidae	<i>Egretta novaehollandiae</i>	white-faced heron		C		6
animals	birds	Ardeidae	<i>Egretta picata</i>	piebald heron		C		1
animals	birds	Ardeidae	<i>Ixobrychus flavicollis</i>	black bittern		C		1
animals	birds	Ardeidae	<i>Nycticorax caledonicus</i>	nankeen night-heron		C		5
animals	birds	Artamidae	<i>Artamus cinereus</i>	black-faced woodswallow		C		2
animals	birds	Artamidae	<i>Artamus leucorhynchus</i>	white-breasted woodswallow		C		3
animals	birds	Artamidae	<i>Artamus minor</i>	little woodswallow		C		3
animals	birds	Artamidae	<i>Cracticus mentalis</i>	black-backed butcherbird		C		4
animals	birds	Artamidae	<i>Cracticus nigrogularis</i>	piebald butcherbird		C		44
animals	birds	Artamidae	<i>Cracticus torquatus</i>	grey butcherbird		C		1
animals	birds	Artamidae	<i>Gymnorhina tibicen</i>	Australian magpie		C		40/2
animals	birds	Artamidae	<i>Strepera graculina</i>	piebald currawong		C		15
animals	birds	Burhinidae	<i>Burhinus grallarius</i>	bush stone-curlew		C		3
animals	birds	Cacatuidae	<i>Cacatua galerita</i>	sulphur-crested cockatoo		C		17
animals	birds	Cacatuidae	<i>Calyptorhynchus banksii</i>	red-tailed black-cockatoo		C		19
animals	birds	Cacatuidae	<i>Eolophus roseicapilla</i>	galah		C		21
animals	birds	Campephagidae	<i>Coracina novaehollandiae</i>	black-faced cuckoo-shrike		C		19
animals	birds	Campephagidae	<i>Coracina papuensis</i>	white-bellied cuckoo-shrike		C		17
animals	birds	Campephagidae	<i>Lalage tricolor</i>	white-winged triller		C		3
animals	birds	Charadriidae	<i>Elseya melanops</i>	black-fronted dotterel		C		4
animals	birds	Charadriidae	<i>Vanellus miles</i>	masked lapwing		C		4
animals	birds	Charadriidae	<i>Vanellus miles miles</i>	masked lapwing (northern subspecies)		C		7
animals	birds	Ciconiidae	<i>Ephippiorhynchus asiaticus</i>	black-necked stork		C		3
animals	birds	Cisticolidae	<i>Cisticola exilis</i>	golden-headed cisticola		C		2
animals	birds	Climacteridae	<i>Climacteris picumnus</i>	brown treecreeper		C		2
animals	birds	Columbidae	<i>Geopelia humeralis</i>	bar-shouldered dove		C		24
animals	birds	Columbidae	<i>Geopelia placida</i>	peaceful dove		C		24
animals	birds	Columbidae	<i>Geophaps scripta peninsulæ</i>	squatter pigeon (northern subspecies)		C		5
animals	birds	Columbidae	<i>Phaps chalcoptera</i>	common bronzewing		C		3
animals	birds	Coraciidae	<i>Eurystomus orientalis</i>	dollarbird		C		6
animals	birds	Corcoracidae	<i>Struthidea cinerea</i>	apostlebird		C		10
animals	birds	Corvidae	<i>Corvus coronoides</i>	Australian raven		C		4
animals	birds	Corvidae	<i>Corvus orru</i>	Torresian crow		C		41
animals	birds	Corvidae	<i>Corvus sp.</i>			C		5
animals	birds	Cuculidae	<i>Cacomantis flabelliformis</i>	fan-tailed cuckoo		C		1
animals	birds	Cuculidae	<i>Cacomantis variolosus</i>	brush cuckoo		C		3
animals	birds	Cuculidae	<i>Centropus phasianinus</i>	pheasant coucal		C		10

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animals	birds	Cuculidae	<i>Eudynamys orientalis</i>	eastern koel		C		2
animals	birds	Cuculidae	<i>Scythrops novaehollandiae</i>	channel-billed cuckoo		C		6
animals	birds	Dicaeidae	<i>Dicaeum hirundinaceum</i>	mistletoebird		C		9
animals	birds	Dicruridae	<i>Dicrurus bracteatus</i>	spangled drongo		C		11
animals	birds	Estrildidae	<i>Chloebia gouldiae</i>	Gouldian finch		E	E	1
animals	birds	Estrildidae	<i>Lonchura castaneothorax</i>	chestnut-breasted mannikin		C		3
animals	birds	Estrildidae	<i>Poephila cincta atropygialis</i>	black-throated finch (black-rumped subspecies)		C		1
animals	birds	Estrildidae	<i>Taeniopygia bichenovii</i>	double-barred finch		C		25
animals	birds	Falconidae	<i>Falco berigora</i>	brown falcon		C		7
animals	birds	Falconidae	<i>Falco cenchroides</i>	nankeen kestrel		C		9
animals	birds	Falconidae	<i>Falco subniger</i>	black falcon		C		1
animals	birds	Gruidae	<i>Antigone antigone</i>	sarus crane		C		3
animals	birds	Gruidae	<i>Antigone rubicunda</i>	broilga		C		7
animals	birds	Hirundinidae	<i>Petrochelidon ariel</i>	fairy martin		C		1
animals	birds	Hirundinidae	<i>Petrochelidon nigricans</i>	tree martin		C		1
animals	birds	Jacanidae	<i>Irediparra gallinacea</i>	comb-crested jacana		C		3
animals	birds	Laridae	<i>Chlidonias hybrida</i>	whiskered tern		C		1
animals	birds	Maluridae	<i>Malurus amabilis</i>	lovely fairy-wren		C		1
animals	birds	Maluridae	<i>Malurus melanocephalus</i>	red-backed fairy-wren		C		17
animals	birds	Megapodiidae	<i>Alectura lathamii</i>	Australian brush-turkey		C		1
animals	birds	Meliphagidae	<i>Cissomela pectoralis</i>	banded honeyeater		C		8
animals	birds	Meliphagidae	<i>Conopophila albogularis</i>	rufous-banded honeyeater		C		1
animals	birds	Meliphagidae	<i>Conopophila rufogularis</i>	rufous-throated honeyeater		C		1
animals	birds	Meliphagidae	<i>Entomyzon cyanotis</i>	blue-faced honeyeater		C		45
animals	birds	Meliphagidae	<i>Lichmera indistincta</i>	brown honeyeater		C		28
animals	birds	Meliphagidae	<i>Manorina melanocephala</i>	noisy miner		C		2
animals	birds	Meliphagidae	<i>Meliphaga lewinii</i>	Lewin's honeyeater		C		1
animals	birds	Meliphagidae	<i>Melithreptus albogularis</i>	white-throated honeyeater		C		27
animals	birds	Meliphagidae	<i>Myzomela obscura</i>	dusky honeyeater		C		1
animals	birds	Meliphagidae	<i>Myzomela sanguinolenta</i>	scarlet honeyeater		C		3
animals	birds	Meliphagidae	<i>Philemon argenticeps</i>	silver-crowned friarbird		C		5
animals	birds	Meliphagidae	<i>Philemon buceroides</i>	helmeted friarbird		C		2
animals	birds	Meliphagidae	<i>Philemon citreogularis</i>	little friarbird		C		29
animals	birds	Meliphagidae	<i>Philemon corniculatus</i>	noisy friarbird		C		46
animals	birds	Meliphagidae	<i>Ramsayornis modestus</i>	brown-backed honeyeater		C		3
animals	birds	Meliphagidae	<i>Stomiopera flava</i>	yellow honeyeater		C		24
animals	birds	Meliphagidae	<i>Stomiopera unicolor</i>	white-gaped honeyeater		C		1
animals	birds	Meliphagidae	<i>Trichodere cockerelli</i>	white-streaked honeyeater		C		3
animals	birds	Meropidae	<i>Merops ornatus</i>	rainbow bee-eater		C		34
animals	birds	Monarchidae	<i>Grallina cyanoleuca</i>	magpie-lark		C		32
animals	birds	Monarchidae	<i>Myiagra cyanoleuca</i>	satin flycatcher		SL		1
animals	birds	Monarchidae	<i>Myiagra rubecula</i>	leaden flycatcher		C		4
animals	birds	Motacillidae	<i>Anthus novaeseelandiae</i>	Australasian pipit		C		1
animals	birds	Nectariniidae	<i>Cinnyris jugularis</i>	olive-backed sunbird		C		2
animals	birds	Neosittidae	<i>Daphoenositta chrysoptera</i>	varied sittella		C		3

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animals	birds	Oriolidae	<i>Oriolus sagittatus</i>	olive-backed oriole		C		7
animals	birds	Oriolidae	<i>Sphecotheres vieilloti</i>	Australasian figbird		C		8
animals	birds	Otididae	<i>Ardeotis australis</i>	Australian bustard		C		8
animals	birds	Pachycephalidae	<i>Colluricincla harmonica</i>	grey shrike-thrush		C		4
animals	birds	Pachycephalidae	<i>Pachycephala rufiventris</i>	rufous whistler		C		11
animals	birds	Pardalotidae	<i>Pardalotus rubricatus</i>	red-browed pardalote		C		24
animals	birds	Pardalotidae	<i>Pardalotus striatus</i>	striated pardalote		C		35
animals	birds	Passeridae	<i>Passer domesticus</i>	house sparrow	Y			4
animals	birds	Pelecanidae	<i>Pelecanus conspicillatus</i>	Australian pelican		C		9
animals	birds	Petroicidae	<i>Microeca flavigaster</i>	lemon-bellied flycatcher		C		3
animals	birds	Phalacrocoracidae	<i>Microcarbo melanoleucos</i>	little pied cormorant		C		14
animals	birds	Phalacrocoracidae	<i>Phalacrocorax carbo</i>	great cormorant		C		1
animals	birds	Phalacrocoracidae	<i>Phalacrocorax sulcirostris</i>	little black cormorant		C		8
animals	birds	Phalacrocoracidae	<i>Phalacrocorax varius</i>	pied cormorant		C		2
animals	birds	Phasianidae	<i>Synoicus ypsilophorus</i>	brown quail		C		2
animals	birds	Podargidae	<i>Podargus strigoides</i>	tawny frogmouth		C		9
animals	birds	Podicipedidae	<i>Podiceps cristatus</i>	great crested grebe		C		5
animals	birds	Podicipedidae	<i>Tachybaptus novaehollandiae</i>	Australasian grebe		C		5
animals	birds	Pomatostomidae	<i>Pomatostomus temporalis</i>	grey-crowned babbler		C		10
animals	birds	Psittaculidae	<i>Aprosmictus erythropterus</i>	red-winged parrot		C		21
animals	birds	Psittaculidae	<i>Platycercus adscitus</i>	pale-headed rosella		C		29
animals	birds	Psittaculidae	<i>Psephotellus chrysopterygius</i>	golden-shouldered parrot		E	E	4
animals	birds	Psittaculidae	<i>Trichoglossus chlorolepidotus</i>	scaly-breasted lorikeet		C		4
animals	birds	Psittaculidae	<i>Trichoglossus moluccanus</i>	rainbow lorikeet		C		53
animals	birds	Ptilonorhynchidae	<i>Chlamydera nuchalis</i>	great bowerbird		C		23
animals	birds	Rallidae	<i>Fulica atra</i>	Eurasian coot		C		4
animals	birds	Recurvirostridae	<i>Himantopus leucocephalus</i>	pied stilt		C		1
animals	birds	Rhipiduridae	<i>Rhipidura albiscapa</i>	grey fantail		C		20
animals	birds	Rhipiduridae	<i>Rhipidura leucophrys</i>	willie wagtail		C		21
animals	birds	Rhipiduridae	<i>Rhipidura rufifrons</i>	rufous fantail		SL		2
animals	birds	Rhipiduridae	<i>Rhipidura rufiventris</i>	northern fantail		C		1
animals	birds	Scolopacidae	<i>Tringa nebularia</i>	common greenshank		SL	E	1
animals	birds	Strigidae	<i>Ninox boobook</i>	southern boobook		C		8
animals	birds	Threskiornithidae	<i>Platalea regia</i>	royal spoonbill		C		2
animals	birds	Threskiornithidae	<i>Plegadis falcinellus</i>	glossy ibis		SL		1
animals	birds	Threskiornithidae	<i>Threskiornis molucca</i>	Australian white ibis		C		5
animals	birds	Threskiornithidae	<i>Threskiornis spinicollis</i>	straw-necked ibis		C		16
animals	birds	Tytonidae	<i>Tyto novaehollandiae</i>	masked owl		C		1
animals	insects	Aeshnidae	<i>Anax papuensis</i>	Australian Emperor				1
animals	insects	Coenagrionidae	<i>Pseudagrion microcephalum</i>	blue riverdamsel				1
animals	insects	Isostictidae	<i>Austrosticta frater</i>	eastern pondsitter				1/1
animals	insects	Isostictidae	<i>Oristicta rosendaleorum</i>	elegant wiretail				1/1
animals	insects	Isostictidae	<i>Rhadinosticta banksi</i>	northern wiretail				2
animals	insects	Libellulidae	<i>Diplacodes haematodes</i>	scarlet percher				3
animals	insects	Libellulidae	<i>Nannodiplax rubra</i>	pygmy percher				1
animals	insects	Libellulidae	<i>Neurothemis stigmatizans stigmatizans</i>	painted grasshawk				2

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animals	insects	Libellulidae	<i>Orthetrum caledonicum</i>	blue skimmer				2
animals	insects	Libellulidae	<i>Pantala flavescens</i>	wandering glider				1
animals	insects	Libellulidae	<i>Rhyothemis princeps</i>	sapphire flutterer				2
animals	insects	Libellulidae	<i>Tramea loewii</i>	common glider				1
animals	insects	Lycaenidae	<i>Acrodipsas hirtipes</i>	black ant-blue				10
animals	insects	Nymphalidae	<i>Acraea andromacha andromacha</i>	glasswing				1
animals	insects	Nymphalidae	<i>Cupha prosope</i>					1
animals	insects	Nymphalidae	<i>Danaus petilia</i>	lesser wanderer				1
animals	insects	Nymphalidae	<i>Euploea corinna</i>	common crow				2
animals	insects	Nymphalidae	<i>Euploea sylvester sylvester</i>	two-brand crow				1
animals	insects	Nymphalidae	<i>Hypolimnias bolina nerina</i>	varied eggfly				3
animals	insects	Nymphalidae	<i>Junonia hedonia zelima</i>	chocolate argus				1
animals	insects	Nymphalidae	<i>Junonia orithya albicincta</i>	blue argus				3
animals	insects	Nymphalidae	<i>Melanitis leda bankia</i>	evening brown				2
animals	insects	Nymphalidae	<i>Pantoporia consimilis consimilis</i>	orange plane				1
animals	insects	Nymphalidae	<i>Yoma sabina parva</i>	lurcher				2
animals	insects	Nymphalidae	<i>Ypthima arctous arctous</i>	dusky knight				2
animals	insects	Papilionidae	<i>Cressida cressida cressida</i>	clearwing swallowtail				1
animals	insects	Papilionidae	<i>Graphium macfarlanei macfarlanei</i>	green triangle				1
animals	insects	Papilionidae	<i>Papilio aegaeus aegaeus</i>	orchard swallowtail (Australian subspecies)				1
animals	insects	Pieridae	<i>Belenois java teutonia</i>	caper white				1
animals	insects	Platycnemididae	<i>Nososticta solida</i>	orange threadtail				1
animals	mammals	Bovidae	<i>Bos indicus</i>	zebu	Y			1
animals	mammals	Canidae	<i>Canis familiaris</i>	dog	Y			4
animals	mammals	Dasyuridae	<i>Dasyurus hallucatus</i>	northern quoll		C	E	4
animals	mammals	Emballonuridae	<i>Taphozous troughtoni</i>	Troughton's sheath-tail bat		C		1
animals	mammals	Equidae	<i>Equus caballus</i>	horse	Y			1
animals	mammals	Felidae	<i>Felis catus</i>	cat	Y			3
animals	mammals	Hipposideridae	<i>Hipposideros diadema reginae</i>	diadem leaf-nosed bat		NT		5
animals	mammals	Macropodidae	<i>Macropus giganteus</i>	eastern grey kangaroo		C		3
animals	mammals	Macropodidae	<i>Notamacropus agilis</i>	agile wallaby		C		77
animals	mammals	Macropodidae	<i>Notamacropus parryi</i>	whiptail wallaby		C		15
animals	mammals	Macropodidae	<i>Osphranter antilopinus</i>	antilopine wallaroo		C		2
animals	mammals	Macropodidae	<i>Osphranter robustus</i>	common wallaroo		C		14
animals	mammals	Macropodidae	<i>Petrogale godmani</i>	Godman's rock-wallaby		C		18/7
animals	mammals	Megadermatidae	<i>Macroderma gigas</i>	ghost bat		E	V	11
animals	mammals	Miniopteridae	<i>Miniopterus schreibersii oceanensis</i>	eastern bent-wing bat		C		1
animals	mammals	Miniopteridae	<i>Miniopterus sp.</i>			C		4
animals	mammals	Muridae	<i>Mesembriomys gouldii</i>	black-footed tree-rat		C	V	1/1
animals	mammals	Muridae	<i>Rattus rattus</i>	black rat	Y			1
animals	mammals	Muridae	<i>Uromys caudimaculatus</i>	giant white-tailed rat		C		1
animals	mammals	Muridae	<i>Zyzomys argurus</i>	common rock-rat		C		1
animals	mammals	Phalangeridae	<i>Trichosurus vulpecula</i>	common brushtail possum		C		5/1
animals	mammals	Rhinolophidae	<i>Rhinolophus megaphyllus</i>	eastern horseshoe-bat		C		3/1
animals	mammals	Rhinolophidae	<i>Rhinolophus robertsi</i>	greater large-eared horseshoe bat		E	V	1/1

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animals	mammals	Suidae	<i>Sus scrofa</i>	pig	Y			7
animals	mammals	Tachyglossidae	<i>Tachyglossus aculeatus</i>	short-beaked echidna		SL		1
animals	mammals	Vespertilionidae	<i>Nyctophilus geoffroyi</i>	lesser long-eared bat		C		1/1
animals	ray-finned fishes	Apogonidae	<i>Glossamia aprion</i>	mouth almighty				1
animals	ray-finned fishes	Clupeidae	<i>Nematalosa erebi</i>	bony bream				1
animals	ray-finned fishes	Eleotridae	<i>Mogurnda adspersa</i>	southern purplespotted gudgeon				1
animals	ray-finned fishes	Eleotridae	<i>Mogurnda mogurnda</i>	northern purplespotted gudgeon				1
animals	ray-finned fishes	Gobiidae	<i>Glossogobius aureus</i>	golden flathead goby				1/1
animals	ray-finned fishes	Melanotaeniidae	<i>Melanotaenia splendida inornata</i>	checkered rainbowfish				2
animals	ray-finned fishes	Melanotaeniidae	<i>Melanotaenia splendida splendida</i>	eastern rainbowfish				1/1
animals	ray-finned fishes	Plotosidae	<i>Neosilurus hyrtlii</i>	Hyrtl's catfish				1
animals	ray-finned fishes	Terapontidae	<i>Hephaestus fuliginosus</i>	sooty grunter				1
animals	ray-finned fishes	Terapontidae	<i>Leiopotherapon unicolor</i>	spangled perch				1
animals	ray-finned fishes	Terapontidae	<i>Pingalla gilberti</i>	Gilbert's grunter				1
animals	reptiles	Agamidae	<i>Diporiphora australis</i>	tommy roundhead		C		5/3
animals	reptiles	Agamidae	<i>Lophognathus gilberti sensu lato</i>	Gilbert's dragon		C		1/1
animals	reptiles	Boidae	<i>Aspidites melanocephalus</i>	black-headed python		C		2
animals	reptiles	Chelidae	<i>Wollumbinia latisternum</i>	saw-shelled turtle		C		1
animals	reptiles	Colubridae	<i>Dendrelaphis punctulatus</i>	green tree snake		C		1
animals	reptiles	Colubridae	<i>Tropidonophis mairii</i>	freshwater snake		C		2
animals	reptiles	Crocodylidae	<i>Crocodylus johnstoni</i>	Australian freshwater crocodile		C		1
animals	reptiles	Diplodactylidae	<i>Amalosia queenslandia</i>	Queensland zigzag gecko		C		8/1
animals	reptiles	Diplodactylidae	<i>Oedura castelnaui</i>	northern velvet gecko		C		3
animals	reptiles	Diplodactylidae	<i>Oedura coggeri</i>	northern spotted velvet gecko		C		2
animals	reptiles	Diplodactylidae	<i>Oedura jowalbinna</i>	Quinkan velvet gecko		C		3
animals	reptiles	Diplodactylidae	<i>Rhynchoedura ornata sensu lato</i>	beaked gecko		C		1/1
animals	reptiles	Elapidae	<i>Acanthophis praelongus</i>	northern death adder		C		1
animals	reptiles	Elapidae	<i>Cryptophis boschmai</i>	Carpentaria whip snake		C		1
animals	reptiles	Elapidae	<i>Cryptophis nigrostriatus</i>	black-striped snake		C		1
animals	reptiles	Elapidae	<i>Oxyuranus scutellatus</i>	coastal taipan		C		1
animals	reptiles	Elapidae	<i>Pseudonaja textilis</i>	eastern brown snake		C		1
animals	reptiles	Gekkonidae	<i>Gehyra dubia</i>	dubious dtella		C		5/4
animals	reptiles	Gekkonidae	<i>Hemidactylus frenatus</i>	house gecko	Y			1
animals	reptiles	Gekkonidae	<i>Heteronotia binoei</i>	Bynoe's gecko		C		14
animals	reptiles	Gekkonidae	<i>Nactus cheverti</i>	Chevert gecko		C		6/1
animals	reptiles	Scincidae	<i>Carlia dogare</i>	sandy rainbow-skink		C		1
animals	reptiles	Scincidae	<i>Carlia jarnoldae</i>	lined rainbow-skink		C		4/2
animals	reptiles	Scincidae	<i>Carlia longipes</i>	closed-litter rainbow-skink		C		1
animals	reptiles	Scincidae	<i>Carlia munda</i>	shaded-litter rainbow-skink		C		3
animals	reptiles	Scincidae	<i>Carlia rostralis</i>	black-throated rainbow-skink		C		4/2
animals	reptiles	Scincidae	<i>Carlia rubigo</i>	orange-flanked rainbow skink		C		3
animals	reptiles	Scincidae	<i>Carlia schmeltzii</i>	robust rainbow-skink		C		6
animals	reptiles	Scincidae	<i>Carlia sp.</i>			C		4
animals	reptiles	Scincidae	<i>Carlia storri</i>	Storr's rainbow-skink		C		1
animals	reptiles	Scincidae	<i>Carlia vivax</i>	tussock rainbow-skink		C		6/5
animals	reptiles	Scincidae	<i>Cryptoblepharus metallicus</i>	metallic snake-eyed skink		C		4/2

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animals	reptiles	Scincidae	<i>Cryptoblepharus sp.</i>			C		2
animals	reptiles	Scincidae	<i>Cryptoblepharus virgatus</i>	striped snake-eyed skink		C		4/1
animals	reptiles	Scincidae	<i>Ctenotus nullum</i>	nullum ctenotus		C		2/2
animals	reptiles	Scincidae	<i>Ctenotus quinkan</i>	Quinkan ctenotus		C		1
animals	reptiles	Scincidae	<i>Glaphyromorphus crassicaudus</i>	Cape York mulch-skink		C		1
animals	reptiles	Scincidae	<i>Lygisaurus foliorum</i>	tree-base litter-skink		C		1
animals	reptiles	Scincidae	<i>Lygisaurus macfarlani</i>	translucent litter-skink		C		2/1
animals	reptiles	Scincidae	<i>Lygisaurus malleolus</i>	firedart litter-skink		C		1
animals	reptiles	Scincidae	<i>Pygmaeascincus koslandae</i>	fine-browed dwarf skink		C		6/2
animals	uncertain	Indeterminate	<i>Indeterminate</i>	Unknown or Code Pending				3
fungi	eurotiomycetes	Verrucariaceae	<i>Placidiopsis poronioides</i>			C		1/1
fungi	eurotiomycetes	Verrucariaceae	<i>Thelidium</i>					1/1
fungi	lecanoromycetes	Caliciaceae	<i>Buellia dimbulahensis</i>			C		1/1
fungi	lecanoromycetes	Caliciaceae	<i>Buellia mamillana</i>			C		1/1
fungi	lecanoromycetes	Caliciaceae	<i>Dimelaena australiensis</i>			C		1/1
fungi	lecanoromycetes	Cladoniaceae	<i>Cladia aggregata</i>			C		1/1
fungi	lecanoromycetes	Cladoniaceae	<i>Cladia muelleri</i>			C		1/1
fungi	lecanoromycetes	Lecideaceae	<i>Paraporphidia leptocarpa</i>			C		1/1
fungi	lecanoromycetes	Parmeliaceae	<i>Relicina rahengensis</i>			C		1/1
fungi	lecanoromycetes	Parmeliaceae	<i>Usnea bismolliuscula</i>			C		1/1
fungi	lecanoromycetes	Parmeliaceae	<i>Xanthoparmelia ballingalliana</i>			C		1/1
fungi	lecanoromycetes	Parmeliaceae	<i>Xanthoparmelia calida</i>			C		1/1
fungi	lecanoromycetes	Pertusariaceae	<i>Lepra subventosa</i>			C		1/1
fungi	lecanoromycetes	Pertusariaceae	<i>Pertusaria xanthoplaca</i>			C		1/1
fungi	lecanoromycetes	Teloschistaceae	<i>Caloplaca cinnabarina</i>			C		1/1
plants	Charophyceae	Characeae	<i>Nitella</i>					2/2
plants	land plants	Acanthaceae	<i>Brunoniella acaulis subsp. acaulis</i>			C		1/1
plants	land plants	Acanthaceae	<i>Pseuderanthemum variabile</i>	pastel flower		C		5/5
plants	land plants	Acanthaceae	<i>Rostellularia</i>					1/1
plants	land plants	Acanthaceae	<i>Rostellularia adscendens</i>			C		6/6
plants	land plants	Acanthaceae	<i>Rostellularia adscendens subsp. adscendens</i>			C		1/1
plants	land plants	Acanthaceae	<i>Rostellularia adscendens var. hispida</i>			C		1/1
plants	land plants	Acanthaceae	<i>Rostellularia adscendens var. latifolia</i>			C		1/1
plants	land plants	Acanthaceae	<i>Staurogyne spatulata</i>			C		1/1
plants	land plants	Acanthaceae	<i>Thunbergia arnhemica</i>			C		6/6
plants	land plants	Acanthaceae	<i>Thunbergia fragrans</i>		Y			1/1
plants	land plants	Aizoaceae	<i>Trianthema triquetra</i>	red spinach		C		3/3
plants	land plants	Amaranthaceae	<i>Achyranthes aspera</i>			C		1/1
plants	land plants	Amaranthaceae	<i>Alternanthera denticulata</i>	lesser joyweed		C		1/1
plants	land plants	Amaranthaceae	<i>Alternanthera denticulata var. micrantha</i>			C		1/1
plants	land plants	Amaranthaceae	<i>Alternanthera ficoidea</i>		Y			2/2
plants	land plants	Amaranthaceae	<i>Celosia argentea</i>		Y			4/4
plants	land plants	Amaranthaceae	<i>Cyathula prostrata</i>			C		3/3
plants	land plants	Anacardiaceae	<i>Blepharocarya involucrigera</i>			C		3/3
plants	land plants	Anacardiaceae	<i>Buchanania arborescens</i>			C		3/3
plants	land plants	Anacardiaceae	<i>Euroschinus falcata var. angustifolia</i>			C		1/1

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plants	land plants	Anacardiaceae	<i>Pleiogynium timorense</i>	Burdekin plum		C		1/1
plants	land plants	Anacardiaceae	<i>Schinus terebinthifolius</i>		Y			1/1
plants	land plants	Annonaceae	<i>Annona squamosa</i>		Y			1/1
plants	land plants	Annonaceae	<i>Huberantha nitidissima</i>			C		5/5
plants	land plants	Apiaceae	<i>Platysace valida</i>			C		7/7
plants	land plants	Apocynaceae	<i>Alstonia actinophylla</i>			C		1/1
plants	land plants	Apocynaceae	<i>Asclepias curassavica</i>	red-head cottonbush	Y			2/2
plants	land plants	Apocynaceae	<i>Calotropis procera</i>		Y			2/1
plants	land plants	Apocynaceae	<i>Cryptostegia grandiflora</i>	rubber vine	Y			46/6
plants	land plants	Apocynaceae	<i>Gymnema geminatum</i>			C		3/3
plants	land plants	Apocynaceae	<i>Hoya australis subsp. australis</i>			C		1/1
plants	land plants	Apocynaceae	<i>Ichnocarpus frutescens</i>			C		1/1
plants	land plants	Apocynaceae	<i>Leichhardtia cymulosa</i>			C		1/1
plants	land plants	Apocynaceae	<i>Leichhardtia viridiflora subsp. tropica</i>			C		1/1
plants	land plants	Apocynaceae	<i>Parsonsia lanceolata</i>	northern silkpod		C		2/2
plants	land plants	Apocynaceae	<i>Tabernaemontana orientalis</i>			C		1/1
plants	land plants	Apocynaceae	<i>Wrightia pubescens subsp. penicillata</i>			C		6/6
plants	land plants	Apocynaceae	<i>Wrightia saligna</i>			C		1/1
plants	land plants	Araliaceae	<i>Astrotricha pterocarpa</i>			C		5/5
plants	land plants	Araliaceae	<i>Heptapleurum actinophyllum</i>			C		1/1
plants	land plants	Araliaceae	<i>Trachymene</i>					1/1
plants	land plants	Araliaceae	<i>Trachymene bivistita var. bivistita</i>			C		4/4
plants	land plants	Arecaceae	<i>Livistona muelleri</i>	dwarf fan palm		SL		1/1
plants	land plants	Aristolochiaceae	<i>Aristolochia holtzei</i>			C		1/1
plants	land plants	Aristolochiaceae	<i>Aristolochia pubera var. pubera</i>			C		2/2
plants	land plants	Asteraceae	<i>Acanthospermum hispidum</i>	star burr	Y			1/1
plants	land plants	Asteraceae	<i>Ageratum conyzoides</i>	billygoat weed	Y			1/1
plants	land plants	Asteraceae	<i>Apowollastonia longipes</i>			C		4/4
plants	land plants	Asteraceae	<i>Apowollastonia spilanthesoides</i>			C		2/2
plants	land plants	Asteraceae	<i>Bidens bipinnata</i>	bipinnate beggar's ticks	Y			1/1
plants	land plants	Asteraceae	<i>Blumea saxatilis</i>			C		1/1
plants	land plants	Asteraceae	<i>Camptacra gracilis</i>			C		1/1
plants	land plants	Asteraceae	<i>Coronidium</i>					1/1
plants	land plants	Asteraceae	<i>Coronidium lanuginosum</i>			C		3/3
plants	land plants	Asteraceae	<i>Coronidium rupicola</i>			C		1/1
plants	land plants	Asteraceae	<i>Cyanthillium cinereum</i>			C		4/4
plants	land plants	Asteraceae	<i>Eclipta prostrata</i>	white eclipta	Y			1/1
plants	land plants	Asteraceae	<i>Emilia sonchifolia var. sonchifolia</i>		Y			2/2
plants	land plants	Asteraceae	<i>Lagenophora queenslandica</i>			C		1/1
plants	land plants	Asteraceae	<i>Parthenium hysterophorus</i>	parthenium weed	Y			1/1
plants	land plants	Asteraceae	<i>Peripleura bicolor</i>			C		2/2
plants	land plants	Asteraceae	<i>Peripleura hispidula var. hispidula</i>			C		2/2
plants	land plants	Asteraceae	<i>Phacellothrix cladochaeta</i>			C		1/1
plants	land plants	Asteraceae	<i>Pleurocarpaea denticulata</i>			C		6/6
plants	land plants	Asteraceae	<i>Praxelis clematidea</i>		Y			1/1
plants	land plants	Asteraceae	<i>Pterocaulon ciliosum</i>			C		5/5

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plants	land plants	Asteraceae	<i>Sphaeromorphaea subintegra</i>			C		1/1
plants	land plants	Asteraceae	<i>Xanthium occidentale</i>		Y			6/4
plants	land plants	Bignoniaceae	<i>Deplanchea tetraphylla</i>			C		1/1
plants	land plants	Bignoniaceae	<i>Dolichandrone alternifolia</i>			C		1/1
plants	land plants	Bignoniaceae	<i>Pandorea pandorana</i>	wonga vine		C		1/1
plants	land plants	Bixaceae	<i>Cochlospermum gillivraei</i>			C		5/4
plants	land plants	Blechnaceae	<i>Blechnum orientale</i>			SL		4/4
plants	land plants	Blechnaceae	<i>Stenochlaena palustris</i>	climbing swamp fern		SL		1/1
plants	land plants	Boraginaceae	<i>Coldenia procumbens</i>			C		1/1
plants	land plants	Boraginaceae	<i>Heliotropium collinum</i>			C		2/2
plants	land plants	Boraginaceae	<i>Heliotropium indicum</i>		Y			1/1
plants	land plants	Burseraceae	<i>Canarium australianum</i> var. <i>australianum</i>			C		3/3
plants	land plants	Burseraceae	<i>Canarium australianum</i> var. <i>glabrum</i>			C		1/1
plants	land plants	Byblidaceae	<i>Byblis liniflora</i>			SL		1/1
plants	land plants	Byttneriaceae	<i>Melochia pyramidata</i>		Y			1/1
plants	land plants	Byttneriaceae	<i>Seringia corollata</i>			C		1/1
plants	land plants	Campanulaceae	<i>Isotoma petraea</i>	rock isotome		SL		1/1
plants	land plants	Campanulaceae	<i>Wahlenbergia caryophylloides</i>			SL		2/2
plants	land plants	Cannabaceae	<i>Trema tomentosa</i> var. <i>aspera</i>			C		1/1
plants	land plants	Capparaceae	<i>Capparis canescens</i>			C		2/2
plants	land plants	Capparaceae	<i>Capparis lucida</i>			C		2/2
plants	land plants	Caryophyllaceae	<i>Polycarpaea corymbosa</i>			C		1/1
plants	land plants	Caryophyllaceae	<i>Polycarpaea spirostylis</i>			C		3/3
plants	land plants	Caryophyllaceae	<i>Polycarpaea spirostylis</i> subsp. <i>densiflora</i>			C		1/1
plants	land plants	Caryophyllaceae	<i>Polycarpaea spirostylis</i> subsp. <i>spirostylis</i>			C		5/5
plants	land plants	Casuarinaceae	<i>Allocasuarina littoralis</i>			C		2/2
plants	land plants	Celastraceae	<i>Denhamia cunninghamii</i>			C		4/4
plants	land plants	Celastraceae	<i>Siphonodon pendulus</i>			C		2/2
plants	land plants	Centrolepidaceae	<i>Centrolepis banksii</i>			C		1/1
plants	land plants	Chenopodiaceae	<i>Dysphania carinata</i>			C		1/1
plants	land plants	Cleomaceae	<i>Arivela viscosa</i>			C		1/1
plants	land plants	Colchicaceae	<i>Iphigenia indica</i>			C		3/3
plants	land plants	Combretaceae	<i>Terminalia platyphylla</i>			C		1/1
plants	land plants	Combretaceae	<i>Terminalia sericocarpa</i>	damson		C		2/2
plants	land plants	Combretaceae	<i>Terminalia subacroptera</i>			C		9/9
plants	land plants	Commelinaceae	<i>Aneilema siliculosum</i>			C		7/7
plants	land plants	Commelinaceae	<i>Cartonema baileyi</i>			C		1/1
plants	land plants	Commelinaceae	<i>Cartonema spicatum</i>			C		6/6
plants	land plants	Commelinaceae	<i>Cartonema spicatum</i> var. <i>humile</i>			C		1/1
plants	land plants	Commelinaceae	<i>Commelina</i>					2/2
plants	land plants	Commelinaceae	<i>Commelina ensifolia</i>	scurvy grass		C		7/7
plants	land plants	Commelinaceae	<i>Commelina</i> sp. (Laura River J.R.Clarkson 4723)			C		1/1
plants	land plants	Convolvulaceae	<i>Argyreia nervosa</i>		Y			4/4
plants	land plants	Convolvulaceae	<i>Evolvulus alsinoides</i>			C		4/4
plants	land plants	Convolvulaceae	<i>Evolvulus alsinoides</i> var. <i>decumbens</i>			C		3/3
plants	land plants	Convolvulaceae	<i>Ipomoea brassii</i>			C		1/1

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plants	land plants	Convolvulaceae	<i>Ipomoea densivestita</i>	bellvine		C		1/1
plants	land plants	Convolvulaceae	<i>Ipomoea diversifolia</i>			C		1/1
plants	land plants	Convolvulaceae	<i>Ipomoea eriocarpa</i>			C		3/3
plants	land plants	Convolvulaceae	<i>Ipomoea funicularis</i>			C		1/1
plants	land plants	Convolvulaceae	<i>Ipomoea gracilis</i>			C		9/9
plants	land plants	Convolvulaceae	<i>Ipomoea graminea</i>			C		3/3
plants	land plants	Convolvulaceae	<i>Ipomoea nil</i>		Y			1/1
plants	land plants	Convolvulaceae	<i>Ipomoea plebeia</i>			C		2/2
plants	land plants	Convolvulaceae	<i>Ipomoea polpha subsp. polpha</i>			C		1/1
plants	land plants	Convolvulaceae	<i>Ipomoea polymorpha</i>			C		1/1
plants	land plants	Convolvulaceae	<i>Ipomoea triloba</i>	West Indian gherkin	Y			2/2
plants	land plants	Convolvulaceae	<i>Jacquemontia paniculata</i>			C		2/2
plants	land plants	Convolvulaceae	<i>Jacquemontia paniculata var. tomentosa</i>			C		1/1
plants	land plants	Convolvulaceae	<i>Jacquemontia sp. (Fairview R.W.Johnson 4026)</i>			C		3/3
plants	land plants	Convolvulaceae	<i>Polymeria</i>	coast cypress pine				1/1
plants	land plants	Cucurbitaceae	<i>Cucumis althaeoides</i>			C		2/2
plants	land plants	Cucurbitaceae	<i>Cucumis anguria var. anguria</i>		Y			1/1
plants	land plants	Cucurbitaceae	<i>Cucumis costatus</i>				NT	2/2
plants	land plants	Cucurbitaceae	<i>Luffa aegyptiaca</i>			C		3/3
plants	land plants	Cucurbitaceae	<i>Muellerargia timorensis</i>			C		1/1
plants	land plants	Cucurbitaceae	<i>Neoalsomitra capricornica</i>			C		1/1
plants	land plants	Cupressaceae	<i>Callitris intratropica</i>			C		2/2
plants	land plants	Cyatheaceae	<i>Alsophila rebeccae</i>			C		2/2
plants	land plants	Cyperaceae	<i>Arthrostylis aphylla</i>			C		8/8
plants	land plants	Cyperaceae	<i>Bulbostylis barbata</i>	rice sedge		C		10/10
plants	land plants	Cyperaceae	<i>Bulbostylis densa</i>			C		1/1
plants	land plants	Cyperaceae	<i>Cyperus aromaticus</i>		Y			1/1
plants	land plants	Cyperaceae	<i>Cyperus castaneus</i>			C		2/2
plants	land plants	Cyperaceae	<i>Cyperus cristulatus</i>			C		1/1
plants	land plants	Cyperaceae	<i>Cyperus cuspidatus</i>			C		3/3
plants	land plants	Cyperaceae	<i>Cyperus decompositus</i>			C		2/2
plants	land plants	Cyperaceae	<i>Cyperus difformis</i>			C		1/1
plants	land plants	Cyperaceae	<i>Cyperus distans</i>			C		1/1
plants	land plants	Cyperaceae	<i>Cyperus flaccidus</i>			C		2/2
plants	land plants	Cyperaceae	<i>Cyperus flavidus</i>	flatsedge		C		1/1
plants	land plants	Cyperaceae	<i>Cyperus fulvus</i>			C		3/3
plants	land plants	Cyperaceae	<i>Cyperus javanicus</i>			C		2/2
plants	land plants	Cyperaceae	<i>Cyperus multispiceus</i>			C		3/3
plants	land plants	Cyperaceae	<i>Cyperus nutans var. eleusinoides</i>			C		2/2
plants	land plants	Cyperaceae	<i>Cyperus orgadophilus</i>			C		1/1
plants	land plants	Cyperaceae	<i>Cyperus paniceus</i>			C		1/1
plants	land plants	Cyperaceae	<i>Cyperus polystachyos var. polystachyos</i>			C		1/1
plants	land plants	Cyperaceae	<i>Cyperus pulchellus</i>			C		4/4
plants	land plants	Cyperaceae	<i>Cyperus scaber</i>			C		1/1
plants	land plants	Cyperaceae	<i>Cyperus sharpei</i>			C		4/4
plants	land plants	Cyperaceae	<i>Cyperus sphacelatus</i>		Y			1/1

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plants	land plants	Cyperaceae	<i>Cyperus squarrosus</i>	bearded flatsedge		C		1/1
plants	land plants	Cyperaceae	<i>Cyperus trinervis</i>			C		6/6
plants	land plants	Cyperaceae	<i>Cyperus zollingeri</i>			C		1/1
plants	land plants	Cyperaceae	<i>Diplacrum pygmaeum</i>			C		1/1
plants	land plants	Cyperaceae	<i>Eleocharis geniculata</i>			C		2/2
plants	land plants	Cyperaceae	<i>Eleocharis minuta</i>		Y			1/1
plants	land plants	Cyperaceae	<i>Fimbristylis acicularis</i>			C		2/2
plants	land plants	Cyperaceae	<i>Fimbristylis complanata</i>			C		1/1
plants	land plants	Cyperaceae	<i>Fimbristylis depauperata</i>			C		3/3
plants	land plants	Cyperaceae	<i>Fimbristylis littoralis</i>			C		3/3
plants	land plants	Cyperaceae	<i>Fimbristylis pauciflora</i>			C		1/1
plants	land plants	Cyperaceae	<i>Fimbristylis pterigosperma</i>			C		1/1
plants	land plants	Cyperaceae	<i>Fimbristylis recta</i>			C		6/6
plants	land plants	Cyperaceae	<i>Fimbristylis sieberiana</i>			C		2/2
plants	land plants	Cyperaceae	<i>Fuirena ciliaris</i>			C		1/1
plants	land plants	Cyperaceae	<i>Fuirena incrassata</i>			C		1/1
plants	land plants	Cyperaceae	<i>Fuirena umbellata</i>			C		2/2
plants	land plants	Cyperaceae	<i>Gahnia sieberiana</i>	sword grass		C		2/2
plants	land plants	Cyperaceae	<i>Machaerina rubiginosa</i>			C		1/1
plants	land plants	Cyperaceae	<i>Rhynchospora heterochaeta</i>			C		2/2
plants	land plants	Cyperaceae	<i>Rhynchospora pterochaeta</i>			C		2/2
plants	land plants	Cyperaceae	<i>Schoenoplectiella mucronata</i>			C		3/3
plants	land plants	Cyperaceae	<i>Schoenoplectiella praelongata</i>			C		1/1
plants	land plants	Cyperaceae	<i>Schoenoplectus subulatus</i>			C		2/2
plants	land plants	Cyperaceae	<i>Schoenus apogon</i> var. <i>apogon</i>			C		2/2
plants	land plants	Cyperaceae	<i>Schoenus sparteus</i>			C		5/5
plants	land plants	Cyperaceae	<i>Scleria brownii</i>			C		5/5
plants	land plants	Cyperaceae	<i>Scleria mackaviensis</i>			C		1/1
plants	land plants	Cyperaceae	<i>Scleria psammitica</i>			C		9/9
plants	land plants	Davalliaceae	<i>Davallia denticulata</i>			C		6/6
plants	land plants	Dennstaedtiaceae	<i>Pteridium aquilinum</i> subsp. <i>wightianum</i>			C		1/1
plants	land plants	Dennstaedtiaceae	<i>Pteridium esculentum</i>	common bracken		C		1/1
plants	land plants	Dilleniaceae	<i>Hibbertia</i>					3/3
plants	land plants	Dilleniaceae	<i>Hibbertia arachnoidea</i>			C		7/7
plants	land plants	Dilleniaceae	<i>Hibbertia cymosa</i>			NT		1/1
plants	land plants	Dilleniaceae	<i>Hibbertia echiifolia</i>			C		1/1
plants	land plants	Dilleniaceae	<i>Hibbertia echiifolia</i> subsp. <i>echiifolia</i>			C		5/5
plants	land plants	Dilleniaceae	<i>Hibbertia laurana</i>			C		3/3
plants	land plants	Dilleniaceae	<i>Hibbertia longifolia</i>			C		4/4
plants	land plants	Dilleniaceae	<i>Hibbertia mulligana</i>			C		1/1
plants	land plants	Droseraceae	<i>Drosera lanata</i>			SL		1/1
plants	land plants	Droseraceae	<i>Drosera spatulata</i> var. <i>spatulata</i>	scaly ebony		SL		1/1
plants	land plants	Ebenaceae	<i>Diospyros geminata</i>			C		5/5
plants	land plants	Ericaceae	<i>Melichrus adpressus</i>			C		1/1
plants	land plants	Ericaceae	<i>Styphelia lavarackii</i>			C		2/2
plants	land plants	Ericaceae	<i>Styphelia ruscifolia</i>			C		5/5

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plants	land plants	Eriocaulaceae	<i>Eriocaulon</i>					2/2
plants	land plants	Eriocaulaceae	<i>Eriocaulon cinereum</i>			C		2/2
plants	land plants	Eriocaulaceae	<i>Eriocaulon pygmaeum</i>			C		2/2
plants	land plants	Eriocaulaceae	<i>Eriocaulon wilddenovianum</i>			C		1/1
plants	land plants	Erythroxylaceae	<i>Erythroxylum ellipticum</i>			C		1/1
plants	land plants	Euphorbiaceae	<i>Claoxylon</i>					1/1
plants	land plants	Euphorbiaceae	<i>Claoxylon tenerifolium subsp. tenerifolium</i>			C		1/1
plants	land plants	Euphorbiaceae	<i>Croton arnhemicus</i>			C		4/4
plants	land plants	Euphorbiaceae	<i>Croton minimus</i>			C		1/1
plants	land plants	Euphorbiaceae	<i>Croton multicaulis subsp. velutinus</i>			C		1/1
plants	land plants	Euphorbiaceae	<i>Euphorbia bifida</i>			C		2/2
plants	land plants	Euphorbiaceae	<i>Euphorbia hirta</i>		Y			1/1
plants	land plants	Euphorbiaceae	<i>Euphorbia mitchelliana var. mitchelliana</i>			C		1/1
plants	land plants	Euphorbiaceae	<i>Jatropha curcas</i>	physic nut	Y			1/1
plants	land plants	Euphorbiaceae	<i>Microstachys chamaelea</i>			C		7/7
plants	land plants	Euphorbiaceae	<i>Ricinocarpos verrucosus</i>			C		1/1
plants	land plants	Euphorbiaceae	<i>Ricinus communis</i>	castor oil bush	Y			1/1
plants	land plants	Euphorbiaceae	<i>Shonia tristigma subsp. borealis</i>			C		2/2
plants	land plants	Euphorbiaceae	<i>Shonia tristigma subsp. parvifolia</i>			C		4/4
plants	land plants	Euphorbiaceae	<i>Tragia finalis</i>			C		1/1
plants	land plants	Gentianaceae	<i>Canscora diffusa</i>			C		4/4
plants	land plants	Gesneriaceae	<i>Boea hygroskopica</i>			SL		3/3
plants	land plants	Gleicheniaceae	<i>Dicranopteris linearis var. linearis</i>			C		3/3
plants	land plants	Gleicheniaceae	<i>Gleichenia</i>					1/1
plants	land plants	Gleicheniaceae	<i>Gleichenia dicarpa</i>	pouched coral fern		C		1/1
plants	land plants	Gleicheniaceae	<i>Sticherus flabellatus</i>			C		1/1
plants	land plants	Gleicheniaceae	<i>Sticherus flabellatus var. compactus</i>			C		1/1
plants	land plants	Gleicheniaceae	<i>Sticherus flabellatus var. flabellatus</i>			C		2/2
plants	land plants	Goodeniaceae	<i>Goodenia armitiana</i>			C		2/2
plants	land plants	Goodeniaceae	<i>Goodenia janamba</i>			C		2/2
plants	land plants	Goodeniaceae	<i>Goodenia pilosa</i>			C		1/1
plants	land plants	Haemodoraceae	<i>Haemodorum coccineum</i>			C		4/4
plants	land plants	Haloragaceae	<i>Gonocarpus acanthocarpus</i>			C		2/2
plants	land plants	Haloragaceae	<i>Myriophyllum dicoccum</i>			C		1/1
plants	land plants	Haloragaceae	<i>Myriophyllum verrucosum</i>	water milfoil		C		3/3
plants	land plants	Hemerocallidaceae	<i>Dianella caerulea var. vannata</i>			C		1/1
plants	land plants	Hemerocallidaceae	<i>Dianella incollata</i>			NT		8/8
plants	land plants	Hemerocallidaceae	<i>Dianella longifolia var. stupata</i>			C		1/1
plants	land plants	Hemerocallidaceae	<i>Dianella nervosa</i>			C		1/1
plants	land plants	Hemerocallidaceae	<i>Tricoryne elatior</i>	yellow autumn lily		C		2/2
plants	land plants	Hymenophyllaceae	<i>Abrodictyum obscurum</i>			SL		2/2
plants	land plants	Hypericaceae	<i>Hypericum gramineum</i>			C		1/1
plants	land plants	Hypoxidaceae	<i>Curculigo ensifolia var. ensifolia</i>			C		2/2
plants	land plants	Hypoxidaceae	<i>Hypoxis pratensis var. pratensis</i>			C		2/2
plants	land plants	Lamiaceae	<i>Anisomeles eriodes</i>			C		1/1
plants	land plants	Lamiaceae	<i>Anisomeles inodora</i>			C		1/1

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plants	land plants	Lamiaceae	<i>Basilicum polystachyon</i>			C		1/1
plants	land plants	Lamiaceae	<i>Callicarpa candicans</i>			C		3/3
plants	land plants	Lamiaceae	<i>Chloanthes parviflora</i>			C		8/8
plants	land plants	Lamiaceae	<i>Clerodendrum floribundum</i>			C		1/1
plants	land plants	Lamiaceae	<i>Clerodendrum tomentosum</i>			C		1/1
plants	land plants	Lamiaceae	<i>Coleus apricus</i>			C		1/1
plants	land plants	Lamiaceae	<i>Coleus congestus</i>			C		2/2
plants	land plants	Lamiaceae	<i>Coleus scutellarioides</i>			C		4/4
plants	land plants	Lamiaceae	<i>Mesosphaerum suaveolens</i>		Y			47/5
plants	land plants	Lamiaceae	<i>Premna acuminata</i>			C		4/4
plants	land plants	Lamiaceae	<i>Premna dallachyana</i>			C		2/2
plants	land plants	Lamiaceae	<i>Salvia hispanica</i>		Y			1/1
plants	land plants	Lamiaceae	<i>Teucrium argutum</i>			C		1/1
plants	land plants	Lamiaceae	<i>Vitex glabrata</i>			C		1/1
plants	land plants	Lauraceae	<i>Beilschmiedia obtusifolia</i>	hard bolly gum		C		1/1
plants	land plants	Lauraceae	<i>Cassytha capillaris</i>			C		2/2
plants	land plants	Lauraceae	<i>Cassytha filiformis</i>	dodder laurel		C		5/5
plants	land plants	Lauraceae	<i>Litsea glutinosa</i>			C		1/1
plants	land plants	Laxmanniaceae	<i>Eustrephus latifolius</i>	wombat berry		C		2/2
plants	land plants	Laxmanniaceae	<i>Eustrephus latifolius subforma fimbriatus</i>			C		1/1
plants	land plants	Laxmanniaceae	<i>Lomandra</i>					4/4
plants	land plants	Laxmanniaceae	<i>Lomandra decomposita</i>			C		1/1
plants	land plants	Laxmanniaceae	<i>Lomandra filiformis subsp. filiformis</i>			C		2/2
plants	land plants	Laxmanniaceae	<i>Lomandra longifolia</i>			C		1/1
plants	land plants	Laxmanniaceae	<i>Lomandra multiflora subsp. multiflora</i>			C		1/1
plants	land plants	Laxmanniaceae	<i>Thysanotus banksii</i>			C		3/3
plants	land plants	Laxmanniaceae	<i>Thysanotus tuberosus subsp. tuberosus</i>			C		1/1
plants	land plants	Leguminosae	<i>Acacia</i>					2/2
plants	land plants	Leguminosae	<i>Acacia armillata</i>			C		6/6
plants	land plants	Leguminosae	<i>Acacia auriculiformis</i>	black wattle		C		2/2
plants	land plants	Leguminosae	<i>Acacia calyculata</i>			C		6/6
plants	land plants	Leguminosae	<i>Acacia colei var. colei</i>			C		1/1
plants	land plants	Leguminosae	<i>Acacia conferta</i>			C		1/1
plants	land plants	Leguminosae	<i>Acacia decora</i>	pretty wattle		C		9/9
plants	land plants	Leguminosae	<i>Acacia disparrima subsp. calidestris</i>			C		2/2
plants	land plants	Leguminosae	<i>Acacia drepanocarpa</i>			C		1/1
plants	land plants	Leguminosae	<i>Acacia elachantha</i>			C		4/4
plants	land plants	Leguminosae	<i>Acacia flavescens</i>	toothed wattle		C		4/4
plants	land plants	Leguminosae	<i>Acacia galioides</i>			C		1/1
plants	land plants	Leguminosae	<i>Acacia guyeri</i>			NT		21/21
plants	land plants	Leguminosae	<i>Acacia hemignosta</i>			C		3/3
plants	land plants	Leguminosae	<i>Acacia hemsleyi</i>			C		3/3
plants	land plants	Leguminosae	<i>Acacia holosericea</i>			C		5/5
plants	land plants	Leguminosae	<i>Acacia humifusa</i>			C		14/14
plants	land plants	Leguminosae	<i>Acacia hyaloneura</i>			C		5/5
plants	land plants	Leguminosae	<i>Acacia johannis</i>			C		7/7

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plants	land plants	Leguminosae	<i>Acacia leptocarpa</i>	north coast wattle		C		5/5
plants	land plants	Leguminosae	<i>Acacia leptoloba</i>			C		3/3
plants	land plants	Leguminosae	<i>Acacia leptostachya</i>	Townsville wattle		C		1/1
plants	land plants	Leguminosae	<i>Acacia multisiliqua</i>			C		4/4
plants	land plants	Leguminosae	<i>Acacia nesophila</i>			C		6/6
plants	land plants	Leguminosae	<i>Acacia oraria</i>			C		7/7
plants	land plants	Leguminosae	<i>Acacia platycarpa</i>			C		1/1
plants	land plants	Leguminosae	<i>Acacia rothii</i>			C		1/1
plants	land plants	Leguminosae	<i>Acacia shirleyi</i>	lancewood		C		1/1
plants	land plants	Leguminosae	<i>Acacia simsii</i>			C		10/10
plants	land plants	Leguminosae	<i>Acacia torulosa</i>			C		3/3
plants	land plants	Leguminosae	<i>Acacia umbellata</i>			C		14/14
plants	land plants	Leguminosae	<i>Acacia victoriae subsp. victoriae</i>			C		1/1
plants	land plants	Leguminosae	<i>Acacia webbii</i>			C		4/4
plants	land plants	Leguminosae	<i>Adenanthera abrosperma</i>			C		2/2
plants	land plants	Leguminosae	<i>Aeschynomene americana var. glandulosa</i>		Y			1/1
plants	land plants	Leguminosae	<i>Aeschynomene indica</i>	budda pea		C		1/1
plants	land plants	Leguminosae	<i>Alysicarpus aurantiacus</i>			C		1/1
plants	land plants	Leguminosae	<i>Alysicarpus ovalifolius</i>		Y			2/2
plants	land plants	Leguminosae	<i>Alysicarpus schomburgkii</i>			C		4/4
plants	land plants	Leguminosae	<i>Aphyllodium biarticulatum</i>			C		1/1
plants	land plants	Leguminosae	<i>Aphyllodium latifolium</i>			C		1/1
plants	land plants	Leguminosae	<i>Austrodolichos errabundus</i>			C		2/2
plants	land plants	Leguminosae	<i>Austrosteenisia blackii var. astipella</i>			C		1/1
plants	land plants	Leguminosae	<i>Bossiaea armitii</i>			C		6/6
plants	land plants	Leguminosae	<i>Cajanus acutifolius</i>			C		10/10
plants	land plants	Leguminosae	<i>Cajanus marmoratus</i>			C		1/1
plants	land plants	Leguminosae	<i>Cajanus reticulatus var. reticulatus</i>			C		1/1
plants	land plants	Leguminosae	<i>Chamaecrista absus var. absus</i>			C		1/1
plants	land plants	Leguminosae	<i>Chamaecrista concinna</i>			C		1/1
plants	land plants	Leguminosae	<i>Chamaecrista mimosoides</i>	dwarf cassia		C		7/7
plants	land plants	Leguminosae	<i>Chamaecrista nomame var. nomame</i>			C		1/1
plants	land plants	Leguminosae	<i>Clitoria ternatea</i>	butterfly pea	Y			1/1
plants	land plants	Leguminosae	<i>Crotalaria aridicola subsp. aridicola</i>			C		2/2
plants	land plants	Leguminosae	<i>Crotalaria brevis</i>			C		3/3
plants	land plants	Leguminosae	<i>Crotalaria goreensis</i>	gambia pea	Y			3/3
plants	land plants	Leguminosae	<i>Crotalaria medicaginea var. medicaginea</i>			C		2/2
plants	land plants	Leguminosae	<i>Crotalaria medicaginea var. neglecta</i>			C		2/2
plants	land plants	Leguminosae	<i>Crotalaria montana</i>			C		1/1
plants	land plants	Leguminosae	<i>Crotalaria montana var. angustifolia</i>			C		6/6
plants	land plants	Leguminosae	<i>Cullen pustulatum</i>			C		1/1
plants	land plants	Leguminosae	<i>Dalbergia densa</i>			C		1/1
plants	land plants	Leguminosae	<i>Daviesia flava</i>			C		8/8
plants	land plants	Leguminosae	<i>Dendrolobium umbellatum var. umbellatum</i>			C		1/1
plants	land plants	Leguminosae	<i>Desmodium brownii</i>			C		2/2
plants	land plants	Leguminosae	<i>Desmodium heterocarpon var. strigosum</i>			C		1/1

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plants	land plants	Leguminosae	<i>Desmodium pullenii</i>			C		2/2
plants	land plants	Leguminosae	<i>Desmodium rhytidophyllum</i>			C		3/3
plants	land plants	Leguminosae	<i>Desmodium strigillosum</i>		Y			1/1
plants	land plants	Leguminosae	<i>Eriosema chinense</i>			C		1/1
plants	land plants	Leguminosae	<i>Erythrophleum chlorostachys</i>			C		1
plants	land plants	Leguminosae	<i>Falcataria toona</i>			C		2/2
plants	land plants	Leguminosae	<i>Flemingia lineata</i>			C		1/1
plants	land plants	Leguminosae	<i>Flemingia parviflora</i>	flemingia		C		2/2
plants	land plants	Leguminosae	<i>Galactia</i>					1/1
plants	land plants	Leguminosae	<i>Galactia tenuiflora forma sericea</i>			C		3/3
plants	land plants	Leguminosae	<i>Glycine</i>					1/1
plants	land plants	Leguminosae	<i>Glycine curvata</i>			C		1/1
plants	land plants	Leguminosae	<i>Glycine cyrtoloba</i>			C		1/1
plants	land plants	Leguminosae	<i>Gompholobium nitidum</i>			C		6/6
plants	land plants	Leguminosae	<i>Hardenbergia sp. (Mt Mulligan J.R.Clarkson 5775)</i>			V		3/3
plants	land plants	Leguminosae	<i>Hovea parvicalyx</i>			C		10/10
plants	land plants	Leguminosae	<i>Indigofera colutea</i>	sticky indigo		C		1/1
plants	land plants	Leguminosae	<i>Indigofera elachantha</i>			C		5/5
plants	land plants	Leguminosae	<i>Indigofera hirsuta</i>	hairy indigo		C		4/4
plants	land plants	Leguminosae	<i>Indigofera polygaloides</i>			C		1/1
plants	land plants	Leguminosae	<i>Indigofera pratensis</i>			C		12/12
plants	land plants	Leguminosae	<i>Indigofera tinctoria</i>		Y			1/1
plants	land plants	Leguminosae	<i>Indigofera trifoliata</i>			C		2/2
plants	land plants	Leguminosae	<i>Jacksonia thesioides</i>			C		8/8
plants	land plants	Leguminosae	<i>Lamprolobium fruticosum</i>			C		12/12
plants	land plants	Leguminosae	<i>Leucaena leucocephala</i>		Y			10
plants	land plants	Leguminosae	<i>Macroptilium atropurpureum</i>	siratro	Y			1
plants	land plants	Leguminosae	<i>Macrotyloma uniflorum var. uniflorum</i>		Y			1/1
plants	land plants	Leguminosae	<i>Neptunia proxima</i>			C		1/1
plants	land plants	Leguminosae	<i>Phyllodium hackeri</i>			C		4/4
plants	land plants	Leguminosae	<i>Pycnospora lutescens</i>	pycnospora		C		1/1
plants	land plants	Leguminosae	<i>Rhynchosia minima var. minima</i>			C		2/2
plants	land plants	Leguminosae	<i>Samanea saman</i>		Y			1/1
plants	land plants	Leguminosae	<i>Senna</i>					1/1
plants	land plants	Leguminosae	<i>Senna gaudichaudii</i>			C		3/3
plants	land plants	Leguminosae	<i>Senna leptoclada</i>			C		1/1
plants	land plants	Leguminosae	<i>Senna obtusifolia</i>		Y			12/3
plants	land plants	Leguminosae	<i>Senna occidentalis</i>	coffee senna	Y			2/1
plants	land plants	Leguminosae	<i>Sesbania cannabina var. cannabina</i>			C		1/1
plants	land plants	Leguminosae	<i>Stylosanthes</i>					24
plants	land plants	Leguminosae	<i>Stylosanthes hamata</i>		Y			1/1
plants	land plants	Leguminosae	<i>Stylosanthes humilis</i>	Townsville stylo	Y			2/2
plants	land plants	Leguminosae	<i>Stylosanthes scabra</i>		Y			3/3
plants	land plants	Leguminosae	<i>Tephrosia</i>					8/8
plants	land plants	Leguminosae	<i>Tephrosia astragaloides</i>			C		7/7
plants	land plants	Leguminosae	<i>Tephrosia astragaloides var. (Belyando Crossing E.J.Thompson+ 139)</i>			C		1/1

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plants	land plants	Leguminosae	<i>Tephrosia filipes</i>			C		2/2
plants	land plants	Leguminosae	<i>Tephrosia filipes forma vestita</i>			C		1/1
plants	land plants	Leguminosae	<i>Tephrosia filipes subsp. filipes</i>			C		2/2
plants	land plants	Leguminosae	<i>Tephrosia filipes var. latifolia</i>			C		2/2
plants	land plants	Leguminosae	<i>Tephrosia juncea</i>			C		8/8
plants	land plants	Leguminosae	<i>Tephrosia leptoclada</i>			C		10/10
plants	land plants	Leguminosae	<i>Tephrosia macrostachya</i>			C		1/1
plants	land plants	Leguminosae	<i>Tephrosia purpurea</i>			C		2/2
plants	land plants	Leguminosae	<i>Tephrosia sp. (Copperfield River P.I.Forster PIF14768)</i>			C		1/1
plants	land plants	Leguminosae	<i>Tephrosia sp. (Laura M.B.Thomas 283)</i>			C		5/5
plants	land plants	Leguminosae	<i>Tephrosia sp. (Pannikan Springs A.R.Bean+ 5612)</i>			C		2/2
plants	land plants	Leguminosae	<i>Tephrosia sp. (Walsh River L.Pedley 4890)</i>			C		1/1
plants	land plants	Leguminosae	<i>Tephrosia sp. G Kimberley Flora (G.J.Keighery 4828)</i>			C		1/1
plants	land plants	Leguminosae	<i>Tephrosia sp. Irvinebank (I.B.Staples IBS2090)</i>			C		3/3
plants	land plants	Leguminosae	<i>Tephrosia varians</i>			C		4/4
plants	land plants	Leguminosae	<i>Uraria lagopodioides</i>			C		1/1
plants	land plants	Leguminosae	<i>Uraria picta</i>			C		9/9
plants	land plants	Leguminosae	<i>Vachellia bidwillii</i>			C		5/5
plants	land plants	Leguminosae	<i>Vigna</i>					1/1
plants	land plants	Leguminosae	<i>Vigna radiata var. sublobata</i>			C		1/1
plants	land plants	Leguminosae	<i>Vigna sp. (Station Creek R.J.Lawn CQ3284)</i>			C		1/1
plants	land plants	Leguminosae	<i>Vigna vexillata var. youngiana</i>			C		1/1
plants	land plants	Leguminosae	<i>Zornia</i>					1/1
plants	land plants	Leguminosae	<i>Zornia dyctiocarpa var. filifolia</i>			C		1/1
plants	land plants	Leguminosae	<i>Zornia floribunda</i>			C		1/1
plants	land plants	Leguminosae	<i>Zornia muelleriana subsp. muelleriana</i>			C		1/1
plants	land plants	Leguminosae	<i>Zornia muriculata</i>			C		3/3
plants	land plants	Leguminosae	<i>Zornia muriculata subsp. angustata</i>			C		5/5
plants	land plants	Leguminosae	<i>Zornia muriculata subsp. muriculata</i>			C		1/1
plants	land plants	Lentibulariaceae	<i>Utricularia</i>					4/4
plants	land plants	Linderniaceae	<i>Bonnaya ciliata</i>			C		1/1
plants	land plants	Linderniaceae	<i>Lindernia alsinoides</i>			C		1/1
plants	land plants	Linderniaceae	<i>Torenia crustacea</i>			C		1/1
plants	land plants	Lindsaeaceae	<i>Lindsaea ensifolia subsp. agatii</i>			C		2/2
plants	land plants	Lindsaeaceae	<i>Lindsaea ensifolia subsp. ensifolia</i>			C		2/2
plants	land plants	Loganiaceae	<i>Mitrasacme</i>					1/1
plants	land plants	Loganiaceae	<i>Mitrasacme nudicaulis var. nudicaulis</i>			C		1/1
plants	land plants	Loganiaceae	<i>Mitrasacme nummularia</i>			C		1/1
plants	land plants	Loganiaceae	<i>Mitrasacme pygmaea</i>			C		5/5
plants	land plants	Loganiaceae	<i>Strychnos lucida</i>			C		4/4
plants	land plants	Loranthaceae	<i>Amyema sanguinea var. sanguinea</i>			C		1/1
plants	land plants	Loranthaceae	<i>Dendrophthoe glabrescens</i>			C		2/2
plants	land plants	Loranthaceae	<i>Lysiana subfalcata</i>			C		1/1
plants	land plants	Lycopodiaceae	<i>Palhinhaea cernua</i>			C		4/4
plants	land plants	Lygodiaceae	<i>Lygodium flexuosum</i>			C		3/3

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plants	land plants	Lygodiaceae	<i>Lygodium reticulatum</i>			C		1/1
plants	land plants	Lythraceae	<i>Ammannia multiflora</i>	jerry-jerry		C		2/2
plants	land plants	Lythraceae	<i>Lagerstroemia archeriana subsp. archeriana</i>	native crepe myrtle		C		6/4
plants	land plants	Lythraceae	<i>Rotala mexicana</i>			C		3/3
plants	land plants	Malvaceae	<i>Abelmoschus ficulneus</i>	native rosella		C		1/1
plants	land plants	Malvaceae	<i>Abelmoschus rhodopetalus</i>			C		1/1
plants	land plants	Malvaceae	<i>Abutilon auritum</i>	Chinese lantern		C		1/1
plants	land plants	Malvaceae	<i>Abutilon micropetalum</i>			C		3/3
plants	land plants	Malvaceae	<i>Gossypium</i>					1/1
plants	land plants	Malvaceae	<i>Helicteres</i>					1/1
plants	land plants	Malvaceae	<i>Helicteres sp. (Bulimba Station P.I.Forster PIF14740)</i>			C		2/2
plants	land plants	Malvaceae	<i>Helicteres sp. (Normanby River J.R.Clarkson+ 7697)</i>			C		5/5
plants	land plants	Malvaceae	<i>Hibiscus graniticus</i>			C		2/2
plants	land plants	Malvaceae	<i>Hibiscus meraukensis</i>	Merauke hibiscus		C		13/13
plants	land plants	Malvaceae	<i>Sida acuta</i>	spinyhead sida	Y			2/2
plants	land plants	Malvaceae	<i>Sida cordifolia</i>		Y			2/2
plants	land plants	Malvaceae	<i>Sida hackettiana</i>			C		1/1
plants	land plants	Malvaceae	<i>Sida spinosa</i>	spiny sida	Y			1/1
plants	land plants	Malvaceae	<i>Urena lobata</i>	urena weed	Y			4/2
plants	land plants	Marattiaceae	<i>Angiopteris evecta</i>	giant fern		C		2/2
plants	land plants	Marsileaceae	<i>Marsilea drummondii</i>	common nardoo		C		1/1
plants	land plants	Melastomataceae	<i>Melastoma malabathricum subsp. malabathricum</i>			C		4/4
plants	land plants	Melastomataceae	<i>Memecylon pauciflorum</i>			C		2/2
plants	land plants	Meliaceae	<i>Turraea pubescens</i>	native honeysuckle		C		1/1
plants	land plants	Menyanthaceae	<i>Nymphoides crenata</i>	wavy marshwort		SL		2/2
plants	land plants	Menyanthaceae	<i>Nymphoides parvifolia</i>			SL		1/1
plants	land plants	Menyanthaceae	<i>Nymphoides simulans</i>			SL		1/1
plants	land plants	Molluginaceae	<i>Glinus lotoides</i>	hairy carpet weed		C		1/1
plants	land plants	Moraceae	<i>Ficus congesta</i>			C		1/1
plants	land plants	Moraceae	<i>Ficus congesta var. congesta</i>			C		1/1
plants	land plants	Moraceae	<i>Ficus obliqua</i>			C		4/4
plants	land plants	Moraceae	<i>Ficus racemosa var. racemosa</i>			C		1/1
plants	land plants	Moraceae	<i>Ficus rubiginosa forma glabrescens</i>			C		1/1
plants	land plants	Moraceae	<i>Ficus rubiginosa forma rubiginosa</i>			C		2/2
plants	land plants	Moraceae	<i>Ficus virens var. virens</i>			C		3/3
plants	land plants	Moringaceae	<i>Moringa oleifera</i>		Y			1/1
plants	land plants	Myrsinaceae	<i>Ardisia pachyrrhachis</i>			C		1/1
plants	land plants	Myrsinaceae	<i>Myrsine ireneae subsp. ireneae</i>			C		1/1
plants	land plants	Myrsinaceae	<i>Myrsine subsessilis subsp. cryptostemon</i>			C		1/1
plants	land plants	Myrsinaceae	<i>Myrsine urceolata</i>			C		1/1
plants	land plants	Myrtaceae	<i>Acmenosperma pringlei</i>			V		2/2
plants	land plants	Myrtaceae	<i>Asteromyrtus lysicephala</i>			C		1/1
plants	land plants	Myrtaceae	<i>Asteromyrtus symphyocarpa</i>			C		1/1
plants	land plants	Myrtaceae	<i>Calytrix leptophylla</i>			C		1/1
plants	land plants	Myrtaceae	<i>Corymbia citriodora subsp. citriodora</i>			C		2/2

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plants	land plants	Myrtaceae	<i>Corymbia clarksoniana</i>			C		10/10
plants	land plants	Myrtaceae	<i>Corymbia confertiflora</i>			C		3/3
plants	land plants	Myrtaceae	<i>Corymbia confertiflora</i> x <i>Corymbia tessellaris</i>			C		1/1
plants	land plants	Myrtaceae	<i>Corymbia dallachiana</i>			C		4/4
plants	land plants	Myrtaceae	<i>Corymbia erythrophloia</i>	variable-barked bloodwood		C		6/6
plants	land plants	Myrtaceae	<i>Corymbia hylandii</i>			C		25/25
plants	land plants	Myrtaceae	<i>Corymbia nesophila</i>			C		1/1
plants	land plants	Myrtaceae	<i>Corymbia polycarpa</i>	long-fruited bloodwood		C		1/1
plants	land plants	Myrtaceae	<i>Corymbia stockeri</i> subsp. <i>peninsularis</i>			C		1/1
plants	land plants	Myrtaceae	<i>Corymbia stockeri</i> subsp. <i>stockeri</i>			C		2/2
plants	land plants	Myrtaceae	<i>Corymbia tessellaris</i>	Moreton Bay ash		C		1/1
plants	land plants	Myrtaceae	<i>Eucalyptus brassiana</i>	Cape York red gum		C		4/4
plants	land plants	Myrtaceae	<i>Eucalyptus camaldulensis</i> subsp. <i>acuta</i>			C		3/3
plants	land plants	Myrtaceae	<i>Eucalyptus camaldulensis</i> subsp. <i>simulata</i>			C		1/1
plants	land plants	Myrtaceae	<i>Eucalyptus chartaboma</i>			C		2/2
plants	land plants	Myrtaceae	<i>Eucalyptus chlorophylla</i>			C		3/3
plants	land plants	Myrtaceae	<i>Eucalyptus cloeziana</i>	Gympie messmate		C		3/3
plants	land plants	Myrtaceae	<i>Eucalyptus crebra</i>	narrow-leaved red ironbark		C		2/2
plants	land plants	Myrtaceae	<i>Eucalyptus cullenii</i>	Cullen's ironbark		C		18/17
plants	land plants	Myrtaceae	<i>Eucalyptus exserta</i>	Queensland peppermint		C		1/1
plants	land plants	Myrtaceae	<i>Eucalyptus granitica</i>	granite ironbark		C		2/2
plants	land plants	Myrtaceae	<i>Eucalyptus leptophleba</i>	Molloy red box		C		3/3
plants	land plants	Myrtaceae	<i>Eucalyptus mediocris</i>			C		4/4
plants	land plants	Myrtaceae	<i>Eucalyptus megasepala</i>			C		7/7
plants	land plants	Myrtaceae	<i>Eucalyptus phoenicea</i>	scarlet gum		C		1/1
plants	land plants	Myrtaceae	<i>Eucalyptus platyphylla</i>	poplar gum		C		7/7
plants	land plants	Myrtaceae	<i>Eucalyptus portuensis</i>			C		5/5
plants	land plants	Myrtaceae	<i>Eucalyptus similis</i>	Queensland yellowjacket		C		1/1
plants	land plants	Myrtaceae	<i>Eucalyptus staigeriana</i>	lemon-scented ironbark		C		18/18
plants	land plants	Myrtaceae	<i>Eucalyptus tardecidens</i>			C		21/21
plants	land plants	Myrtaceae	<i>Eucalyptus tereticornis</i> subsp. <i>tereticornis</i>			C		3/3
plants	land plants	Myrtaceae	<i>Eugenia reinwardtiana</i>	beach cherry		C		3/3
plants	land plants	Myrtaceae	<i>Gossia bidwillii</i>			C		2/2
plants	land plants	Myrtaceae	<i>Gossia sankowskyorum</i>			C		10/10
plants	land plants	Myrtaceae	<i>Homoranthus tropicus</i>			NT		13/13
plants	land plants	Myrtaceae	<i>Leptospermum polygalifolium</i>	tantoon		C		1/1
plants	land plants	Myrtaceae	<i>Lithomyrtus retusa</i>			C		3/3
plants	land plants	Myrtaceae	<i>Lophostemon grandiflorus</i> subsp. <i>riparius</i>			C		1/1
plants	land plants	Myrtaceae	<i>Melaleuca borealis</i>			C		1/1
plants	land plants	Myrtaceae	<i>Melaleuca bracteata</i>			C		1/1
plants	land plants	Myrtaceae	<i>Melaleuca fluviatilis</i>			C		3/3
plants	land plants	Myrtaceae	<i>Melaleuca foliolosa</i>			C		4/4
plants	land plants	Myrtaceae	<i>Melaleuca leucadendra</i>	broad-leaved tea-tree		C		1/1
plants	land plants	Myrtaceae	<i>Melaleuca monantha</i>			C		6/6
plants	land plants	Myrtaceae	<i>Melaleuca stenostachya</i>			C		1/1
plants	land plants	Myrtaceae	<i>Melaleuca stenostachya</i> subsp. <i>amplior</i>			C		2/2

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plants	land plants	Myrtaceae	<i>Melaleuca stenostachya</i> subsp. <i>stenostachya</i>			C		4/4
plants	land plants	Myrtaceae	<i>Melaleuca trichostachya</i>			C		6/6
plants	land plants	Myrtaceae	<i>Melaleuca viminalis</i>			C		1/1
plants	land plants	Myrtaceae	<i>Melaleuca viridiflora</i>			C		1/1
plants	land plants	Myrtaceae	<i>Melaleuca viridiflora</i> var. <i>attenuata</i>			C		1/1
plants	land plants	Myrtaceae	<i>Melaleuca viridiflora</i> var. <i>viridiflora</i>			C		10/10
plants	land plants	Myrtaceae	<i>Neofabricia sericisepala</i>			C		4/4
plants	land plants	Myrtaceae	<i>Syncarpia</i>					3/3
plants	land plants	Myrtaceae	<i>Syncarpia glomulifera</i>			C		1/1
plants	land plants	Myrtaceae	<i>Syzygium angophoroides</i>			C		1/1
plants	land plants	Myrtaceae	<i>Syzygium eucalyptoides</i> subsp. <i>eucalyptoides</i>			C		1/1
plants	land plants	Myrtaceae	<i>Thryptomene oligandra</i>			C		2/2
plants	land plants	Myrtaceae	<i>Thryptomene oligandra</i> var. <i>parviflora</i>			C		1/1
plants	land plants	Myrtaceae	<i>Tristaniopsis exiliflora</i>	kanuka box		C		2/2
plants	land plants	Myrtaceae	<i>Xanthostemon umbrosus</i>			C		2/2
plants	land plants	Nephrolepidaceae	<i>Nephrolepis acutifolia</i>			C		1/1
plants	land plants	Nephrolepidaceae	<i>Nephrolepis biserrata</i>			C		2/2
plants	land plants	Nyctaginaceae	<i>Boerhavia burbridgeana</i>			C		1/1
plants	land plants	Nyctaginaceae	<i>Boerhavia dominii</i>			C		1/1
plants	land plants	Nymphaeaceae	<i>Nymphaea violacea</i>			SL		9/8
plants	land plants	Octoblepharaceae	<i>Octoblepharum albidum</i>			C		1/1
plants	land plants	Olacaceae	<i>Olax aphylla</i>			C		5/5
plants	land plants	Oleaceae	<i>Jasminum didymum</i> subsp. <i>racemosum</i>			C		1/1
plants	land plants	Oleaceae	<i>Jasminum elongatum</i>			C		9/9
plants	land plants	Onagraceae	<i>Ludwigia hyssopifolia</i>		Y			1/1
plants	land plants	Onagraceae	<i>Ludwigia octovalvis</i>	willow primrose		C		2/2
plants	land plants	Ophioglossaceae	<i>Ophioglossum lusitanicum</i>	adder's tongue		C		2/2
plants	land plants	Opiliaceae	<i>Opilia amentacea</i>			C		2/2
plants	land plants	Orchidaceae	<i>Chiloschista phyllorhiza</i>			SL		1/1
plants	land plants	Orchidaceae	<i>Cymbidium canaliculatum</i>			SL		1/1
plants	land plants	Orchidaceae	<i>Dendrobium bigibbum</i>	Cooktown orchid		V	V	3/3
plants	land plants	Orchidaceae	<i>Dipodium elegantulum</i>			SL		1/1
plants	land plants	Orchidaceae	<i>Dipodium variegatum</i>			SL		3/3
plants	land plants	Orchidaceae	<i>Dockrillia rigida</i>			SL		1/1
plants	land plants	Orchidaceae	<i>Habenaria propinquior</i>			SL		2/2
plants	land plants	Orchidaceae	<i>Saccolabiopsis armitii</i>			SL		1/1
plants	land plants	Orobanchaceae	<i>Buchnera gracilis</i>			C		2/2
plants	land plants	Orobanchaceae	<i>Buchnera linearis</i>			C		6/6
plants	land plants	Orobanchaceae	<i>Buchnera tetragona</i>			C		1/1
plants	land plants	Orobanchaceae	<i>Buchnera urticifolia</i>			C		1/1
plants	land plants	Orobanchaceae	<i>Centranthera cochinchinensis</i>			C		3/3
plants	land plants	Orobanchaceae	<i>Rhamphicarpa australiensis</i>			C		3/3
plants	land plants	Orobanchaceae	<i>Striga curviflora</i>			C		5/5
plants	land plants	Orobanchaceae	<i>Striga parviflora</i>			C		3/3
plants	land plants	Pandanaceae	<i>Freycinetia scandens</i>			C		3/3
plants	land plants	Pandanaceae	<i>Pandanus cookii</i>			C		1/1

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plants	land plants	Philydraceae	<i>Philydrum lanuginosum</i>	frogsmouth		C		1/1
plants	land plants	Phyllanthaceae	<i>Antidesma ghaesembilla</i>			C		2/2
plants	land plants	Phyllanthaceae	<i>Antidesma parvifolium</i>			C		1/1
plants	land plants	Phyllanthaceae	<i>Bridelia tomentosa</i>			C		3/3
plants	land plants	Phyllanthaceae	<i>Cleistanthus xerophilus</i>			C		3/3
plants	land plants	Phyllanthaceae	<i>Flueggea virosa</i> subsp. <i>melanthesoides</i>			C		2/2
plants	land plants	Phyllanthaceae	<i>Glochidion benthamianum</i>			C		2/2
plants	land plants	Phyllanthaceae	<i>Glochidion disparipes</i>			C		1/1
plants	land plants	Phyllanthaceae	<i>Margaritaria dubium-traceyi</i>			C		1/1
plants	land plants	Phyllanthaceae	<i>Phyllanthus</i>					3/3
plants	land plants	Phyllanthaceae	<i>Phyllanthus carpentariae</i>			C		3/3
plants	land plants	Phyllanthaceae	<i>Phyllanthus collinus</i>			C		1/1
plants	land plants	Phyllanthaceae	<i>Phyllanthus dallachyanus</i>			C		1/1
plants	land plants	Phyllanthaceae	<i>Phyllanthus dallachyanus</i> subsp. (<i>Irvinebank P.I.Forster PIF14675</i>)			C		2/2
plants	land plants	Phyllanthaceae	<i>Phyllanthus debilis</i>		Y			1/1
plants	land plants	Phyllanthaceae	<i>Phyllanthus hebecarpus</i>			C		3/3
plants	land plants	Phyllanthaceae	<i>Phyllanthus minutiflorus</i>			C		1/1
plants	land plants	Phyllanthaceae	<i>Phyllanthus novae-hollandiae</i>			C		2/2
plants	land plants	Phyllanthaceae	<i>Phyllanthus simplex</i>			C		1/1
plants	land plants	Phyllanthaceae	<i>Phyllanthus virgatus</i>			C		1/1
plants	land plants	Phyllanthaceae	<i>Poranthera microphylla</i>	small poranthera		C		2/2
plants	land plants	Phyllanthaceae	<i>Synostemon elachophyllus</i>			C		2/2
plants	land plants	Phyllanthaceae	<i>Synostemon elachophyllus</i> subsp. <i>elachophyllus</i>			C		5/5
plants	land plants	Phyllanthaceae	<i>Synostemon elachophyllus</i> subsp. <i>latior</i>			C		2/2
plants	land plants	Phyllanthaceae	<i>Synostemon lissocarpus</i>			C		2/2
plants	land plants	Phyllanthaceae	<i>Synostemon podenzanae</i>			C		2/2
plants	land plants	Picrodendraceae	<i>Petalostigma banksii</i>			C		2/2
plants	land plants	Picrodendraceae	<i>Petalostigma pubescens</i>	quinine tree		C		2/2
plants	land plants	Picrodendraceae	<i>Pseudanthus ligulatus</i> subsp. <i>ligulatus</i>			C		2/2
plants	land plants	Pittosporaceae	<i>Bursaria incana</i>			C		2/2
plants	land plants	Pittosporaceae	<i>Bursaria tenuifolia</i>			C		1/1
plants	land plants	Pittosporaceae	<i>Pittosporum tinifolium</i>			C		2/2
plants	land plants	Plantaginaceae	<i>Stemodia lythrifolia</i>			C		2/2
plants	land plants	Plumbaginaceae	<i>Plumbago zeylanica</i>	native plumbago		C		2/2
plants	land plants	Poaceae	<i>Alloteropsis cimicina</i>			C		1/1
plants	land plants	Poaceae	<i>Alloteropsis semialata</i>	cockatoo grass		C		4/4
plants	land plants	Poaceae	<i>Ancistrachne uncinulata</i>	hooky grass		C		2/2
plants	land plants	Poaceae	<i>Andropogon gayanus</i>	gamba grass	Y			6/4
plants	land plants	Poaceae	<i>Aristida calycina</i> var. <i>praealta</i>			C		2/2
plants	land plants	Poaceae	<i>Aristida holathera</i>			C		2/2
plants	land plants	Poaceae	<i>Aristida holathera</i> var. <i>holathera</i>			C		1/1
plants	land plants	Poaceae	<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>			C		1/1
plants	land plants	Poaceae	<i>Aristida queenslandica</i> var. <i>dissimilis</i>			C		2/2
plants	land plants	Poaceae	<i>Aristida schultzei</i>			C		1/1
plants	land plants	Poaceae	<i>Aristida superpendens</i>			C		1/1

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plants	land plants	Poaceae	<i>Aristida utilis</i> var. <i>utilis</i>			C		3/3
plants	land plants	Poaceae	<i>Arundinella nepalensis</i>	reedgrass		C		1/1
plants	land plants	Poaceae	<i>Arundinella setosa</i>			C		6/6
plants	land plants	Poaceae	<i>Bothriochloa bladhii</i>			C		1/1
plants	land plants	Poaceae	<i>Bothriochloa bladhii</i> subsp. <i>bladhii</i>			C		6/6
plants	land plants	Poaceae	<i>Bothriochloa pertusa</i>		Y			2/2
plants	land plants	Poaceae	<i>Brachyachne convergens</i>	common native couch		C		2/2
plants	land plants	Poaceae	<i>Cenchrus ciliaris</i>		Y			2/1
plants	land plants	Poaceae	<i>Cenchrus pedicellatus</i> subsp. <i>pedicellatus</i>		Y			1/1
plants	land plants	Poaceae	<i>Cenchrus pedicellatus</i> subsp. <i>unispiculus</i>		Y			1/1
plants	land plants	Poaceae	<i>Chionachne cyathopoda</i>	river grass		C		1/1
plants	land plants	Poaceae	<i>Chloris gayana</i>	rhodes grass	Y			1/1
plants	land plants	Poaceae	<i>Chloris lobata</i>			C		2/2
plants	land plants	Poaceae	<i>Chrysopogon filipes</i>			C		1/1
plants	land plants	Poaceae	<i>Cleistochloa subjuncea</i>			C		4/4
plants	land plants	Poaceae	<i>Cymbopogon ambiguus</i>	lemon grass		C		1/1
plants	land plants	Poaceae	<i>Cymbopogon bombycinus</i>	silky oilgrass		C		3/3
plants	land plants	Poaceae	<i>Cymbopogon obtectus</i>			C		1/1
plants	land plants	Poaceae	<i>Cymbopogon queenslandicus</i>			C		1/1
plants	land plants	Poaceae	<i>Dichanthium fecundum</i>	curly bluegrass		C		1/1
plants	land plants	Poaceae	<i>Dichanthium sericeum</i> subsp. <i>sericeum</i>			C		2/2
plants	land plants	Poaceae	<i>Digitaria bicornis</i>			C		2/2
plants	land plants	Poaceae	<i>Digitaria breviglumis</i>			C		3/3
plants	land plants	Poaceae	<i>Digitaria ciliaris</i>	summer grass	Y			1/1
plants	land plants	Poaceae	<i>Digitaria fumida</i>			C		3/3
plants	land plants	Poaceae	<i>Echinochloa colona</i>	awnless barnyard grass	Y			1/1
plants	land plants	Poaceae	<i>Ectrosia confusa</i>			C		1/1
plants	land plants	Poaceae	<i>Ectrosia gulliveri</i>			C		1/1
plants	land plants	Poaceae	<i>Ectrosia nervilemma</i>			C		3/3
plants	land plants	Poaceae	<i>Eragrostis</i>					1/1
plants	land plants	Poaceae	<i>Eragrostis cumingii</i>			C		2/2
plants	land plants	Poaceae	<i>Eragrostis elongata</i>			C		2/2
plants	land plants	Poaceae	<i>Eragrostis schultzei</i>			C		2/2
plants	land plants	Poaceae	<i>Eragrostis spartanoides</i>			C		1/1
plants	land plants	Poaceae	<i>Eragrostis tenellula</i>	delicate lovegrass		C		3/3
plants	land plants	Poaceae	<i>Eriachne</i>					3/3
plants	land plants	Poaceae	<i>Eriachne armitii</i>			C		1/1
plants	land plants	Poaceae	<i>Eriachne ciliata</i>			C		3/3
plants	land plants	Poaceae	<i>Eriachne humilis</i>			C		3/3
plants	land plants	Poaceae	<i>Eriachne melicacea</i>			C		2/2
plants	land plants	Poaceae	<i>Eriachne obtusa</i>			C		3/3
plants	land plants	Poaceae	<i>Eriachne pallescens</i> var. <i>pallescens</i>			C		1/1
plants	land plants	Poaceae	<i>Eriachne</i> sp. (Dugald River B.K.Simon+ 3007)			C		1/1
plants	land plants	Poaceae	<i>Eriachne stipacea</i>			C		1/1
plants	land plants	Poaceae	<i>Eulalia annua</i>			C		1/1
plants	land plants	Poaceae	<i>Germainia grandiflora</i>			C		4/4

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plants	land plants	Poaceae	<i>Heterachne abortiva</i>			C		1/1
plants	land plants	Poaceae	<i>Heteropogon contortus</i>	black speargrass		C		5/5
plants	land plants	Poaceae	<i>Heteropogon triticeus</i>	giant speargrass		C		4/4
plants	land plants	Poaceae	<i>Hymenachne amplexicaulis</i> 'Olive'		Y			1/1
plants	land plants	Poaceae	<i>Hyparrhenia rufa</i>		Y			3/1
plants	land plants	Poaceae	<i>Hyparrhenia rufa</i> subsp. <i>rufa</i>		Y			1/1
plants	land plants	Poaceae	<i>Isachne confusa</i>			C		1/1
plants	land plants	Poaceae	<i>Ischaemum rugosum</i> var. <i>segetum</i>			C		1/1
plants	land plants	Poaceae	<i>Iseilema vaginiflorum</i>	red flinders grass		C		1/1
plants	land plants	Poaceae	<i>Megathyrsus maximus</i>		Y			7
plants	land plants	Poaceae	<i>Melinis repens</i>	red natal grass	Y			9/8
plants	land plants	Poaceae	<i>Mnesithea formosa</i>			C		3/3
plants	land plants	Poaceae	<i>Mnesithea rottboellioides</i>			C		6/6
plants	land plants	Poaceae	<i>Oplismenus aemulus</i>	creeping shade grass		C		1/1
plants	land plants	Poaceae	<i>Oplismenus burmanni</i>			C		1/1
plants	land plants	Poaceae	<i>Panicum mindanaense</i>			C		2/2
plants	land plants	Poaceae	<i>Panicum seminudum</i>			C		1/1
plants	land plants	Poaceae	<i>Panicum seminudum</i> var. <i>cairnsianum</i>			C		4/4
plants	land plants	Poaceae	<i>Panicum simile</i>			C		1/1
plants	land plants	Poaceae	<i>Panicum trichoides</i>			C		4/4
plants	land plants	Poaceae	<i>Paspalidium constrictum</i>			C		1/1
plants	land plants	Poaceae	<i>Paspalidium distans</i>	shotgrass		C		2/2
plants	land plants	Poaceae	<i>Paspalidium rarum</i>			C		1/1
plants	land plants	Poaceae	<i>Paspalidium spartellum</i>			C		1/1
plants	land plants	Poaceae	<i>Paspalum scrobiculatum</i>	ditch millet		C		1/1
plants	land plants	Poaceae	<i>Paspalum urvillei</i>	vasey grass	Y			1/1
plants	land plants	Poaceae	<i>Perotis indica</i>		Y			1/1
plants	land plants	Poaceae	<i>Perotis rara</i>	comet grass		C		1/1
plants	land plants	Poaceae	<i>Pseudopogonatherum irritans</i>			C		1/1
plants	land plants	Poaceae	<i>Sacciolepis myosuroides</i>			C		1/1
plants	land plants	Poaceae	<i>Sarga plumosum</i>			C		12/12
plants	land plants	Poaceae	<i>Schizachyrium fragile</i>	firegrass		C		5/5
plants	land plants	Poaceae	<i>Schizachyrium pachyarthron</i>			C		1/1
plants	land plants	Poaceae	<i>Setaria pumila</i> subsp. <i>subtesselata</i>		Y			1/1
plants	land plants	Poaceae	<i>Setaria surgens</i>			C		1/1
plants	land plants	Poaceae	<i>Sorghum</i>					1/1
plants	land plants	Poaceae	<i>Sorghum bicolor</i>	forage sorghum	Y			1/1
plants	land plants	Poaceae	<i>Sporobolus australasicus</i>			C		1/1
plants	land plants	Poaceae	<i>Sporobolus coromandelianus</i>		Y			1/1
plants	land plants	Poaceae	<i>Sporobolus fertilis</i>	giant Parramatta grass	Y			1/1
plants	land plants	Poaceae	<i>Sporobolus jacquemontii</i>		Y			2/2
plants	land plants	Poaceae	<i>Sporobolus lenticularis</i>			C		1/1
plants	land plants	Poaceae	<i>Sporobolus natalensis</i>		Y			2/2
plants	land plants	Poaceae	<i>Thaumastochloa pubescens</i>			C		2/2
plants	land plants	Poaceae	<i>Themeda arguens</i>			C		4/4
plants	land plants	Poaceae	<i>Themeda quadrivalvis</i>	grader grass	Y			97/4

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Poaceae	<i>Themeda triandra</i>	kangaroo grass		C		5/5
plants	land plants	Poaceae	<i>Triodia microstachya</i>			C		7/7
plants	land plants	Poaceae	<i>Tripogon loliiformis</i>	five minute grass		C		1/1
plants	land plants	Poaceae	<i>Urochloa decumbens</i>		Y			2
plants	land plants	Poaceae	<i>Urochloa holosericea</i>			C		2/2
plants	land plants	Poaceae	<i>Urochloa holosericea subsp. holosericea</i>			C		4/4
plants	land plants	Poaceae	<i>Urochloa mosambicensis</i>	sabi grass	Y			2/2
plants	land plants	Poaceae	<i>Urochloa mutica</i>		Y			1/1
plants	land plants	Poaceae	<i>Urochloa piligera</i>			C		1/1
plants	land plants	Poaceae	<i>Urochloa pubigera</i>			C		1/1
plants	land plants	Poaceae	<i>Urochloa subquadriflora</i>		Y			1/1
plants	land plants	Poaceae	<i>Vacoparis laxiflorum</i>			C		1/1
plants	land plants	Polygalaceae	<i>Comesperma secundum</i>			C		1/1
plants	land plants	Polygalaceae	<i>Comesperma secundum subsp. secundum</i>			C		4/4
plants	land plants	Polygalaceae	<i>Polygala exsuarrosa</i>			C		1/1
plants	land plants	Polygalaceae	<i>Polygala longifolia</i>			C		2/2
plants	land plants	Polygalaceae	<i>Polygala parviloba</i>			C		3/3
plants	land plants	Polygalaceae	<i>Polygala persicariifolia</i>			C		1/1
plants	land plants	Polygonaceae	<i>Persicaria attenuata</i>			C		2/2
plants	land plants	Polygonaceae	<i>Persicaria orientalis</i>	princes feathers		C		1/1
plants	land plants	Polygonaceae	<i>Polygonum plebeium</i>	small knotweed		C		1/1
plants	land plants	Polypodiaceae	<i>Drynaria quercifolia</i>			SL		4/4
plants	land plants	Pontederiaceae	<i>Monochoria cyanea</i>			C		2/2
plants	land plants	Portulacaceae	<i>Portulaca bicolor</i>			C		3/3
plants	land plants	Potamogetonaceae	<i>Potamogeton</i>					2/2
plants	land plants	Potamogetonaceae	<i>Potamogeton tepperi</i>			SL		1/1
plants	land plants	Potamogetonaceae	<i>Potamogeton tricarlinatus</i>	floating pondweed		SL		1/1
plants	land plants	Proteaceae	<i>Banksia dentata</i>			C		2/2
plants	land plants	Proteaceae	<i>Grevillea dryandri subsp. dryandri</i>			C		6/6
plants	land plants	Proteaceae	<i>Grevillea glauca</i>	bushy's clothes peg		C		4/4
plants	land plants	Proteaceae	<i>Grevillea mcgillivrayi</i>			C		8/8
plants	land plants	Proteaceae	<i>Grevillea mimosoides</i>			C		1/1
plants	land plants	Proteaceae	<i>Grevillea parallela</i>			C		4/4
plants	land plants	Proteaceae	<i>Grevillea striata</i>	beefwood		C		1/1
plants	land plants	Proteaceae	<i>Hakea lorea subsp. lorea</i>			C		1
plants	land plants	Proteaceae	<i>Hakea persiehana</i>			C		2/2
plants	land plants	Proteaceae	<i>Persoonia falcata</i>			C		4/4
plants	land plants	Proteaceae	<i>Stenocarpus</i>					1/1
plants	land plants	Psilotaceae	<i>Psilotum nudum</i>	skeleton fork fern		SL		1/1
plants	land plants	Pteridaceae	<i>Adiantum atroviride</i>			SL		6/6
plants	land plants	Pteridaceae	<i>Adiantum hispidulum</i>			SL		1/1
plants	land plants	Pteridaceae	<i>Adiantum hispidulum var. hispidulum</i>			SL		3/3
plants	land plants	Pteridaceae	<i>Ceratopteris thalictroides</i>			SL		2/2
plants	land plants	Pteridaceae	<i>Cheilanthes</i>					1/1
plants	land plants	Pteridaceae	<i>Cheilanthes brownii</i>			C		1/1
plants	land plants	Pteridaceae	<i>Cheilanthes contigua</i>			C		3/3

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Pteridaceae	<i>Cheilanthes nitida</i>			C		3/3
plants	land plants	Pteridaceae	<i>Cheilanthes nudiuscula</i>			C		2/2
plants	land plants	Pteridaceae	<i>Cheilanthes praetermissa</i>			C		1/1
plants	land plants	Pteridaceae	<i>Cheilanthes pumilio</i>			C		4/4
plants	land plants	Pteridaceae	<i>Cheilanthes sieberi subsp. sieberi</i>			C		2/2
plants	land plants	Pteridaceae	<i>Doryopteris concolor</i>			SL		2/2
plants	land plants	Pteridaceae	<i>Haplopteris ensiformis</i>			SL		1/1
plants	land plants	Pteridaceae	<i>Pellaea muelleri</i>			SL		4/4
plants	land plants	Pteridaceae	<i>Pityrogramma calomelanos var. calomelanos</i>		Y			1/1
plants	land plants	Pteridaceae	<i>Taenitis pinnata</i>	morse fern		SL		1/1
plants	land plants	Putranjivaceae	<i>Drypetes deplanchei</i>	grey boxwood		C		3/3
plants	land plants	Pylaiadelphaceae	<i>Trachyphyllum inflexum</i>			C		2/2
plants	land plants	Rhamnaceae	<i>Alphitonia excelsa</i>	soap tree		C		2/2
plants	land plants	Rhamnaceae	<i>Cryptandra filiformis</i>			C		2/2
plants	land plants	Rhamnaceae	<i>Stenanthemum argenteum</i>			V		3/3
plants	land plants	Rubiaceae	<i>Aidia racemosa</i>			C		3/3
plants	land plants	Rubiaceae	<i>Atractocarpus sessilis</i>			C		8/8
plants	land plants	Rubiaceae	<i>Coelospermum reticulatum</i>			C		2/2
plants	land plants	Rubiaceae	<i>Gardenia rupicola</i>			C		5/5
plants	land plants	Rubiaceae	<i>Gardenia tessellaris</i>			C		3/3
plants	land plants	Rubiaceae	<i>Gynochthodes ammitia</i>			C		6/6
plants	land plants	Rubiaceae	<i>Ixora timorensis</i>			C		3/3
plants	land plants	Rubiaceae	<i>Larsenaikia ochreatea</i>			C		3/3
plants	land plants	Rubiaceae	<i>Nauclea orientalis</i>	Leichhardt tree		C		1
plants	land plants	Rubiaceae	<i>Paranotis mitrasacmoides subsp. mitrasacmoides</i>			C		1/1
plants	land plants	Rubiaceae	<i>Psychotria loniceroides</i>	hairy psychotria		C		1/1
plants	land plants	Rubiaceae	<i>Psychotria polioSTEMMA</i>			C		1/1
plants	land plants	Rubiaceae	<i>Psydrax graciliflora</i>			C		1/1
plants	land plants	Rubiaceae	<i>Psydrax lepida</i>			C		1/1
plants	land plants	Rubiaceae	<i>Richardia scabra</i>		Y			1/1
plants	land plants	Rubiaceae	<i>Scleromitron galioides</i>			C		1/1
plants	land plants	Rubiaceae	<i>Spermacoce</i>					6/6
plants	land plants	Rubiaceae	<i>Spermacoce brachystema</i>			C		1/1
plants	land plants	Rubiaceae	<i>Spermacoce cristulata</i>			C		2/2
plants	land plants	Rubiaceae	<i>Spermacoce jacobsonii</i>			C		1/1
plants	land plants	Rubiaceae	<i>Timonius timon var. timon</i>			C		3/3
plants	land plants	Rutaceae	<i>Acronychia laevis</i>	glossy acronychia		C		5/5
plants	land plants	Rutaceae	<i>Acronychia laevis var. leucocarpa</i>			C		2/2
plants	land plants	Rutaceae	<i>Boronia bowmanii</i>			C		2/2
plants	land plants	Rutaceae	<i>Boronia quinkanensis</i>			C		12/12
plants	land plants	Rutaceae	<i>Dinosperma erythrococcum</i>			C		1/1
plants	land plants	Rutaceae	<i>Flindersia collina</i>	broad-leaved leopard tree		C		1/1
plants	land plants	Rutaceae	<i>Halfordia kendack</i>	saffron heart		C		1/1
plants	land plants	Rutaceae	<i>Melicope elleryana</i>			C		1/1
plants	land plants	Rutaceae	<i>Micromelum minutum</i>	clusterberry		C		3/3
plants	land plants	Salicaceae	<i>Homalium brachybotrys</i>			C		4/4

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Salviniaceae	<i>Salvinia molesta</i>	salvinia	Y			2/2
plants	land plants	Santalaceae	<i>Anthobolus filifolius</i>			C		3/3
plants	land plants	Santalaceae	<i>Santalum lanceolatum</i>			SL		3/3
plants	land plants	Santalaceae	<i>Santalum lanceolatum</i> var. <i>venosum</i>			C		1/1
plants	land plants	Santalaceae	<i>Viscum articulatum</i>	flat mistletoe		C		1/1
plants	land plants	Sapindaceae	<i>Atalaya angustifolia</i>			C		8/8
plants	land plants	Sapindaceae	<i>Atalaya oligoclada</i>			C		7/7
plants	land plants	Sapindaceae	<i>Atalaya sericopetala</i>			C		1/1
plants	land plants	Sapindaceae	<i>Cupaniopsis anacardioides</i>	tuckeroo		C		1/1
plants	land plants	Sapindaceae	<i>Dodonaea</i>					4/4
plants	land plants	Sapindaceae	<i>Dodonaea dodecandra</i>			C		1/1
plants	land plants	Sapindaceae	<i>Dodonaea hispidula</i> var. <i>hispidula</i>			C		1/1
plants	land plants	Sapindaceae	<i>Dodonaea lanceolata</i> var. <i>subsessilifolia</i>			C		1/1
plants	land plants	Sapindaceae	<i>Dodonaea malvacea</i>			C		7/7
plants	land plants	Sapindaceae	<i>Dodonaea physocarpa</i>			C		2/2
plants	land plants	Sapindaceae	<i>Ganophyllum falcatum</i>			C		1/1
plants	land plants	Sapotaceae	<i>Amorphospermum antilogum</i>			C		1/1
plants	land plants	Sapotaceae	<i>Planchonella pohlmaniana</i>			C		2/2
plants	land plants	Sapotaceae	<i>Sersalisia sericea</i>			C		2/2
plants	land plants	Schizaeaceae	<i>Actinostachys digitata</i>			SL		1/1
plants	land plants	Schizaeaceae	<i>Schizaea dichotoma</i>	branched comb fern		SL		1/1
plants	land plants	Sematophyllaceae	<i>Sematophyllum subhumile</i>			C		1/1
plants	land plants	Smilacaceae	<i>Smilax</i>					2/2
plants	land plants	Smilacaceae	<i>Smilax australis</i>	barbed-wire vine		C		4/4
plants	land plants	Solanaceae	<i>Lycianthes shanesii</i>			C		9/9
plants	land plants	Solanaceae	<i>Physalis angulata</i>		Y			2/2
plants	land plants	Solanaceae	<i>Solanum</i>					1/1
plants	land plants	Solanaceae	<i>Solanum americanum</i>		Y			2/2
plants	land plants	Solanaceae	<i>Solanum ellipticum</i>	potato bush		C		1/1
plants	land plants	Solanaceae	<i>Solanum multiglochidiatum</i>			C		7/7
plants	land plants	Sparrmanniaceae	<i>Corchorus aestuans</i>			C		2/2
plants	land plants	Sparrmanniaceae	<i>Grewia australis</i>			C		6/6
plants	land plants	Sparrmanniaceae	<i>Grewia mesomischa</i>			C		3/3
plants	land plants	Sparrmanniaceae	<i>Grewia papuana</i>			C		1/1
plants	land plants	Sparrmanniaceae	<i>Triumfetta pentandra</i>		Y			2/2
plants	land plants	Sparrmanniaceae	<i>Triumfetta</i> sp. (Turtle Rock A.R.Bean 3807)			C		3/3
plants	land plants	Sterculiaceae	<i>Brachychiton</i>					1/1
plants	land plants	Sterculiaceae	<i>Brachychiton albidus</i>			SL		8/7
plants	land plants	Sterculiaceae	<i>Brachychiton diversifolius</i> subsp. <i>orientalis</i>			SL		1/1
plants	land plants	Sterculiaceae	<i>Brachychiton muellerianus</i>			SL		1/1
plants	land plants	Stylidiaceae	<i>Stylidium</i>					1/1
plants	land plants	Stylidiaceae	<i>Stylidium adenophorum</i>			SL		1/1
plants	land plants	Stylidiaceae	<i>Stylidium capillare</i>			SL		3/3
plants	land plants	Stylidiaceae	<i>Stylidium confertum</i>			SL		1/1
plants	land plants	Stylidiaceae	<i>Stylidium leiophyllum</i>			SL		5/5
plants	land plants	Stylidiaceae	<i>Stylidium ramosissimum</i>			SL		7/7

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Taccaceae	<i>Tacca leontopetaloides</i>			C		1/1
plants	land plants	Thymelaeaceae	<i>Pimelea</i>					1/1
plants	land plants	Thymelaeaceae	<i>Pimelea confertiflora</i>			C		1/1
plants	land plants	Thymelaeaceae	<i>Pimelea cornucopiae</i>			C		1/1
plants	land plants	Thymelaeaceae	<i>Pimelea linifolia</i>			C		1/1
plants	land plants	Thymelaeaceae	<i>Pimelea sericostachya</i>			C		2/2
plants	land plants	Typhaceae	<i>Typha domingensis</i>			C		1/1
plants	land plants	Typhaceae	<i>Typha orientalis</i>	broad-leaved cumbungi		C		1/1
plants	land plants	Urticaceae	<i>Laportea interrupta</i>			C		4/4
plants	land plants	Urticaceae	<i>Pouzolzia zeylanica</i>			C		2/2
plants	land plants	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	Jamaica snakeweed	Y			1
plants	land plants	Violaceae	<i>Pigea enneasperma</i>			C		4/4
plants	land plants	Vitaceae	<i>Ampelocissus gardineri</i>			C		4/4
plants	land plants	Vitaceae	<i>Causonis trifolia</i>			C		2/2
plants	land plants	Vitaceae	<i>Cayratia acris</i>	hairy grape		C		2/2
plants	land plants	Vitaceae	<i>Cayratia cardiophylla</i>			C		2/2
plants	land plants	Vitaceae	<i>Cayratia saponaria</i>			C		1/1
plants	land plants	Vitaceae	<i>Cissus cardiophylla</i>			C		1/1
plants	land plants	Vitaceae	<i>Cissus pentaclada</i>			C		2/2
plants	land plants	Vitaceae	<i>Cissus reniformis</i>			C		2/2
plants	land plants	Vitaceae	<i>Clematicissus opaca</i>			C		1/1
plants	land plants	Xanthorrhoeaceae	<i>Xanthorrhoea johnsonii</i>			SL		1/1
plants	land plants	Xyridaceae	<i>Xyris</i>					1/1
plants	land plants	Xyridaceae	<i>Xyris indica</i>			C		1/1
plants	land plants	Zingiberaceae	<i>Curcuma australasica</i>			C		1/1
plants	land plants	Zygophyllaceae	<i>Tribulus cistoides</i>	bulls head vine		C		1/1

CODES

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

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

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

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

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

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

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

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

Appendix B – EPBC Act Protected Matters Search Tool search



Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 15-Apr-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	30
Listed Migratory Species:	20

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	25
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

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

Details

Matters of National Environmental Significance

National Heritage Places			[Resource Information]
Name	State	Legal Status	Buffer Status
Indigenous			
Quinkan Country	QLD	Listed place	In buffer area only

Listed Threatened Species			[Resource Information]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Erythroriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area	In feature area
Erythrura gouldiae Gouldian Finch [413]	Endangered	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In feature area
Turnix olivii Buff-breasted Button-quail [59293]	Endangered	Species or species habitat may occur within area	In buffer area only
Tyto novaehollandiae kimberli Masked Owl (northern) [26048]	Vulnerable	Species or species habitat may occur within area	In feature area
MAMMAL			
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area	In feature area
Hipposideros semoni Semon's Leaf-nosed Bat, Greater Wart-nosed Horseshoe-bat [180]	Vulnerable	Species or species habitat may occur within area	In feature area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Mesembriomys gouldii rattoides Black-footed Tree-rat (north Queensland), Shaggy Rabbit-rat [87620]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petauroides minor Greater Glider (northern), Greater Glider (north-eastern Queensland) [92008]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Pteropus conspicillatus Spectacled Flying-fox [185]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhinolophus robertsi Large-eared Horseshoe Bat, Greater Large-eared Horseshoe Bat [87639]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare- rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat may occur within area	In feature area
PLANT			
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Dendrobium carronii listed as Cepobaculum carronii an orchid [10822]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Dendrobium johannis Chocolate Tea Tree Orchid [13585]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area	In feature area
Tomophyllum walleri [83507]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Vappodes phalaenopsis Cooktown Orchid [78894]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area	In feature area
Varanus mertensi Mertens' Water Monitor, Mertens's Water Monitor [1568]	Endangered	Species or species habitat known to occur within area	In feature area
SHARK			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pristis pristis			
Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In feature area

Listed Migratory Species	[Resource Information]		
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area

Migratory Marine Species			
Pristis pristis			
Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In feature area

Migratory Terrestrial Species			
Cecropis daurica			
Red-rumped Swallow [80610]		Species or species habitat may occur within area	In feature area
Cuculus optatus			
Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundo rustica			
Barn Swallow [662]		Species or species habitat may occur within area	In feature area
Monarcha frater			
Black-winged Monarch [607]		Species or species habitat may occur within area	In buffer area only
Monarcha melanopsis			
Black-faced Monarch [609]		Species or species habitat may occur within area	In feature area
Motacilla cinerea			
Grey Wagtail [642]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat may occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha frater Black-winged Monarch [607]		Species or species habitat may occur within area overfly marine area	In buffer area only
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat likely to occur within area overfly marine area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Reptile			
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Palmer Goldfield	Resources Reserve	QLD	In buffer area only

EPBC Act Referrals					[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status	
Not controlled action					
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area	

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

Please feel free to provide feedback via the [Contact us](#) page.

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Appendix C – Flora trigger mapping and vegetation management property report



Vegetation management report

For Lot: 66 Plan: SP245572

8/30/2024



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Recent changes

Updated mapping

Updated vegetation mapping was released on 22 November 2023 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, essential habitat, wetland and high-value regrowth mapping.

The Department of Environment, Science and Innovation have also updated their koala protection mapping to align with the Queensland Herbarium scientific updates.

The latest version (v10) of the Protected Plants Flora Survey Trigger Map (trigger map) was released on 6 September 2023.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:

Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Resources who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of Environment, Science and Innovation who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of Environment, Science and Innovation who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:

- the vegetation management framework, which may include:

- exempt clearing work;
- accepted development vegetation clearing code;
- an area management plan;
- a development approval;

- the protected plant framework, which may include:

- the need to undertake a flora survey;
- exempt clearing;
- a protected plant clearing permit;

- the koala protection framework, which may include:

- exempted development;
- a development approval;
- the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

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1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 66 Plan: SP245572 are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
66	SP245572	Lands Lease	1,420,000,000

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

Does the property Lot: 66 Plan: SP245572 have a freehold tenure and is in the Wet Tropics of Queensland World Heritage Area?

No, this property is not located in the Wet Tropics of Queensland World Heritage Area.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 66 Plan: SP245572, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Cook Shire	Normanby	Einasleigh Uplands	Hodgkinson Basin
Mareeba Shire	Mitchell	Cape York Peninsula	Battle Camp Sandstones

2. Vegetation management framework (administered by the Department of Resources)

The *Vegetation Management Act 1999* (VMA), the Vegetation Management Regulation 2012, the *Planning Act 2016* and the Planning Regulation 2017, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem identified in the Vegetation Management Regional Ecosystem Description Database (VM REDD) as having a grassland structure; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Resources or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Resources before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at

<https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/exemptions/>.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Resources prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at

<https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/codes/>

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Resources before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at

<https://vegetation-apps.dnrm.qld.gov.au>

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Resources and then follow the conditions and requirements listed in the AMP.

<https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/area-management-plans>

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at

<https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/development>

2.5. Contact information for the Department of Resources

For further information on the vegetation management framework:

Phone 135VEG (135 834)

Email vegetation@resources.qld.gov.au

Visit <https://www.resources.qld.gov.au/?contact=vegetation> to submit an online enquiry.

3. Vegetation management framework for Lot: 66 Plan: SP245572

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property

Vegetation category	Area (ha)
Category B	146,872.72
Category C	356.81
Category R	0.80
Category Water	5.60
Category X	541.35

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Resources to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department of Resources to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

The following Property Map of Assessable Vegetation (PMAVs) may be present on this property.

Reference number:

2011/007257

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at

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

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
3.10.16	Least concern	B	81.73	Melaleuca stenostachya +/- M. citrolens low open woodland on sandstone ranges	Very sparse
3.10.6	Least concern	B	5,270.73	Eucalyptus tetradonta +/- Corymbia stockeri subsp. stockeri woodland on sandstone plateaus	Sparse
9.11.12	Least concern	B	4,621.54	Eucalyptus cullenii, Corymbia hylandii and E. tetradonta +/- Erythrophleum chlorostachys woodland on metamorphic hills	Sparse
9.11.12	Least concern	C	7.33	Eucalyptus cullenii, Corymbia hylandii and E. tetradonta +/- Erythrophleum chlorostachys woodland on metamorphic hills	Sparse
9.11.25	Least concern	B	14,334.55	Eucalyptus tardecidens or E. chlorophylla +/- Corymbia spp. +/- E. cullenii low woodland on steep to rolling metamorphic hills and rises	Sparse
9.11.25	Least concern	C	18.39	Eucalyptus tardecidens or E. chlorophylla +/- Corymbia spp. +/- E. cullenii low woodland on steep to rolling metamorphic hills and rises	Sparse
9.11.26	Least concern	B	6,613.34	Eucalyptus leptophleba and/or E. cullenii and/or Corymbia clarksoniana +/- E. platyphylla woodland on undulating terrain to rolling hills	Sparse
9.11.26	Least concern	C	5.35	Eucalyptus leptophleba and/or E. cullenii and/or Corymbia clarksoniana +/- E. platyphylla woodland on undulating terrain to rolling hills	Sparse
9.11.3	Least concern	B	101,098.36	Eucalyptus cullenii or E. staigeriana +/- Corymbia clarksoniana woodland on skeletal soils on metamorphic hills	Sparse
9.11.3	Least concern	C	34.32	Eucalyptus cullenii or E. staigeriana +/- Corymbia clarksoniana woodland on skeletal soils on metamorphic hills	Sparse
9.11.3	Least concern	R	0.77	Eucalyptus cullenii or E. staigeriana +/- Corymbia clarksoniana woodland on skeletal soils on metamorphic hills	Sparse
9.11.9	Of concern	B	98.19	Semi-deciduous vine thicket on metamorphic soils (not limestone)	Dense

9.12.15	Least concern	B	771.76	Eucalyptus staigeriana +/- Erythrophleum chlorostachys low open woodland on hills on igneous rocks	Very sparse
9.12.2	Least concern	B	1,074.24	Eucalyptus portuensis, Corymbia citriodora subsp. citriodora, E. granitica or E. crebra, C. intermedia or C. clarksoniana mixed woodland on steep hills and ranges on igneous hills close to Wet Tropics boundary	Sparse
9.12.3	Least concern	B	0.58	Eucalyptus chartaboma +/- Eucalyptus spp. +/- Corymbia spp. woodland on sandy soils on igneous rocks	Sparse
9.12.31	Least concern	B	1,376.11	Eucalyptus leptophleba, Corymbia clarksoniana and E. crebra +/- C. dallachiana woodland on igneous rocks	Sparse
9.12.36	Least concern	B	11.01	Cochlospermum gregorii or C. gillivraei deciduous low woodland on rocky outcrops	Sparse
9.12.43	Of concern	B	2,836.65	Granite and rhyolite boulders and pavements edged with patches of Callitris intratropica +/- vine thicket species	Other
9.12.7	Least concern	B	4,473.86	Eucalyptus cullenii +/- Corymbia leichhardtii +/- C. erythrophloia woodland on igneous rocks	Sparse
9.12.8	Least concern	B	4.95	Semi-evergreen vine thicket on rocky outcrops and shallow soils of igneous rocks	Dense
9.3.12	Least concern	B	783.93	River beds and associated waterholes on major rivers and channels	Other
9.3.12	Least concern	C	2.06	River beds and associated waterholes on major rivers and channels	Other
9.3.13	Least concern	B	290.43	Melaleuca spp., Eucalyptus camaldulensis and Casuarina cunninghamiana fringing open forest on streams and channels	Mid-dense
9.3.13	Least concern	C	2.36	Melaleuca spp., Eucalyptus camaldulensis and Casuarina cunninghamiana fringing open forest on streams and channels	Mid-dense
9.3.14	Least concern	B	1,239.53	Melaleuca spp. +/- Acacia spp. +/- Syzygium spp. +/- Leptospermum spp. fringing woodland on channels and levees	Sparse
9.3.14	Least concern	C	2.31	Melaleuca spp. +/- Acacia spp. +/- Syzygium spp. +/- Leptospermum spp. fringing woodland on channels and levees	Sparse
9.3.2	Least concern	B	111.09	Eucalyptus leptophleba and/or E. chlorophylla +/- Corymbia dallachiana woodland on river levees and terraces	Sparse
9.3.3	Least concern	B	1.67	Corymbia spp. and Eucalyptus spp. dominated mixed woodland on alluvial flats, levees and plains	Sparse

9.3.3	Least concern	C	0.25	Corymbia spp. and Eucalyptus spp. dominated mixed woodland on alluvial flats, levees and plains	Sparse
9.5.12	Least concern	B	45.82	Eucalyptus chlorophylla and/or E. tardecidens woodland on Tertiary plains	Sparse
9.5.12	Least concern	R	0.03	Eucalyptus chlorophylla and/or E. tardecidens woodland on Tertiary plains	Sparse
9.5.14	Of concern	B	208.61	Melaleuca viridiflora and/or M. stenostachya low open woodland on erosional plains	Very sparse
9.5.9	Least concern	B	385.25	Corymbia clarksoniana and/or Eucalyptus leptophleba and/or E. platyphylla woodland on plains	Sparse
9.8.2	Least concern	B	1,138.76	Eucalyptus leptophleba +/- Corymbia clarksoniana +/- C. erythrophloia open woodland on basalt plains	Very sparse
9.8.2	Least concern	C	284.45	Eucalyptus leptophleba +/- Corymbia clarksoniana +/- C. erythrophloia open woodland on basalt plains	Very sparse
non-rem	None	X	434.06	None	None
water	None	B	less than 0.01	None	None
water	None	Water	5.60	None	None
water	None	X	107.29	None	None

Please note:

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

2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

- 1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or
- 2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
10201	<i>Acacia guyeri</i>		V	open forest and woodland of a variety of Eucalyptus and Corymbia species	0 to 600 m	skeletal often rocky, stony well-drained, lithosol (sandy), loam to clay loam	ironstone ridge, sandstone scarp, rocky hill slope
12617	<i>Dianella incollata</i>		NT	scrub dominated by <i>Blepharocarya involucrigera</i> and <i>Schefflera actinophylla</i> , associated species: <i>Gahnia sieberana</i> , <i>Arthrostylis aphylla</i> , <i>Ipomoea gracilis</i> and <i>Mnesithea rottboelliioides</i> ; fragmented deciduous vine thicket amongst sandstone on escarpment; woodland of <i>Corymbia hylandii</i> and <i>Eucalyptus tetradonta</i> ; open woodland of <i>Melaleuca</i> spp.; open forest of <i>Eucalyptus</i> spp.	0 to 500 m	sandy soil often skeletal derived from sandstone substrates	rocky sandstone hill slope, ridge line or escarpment, small gullies over sandstone plateau
29779	<i>Stenanthemum argenteum</i>		V	heathlands; woodland or open woodland of <i>Eucalyptus</i> and <i>Corymbia</i> spp.	400 to 850 m	skeletal, sandy	sandstone plateau, steep sandstone hill slope, sandstone pavement and outcrop

Label	Regional Ecosystem (mandatory unless otherwise specified)
10201	3.5.26, 3.10.6, 3.10.9, 3.11.12, 9.5.8, 9.5.15, 9.11.3, 9.11.25, 9.12.7, 9.12.36
12617	3.3.20, 3.3.27, 3.3.49, 3.5.6, 3.10.5, 3.10.6, 3.10.7, 3.10.9, 3.11.11, 9.11.3
29779	3.10.6, 3.10.9, 9.10.7, 9.10.8, 9.10.9, 9.11.3

3.6 Area Management Plan(s)

Area Management Plan for the control of pest plants in the Dry Tropics region

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Coastal

Non Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

No Class A

No Class B

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 66 Plan: SP245572.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:
<https://www.resources.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form>

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new [property maps of assessable vegetation \(PMAV\)](#).

Vegetation management supporting map

The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

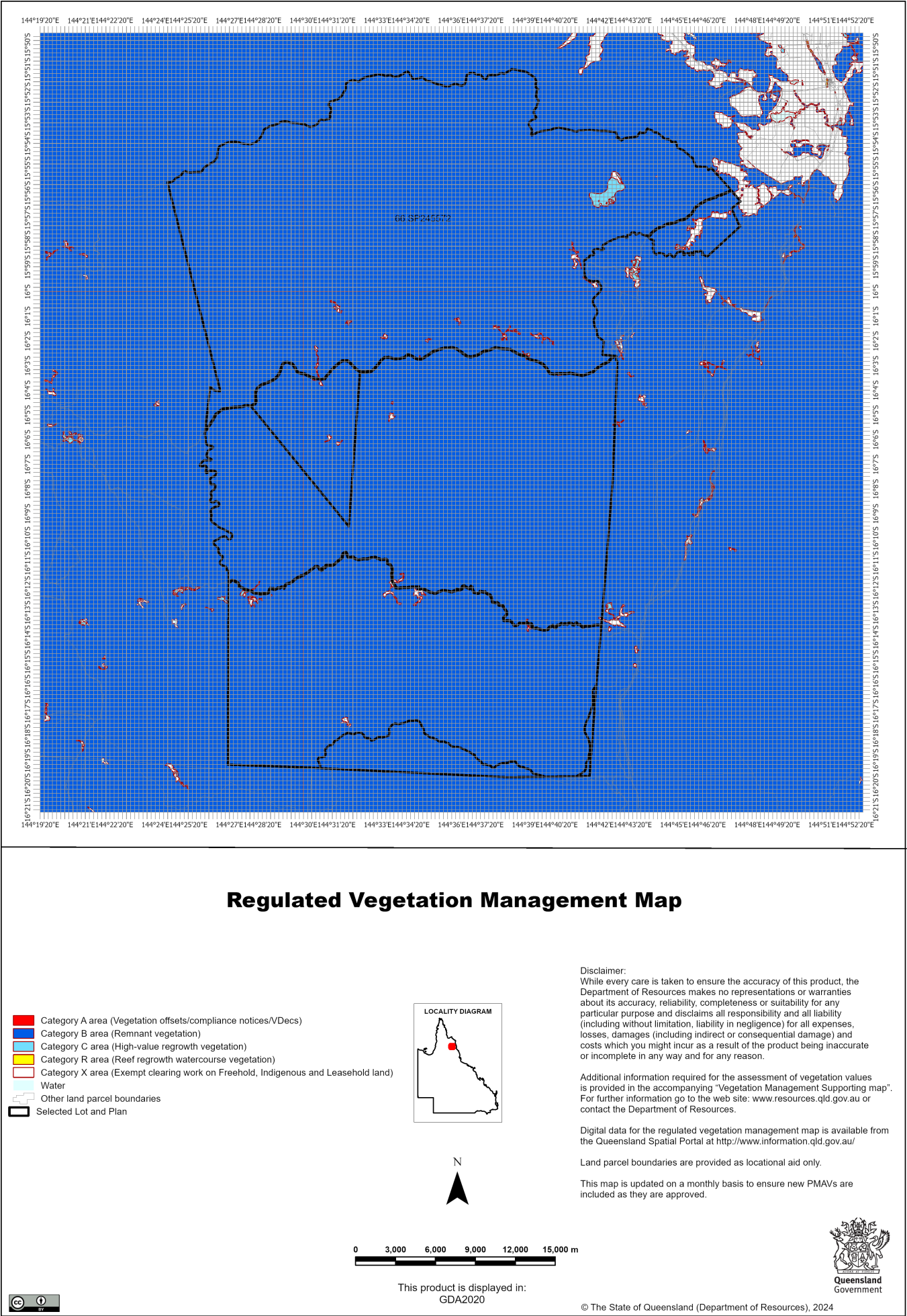
Coastal/non-coastal map

The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

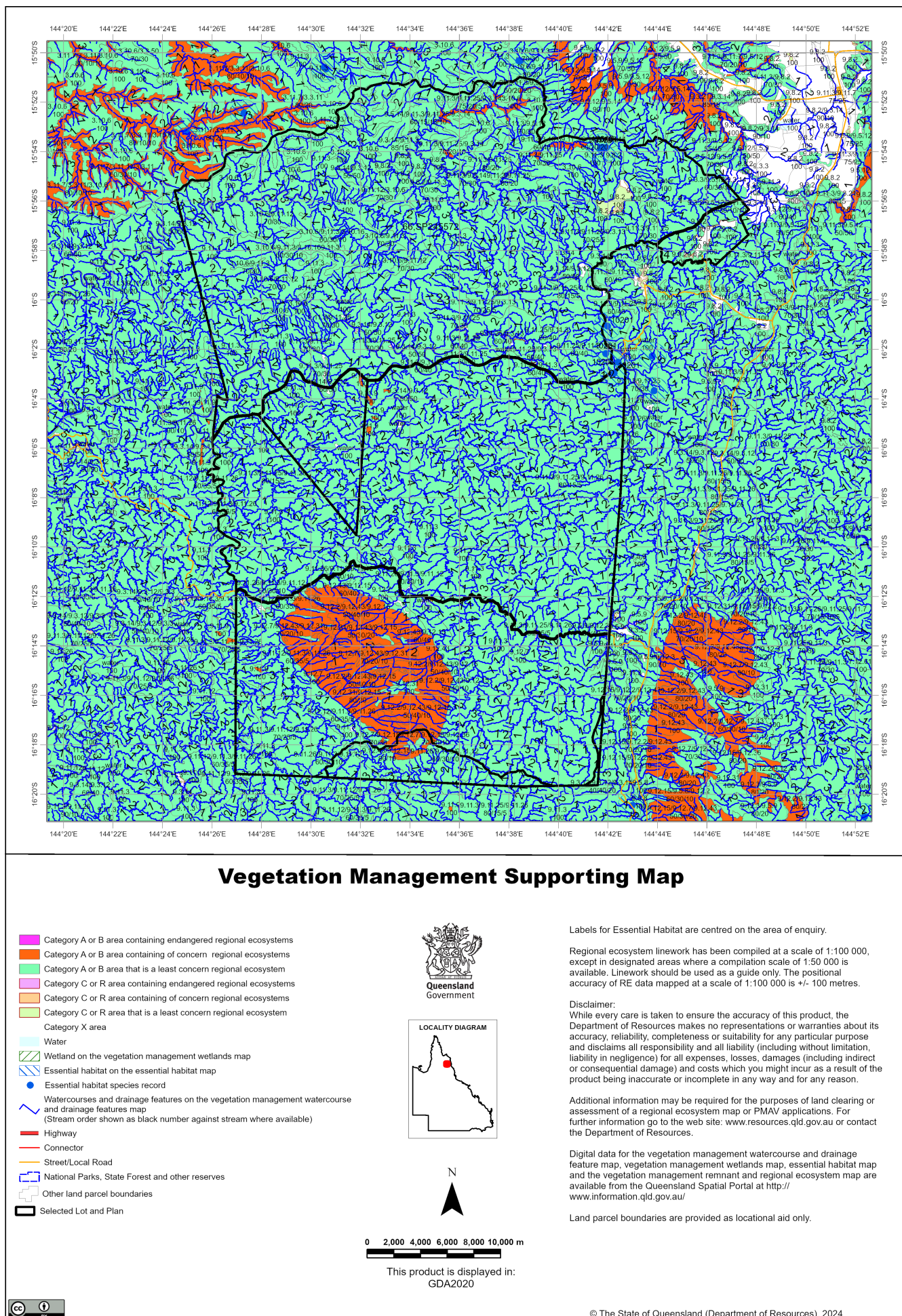
Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

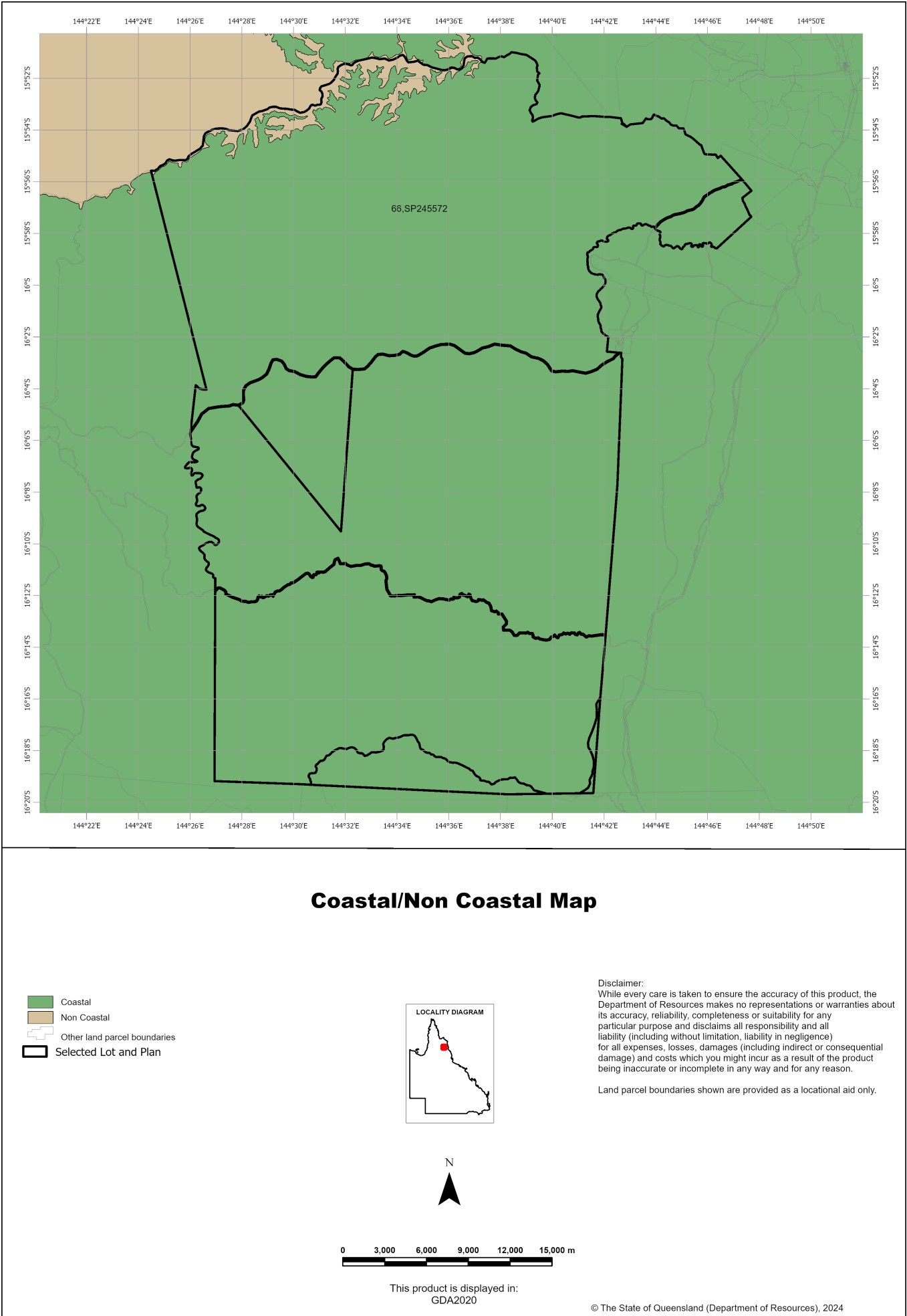
4.1 Regulated vegetation management map



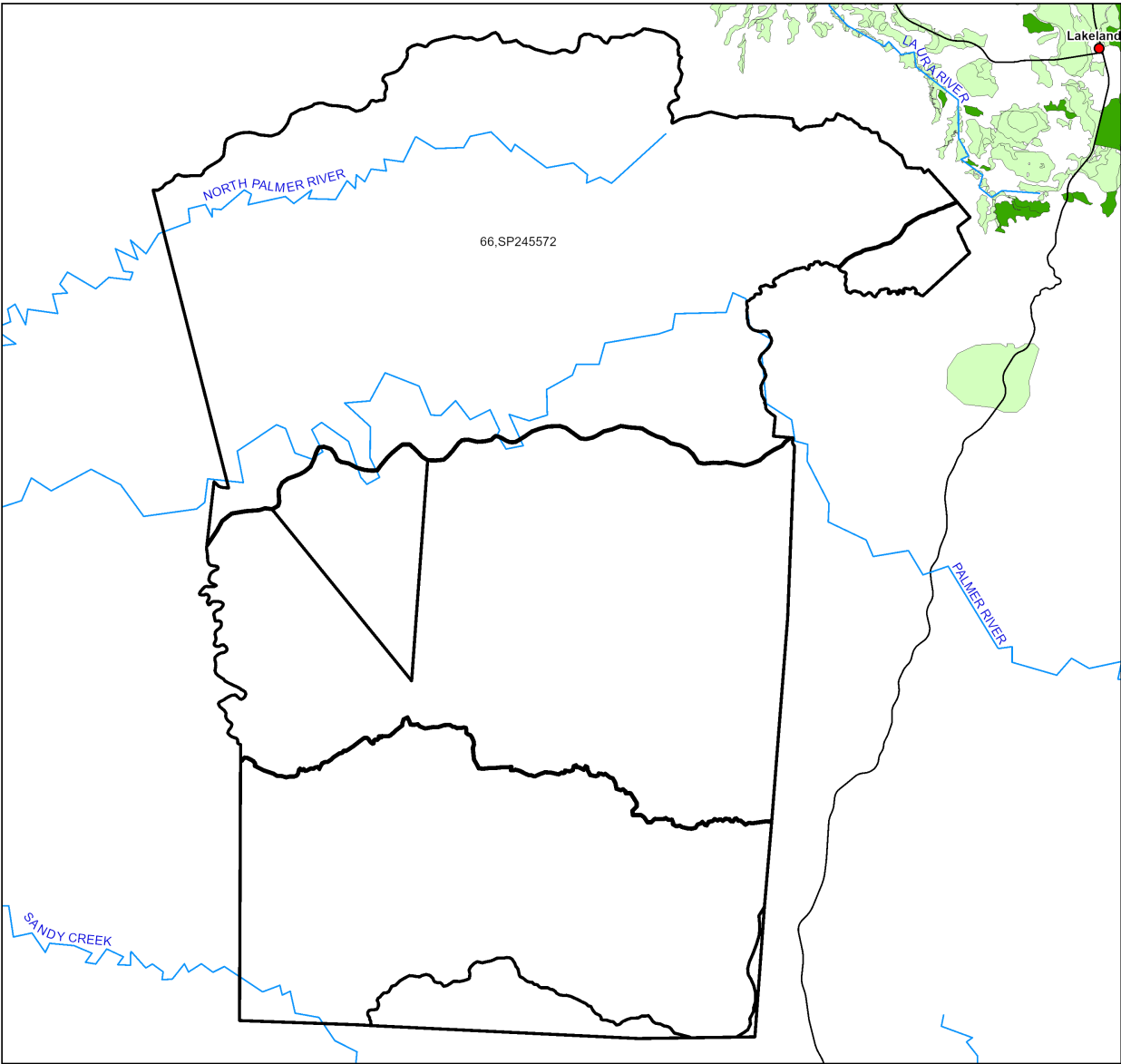
4.2 Vegetation management supporting map



4.3 Coastal/non-coastal map



4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

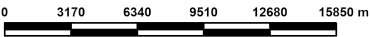


Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

- Towns
- Rivers and creeks
- Freeways / motorways; Highways
- Secondary roads; Streets
- Agricultural land class A or B
 - A
 - B
 - Not class A or B
- Selected Lot and Plan



Disclaimer
Whilst every care is taken to ensure the accuracy of these details all data custodians and/or the State of Queensland makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses damages (including indirect or consequential damage) and costs to which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.



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5. Protected plants framework (administered by the Department of Environment, Science and Innovation (DESI))

In Queensland, all plants that are native to Australia are protected plants under the [Nature Conservation Act 1992](#) (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see [Operational policy: When a protected plant in Queensland is considered to be 'in the wild'](#)) that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for threatened and near threatened plants. These are areas where threatened or near threatened plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the [Flora survey guidelines](#). The main objective of a flora survey is to locate any threatened or near threatened plants that may be present in the clearing impact area.

If the flora survey identifies that threatened or near threatened plants are not present within the clearing impact area or clearing within 100m of EVNT plants can be avoided, the clearing activity is exempt from a permit. An [exempt clearing notification form](#) must be submitted to the Department of Environment, Science and Innovation, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that threatened or near threatened plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the [clearing permit application form](#).

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that threatened or near threatened plants are present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DESI

For further information on the protected plants framework:

Phone 1300 130 372 (and select option four)

Email palm@des.qld.gov.au

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

5.5 Protected plants flora survey trigger map

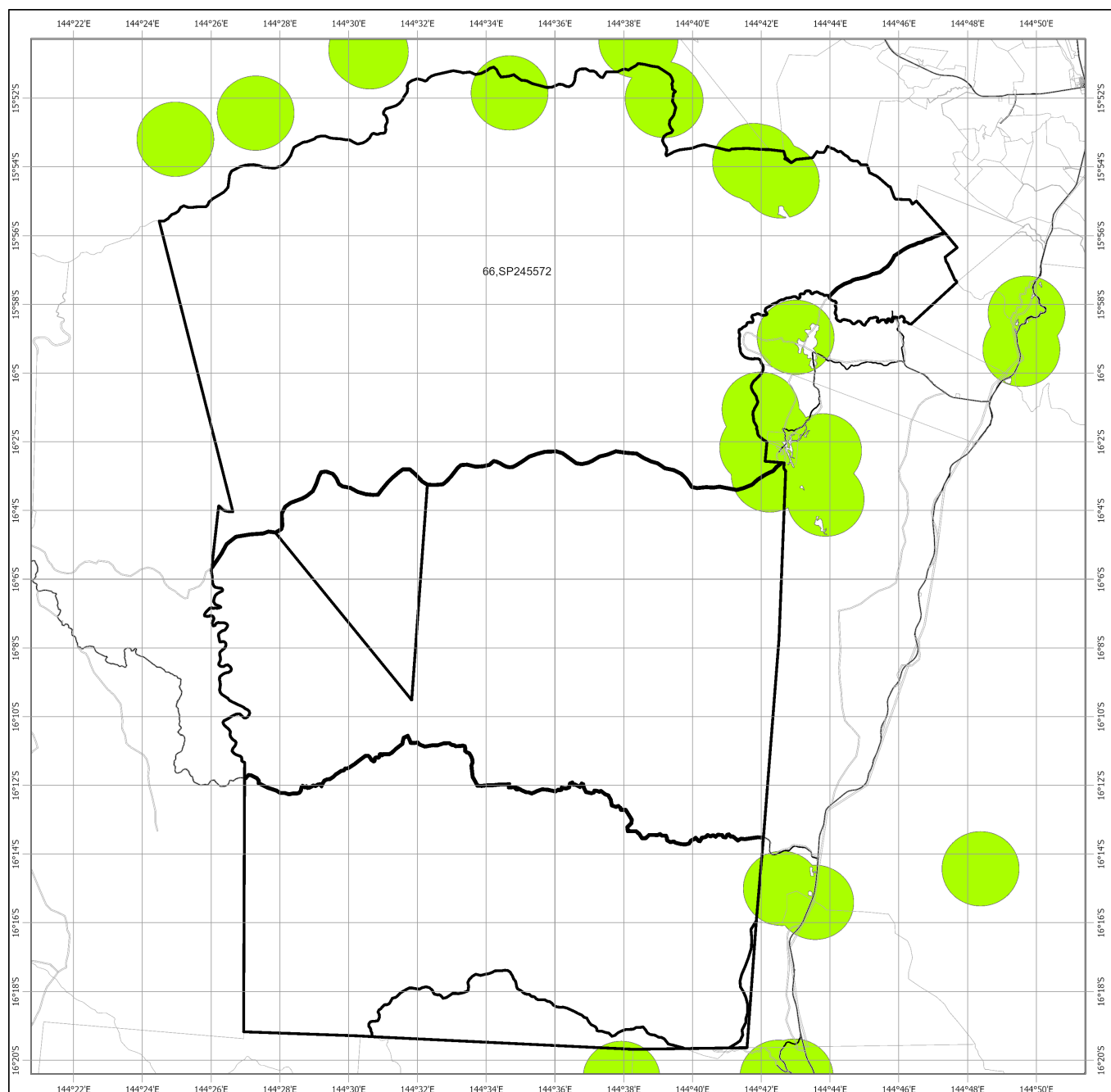
This map included may also be requested individually at: <https://apps.des.qld.gov.au/map-request/flora-survey-trigger/>.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment, Science and Innovation does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment, Science and Innovation webpage on the [clearing of protected plants](#) for more information.



Protected Plants Flora Survey Trigger Map

- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
- Secondary roads / streets
- Selected Lot and Plan



0 2,000 4,000 6,000 8,000 10,000 m

This product is displayed in:
GDA2020

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

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment, Science and Innovation at palm@des.qld.gov.au

Disclaimer: While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

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6. Koala protection framework (administered by the Department of Environment, Science and Innovation (DESI))

The koala (*Phascolarctos cinereus*) is listed in Queensland as endangered by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the *Nature Conservation (Animals) Regulation 2020*, the *Nature Conservation (Koala) Conservation Plan 2017*, the *Planning Act 2016* and the *Planning Regulation 2017*.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.

Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the *Planning Regulation 2017* for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document [Spatial modelling in South East Queensland](#).

Section 7.2 shows any koala habitat area that exists on your property.

Under the *Nature Conservation (Koala) Conservation Plan 2017*, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document [Guideline - Requests to make, amend or revoke a koala habitat area determination](#).

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at:

<https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps>. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the *Planning Regulation 2017* (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:

<https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy>.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

1. Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
2. Does not include destroying standing vegetation stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the [Planning Regulation 2017](#). More information on exempted development can be found here:

<https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy>.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:

- the local government planning scheme makes the development assessable;
- the premises includes an area that is both a koala priority area and a koala habitat area; and
- the development does not involve interfering with koala habitat (defined above); and

- development in identified koala broad-hectare areas.

The [Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks](#) outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the [Nature Conservation \(Koala\) Conservation Plan 2017](#) prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DESI

For further information on the koala protection framework:

Phone 13 QGOV (13 74 68)

Email koala.assessment@des.qld.gov.au

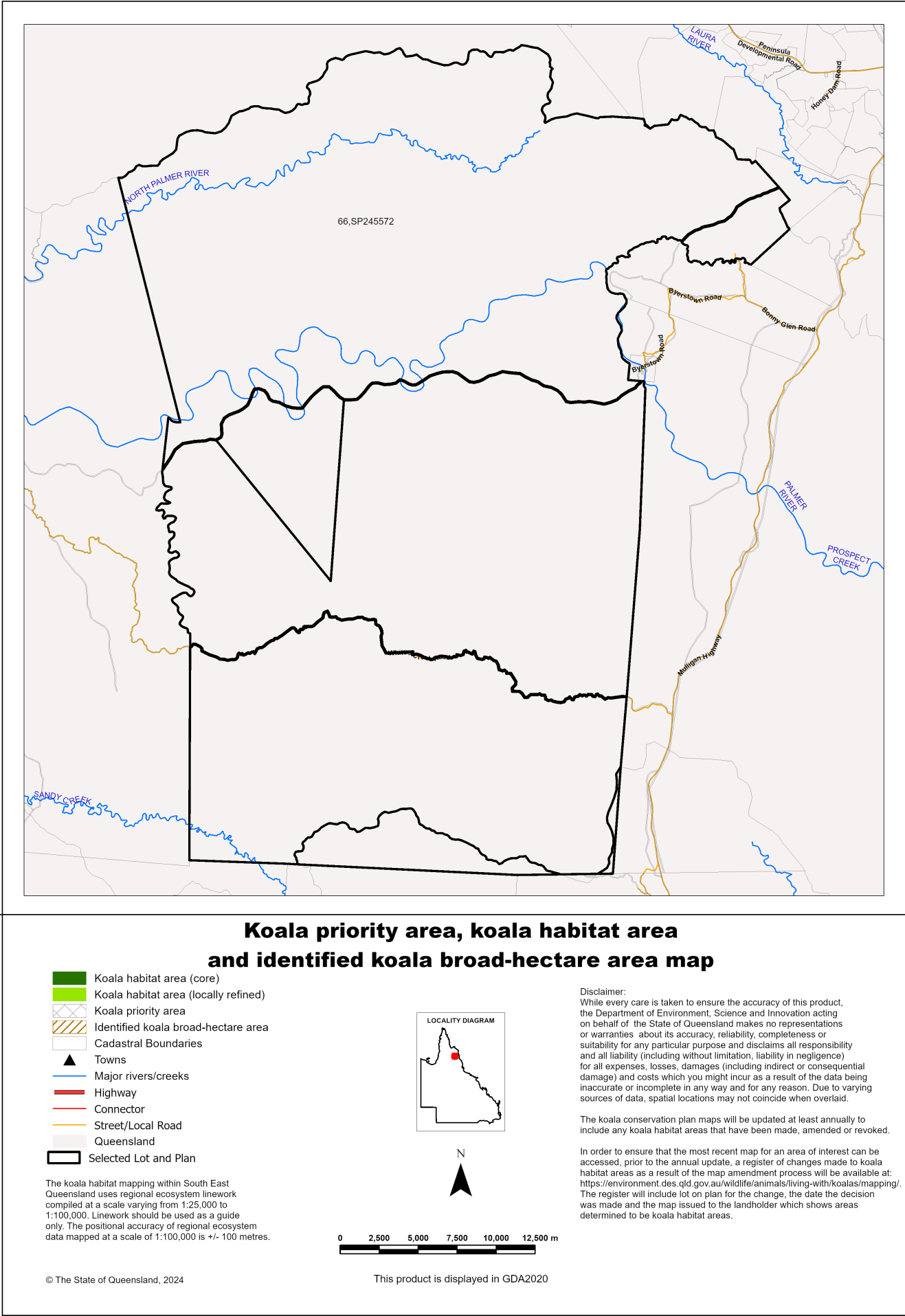
Visit <https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping>

7. Koala protection framework details for Lot: 66 Plan: SP245572

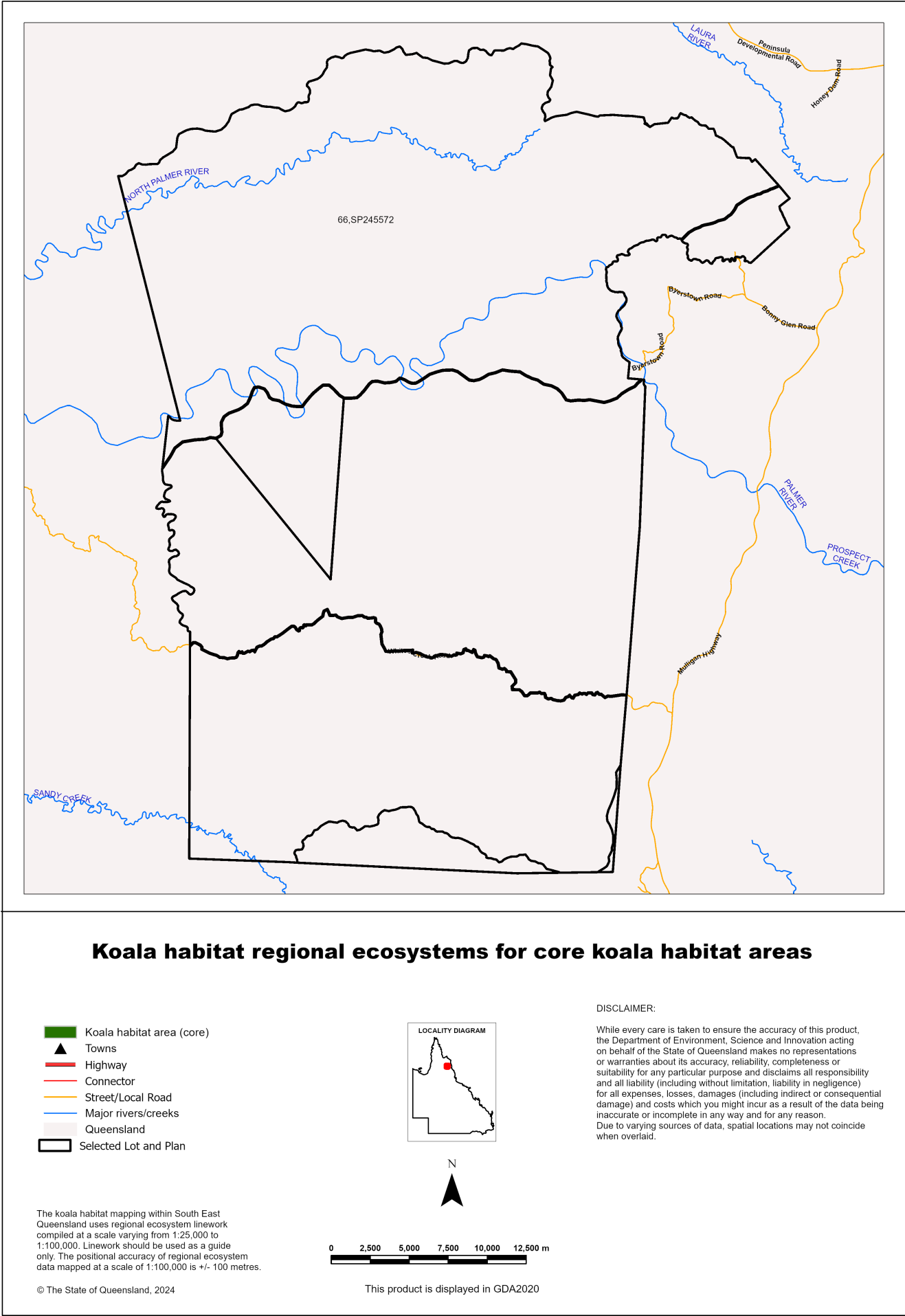
7.1 Koala districts

Koala District C

7.2 Koala priority area, koala habitat area and identified koala broad-hectare map

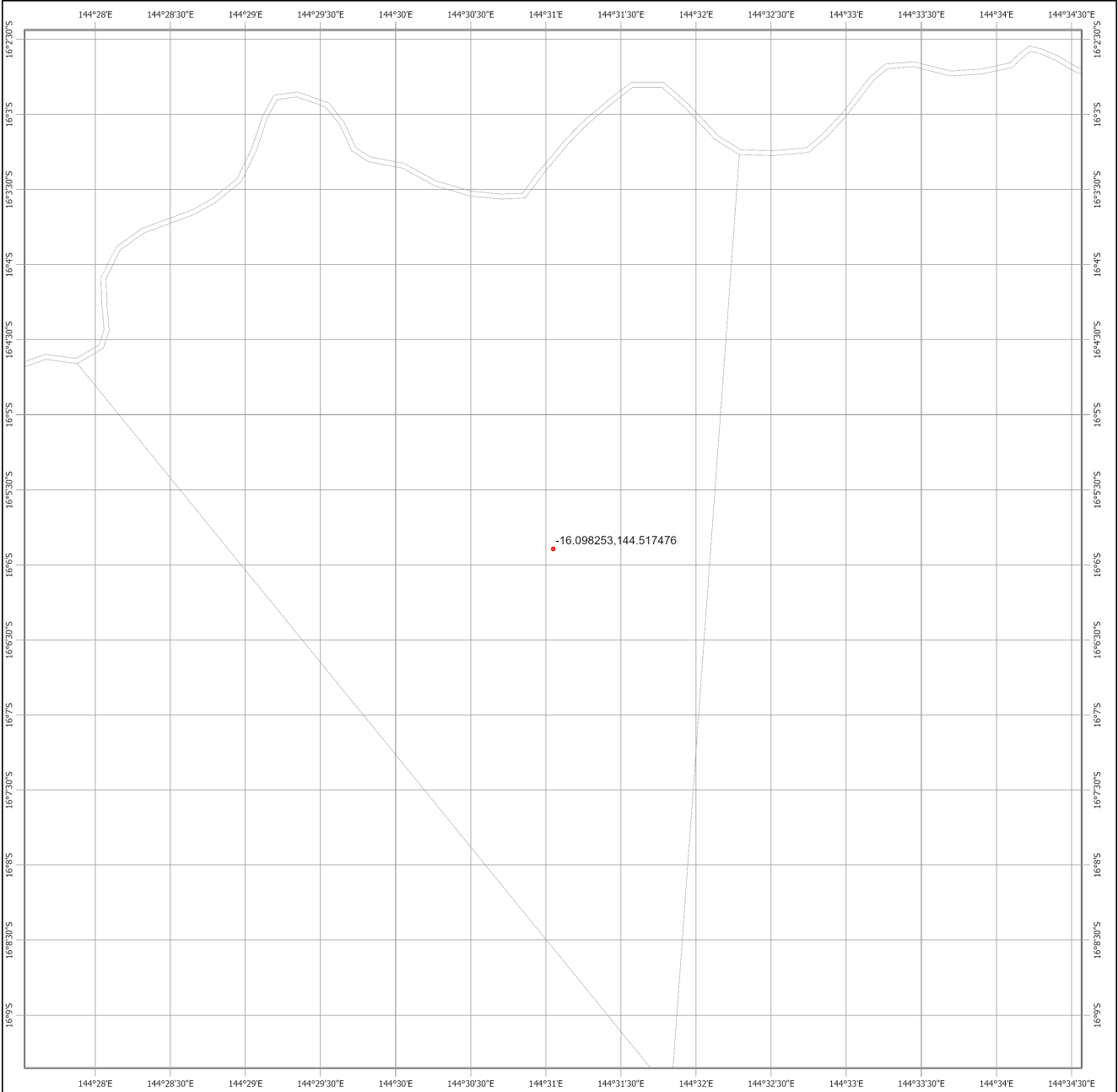


7.3 Koala habitat regional ecosystems for core koala habitat areas



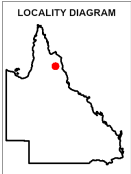
8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
- Interference with overland flow - Earthworks, significant disturbance	<i>Water Act 2000</i> <i>Soil Conservation Act 1986</i>	Department of Regional Development, Manufacturing and Water (Queensland Government) Department of Resources (Queensland Government)	Ph: 13 QGOV (13 74 68) www.rdmw.qld.gov.au/ www.resources.qld.gov.au
Indigenous Cultural Heritage	<i>Aboriginal Cultural Heritage Act 2003</i> <i>Torres Strait Islander Cultural Heritage Act 2003</i>	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
- Mining and environmentally relevant activities - Infrastructure development (coastal) - Heritage issues	<i>Environmental Protection Act 1994</i> <i>Coastal Protection and Management Act 1995</i> <i>Queensland Heritage Act 1992</i>	Department of Environment, Science and Innovation (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
Protected plants and protected areas	<i>Nature Conservation Act 1992</i>	Department of Environment, Science and Innovation (Queensland Government)	Ph: 1300 130 372 (option 4) palm@des.qld.gov.au www.des.qld.gov.au
Koala mapping and regulations	<i>Nature Conservation Act 1992</i>	Department of Environment, Science and Innovation (Queensland Government)	Ph: 13 QGOV (13 74 68) Koala.assessment@des.qld.gov.au
- Interference with fish passage in a watercourse, mangroves - Forestry activities on State land tenures	<i>Fisheries Act 1994</i> <i>Forestry Act 1959</i>	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
Matters of National Environmental Significance including listed threatened species and ecological communities	<i>Environment Protection and Biodiversity Conservation Act 1999</i>	Department of Agriculture, Water and the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
Development and planning processes	<i>Planning Act 2016</i> <i>State Development and Public Works Organisation Act 1971</i>	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
Local government requirements	<i>Local Government Act 2009</i> <i>Planning Act 2016</i>	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office
Harvesting timber in the Wet Tropics of Qld World Heritage area	<i>Wet Tropics World Heritage Protection and Management Act 1993</i>	Wet Tropics Management Authority	Ph: (07) 4241 0500 https://www.wettropics.gov.au/



Protected Plants Flora Survey Trigger Map

- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
- Secondary roads / streets
- Coordinates



0 480 960 1,440 1,920 2,400 m

This product is displayed in:
GDA2020

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

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment, Science and Innovation at palm@des.qld.gov.au

Disclaimer: While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

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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.

Appendix D – Significant impact assessment

This section provides detailed profiles for MNES, outlining the specific, potential impacts and mitigation measures to avoid or reduce the impact to MNES from project activities. Impacts specific to threatened and migratory species are discussed in relation to guidance within the policy statement on those subject areas, and species-specific mitigation measures are also provided (additional to those discussed in Section 8).

MNES identified as having a likelihood of occurrence of *moderate* or higher are addressed in this appendix.

D.1 SIGNIFICANT IMPACT CRITERIA

The EPBC Act policy statement 1.1 states that the following measures should be considered to determine whether an action is likely to have a significant impact on an MNES:

- Whether there are any MNES located in the area of the proposed action (noting that *'the area of the proposed action'* is broader than the immediate location where the action is undertaken. Consider also whether there are any MNES adjacent to or downstream from the immediate location that may potentially be impacted).
- 12. Consider the proposed action at its broadest scope (that is, considering all stages and components of the action, and all related activities and infrastructure), whether there is potential for impacts, including indirect impacts, on MNES.
- 13. Whether there are any proposed measures to avoid or reduce impacts on MNES (and if so, is the effectiveness of these measures certain enough to reduce the level of impact below the *'significant impact'* threshold).
- 14. Whether any impacts of the proposed action on MNES are likely to be significant impacts (important, notable, or of consequence, having regard to their context or intensity).

D.2 HABITAT CRITICAL TO THE SURVIVAL OF A SPECIES

'Habitat critical to the survival of a species' refers to areas that are necessary:

- For activities such as foraging, breeding, roosting, or dispersal;
- For the long-term maintenance of the species (including the maintenance of species essential to the survival of the species, such as pollinators);
- To maintain genetic diversity and long-term evolutionary development; or
- For the reintroduction of populations or recovery of the species.

D.3 VULNERABLE SPECIES CRITERIA

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

- Lead to a long-term decrease in the size of an important population of a species;
- Reduce the area of occupancy of an important population;
- Fragment an existing important population into two or more populations;
- Adversely affect habitat critical to the survival of a species;
- Disrupt the breeding cycle of an important population;
- Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;

- Result in invasive species that are harmful to a vulnerable species becoming established in the habitat of the vulnerable species;
- Introduce disease that may cause the species to decline; or
- Interfere substantially with the recovery of the species.

An '*important population*' is a population that is necessary for the long-term survival and recovery of a species. This may include populations identified as such in recovery plans, and/or that are:

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

D.4 CRITICALLY ENDANGERED OR ENDANGERED SPECIES CRITERIA

An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:

- Lead to a long-term decrease in the size of a population;
- Reduce the area of occupancy of the species;
- Fragment an existing population into two or more populations;
- Adversely affect habitat critical to the survival of a species;
- Disrupt the breeding cycle of a population;
- Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;
- Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the habitat of the endangered or critically endangered species;
- Introduce disease that may cause the species to decline; or
- Interfere with the recovery of the species.

D.5 MIGRATORY SPECIES CRITERIA

An action is likely to have a significant impact on a migratory species if there is a real chance or possibility that it will:

- Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species;
- Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species; or
- Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

An area of '*important habitat*' for a migratory species is:

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

- (d) Habitat within an area where the species is declining.

D.6 WHAT IS AN ECOLOGICALLY SIGNIFICANT PROPORTION ?

Listed migratory species cover a broad range of species with different life cycles and population sizes. Therefore, what is an '*ecologically significant proportion*' of the population varies with the species (each circumstance will need to be evaluated). Some factors that should be considered include the species-specific population status, genetic distinctiveness, and behavioural patterns (for example, site fidelity and dispersal rates).

D.7 WHAT IS THE POPULATION OF A MIGRATORY SPECIES?

Listed migratory species cover a broad range of species with different life cycles and population sizes. Therefore, what is an '*ecologically significant proportion*' of the population varies with the species (each circumstance will need to be evaluated). Some factors that should be considered include the species-specific population status, genetic distinctiveness and behavioural patterns (for example, site fidelity and dispersal rates).

'Population', in relation to migratory species, means the entire population or any geographically separate part of the population of any species or lower taxon of wild animals, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries, including Australia.

D.8 VULNERABLE SPECIES

D.8.1 WHITE-THROATED NEEDLETAIL (*HIRUNDAPUS CAUDACUTUS*)

Note: Most of this information was derived from DCCEEW (2024j).

Description

The white-throated needletail (*Hirundapus caudacutus*) is a large swift with a thickset, cigar-shaped body, stubby tail and long, pointed wings (20 cm in length and approximately 115–120 g in weight). Sexes are alike, with no seasonal variation in plumage. The adults have a dark-olive head and neck, with an iridescent gloss on the crown. The mantle and the back are paler, greyish in colour and the upperwings are blackish, sometimes with a greenish gloss, with a contrasting white patch at the base of the trailing edge. The uppertail is black with a greenish gloss. The face is dark-olive with a narrow, white band across the forehead and lores and a white patch on the chin and throat.

The underparts are generally dark-olive except for a U-shaped band across the rear flanks, the vent and the undertail coverts, and the undertail is black with a greenish gloss. The underwing is blackish-brown with glossy grey-brown flight feathers. The bill is black, the eyes black-brown and the legs and feet are dark grey, sometimes with a pinkish tinge.

Juveniles have a similar appearance to the adults but can be separated by duller plumage, with little gloss. The pale saddle is duller, contrasting less with the head, neck and uppertail, and the white band across the forehead – and white patches on the upperwings and the vent and undertail coverts – are all less prominent and duller (Higgins, 1999).

The white-throated needletail is generally gregarious when in Australia, sometimes occurring in large flocks, although they are occasionally seen singly. Occasionally, the species occurs in mixed flocks with other aerial insectivores, including fork-tailed swifts (*Apus pacificus*) and fairy martins (*Hirundo ariel*; Learmonth, 1950, 1951; McMicking, 1925; Wheeler, 1959).

Distribution

There are two recognised subspecies of the white-throated needletail:

- Subspecies *caudacutus* occurs in central and eastern Siberia, northern Mongolia, northern China and the Korean Peninsula, Sakhalin and Japan, and migrates to spend the non-breeding season in Australasia; and
- Subspecies *nudipes*, which breeds in the Himalayas from northern Pakistan to Assam and southwestern China, and is largely resident and does not occur in Australasia (Chantler, 1999; Higgins, 1999).

Subspecies *caudacutus* is widespread in eastern and southeastern Australia (Blakers et al., 1984; Higgins, 1999). In eastern Australia, the species is recorded in all coastal regions of Queensland and New South Wales, extending inland to the western slopes of the Great Dividing Range and occasionally onto the adjacent inland plains. Further south on the mainland, it is widespread in Victoria, although more so on – and south of – the Great Dividing Range. There are few records in western Victoria. The species occurs in adjacent areas of southeastern South Australia, where it extends west to the Yorke Peninsula and the Mount Lofty Ranges. It is widespread in Tasmania (Blakers et al., 1984; Higgins, 1999).

The species is also a vagrant to the Northern Territory as well as various outlying islands, including Norfolk, Lord Howe, Macquarie, Christmas and Cocos-Keeling islands (Schodde et al., 1983).

The breeding distribution of the white-throated needletail is fragmented, with subspecies *caudacutus* breeding from northern Japan west to central and eastern Siberia.

General habitat

This species is mostly aerial, from heights of less than 1 m up to more than 1,000 m above the ground (Coventry, 1989; Tarburton, 1993). Although they occur over most types of habitat, they are recorded most often above wooded areas, including open forest and rainforest, and may also fly below the canopy between trees or in clearings (Higgins, 1999).

Roosting habitat

This species roosts in trees amongst dense foliage in the canopy or in hollows (Corben et al., 1982; Tarburton, 1993, 2015).

Recognised threats

In Australia, there is evidence of collision with wind turbines (Hull, 2013), overhead wires, windows and lighthouses (Stokes, 1983). However, the scale of impact at the population level requires further investigation.

Tarburton (2014) identified the use of insecticides, particularly organochlorines, as another possible cause of decline of white-throated needletails, either through a decrease in the abundance of invertebrates from wide use of insecticides or from secondary poisoning by insecticides accumulated as sublethal doses in the prey.

As noted in Tarburton (2014), the loss of roosting sites in Australia may also be contributing to the decline of the species. Additionally, the reduction of forest and woodland habitats may have resulted in the reduction of invertebrate prey.

It is thought that logging of taiga forests in Siberia – where most of the population breeds – poses the greatest risk by removing old trees and stumps that contain hollows which this species uses to breed (Crowley, 2005).

On the breeding grounds of the species, it was formerly hunted with nets placed near their breeding sites.

Important population

There are no important populations of this species known in Australia (or elsewhere), and the total population of the species is unknown.

Significant impact assessment

An assessment against the significant impact guidelines 1.1 is provided in Table 20. The outcome of this assessment was that the project is considered unlikely to result in a significant impact to the species due to the absence of an important population in the project area and the occurrence of potential foraging and roosting habitat only. The assessment has been based on total clearing of approximately 33 ha of remnant vegetation, although not this entire area may require clearing for the project.

Table 20: Significant impact assessment for white-throated needletail.

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
Lead to a long-term decrease in the size of an important population of a species?	No This species is almost entirely aerial in its habits, although potential foraging habitat and perhaps some marginal roosting habitat may exist within the project area, specifically the patches of remnant woodland and riparian habitat within which the species may occasionally roost in the few tree hollows present and within foliage in the forest canopy. The species was not detected within the project area during any of the four surveys, all of which were undertaken during the optimal time for detecting this species in Australia. No important population of the white-throated needletail has been identified within or near the project area (or elsewhere in Australia). It is therefore considered highly unlikely that the project will result in a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population?	No The area of occupancy of the white-throated needletail in Australia has been estimated at 126,200 km² (DCCEEW, 2024a). As a worst-case scenario, the project will result in the loss of approximately 0.33 km² (33 ha) of woodland and simple, riparian habitat. This constitutes approximately 0.0003% of the total estimated area of occupancy for the species. No white-throated needletails were identified within the project area. Further, no important populations are known from within Australia. Consequently, it is considered unlikely that the project will result in a reduction in the area of occupancy of an important population.
Fragment an existing important population into two or more populations?	No The species is highly mobile and aerial in habit, and the project will result in limited vegetation clearing. Vast tracts of contiguous, remnant vegetation surround the project site, maintaining extensive connectivity throughout the landscape. No important populations are known within Australia or expected to occur within the project area. Project activities would not result in dispersal challenges for any population that may exist. Therefore, it is considered unlikely that the project will result in the fragmentation of an existing, important population into two or more subpopulations.

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
Adversely affect habitat critical to the survival of a species?	No Important habitat for this widespread and aerial species in Australia is restricted to non-breeding foraging and roosting habitat. Habitat critical to the survival of the species has not been defined in Australia. Consequently, it is considered unlikely that the project will result in adverse impacts to habitat classified as critical to the survival of this species.
Disrupt the breeding cycle of an important population?	No This species does not breed in Australia and the project will not disrupt the breeding cycle of any important populations.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?	No From examining the extent and connectivity of habitat in the surrounding landscape, and considering relevant aspects of their biology, the proposed action would not have the capacity to isolate populations or destroy enough habitat that could be considered significant in the broader context. It is not anticipated that the proposed action will decrease the availability or quality of habitat to the extent that the species is likely to decline. Therefore, considering the broader landscape characteristics and connectivity, as well as the ability of the species to move across large areas, it is concluded that the proposed action is unlikely to decrease habitat availability to the extent that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat?	No Detailed weed and pest management measures will be developed and incorporated into the project pest management plan to mitigate and manage the potential spread of pest flora and fauna species. Species-specific management will be undertaken for identified key weed and pest species at risk of spread through project activities. Control efforts will be increased in areas particularly sensitive to invasion. Further, invasive species have not been identified as a threat to the white-throated needletail.
Introduce disease that may cause the species to decline?	No Disease has not been identified as a threat to the white-throated needletail.
Interfere with the recovery of the species?	No Due to the limited nature of any threats to this species and its mobility (DCCEEW, 2024a), there are no threat abatement or recovery actions either underway or proposed. Threatening processes identified in Australia include collision with overhead wires, windows and lighthouses. The mitigation proposed in this report include measures to mitigate such impacts. It is therefore unlikely that the project will interfere with the recovery of the species.

D.8.2 LARGE-EARED HORSESHOE BAT (*RHINOLOPHUS ROBERTSI*)

Note: Most of this information was derived from DCCEEW (2024k).

Description

The large-eared horseshoe bat has enormous ears and a large nose-leaf. The fur is long, fine, grey-brown and peppered with white hairs. The fur on the belly is paler in colour. In some individuals, the skin of the nose-leaf is bright yellow. However, the most common colour is greyish. Sexes are similar in appearance and measurements.

The fur colour of this species is also very similar to the lesser large-eared horseshoe bat (*Rhinolophus* sp. 'intermediate'). Some individuals of the latter form may also have yellow skin (Churchill, 1998, 2008).

The forearm length of the large-eared horseshoe bat ranges from 51.6 mm to 59.0 mm, ear length 29.0 mm to 33.3 mm, and weight 10.0 g to 16.2 g. However, there is a cline in size, with the smallest individuals occurring in the southern part of their range. Where it overlaps in range with the lesser large-eared horseshoe bat in the northern areas of Cape York, the large-eared horseshoe bat is significantly larger and heavier, with the forearm 56.0 mm to 59.0 mm, ear length 32.1 mm to 33.3 mm and weight 11.5 g to 16.2 g. In contrast, in this area of sympatry (overlapping distribution), the lesser large-eared horseshoe bat has a forearm of 50.0 mm to 53.5 mm, ear length 25.2 mm to 27.3 mm, and weight 8.3 g to 9.9 g (Churchill, 2008; Pavey and Kutt, 2008). The large-eared horseshoe bat can also be distinguished from the eastern horseshoe bat (*Rhinolophus megaphyllus*) by its much longer forearm length and larger ears (Churchill, 1998, 2008).

The echolocation calls of the large-eared horseshoe bat are the lowest frequency of any Rhinolophid bat, ranging between 28 kHz and 34 kHz (Coles, 1993; Fenton, 1982; Note that call frequency was confounded between large and small forms in Churchill [1998] and Pavey [2002], but is corrected and updated in Churchill [2008] and Pavey and Kutt [2008]). In contrast, the lesser large-eared horseshoe bat emits calls around 40 kHz, and the calls of the eastern horseshoe bat range between 66 kHz to 72 kHz (Coles, 1993; Pennay et al., 2004; Reinhold et al., 2001).

Distribution

The large-eared horseshoe bat occurs in northeastern Queensland, from the tip of Cape York Peninsula to as far south as Townsville (Kutt, 2004; Pavey and Kutt, 2008). Most of the distribution is along the eastern coast, but it extends inland where there are suitable cave systems (e.g. Chillagoe, Undara; Pavey and Kutt, 2008). Its distribution covers most of the wet tropics bioregion, and parts of Cape York Peninsula and the Einasleigh Uplands bioregion. Duncan et al. (1999) and Thomson et al. (2001) reported the loss (in the 1990s) of some colonies from underground mines, which may have led to reductions in area of occupancy, and possibly in population size.

The distribution of the large-eared horseshoe bat is considered continuous on a broad scale. However, within this, connectedness among population groups might be low because of land clearing because the species prefers to forage within relatively dense stands of vegetation (Pavey, 2002). The species does forage within woodland, and one radio-tagged individual at Iron Range was observed to fly regularly into the open to feed on insects attracted to a light source (Pavey, 2002; Pavey and Kutt, 2008). Thus, some propensity for movement among suitable rainforest habitat patches might be possible, but would need to be quantified by a population genetic study.

The current extent of occurrence is estimated at 124,250 km² and the area of further potential distribution is an additional 79,100 km². However, the area of occupancy has not been accurately calculated for this species.

Within the proximity to the project area, the species is known to occur at Mt Molloy (on mining leases), the Mitchell Palmer Goldfields Reserve, and at the Palmer River Station in caves of the Mitchell/Palmer karst area.

Foraging and breeding habitat

The large-eared horseshoe bat is a poorly-known and generally uncommon species (Woinarski et al., 2014), which probably occurs in low densities even within core habitats. It occurs in rainforests, riparian forests, eucalypt open forests and woodlands. It has a slow, fluttery flight, and its diet mostly comprises moths and beetles, but also includes grasshoppers, crickets and lacewings (Pavey, 1999; Pavey and Kutt, 2008). At night, it forages mainly in open forest and wattle-dominated ridges in rainforest (Duncan et al., 1999). In open forest and woodland, it prefers to forage amongst the thicker vegetation in gullies and along creeks, although they have been observed at the edge of grassy clearings in rainforest and road edges (Churchill, 2008; Pavey, 1999, 2002; Pavey and Kutt, 2008). It usually flies within the lower half of the canopy between one and eight metres, using gaps such as tracks within rainforest. However, it has also been observed regularly at canopy height. Although the species has occasionally been noted foraging in rainforest clearings and around a light near a patch of rainforest, it is thought to prefer remaining within the canopy (Pavey, 1999). The loss of native vegetation remnants and understorey would likely limit their local distribution.

The species is thought to roost mainly in tree hollows and vegetation, or open habitats such as under creek banks and road culverts, in rockpiles, and relatively shallow caves in drier times. Like many species of bat, it has taken some advantage of disused underground mines. However, it is not an obligate cave- or mine-dwelling species.

Important population

No important populations of the large-eared horseshoe bat have been identified to date.

Significant impact assessment

An assessment against the significant impact guidelines 1.1 is provided in Table 21. The outcome of this assessment was that the project is considered unlikely to result in a significant impact to the species due to the absence of an important population in the project area and the occurrence of foraging habitat and potentially marginal roosting habitat only. The assessment has been based on a total worst-case scenario of clearing of approximately 33 ha of remnant vegetation, although not this entire area may require clearing for the project.

Table 21: Significant impact assessment for large-eared horseshoe bat.

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
Lead to a long-term decrease in the size of an important population of a species?	No Potential foraging habitat and perhaps some marginal roosting habitat may exist within the project area, specifically the patches of remnant woodland and simple, riparian habitat within which the species may occasionally roost. However, the site was found to contain a very low abundance of tree hollows. The species was not detected within the project area during any of the four surveys. No important population of the large-eared horseshoe bat has been identified near the project area. It is therefore considered unlikely that the project will result in a long-term decrease in the size of an important population of this species.

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
Reduce the area of occupancy of an important population?	No The area of occupancy is not known for this species. However, the extent of occupancy is estimated to be 124,250 km² and the area of further potential distribution is an additional 79,100 km². The project will require the clearing (as a worst-case scenario) of approximately 0.33 km² (33 ha) of potential foraging habitat for this species, although it is possible that not this entire area may require clearing. Due to the limited amount of clearing required, and the fact that no individuals have been recorded within the site during any of the surveys, it is unlikely that the project will result in a reduction to the area of occupancy of the species. Further, no important populations are expected to occur within or above the project area.
Fragment an existing important population into two or more populations?	No The project will result in limited vegetation clearing. Vast tracts of contiguous, remnant vegetation surround the project site in all directions, maintaining extensive connectivity throughout the landscape. No important populations of this species are known to occur within the project area and project activities should not result in dispersal challenges for any population that may exist. Therefore, it is considered unlikely that the project will result in the fragmentation of an existing, important population into two or more subpopulations.
Adversely affect habitat critical to the survival of a species?	No Habitat critical to the survival of the large-eared horseshoe bat has not been defined. The species is known from rainforests, riparian forests, eucalypt open forests and woodlands. It is thought to roost mainly in tree hollows and vegetation, or open habitats such as under creek banks and road culverts, in rockpiles, and relatively shallow caves in drier times. The project site was assessed against these habitat requirements to determine the extent of important habitat for this species within the site. Although some potential foraging and roosting habitat exists, there are no known records in the immediate vicinity of the site and no individuals were recorded during any of the surveys. Further, the proposed clearing of approximately 0.33 km² of potential habitat for this species represents the loss of approximately 0.0002% of habitat within the overall extent of occupancy of this species. Therefore, the project is not expected to result in adverse impacts to habitat critical to the survival of this species.
Disrupt the breeding cycle of an important population?	No No important populations of large-eared horseshoe bat are known from the project site and no individuals were recorded during any of the surveys. No breeding or roosting sites are known in the immediate area. The project has therefore been assessed as unlikely to disrupt the breeding cycle of an important population of this species.

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?	No The species has not been recorded within the site and no important populations are known from the immediate vicinity. The project will require the clearing (as a worst-case scenario) of approximately 0.33 km² (33 ha) of potential foraging habitat for this species, although it is possible that not this entire area may require clearing. Due to the limited amount of clearing required, and the fact that no individuals have been recorded within the site during any of the surveys, it is unlikely that the project will result in a decrease in habitat availability or quality to the extent that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat?	No Detailed weed and pest management measures will be developed and incorporated into the project pest management plan to mitigate and manage the potential spread of pest flora and fauna species. Species-specific management will be undertaken for identified key weed and pest species at risk of spread through project activities. Control efforts will be increased in areas particularly sensitive to invasion.
Introduce disease that may cause the species to decline?	No Disease has not been identified as a threat to the large-eared horseshoe bat.
Interfere with the recovery of the species?	No The recovery plan for cave-dwelling bats (Thomson et al., 2001) includes a comprehensive set of recovery objectives and criteria for conservation and recovery, none of which the proposed action will interfere with.

D.9 ENDANGERED SPECIES

D.9.1 GOULDIAN FINCH (*CHLOEBIA GOULDIAE*)

Note: Most of this information was derived from the Threatened Species Scientific Committee (2016).

Description

The Gouldian finch measures approximately 12 to 15 cm in length and weighs between 14 to 15 grams. Adults are strikingly multi-coloured and display three distinct facial colour morphs: black-headed (the most common), red-headed, and yellow-headed (the rarest). The adult male features a predominantly emerald green upper body, a light-blue upper tail, and a large mask – either black, red, or yellow-orange depending on the morph – outlined by a light-blue band. Its underparts are yellow, with a purple breast and cream-colored undertail. The adult female resembles the male but is generally duller and paler, with a shorter tail. Both sexes have black-brown irises, a ring of pale bluish-grey skin around each eye, pinkish-orange legs and feet, and a beak that changes colour: white with a red (or rarely yellow) tip in the non-breeding season, and pearl (in males) or dark grey (in females) during the breeding season. Juveniles are easily distinguished by their relatively plain, olive-brown-grey plumage.

Distribution

The Gouldian finch is found in northern Australia from Cape York Peninsula through northwest Queensland and the north of the Northern Territory to the Kimberley region of Western Australia (Higgins et al., 2006; O'Malley, 2006a). Genetic analyses of mitochondrial markers provides no evidence for population structuring across the species range and indicates that there is one continuous, genetic population in the west, whereas nuclear markers indicate contemporary gene flow from the Kimberley to the Northern Territory (Esparza-Salas, 2008; Bolton et al., 2018).

In Queensland there are no recent breeding records. However, since 2005, birds have been sighted on at least three sites on Cape York Peninsula, on the Atherton Tablelands, and at several sites in and around Boodjamulla National Park (Garnett et al., 2011). In the Northern Territory, there are recent breeding records at well-known sites in the Yinberrie Hills and Newry, as well as at Wollogorang and near Maningrida (see references in Garnett et al., 2011). In the Kimberley, small breeding populations of up to 120 adults each are known from the east (Garnett et al., 2011), the centre (Morrington Sanctuary; Legge et al., 2015), and west to Dampierland (Threatened Species Scientific Committee, 2016).

Foraging and breeding habitat

The Gouldian finch may be seen singly, in twos and in flocks that vary in size from small parties (including family groups) of less than ten birds to large flocks of hundreds of birds. Gouldian finches may congregate around waterholes when coming to drink, although groups may arrive at waterholes independently. They are regularly observed in mixed flocks with other species of finches, particularly the long-tailed finch (*Poephila acuticauda*).

Gouldian finches feed almost exclusively on grass seed and depend on a relatively small number of grass species which seed at different times throughout the year (O'Malley, 2006a). In the wet season, they rely on a small number of perennial grass species, consuming the seeds directly off plants as they ripen. In the dry season, they depend on the large volume of annual grass seed that is produced towards the end of the previous wet season and lies dormant on the ground (Dostine et al., 2001).

They nest in tree hollows between April and July (although this period is extended in some years), lay an average clutch of five eggs, and may raise several clutches in a season, with productivity averaging 1.5 fledglings per adult per season (Tidemann et al., 1999). When breeding, they use small patches of open woodland, usually on ridges dominated by cavity-bearing trees such as white northern gum (*Eucalyptus brevifolia*) in the west and salmon gum (*E. tintinnans*) in the east (Tidemann et al., 1992), with an understory of grasses such as sorghum (*Sorghum* spp.), *Schizachyrium* spp. and spinifex (*Triodia* spp.), and usually within 2–4 km of perennial waterholes or springs (Dostine et al., 2001; O'Malley, 2006a). After breeding, they tend to flock and move across the broader landscape, following grass seed resources (O'Malley, 2006a).

Important population

No important populations of Gouldian finch are recognised. However, the recovery plan for the species (O'Malley, 2006a) recognises key areas with significant populations of Gouldian finches, where it is assumed that the species is likely to persist if threatening processes can be minimised. These sites represent areas where populations of adults and juvenile birds (indicative of breeding events) have been recorded consistently over at least the past decade, either as part of on-going population monitoring programs or based on incidental sightings recorded on the Gouldian finch national database. Known breeding habitat for Gouldian finches in the Northern Territory and Western Australia is characterised by rocky hills with hollow-bearing, smooth-barked gums (*Eucalyptus brevifolia* or *E. tintinnans*) within two to four kilometres of small waterholes or springs that persist throughout the dry season.

Significant impact assessment

An assessment against the significant impact guidelines 1.1 is provided in Table 22. The outcome of this assessment was that the project is considered unlikely to result in a significant impact to the species due to the absence of an important population in the project area and the occurrence of foraging habitat and potentially marginal roosting habitat only. The assessment has been based on a total worst-case scenario of clearing of approximately 33 ha of remnant vegetation, although not this entire area may require clearing for the project.

Table 22: Significant impact assessment for the Gouldian finch.

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
Lead to a long-term decrease in the size of an important population of a species?	No Based on the assessment of habitat condition and suitability for Gouldian finch throughout the project area, it is considered unlikely that the project will lead to a long-term decrease in the size of an important population. Potential foraging habitat and permanent waters exist within and surrounding the project area – specifically the patches of remnant woodland habitat, simple, riparian habitat and dams 2, 4 and 5 around which the species may forage and drink and bathe. However, the lack of suitable hollows for nesting would be a significant limiting factor for this species within the project area. The species was not detected within the project area during any of the four surveys, and no key areas for the Gouldian finch are recognised in proximity to the site.
Reduce the area of occupancy of an important population?	No The project is expected to impact on approximately 33 ha of woodland and simple, riparian vegetation which may provide some foraging habitat on a seasonal basis. However, the lack of hollows for nesting would be a limiting factor for this species within the project site. No Gouldian finches have been recorded within the site during any of the survey events, and no historical records exist within 50 km of the site. Consequently, it is considered unlikely that the project would result in a reduction in the area of occupancy of this species. The project was therefore assessed as unlikely to result in a reduction in the area of occupancy of an important population of this species.
Fragment an existing important population into two or more populations?	No No populations of Gouldian finch have been detected within the project area and no important populations have been recognised in the area. The project is expected to impact on approximately 33 ha of woodland and simple, riparian vegetation surrounding an existing area of disturbance from the original DCM. The proposed disturbance area is surrounded, on all sides, by vast tracts of contiguous, remnant vegetation, providing extensive connectivity throughout the landscape for the movement and dispersal of this species, should it occur. Therefore, the proposed clearing in this area will not fragment an existing, important population.
Adversely affect habitat critical to the survival of a species?	No

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
	The site is not considered habitat critical to the survival of this species due to the lack of hollows required for nesting, which would be a limiting factor for the Gouldian finch within the site. Further, key areas are recognised for significant populations of this species, none of which occur in the vicinity of the project site. No significant populations of the species are known from the general area, and key populations of this species are only recognised in the Northern Territory and Western Australia, where breeding is known to occur. Therefore, it is unlikely that the project will adversely affect habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population?	No Known breeding habitat for Gouldian finches occurs in the Northern Territory and Western Australia. The habitat is characterised by rocky hills, with hollow-bearing, smooth-barked gums (<i>Eucalyptus brevifolia</i> or <i>E. tintinnans</i>) within two to four kilometres of small waterholes or springs that persist throughout the dry season. The lack of hollows within the project site is a limiting factor for this species, and also means that the project is unlikely to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?	No The species has not been recorded within the site and no important populations are known from the immediate vicinity. The project will require the clearing (as a worst-case scenario) of approximately 0.33 km² (33 ha) of potential foraging habitat for this species, although it is possible that not this entire area may require clearing. Due to the limited amount of clearing required, the fact that no individuals have been recorded within the site during any of the surveys, and the assessment of habitat which concluded that the site is unlikely to represent habitat critical to the survival of the species, it is unlikely that the project will result in a decrease in habitat availability or quality to the extent that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat?	No Detailed weed and pest management measures will be developed and incorporated into the project pest management plan to mitigate and manage the potential spread of pest flora and fauna species. Species-specific management will be undertaken for identified key weed and pest species at risk of spread through project activities. Control efforts will be increased in areas particularly sensitive to invasion.
Introduce disease that may cause the species to decline?	No Disease has not been identified as a threat to the Gouldian finch.
Interfere with the recovery of the species?	No The recovery plan for the Gouldian finch (O'Malley, 2006a) includes five specific objectives for the conservation and recovery of this species, none of which the proposed action will interfere with.

D.9.2 BUFF-BREASTED BUTTON-QUAIL (*TURNIX OLIVII*)

Note: Most of this information was derived from Mathieson and Smith (2009).

Description

The buff-breasted button-quail is a large, plump and pale-eyed button-quail. Fully-grown males measure about 18 cm in length, and are slightly smaller than fully-grown females, which measure 19 to 22 cm in length (Marchant and Higgins, 1993). The adults have rufous-brown upperparts, a white chin and throat, a pale olive-buff breast, an off-white belly, off-white tail coverts and flank, a brown bill, with bluish-white cutting edge and lower mandible, yellow irides and yellow legs and feet (Marchant and Higgins, 1993). They have white streaks and black bars on the back and shoulders, and white spots on the wings. The wings, when extended in flight, are grey-black above (on the outer and trailing edges), and light grey below (Marchant and Higgins, 1993).

The sexes differ in the plumage of the head. The heads of males are off-white with black freckling, a grey crown and hind-neck, and a prominent black stripe (mottled chestnut-brown) on either side. The heads of females are grey (sometimes with some white speckling) with a dark grey forehead, a grey crown and hind-neck, and a prominent chestnut stripe on either side. The plumages of juvenile and immature birds have not been described (Marchant and Higgins, 1993).

Distribution

There has been a considerable effort to locate populations of the buff-breasted button-quail in recent years (Garnett and Crowley, 2000; Webster et al., 2024), with searches conducted at the known and potential locations – including sites in the Iron Range, around Coen, Mount Molloy and Mareeba, and from Atherton to Georgetown – as part of broad-scale surveys coordinated by Conservation Partners in collaboration with First Nations people, BirdLife Australia, Research and Recovery of Endangered Species (UQ) and Cape York NRM to determine the status of the species. No confirmed sightings of the species with tangible evidence were made during any of the targeted searches, and it is considered that this species may already be extinct (Conservation Partners, 2024).

For decades, bird watchers and conservation scientists had rest assured that a population of the buff-breasted button-quail occurred across the northern region of the Atherton Tablelands in north Queensland (Conservation Partners, 2024). However, new evidence strongly suggests that birds in this region were actually being confused with the more common painted button-quail. It is now thought that the buff-breasted button-quail has probably never occurred near the Atherton Tablelands (Conservation Partners, 2024). One indisputable fact is that there has been no tangible evidence produced of the existence of the buff-breasted button-quail for over 100 years (Conservation Partners, 2024).

Photos captured in the 1920s show that the Coen sites – where the species definitely occurred – consisted of open, stringy bark forests with an understory of perennial grasses (Conservation Partners, 2024). Recent visits to these same places have revealed that they are now thick with mid-story trees and most of the perennial grasses have gone. Grazing pressure and changed fire patterns is believed to have driven this change. It is assumed that this is why buff-breasted button-quail have now disappeared from these locations.

Foraging and breeding habitat

The buff-breasted button-quail is one of the least known birds in Australia. However, from historical accounts of habitat near Coen in far north Queensland where the bird was reliably detected and specimens collected in the 1920s, it is believed to occur in patches of short and sparse grassland, on a terrain of small stones (often on the lower slopes of hills and ridges), and sometimes in open glades amongst Melaleuca, Acacia, Alphitonia or Tristania, in rainforest or open Eucalyptus woodland (Garnett and Crowley, 2000; White, 1922).

Habitat critical to the survival of the species

Habitat critical to survival has not been defined for the buff-breasted button-quail. However, its core habitat is considered to include patches of short and sparse grassland, on a terrain of small stones (often on the lower slopes of hills and ridges), and sometimes in open glades amongst Melaleuca, Acacia, Alphitonia or Tristania, in rainforest or open Eucalyptus woodland (Garrett and Crowley, 2000; Rogers, 1995; Squire, 1990; White, 1922). Photos captured in the 1920s show that the sites near Coen in far north Queensland – where it definitely occurred – consisted of open, stringy bark forests with an understory of perennial grasses (Conservation Partners, 2024).

Important population

No populations of buff-breasted button-quail are currently known, and this species has not been reliably detected in almost 100 years.

Significant impact assessment

An assessment against the significant impact guidelines 1.1 is provided in Table 23. The outcome of this assessment was that the project is considered highly unlikely to result in a significant impact to the species due to the absence of any known populations in Australia at the time of writing.

Table 23: Significant impact assessment for the buff-breasted button-quail.

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
Lead to a long-term decrease in the size of an important population of a species?	No This species was not detected during any targeted surveys within the project site, nor has it been detected in any locations over several years of intensive surveys throughout the northern and far north Queensland regions. The buff-breasted button-quail has not been reliably recorded (with tangible evidence) for almost 100 years. There are no known populations, and it is considered quite possible that the species could already be extinct (Conservation Partners, 2024). Given the lack of any recent records of this species, and no evidence of occurrence within the project site, it is considered unlikely that the project will result in a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population?	No There are currently no known populations of this species. The buff-breasted button-quail has not been reliably detected since the 1920s, when it was recorded from stringy bark forest near Coen in far north Queensland. The project will therefore not reduce the area of occupancy of an important population of this species.
Fragment an existing important population into two or more populations?	No There are currently no known populations of this species. The buff-breasted button-quail has not been reliably detected since the 1920s, when it was recorded from stringy bark forest near Coen in far north Queensland. The project will therefore not fragment an existing, important population into two or more populations.
Adversely affect habitat critical to the survival of a species?	No

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
	Habitat critical to survival has not been defined for the buff-breasted button-quail. Further, there are currently no known populations of this species. The buff-breasted button-quail has not been reliably detected since the 1920s, when it was recorded from stringy bark forest near Coen in far north Queensland. The project will therefore not adversely affect habitat critical to survival.
Disrupt the breeding cycle of an important population?	No There are currently no known populations of this species. The buff-breasted button-quail has not been reliably detected since the 1920s, when it was recorded from stringy bark forest near Coen in far north Queensland. The project will not disrupt the breeding cycle of an important population of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?	No There are currently no known populations of this species. The buff-breasted button-quail has not been reliably detected since the 1920s, when it was recorded from stringy bark forest near Coen in far north Queensland. It is considered possible that this species may already be extinct (Conservation Partners, 2024).
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat?	No There are currently no known populations of this species. The buff-breasted button-quail has not been reliably detected since the 1920s, when it was recorded from stringy bark forest near Coen in far north Queensland. It is considered possible that this species may already be extinct (Conservation Partners, 2024). Nonetheless, detailed weed and pest management measures will be developed and incorporated into the project pest management plan to mitigate and manage the potential spread of pest flora and fauna species.
Introduce disease that may cause the species to decline?	No Disease has not been identified as a threat to this species.
Interfere with the recovery of the species?	No There is no recovery plan for this species. The project is not expected to interfere with any future recovery objectives or actions.

D.9.3 AUSTRALIAN PAINTED SNIPE (*ROSTRATULA AUSTRALIS*)

Note: Most of this information was derived from DCCEEW (2024I).

Description

Rostratula australis, commonly known as the Australian painted snipe, is a stocky wading bird, measuring approximately 240–300 mm in length, with a wingspan of 500–540 mm and a weight of 125–130 g. The adult female is larger and more colourful than the male, featuring a chocolate-brown head with a chestnut patch on the nape, a distinctive comma-shaped, white marking around the eye, and a metallic, green back, and wings densely barred with olive and black. A characteristic, white 'harness marking' extends from the mantle to the

breast. The female also has brown eyes, white belly, bluish-green legs, and a long, pink-orange bill that darkens toward the tip (Reader's Digest, 1997). In contrast, the male is smaller and has a more subdued head pattern, with a mottled, grey-brown head and neck, a buff stripe running down the centre of the crown and through the eyes, and wings and back barred in black, buff and white, with a broad, black band across the breast (Reader's Digest, 1997). The Australian painted snipe's plumage does not vary seasonally. Juveniles are similar to the adult male but can be distinguished by subtle differences (Marchant and Higgins, 2003).

Distribution

The Australian painted snipe has been recorded at wetlands in all states and territories (Barrett et al., 2003; Blakers et al., 1984) and is most common in eastern Australia.

Important areas for this species in the past have included the Murray-Darling Basin (particularly the Riverina of Victoria and New South Wales), Queensland Channel Country, the Fitzroy Basin of central Queensland, southeastern South Australia and adjacent parts of Victoria (Rogers et al., 2005). Records published over the past twenty years provide evidence for Australian painted snipe occurring more widely and frequently in the remote arid and tropical regions of Australia than was previously thought (Hassell and Rogers, 2002; Jaensch 2003a, 2003b; Jaensch et al., 2004; Black et al., 2010).

The Australian painted snipe is inferred to have undergone a severe decline in the number of mature individuals since the 1950s (Garnett and Crowley, 2000), specifically over the last three generations (~26 years) due to the loss and degradation of its wetland habitat.

The species is widespread and is not considered to have a limited geographic distribution. Its current extent of occurrence is estimated to be 7,100,000 km² and stable (Garnett et al., 2011). The species' area of occupancy was estimated to be 2,000 km² and decreasing (Garnett et al., 2011). However, given the exceptional rainfall of 2010/2011, this figure is currently assumed to be higher. The Australian painted snipe occurs within many NRM regions and *interim biogeographic regionalisation for Australia* bioregions across Australia.

Foraging and breeding habitat

The Australian painted snipe occurs in shallow freshwater (occasionally brackish) wetlands – both non-perennial and permanent – such as lakes, swamps, claypans, inundated or waterlogged grasslands/saltmarshes, dams, rice crops, sewage farms and bore drains, generally with a good cover of grasses, rushes and reeds, low scrub, *Muehlenbeckia* spp. (lignum), open timber or samphire (Reader's Digest, 1997; Marchant and Higgins, 2003).

Its breeding habitat requirements may be quite specific and comprise shallow wetlands with areas of bare, wet mud, and both upper and canopy cover nearby. Nest records are all – or nearly all – from or near small islands in freshwater wetlands (DCCEEW, 2024i), provided that these islands are a combination of very shallow water, exposed mud, dense, low cover and sometimes some tall dense cover (Rogers et al., 2005).

The Australian painted snipe has also been recorded nesting in and near swamps, canegrass swamps, flooded areas including samphire, grazing land, among cumbungi, sedges, grasses, saltwater couch (*Paspalum*), saltbush (*Halosarcia*) and grass, also in groundcover of water-buttons and grasses, at the base of tussocks and under low saltbush (Marchant and Higgins, 1993). One nest has been found in the centre of a cow-pat in a clump of long grass (Marchant and Higgins, 1993).

The nest is usually placed in a scrape in the ground, and either has scant lining or is a shallow, bowl-shaped nest of dry grass or other plant material (Marchant and Higgins, 1993).

This species loafs on the ground under clumps of lignum, tea-tree and similar, dense bushes (Marchant and Higgins, 1993). It has been recorded foraging under clumps of tea-trees but

most records are from daytime roost sites. The foraging habitat requirements of this species are not well understood and may be quite specific.

This species requires suitable wetland areas even in drought conditions, and can move to suitable habitat as necessary (Marchant and Higgins, 1993).

Habitat critical to the survival of the species

The recovery plan for the Australian painted snipe (Commonwealth of Australia, 2022) uses the following habitat definitions as a guide to habitat critical to the survival of the Australian painted snipe:

- *Any natural wetland habitat where the species is known or likely to occur (especially with suitable breeding habitat) within the indicative distribution map provided in Commonwealth of Australia (2022).*
- *Any location outside the above area that may be periodically occupied by Australian painted snipe when wetland conditions are favourable.*

Important population

The total population size of the Australian painted snipe is effectively unknown. Tentative estimates range from a few hundred to 5,000 breeding adults (e.g. Garnett and Crowley, 2000). It is considered to occur in a single, contiguous breeding population (Garnett and Crowley, 2000).

There are currently no important populations recognised.

Significant impact assessment

An assessment against the significant impact guidelines 1.1 is provided in Table 24. The outcome of this assessment was that the project is considered unlikely to result in a significant impact to the species due to the absence of an important population in the project area and the lack of suitable nesting habitat. The assessment has been based on a total worst-case scenario of clearing or disturbance of approximately 0.2 ha of remnant vegetation. That area comprises a mosaic of grasses, reeds and shrubs along the margins of Dam 2 (applying a 5 m buffer around the dam margins), and approximately 0.55 ha of waters associated with Dam 2, which provides the only suitable water habitat within the project area. A further 8.2 ha of waters and 1.4 ha of potential foraging vegetation around the margins of dams 4 and 5 are shown in the mapping of potential habitat for this species surrounding the project site (see Figure 29). However, it is not expected that there will be any significant changes or impacts to these two dams as a result of the project because they are outside of the main project footprint.

Table 24: Significant impact assessment for the Australian painted snipe.

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
Lead to a long-term decrease in the size of an important population of a species?	No There are no recognised, important populations of this species in or near the project site. It is therefore considered unlikely that the project will result in a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population?	No There are no known, important populations of this species within or near the project site.

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
	Garnett et al. (2011) estimate that the current extent of occupancy is stable and covers 7,100,000 km². The species' area of occupancy within this extent is estimated to be 2,000 km². As a worst-case scenario, the project may result in the clearing of approximately 0.2 ha of wetland vegetation along the margins of Dam 2, within which the Australian painted snipe may forage and shelter, and approximately 0.55 ha of open water associated with Dam 2. The total disturbance of 0.75 ha of potential Australian painted snipe habitat represents 0.0004% of the current, estimated 2,000 km² area of occupancy of the species. The project is therefore not expected to reduce the area of occupancy of an important population of this species.
Fragment an existing important population into two or more populations?	No There are currently no known, important populations of this species within or near the project site. Considering the project site in the broader landscape context, it is surrounded by vast tracts of remnant vegetation and many natural and artificial wetlands and water sources. These could provide habitat of equivalent quality and availability for the Australian painted snipe as Dam 2. Dam 2 exists in an already disturbed landscape (immediately adjacent to the old mine pit and cleared areas) with no nesting habitat present. It is therefore considered unlikely that the project would result in the fragmentation of an important population into two or more populations.
Adversely affect habitat critical to the survival of a species?	Yes The vegetation and open water habitat associated with Dam 2, although only assessed as foraging and shelter habitat for Australian painted snipe, technically meets the definition of habitat critical to the survival of this species. However, the project will result in the removal of only 0.2 ha of fringing wetland vegetation and 0.55 ha of open water, which does not contain any suitable nesting habitat. The project was therefore assessed as unlikely to result in a significant impact to habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population?	No There are currently no known populations of this species and no suitable nesting habitat is present within or near the site.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?	No Garnett et al. (2011) estimate that the current extent of occupancy is stable and covers 7,100,000 km². The species' area of occupancy within this extent is estimated to be 2,000 km².

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
	As a worst-case scenario, the project will result in the clearing of approximately 0.2 ha of wetland vegetation along the margins of Dam 2, within which the Australian painted snipe may forage and shelter, and approximately 0.55 ha of open water associated with Dam 2. The total disturbance of 0.75 ha of potential Australian painted snipe habitat represents 0.0004% of the current, estimated 2,000 km² area of occupancy of the species. Further, an assessment of habitat availability at the landscape scale identified numerous other water sources and wetland areas that would provide suitable habitat for this species in the surrounding landscape. The project is therefore not expected to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat?	No Detailed weed and pest management measures will be developed and incorporated into the project pest management plan to mitigate and manage the potential spread of pest flora and fauna species, particularly those restricted species listed under the <i>Biosecurity Act 2014</i> that pose the greatest threat to the Australian painted snipe and other threatened species.
Introduce disease that may cause the species to decline?	No Disease has not been identified as a threat to this species.
Interfere with the recovery of the species?	No The recovery plan for this species (Commonwealth of Australia, 2022) identified six strategies for the conservation and recovery of the Australian painted snipe. The project is not expected to interfere with these strategies.

D.9.4 NORTHERN QUOLL (*DASYURUS HALLUCATUS*)

Note: Most of this information was derived from DCCEEW (2024h) and DoE (2016).

Description

The northern quoll (*Dasyurus hallucatus*) is the smallest of the four quoll species native to Australia. It has a pointed snout, reddish-brown fur with a cream-colored underside, and is marked with white spots on its back and rump. Its long tail is sparsely furred and unspotted, measuring between 202 and 345 mm (Oakwood, 2008). The hind feet are equipped with striated pads and five toes (Oakwood, 2008). Northern quolls can weigh up to 1.2 kg, with males typically ranging from 400 to 900 g and females from 300 to 500 g (Braithwaite and Begg, 1995). Among the quoll species, the northern quoll is the most arboreal and aggressive, and is known for the strong odor of its faeces and body (Braithwaite and Begg, 1995).

Distribution

The northern quoll was historically common across northern Australia, occurring almost continuously from the Pilbara, Western Australia, to near Brisbane, Queensland (Braithwaite and Griffiths, 1994). It now occurs in five regional populations across Queensland, the Northern Territory and Western Australia – both on the mainland and on offshore islands.

In Queensland, the northern quoll is known to occur as far south as Gracemere and Mt Morgan, south of Rockhampton, as far north as Weipa in Queensland, and as far west into central Queensland to the vicinity of Carnarvon Range National Park (Woinarski et al., 2008). There are occasional records as far south in Queensland as Maleny on the Sunshine Coast Hinterland. The species is highly fragmented in the state. Surveys by Woinarski et al. (2008) indicated severe reductions from the former distribution of the species.

Local populations are still persisting in the central Queensland coast and in northern Queensland despite the presence of cane toads (*Rhinella marina*). Relatively recent northern quoll records come from around Proserpine, Midge Point, Eungella and Cape Upstart (Woinarski et al., 2008). In northern Queensland, recent northern quoll records exist from Mareeba, Mount Carbine, Tolga and around Cooktown (Woinarski et al., 2008).

Foraging and breeding habitat

The northern quoll occupies a variety of habitats across its current range, including rocky areas, eucalypt forest and woodlands, dry rainforests and vine thickets, sandy lowlands and beaches, shrublands, grasslands and deserts. Habitat usually includes some form of rocky area or structurally diverse woodland or forest used for shelter purposes. Surrounding, vegetated habitats are used for foraging and dispersal. Shelter habitat is important for breeding and refuge from fire and/or predation. Little is understood about the characteristics of foraging or dispersal habitat for the northern quoll (DoE, 2016). However, on current knowledge, foraging or dispersal habitat is recognised to be any land comprising predominantly native vegetation in the immediate area (i.e. within 1 km) of shelter habitat, quoll records or land comprising predominately native vegetation that is connected to shelter habitat within the range of the species.

Habitat critical to the survival of the species

Habitat critical to the survival of the northern quoll provides shelter for breeding – as well as refuge from fire and/or predation and potential poisoning from cane toads. Habitat critical to the survival (DoE, 2016) usually occurs in the form of:

- Off-shore islands where the northern quoll is known to exist;
- Rocky habitats such as ranges, escarpments, mesas, gorges, breakaways, boulder fields, major drainage lines or treed creek lines; and
- Structurally diverse woodland or forest areas containing large diameter trees, termite mounds or hollow logs.

Dispersal and foraging habitat that support or connect populations important for the long-term survival of the northern quoll are also considered critical to the survival of the species.

Important population

Important populations of the northern quoll are:

- High-density quoll populations that occur in refuge-rich habitat critical to the survival of the species, including where cane toads are present;
- Occurring in habitat that is free of cane toads and unlikely to support cane toads upon arrival (e.g. granite habitats in Western Australia, and populations surrounded by desert and without permanent water);
- Subject to ongoing conservation or research actions (i.e. populations being monitored by government agencies or universities, or subject to reintroductions or translocation).

A high-density population may be characterised by numerous camera triggers of multiple individuals across multiple cameras and/or traps on the site. A low-density population may be characterised by infrequent captures of one or two individuals confined to one or two traps – or where no trapping has identified a northern quoll but latrine evidence remains. Detailed population modelling is not needed to make this assessment. If appropriate survey effort is

carried out, the informed determination of whether the population is of high- or low-density is sufficient.

Significant impact assessment

An assessment against the significant impact guidelines 1.1 is provided in Table 25. The outcome of this assessment was that the project is considered unlikely to result in a significant impact to the species due to the absence of a high-density population in the project area, the lack of suitable denning and breeding sites and the occurrence of dispersal and foraging habitat only. The assessment has been based on a total worst-case scenario of clearing or disturbance of approximately 33 ha of remnant woodland and simple, riparian vegetation occurring immediately surrounding the existing, cleared footprint of the original DCM.

Table 25: Significant impact assessment for the northern quoll.

EPBC Act criteria – is there a real possibility that the project will:	Assessment of significance
Lead to a long-term decrease in the size of an important population of a species?	No It is possible that a low-density population of northern quoll could occur in the area of the project. However, no northern quolls – or evidence of northern quolls – were identified during the four seasonal surveys, which included a total survey effort of 368 camera trapping nights, 82 habitat assessments, active searches for signs of northern quolls (e.g. scats and latrines) and spotlighting surveys. It has been determined that the site does not support a high-density (important) population of the species. It is therefore considered unlikely that the project will result in a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population?	No Although it is possible that the project area could support a low-density population of northern quoll, no individuals were recorded during the four surveys. Further, it has been determined that the site does not support a high-density population of this species. The project is therefore not expected to reduce the area of occupancy of an important population of the northern quoll.
Fragment an existing important population into two or more populations?	No Although it is possible that the project area could support a low-density population of northern quoll, no individuals were recorded during the four surveys. In addition, it has been determined that the site does not support a high-density (important) population of this species. Further, considering the project site in the broader landscape context, it is surrounded by vast tracts of remnant vegetation maintaining extensive connectivity throughout the landscape. It is therefore considered unlikely that the project would result in the fragmentation of an important population into two or more populations.
Adversely affect habitat critical to the survival of a species?	Yes The open woodland and simple, riparian vegetation – although assessed as potential foraging and dispersal habitat only for the northern quoll – technically meets the definition of habitat critical to the survival of this species.

EPBC Act criteria – is there a real possibility that the project will:	Assessment of significance
	The project, as a worst-case scenario, will result in the removal of approximately 33 ha of woodland and simple, riparian habitat that could be used by a low-density population of northern quoll to move between patches of higher-quality and potential breeding habitat for the species. However, considering the extensive area of habitat with similar structure, composition and quality in the broader landscape surrounding the project site, the project was assessed as unlikely to result in a significant impact to habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population?	No Although a low-density population of northern quoll could occur in the area, the site is generally devoid of suitable denning and breeding habitat such as rocky outcrops and rock crevices, hollow limbs and hollow logs, termite mounds and goanna burrows. All of these are used for denning purposes. It is therefore considered unlikely that the project will result in the disruption of the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?	No The project, as a worst-case scenario, will result in the removal of approximately 33 ha of woodland and simple, riparian habitat that could be used by a low-density population of northern quoll to move between patches of higher-quality and potential breeding and denning habitat for the species. Micro-siting of infrastructure and clearing areas will be undertaken to minimise the extent of clearing in northern quoll habitat. However, considering the extensive area of habitat with similar structure, composition and quality in the broader landscape surrounding the project site, the project was assessed as unlikely to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat?	No Detailed weed and pest management measures will be developed and incorporated into the project pest management plan to mitigate and manage the potential spread of pest flora and fauna species, particularly those restricted species listed under the <i>Biosecurity Act 2014</i> (and the non-listed cane toad) which pose the greatest threat to the northern quoll and other threatened species.
Introduce disease that may cause the species to decline?	No Disease has not been identified as a threat to this species.
Interfere with the recovery of the species?	No There is no current recovery plan for this species. However, the national recovery plan for this species (Hill and Ward, 2010) identified eight key objectives for the conservation and recovery of the northern quoll. The project is not expected to interfere with these objectives.

D.9.5 MERTENS' WATER MONITOR (*VARANUS MERTENS*)

Note: Most of this information was derived from DCCEEW (2024c).

Description

Mertens' water monitor is a large, robust monitor that can grow up to 1.5 m in total length. Adapted for a semi-aquatic lifestyle, it has nostrils positioned on top of its snout and a long, powerful tail that aids in swimming. The upper body is dark, olive-brown to blue-grey, marked with numerous, randomly scattered, dark-edged spots in shades of yellow, cream or grey, each about the size of a single, keeled scale. These spots form rings around the outer legs and the base of the tail, gradually fading into pale and dark flecks towards the tail tip, which may also have a reddish-brown tint on its sides. The lower lip ranges from lemon-yellow to yellow-brown to cream, speckled or faintly barred with grey-brown. The underside is bright-yellow to cream-white, with an unmarked throat but sparse, darker markings on the chest, belly, hind legs, vent, and occasionally under the tail. The tail – flattened side-to-side (laterally compressed) and adorned with a two-keeled crest along the spine – is about 1.2 to 1.4 times the length of the head and body (Wilson and Knowles, 1988; Pianka et al., 2004).

Distribution

Mertens' water monitor occurs patchily across tropical northern Australia, from the west Kimberley in Western Australia, across the Top End of the Northern Territory, to the wet tropics in far north Queensland. The distribution of this species is bound to the west, north and east by the north Australian coastline and near-coastal islands. Its southern extent is approximately bound by the Mary River in the southern Kimberley (Western Australia), Judbarra/Gregory National Park, Elsey National Park, and the McArthur River in the Northern Territory, and from Mt Isa to Cairns in north Queensland. Historical records occur from further south in the northern Tanami and Ganalanga-Mindiberrina indigenous protected areas, and at Bulliwallah Station on the Belyando River south of Charters Towers.

Mertens' water monitor also occurs on Vanderlin, Groote and Winchelsea islands in the Gulf of Carpentaria, Marchinbar, Jirrgari, Raragala and Guluwuru islands off East Arnhem Land, Melville and Bathurst islands north of Darwin, and Augustus and Koolan islands off the west Kimberley coast (Woinarski et al., 1999, 2003).

Foraging and breeding habitat

Mertens' water monitor is a highly aquatic lizard that seldom ventures more than 5–10 m from the edge of the water (Wilson and Knowles, 1988) except when transiting among core aquatic activity areas. This species is recorded from:

- Perennial and semi-permanent pools in upper catchment areas, including springs, seeps, swamps, creeks and gorges;
- The margins of permanent streams, rivers and lakes in lower catchment areas;
- Floodplain billabongs, lagoons, swamps and soaks;
- Perennial waterholes in woodlands; and
- Man-made irrigation channels and the margins of dams.

Mertens' water monitor is recorded basking on a variety of structures in and around water bodies, including rocks, mud banks, overhanging branches and dead timber, tree roots, floating vegetation, irrigation infrastructure, and roads (Wilson and Knowles, 1988; Leseberg and Campbell, 2015).

It has been recorded sheltering in hollows between rocks, and in burrows that have been dug into the banks of waterways (Thompson et al., 2008). Burrow entries are usually at water level and they have an upward-sloping tunnel that is connected to an enlarged chamber at the end. Multiple shelters are used by different individuals for overnight refuge and as places to retreat when disturbed.

Mertens' water monitor is a diurnal species. The lizard emerges from its overnight shelter in the morning to warm up before actively foraging and basking throughout the day, then retreating to an overnight shelter late in the afternoon as its body temperature starts to cool.

It is an active predator that forages primarily in the water and at the water-land interface (Mayes et al., 2005; Wilson and Swan, 2021), eating freshwater crabs (*Holthuisana* sp.), fish, insects, amphipods, spiders and frogs. However, it will also consume most invertebrate and small vertebrate prey that can be subdued, including shrimps, crayfish, aquatic snakes, lizards, nestling birds, small mammals, caterpillars and eggs.

Habitat critical to the survival of the species

Habitat critical to the survival of Mertens' water monitor includes all areas where this species persists following the establishment of cane toads. Critical habitat also comprises areas within its recorded distribution that provide connectivity among remnant subpopulations. Specifically, such areas include natural and artificial water bodies that connect remnant subpopulations and have open water, food resources, basking sites and shelter opportunities. These areas may be temporarily unoccupied due to cane toad impacts. They are sink areas for individuals that are resilient to cane toads to disperse into, breed and subsequently provide source individuals for additional dispersal and recolonisation events.

The spatial distribution of habitat critical to the survival of Mertens' water monitor was not mapped as of 21 December 2023.

Important population

All remnant populations of Mertens' water monitor within the distribution of the cane toad are important populations for sustaining this species and providing a source for dispersing individuals to support recovery. Populations on offshore islands that are free of cane toads are important for conserving genetic diversity of this species.

Significant impact assessment

An assessment against the significant impact guidelines 1.1 is provided in Table 26. The outcome of this assessment was that the project is considered unlikely to result in a significant impact to the species due to the small area of potential habitat expected to be impacted by the project (within which no Mertens' water monitors have been recorded to date). Further, the persisting occurrence of the species in dams to both the north and south of the project area (dams 4, 5 and 6) was confirmed during the four seasonal surveys, despite the area already having been disturbed by the original construction and operation of DCM.

The assessment has been based on a total worst-case scenario of clearing or disturbance of approximately 0.2 ha of remnant, simple, riparian vegetation surrounding Dam 2 (with a 10 m buffer from the water's edge and capturing potential basking and burrowing sites in the banks of the dam) and approximately 0.55 ha of open water habitat associated with Dam 2.

Table 26: Significant impact assessment for the Mertens' water monitor.

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
Lead to a long-term decrease in the size of an important population of a species?	No All populations of Mertens' water monitor that persist in areas where cane toads occur are considered important populations. Therefore, the population in the area of the project is considered an important population.

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
	The species was recorded from Dam 5 – to the north of the site – and Dam 4 – to the south of the site. These dams will not be removed as a result of the project. Confirmed sightings were also made at Dam 6, approximately 1.5 km to the south. Only one dam (Dam 2) within the project area was assessed as potentially providing habitat for this species within the project footprint. However, no individual monitors were recorded at this location over the four seasonal surveys. Considering the small scale of habitat disturbance and the fact that no records have been obtained from Dam 2, it is considered unlikely that the project will lead to a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population?	No Only one dam (Dam 2) will be removed as a result of the project. No Mertens' water monitors have been recorded within this dam to date, with all records occurring at Dam 5 to the north of the project footprint and dams 4 and 6 to the south. The network of gullies, drainage lines and creeks throughout the landscape in the immediate vicinity of the project footprint would maintain connectivity for this species between the existing dams to other water sources that are scattered throughout the broader landscape surrounding the site. It is therefore considered that the project is unlikely to reduce the area of occupancy of an important population of the Mertens' water monitor.
Fragment an existing important population into two or more populations?	No The project site largely falls over an existing disturbed area, cleared for the construction and operation of the original DCM. The project will result in the removal of one dam only (Dam 2) that was assessed as potentially providing habitat for this species, although the lizard was not recorded at this location. The species was confirmed at the dams surrounding the project footprint to both the north and the south. Considering the vast extent of habitat within the broader landscape, connected via numerous other water sources, creeks, rivers and drainage features in the landscape surrounding the site, it is considered unlikely that the project would result in the fragmentation of an important population into two or more populations.
Adversely affect habitat critical to the survival of a species?	Yes The open water and fringing woodland habitat (buffered by 10 m from the dam margin) of Dam 2 within the project footprint technically meets the definition of habitat critical to the survival of this species (i.e. any habitat where the species persists following the introduction of the cane toad and within its mapped distribution). However, the project will require the removal of only one dam (Dam 2), including approximately 0.2 ha of fringing woodland habitat and 0.55 ha of open water habitat which could provide habitat for this species, although it has not been recorded at this location. Considering the lack of records of the species from Dam 2, and the small scale of impact (removal of one dam with a total habitat disturbance of 0.75 ha), the project was assessed as unlikely to result in a significant impact to habitat critical to the survival of the species.

EPBC Act criteria – Is there a real possibility that the project will:	Assessment of significance
Disrupt the breeding cycle of an important population?	No No nests or breeding sites have been identified around Dam 2, despite extensive survey effort. It is considered unlikely that the project will result in the disruption of the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?	No The project will require the removal of only one dam (Dam 2), including approximately 0.2 ha of fringing woodland habitat and 0.55 ha of open water habitat which could provide habitat for this species, although it has not been recorded at this location. Considering the lack of records of the species from this location, and the small scale of impact (removal of one dam with a total habitat disturbance of 0.75 ha), the project was assessed as unlikely to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat?	No Detailed weed and pest management measures will be developed and incorporated into the project pest management plan to mitigate and manage the potential spread of pest flora and fauna species, particularly those restricted species listed under the <i>Biosecurity Act 2014</i> (and the non-listed cane toad) which pose the greatest threat to the Merten's water monitor and other threatened species.
Introduce disease that may cause the species to decline?	No Disease has not been identified as a threat to this species.
Interfere with the recovery of the species?	No There is no current recovery plan for this species, and none required, with the conservation advice (DCCEEW, 2024c) considered effective. The project is not expected to interfere with any future recovery objectives or actions for this species.

Appendix E – Flora species list

Family	Scientific Name	Common Name	Introduced	NC Act	EPBC	Wildnet record	Woodland 1	Woodland 2	Riparian
Acanthaceae	Brunoniella acaulis subsp. acaulis			C		X			
Acanthaceae	Pseuderanthemum variable	pastel flower		C		X			
Acanthaceae	Rostellularia					X			
Acanthaceae	Rostellularia adscendens			C		X			
Acanthaceae	Rostellularia adscendens subsp. adscendens			C		X			
Acanthaceae	Rostellularia adscendens var. hispida			C		X			
Acanthaceae	Rostellularia adscendens var. latifolia			C		X			
Acanthaceae	Staurogyne spatulata			C		X			
Acanthaceae	Thunbergia arnhemica			C		X			
Acanthaceae	Thunbergia fragrans		Y			X			
Aizoaceae	Trianthema triquetra	red spinach		C		X	X		
Amaranthaceae	Achyranthes aspera			C		X	x		
Amaranthaceae	Alternanthera denticulata	lesser joyweed		C		X			
Amaranthaceae	Alternanthera denticulata var. micrantha			C		X			
Amaranthaceae	Alternanthera ficoidea		Y			X			
Amaranthaceae	Celosia argentea		Y			X			
Amaranthaceae	Cyathula prostrata			C		X			
Anacardiaceae	Blepharocarya involucrigera			C		X			
Anacardiaceae	Buchanania arborescens			C		X			
Anacardiaceae	Euroschinus falcata var. angustifolia			C		X			
Anacardiaceae	Pleiogynium timorense	Burdekin plum		C		X			
Anacardiaceae	Schinus terebinthifolius		Y			X			
Annonaceae	Annona squamosa		Y			X			
Annonaceae	Huberantha nitidissima			C		X			
Apiaceae	Platysace valida			C		X			
Apocynaceae	Alstonia actinophylla			C		X			
Apocynaceae	Asclepias curassavica	red-head cottonbush	Y			X			
Apocynaceae	Calotropis procera		Y			X			
Apocynaceae	Cryptostegia grandiflora	rubber vine	Y			X	X		X
Apocynaceae	Gymnema geminatum			C		X			
Apocynaceae	Hoya australis subsp. australis			C		X			
Apocynaceae	Ichnocarpus frutescens			C		X			
Apocynaceae	Leichhardtia cymulosa			C		X			
Apocynaceae	Leichhardtia viridiflora subsp. tropica			C		X			
Apocynaceae	Parsonsia lanceolata	northern silkpod		C		X			
Apocynaceae	Tabernaemontana orientalis			C		X			

Family	Scientific Name	Common Name	Introduced	NC Act	EPBC	Wildnet record	Woodland 1	Woodland 2	Riparian
Apocynaceae	Wrightia pubescens subsp. penicillata			C		X			
Apocynaceae	Wrightia saligna			C		X			
Araliaceae	Astrotricha pterocarpa			C		X			
Araliaceae	Heptapleurum actinophyllum			C		X			
Araliaceae	Trachymene					X			
Araliaceae	Trachymene bivistita var. bivistita			C		X			
Arecaceae	Livistona muelleri	dwarf fan palm		SL		X			
Aristolochiaceae	Aristolochia holtzei			C		X			
Aristolochiaceae	Aristolochia pubera var. pubera			C		X			
Asteraceae	Acanthospermum hispidum	star burr	Y			X			
Asteraceae	Ageratum conyzoides	billygoat weed	Y			X	X		
Asteraceae	Apowollastonia longipes			C		X			
Asteraceae	Apowollastonia spilanthis			C		X			
Asteraceae	Bidens bipinnata	bipinnate beggar's ticks	Y			X			
Asteraceae	Blumea saxatilis			C		X			
Asteraceae	Camptacra gracilis			C		X			
Asteraceae	Coronidium					X			
Asteraceae	Coronidium lanuginosum			C		X			
Asteraceae	Coronidium rupicola			C		X			
Asteraceae	Cyanthillium cinereum			C		X	X		
Asteraceae	Eclipta prostrata	white eclipta	Y			X			
Asteraceae	Emilia sonchifolia var. sonchifolia		Y			X			
Asteraceae	Lagenophora queenslandica			C		X			
Asteraceae	Parthenium hysterophorus	parthenium weed	Y			X			
Asteraceae	Peripleura bicolor			C		X			
Asteraceae	Peripleura hispidula var. hispidula			C		X			
Asteraceae	Phacellothrix cladochaeta			C		X			
Asteraceae	Pleurocarpaea denticulata			C		X			
Asteraceae	Praxelis clematidea		Y			X			
Asteraceae	Pterocaulon ciliatum			C		X	X		
Asteraceae	Sphaeromorphaea subintegra			C		X			
Asteraceae	Xanthium occidentale		Y			X			
Bignoniaceae	Deplanchea tetraphylla			C		X			
Bignoniaceae	Dolichandrone alternifolia			C		X			
Bignoniaceae	Pandorea pandorana	wonga vine		C		X			
Bixaceae	Cochlospermum gillivraei			C		X			
Blechnaceae	Blechnum orientale			SL		X			

Family	Scientific Name	Common Name	Introduced	NC Act	EPBC	Wildnet record	Woodland 1	Woodland 2	Riparian
Blechnaceae	Stenochlaena palustris	climbing swamp fern		SL		X			
Boraginaceae	Coldenia procumbens			C		X			
Boraginaceae	Heliotropium collinum			C		X			
Boraginaceae	Heliotropium indicum		Y			X			
Burseraceae	Canarium australicum var. australicum			C		X			
Burseraceae	Canarium australicum var. glabrum			C		X			
Byblidaceae	Byblis liniflora			SL		X			
Byttneriaceae	Melochia pyramidata		Y			X			
Byttneriaceae	Seringia corollata			C		X			
Campanulaceae	Isotoma petraea	rock isotome		SL		X			
Campanulaceae	Wahlenbergia caryophyllodes			SL		X			
Cannabaceae	Trema tomentosa var. aspera			C		X			
Capparaceae	Capparis canescens			C		X	X		
Capparaceae	Capparis lucida			C		X			
Caryophyllaceae	Polycarpaea corymbosa			C		X	X		
Caryophyllaceae	Polycarpaea spirostylis			C		X			
Caryophyllaceae	Polycarpaea spirostylis subsp. densiflora			C		X			
Caryophyllaceae	Polycarpaea spirostylis subsp. spirostylis			C		X			
Casuarinaceae	Allocasuarina littoralis			C		X	X		X
Celastraceae	Denhamia cunninghamii			C		X			
Celastraceae	Siphonodon pendulus			C		X			
Centrolepidaceae	Centrolepis banksii			C		X			
Chenopodiaceae	Dysphania carinata			C		X			
Cleomaceae	Arivela viscosa			C		X			
Colchicaceae	Iphigenia indica			C		X			
Combretaceae	Terminalia platyphylla			C		X	X		X
Combretaceae	Terminalia sericocarpa	damson		C		X			
Combretaceae	Terminalia subacroptera			C		X			
Commelinaceae	Aneilema siliculosum			C		X			
Commelinaceae	Cartonema baileyi			C		X			
Commelinaceae	Cartonema spicatum			C		X			
Commelinaceae	Cartonema spicatum var. humile			C		X			
Commelinaceae	Commelina					X			
Commelinaceae	Commelina ensifolia	scurvy grass		C		X			
Commelinaceae	Commelina sp. (Laura River J.R.Clarkson 4723)			C		X			
Convolvulaceae	Argyrea nervosa		Y			X	X		
Convolvulaceae	Evolvulus alsinoides			C		X			

Family	Scientific Name	Common Name	Introduced	NC Act	EPBC	Wildnet record	Woodland 1	Woodland 2	Riparian
Convolvulaceae	Evolvulus alsinoides var. decumbens			C		X			
Convolvulaceae	Ipomoea brassii			C		X			
Convolvulaceae	Ipomoea densivestita			C		X			
Convolvulaceae	Ipomoea diversifolia			C		X			
Convolvulaceae	Ipomoea eriocarpa			C		X			
Convolvulaceae	Ipomoea funicularis			C		X			
Convolvulaceae	Ipomoea gracilis			C		X			
Convolvulaceae	Ipomoea graminea			C		X			
Convolvulaceae	Ipomoea nil		Y			X			
Convolvulaceae	Ipomoea plebeia	bellvine		C		X			
Convolvulaceae	Ipomoea polpha subsp. polpha			C		X			
Convolvulaceae	Ipomoea polymorpha			C		X			
Convolvulaceae	Ipomoea triloba		Y			X			
Convolvulaceae	Jacquemontia paniculata			C		X			
Convolvulaceae	Jacquemontia paniculata var. tomentosa			C		X			
Convolvulaceae	Jacquemontia sp. (Fairview R.W.Johnson 4026)			C		X			
Convolvulaceae	Polymeria					X			
Cucurbitaceae	Cucumis althaeoides			C		X			
Cucurbitaceae	Cucumis anguria var. anguria	West Indian gherkin	Y			X			
Cucurbitaceae	Cucumis costatus			NT		X			
Cucurbitaceae	Luffa aegyptiaca			C		X			
Cucurbitaceae	Muellerargia timorensis			C		X			
Cucurbitaceae	Neoalsomitra capricornica			C		X			
Cupressaceae	Callitris intratropica	coast cypress pine		C		X			
Cyatheaceae	Alsophila rebecca			C		X			
Cyperaceae	Arthrostylis aphylla			C		X			
Cyperaceae	Bulbostylis barbata			C		X			
Cyperaceae	Bulbostylis densa			C		X			
Cyperaceae	Cyperus aromaticus		Y			X			
Cyperaceae	Cyperus castaneus			C		X			
Cyperaceae	Cyperus cristulatus			C		X			
Cyperaceae	Cyperus cuspidatus			C		X			
Cyperaceae	Cyperus decompositus			C		X			
Cyperaceae	Cyperus difformis	rice sedge		C		X			X
Cyperaceae	Cyperus distans			C		X			
Cyperaceae	Cyperus flaccidus			C		X			
Cyperaceae	Cyperus flavidus			C		X			X

Family	Scientific Name	Common Name	Introduced	NC Act	EPBC	Wildnet record	Woodland 1	Woodland 2	Riparian
Cyperaceae	<i>Cyperus fulvus</i>			C		X			
Cyperaceae	<i>Cyperus javanicus</i>			C		X			X
Cyperaceae	<i>Cyperus multispiceus</i>			C		X			
Cyperaceae	<i>Cyperus nutans</i> var. <i>eleusinoides</i>	flatsedge		C		X			X
Cyperaceae	<i>Cyperus orgadophilus</i>			C		X			
Cyperaceae	<i>Cyperus paniceus</i>			C		X			
Cyperaceae	<i>Cyperus polystachyos</i> var. <i>polystachyos</i>			C		X			
Cyperaceae	<i>Cyperus pulchellus</i>			C		X			
Cyperaceae	<i>Cyperus scaber</i>			C		X			
Cyperaceae	<i>Cyperus sharpei</i>			C		X			
Cyperaceae	<i>Cyperus sphacelatus</i>		Y			X			
Cyperaceae	<i>Cyperus squarrosus</i>	bearded flatsedge		C		X			X
Cyperaceae	<i>Cyperus trinervis</i>			C		X			
Cyperaceae	<i>Cyperus zollingeri</i>			C		X			
Cyperaceae	<i>Diplacrum pygmaeum</i>			C		X			
Cyperaceae	<i>Eleocharis geniculata</i>			C		X			
Cyperaceae	<i>Eleocharis minuta</i>		Y			X			
Cyperaceae	<i>Fimbristylis acicularis</i>			C		X			
Cyperaceae	<i>Fimbristylis complanata</i>			C		X			
Cyperaceae	<i>Fimbristylis depauperata</i>			C		X			
Cyperaceae	<i>Fimbristylis littoralis</i>			C		X			
Cyperaceae	<i>Fimbristylis pauciflora</i>			C		X			
Cyperaceae	<i>Fimbristylis pterigosperma</i>			C		X			
Cyperaceae	<i>Fimbristylis recta</i>			C		X			
Cyperaceae	<i>Fimbristylis sieberiana</i>			C		X			
Cyperaceae	<i>Fuirena ciliaris</i>			C		X			
Cyperaceae	<i>Fuirena incrassata</i>			C		X			
Cyperaceae	<i>Fuirena umbellata</i>			C		X			
Cyperaceae	<i>Gahnia sieberiana</i>	sword grass		C		X			
Cyperaceae	<i>Machaerina rubiginosa</i>			C		X			
Cyperaceae	<i>Rhynchospora heterochaeta</i>			C		X			
Cyperaceae	<i>Rhynchospora pterochaeta</i>			C		X			
Cyperaceae	<i>Schoenoplectiella mucronata</i>			C		X			
Cyperaceae	<i>Schoenoplectiella praelongata</i>			C		X			
Cyperaceae	<i>Schoenoplectus subulatus</i>			C		X			
Cyperaceae	<i>Schoenus apogon</i> var. <i>apogon</i>			C		X			
Cyperaceae	<i>Schoenus sparteus</i>			C		X			

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Cyperaceae	Scleria brownii			C		X			
Cyperaceae	Scleria mackaviensis			C		X			
Cyperaceae	Scleria psammitica			C		X			
Davalliaceae	Davallia denticulata			C		X			
Dennstaedtiaceae	Pteridium aquilinum subsp. wightianum			C		X			
Dennstaedtiaceae	Pteridium esculentum	common bracken		C		X			
Dilleniaceae	Hibbertia					X			
Dilleniaceae	Hibbertia arachnoidea			C		X			
Dilleniaceae	Hibbertia cymosa			NT		X			
Dilleniaceae	Hibbertia echiifolia			C		X			
Dilleniaceae	Hibbertia echiifolia subsp. echiifolia			C		X			
Dilleniaceae	Hibbertia laurana			C		X			
Dilleniaceae	Hibbertia longifolia			C		X			
Dilleniaceae	Hibbertia mulligana			C		X			
Droseraceae	Drosera lanata			SL		X			
Droseraceae	Drosera spatulata var. spatulata			SL		X			
Ebenaceae	Diospyros geminata	scaly ebony		C		X			
Ericaceae	Melichrus adpressus			C		X			
Ericaceae	Styphelia lamarckii			C		X			
Ericaceae	Styphelia ruscifolia			C		X			
Eriocaulaceae	Eriocaulon					X			
Eriocaulaceae	Eriocaulon cinereum			C		X			
Eriocaulaceae	Eriocaulon pygmaeum			C		X			
Eriocaulaceae	Eriocaulon willdenovianum			C		X			
Erythroxylaceae	Erythroxylum ellipticum			C		X	X	X	X
Euphorbiaceae	Claoxylon					X			
Euphorbiaceae	Claoxylon tenerifolium subsp. tenerifolium			C		X			
Euphorbiaceae	Croton arnhemicus			C		X			
Euphorbiaceae	Croton minimus			C		X			
Euphorbiaceae	Croton multicaulis subsp. velutinus			C		X			
Euphorbiaceae	Euphorbia bifida			C		X			
Euphorbiaceae	Euphorbia hirta		Y			X			
Euphorbiaceae	Euphorbia mitchelliana var. mitchelliana			C		X			
Euphorbiaceae	Jatropha curcas	physic nut	Y			X			
Euphorbiaceae	Microstachys chamaelea			C		X			
Euphorbiaceae	Ricinocarpos verrucosus			C		X			
Euphorbiaceae	Ricinus communis	castor oil bush	Y			X	X		X

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Euphorbiaceae	Shonia tristigma subsp. borealis			C		X			
Euphorbiaceae	Shonia tristigma subsp. parvifolia			C		X			
Euphorbiaceae	Tragia finalis			C		X			
Gentianaceae	Canscora diffusa			C		X			
Gesneriaceae	Boea hygroskopica			SL		X			
Gleicheniaceae	Dicranopteris linearis var. linearis			C		X			
Gleicheniaceae	Gleichenia					X			
Gleicheniaceae	Gleichenia dicarpa	pouched coral fern		C		X			
Gleicheniaceae	Sticherus flabellatus			C		X			
Gleicheniaceae	Sticherus flabellatus var. compactus			C		X			
Gleicheniaceae	Sticherus flabellatus var. flabellatus			C		X			
Goodeniaceae	Goodenia armitiana			C		X			
Goodeniaceae	Goodenia janamba			C		X			
Goodeniaceae	Goodenia pilosa			C		X			
Haemodoraceae	Haemodorum coccineum			C		X			
Haloragaceae	Gonocarpus acanthocarpus			C		X			
Haloragaceae	Myriophyllum dicoccum			C		X			
Haloragaceae	Myriophyllum verrucosum	water milfoil		C		X			
Hemerocallidaceae	Dianella caerulea var. vannata			C		X			
Hemerocallidaceae	Dianella incollata			NT		X			
Hemerocallidaceae	Dianella longifolia var. stupata			C		X	X		X
Hemerocallidaceae	Dianella nervosa			C		X	X		X
Hemerocallidaceae	Tricoryne elatior	yellow autumn lily		C		X			
Hymenophyllaceae	Abrodictyum obscurum			SL		X			
Hypericaceae	Hypericum gramineum			C		X			
Hypoxidaceae	Curculigo ensifolia var. ensifolia			C		X			
Hypoxidaceae	Hypoxis pratensis var. pratensis			C		X			
Lamiaceae	Anisomeles eriodes			C		X			
Lamiaceae	Anisomeles inodora			C		X			
Lamiaceae	Basilicum polystachyon			C		X			
Lamiaceae	Callicarpa candicans			C		X			
Lamiaceae	Chloanthes parviflora			C		X			
Lamiaceae	Clerodendrum floribundum			C		X			
Lamiaceae	Clerodendrum tomentosum			C		X			
Lamiaceae	Coleus apricus			C		X			
Lamiaceae	Coleus congestus			C		X			
Lamiaceae	Coleus scutellarioides			C		X			

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Lamiaceae	Mesosphaerum suaveolens		Y			X			
Lamiaceae	Premna acuminata			C		X			
Lamiaceae	Premna dallachyana			C		X			
Lamiaceae	Salvia hispanica		Y			X			
Lamiaceae	Teucrium argutum			C		X			
Lamiaceae	Vitex glabrata			C		X			
Lauraceae	Beilschmiedia obtusifolia	hard bolly gum		C		X			
Lauraceae	Cassytha capillaris			C		X			
Lauraceae	Cassytha filiformis	dodder laurel		C		X			
Lauraceae	Litsea glutinosa			C		X			
Laxmanniaceae	Eustrephus latifolius	wombat berry		C		X			
Laxmanniaceae	Eustrephus latifolius subforma fimbriatus			C		X			
Laxmanniaceae	Lomandra					X			
Laxmanniaceae	Lomandra decomposita			C		X	X	X	X
Laxmanniaceae	Lomandra filiformis subsp. filiformis			C		X			
Laxmanniaceae	Lomandra longifolia			C		X			X
Laxmanniaceae	Lomandra multiflora subsp. multiflora			C		X			
Laxmanniaceae	Thysanotus banksii			C		X			
Laxmanniaceae	Thysanotus tuberosus subsp. tuberosus			C		X			
Leguminosae	Acacia					X			
Leguminosae	Acacia armillata			C		X			
Leguminosae	Acacia auriculiformis	black wattle		C		X	X		X
	Acacia aulacocarpa						X	X	
	Acacia bidwillii						X		
Leguminosae	Acacia calyculata			C		X			
Leguminosae	Acacia colei var. colei			C		X			
Leguminosae	Acacia conferta			C		X			
Leguminosae	Acacia decora	pretty wattle		C		X			
Leguminosae	Acacia disparrima subsp. calidestris			C		X			
Leguminosae	Acacia drepanocarpa			C		X			
Leguminosae	Acacia elachantha			C		X			
Leguminosae	Acacia flavescens	toothed wattle		C		X			
Leguminosae	Acacia galioides			C		X			
Leguminosae	Acacia guyeri			NT		X			
Leguminosae	Acacia hemignosta			C		X			
Leguminosae	Acacia hemsleyi			C		X			
Leguminosae	Acacia holosericea			C		X	X	X	X

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Leguminosae	Acacia humifusa			C		X			
Leguminosae	Acacia hyaloneura			C		X			
Leguminosae	Acacia johannis			C		X			
Leguminosae	Acacia leptocarpa	north coast wattle		C		X	X		X
Leguminosae	Acacia leptoloba			C		X	Xx		
Leguminosae	Acacia leptostachya	Townsville wattle		C		X	X		
Leguminosae	Acacia multisiliqua			C		X			
Leguminosae	Acacia nesophila			C		X	X		
Leguminosae	Acacia oraria			C		X			
Leguminosae	Acacia platycarpa			C		X	X	X	X
Leguminosae	Acacia rothii			C		X			
Leguminosae	Acacia shirleyi	lancewood		C		X			
Leguminosae	Acacia simsii			C		X	X		X
Leguminosae	Acacia torulosa			C		X	X		
Leguminosae	Acacia umbellata			C		X			
Leguminosae	Acacia victoriae subsp. victoriae			C		X			
Leguminosae	Acacia webbii			C		X			
Leguminosae	Adenantha abrosperma			C		X			
Leguminosae	Aeschynomene americana var. glandulosa		Y			X			
Leguminosae	Aeschynomene indica	budda pea		C		X	X		
Leguminosae	Alysicarpus aurantiacus			C		X			
Leguminosae	Alysicarpus ovalifolius		Y			X			
Leguminosae	Alysicarpus schomburgkii			C		X			
Leguminosae	Aphyllodium biarticulatum			C		X			
Leguminosae	Aphyllodium latifolium			C		X			
Leguminosae	Austrodolichos errabundus			C		X			
Leguminosae	Austrostenisia blackii var. astipella			C		X			
Leguminosae	Bossiaea armitii			C		X			
Leguminosae	Cajanus acutifolius			C		X	X		
Leguminosae	Cajanus marmoratus			C		X			
Leguminosae	Cajanus reticulatus var. reticulatus			C		X			
Leguminosae	Chamaecrista absus var. absus			C		X	X	X	
Leguminosae	Chamaecrista concinna			C		X			
Leguminosae	Chamaecrista mimosoides	dwarf cassia		C		X			
Leguminosae	Chamaecrista nomame var. nomame			C		X			
Leguminosae	Clitoria ternatea	butterfly pea	Y			X	X		
Leguminosae	Crotalaria aridicola subsp. aridicola			C		X			

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Leguminosae	Crotalaria brevis			C		X	X		
Leguminosae	Crotalaria goreensis	gambia pea	Y			X			
Leguminosae	Crotalaria medicaginea var. medicaginea			C		X			
Leguminosae	Crotalaria medicaginea var. neglecta			C		X			
Leguminosae	Crotalaria montana			C		X	X	X	
Leguminosae	Crotalaria montana var. angustifolia			C		X			
Leguminosae	Cullen pustulatum			C		X			
Leguminosae	Dalbergia densa			C		X			
Leguminosae	Daviesia flava			C		X			
Leguminosae	Dendrobium umbellatum var. umbellatum			C		X			
Leguminosae	Desmodium brownii			C		X			
Leguminosae	Desmodium heterocarpon var. strigosum			C		X			
Leguminosae	Desmodium pullenii			C		X			
Leguminosae	Desmodium rhytidophyllum			C		X			
Leguminosae	Desmodium strigillosum		Y			X			
Leguminosae	Eriosema chinense			C		X			
Leguminosae	Erythrophleum chlorostachys			C		X	X	X	
Leguminosae	Falcataria toona			C		X			
Leguminosae	Flemingia lineata			C		X			
Leguminosae	Flemingia parviflora	flemingia		C		X	X		
Leguminosae	Galactia					X			
Leguminosae	Galactia tenuiflora forma sericea			C		X			
Leguminosae	Glycine					X			
Leguminosae	Glycine curvata			C		X			
Leguminosae	Glycine cyrtoloba			C		X			
Leguminosae	Gompholobium nitidum			C		X			
Leguminosae	Hardenbergia sp. (Mt Mulligan J.R.Clarkson 5775)			V		X			
Leguminosae	Hovea parvicalyx			C		X			
Leguminosae	Indigofera colutea	sticky indigo		C		X	X		
Leguminosae	Indigofera elachantha			C		X			
Leguminosae	Indigofera hirsuta	hairy indigo		C		X	X	X	
Leguminosae	Indigofera polygaloides			C		X			
Leguminosae	Indigofera pratensis			C		X			
Leguminosae	Indigofera tinctoria		Y			X	X		
Leguminosae	Indigofera trifoliata			C		X			
Leguminosae	Jacksonia thesioides			C		X			
Leguminosae	Lamprolobium fruticosum			C		X			

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Leguminosae	Leucaena leucocephala		Y			X			
Leguminosae	Macroptilium atropurpureum	siratiro	Y			X			X
Leguminosae	Macrotyloma uniflorum var. uniflorum		Y			X			
Leguminosae	Neptunia proxima			C		X			
Leguminosae	Phyllodium hackeri			C		X			
Leguminosae	Pycnospora lutescens	pycnospora		C		X			
Leguminosae	Rhynchosia minima var. minima			C		X			
Leguminosae	Samanea saman		Y			X			
Leguminosae	Senna					X			
Leguminosae	Senna gaudichaudii			C		X			
Leguminosae	Senna leptoclada			C		X			
Leguminosae	Senna obtusifolia		Y			X			
Leguminosae	Senna occidentalis	coffee senna	Y			X			
Leguminosae	Sesbania cannabina var. cannabina			C		X			
Leguminosae	Stylosanthes					X			
Leguminosae	Stylosanthes hamata		Y			X			
Leguminosae	Stylosanthes humilis	Townsville stylo	Y			X	X		
Leguminosae	Stylosanthes scabra		Y			X	X		
Leguminosae	Tephrosia					X			
Leguminosae	Tephrosia astragaloides			C		X	X		
Leguminosae	Tephrosia astragaloides var. (Belyando Crossing E.J.Thompson+ 139)			C		X			
Leguminosae	Tephrosia filipes			C		X	X		
Leguminosae	Tephrosia filipes forma vestita			C		X			
Leguminosae	Tephrosia filipes subsp. filipes			C		X			
Leguminosae	Tephrosia filipes var. latifolia			C		X			
Leguminosae	Tephrosia juncea			C		X			
Leguminosae	Tephrosia leptoclada			C		X	X		
Leguminosae	Tephrosia macrostachya			C		X			
Leguminosae	Tephrosia purpurea			C		X			
Leguminosae	Tephrosia sp. (Copperfield River P.I.Forster PIF14768)			C		X			
Leguminosae	Tephrosia sp. (Laura M.B.Thomas 283)			C		X			
Leguminosae	Tephrosia sp. (Pannikan Springs A.R.Bean+ 5612)			C		X			
Leguminosae	Tephrosia sp. (Walsh River L.Pedley 4890)			C		X			
Leguminosae	Tephrosia sp. G Kimberley Flora (G.J.Keighery 4828)			C		X			
Leguminosae	Tephrosia sp. Irvinebank (I.B.Staples IBS2090)			C		X			
Leguminosae	Tephrosia varians			C		X			
Leguminosae	Uraria lagopodioides			C		X	X		

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Leguminosae	Uraria picta			C		X			
Leguminosae	Vachellia bidwillii			C		X			
Leguminosae	Vigna					X			
Leguminosae	Vigna radiata var. sublobata			C		X	X	X	
Leguminosae	Vigna sp. (Station Creek R.J.Lawn CQ3284)			C		X			
Leguminosae	Vigna vexillata var. youngiana			C		X			
Leguminosae	Zornia					X			
Leguminosae	Zornia dyctiocarpa var. filifolia			C		X			
Leguminosae	Zornia floribunda			C		X			
Leguminosae	Zornia muelleriana subsp. muelleriana			C		X			
Leguminosae	Zornia muriculata			C		X	X	X	
Leguminosae	Zornia muriculata subsp. angustata			C		X			
Leguminosae	Zornia muriculata subsp. muriculata			C		X			
Lentibulariaceae	Utricularia					X			
Linderniaceae	Bonnaya ciliata			C		X			
Linderniaceae	Lindernia alsinoides			C		X			
Linderniaceae	Torenia crustacea			C		X			
Lindsaeaceae	Lindsaea ensifolia subsp. agatii			C		X			
Lindsaeaceae	Lindsaea ensifolia subsp. ensifolia			C		X			
Loganiaceae	Mitrasacme					X			
Loganiaceae	Mitrasacme nudicaulis var. nudicaulis			C		X			
Loganiaceae	Mitrasacme nummularia			C		X			
Loganiaceae	Mitrasacme pygmaea			C		X			
Loganiaceae	Strychnos lucida			C		X			
Loranthaceae	Amyema sanguinea var. sanguinea			C		X			
Loranthaceae	Dendrophthoe glabrescens			C		X			
Loranthaceae	Lysiana subfalcata			C		X			
Lycopodiaceae	Palhinhaea cernua			C		X			
Lygodiaceae	Lygodium flexuosum			C		X			
Lygodiaceae	Lygodium reticulatum			C		X			
Lythraceae	Ammannia multiflora	jerry-jerry		C		X			
Lythraceae	Lagerstroemia archeriana subsp. archeriana	native crepe myrtle		C		X			
Lythraceae	Rotala mexicana			C		X			
Malvaceae	Abelmoschus ficulneus	native rosella		C		X			
Malvaceae	Abelmoschus rhodopetalus			C		X			
Malvaceae	Abutilon auritum	Chinese lantern		C		X			
Malvaceae	Abutilon micropetalum			C		X			

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Malvaceae	Gossypium					X			
Malvaceae	Helicteres					X			
Malvaceae	Helicteres sp. (Bulimba Station P.I.Forster PIF14740)			C		X			
Malvaceae	Helicteres sp. (Normanby River J.R.Clarkson+ 7697)			C		X			
Malvaceae	Hibiscus graniticus			C		X			
Malvaceae	Hibiscus meraukensis	Merauke hibiscus		C		X	X	X	
Malvaceae	Sida acuta	spinyhead sida	Y			X			
Malvaceae	Sida cordifolia		Y			X			
Malvaceae	Sida hackettiana			C		X			
Malvaceae	Sida spinosa	spiny sida	Y			X			
Malvaceae	Urena lobata	urena weed	Y			X			
Marattiaceae	Angiopteris evecta	giant fern		C		X			
Marsileaceae	Marsilea drummondii	common nardoo		C		X			
Melastomataceae	Melastoma malabathricum subsp. malabathricum			C		X			
Melastomataceae	Memecylon pauciflorum			C		X			
Meliaceae	Turraea pubescens	native honeysuckle		C		X			
Menyanthaceae	Nymphoides crenata	wavy marshwort		SL		X			
Menyanthaceae	Nymphoides parvifolia			SL		X			
Menyanthaceae	Nymphoides simulans			SL		X			
Molluginaceae	Glinus lotoides	hairy carpet weed		C		X			
Moraceae	Ficus nodosa								X
Moraceae	Ficus congesta			C		X			
Moraceae	Ficus congesta var. congesta			C		X			
Moraceae	Ficus obliqua			C		X			
Moraceae	Ficus racemosa var. racemosa			C		X			x
Moraceae	Ficus rubiginosa forma glabrescens			C		X			
Moraceae	Ficus rubiginosa forma rubiginosa			C		X			
Moraceae	Ficus virens var. virens			C		X			
Moringaceae	Moringa oleifera		Y			X			
Myrsinaceae	Ardisia pachyrrhachis			C		X			
Myrsinaceae	Myrsine ireneae subsp. ireneae			C		X			
Myrsinaceae	Myrsine subsessilis subsp. cryptostemon			C		X			
Myrsinaceae	Myrsine urceolata			C		X			
Myrtaceae	Acmenosperma pringlei			V		X			
Myrtaceae	Asteromyrtus lysicephala			C		X			
Myrtaceae	Asteromyrtus symphyocarpa			C		X			
Myrtaceae	Calytrix leptophylla			C		X			

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Myrtaceae	<i>Corymbia citriodora</i> subsp. <i>citriodora</i>			C		X			X
Myrtaceae	<i>Corymbia clarksoniana</i>			C		X	X	X	X
Myrtaceae	<i>Corymbia confertiflora</i>			C		X			
Myrtaceae	<i>Corymbia confertiflora</i> x <i>Corymbia tessellaris</i>			C		X			
Myrtaceae	<i>Corymbia dallachiana</i>			C		X	X	X	
Myrtaceae	<i>Corymbia erythrophloia</i>	variable-barked bloodwood		C		X	X		
Myrtaceae	<i>Corymbia hylandii</i>			C		X			
Myrtaceae	<i>Corymbia nesophila</i>			C		X			
Myrtaceae	<i>Corymbia polycarpa</i>	long-fruited bloodwood		C		X			
Myrtaceae	<i>Corymbia stockeri</i> subsp. <i>peninsularis</i>			C		X			
Myrtaceae	<i>Corymbia stockeri</i> subsp. <i>stockeri</i>			C		X	X		
Myrtaceae	<i>Corymbia tessellaris</i>	Moreton Bay ash		C		X	X	X	
Myrtaceae	<i>Eucalyptus brassiana</i>	Cape York red gum		C		X			
Myrtaceae	<i>Eucalyptus camaldulensis</i> subsp. <i>acuta</i>			C		X			
Myrtaceae	<i>Eucalyptus camaldulensis</i> subsp. <i>simulata</i>			C		X			
Myrtaceae	<i>Eucalyptus chartaboma</i>			C		X			
Myrtaceae	<i>Eucalyptus chlorophylla</i>			C		X			
Myrtaceae	<i>Eucalyptus cloeziana</i>	Gympie messmate		C		X			
Myrtaceae	<i>Eucalyptus crebra</i>	narrow-leaved red ironbark		C		X	X	X	
Myrtaceae	<i>Eucalyptus cullenii</i>	Cullen's ironbark		C		X	X	X	X
Myrtaceae	<i>Eucalyptus exserta</i>	Queensland peppermint		C		X			
Myrtaceae	<i>Eucalyptus granitica</i>	granite ironbark		C		X			
Myrtaceae	<i>Eucalyptus leptophleba</i>	Molloy red box		C		X			
Myrtaceae	<i>Eucalyptus mediocris</i>			C		X			
Myrtaceae	<i>Eucalyptus megasepala</i>			C		X			
Myrtaceae	<i>Eucalyptus phoenicea</i>	scarlet gum		C		X			
Myrtaceae	<i>Eucalyptus platyphylla</i>	poplar gum		C		X			
Myrtaceae	<i>Eucalyptus portuensis</i>			C		X			
Myrtaceae	<i>Eucalyptus similis</i>	Queensland yellowjacket		C		X	X		
Myrtaceae	<i>Eucalyptus staigeriana</i>	lemon-scented ironbark		C		X			
Myrtaceae	<i>Eucalyptus tardecidens</i>			C		X			
Myrtaceae	<i>Eucalyptus tereticornis</i> subsp. <i>tereticornis</i>			C		X			X
Myrtaceae	<i>Eugenia reinwardtiana</i>	beach cherry		C		X			

Family	Scientific Name	Common Name	Introduced	NC Act	EPBC	Wildnet record	Woodland 1	Woodland 2	Riparian
Myrtaceae	Gossia bidwillii			C		X			
Myrtaceae	Gossia sankowskyorum			C		X			
Myrtaceae	Homoranthus tropicus			NT		X			
Myrtaceae	Leptospermum polygalifolium	tantoon		C		X			
Myrtaceae	Lithomyrtus retusa			C		X			
Myrtaceae	Lophostemon grandiflorus subsp. riparius			C		X	X		X
Myrtaceae	Melaleuca borealis			C		X			
Myrtaceae	Melaleuca bracteata			C		X			X
Myrtaceae	Melaleuca fluviatilis			C		X			X
Myrtaceae	Melaleuca foliolosa			C		X	X		
Myrtaceae	Melaleuca leucadendra	broad-leaved tea-tree		C		X			X
Myrtaceae	Melaleuca monantha			C		X			
Myrtaceae	Melaleuca stenostachya			C		X	X	X	X
Myrtaceae	Melaleuca stenostachya subsp. amplior			C		X			
Myrtaceae	Melaleuca stenostachya subsp. stenostachya			C		X			
Myrtaceae	Melaleuca trichostachya			C		X	X		X
Myrtaceae	Melaleuca viminalis			C		X			
Myrtaceae	Melaleuca viridiflora			C		X	X		X
Myrtaceae	Melaleuca viridiflora var. attenuata			C		X			
Myrtaceae	Melaleuca viridiflora var. viridiflora			C		X			
Myrtaceae	Neofabricia sericisepala			C		X			
Myrtaceae	Syncarpia					X			
Myrtaceae	Syncarpia glomulifera			C		X			
Myrtaceae	Syzygium angophoroides			C		X			
Myrtaceae	Syzygium eucalyptoides subsp. eucalyptoides			C		X			
Myrtaceae	Thryptomene oligandra			C		X			
Myrtaceae	Thryptomene oligandra var. parviflora			C		X			
Myrtaceae	Tristaniopsis exiliflora	kanuka box		C		X			
Myrtaceae	Xanthostemon umbrosus			C		X			
Nephrolepidaceae	Nephrolepis acutifolia			C		X			
Nephrolepidaceae	Nephrolepis biserrata			C		X			
Nyctaginaceae	Boerhavia burbidgeana			C		X			
Nyctaginaceae	Boerhavia dominii			C		X			
Nymphaeaceae	Nymphaea violacea			SL		X			
Octoblepharaceae	Octoblepharum albidum			C		X			
Olacaceae	Olax aphylla			C		X			
Oleaceae	Jasminum didymum subsp. racemosum			C		X			

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Oleaceae	Jasminum elongatum			C		X			
Onagraceae	Ludwigia hyssopifolia		Y			X			
Onagraceae	Ludwigia octovalvis	willow primrose		C		X			
Ophioglossaceae	Ophioglossum lusitanicum	adder's tongue		C		X			
Opiliaceae	Opilia amentacea			C		X			
Orchidaceae	Chiloschista phyllorhiza			SL		X			
Orchidaceae	Cymbidium canaliculatum			SL		X	X	X	X
Orchidaceae	Dendrobium bigibbum	Cooktown orchid		V	V	X			
Orchidaceae	Dipodium elegantulum			SL		X			
Orchidaceae	Dipodium variegatum			SL		X			
Orchidaceae	Dockrillia rigida			SL		X			
Orchidaceae	Habenaria propinqua			SL		X			
Orchidaceae	Saccolabiopsis armitii			SL		X			
Orobanchaceae	Buchnera gracilis			C		X			
Orobanchaceae	Buchnera linearis			C		X	X		
Orobanchaceae	Buchnera tetragona			C		X			
Orobanchaceae	Buchnera urticifolia			C		X			
Orobanchaceae	Centranthera cochinensis			C		X			
Orobanchaceae	Rhamphicarpa australiensis			C		X			
Orobanchaceae	Striga curviflora			C		X			
Orobanchaceae	Striga parviflora			C		X			
Pandanaceae	Freyinetia scandens			C		X			
Pandanaceae	Pandanus cookii			C		X			
Philydraceae	Philydrum lanuginosum	frogsmouth		C		X			
Phyllanthaceae	Antidesma ghaesembilla			C		X			
Phyllanthaceae	Antidesma parvifolium			C		X			
Phyllanthaceae	Bridelia tomentosa			C		X			
Phyllanthaceae	Cleistanthus xerophilus			C		X			
Phyllanthaceae	Flueggea virosa subsp. melanthesoides			C		X			
Phyllanthaceae	Glochidion benthamianum			C		X			
Phyllanthaceae	Glochidion disparipes			C		X			
Phyllanthaceae	Margaritaria dubium-traceyi			C		X			
Phyllanthaceae	Phyllanthus					X			
Phyllanthaceae	Phyllanthus carpentariae			C		X			
Phyllanthaceae	Phyllanthus collinus			C		X	X		
Phyllanthaceae	Phyllanthus dallachyanus			C		X			
Phyllanthaceae	Phyllanthus dallachyanus subsp. (Irvinebank P.I.Forster PIF14675)			C		X			

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Phyllanthaceae	Phyllanthus debilis		Y			X			
Phyllanthaceae	Phyllanthus hebecarpus			C		X			
Phyllanthaceae	Phyllanthus minutiflorus			C		X			
Phyllanthaceae	Phyllanthus novae-hollandiae			C		X			
Phyllanthaceae	Phyllanthus simplex			C		X			
Phyllanthaceae	Phyllanthus virgatus			C		X	X		
Phyllanthaceae	Poranthera microphylla	small poranthera		C		X			
Phyllanthaceae	Synostemon elachophyllus			C		X			
Phyllanthaceae	Synostemon elachophyllus subsp. elachophyllus			C		X			
Phyllanthaceae	Synostemon elachophyllus subsp. latior			C		X			
Phyllanthaceae	Synostemon lissocarpus			C		X			
Phyllanthaceae	Synostemon podenzanae			C		X			
Picrodendraceae	Petalostigma banksii			C		X			
Picrodendraceae	Petalostigma pubescens	quinine tree		C		X	X		X
Picrodendraceae	Pseudanthus ligulatus subsp. ligulatus			C		X			
Pittosporaceae	Bursaria incana			C		X			
Pittosporaceae	Bursaria tenuifolia			C		X			
Pittosporaceae	Pittosporum tinifolium			C		X			
Plantaginaceae	Stemodia lythrifolia			C		X			
Plumbaginaceae	Plumbago zeylanica	native plumbago		C		X			
Poaceae	Alloteropsis cimicina			C		X			
Poaceae	Alloteropsis semialata	cockatoo grass		C		X	X		
Poaceae	Ancistrachne uncinulata	hooky grass		C		X			
Poaceae	Andropogon gayanus	gamba grass	Y			X			
Poaceae	Aristida calycina var. praealta			C		X			
Poaceae	Aristida holathera			C		X	X	X	
Poaceae	Aristida holathera var. holathera			C		X			
Poaceae	Aristida jerichoensis var. subspinulifera			C		X		X	
Poaceae	Aristida queenslandica var. dissimilis			C		X			
Poaceae	Aristida schultzei			C		X	X		
Poaceae	Aristida superpendens			C		X			
Poaceae	Aristida utilis var. utilis			C		X			
Poaceae	Arundinella nepalensis	reedgrass		C		X			
Poaceae	Arundinella setosa			C		X	X	X	
Poaceae	Bothriochloa bladhii			C		X	X		
Poaceae	Bothriochloa bladhii subsp. bladhii			C		X			
Poaceae	Bothriochloa pertusa		Y			X			

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Poaceae	Brachyachne convergens	common native couch		C		X			
Poaceae	Cenchrus ciliaris		Y			X	X		
Poaceae	Cenchrus pedicellatus subsp. pedicellatus		Y			X			
Poaceae	Cenchrus pedicellatus subsp. unispiculus		Y			X			
Poaceae	Chionachne cyathopoda	river grass		C		X			
Poaceae	Chloris gayana	rhodes grass	Y			X	X		
Poaceae	Chloris lobata			C		X			
Poaceae	Chrysopogon filipes			C		X			
Poaceae	Cleistochloa subjuncea			C		X			
Poaceae	Cymbopogon ambiguus	lemon grass		C		X	X		
Poaceae	Cymbopogon bombycinus	silky oilgrass		C		X	X	X	
Poaceae	Cymbopogon obtectus			C		X			
Poaceae	Cymbopogon queenslandicus			C		X			
Poaceae	Dichanthium fecundum	curly bluegrass		C		X			
Poaceae	Dichanthium sericeum subsp. sericeum			C		X			
Poaceae	Digitaria bicornis			C		X			
Poaceae	Digitaria breviglumis			C		X			
Poaceae	Digitaria ciliaris	summer grass	Y			X	X		
Poaceae	Digitaria fumida			C		X	X		
Poaceae	Echinochloa colona	awnless barnyard grass	Y			X	X		
Poaceae	Ectrosia confusa			C		X			
Poaceae	Ectrosia gulliveri			C		X			
Poaceae	Ectrosia nervilemma			C		X			
Poaceae	Eragrostis					X			
Poaceae	Eragrostis cumingii			C		X	X		
Poaceae	Eragrostis elongata			C		X			
Poaceae	Eragrostis schultzei			C		X			
Poaceae	Eragrostis spartinioides			C		X			
Poaceae	Eragrostis tenellula	delicate lovegrass		C		X			
Poaceae	Eriachne					X			
Poaceae	Eriachne armitii			C		X			
Poaceae	Eriachne ciliata			C		X			
Poaceae	Eriachne humilis			C		X	X	X	
Poaceae	Eriachne melicacea			C		X			
Poaceae	Eriachne obtusa			C		X			
Poaceae	Eriachne pallescens var. pallescens			C		X			

Family	Scientific Name	Common Name	Introduced	NC Act	EPBC	Wildnet record	Woodland 1	Woodland 2	Riparian
Poaceae	Eriachne sp. (Dugald River B.K.Simon+ 3007)			C		X			
Poaceae	Eriachne stipacea			C		X			
Poaceae	Eulalia annua			C		X			
Poaceae	Germania grandiflora			C		X			
Poaceae	Heterachne abortiva			C		X			
Poaceae	Heteropogon contortus	black speargrass		C		X	X	X	X
Poaceae	Heteropogon triticeus	giant speargrass		C		X	X	X	X
Poaceae	Hymenachne amplexicaulis 'Olive'		Y			X			
Poaceae	Hyparrhenia rufa		Y			X			
Poaceae	Hyparrhenia rufa subsp. rufa		Y			X			
Poaceae	Isachne confusa			C		X			
Poaceae	Ischaemum rugosum var. segetum			C		X			
Poaceae	Iseilema vaginiflorum	red flinders grass		C		X			
Poaceae	Megathyrsus maximus		Y			X			
Poaceae	Melinis repens	red natal grass	Y			X	X	X	X
Poaceae	Mnesithea formosa			C		X			
Poaceae	Mnesithea rottboellioides			C		X			
Poaceae	Oplismenus aemulus	creeping shade grass		C		X			
Poaceae	Oplismenus burmanni			C		X			
Poaceae	Panicum mindanaense			C		X			
Poaceae	Panicum seminudum			C		X			
Poaceae	Panicum seminudum var. cairnsianum			C		X			
Poaceae	Panicum simile			C		X	X		
Poaceae	Panicum trichoides			C		X			
Poaceae	Paspalidium constrictum			C		X			
Poaceae	Paspalidium distans	shotgrass		C		X			
Poaceae	Paspalidium rarum			C		X			
Poaceae	Paspalidium spartellum			C		X			
Poaceae	Paspalum scrobiculatum	ditch millet		C		X			
Poaceae	Paspalum urvillei	vasey grass	Y			X			
Poaceae	Perotis indica		Y			X			
Poaceae	Perotis rara	comet grass		C		X			
Poaceae	Pseudopogonatherum irritans			C		X			
Poaceae	Sacciolepis myosuroides			C		X			
Poaceae	Sarga plumosum			C		X			
Poaceae	Schizachyrium fragile	firegrass		C		X	X	X	
Poaceae	Schizachyrium pachyarthon			C		X			

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Poaceae	Setaria pumila subsp. subtesselata		Y			X			
Poaceae	Setaria surgens			C		X			
Poaceae	Sorghum					X			
Poaceae	Sorghum bicolor	forage sorghum	Y			X			
Poaceae	Sporobolus australasicus			C		X			
Poaceae	Sporobolus coromandelianus		Y			X			
Poaceae	Sporobolus fertilis	giant Parramatta grass	Y			X			
Poaceae	Sporobolus jacquemontii		Y			X			
Poaceae	Sporobolus lenticularis			C		X			
Poaceae	Sporobolus natalensis		Y			X			
Poaceae	Thaumastochloa pubescens			C		X			
Poaceae	Themeda arguens			C		X			
Poaceae	Themeda quadrivalvis	grader grass	Y			X	X	X	X
Poaceae	Themeda triandra	kangaroo grass		C		X	X	X	X
Poaceae	Triodia microstachya			C		X			
Poaceae	Tripogon loliiformis	five minute grass		C		X			
Poaceae	Urochloa decumbens		Y			X			
Poaceae	Urochloa holosericea			C		X			
Poaceae	Urochloa holosericea subsp. holosericea			C		X			
Poaceae	Urochloa mosambicensis	sabi grass	Y			X	X		
Poaceae	Urochloa mutica		Y			X			
Poaceae	Urochloa piligera			C		X			
Poaceae	Urochloa pubigera			C		X			
Poaceae	Urochloa subquadripara		Y			X			
Poaceae	Vacoparis laxiflorum			C		X			
Polygalaceae	Comesperma secundum			C		X			
Polygalaceae	Comesperma secundum subsp. secundum			C		X			
Polygalaceae	Polygala exsuarrosa			C		X			
Polygalaceae	Polygala longifolia			C		X			
Polygalaceae	Polygala parviloba			C		X			
Polygalaceae	Polygala persicariifolia			C		X			
Polygonaceae	Persicaria attenuata			C		X			
Polygonaceae	Persicaria orientalis	princes feathers		C		X			
Polygonaceae	Polygonum plebeium	small knotweed		C		X			
Polypodiaceae	Drynaria quercifolia			SL		X			
Pontederiaceae	Monochoria cyanea			C		X			
Portulacaceae	Portulaca bicolor			C		X			

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Potamogetonaceae	Potamogeton					X			
Potamogetonaceae	Potamogeton tepperi			SL		X			
Potamogetonaceae	Potamogeton tricarinatus	floating pondweed		SL		X			
Proteaceae	Banksia dentata			C		X			
Proteaceae	Grevillea dryandri subsp. dryandri			C		X			
Proteaceae	Grevillea glauca	bushy's clothes peg		C		X	X	X	
Proteaceae	Grevillea mcgillivrayi			C		X			
Proteaceae	Grevillea mimosoides			C		X			
Proteaceae	Grevillea parallela			C		X	X		
	Grevillea pteridifolia							X	
Proteaceae	Grevillea striata	beefwood		C		X	X		
Proteaceae	Hakea lorea subsp. lorea			C		X			
Proteaceae	Hakea persiehana			C		X		X	
Proteaceae	Persoonia falcata			C		X	X		
Proteaceae	Stenocarpus					X			
Psilotaceae	Psilotum nudum	skeleton fork fern		SL		X			
Pteridaceae	Adiantum atroviride			SL		X			
Pteridaceae	Adiantum hispidulum			SL		X			
Pteridaceae	Adiantum hispidulum var. hispidulum			SL		X			
Pteridaceae	Ceratopteris thalictroides			SL		X			
Pteridaceae	Cheilanthes					X			
Pteridaceae	Cheilanthes brownii			C		X			
Pteridaceae	Cheilanthes contigua			C		X			
Pteridaceae	Cheilanthes nitida			C		X			
Pteridaceae	Cheilanthes nudiusscula			C		X			
Pteridaceae	Cheilanthes praetermissa			C		X			
Pteridaceae	Cheilanthes pumilio			C		X			
Pteridaceae	Cheilanthes sieberi subsp. sieberi			C		X			
Pteridaceae	Doryopteris concolor			SL		X			
Pteridaceae	Haplopteris ensiformis			SL		X			
Pteridaceae	Pellaea muelleri			SL		X			
Pteridaceae	Pityrogramma calomelanos var. calomelanos		Y			X			
Pteridaceae	Taenitis pinnata	morse fern		SL		X			
Putranjivaceae	Drypetes deplanchei	grey boxwood		C		X			
Pylaisiadelphaceae	Trachyphyllum inflexum			C		X			
Rhamnaceae	Alphitonia excelsa	soap tree		C		X			
Rhamnaceae	Cryptandra filiformis			C		X			

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Rhamnaceae	Stenanthemum argenteum			V		X			
Rubiaceae	Aidia racemosa			C		X			
Rubiaceae	Atractocarpus sessilis			C		X			
Rubiaceae	Coelospermum reticulatum			C		X			
	Gardenia vilhelmii						X		
Rubiaceae	Gardenia rupicola			C		X			
Rubiaceae	Gardenia tessellaris			C		X			
Rubiaceae	Gynochthodes ammitia			C		X			
Rubiaceae	Ixora timorensis			C		X			
Rubiaceae	Larsenaikia ochreatea			C		X			
Rubiaceae	Nauclea orientalis	Leichhardt tree		C		X			X
Rubiaceae	Paranotis mitrasacmoides subsp. mitrasacmoides			C		X			
Rubiaceae	Psychotria loniceroides	hairy psychotria		C		X			
Rubiaceae	Psychotria polioctemma			C		X			
Rubiaceae	Psydrax graciliflora			C		X			
Rubiaceae	Psydrax lepidia			C		X			
Rubiaceae	Richardia scabra		Y			X			
Rubiaceae	Scleromitron galioides			C		X			
Rubiaceae	Spermacoce					X			
Rubiaceae	Spermacoce brachystema			C		X			
Rubiaceae	Spermacoce cristulata			C		X			
Rubiaceae	Spermacoce jacobsonii			C		X			
Rubiaceae	Timonius timon var. timon			C		X			
Rutaceae	Acronychia laevis	glossy acronychia		C		X			
Rutaceae	Acronychia laevis var. leucocarpa			C		X			
Rutaceae	Boronia bowmanii			C		X			
Rutaceae	Boronia quinkanensis			C		X			
Rutaceae	Dinosperma erythroccum			C		X			
Rutaceae	Flindersia collina	broad-leaved leopard tree		C		X			
Rutaceae	Halfordia kendack	saffron heart		C		X			
Rutaceae	Melicope elleryana			C		X			
Rutaceae	Micromelum minutum	clusterberry		C		X			
Salicaceae	Homalium brachybotrys			C		X			
Salviniaceae	Salvinia molesta	salvinia	Y			X			
Santalaceae	Anthobolus filifolius			C		X			
Santalaceae	Santalum lanceolatum			SL		X	X		
Santalaceae	Santalum lanceolatum var. venosum			C		X			

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Santalaceae	Viscum articulatum	flat mistletoe		C		X			
Sapindaceae	Atalaya angustifolia			C		X	X		
Sapindaceae	Atalaya oligoclada			C		X			
Sapindaceae	Atalaya sericopetala			C		X			
Sapindaceae	Cupaniopsis anacardioides	tuckeroo		C		X	X	X	
Sapindaceae	Dodonaea					X			
Sapindaceae	Dodonaea dodecandra			C		X			
Sapindaceae	Dodonaea hispidula var. hispidula			C		X			
Sapindaceae	Dodonaea lanceolata var. subsessilifolia			C		X			
Sapindaceae	Dodonaea malvacea			C		X			
Sapindaceae	Dodonaea physocarpa			C		X			
Sapindaceae	Ganophyllum falcatum			C		X			
Sapotaceae	Amorphospermum antilogum			C		X			
Sapotaceae	Planchonella pohlmanniana			C		X			
Sapotaceae	Sersalisia sericea			C		X			
Schizaeaceae	Actinostachys digitata			SL		X			
Schizaeaceae	Schizaea dichotoma	branched comb fern		SL		X			
Sematophyllaceae	Sematophyllum subhumile			C		X			
Smilacaceae	Smilax					X			
Smilacaceae	Smilax australis	barbed-wire vine		C		X			
Solanaceae	Lycianthes shanesii			C		X			
Solanaceae	Physalis angulata		Y			X			
Solanaceae	Solanum					X			
Solanaceae	Solanum americanum		Y			X			
Solanaceae	Solanum ellipticum	potato bush		C		X			
Solanaceae	Solanum multiglochidiatum			C		X			
Sparrmanniaceae	Corchorus aestuans			C		X			
Sparrmanniaceae	Grewia australis			C		X	X		
Sparrmanniaceae	Grewia mesomischa			C		X			
Sparrmanniaceae	Grewia papuana			C		X			
Sparrmanniaceae	Triumfetta pentandra		Y			X			
Sparrmanniaceae	Triumfetta sp. (Turtle Rock A.R.Bean 3807)			C		X			
Sterculiaceae	Brachychiton					X			
Sterculiaceae	Brachychiton albidus			SL		X	X	X	
Sterculiaceae	Brachychiton diversifolius subsp. orientalis			SL		X			
Sterculiaceae	Brachychiton muellerianus			SL		X			
Stylidiaceae	Stylidium					X			

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Stylidiaceae	Stylidium adenophorum			SL		X			
Stylidiaceae	Stylidium capillare			SL		X			
Stylidiaceae	Stylidium confertum			SL		X			
Stylidiaceae	Stylidium leiophyllum			SL		X			
Stylidiaceae	Stylidium ramosissimum			SL		X			
Taccaceae	Tacca leontopetaloides			C		X			
Thymelaeaceae	Pimelea					X			
Thymelaeaceae	Pimelea confertiflora			C		X			
Thymelaeaceae	Pimelea cornucopiae			C		X			
Thymelaeaceae	Pimelea linifolia			C		X			
Thymelaeaceae	Pimelea sericostachya			C		X			
Typhaceae	Typha domingensis			C		X			
Typhaceae	Typha orientalis	broad-leaved cumbungi		C		X			
Urticaceae	Laportea interrupta			C		X			
Urticaceae	Pouzolzia zeylanica			C		X			
Verbenaceae	Stachytarpheta jamaicensis	Jamaica snakeweed	Y			X			
Violaceae	Pigea enneasperma			C		X			
Vitaceae	Ampelocissus gardineri			C		X			
Vitaceae	Causonis trifolia			C		X			
Vitaceae	Cayratia acris	hairy grape		C		X			
Vitaceae	Cayratia cardiophylla			C		X			
Vitaceae	Cayratia saponaria			C		X			
Vitaceae	Cissus cardiophylla			C		X			
Vitaceae	Cissus pentaclada			C		X			
Vitaceae	Cissus reniformis			C		X			
Vitaceae	Clematicissus opaca			C		X			
Xanthorrhoeaceae	Xanthorrhoea johnsonii			SL		X	X		
Xyridaceae	Xyris					X			
Xyridaceae	Xyris indica			C		X			
Zingiberaceae	Curcuma australasica			C		X			
Zygophyllaceae	Tribulus cistoides	bulls head vine		C		X			

Appendix F – Flora assessment sites

Site	Longitude	Latitude	Photo	Description
01	144.52	-16.0966		Located in the northeast of the project areas at the top of a eastern facing slope. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less common in the eastern portion of the project site. . Consistent with regional ecosystem 9.11.3
02	144.5138	-16.1007		Located on a ridge line in the far west of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
03	144.5131	-16.1001		Located on a ridge in the western portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) and Silky oil grass (<i>Cymbopogon bombycinus</i> .) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3
04	144.5129	-16.0996		Located at the top of a southern facing valley the western portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) and Silky oil grass (<i>Cymbopogon bombycinus</i> .) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
05	144.5148	-16.1002		Located on the mid-section of a southern facing slope in the western portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11
06	144.5153	-16.1004		Site is located in a steep valley. Grassy open woodland co-dominated by Clarkson's bloodwood (<i>Corymbia clarksoniana</i>) and Cullen's ironbark (<i>Eucalyptus cullenii</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) and Kangaroo grass (<i>Themeda triandra</i>) Other less dominant species present include <i>Dianella nervosa</i> and <i>Lomandra decomposita</i> Consistent with regional ecosystem 9.11.3 however Clarkson's bloodwood is more dominant than other areas.
07	144.5164	-16.1017		Located in the southwest of the project areas in the mid portion of a moderate north facing slope adjacent to historic disturbances. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less

Site	Longitude	Latitude	Photo	Description
				common in the eastern portion of the project site. . Consistent with regional ecosystem 9.11.3
08	144.5161	-16.1018		Located in the southwest of the project areas in the mid portion of a moderate north facing slope adjacent to historic disturbances. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less common in the eastern portion of the project site. Consistent with regional ecosystem 9.11.3
12	144.5151	-16.1019		Located in the southwest of the project areas in the lower portion of a moderate west facing slope adjacent to historic disturbances. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less common in the eastern portion of the project site. . Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
14	144.5183	-16.0993		Located at the base of a small valley in the south-central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood. Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3
15	144.521	-16.1012		Located on a southern facing slope adjacent to the access track in the south south central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> . Isolated individuals of <i>Melaleuca foliolosa</i> are observed as a shrub layer. Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
16	144.5199	-16.0995		Located on the mid-section of a eastern facing slope in the south central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3
19	144.5203	-16.0975		Located on a eastern facing slope in the west of the project Grassy open woodland co-dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) and Kangaroo grass (<i>Themeda triandra</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
21	144.5208	-16.0979		Located in the headwaters of the 1 st order drainage feature which traverses the site. there is little to no differentiation between the broader vegetation and the vegetation associated with the “riparian zone” Within the drainage feature there are occasional sedges (<i>Cyperus spp</i>)observed. The broader vegetation is observed as a grassy open woodland dominated by Cullen’s ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Northern swamp mahogany (<i>Lophostemon grandiflorus</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) Consistent with regional ecosystem 9.11.3 with minor elements of 9.3.14a
23	144.5196	-16.0974		Located in the north of the project areas in the mid-section of a a southern facing slope. Grassy open woodland dominated by Cullen’s ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is common. . Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
24	144.52	-16.098		Located on the mid-section of a southern facing slope in the central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> . Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3
25	144.5169	-16.0966		Located on a ridge at the edge of a disturbed area in the northern central portion of the project area . Grassy open woodland co-dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) Giant spear grass (<i>Heteropogon triticeus</i>) and Kangaroo grass (<i>Themeda triandra</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
26	144.5215	-16.099		Located in the upper portion of a north westerly facing valley on a moderate slope in the south central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3
27	144.5211	-16.0986		Located in the lower portion of a north westerly facing valley. in the south central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
28	144.5209	-16.099		Located on the upper section of a northern facing risegeline in the south central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>). Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3
29	144.5203	-16.1003		Located in a small valley on the mid-section of a eastern facing slope in the south central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> . Isolated individuals of <i>Melaleuca foliolosa</i> are observed as a shrub layer. Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
30	144.5203	-16.0998		Located in a small valley on the mid-section of a eastern facing slope in the south central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> . Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3
31	144.5203	-16.0994		Located on the lower section of a western facing slope in the south-central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
32	144.52	-16.0991		Located on the lower section of a north facing slope in the south central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3
33	144.5158	-16.0986		Located on the mid-section of a western facing slope in the north central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
34	144.5154	-16.0997		Site is located on the slope of a steep valley. Grassy open woodland co-dominated by Clarkson's bloodwood (<i>Corymbia clarksoniana</i>) and Cullen's ironbark (<i>Eucalyptus cullenii</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) Giant spear grass (<i>Heteropogon triticeus</i>) and Kangaroo grass (<i>Themeda triandra</i>) and the introduced Grader grass (<i>Themeda quadrivalvis</i>) Other less dominant species present include Silky oil grass (<i>Cymbopogon bombycinus</i>). Consistent with regional ecosystem 9.11.3 however Clarkson's bloodwood is more dominant than other areas.
36	144.5153	-16.0997		Site is located on the slope of a steep valley. Grassy open woodland co-dominated by Clarkson's bloodwood (<i>Corymbia clarksoniana</i>) and Cullen's ironbark (<i>Eucalyptus cullenii</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) and Kangaroo grass (<i>Themeda triandra</i>) and the introduced Grader grass (<i>Themeda quadrivalvis</i>) Other less dominant species present include Silky oil grass (<i>Cymbopogon bombycinus</i>). Consistent with regional ecosystem 9.11.3 however Clarkson's bloodwood is more dominant than other areas

Site	Longitude	Latitude	Photo	Description
37	144.5153	-16.0988		Located on a ridgeline in the north central portion of the prooject area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), introduced Grader grass (<i>Themeda quadrivalvis</i>) is co dominant in the understory common. Consistent with regional ecosystem 9.11.3
38	144.5152	-16.0984		Located on a ridgeline in the north central portion of the prooject area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i>)Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), and Kangaroo grass (<i>Themeda triandra</i>), introduced Grader grass (<i>Themeda quadrivalvis</i>) is co dominant in the understory common. Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
39	144.5137	-16.0988		Located on a southern facing slope in the west of the project Grassy open woodland co-dominated by Clarkson's bloodwood (<i>Corymbia clarksoniana</i>) and Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated Dallachy's gum (<i>Corymbia dallachyana</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) and Kangaroo grass (<i>Themeda triandra</i>) make up the balance of grasses with scattered herbage such as <i>Sida atherophora</i>,) and yellow rattlepod (<i>Crotalaria mitchellii</i>). Consistent with regional ecosystem 9.11.3
40	144.5144	-16.0999		Located on a steep south facing slope Grassy open woodland co-dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and Dallachy's gum (<i>Corymbia dallachyana</i>) with associated <i>Corymbia clarksoniana</i> Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) and Kangaroo grass (<i>Themeda triandra</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
41	144.5146	-16.0996		Located on a steep south eastern western facing slope at the edge of a historic clearing in the west of the project Grassy open woodland co-dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and Dallachy's gum (<i>Corymbia dallachyana</i>) with associated <i>Corymbia clarksoniana</i> Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) and Kangaroo grass (<i>Themeda triandra</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3
42	144.5145	-16.0992		Located on a western facing slope in the west of the project Grassy open woodland co-dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and eucalyptus crebra with associated <i>Corymbia clarksoniana</i> Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) and Kangaroo grass (<i>Themeda triandra</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
43	144.5143	-16.0989		Located at the top of a south eastern facing slope in the west of the project area. Grassy open woodland co-dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and eucalyptus crebra with associated <i>Corymbia clarksoniana</i> Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) and Kangaroo grass (<i>Themeda triandra</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3
44	144.513	-16.1001		Located on a ridge in the western portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) and Silky oil grass (<i>Cymbopogon bombycinus</i> .) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
45	144.5135	-16.1003		Located on a ridge line in the far west of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3
46	144.5161	-16.0974		Located on a ridge at the edge of a disturbed area in the northern central portion of the project area . Grassy open woodland co-dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) Giant spear grass (<i>Heteropogon triticeus</i>) and Kangaroo grass (<i>Themeda triandra</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
47	144.5164	-16.0982		Located at the bottom of a southern facing slope on the edge of historic mine workings. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3
48	144.5186	-16.0967		located adjacent to historic mine workings at the top of a southeast facing slope. .Grassy open woodland co-dominated by Clarkson's bloodwood (<i>Corymbia clarksoniana</i>) and Cullen's ironbark (<i>Eucalyptus cullenii</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) and Kangaroo grass (<i>Themeda triandra</i>) Highly impacted by non native species particularly Grader grass (<i>Themeda quadrivalvis</i>) 9.11.3 however Clarkson's bloodwood is more dominant than other areas

Site	Longitude	Latitude	Photo	Description
49	144.5194	-16.0965		Located in the north of the project areas at the top of a ridge with a southern facing slope. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> . Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is common. . Consistent with regional ecosystem 9.11.3
50	144.5207	-16.0964		Located in the northeast of the project areas at the very top a broad sothern facing valley. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>). Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less common in the eastern portion of the project site. . Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
51	144.5211	-16.096		Located in the north east of the project areas at the very top of a broad meandering. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less common in the eastern portion of the project site. . Consistent with regional ecosystem 9.11.3
52	144.5209	-16.0957		Located in the north east of the project areas at the very top of a broad southern facing valley. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less common in the eastern portion of the project site. . Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
53	144.5216	-16.0966		Located in the north east of the project areas on a moderate south west facing slope. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less common in the eastern portion of the project site. . Consistent with regional ecosystem 9.11.3
55	144.5232	-16.0972		Located in the headwaters of the 1st order drainage feature which traverses the site. there is little to no differentiation between the broader vegetation and the vegetation associated with the "riparian zone" Within the drainage feature there are occasional sedges (<i>Cyperus</i> spp)observed. The broader vegetation is observed as a grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Northern swamp mahogany (<i>Lophostemon grandiflorus</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is common . Consistent with regional ecosystem 9.11.3 with minor elements of 9.3.14a

Site	Longitude	Latitude	Photo	Description
56	144.5224	-16.0975		Located in the east of the project areas on a in the mid-section of a moderate north facing slope. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is common . Consistent with regional ecosystem 9.11.3
57	144.5218	-16.0978		Located in the north of the project areas at the top of a ridge with a southern facing slope. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is common. . Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
58	144.5217	-16.0971		Located in the north east of the project areas at the bottom of a moderate south west facing slope near a drainage feature . Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less common in the eastern portion of the project site. . Consistent with regional ecosystem 9.11.3 no obvious influence of the drainage feature observed.
59	144.5205	-16.0984		Located in the headwaters of the 1st order drainage feature which traverses the site. there is little to no differentiation between the broader vegetation and the vegetation associated with the "riparian zone" Within the drainage feature there are occasional sedges (<i>Cyperus</i> spp) observed. The broader vegetation is observed as a grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Northern swamp mahogany (<i>Lophostemon grandiflorus</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is common . Consistent with regional ecosystem 9.11.3 with minor elements of 9.3.14a

Site	Longitude	Latitude	Photo	Description
60	144.5194	-16.0976		Located in the north of the project areas on the mid-section of a southern facing slope. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> . Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is common. . Consistent with regional ecosystem 9.11.3
61	144.5141	-16.0999		Site is located in a steep valley. Grassy open woodland co-dominated by Clarkson's bloodwood (<i>Corymbia clarksoniana</i>) and Cullen's ironbark (<i>Eucalyptus cullenii</i>). Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) and Kangaroo grass (<i>Themeda triandra</i>). Other less dominant species present include <i>Dianella nervosa</i> and <i>Lomandra decomposita</i> . Consistent with regional ecosystem 9.11.3.

Site	Longitude	Latitude	Photo	Description
62	144.5143	-16.1002		Site is located in a steep valley. Grassy open woodland co-dominated by Clarkson's bloodwood (<i>Corymbia clarksoniana</i>) and Cullen's ironbark (<i>Eucalyptus cullenii</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) and Kangaroo grass (<i>Themeda triandra</i>) Other less dominant species present include <i>Dianella nervosa</i> and <i>Lomandra decomposita</i> Consistent with regional ecosystem 9.11.3.
63	144.5146	-16.1009		Site is located on the slope of a steep valley. Grassy open woodland co-dominated by Clarkson's bloodwood (<i>Corymbia clarksoniana</i>) and Cullen's ironbark (<i>Eucalyptus cullenii</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) and Kangaroo grass (<i>Themeda triandra</i>) Other less dominant species present include <i>Dianella nervosa</i> and <i>Lomandra decomposita</i> Consistent with regional ecosystem 9.11.3 however Clarkson's bloodwood is more dominant than other areas

Site	Longitude	Latitude	Photo	Description
64	144.5151	-16.0993		Site is located in a steep valley. Grassy open woodland co-dominated by Clarkson's bloodwood (<i>Corymbia clarksoniana</i>) and Cullen's ironbark (<i>Eucalyptus cullenii</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>) and Kangaroo grass (<i>Themeda triandra</i>) Other less dominant species present include <i>Dianella nervosa</i> and <i>Lomandra decomposita</i> Consistent with regional ecosystem 9.11.3 however Clarkson's bloodwood is more dominant than other areas.
65	144.515	-16.0988		Located at the top of a western facing slope in the western portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) and Silky oil grass (<i>Cymbopogon bombycinus</i> .) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
66	144.5131	-16.0993		Located at the top of a southern facing valley the western portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) and Silky oil grass (<i>Cymbopogon bombycinus</i> .) introduced Grader grass (<i>Themeda quadrivalvis</i>) common. Consistent with regional ecosystem 9.11.3
67	144.5158	-16.099		Located on the mid-section of a western facing slope in the north central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
68	144.516	-16.099		Located on the mid-section of a western facing slope in the north central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3
69	144.5164	-16.0994		Located on the lower section of a western facing slope in the north central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
70	144.5159	-16.1001		Located on the mid-section of a southern facing slope in the north central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3
71	144.5159	-16.0997		Located on the mid-section of a southern facing slope in the north central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
72	144.5156	-16.0996		Located on in the mid-section of a southern facing slope in the north central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3
73	144.5205	-16.0997		Located in a small valley on the lower section of a western facing slope in the south central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
74	144.5203	-16.099		Located on the lower section of a western facing slope in the south central portion of the project area. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) with associated <i>Corymbia clarksoniana</i> and <i>Corymbia dallachiana</i> . Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Consistent with regional ecosystem 9.11.3
75	144.5205	-16.0968		Located in the north east of the project on the mid-section of a eastern facing slope. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>). Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less common in the eastern portion of the project site. . Consistent with regional ecosystem 9.11.3

Site	Longitude	Latitude	Photo	Description
78	144.5194	-16.0972		Located in the north of the project areas in the mid-section of a a southern facing slope. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is common. . Consistent with regional ecosystem 9.11.3
77	144.5207	-16.0975		Located in the north east of the project areas at the bottom of a moderate south west facing slope near a drainage feature . Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less common in the eastern portion of the project site. . Consistent with regional ecosystem 9.11.3 no obvious influence of the drainage feature observed

Site	Longitude	Latitude	Photo	Description
79	144.5181	-16.1001		Located in the south central of the project areas at the bottom of a moderate north facing slope adjacent to historic disturbances e near a drainage feature . Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less common in the eastern portion of the project site. . Consistent with regional ecosystem 9.11.3 no obvious influence of the drainage feature observed
80	144.5174	-16.1006		Located in the south west of the project areas at the bottom of a moderate north facing slope adjacent to historic disturbances e near a drainage feature . Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less common in the eastern portion of the project site. . Consistent with regional ecosystem 9.11.3 no obvious influence of the drainage feature observed

Site	Longitude	Latitude	Photo	Description
81	144.5167	-16.1018		Located in the south west of the project areas in the mid portion of a moderate north facing slope adjacent to historic disturbances. Grassy open woodland dominated by Cullen's ironbark (<i>Eucalyptus cullenii</i>) and <i>Eucalyptus crebra</i> with associated <i>Corymbia clarksoniana</i> and Cooktown ironwood (<i>Erythrophleum chlorostachys</i>) Groundcover dominated by Black spear grass (<i>Heteropogon contortus</i>), Giant spear grass (<i>Heteropogon triticeus</i>), Kangaroo grass (<i>Themeda triandra</i>), Northern Kerosene grass (<i>Aristida hygrometrica</i>) introduced Grader grass (<i>Themeda quadrivalvis</i>) is far less common in the eastern portion of the project site. . Consistent with regional ecosystem 9.11.3

Appendix G – Fauna species list

Table 27: Fauna species list.

Species Name	Common Name
Birds	
<i>Struthidea cinerea</i>	Apostlebird
<i>Anhinga novaehollandiae</i>	Australasian darter
<i>Sphecotheres vieilloti</i>	Australasian figbird
<i>Tachybaptus novaehollandiae</i>	Australasian grebe
<i>Cracticus tibicen</i>	Australian magpie
<i>Aegotheles cristatus</i>	Australian owl-nightjar
<i>Aerodramus terrareginae</i>	Australian swiftlet
<i>Threskiornis molucca</i>	Australian white ibis
<i>Chenonetta jubata</i>	Australian wood duck
<i>Ceyx azureus</i>	Azure kingfisher
<i>Cissomela pectoralis</i>	Banded honeyeater
<i>Ninox connivens</i>	Barking owl
<i>Geopelia humeralis</i>	Bar-shouldered dove
<i>Ixobrychus flavicollis</i>	Black bittern
<i>Coracina novaehollandiae</i>	Black-faced cuckoo-shrike
<i>Poephila cincta atropygialis</i>	Black-throated finch (northern)
<i>Entomyzon cyanotis</i>	Blue-faced honeyeater
<i>Dacelo leachii</i>	Blue-winged kookaburra
<i>Falco berigora</i>	Brown falcon
<i>Accipiter fasciatus</i>	Brown goshawk
<i>Lichmera indistincta</i>	Brown honeyeater
<i>Ramsayornis modestus</i>	Brown-backed honeyeater
<i>Climacteris picumnus</i>	Brown tree-creeper
<i>Cacomantis variolosus</i>	Brush cuckoo
<i>Acanthiza reguloides</i>	Buff-rumped thornbill
<i>Ardea ibis</i>	Cattle egret
<i>Scythrops novaehollandiae</i>	Channel-billed cuckoo
<i>Anas castanea</i>	Chestnut teal
<i>Coracina tenuirostris</i>	Cicadabird
<i>Accipiter cirrocephalus</i>	Collared sparrowhawk
<i>Irediparra gallinacea</i>	Comb-crested jacana
<i>Phaps chalcoptera</i>	Common bronzewing
<i>Ocyphaps lophotes</i>	Crested pigeon
<i>Eurystomus orientalis</i>	Dollarbird

Species Name	Common Name
<i>Taeniopygia bichenovii</i>	Double-barred finch
<i>Gallinula tenebrosa</i>	Dusky moorhen
<i>Tyto javanica</i>	Eastern barn owl
<i>Ardea modesta</i>	Eastern great egret
<i>Eudynamys orientalis</i>	Eastern koel
<i>Fulica atra</i>	Eurasian coot
<i>Cacomantis flabelliformis</i>	Fan-tailed cuckoo
<i>Todiramphus macleayii</i>	Forest kingfisher
<i>Plegadis falcinellus</i>	Glossy ibis
<i>Ptilonorhynchus nuchalis</i>	Great bowerbird
<i>Phalacrocorax carbo</i>	Great cormorant
<i>Nettapus pulchellus</i>	Green pygmy-goose
<i>Rhipidura albiscapa</i>	Grey fantail
<i>Colluricincla harmonica</i>	Grey shrike-thrush
<i>Aythya australis</i>	Hardhead
<i>Ardea intermedia</i>	Intermediate egret
<i>Microeca fascinans</i>	Jacky winter
<i>Dacelo novaeguineae</i>	Laughing kookaburra
<i>Myiagra rubecula</i>	Leaden flycatcher
<i>Microeca flavigaster</i>	Lemon-bellied flycatcher
<i>Phalacrocorax sulcirostris</i>	Little black cormorant
<i>Chalcites minutillus</i>	Little bronze-cuckoo
<i>Egretta garzetta</i>	Little egret
<i>Philemon citreogularis</i>	Little friarbird
<i>Colluricincla megarhyncha</i>	Little shrike-thrush
<i>Grallina cyanoleuca</i>	Magpie-lark
<i>Anseranas semipalmata</i>	Magpie goose
<i>Vanellus miles</i>	Masked lapwing
<i>Dicaeum hirundinaceum</i>	Mistletoebird
<i>Falco cenchroides</i>	Nankeen kestrel
<i>Nycticorax caledonicus</i>	Nankeen night-heron
<i>Philemon corniculatus</i>	Noisy friarbird
<i>Manorina melanocephala</i>	Noisy miner
<i>Oriolus sagittatus</i>	Olive-backed oriole
<i>Aviceda subcristata</i>	Pacific baza
<i>Anas superciliosa</i>	Pacific black duck

Species Name	Common Name
<i>Turnix varius</i>	Painted button-quail
<i>Platycercus adscitus</i>	Pale-headed rosella
<i>Cacomantis pallidus</i>	Pallid cuckoo
<i>Geopelia striata</i>	Peaceful dove
<i>Falco peregrinus</i>	Peregrine falcon
<i>Centropus phasianinus</i>	Pheasant coucal
<i>Cracticus nigrogularis</i>	Pied butcherbird
<i>Phalacrocorax varius</i>	Pied cormorant
<i>Strepera graculina</i>	Pied currawong
<i>Porphyrio porphyrio</i>	Purple swamphen
<i>Merops ornatus</i>	Rainbow bee-eater
<i>Trichoglossus haematodus</i>	Rainbow lorikeet
<i>Malurus melanocephalus</i>	Red-backed fairywren
<i>Calyptorhynchus banksii</i>	Red-tailed black cockatoo
<i>Aprosmictus erythropterus</i>	Red-winged parrot
<i>Myiagra inquieta</i>	Restless flycatcher
<i>Platalea regia</i>	Royal spoonbill
<i>Pachycephala rufiventris</i>	Rufous whistler
<i>Todiramphus sanctus</i>	Sacred kingfisher
<i>Myiagra cyanoleuca</i>	Satin flycatcher
<i>Myzomela sanguinolenta</i>	Scarlet honeyeater
<i>Ninox novaeseelandiae</i>	Southern boobook
<i>Dicrurus bracteatus</i>	Spangled drongo
<i>Streptopelia chinensis</i>	Spotted dove
<i>Geophaps scripta</i>	Squatter pigeon
<i>Threskiornis spinicollis</i>	Straw-necked ibis
<i>Pardalotus striatus</i>	Striated pardalote
<i>Cacatua galerita</i>	Sulphur-crested cockatoo
<i>Podargus strigoides</i>	Tawny frogmouth
<i>Corvus orru</i>	Torresian crow
<i>Dendrocygna arcuata</i>	Wandering whistling-duck
<i>Haliastur sphenurus</i>	Whistling kite
<i>Coracina papuensis</i>	White-bellied cuckoo-shrike
<i>Egretta novaehollandiae</i>	White-faced heron
<i>Ardea pacifica</i>	White-necked heron
<i>Gerygone albogularis</i>	White-throated gerygone

Species Name	Common Name
<i>Melithreptus albogularis</i>	White-throated honeyeater
<i>Rhipidura leucophrys</i>	Willie wagtail
<i>Lichenostomus flavus</i>	Yellow honeyeater
<i>Lichenostomus chrysops</i>	Yellow-faced honeyeater
Mammals	
<i>Equus callabus</i>	Brumby
<i>Trichosurus vulpecula</i>	Brushtail possum
<i>Canis familiaris (dingo)</i>	Dingo
<i>Macropus giganteus</i>	Eastern grey kangaroo
<i>Bos taurus</i>	European cattle
<i>Felis catus</i>	Feral cat
<i>Sus scrofa</i>	Feral pig
<i>Pteropus scapulatus</i>	Little red flying-fox
<i>Isodon macrourus</i>	Northern brown bandicoot
<i>Hydromys chrysogaster</i>	Water-rat; rakali
<i>Austronomus australis</i>	White-striped freetail bat
<i>Chalinolobus gouldii</i>	Gould's wattled bat
<i>Chalinolobus nigrogriseus</i>	Hoary wattled bat
<i>Chaerephon jobensis</i>	Northern freetail bat
<i>Miniopterus australis</i>	Little bentwaing bat
<i>Miniopterus orianae oceanensis</i>	Eastern bentwing bat
<i>Myotis macropus</i>	Large-footed myotis
<i>Nyctophilus</i> sp. (either <i>N. bifax</i> or <i>N. geoffroyi</i>)	Eastern long-eared bat; lesser long-eared bat
<i>Ozimops lumsdenae</i>	Northern free-tailed bat
<i>Ozimops ridei</i>	Eastern free-tailed bat
<i>Pipistrellus adamsi</i> (unconfirmed)	Cape York pipistrelle
<i>Rhinolophus megaphyllus</i>	Eastern horseshoe bat
<i>Saccolaimus flaviventris</i>	Yellow-bellied sheath-tail bat
<i>Scotorepens greyii</i>	Little broad-nosed bat
<i>Scotorepens sanborni</i> (unconfirmed)	Northern broad-nosed bat
<i>Taphozous troughoni</i>	Troughton's sheath-tail bat
Reptiles	
<i>Hemidactylus frenatus</i>	Asian house gecko
<i>Aspidites melanocephalus</i>	Black-headed python
<i>Carlia rostralis</i>	Black-throated rainbow-skink
<i>Boiga irregularis</i>	Brown tree snake

Species Name	Common Name
<i>Lialis burtonis</i>	Burton's legless lizard
<i>Suta suta</i>	Curl snake
<i>Ctenotus robustus</i>	Eastern striped skink
<i>Tropidonophis mairii</i>	Keelback
<i>Carlia jarnoldae</i>	Lined rainbow-skink
<i>Varanus mertensi</i>	Mertens' water monitor
<i>Cryptoblepharus metallicus</i>	Metallic snake-eyed skink
<i>Gehyra nana</i>	Northern spotted rock dtella
<i>Carlia schmeltzii</i>	Robust rainbow-skink
<i>Carlia munda</i>	Shaded-litter rainbow-skink
<i>Cryptoblepharus virgatus</i>	Striped snake-eyed skink
<i>Carlia vivax</i>	Tussock rainbow-skink
<i>Oedura</i> sp.	Velvet gecko
Amphibians	
<i>Litoria inermis</i>	Bumpy rocket-frog
<i>Rhinella marina</i>	Cane toad
<i>Litoria caerulea</i>	Green tree frog
<i>Litoria jungguy</i>	Northern stony creek frog
<i>Platyplectrum ornatum</i>	Ornate burrowing frog
<i>Litoria rothii</i>	Roth's tree frog
<i>Litoria nasuta</i>	Striped rocket frog