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Rockhampton Northern Access Upgrade

Review of Environmental Factors



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Review of Environmental Factors

Client: Department of Transport and Main Roads

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Executive Summary

This Review of Environmental Factors (REF) for the Rockhampton Northern Access Upgrade (RNAU) Business Case (BC) was completed in July 2017. A summary of key environmental recommendations for the Project are identified in this report.

The Project area is characterised by a mix of land uses such as residential, industrial, community facility, open space and commercial. The Project area contains environmental values where the alignment intersects Limestone Creek and Ramsay Creek.

This REF includes desktop searches and field survey results. A likelihood occurrence assessment identified the following species as having the potential to be impacted:

- Fitzroy River Turtle (*Rheodytes leukops*) – Vulnerable (EPBC) Vulnerable (NCA)
- Southern Snapping Turtle (*Elseya ablagula*) – Critically Endangered (EPBC) Endangered (NCA).

Key environmental impacts

The key impacts of the Project on the environment can be summarised as:

- potential impact on water quality within Limestone Creek and Ramsay Creek
- potential impact on sensitive receptors (i.e. impacts to air, noise and visual qualities)
- potential impacts from waterway barrier works in waterways; and
- clearance of six Black Ironbox (*Eucalyptus raveretiana*) (Vulnerable EPBC Act).

Key social impacts

The key social impacts of the Project can be summarised as:

- potential to disturb areas of cultural significance; and
- increased level of noise generated from traffic.

Legislative and Duty of Care requirements

A review of relevant environmental and heritage legislation was undertaken and identified the following requirements as potentially being triggered:

- waterway barrier works for permanent works in Limestone and Ramsay Creeks
- an NCA exempt clearing notification within one year of the protected plant flora survey
- native title notification in a number of reserve properties
- five Category 5 high risk cultural heritage areas are located within the Project area and require further assessment
- consultation with the Traditional Landowners to extend the existing cultural heritage field agreement or develop a Cultural Heritage Management Agreement; and
- a number of permit requirements remain unknown at this stage of the design process.

A summary of approvals required for this Project is provided in Appendix A.

1.0 Introduction

The Preliminary Evaluation (PE) Phase of the Rockhampton Northern Access Upgrade (RNAU) was completed in August 2016, with the Business Case (BC) Phase commencing in February 2017.

This report outlines the environmental technical evaluation for the BC Phase of the RNAU Project.

In accordance with the Transport and Main Roads (TMR) Environmental Process Manual, the purpose of the Review of Environmental Factors is to assess in further detail the Project's potential impacts following classification of the environmental component as 'high level' within the initial Environmental Scoping Report (ESR). The purpose of the Review of Environmental Factors is to reduce the level of uncertainty of potential impacts through a more detailed analysis of the existing environment and impact of the Project's aspects.

1.1 Project Location and Context

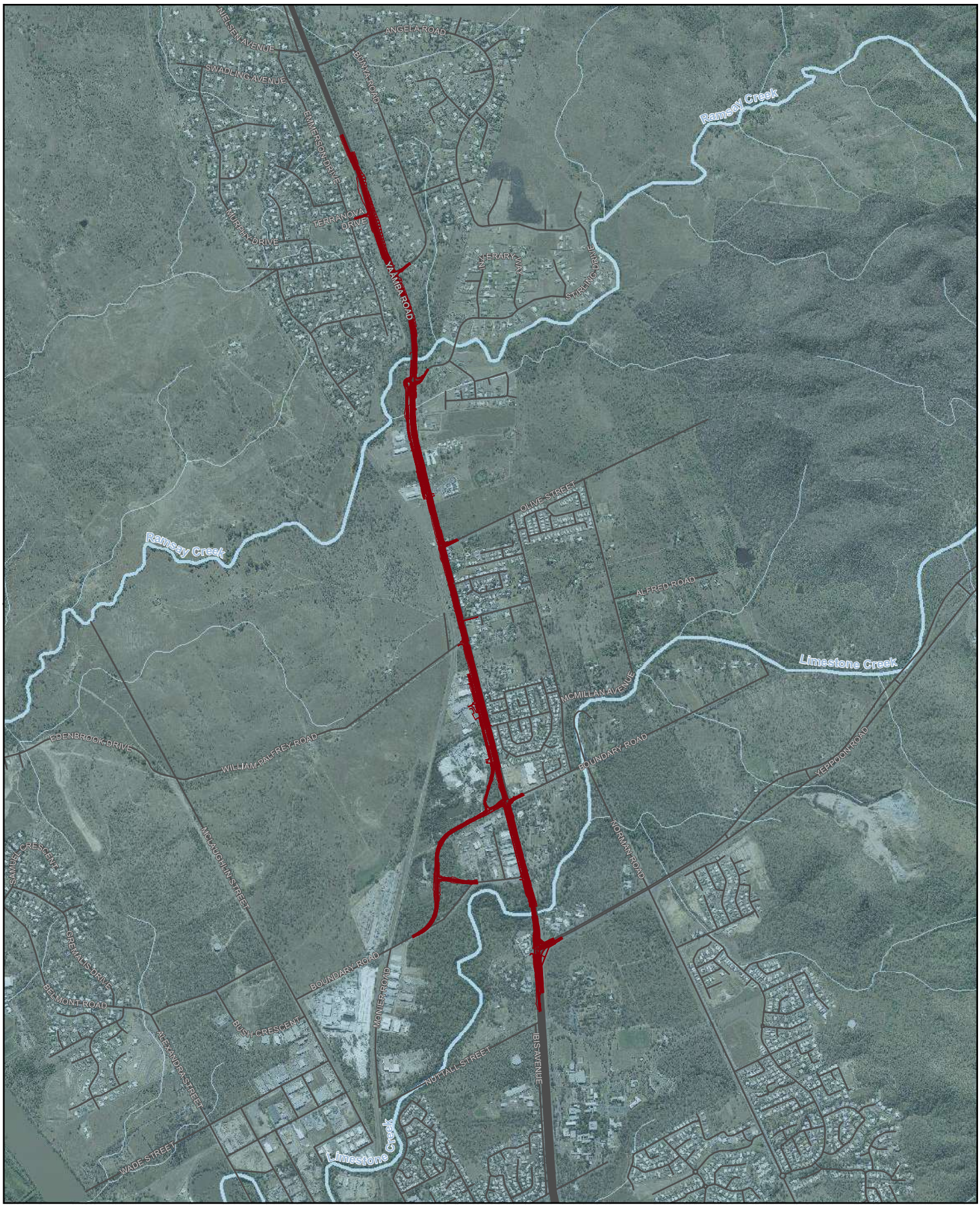
The Rockhampton Northern Access Upgrade (RNAU) Project is a section of the Bruce Highway located approximately 8 km north of Rockhampton city centre, in the suburb of Parkhurst. The Project area of RNAU extends for a length of 5.5 km from the intersection with Yeppoon Road through to the intersection with Terranova Drive.

The section of the highway north of the Rockhampton – Yeppoon Road intersection is currently a two lane highway with multiple sign controlled intersections and private entrances which provide access to the adjacent residential and industrial areas of Parkhurst. The Project alignment is illustrated in Figure 1.

The primary objective of the RNAU Project is to improve connectivity and capacity of the national highway which also acts as the only arterial road to service the industrial, commercial and residential developments within the Parkhurst vicinity. The Project is also expected to improve economic efficiency, safety and urban amenity for the northern outskirts of Rockhampton.

The Project is situated within a mix of existing land uses which comprise of residential, industrial, community facilities, open space and commercial. During the Preliminary Evaluation stage of the RNAU Project, two major residential developments were approved on the western side of the Project area. These are Stockland's development with approximately 2,350 lots and the Edenbrook development with approximately 750 lots. The impact of this additional development will increase demand on the identified section of highway.

Within the last ten years, this section has seen an increase in accidents. While the predominant accident types have involved vehicles, there have also been a number of pedestrian accidents. Increased traffic generated by developments within the area is believed to have contributed to the rise in accidents in this location (Department of Transport and Main Roads, 2016). The approved residential developments mentioned above will increase traffic along the section of road. The duplication works will assist in relieving traffic congestion (Department of Transport and Main Roads, 2016).



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Coordinate System: GDA 1994 MGA Zone 56
Projection: Transverse Mercator

0 200 400 800
Metres
1:30,000 (when printed at A4)

Legend
- Project Area
- Major roads
- Minor roads
- Major Creeks
- Minor Creeks



Data sources:
Rockhampton Imagery from SISP Imagery 2016

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RNAU Road alignment design

SITE LOCATION AND CONTEXT

PROJECT ID	60528953
CREATED BY	joaquin.rivera
LAST MODIFIED	smithc5 - 5/04/2017
VERSION:	1

Figure 1

Filename: P:\605X\60528953\4. Tech Work Area\4.99 GIS\02_MXDs\P60528953_RNAU_SiteLocationMap_20170215_V1_A4P.mxd

A4 size

1.2 Environmental Context

The Project area is situated within the Fitzroy River sub-basin. Limestone Creek, Ramsay Creek and a small unnamed waterway intersect the Project area. Runoff from the Project area is collected and drained largely into Limestone Creek and Ramsay Creek. The section of Limestone Creek within the Limestone Creek Conservation Park has the management intent of Aquatic ecosystem – high ecological values and across the rest of the Project area the management intent is that of moderately disturbed or highly disturbed.

Parks and reserves near the Project area include the Mt Archer National Park which is 4 km to the east, Ramsay Park to the north east, Bruce Highway North Park to the west and Boundary Park to the east.

Environmental features and constraints in and adjacent to the Project area are provided in Appendix B.

2.0 Preliminary Evaluation Phase Objectives and Options

The primary objective of the PE Phase (Options Analysis and Technical Evaluation) was to investigate and recommend road infrastructure options that provide an effective and affordable solution to improve traffic flow and improve choke points along the identified section of the Bruce Highway.

Four options were assessed in the PE Phase. The recommendation from the PE Phase was to investigate and refine (under the BC phase) the following:

- upgrading of the road to four lanes from the Yeppoon Road Intersection through to Ramsay Creek
- signalisation at the intersections of Boundary Road (north), Olive Street and Stirling Drive
- construction of two service roads to facilitate movement from the industrial properties on the western side of the road corridor
- construction of new concrete bridges over Limestone Creek
- realignment of Boundary Road across existing State Land, to accommodate the upgrading of the Boundary Road (north) Intersection and the Southern Service Road.

2.1 Preliminary Evaluation Phase Outcomes and Recommendations

The PE Phase outcomes and recommendations were as follows:

- That the RNAU Project should progress to the Business Case Development Phase of the evaluation and includes the following aspects:
  - construction of the Bruce Highway to a four lane carriageway with raised concrete medians
  - intersection upgrades, including signalisation at Boundary Road (north & south combined), Olive Street and Stirling Drive
  - construction of new concrete bridge over Limestone Creek; and
  - construction of service roads to improve highway access and resolve key conflict points.
- The ESR 2017 identified the Project as a high risk Project. Environmental factors which required further assessment are identified below:
  - flora survey requirements in high risk protected plant trigger areas
  - *Eucalyptus raveretiana* clearance at Limestone Creek
  - potential for fish and turtle habitat within Limestone Creek and fauna habitat values at both creeks and north and south of the Boundary Road intersection and service roads. Fish passage requirements to be incorporated into the Project design
  - determination status of creeks under the *Water Act 2000* to determine Riverine Protection Permit requirements
  - works in riparian areas and the potential for changes to water quality from both sediment during construction and operational impacts of the road
  - potential for waterway barrier works applications subject to design
  - potential for contaminated land assessment and disposal requirements; and
  - potential for amenity impacts on a range of residents and sensitive receptors.

3.0 Business Case Investigations and Results

3.1 Preferred Option Design Features

The PE Stage assessed four options which were to be investigated and refined under the Business Case (BC).

The proposed Project option, which was further defined under the BC, involves the following elements and activities:

- the alignment is a generally straight alignment with a bridge at each end; the new cross section will be 4 lane divided carriageways with urban treatments
- a new 65 m long northbound concrete bridge over Limestone Creek (with the existing bridge to be retained for southbound traffic)
- a new 65 m long separate pedestrian and cyclist bridge over Limestone Creek
- the upgrade of 2 un-signalised intersections (Olive Street and Stirling Drive (new signalised or optional roundabout))
- the upgrade of an existing signalised T-Intersection at Boundary Road (north) to 4 way signals
- non-signalised intersections at Bunya Road and Terranova Drive (optional signal intersection)
- modification of accesses to businesses and private properties and changes to local government roads
- several indented bus bays and on street parking provision
- highway runoff will be collected by a pit and pipe system with discharge to Limestone and Ramsay Creeks. Existing cross drainage systems will generally remain as existing
- relocation of services including Ergon Energy high voltage assets, gas main, telecommunications, optic fibre and the undergrounding of 3.96 km of 600 mm diameter water pipeline. This service is currently above ground and poses a significant risk to the traveling public
- construction of two service roads, the southern service road from Boundary Road (north) to Nu Tank Sales and the northern service road from William Palfrey Road to Stirling Drive; and
- construction of a new 33 m long southbound bridge over Ramsay Creek (with the existing bridge retained for northbound traffic).

3.2 Summary of Key Footprint Impacts

In summary, the main changes on the Project footprint comparing the PE Phase and the BC Phase are the:

- northern extension of the Project area to Terranova Drive
- inclusion of two service roads (between Boundary Road and William Palfrey Road and between Olive Street and Stirling Drive)
- inclusion of a roundabout located at Sterling Drive; and
- inclusion of an additional bridge crossing Ramsay Creek.

3.3 Construction and Ancillary Activities

Highway traffic will be able to use the existing road as the additional bridges are constructed.

Materials required for construction are expected to be sourced from local quarries in Rockhampton which are located within 3 km to 10 km of the Project area. Therefore Project activities will not involve quarrying activities to supply construction material. Material may be required to be extracted from the banks of the creeks to facilitate the construction of the bridges.

Construction on the bridges is not expected to exceed a six month timeframe. The contractor would be required to construct access tracks and pads to facilitate the bridge works. Temporary waterway barrier works are likely to be required to assist with bridge construction.

3.4 Project Delivery

The Project design is to be delivered as a Transport Infrastructure Contract – Construct Only (TIC-CO). The Project construction timeframes are to take place from January 2018 through to June 2019.

4.0 Assessment Process

An Environmental Scoping Report (ESR) was completed during the Project's Business Case phase (March 2017). The environmental risk assessment undertaken as part of the ESR identified the Project as representing a high environmental and cultural heritage risk, requiring further detailed environmental assessment (this report) to clearly determine the likely impacts and management requirements.

In response to the REF, an Environmental Management Plan (Planning) will be developed to identify recommended mitigation measures and strategies related to environmental impacts and legislative requirements.

4.1 REF Assessment Area

The REF assessment area has included the following:

- duplication of the section of highway from 250 m south of the Rockhampton – Yeppoon Road intersection on the Bruce Highway to 400 m north of the Terranova Drive (5.4 km in length)
- construction of a service road (Boundary Road (North) extension)
- two new bridges over Limestone Creek
- a new bridge over Ramsay Creek
- upgrade of un-signalled intersection to signalled at Olive Street
- upgrade of existing T-intersection at Boundary Road to four way signals; and
- one new roundabout situated at the Sterling Drive intersection.

4.2 Assessment Methodology

Desktop and field investigations were undertaken in preparation of this REF. Methodologies were developed based on the findings and recommendations of the ESR to target specific investigations which are detailed under each environmental factor (Section 5 to 15).

4.3 Previous Reports & Studies

Previous assessments for the Project include:

- Preliminary Evaluation Rockhampton Northern Access Upgrade (AECOM, 2016)
- Business Case: Rockhampton Northern Access Upgrade (AECOM, 2017)
- Rockhampton Northern Access Upgrade Traffic Modelling and Analysis (AECOM, 2017)
- Environmental Scoping Report Northern Access Upgrade Project Stage 1 (DTMR, 2014)
- Environmental Scoping Report: Rockhampton Northern Access Upgrade Project (2017) (AECOM, 2017)
- Rockhampton Northern Access Upgrade Economic & Financial Analysis (Nine Squared, 2017); and
- Cultural Heritage Field Agreement with Darumbal People (State of Queensland & Darumbal Enterprises Corporation / Darumbal Native Title Applicants, 2014).

5.0 Climate

5.1 Assessment Methodology

Bureau of Meteorology climate data for the Rockhampton Regional Council's local government area (Bureau of Meteorology, 2016a) has been reviewed as follows:

- average and seasonal rainfall data
- Average temperatures; and
- Seasonal humidity data.

5.2 Existing Factors

The Project area falls within a sub-tropical climate. The sub-tropical climate experiences regular north-west monsoonal influence. Rockhampton has an average annual rainfall of approximately 800 mm and experiences a distinct wet and dry season. The monthly mean rainfall figures vary greatly. The highest rainfall averages are recorded during summer / wet season months, with a maximum value recorded in February with 145.8 mm. Approximately 47% of the average annual rainfall recorded during the months of December, January and February.

The region experiences a large variation in mean annual rainfall due to its location in the Tropic of Capricorn. The Tropic of Capricorn runs across Queensland just north of Rockhampton and denotes the change in climate zones with changing latitude. The region is situated within a cyclone risk zone and Fitzroy River has a long documented history of flooding (Bureau of Meteorology, 2017). Limestone Creek is identified as being within the 100 year ARI flood extent (GHD, 2010).

Table 1 Rainfall statistics for all years at Rockhampton Airport (Rockhampton Aero) 39083 (Bureau of Meteorology, 2017)

Statistic (mm)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean Monthly	131.1	145.8	106.4	43.5	46.3	38.6	32.0	27.7	25.0	47.7	67.2	105.0
Median Monthly	88.2	108.5	69.5	31.7	27.9	23.5	14.4	15.9	13.1	39.8	58.7	79.0
Highest Daily	348.0	183.1	172.2	59.4	108.2	80.0	136.8	77.6	57.4	69.6	111.4	271.5

Temperatures recorded at Rockhampton Aero station (located approximately 8 km from the Project area) show the warmest temperatures are recorded during the summer months, with the average maximum temperature recorded in December (32.2°C). July is the coldest month on average with the lowest temperature of 23.2°C (Table 2). Within both winter and summer there is little variability in the average temperatures; the greatest difference is observed between winter months June and August (1.3°C). The temperature also remains relatively consistent across the year only varying up to 9°C (Bureau of Meteorology, 2017).

Table 2 Temperature Statistics for Rockhampton (Bureau of Meteorology, 2017)

Statistic (^{0}C)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean	32.0	31.3	30.5	28.8	26.0	23.5	23.2	24.8	27.4	29.7	31.3	32.2
Highest Daily	42.5	43.3	42.1	35.4	34.4	32.3	30.6	35.1	37.2	41..1	45.3	41.5
Lowest Daily	21.9	21.7	21.6	18.1	14.8	12.1	13.1	12.8	17.3	18.1	19.9	21.1

Table 3 Relative Humidity for Rockhampton (Bureau of Meteorology, 2017)

Statistic (%)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean 9 am relative humidity	70	73	72	71	71	72	72	68	65	62	62	66
Mean 3 pm relative humidity	53	57	54	49	47	46	42	40	40	42	46	49

5.3 Potential Impact / Opportunity

A *Natural Hazard and Climate Change Study* undertaken for the development of the Rockhampton Regional Planning Scheme identified the following future trends in weather patterns for the region:

- an increase of the average sea level be 0.8 m by 2100
- a change in sea temperature and chemistry
- an increase in the annual temperature by approximately 1°C in 2030
- a reduction in annual average rainfall by -3% in 2030 (medium scenario)
- a reduction of the number of cyclones. However, cyclones are expected to increase in the severity by between 22% and 56% by 2050
- an increase in storm surge magnitude (GHD, 2010).

Of the above, the primary trend of relevance to the Project is related to cyclone risk and severity area. Rockhampton is known to experience severe flooding events. The proposed works will increase the amount of sealed surfaces which has the potential to increased flooding within Limestone and Ramsay creeks and adjacent areas.

5.4 Approvals & Legislative Requirements

No approvals or legislative requirements are applicable.

6.0 Water

6.1 Assessment Methodology

The following datasets and references were reviewed:

- Department of Agriculture and Fisheries (DAF) waterways (Department of Infrastructure, Local Government and Planning DA mapping system, SARA Layers, Environment and Heritage, Fish Habitat Areas)
- Queensland Globe Inland Water (*Water Act 2000* Waterways)
- Flood information and average rainfall data (Bureau of Meterology, 2016b)
- Fitzroy Basin Water Resource Plan Area (Department of Resources and Mines, 2017)
- Fitzroy Basin Assessment (Great Barrier Reef Marine Park Authority, 2013)
- Natural Environment Study (RPS, 2010).

6.2 Existing Factors

Water Act 2000 Waterways

The Project area crosses three 'yet to be mapped' waterways identified under the *Water Act 2000*. Both the Limestone and Ramsay creeks flow into the freshwater component of the Fitzroy River above the Fitzroy River Barrage.

Flooding

Riverine floods in Rockhampton can occur from extended periods of rainfall within the 142,000 km^2 Fitzroy River basin. As peak discharge increases along the Fitzroy River, a key breakout occurs upstream of Rockhampton at the Pink Lily meander, which can result in the inundation of large areas of Depot Hill, Port Curtis and Allenstown. In addition, backwater effects impact low-lying areas adjacent to creeks on the northern side of Rockhampton, including Limestone Creek and Ramsay Creek which intersect the Project area (AECOM, 2017).

The Department of Natural Resources and Mines flood information identified the Project area as being situated above recorded maximum flood levels between 2010 and 2011. However Limestone Creek and Ramsay Creek have the potential to flood during an extreme flood event based on the Basin 1 % AEP and Basin Extreme Events mapping.

Surface Water Use

Limestone Creek and Ramsay Creek are ephemeral. Approximately 3 km west of the Project area is the Fitzroy River which is situated within the Fitzroy River Basin. The Fitzroy River Barrage occurs on the river to the south of the Project area, creating a water storage area extending 60 km upstream and is the primary water source for the Rockhampton, Gracemere, The Caves and Nerirmbera plus agricultural water to registered rural users. The barrage storage area is defined under the Fitzroy Basin Resource Operations Plan (ROP) as including sections of tributaries where there is access to flow or pondage from the Fitzroy River (Department of Natural Resources and Mines, 2015).

Rockhampton Regional Council holds a 50, 383 ML allocation within the Barrage storage for the supply of drinking water through the Glenmore water treatment plant, and for the supply of untreated irrigation water to rural users upstream of the Barrage. Fitzroy River Water is the resource operations licence holder for the Barrage storage and operates under the requirements of the Fitzroy ROP (Fitzroy River Water, no date).

To achieve sustainability requirements for the Project, TMR require the Contractor to investigate sources of non-potable water for use as construction and irrigation water during the Project including the harvesting of stormwater runoff in construction sediment detention dams and other sources.

Surface Water Quality

Water sampling to set a baseline assessment of the quality of the waterways in the Project area is planned to occur during detailed design and throughout construction (AECOM, 2017b). As the three watercourses are ephemeral with no base flow there is no water quality information publically available for these waterways, nor water quality objectives set for them. Runoff from the Project area is collected and largely drained into both these creeks. Water quality objectives for Fitzroy urban streams are set in the Environmental Protection (Water) Policy 2009 for the Fitzroy River Sub-basin and Plan WQ1305 – Surface Waters (DEHP, 2011).

Groundwater Hydrology and Groundwater Dependant Ecosystems

The Project area is located within the Fitzroy Basin Water Resource Plan Area, which came into effect in 2011. The Fitzroy Basin accesses groundwater from three distinct sources which are alluvial soils, sedimentary rock and fractured aquifers. The Fitzroy Basin has a total groundwater resource level of approximately 943,200 ML per annum. The agricultural industry within the Basin relies on the direct access to river water supplies. However when this is not possible, irrigated agriculture is supported by ground water supply. There is a concern that the groundwater supply within the basin is at risk of depletion from over-use, accordingly this form of water supply is mainly used for small crops and pastures (Great Barrier Reef Marine Park Authority, 2013).

No groundwater dependant ecosystems have been identified for the Project area from Queensland Globe Biota.

No ground water bores are within the Project footprint. However the following adjoining lots contain bores:

- Lot 2 RP609987 (RN 88570)
- Lot 21 SP171783 (RN 161033, RN 161034, RN 161257, RN 161035, RN 161036)
- Lot 1 SP197245 (RN 151704); and
- Lot 7 SP197245 (RN 151953).

6.3 Potential Impact / Opportunity

Flooding

The Business Case identified the flood immunity of the identified section of the Bruce Highway as adequate.

The following summarises the key findings of bridge hydraulic and scour design assessment (AECOM, 2017):

- Existing bridges are predicted to have greater than 1% AEP flood immunity and sufficient freeboard.
- Existing and design bridge structures are expected to experience flow velocities up to 4m/s under the bridge decks.
- Ramsay Creek bridge experiences higher scour potential on left bank influenced by left bank abutment, which is located on the outward bend.
- Limestone Creek bridges are expected to experience higher scour potential in left bank abutment, even though the existing bridge shows evidence of scour on the right bank abutment. This indicate cross flow may be occurring under bridge structures as creek bed is straightening after nearly ninety degree bend just upstream of the bridge.
- Both Limestone Creek and Ramsay Creek bridges received significant scour under 1% AEP design storm.

Surface Water Use

The Contractor will be encouraged to use non-potable water for construction works where feasible. It is noted however that no raw water or treated effluent lines are in close proximity to the Project area that could be drawn from as a supply source. Water sourced from the mouth of Limestone Creek may be considered to be part of the Fitzroy Barrage water storage area and the contractor would need to discuss this further with Fitzroy River Water. Rockhampton Regional Council would need to be approached in relation to whether there is water available from the water treatment plant. It is expected that further investigations would be required to pursue the use of non-potable water, including the merits and feasibility of water from sediment detention basins required for construction.

Water Quality

Construction and road use impacts have the potential to introduce further petroleum hydrocarbons and heavy metal contaminants into creek ecosystems. These parameters should be monitored during this year (subject to suitable seasonal high rainfall events) and during construction with potential impacts determined by assessing the level of toxicants in water against Australian Water Quality Guidelines (2000), and with reference to water quality objectives to protect aquatic ecosystem Environmental Values for baseline flow conditions established in relation to EP (Water) Policy for the Fitzroy River Sub-basin.

Groundwater Use

The Project is not expected to impact on groundwater hydrology or groundwater dependent ecosystems.

6.4 Approvals & Legislative Requirements

Water Act 2000

Three “Yet to be mapped” watercourses cross the Project area. Aerial imagery clearly identifies two watercourses which are Limestone Creek and Ramsay Creek. The third, south of Ramsay Creek is not easily identifiable in aerial photography. It is recommended that a determination is gained from DNRM on the status of these waterways. If any of the areas identified as “Yet to be mapped” are considered to be a watercourse under the *Water Act 2000*, the works will be required to comply with the Riverine Protection Permit or exemption requirements.

If the Construction Contractor intends to obtain water from the Fitzroy River barrage system for construction water, they will need to determine if they are entitled to apply for a water allocation or a seasonal water assignment from the Fitzroy River Barrage Water Storage or determine if an existing water allocation holder is prepared to undertake a temporary trade of their water allocation as part of their feasibility assessment (Fitzroy River Water, 2017).

For other water sources outside of the barrage system, the taking of water would need to comply with the DNRM exemption requirements “Exemption requirements for constructing authorities for the take of water without a water entitlement” (WWS/2013/666) (Version 3.02). The constructing authority must notify the chief executive, in writing, 10 business days before commencing the take of water.

7.0 Soil and Land Management

7.1 Assessment Methodology

The following datasets and references were reviewed:

- soil mapping (Queensland Government, 2016)
- acid sulphate soil mapping provided in the Rockhampton Regional Planning Scheme 2015
- Queensland Government mapping of 'important agricultural areas' (Department of Agriculture and Fisheries, 2016)
- Contaminated land mapping (Environmental Management Register (EMR) / Contaminated Land Register (CLR)); and
- Desktop investigation of potential contamination risk from previous land uses associated with properties listed on the EMR/CLR (Appendix E).

7.2 Existing Factors

Geology

Primary geological units within the study area consist of the following units (Department of Mines, 1975):

- Qha – Quaternary alluvium, consisting of gravel, sand, silt, clay – primarily within the river and creek alignments
- Plb – Lower Permian aged Berserker Beds consisting of acid lapilli tuff, vitric and crystal tuff, andesitic and acid flows, agglomerate, tuffaceous conglomerate, mudstone and lithic arenite – located within the proposed road corridor and eastern part of the study area
- Clr – Carboniferous aged Rockhampton group consisting of mudstone, siltstone, feldspathic and lithic arenite, conglomerate, oolitic limestone & arenite– located west of the highway alignment and railway alignment
- Pub – Upper Permian Eulogie Park Gabbro consisting of gabbro & diorite – occurring as isolated outcrops within the Lower Permian Berserker Beds tuffs in the east of the study area and east of the road alignment.

Key structural features include a fault indicated to be present west of the road alignment trending north-northwest to south-southeast. The fault forms the primary boundary between the Rockhampton Group mudstones and Berserker Beds tuffs.

The primary geology encountered within the road alignment and proposed expansion is:

- Qha – Quaternary alluvium, within the river and creek alignments that cross the road; and
- Plb – Lower Permian aged tuff forming the underlying geology within the proposed road corridor.

Soil

The soils within the Project area have been highly disturbed by past road construction and maintenance activities.

The ASRIS mapping identified the following soils:

- Vertosols (northern section of the site)
- Sododols (central section of the site); and
- Rudosols (southern section of the site).

A desktop search identified discrepancies with the acid sulfate soils mapping within the Project area. Queensland Globe did not identify acid sulfate within the Project area (the closest site was located approximately 4.1 km from the Project area). ASRIS mapping identified the Project area as having a low probability of containing acid sulfate soils. However, the Rockhampton Planning Scheme identified a section of the Project area to the south (within Limestone Creek) and near Boundary Road as containing acid sulfate soils.

Site specific geotechnical investigations are to be undertaken to determine if ASS and PASS are within the Project area, amongst other matters. Samples will be obtained from within Limestone Creek. Other locations which will be sampled for acid sulfate soils are within the southern section of the Project area which includes the service roads. Environmental soil sampling is also to occur along the length of the alignment.

A conceptual Erosion and Sediment Control Plan in line with the IECA Best Practice Sediment and Erosion Control Manual and MRTS 52 is to be developed during the detailed design.

Contaminated Land & Environmental Management Register

Contaminated land is land which has been exposed to hazardous substances which may pose a risk to human health or the environment, and can result from land use activities such as landfills, service stations or fuel storage. Registered activities which are likely to cause contaminated land are recorded on the Environmental Management Register (EMR) and areas of land proven to be contaminated and which are causing or could cause serious environmental harm are recorded on the Contaminated Land Register (CLR).

A desktop contaminated land review has been undertaken for the Project (AECOM, 2017). The review identified eleven lots adjacent to the Project area which are listed on the Queensland Environmental Management Register (EMR) (refer to Table 4). Historical imagery shows evidence of industrial activities on the identified lots (Appendix E).

Table 4 Summary of Lots Registered on the Qld EMR adjacent to proposed Road Corridor inclusive of properties that will be resumed[1]

No	Lot & Plan No	Details & Observations
1	Lot 70 LN2378	Central Queensland University – Educational Institution No additional EMR details sighted Aerial imagery review indicates open or vegetated land adjacent to road corridor
2	Lot 92 LN2178	G James Holdings Pty Ltd Glass & Aluminium No additional EMR details sighted Aerial imagery review indicates buildings outside potential road corridor footprint
3	Lot 105 SP108704	Joy Global Australia Pty Ltd – Joy Mining Machinery No additional EMR details sighted Aerial imagery review indicates buildings and lay-down area adjacent to road corridor.
4	Lot 1 RP604139	QMCH Pty Ltd / QMC (Kunawarara) Pty Ltd / QMC REFMAG Pty Ltd No additional EMR details sighted Aerial imagery review indicates vacant land adjacent to road corridor. Unidentified materials located on paved ground approx. 100 m from current road alignment
5	Lot 2 RP604139	QMCH Pty Ltd / QMC (Kunawarara) Pty Ltd / QMC REFMAG Pty Ltd - Sibelco No additional EMR details sighted Aerial imagery review indicates site weighbridge and administration building & parking adjacent to road corridor
6	Lot 4 SP229024	Title not sighted No additional EMR details sighted Aerial imagery review indicates commercial/warehouse buildings
7	Lot 2 RP603056	 No additional EMR details sighted Aerial imagery review indicates potential service station
8	Lot 22 SP134380	State of Queensland - sub-leased to Queensland Rail Ltd No additional EMR details sighted Aerial imagery review indicates open undeveloped land.
9	Lot 69 CP910378	State of Queensland No additional EMR details Aerial imagery indicates vacant land next to rail corridor with areas of previous disturbance
10	Lot 3 RP601877	State of Queensland No additional EMR details Arial imagery review shows vacant land next to railway
11	Lot 1 RP608429	Title not sighted No additional EMR details sighted Aerial imagery shows vacant land on one half and building site on other

[1] Note the contaminated land report in Appendix E does not include the property resumptions.

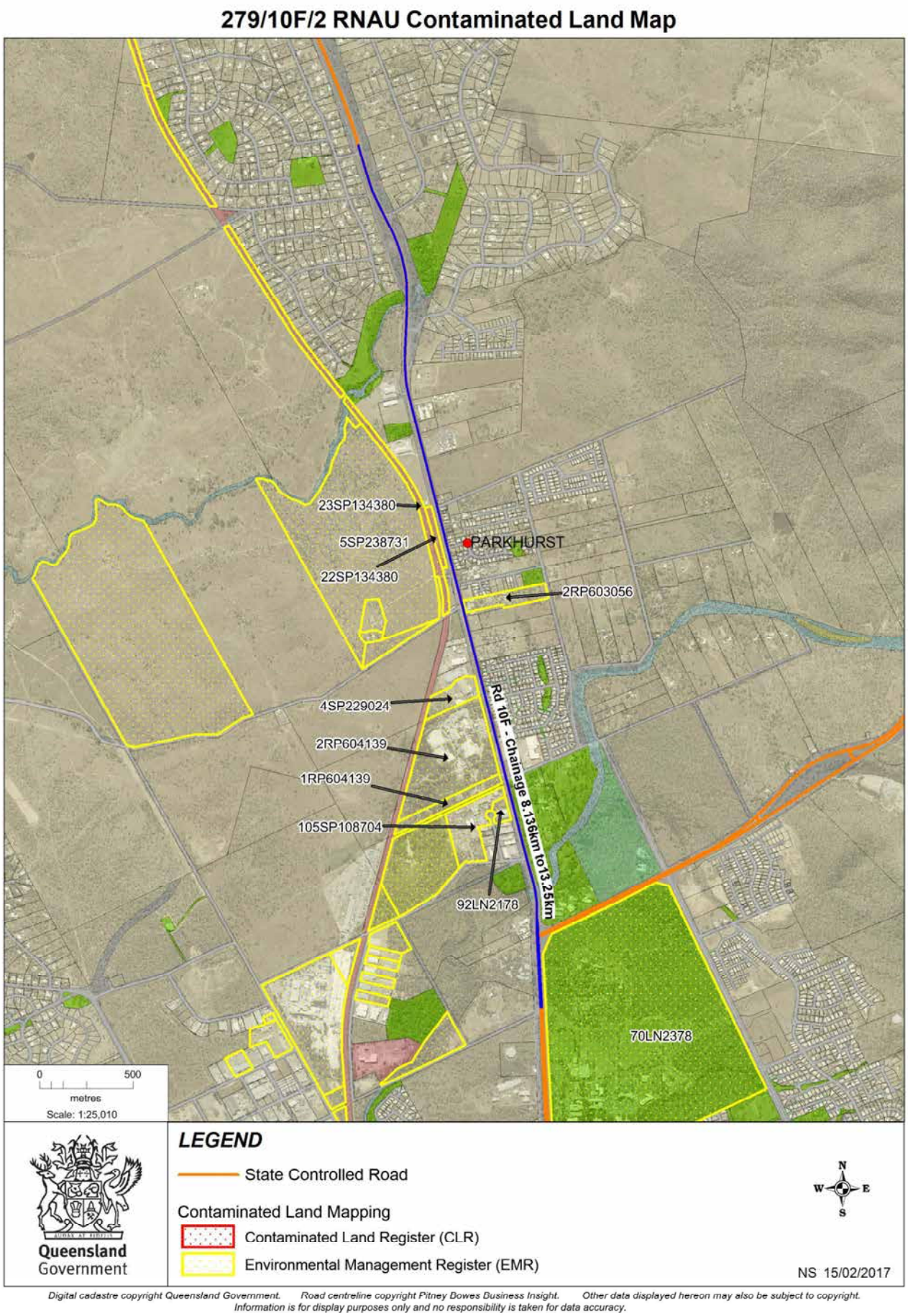


Figure 2 – Lots listed on the EMR and CLR in or near the project upgrade area

Soil Management

A Concept Erosion and Sediment Plan will be developed for the RNAU Project during the detailed design. Findings of the Concept ESCP will be incorporated into the contract annexures.

7.3 Potential Impact / Opportunity

Acid Sulfate Soils

The proposed excavation works have the potential to expose acid sulfate soils within the Project area. The exposure of acid sulfate soils could result in their oxidation and subsequent release of contaminants (sulphuric acid, iron and aluminium) which could harm the receiving environment.

Contaminated Land & Environmental Management Register

Eleven properties affected by the proposed road are listed on the Environmental Management Register including the driveway to Sibelco (formerly Queensland Cement (Lot 2 RP604139)). The desktop review provided two recommendations. The first is to conduct a visual verification to identify *de-minimis conditions* within lots located adjacent to the planned disturbed area. This visual verification can assist in refining the current risk profile for soils. The Construction Environmental Management Plan (CEMP) is considered appropriate to manage risk associated with the above described conditions. The second recommendation is to carry out site inspections on the eleven lots identified on the EMR to determine if there is a need to undertake any further investigations. The lateral and vertical extent of the potential contamination within the respective high risk lots should be considered in the context of the planned areas of disturbance during the construction activities. The chemical analysis of soil samples and verification of the presences of potential soil contamination would be used to inform CEMP to guide construction activities.

Soil Management

The Project will involve the major earthworks (cut and fill) for the duplication, intersections, service roads, instalment of traffic lights, a roundabout and associated infrastructure. The soil types vary across the Project area.

The Project will require an appropriate Erosion and Sediment Control Plan as specified by MRTS52.1, as part of the Construction Environmental Management Plan. Works should be scheduled to ensure that disturbed areas are revegetated / minimised progressively as soon as practicable after completion of works.

7.4 Approvals & Legislative Requirements

Based on the information available at the time of this report, an Acid Sulphate Plan may be required for the Project in areas that could expose PASS. Findings from the geotechnical investigation will inform this decision once soil test findings are available.

The Project area contains lots which are listed on the EMR. Contaminated soil removed to facilitate the works may not be able to be treated on site. If so, a Disposal Permit will need to be obtained under the *Environmental Protection Act 1994*.

The Project will require an Erosion and Sediment Control Plan and estimates of quantities in accordance with MRTS52.

8.0 Biodiversity – Flora

8.1 Assessment Methodology

A desktop assessment reviewed the following databases and key references:

- Department of the Environment and Energy online EPBC Protected Matters Search Tool (EPBC PMST)
- Queensland Herbarium RE mapping (Version 8)
- Species data from Wild net (Wildlife Online) and Atlas of Living Australia
- Wetland mapping (EHP)
- Essential habitat mapping (EHP); and
- Flora survey trigger map.

Ecological site investigations have been undertaken in late January 2017 and in early May 2017. The site investigations included:

- a protected plants survey undertaken according to the Protected Plant Survey Guidelines (NCA 1992) (refer to Appendix D)
- ground truthing of Regional Ecosystem (RE) mapping including one tertiary site within mapped regrowth to consider potential remnant status
- habitat assessment and characterisation with specific consideration of EVNT flora and fauna species and migratory fauna species (refer to Appendix C); and
- opportunistic searches for EVNT listed fauna species identified from the desktop review.

The site investigations considered ecological aspects and potential habitat availability in the Project area and surrounds.

8.2 Existing Values

The assessment included both desktop reviews and field studies within the Project area. The Project area has been cleared historically cleared and thinned of native vegetation and is subject to agricultural, mining and land development practices. The Cultural Heritage Risk Assessment includes a review of aerial imagery from 1956 to the present which demonstrates the changes to the landscape of the Project area (AECOM, 2017a). This review indicates that a large portion of the Project area was cleared sometime before 1956 for pastoral and agricultural activities as well as for the road corridor. During the late 1960s and early 1970s industrial and housing development becomes evident and the isolated pockets of remnant vegetation left in the 1950s were cleared. During the mid-1970s it would appear that the road corridor in the northern section of the Project area was shifted slightly to the east of the current alignment and may have cleared remnant vegetation. From 1980s to the present, areas adjacent to the northern section were cleared for housing development. The aerial imagery shows that discrete pockets of vegetation appeared to remain uncleared in or adjacent to the south of the Project area including around Boundary Road (AECOM, 2017a). Figure 3 shows the periods of vegetation change in the Project area.

The online searches (PMST and Wildlife Online) identified 21 species of flora occurring, or potentially occurring within 20 km of the Project area (refer to Appendix C). A likelihood of occurrence of assessment was undertaken to identify the likelihood of each species occurring within the Project area. The species that were identified as having a moderate to high likelihood of occurring within the Project area include:

- *Eucalyptus raveretiana* – Vulnerable (EPBC) (Present)
- *Stackhousia tryonii* – Near Threatened (NCA) (Moderate); and
- *Samadera bidwillii* – Vulnerable (EPBC and NCA) (Moderate).

The Department of Environment and Heritage Protection's Protected Plants Flora Survey Trigger Mapping identified majority of the Project alignment as being within a 'high risk area' under the *Nature Conservation Act 1992*. Site investigations were initially undertaken in late 2013 and March 2014 as part of the original ESR by DTMR. Further recent field studies were undertaken in January 2017 and May 2017 to encompass the increased Project footprint.

The 2013 / 2014 site investigations identified the presence of several mature Black Iron Box (*Eucalyptus raveretiana*) (listed as Vulnerable under the EPBC Act) located surrounding Limestone Creek. The Environmental Scoping Report (ESR) (dated April 2014) identified three of the specimens located on the Rockhampton Yeppoon Road as likely to have been planted as a part of gardens and beautification of Queensland Government Department grounds, as supported by anecdotal evidence. Recent field studies carried out under the NCA flora survey guidelines are reported on in Appendix D.

No EVNT species listed under the NC Act were identified during the field survey. However, fifty two individuals of Black Ironbox (*Eucalyptus raveretiana*), were identified within the clearing impact area. These trees were identified along Limestone Creek. An additional four individuals were identified along Yeppoon Road and two within gardens of the Sibelco property, however, these individuals have been planted, and do not require consideration for clearing permits.

The Project area has not been mapped on the Vegetation Management Map to contain remnant regional ecosystems. However aerial photography and field surveys identified an area of significant regrowth vegetation south of Boundary Road, in association with Limestone Creek.

The EPBC Act Protected Matters Search Tool (PMST) identified the potential presence of four threatened ecological communities (TEC) within or surrounding the Project footprint. Field studies for the Project have identified the following regional ecosystems (RE) within the Project area:

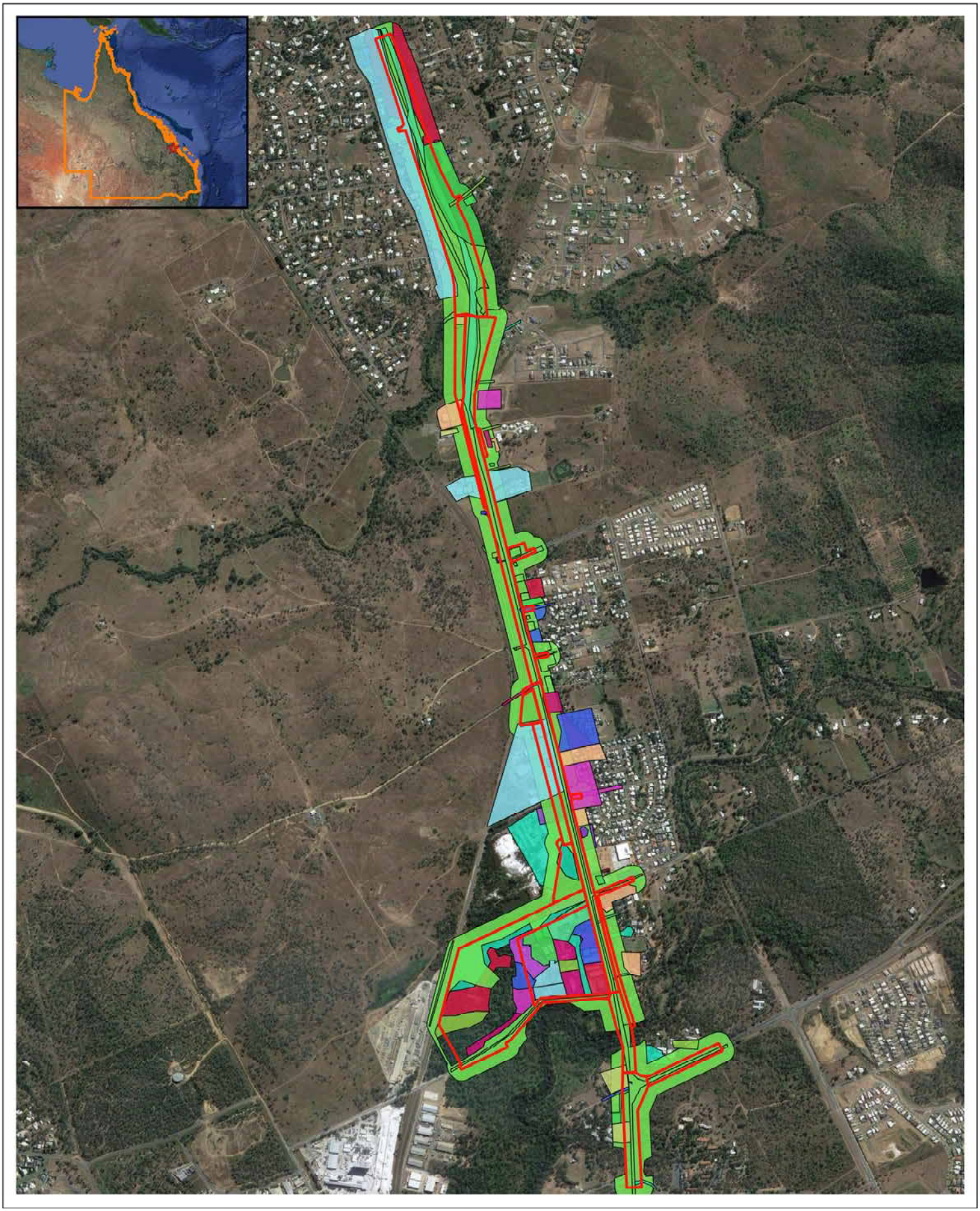
- RE 11.3.4: *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains (Of Concern)
- RE 11.3.25a: *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines (Least Concern).

These regional ecosystems and landforms within the area are not analogous with the TECs identified in the EPBC search findings.

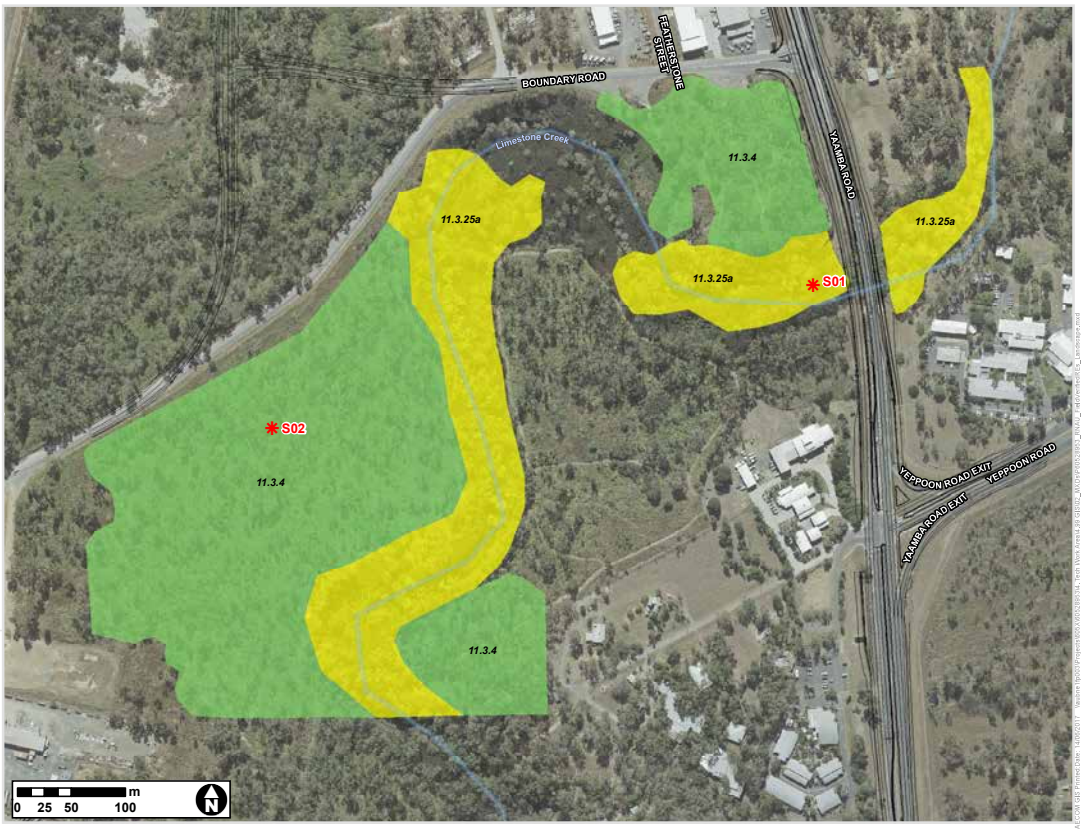
Figure 4 shows the extent of vegetation that is considered to be remnant by field survey for the project.

No wetland or wetland protection areas have been identified as present within or surrounding the Project area. No essential habitat has been mapped within the Project area.

The field survey identified that no marine plants occurred within the Project area.


LEGEND
Historic Disturbance
1956
1961
1964
1970
1973
1975
1978
1982
1988
1990
1992
1994
1999
2004
2017
AECOM
www.aecom.com
0 100 200 300 400 m
1:12,000 (when printed at A3)
Data Sources:
Qimagery (DNRM)
Rockhampton Northern Access Upgrade
Heritage Assessment Report
Disturbance of Project Area from 1956-2017 Aerial Photographs
PROJECT ID 60528953
CREATED BY PB
LAST MODIFIED 09-5-2017
VERSION 1
Figure 3





LEGEND

- Flora Site
- Project Area
- Major Creeks
- Minor Creeks

Field Verified Regional Ecosystems

- 11.3.25a
- 11.3.4

AECOM

SIZE	COORDINATE SYSTEM
A3	GDA 1994 MGA Zone 56

TITLE

Figure 4
Field Verified
Regional Ecosystems

REPORT

PRELIMINARY FLORA AND FAUNA TECHNICAL REPORT

DISCLAIMER

Spatial data used under licence from The State of Queensland 2017.

AECOM makes no representations or warranties of any kind, about the accuracy, reliability, completeness, suitability or fitness for purpose in relation to the map content.

8.3 Potential Impact / Opportunity

Vegetation Clearing

The proposed work have been identified as having the potential to impact a small area of RE 11.3.25a (Least Concern) and RE 11.3.4 (Of Concern) between Limestone Creek and Boundary Road on the western side of the Bruce Highway. It is expected that the works would result in the clearing of approximately 2,971 m^2 at Limestone Creek.

Threatened Species

The Project is expected to remove and or disturb up to six individuals of Black Ironbox (*Eucalyptus raveretiana*) (Vulnerable (EPBC).

Mitigation and Rehabilitation

The Preliminary Flora and Fauna Technical Report (Appendix C) provides the following mitigation measures to reduce the Project impact on flora and fauna habitat:

- Ensure all personnel are aware of the key ecological issues on site, mitigation measures and policies / restrictions related to vegetation clearing prior to the commencement of works.
- Pre-clearance surveys immediately prior to clearing should be implemented.
- A licenced fauna spotter catcher is to be engaged during all clearing works.
- Clearing of native vegetation should be limited to the minimum possible extent that is necessary for construction where practicable, particularly in drainage lines. The clearing footprint should be clearly marked prior to construction and no-go zones of any sensitive areas established. Existing tracks and open areas should be utilised where possible.
- Clearing should be undertaken in dry weather conditions to reduce soil disturbance. Where clearing is required during wet weather conditions, sediment control measures should be implemented such as sediment trap devices to reduce sediment runoff and loss of topsoil.
- Clearly mark any native trees to be removed (including *Eucalyptus raveretiana*) and avoid disturbance to the canopy and root zones of adjacent trees outside of the disturbance footprint. Limit the removal of whole trees where practicable. An arborist should undertake the removal or pruning of trees within the Project area.
- Access roads and cleared areas should be watered during construction to minimise dust emissions and loss of topsoil.
- Erosion control measures should be implemented to reduce sediment loss through run-off and vegetation clearing in erosion prone areas and during in-stream works.
- All hazardous substances and materials including fuels, oils and chemicals should be stored, handled and disposed of in such a way as to minimise potential leakage to the environment.
- Develop and implement a Weed Management Plan to manage weeds that may impact on the natural plant biodiversity values of the area and surrounding land. This plan should focus on prevention and awareness, early detection and monitoring and control.
- Areas disturbed by construction will be rehabilitated as soon as possible to limit the chance of weed incursion, or erosion.
- Landscaping and revegetation in riparian areas should be employed to promote soil stabilisation and discourage weed establishment. Any landscaping proposed should consider native, endemic species where practicable.
- Regeneration and revegetation efforts in Limestone and Ramsay Creek areas should promote native biodiversity, reduce weed invasion and improve habitat quality. Revegetation / reseeding efforts should be based on soil types, existing local vegetation characteristics and endemism of selected species and should involve the implementation of a monitoring program (annual to biannual).

- A suitable EMP and CEMP documents should be prepared to clearly document site specific and design specific risks and control measures.
- A licenced fauna spotter catcher is to be engaged during all clearing works.

8.4 Approvals & Legislative Requirements

Vegetation Management Act 1999

The proposed Project foot print is expected to impact less about 2,971 m^2 of remnant vegetation which is not mapped as regulated vegetation. TMR has exemptions to clear vegetation within a State Controlled Road.

Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The proposed works will impact on a Matter of National Significance by removing six Black Ironbox (*Eucalyptus raveretiana*) trees listed as Vulnerable under the EPBC Act. An EPBC self-assessment is recommended to determine EPBC referral requirements.

Nature Conservation Act 1992

A protected plant permit is not required for the Project as no EVNT species listed under the NC Act were identified within the clearing impact area. However an Exempt Clearing Notification must be submitted to EHP within one year of the survey being undertaken and at least one week prior to the clearing commencing. The clearing must be undertaken within two years after the flora survey report is given to EHP.

9.0 Biodiversity – Fauna

9.1 Assessment Methodology

A desktop assessment reviewed the following databases and key references:

- Department of the Environment and Energy Protected Matters Search (EPBC PMST)
- Queensland Herbarium RE mapping (Version 8)
- species data from Wild net (Wildlife Online) and Atlas of Living Australia
- wetland mapping (EHP)
- essential habitat mapping (EHP); and
- flora survey trigger map.

9.2 Existing Values

DAF Waterways and Fish Passage

Waterway determinations under the *Fisheries Act 1994* use several colours to identify their level of risk of impact on fisheries. These are as follows (Department of Agriculture and Fisheries , 2017):

- green (low impact)
- amber (moderate impact)
- red (high impact)
- purple and grey (major).

Constructing or raising barrier works in a waterway will trigger development applications if they are not considered accepted development under DAF's Accepted development requirements for operational works that is constructing or raising waterway barrier works (DAF, 2017). A key consideration in a waterway barrier application is providing for appropriate fish passage.

Three of the waterway crossings in the Project are identified as DAF waterways. Specific waterway crossing characteristics in terms of potential impact risks include:

- Limestone Creek is mapped as a high impact (red) waterway and is situated north of Yeppoon Road
- a small creek (unknown name) is mapped as a low impact (green) waterway and is located south of Stirling Drive
- Ramsay Creek is mapped as a moderate impact (amber) waterway located north of Stirling Drive.

According to the DA mapping there are no tidal waterways within the Project area.

Species found

An EPBC Act Protected Matters Search identified 44 fauna species as potentially occurring within a 20 km search of the Project area. A likelihood of occurrence assessment identified the following species:

- Fitzroy River Turtle, *Rheodytes leukops* – Vulnerable (EPBC and NCA); and
- Southern Snapping Turtle, *Elseya albagula* – Critically Endangered (EPBC).

The Fitzroy River Turtle is generally found in fast flowing clear freshwater rivers and rivers with deep pools with rocky, gravelly or sandy substrates, connected by shallow riffles (Wilson, 2005, DOE 2012). While most records are in the primary streams of the Fitzroy, there are two records from the last decade for Fitzroy Turtle in estuarine environments below the Barrage. Assuming these records are of live turtles this may imply that habitat characteristics are broader than presented in the literature. Given this and habitat assessment of Limestone Creek, which contains deep clear pools and shallow riffles, sandy to gravely substrate and riparian cover, plus the finding of an unidentified turtle remains

in the Creek (TMR 2014) it is considered that Limestone Creek as habitat is suitable for Fitzroy River Turtle and Southern snapping Turtle for similar reasons.

Migratory Species

There were 30 migratory species identified in the EPBC Act Protected Matters and Wildlife on line searches as potentially occurring within a 20 km search of the Project area. However the site investigations have not identified any feeding, roosting or breeding habitat for the species identified. Additionally a large proportion of the identified species were marine species and it is not likely that core habitat for these species will be within and surrounding the Project area.

As the Project area containing the proposed road duplication is already within a heavily disturbed road corridor in an urban environment, the potential for migratory animals or species to be present and / or for works to have a significant impact is limited. If there were to be any migratory species present at site, there is potential for short term displacement due to construction activities, particularly noise and physical activity however this is expected to only be an impact during construction phases of the Project. Indirect impacts such as downstream contamination of waterways due to site water runoff will be managed appropriately through the use of a site specific CEMP and therefore risk of such an impact is considered unlikely.

Riparian and Instream Habitat

Ramsay Creek near the existing bridge structure is heavily overgrown and modified by para grass (Plate 1). Access further up and downstream along the creek bed was difficult due to the level of weed infestation.

Limestone Creek at the time of survey had a large isolated water body upstream of the bridge which was connected to smaller pools in the vicinity of the bridge by a narrow rocky streambed which would form a shallow riffle area during times of flow. Riparian vegetation included mature Melaleuca and Eucalypts. The water column was algae rich and supported a dense community of *Valisneria* species with Potemogeton and Nymphaea species also present. Directly downstream another large isolated waterbody was observed. Riparian vegetation was heavily infested with Leucaena and introduced grasses with canopy species including *E. tereticornis*, *E. raveretiana* and *Melaleuca* sp. Stream bed substrate was observed to be coarse, heavily silted sand (Plate 2). The water body was observed to contain water milfoil, *Vallisneria* sp. and a small area of *Nymphacea* sp. Small fish were observed in the water.

Essential Habitat

No essential habitat areas have been identified as present within or surrounding the Project area.



Plate 1 Ramsay Creek as viewed downstream from underneath existing bridge structure



Plate 2 Upstream of Limestone Creek Bridge

9.3 Potential Impact / Opportunity

Waterways

The proposed works will see the construction of additional bridge crossings on Limestone and Ramsay creeks. A new 65 m long northbound concrete bridge and a new 65 m long separate pedestrian and cyclist bridge will be constructed over Limestone Creek. A new 33 m long southbound bridge will be constructed over Ramsay Creek. The additional structures will facilitate both an increase in vehicle and active transport.

A new culvert will be required in the unnamed green DAF waterway.

At present, no temporary side access tracks are expected to be required for highway traffic to cross Limestone and Ramsay Creek during construction. However access tracks will be required to facilitate construction activities within the creeks.

During construction works, sediment runoff has the potential to cause degradation of the water quality of watercourses within the Project area. Implementation of sediment controls in works areas to protect water quality in the creeks and catchment will be a significant requirement for the construction contract.

Threatened Species

The proposed works have the potential to disturb Fitzroy River Turtle (*Rheodytes leukops*) and the Southern Snapping Turtle (*Elseya albagula*) habitat if present in Limestone Creek. Impacts could be associated with:

- small scale vegetation clearing and riparian habitat loss
- potential impacts to turtles which may include:
    - predation of or destruction of nesting habitat in river banks if either turtle species are present and using area as nesting habitat
    - flow regulation or blockages / barriers to water flow and seasonal migration
    - reduction of water quality; and
    - over time, occurrence of dense stands of aquatic weeds.

Fish Species

Field studies have identified the presence of species even with limited water in the area. The occurrence of small fish and an unidentified turtle was observed during the 2013/2014 field studies. In the broader area three fish species have been recorded in Moores Creek to the south of the Project area (Agassiz's Chandra Perch, Eastern Queensland Rainbow Fish, Chequered Gudgeon), with Banded Grunter, Fly-speckled Hardyhead, striped Gudgeon, Common Eel-tail catfish within 5 km of Limestone Creek (Atlas of Living Australia, 2017). Kreft's turtle has been recorded in Limestone Creek Conservation Park. There is a previous record for Irwin's turtle (*Elseya irwini*) west of Parkhurst.

Fish Passage and Fauna Sensitive Design

Temporary and permanent structures will need to provide for fish passage and connectivity that is adequate for fish and turtle movement in the area. This will need to be a focus during the detailed design in relation to the design of structures and management during construction and long term rehabilitation requirements for the Project.

The Rockhampton natural environment study identifies Limestone and Ramsay creeks and riparian vegetation has having a moderate total biophysical rating. The study recommended an urban nature corridor with a minimum width of 30 m each side of both creeks is maintained (RPS, 2010).

9.4 Approvals & Legislative Requirements

Fisheries Act 1994

The proposed works have the potential to trigger waterway barrier works for the permanent bridge structures over Limestone and Ramsay creeks (refer to Appendix A). The final detailed design of the bridges will determine approval requirements, however at this stage it would appear that piers in both creeks will be in the low flow channel and in Ramsay Creek the bridge abutments may extend beyond the toe of the creek bank.

A Development Approval is not required where works are considered accepted development. The document cited below defines the standards and accepted development requirements: Factsheets on what is and what is not waterway barrier work are also relevant.

- *Accepted development requirements for operational work that is constructing or raising waterway barrier works* (DAF, 2017)
- What is not waterway barrier work? (Department of Agriculture and Fisheries, 2014)
- What is waterway barrier work? (Department of Agriculture and Fisheries, 2014).

Multi-span Bridges

Dependent on the final detailed design, the bridges may not be classed as waterway barrier works if they meet the criteria of "what is not waterway barrier works" (Department of Agriculture and Fisheries, 2014). New multi span bridges are not considered waterway barrier works (and therefore do not require development permits) when the following is met:

- the pier or pile and or pier/pile platforms are completely outside the low flow channel in amber and green waterways (this requirement applies to Ramsay Creek)
- the abutments do not extend into the waterway beyond the high bank and the abutment revetment works do not extend into the waterway beyond the toes of the banks (this requirement applies to both Limestone and Ramsay Creeks); and
- for both Limestone and Ramsay Creeks bed scour protection is placed at or below the natural bed level of the waterway and does not change the characteristics of the low flow channel, and cannot be extended more than 20 m upstream and downstream of the structure.

Culverts on DAF Waterways

Culverts for intentional duplications[2] are not considered to be accepted development by DAF and require a development application.

Temporary Works

Temporary works within a red waterway (Limestone Creek) require works to commence and finish within a maximum time of 180 calendar days (inclusive of instream sediment and instream silt control measures associated with the works).

Temporary works within an amber waterway (Ramsay Creek) require works to commence and finish within a maximum time of 360 calendar days (inclusive of instream sediment and instream silt control measures associated with the works).

Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The likelihood of occurrence assessment identified the potential for the Fitzroy River Turtle (*Rheodytes leukops*) and the Southern Snapping Turtle (*Elseya albagula*) occurring within the Project area. Therefore the proposed works have the potential to impact a Matter of National Significance by disturbing habitat if the species is present. As it is possible that Limestone Creek may contain suitable habitat, it is recommended that a targeted survey during the turtle nesting season is undertaken. Should the species be found and or it is clear that nesting or nesting habitat exists, an EPBC self-assessment to determine if the proposed works are likely to pose a significant impact.

[2] "Intentional duplication means purposefully making a copy of an existing structure e.g. a single lane is duplicated to form a dual lane" (DAF, 2017)

Nature Conservation Act 1992

TMR is to comply with requirements under the *Nature Conservation Act 1992*. A spotter catcher is to be on site in the event of any clearing activities. All removal or translocation of wildlife must be undertaken by a suitably licenced (in possession of a damage mitigation permit) and experienced person.

10.0 Pest Flora and Fauna

10.1 Assessment Methodology

Pest flora and fauna were recorded during field surveys within the Project assessment area. Moreover, the following data sources were used to add to field records:

- Department of the Environment and Energy online EPBC PMST
- Wild net (Wildlife Online) and Atlas of Living Australia; and
- Queensland Government Maps of Queensland biosecurity zones.

10.2 Existing Factors

The Project area has experienced substantial land modifications. The field survey recorded 64 flora species. Of these species, eight are classified as Category 3 restricted invasive plants under the *Biosecurity Act 2014* and five as Weeds of National Significance (WONS).

Table 5 Introduced flora identified during field surveys

Scientific Name	Common Name	Status Category[1]
Schinus terebinthifolius	Brazilian Pepper	Category 3
Cryptostegia grandiflora	Rubber Vine	Category 3 (WoNS)
Harrisia martinii	Cactus	Category 3 (WoNS)
Tamarix aphylla	Athel pine	Category 3 (WoNS)
Lantana camara	Lantana	Category 3 (WoNS)
Lantana montevidensis	Creeping lantana	Category 3
Lantana camara		WoNS
Opuntia spp.	Prickly pear	Category 3
Acacia farnesiana	Mimosa Bush	Category 3

1. Restricted invasive categories and restrictions in Queensland are:
Categories 1 & 2: the species must be reported within 24 hours Biosecurity Queensland on 13 25 23; Category 3: the invasive plant must not be distributed either by sale or gift, or released into the environment; Category 4: the invasive plant must not be moved; Category 5: the invasive plant must not be kept.

No pest fauna species were recorded during the field surveys; however the Wildlife Online and EPBC protected matters searches generated the following pest fauna species list. Of these species seven are classified as restrictive invasive animals under the *Biosecurity Act 2014*.

Table 6 Invasive animals potentially occurring within the Project assessment area (Queensland Government, 2016).

Scientific Name	Common Name	Status / Category [1]
Rhinella marina	Cane toad	
Capra hircus	Goat	Category 3
Felis catus	Cat	Category 3
	Feral deer	Category 3
Lepus capensis	Brown hare	
Mus musculus	House mouse	
Oryctolagus cuniculus	European rabbit	Category 3
Rattus rattus	Black / Ship rat	

Scientific Name	Common Name	Status / Category [1]
Sus scrofa	Pig	Category 3
Vulpes vulpes	Red Fox	Category 3
Canus lupus familarus	Dog	Category 3
Gambusia helbrock	Mosquito fish	Categories 3, 5, 6, 7
Poecillia reticula	Guppy	

1. Restricted invasive categories and restrictions in Queensland are:
Categories 1 & 2: the species must be reported within 24 hours Biosecurity Queensland on 13 25 23; Category 3: the invasive animal and or fish must not be distributed either by sale or gift, or released into the environment; Category 4: the invasive species must not be moved; Category 5: the invasive species must not be kept. Category 6 (invasive species such as feral deer, foxes, rabbits, wild dogs and noxious fish) must not be fed. A person holding a Category 7 species (usually noxious fish) must kill the restricted species and dispose of the carcass by burying the waste in a waste disposal receptacle.

10.3 Potential Impact / Opportunity

The Project has the potential to introduce new weeds and spread existing species (through machinery and earthworks). The establishment of new populations and expansion of existing pest plant densities has the potential to further deteriorate fauna habitat which is already under pressure. To ensure weed species are not spread, the control of restrictive invasive weeds in accordance with MRTS51.1 will be required to establish effective control methods of declared and invasive species across the Project area.

10.4 Approvals and Legislative Requirements

Biosecurity Act 2014

The *Biosecurity Act 2014* (the Act) came into effect on 1 July 2016. The Act's intent is to improve Queensland's biosecurity preparedness and response capabilities, and imposes a general biosecurity obligation to all individuals and organisations whose activities pose a biosecurity risk to ensure activities do not spread a pest, disease or contaminant. These responsibilities include:

- taking all reasonable and practical steps to prevent or minimise each biosecurity risk
- minimising the likelihood of the risk causing a biosecurity event and limit the consequences of such an event; and
- preventing or minimising the adverse effects the biosecurity risk could have and refrain from doing anything that might exacerbate the adverse effects.

A biosecurity risk is considered to exist when anyone deals with any pest, disease or contaminant, or with something that could carry one of these factors. This includes, for example, moving diseased plant material, or associated soil or equipment, off a property. Everyone is obligated to take all reasonable and practical steps to minimise the risks associated with invasive plants under their control, known as the general Biosecurity duty of care.

The Act and associated regulation sets out zones and movement restrictions in Queensland as follows:

Cattle Tick Biosecurity Zone

The Project area is situated within a Cattle Tick Infested Zone and is defined as "part of the State identified as the cattle tick infested zone on the cattle tick biosecurity zone map is established as a biosecurity zone for cattle ticks" under the Biosecurity Regulations 2016.

A cattle tick is identified as:

- *Rhipecephalus (Boophilus) australis*
- *Rhipecephalus (Boophilus) microplus.*

Given the Project is for the duplication of an existing section of highway and associated works, it is unlikely to involve cattle tick carriers and spread cattle ticks.

Sugar Cane Biosecurity Zone

The Project assessment area is within Sugar Cane Biosecurity Zone 3 (Abbotts Point to Rockhampton). The Project area is located in close proximity to the zone boundary and has the potential to transport sugar cane pest carriers via construction plant and materials.

A sugar cane pest carrier is defined as:

a. a vegetative part of a sugar cane plant; or

b. soil, or other growing mediums, in which a sugar cane plant has been grown; or

c. an appliance that has come into contact with a part of a sugar cane plant mentioned in (a) or soil mentioned in (b).

Sugar cane pest carriers must not be moved from a place outside of Queensland into a biosecurity zone or from a place within a biosecurity zone to any place outside of that zone unless:

- risk minimisation requirements for a sugar cane pest carrier are met; and
- a biosecurity certificate from an inspector or accredited certifier has been obtained.

The works are to meet the MRTS51 requirements for pest and weed control. These requirements will be incorporated into the CEMP.

11.0 Cultural Heritage

11.1 Assessment Methodology

In May 2017, a Cultural Heritage Risk Assessment (CHRA) was undertaken (AECOM, 2017a). The CHRA identified the Darumbal People as the traditional owners and the potential for indigenous artefacts to be found within undisturbed areas within the Project area. A Cultural Heritage Field Agreement (CHFA) was completed between TMR and Darumbal Enterprise on 24 March 2014 upon the completion of a site survey for the Rockhampton Northern Access Upgrade Stage 1. Stage 1 of the Project was identified as being heavily disturbed and no cultural heritage sites or values were identified by the Darumbal people. Darumbal Enterprise provided advised that no further cultural heritage assessments of mitigations were required for Stage 1 of the Project. Sections of the current Project area are not situated within the CHFA area and required further consultation with Darumbal Enterprise.

The investigations also included searches of State and Federal cultural heritage registers which did not identify any European heritage sites within the Project area. Bauhinia trees which are thought to have been planted for commemorative purposes are located within the Project footprint. These trees may have local significance.

11.2 Existing Values

The CHRA identified five Category 5 (high risk) sites along the alignment which require further assessment. Table 7 provides information on the identified sites.

Table 7 Details of Category 5 sites

Property / location description	Category	Past use / ground disturbance	Description of vegetation / features	Management Recommendations
Lot 70 LN2378 (From 10m to 50m, adjacent to the eastern boundary of the Project area)	High risk Category 5.	From 10m to 50m, adjacent to the eastern boundary of the Project area	Old growth / remnant *Eucalyptus crebra*.	Outside of current Project area. Further cultural heritage assessment required if Project works extend into this area.
Limestone Creek crossing adjacent to Lot 207 LN1609 (Within the Project area extending 80m east of the southern boundary of the Project area)	High risk Category 5 (area outside current Project footprint).	Within the Project area extending 80m east of the southern boundary of the Project area	Creek crossing Old growth / remnant *Eucalyptus crebra* on alluvial plain. Section within Project area surveyed for previous CHFA, and no cultural heritage values identified. Section outside of Project area not previously surveyed.	Implement standard TMR inductions and chance find procedures. Further assessment required if Project works extend beyond current footprint, into unsurveyed area.
Lot 2 RP605659 (Adjacent to Project area, south of the Boundary Road)	High risk Category 5	Adjacent to Project area, south of the Boundary Road	Old growth / remnant *Eucalyptus crebra* on alluvial plains.	Outside of current Project area. Further cultural heritage assessment required if Project works extend into this area.
Lot 69 CP910378 (Adjacent to Project area, north of Boundary Road)	High risk Category 5	Adjacent to Project area, north of Boundary Road	Old growth / remnant *Eucalyptus crebra* on alluvial plains.	Outside of current Project area. Further cultural heritage assessment required if Project works extend into this area.
Lot 69 CP910378 (Within the Project area, north of Boundary Road)	High risk Category 5	Within the Project area, north of Boundary Road	Old growth / remnant *Eucalyptus crebra* on alluvial plains.	Further cultural heritage assessment required.

In terms of local heritage, there are tree plantings on the western boundary of the Project area that have been planted by a local community group presumably through a local beautification Project. Many of these trees may be impacted by works. It is understood that the original floral emblem of Rockhampton was *Bauhinia hookeri* (now known as *Lysiphyllum hookeri*), and the tree has a strong local tradition of recognition in the town. The trees planted in the Project area, however, are the introduced *Bauhinia sp.*

11.3 Potential Impacts / Opportunities

Recommendations from the Cultural Heritage Risk Assessment include further consultation with the Darumbal People to determine if the additional sections of the Project area contain any significant cultural heritage sites or values. If the Darumbal People do not deem the sites to be of cultural significance then the existing Cultural Heritage Field Agreement may be extended to encompass the entirety of the Project area. However if the extended sections are seen to contain cultural values it is recommended that TMR should consider the creation of a Cultural Heritage Management Agreement to ensure that the values are appropriately managed.

Should community groups indicate concern regarding the removal of these trees, it is recommended that landscaping incorporate the native flora emblem in key locations.

11.4 Approvals & Legislative Requirements

The *Aboriginal Cultural Heritage Act 2003* requires that a person who carries out an activity must take all reasonable and practicable measures to ensure that the activity does not harm Aboriginal cultural heritage.

Under the Duty of Care guidelines, works within Category 3 are considered highly modified and do not trigger the requirement for Traditional Owners engagement. Category 4 and 5 areas are triggers for engagement with the Traditional Owners, to ensure appropriate management and protection of cultural heritage values.

To ensure TMR's addresses their Cultural Heritage Duty of Care under the *Aboriginal Cultural Heritage Act 2003*, it is recommended that further consultation be conducted with the Darumbal People on the new scope of work. By doing so, the Darumbal People will be given the opportunity to inspect and assess the additional sections of the Project area which do not fall within the CHFA area. If the area is identified as not containing any cultural significance, the CHFA can be amended to include the additional area. Should the Darumbal People identify the works as being at risk of harming significant Aboriginal heritage, TMR may need to consider a Cultural Heritage Management Agreement to ensure the area is managed appropriately.

12.0 Public Amenity / Health

12.1 Assessment Methodology

Air Quality

In accordance with the Project's Terms of Reference and relevant guidelines, air quality impacts were assessed using the adopted assessment methodology outlined below:

- consider and list the likely emissions to be generated from the construction works and key activity sources (such as earthworks for dust)
- consider the requirements of the Transport and Main Roads (TMR) Road Traffic Air Quality Management Manual under the Environmental Protection (Air) Policy 2008 and National Environmental Protection Measure (Ambient Air Quality / Air Toxics)
- describe existing environment and air quality within the study area
- undertake desktop review of aerial photographs to consider whether emissions may impact on dwellings, agriculture, and health and wellbeing
- consider prevailing wind directions, locations of high-risk emissions sources on construction site and identify likely impacted receptors
- predict potential construction emissions and assess. Advise whether construction emissions are likely to adversely impact upon receptors
- recommend management measures to mitigate potential impacts; and
- make recommendations as to whether further assessment is warranted.

Visual Amenity

The assessment methodology used to determine impacts on visual amenity by the proposed works is outlined below:

- observations made during general site inspections
- Queensland Globe (Planning Cadastre); and
- A Landscape and Visual Assessment was conducted as required by the Road Landscape Manual (Lat27, 2017).

Noise

The following field assessments are currently being undertaken:

- noise monitoring assessment (undertaken from May 2017 to June 2017).

12.2 Existing Factors

The alignment of the RNAU is situated within a mix of existing land uses which include residential, industrial, community facility, open space and commercial uses. TMR is required to comply with General Environmental Duty as required under the *Environmental Protection Act 1994*.

A sensitive receiver (air quality) includes the following:

- a dwelling (detached and attached), reformatory institution, caravan park or retirement village
- a library, child care centre, kindergarten, school, school playgrounds, college, university, museum, art gallery or other educational institution
- a hotel, motel or other premises which provides accommodation for the public
- a protected area, or an area identified under a conservation plan as a critical habitat or an area of major interest under the *Nature Conservation Act 1992*; and

- a public park or gardens that is open to the public (whether or not on payment of a fee) for use other than for sport or organised entertainment (passive recreation only) (DTMR, 2014).

Sensitive receptors for noise and vibration are defined in accordance with the Transport Noise Code of Practice Volume 2 as:

- a dwelling (detached or attached) including house, townhouse, unit, reformatory institution, caravan park or retirement village
- a library, child care centre, kindergarten, school, school playground, college, university, museum, art gallery, or other educational institution, hospital, respite care facility, nursing home, aged care facility, surgery or other medical centre
- a community building including a place of public worship
- a court of law
- a hotel, motel or other premise which provides accommodation for the public
- a commercial (office) or retail facility
- a protected area, or an area identified under a conservation plan as a critical habitat or an area of major interest under the NC Act; and
- an outdoor recreational area (such as public park or gardens open to the public, whether or not on payment of fee, for passive recreation other than for sport or organised entertainment) or a private open space.

There are a number of sensitive receptors and sensitive receivers within and adjacent to the works including:

- Low and medium density residential zoning
- Parkhurst State School
- Parkhurst Early Learning Centre
- Dreamtime Cultural Centre; and
- Rockhampton Heritage Village.

Sensitive receptors and sensitive receivers which are located further from the Project boundary are:

- Oak Tree Retirement Norman Gardens (approximately 0.4 km)
- Norman Road at North Rockhampton Centre (approximately 1.7 km)
- Family Practice at Glenmore (approximately 2.6 km)
- Heights Collage (approximately 1.1 km)
- Carinity Education – Rockhampton (approximately 2.7 km)
- Glenmore State High School (approximately 2 km)
- Stockland’s residential development (recently approved for approximately 2,350 lots)
- Edenbrook’s residential development (recently approved for approximately 750 lots)
- Ramsay Park (reserve)
- Lot 104 LN2416 (reserve)
- Lot 40 SP169165 (reserve)
- Joseph Harrison Park (300 m east)
- Lot 35 RP866013 (reserve) (300 m east)
- John Hegvold Park (300 m east)

- Bill Neven Park (300 m east)
- Boundary Road Park (170 m east); and
- Limestone Creek Conservation Park Adjacent to the Project area).

Air Quality

From an air quality perspective, Parkhurst is moderately developed and has large areas of vacant or vegetated land. Overall the area is expected to have no existing air quality issues.

The city of Rockhampton is centred on the Fitzroy River and is primarily spread across topographically low-lying areas. The suburb of Parkhurst, while not directly along the Fitzroy, is largely flat terrain of low elevation. Connecting waterways such as Ramsay and Limestone creeks are present in the Project area. The Berserker Mountain Range is approximately 2 km east of the Study Area (with Mt. Archer, elevation of 604 m), and has potential to create some localised afternoon wind conditions. Furthermore, the site is approximately 30 km inland and well within sea breezes influences. Overall, wind conditions have minimal variations across the seasons with similar wind strengths (moderate-strong) and prevailing wind directions (east to south-east) recorded. This is expected to be due to Rockhampton's relatively close proximity to the coastline.

The Department of Environment and Heritage Protection (DEHP) has an ambient monitoring network across Queensland that monitors for controlled pollutants in areas with large population bases or heavy industry adjacent to residential areas. The Rockhampton region does not have DEHP air quality monitoring. The nearest is located in the Gladstone region which has been used as a conservative estimated for the Project.

DEHP has nine air quality monitoring stations across the Gladstone region which measure local industrial emissions and air movement (Figure 5). Of these stations only 4 have been considered relevant to the RNAU Project area.

Both the Boyne Island and South Gladstone stations are not considered representative of the RNAU Project area as they are located south of the Gladstone CBD (furthest away from Study Area), and are likely to experience the greatest impacts from industrial air emissions. The Fisherman's Landing monitoring station was also not considered representative, the Central Qld Air quality 2016 bulletin stating "*The monitoring site at Fisherman's Landing was established in March 2016 in close proximity to Curtis Island to measure the impact of any emissions from LNG facilities. The site is located on industrial land and, as such, measured pollutant levels do not reflect typical population exposure in the Gladstone region*". Auckland Point station only measures PM_{10}, and is located to directly monitor impacts from port operations. The Aldoga station only monitors wind speed and direction.

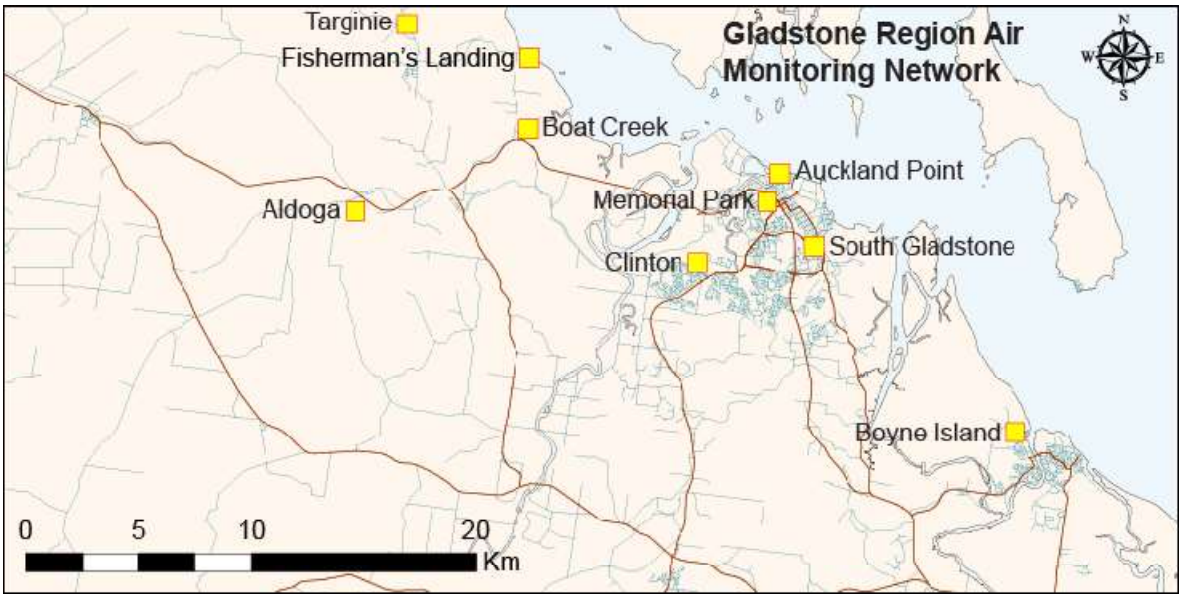


Figure 5 Qld EHP (2017) map of air quality monitoring stations in Gladstone Region

The DEHP sites considered representative of the RNAU study area are detailed below:

Table 8 Details of DEHP air quality monitoring stations

DEHP Monitoring Site	Coordinates	Commencement Date	Monitors
Clinton	-23.870, 151.222	N/A	Nitrogen oxides, sulfur dioxide, PM_{10} & $PM_{2.5}$.
Memorial Park	-23.843, 151.253	2009	Ozone, nitrogen oxides, sulfur dioxide and organic pollutant.
Boat Creek	-23.820, 151.154	2008	Nitrogen oxides, sulfur dioxide, PM_{10} & $PM_{2.5}$.
Targinie	-23.774, 151.106	1991	Nitrogen oxides, sulfur dioxide, PM_{10} & $PM_{2.5}$.

Table 9 Maximum measured concentrations for each criterion contaminant sourced from 2016 Air Bulletin Data

Pollutant	Averaging period	Units	Clinton	Memorial Park	Boat Creek	Targinie	EPP (Air) 2008 Criteria
NO_2	1 hour	Ppm	0.031	0.032	0.033	0.043	*0.12*
	Annual	Ppm	0.004	0.005	0.005	0.004	*0.03*
SO_2	24 hour	Ppm	0.007	0.016	0.013	0.012	*570*
	1 hour	Ppm	0.052	0.091	0.060	0.072	*230*
	Annual	Ppm	0.001	0.003	0.002	0.002	*57*
PM_{10}	24 hour	$\mu g/m^3$	28.0	N/A	30.6	26.0	*50*
$PM_{2.5}$	24 hour	$\mu g/m^3$	17.1	N/A	10.7	14.7	*25*
	Annual	$\mu g/m^3$	4.9	N/A	4.6	4.4	*8*

Note: 'N/A' refers to absence of data in cases where such pollutant was not monitored

According to the NPI database there is one listed emission source existing within the Study Area that may influence local air quality. Queensland Magnesia has a mineral processing site in Parkhurst North on the Bruce Highway. Reported at this site are the following; Carbon Monoxide, oxides of Nitrogen, PM_{10} and total Volatile Organic Compounds (VOCs). The most recent reporting data available is from July 1st 2014 to June 30 2015 and is presented in table below. As Queensland Magnesia is located on the western side of the Study Area, any potential air pollutants are likely to travel further west or north-west with the winds.

Table 10 2014/2015 air monitoring data summary for Queensland Magnesia, Parkhurst North

Substance	Air Total (kg)	Air Fugitive (kg)	Total (kg)
Carbon Monoxide	121.4	121.4	121.4
Oxides of Nitrogen	192	192	192
PM_{10}	1309	1309	1309
Total Volatile Organic Compounds	15.9	15.9	15.9

Landscape and Visual Amenity

The Project area is surrounded by a mix of land uses and characteristics such as industrial, residential and agricultural uses. Additionally, the area is surrounded with features which include open eucalypt forest, mountain ranges, creeks with fringing vegetation, open space, a rail corridor and educational facilities. A Landscape and Visual Assessment (LVA) identified the characteristics present and groups the features into seven landscape character types (LCTs) (Lat27, 2017). The seven LCTs are:

- Elevated Forest
- Nature / Recreation Creek
- Lowland Rural
- Acreage Residential
- Suburban Residential
- Industrial / Warehouse / Quarry; and
- Commercial Tourist / Institutional.

Figure 6 shows the location of the landscape character types across the Project area.

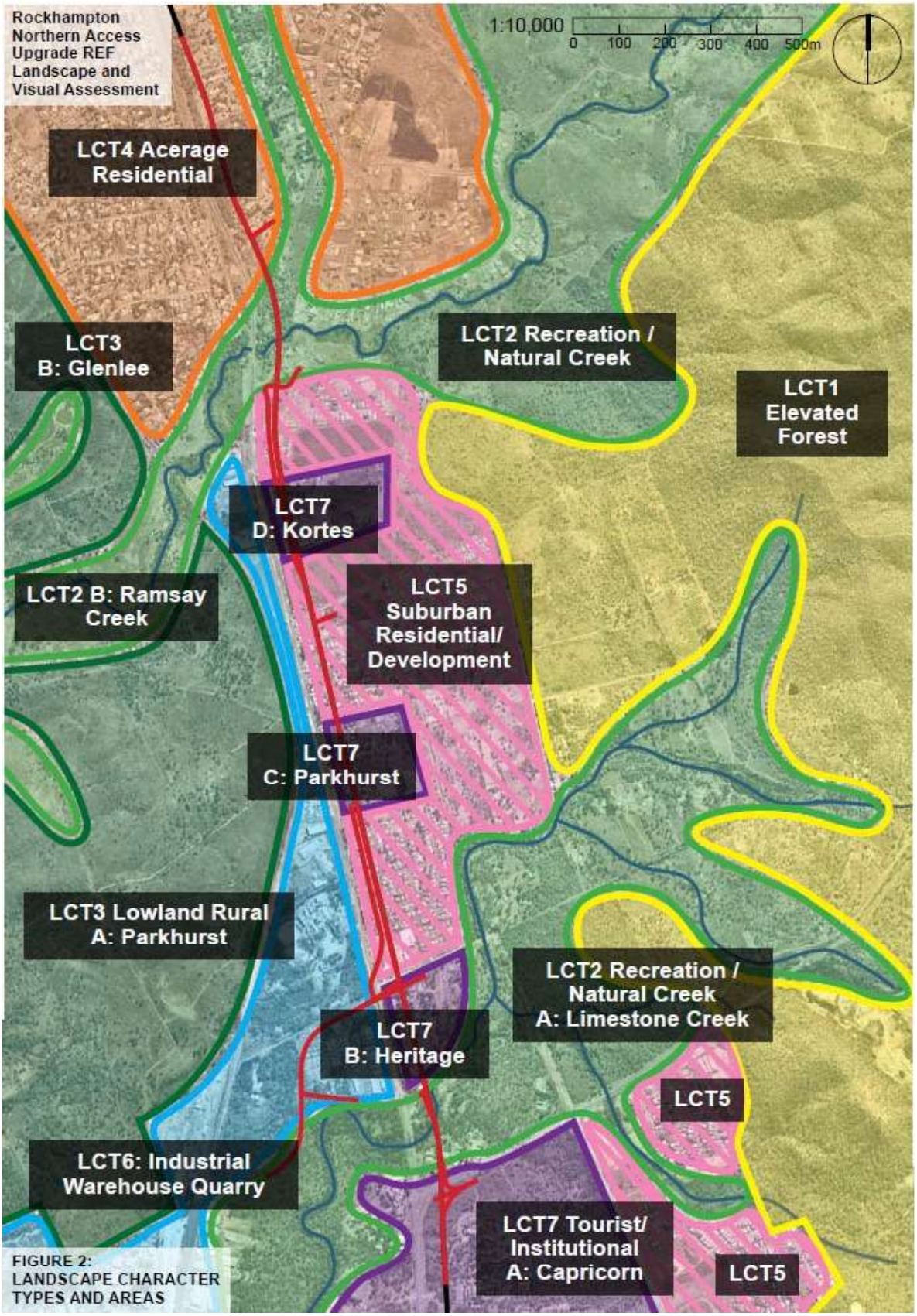


Figure 6 Landscape character types

An assessment on the impact on the LCT identified that the Project would not have a significant impact on the landscape character values (refer to Table 11). The greatest impact to the landscape was identified as to be of moderate-low significance for LCT2 (Natural/Recreation Creek), LCT5 (Suburban Residential) and LCT6 (Industrial/Warehouse/Quarry). The source of the impact was linked to the removal of vegetation such as the loss of street trees which provided screening to dwellings at LCT5 and the removal of vegetation as LCT2 and LCT6. However the changes were considered to be contained with minimal impacts.

Table 11 Assessment of anticipated impact significance on selected landscape receptors

Landscape Receptor (LCT)	Sensitivity	Magnitude of Change	Impact Significance
LCT1: Elevated Forest	High	Negligible	Negligible
LCT2: Natural/Recreation Creek	Medium	Low	Moderate-low
LCT3: Lowland Rural	Low	Negligible	Negligible
LCT4: Acreage Residential	Low	Low	Low
LCT5: Suburban Residential	Low	Moderate	Moderate-low
LCT6: Industrial/Warehouse/ Quarry	Low (due to remnant forest cover) otherwise negligible	Moderate	Moderate-low
LCT7: Commercial/Tourist/Institution	Low	Negligible	Negligible

The visual assessment was conducted at the following nine locations:

- Viewpoint 1: Terranova Drive looking southeast
- Viewpoint 2: Kildare Crescent looking west
- Viewpoint 3: Bruce Highway North Park looking northeast
- Viewpoint 4: Bruce Highway (Yaamba Road) near Jones Street looking southwest
- Viewpoint 5: 921 Bruce Highway (Yaamba Road) looking northeast
- Viewpoint 6: Bruce Highway (Yaamba Road) near Machafee Street looking southwest
- Viewpoint 7: Bruce Highway near Dreamtime Cultural Centre looking north
- Viewpoint 8: Boundary Road South looking west; and
- Viewpoint 9: St John's Church looking east.

The locations were selected to be representative of each key receptor viewpoint. The assessment took into account the existing condition, character and sensitivity. Figure 7 displays the view point locations.

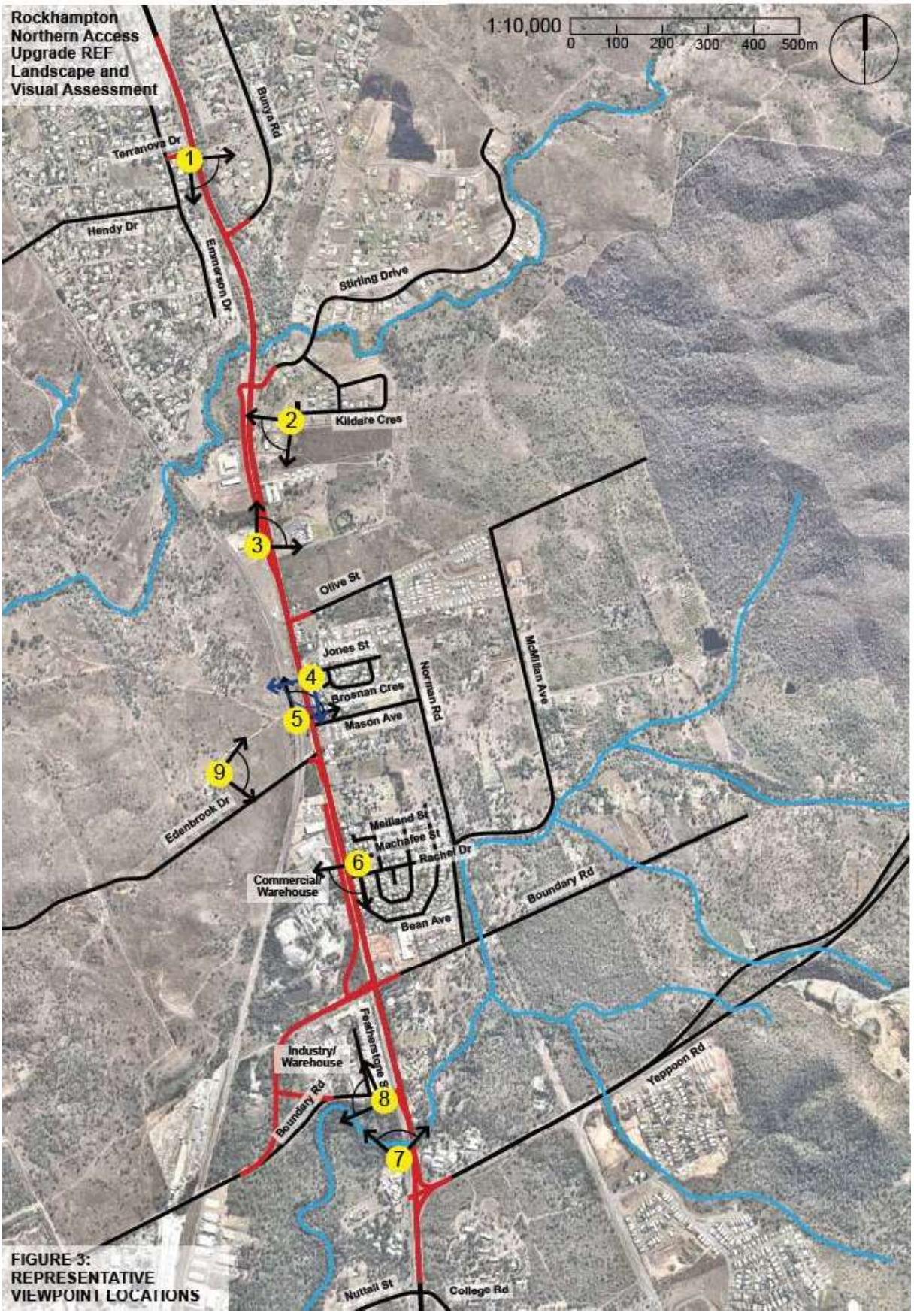


Figure 7 Representative viewpoint locations

Overall, the assessment of visual impacts of the Project was considered to be contained within the local catchment (less than 1 km from the road). At a distance, no impacts have been identified. The proposed works have the potential to improve the visual landscape by the removal of unsightly aspects, such as the above-ground water pipeline. However the works will result in the removal of vegetation and the hardening of the landscape.

Table 12 provides a summary of the assessment of anticipated impact significance at identified viewpoints. The Project was identified as having a moderate impact on the visual receptors. Two significant visual impacts were identified (Moderate to High) at VP4 and VP6.

Table 12 Assessment of anticipated impact significance on selected receptors

Visual receptor (Viewpoint)	Visual Audience Sensitivity	Overall Viewpoint sensitivity	Magnitude of Change	Impact Significance
VP01: Terranova Drive looking southeast	Acreage residential/ National Road: High	Medium to high	Low to moderate	Moderate
VP02: Kildare Crescent looking west	Urban Residential/Local Road/Tourist: High	Medium	Low to moderate	Moderate
VP03: Bruce Highway Truck Dealership looking northeast	Industrial area/National Road: Low/High	Medium	Moderate	Moderate
VP04: Bruce Highway (Yaamba Road) near Jones Street looking southwest	Urban Residential/ National Road: High	Medium to high	High	Moderate to High#
VP05: 921 Bruce Highway (Yaamba Road) looking northeast	Rural Residential/ National Road: High	Medium	Moderate	Moderate
VP06: Bruce Highway (Yaamba Road) near Machafee Street looking southwest	Urban Residential/ National Road: High	Medium to high	Moderate	Moderate to high#
VP07: Bruce Highway near Dreamtime Cultural Centre looking north	Tourist facility/National Road/Open Space: High	Medium to high	Moderate to low	Moderate
VP08: Boundary Road South looking west	Industrial area: Low	Low	Moderate to low	Moderate-low
VP09: St John's Church looking east	Institutional (religious) Building: Medium	Medium	Low	Moderate-low

Significant impact

Noise

Noise monitoring has been conducted in order to:

- determine the pre-construction road traffic noise model, as part of the road traffic noise assessment
- assist in the verification of the pre-construction road traffic noise model, as part of the road traffic noise assessment; and
- determine the background noise level, as part of the pre-construction phase screening assessment.

Baseline data which is currently being analysed indicates that there is one existing cluster of sensitive receptors where traffic noise exceeds the 68 dB (A) $L_{A10\ (18hr)}$ noise criterion and will require noise treatment. Analysis of the interpretation of the Code of Practice indicates other building uses in some of the clusters of sensitive receptors do not fall into the definition of noise sensitive (AECOM, 2017c). Further, anecdotal evidence has indicated that existing noise disturbances are being experienced by

residents situated along the alignment particularly in relation to engine brake noise, which considered under the COP as isolated noisy events are excluded from assessment and treatment. Other areas with sensitive receptors do not qualify for treatment under the COP 2013 (DTMR, 2013). Once noise assessment findings are modelled assessment of noise treatments requirements are likely to follow traditional treatments such as the provision of noise barriers along property boundary as well as exceptional circumstances treatment (such as mechanical ventilation, air conditioning and or upgrades to the building façade).

12.3 Potential Impacts / Opportunities

Construction Phases

Air Quality

During construction pollutants will be generated from the burning of fuel from equipment such as plant material. The main cause of air pollution will be from the disturbance of dust. Typically construction activities which create dust disturbance include:

- wind erosion of stockpiles
- wheel generated dust from construction equipment and vehicles on unsealed roads
- exposure of areas of earth due to vegetation clearing; and
- transportation of soil.

The level of dust disturbance will influenced by the level intensity of activities, the final construction methodology, vehicle and wind speed, and the total area of exposed earth on site.

Visual / Landscape Amenity

The construction phase will impact the landscape of the Project area. The LVA identified the following key temporary impacts on landscape and visual amenity during construction:

- land take of the road corridor
- clearing and stockpiling of vegetation and topsoil
- presence of construction workers and associated movement of large scale machinery, including emission of noise and dust from earthmoving equipment
- increasing vehicle traffic i.e. movement of people and materials to and from the work site
- general earthworks, excavations and re-levelling
- creation of batters, drainage and erosion control works
- bridge construction works – assumed to include piling
- erection of temporary fencing and safety barriers
- temporary lighting infrastructure
- site offices and associated temporary parking areas
- potential sources of air pollutant emissions from construction activities; and
- dust disturbances generated by construction activities (i.e. exposure of areas of earth due to vegetation clearing, transportation of soil).

Noise

The construction phase will generate noise and vibrations that have the potential to impact residential dwellings, commercial uses and community facilities along the alignment. Construction phase noise and vibration impacts are to be assessed and managed in accordance with the Transport Noise Management Code of Practice, Volume 2 – Construction Noise and Vibration and MRTS51. Consideration should also be given to potential impacts of any proposed lighting on dwellings.

Construction phase screening assessment will serve to identity any buildings and or construction activities requiring extra attention during the construction phase based on the following assumptions:

- high impact construction work (i.e. the most noise/vibration) is carried out during Standard Hours (Monday to Friday 7 am to 6pm, Saturday 8 am to 1pm only)
- the highest noise generating activity along the alignment comprises bulk earthworks (excavators) or road pavement (asphalt paver)
- the highest noise generating in the vicinity of the new bridge (at Ramsay Creek) comprises impact piling
- the highest vibration generating activity along the alignment comprises ground compaction (e.g. with a 20 tonne roller)
- the highest vibration generating in the vicinity of the Ramsey Creek comprises impact piling; and
- typical construction practices (i.e. no blasting, no underground tunnelling, using typical Roadtek fleet or similar).

Operational Phase

Air Quality
The works are to facilitate the upgrade of the identified section of highway from a single lane each way to a double lane. Once the Project is completed, an increased volume of traffic is expected to utilise the section of road but the reduction in traffic congestion will result in a reduced negative air quality impact.

Visual / Landscape Amenity
The Landscape and Visual Assessment identified the following likely impacts once the Project is operational:

- introduction of an additional road corridor with associated shared user path and indented bus bays as described above
- new bridge infrastructure over Ramsay and Limestone Creek as described above
- associated traffic movements
- lighting infrastructure
- grass batters; and
- w-bean crash barriers.

A physical change would occur as the road will be duplicated. However the assessment concluded that the visual impacts of the Project will be contained within a local catchment (less than 1 km from the road). At further distances, no elements of the Project are likely to be discernible.

Recommendations to mitigate the landscape and visual impact have been identified. These include retaining existing buffer vegetation where possible during construction, the rehabilitation planting to embankments / disturbed areas and new street tree planting where possible.

The proposed duplication and associated works will alter the existing landscape within the Project area. The Project provides an opportunity to improve connectivity by upgrading the footpaths along the road and improving driveway access. Amenity landscaping (boundary planting) may be required to mitigate the impact that the extension of the road where it will become closer to existing sensitive receptors as feasible. Such landscaping will provide positive impacts on visual amenity in the longer term.

Key impacts relating to landscape and visual amenity during construction activities are identified above.

Noise
The construction and operational phases of the Project have the potential to impact the sensitive receptors along the alignment.

12.4 Approvals & Legislative Requirements

Noise

Compliance with *Environmental Protection Act 1994* and Environmental Protection (Noise) Policy 2008, Transport Noise Management Code of Practice Volume 1 – Road Traffic Noise November 2013 and Transport Noise Management Code of Practice Volume 2 – Construction Noise Vibration September 2014.

Air Quality

The nature of the Project leads to the use and reference of the Department of Transport and Main Roads (TMR) Road Traffic Air Quality Management manual for guidance on management of air quality. The manual is based on the Queensland legislative framework to ensure that air quality impacts of activities associated with the construction and operation of state-controlled roads are within appropriate criteria at all nearby sensitive receptors. The Queensland Environmental Protection (Air) Policy 2008 sets air quality objectives for enhancing or protecting health and wellbeing of the general population of Queensland, aesthetic environment, agriculture and biodiversity.

Legislative and policy instruments considered in the assessment are:

- *Environmental Protection Act 1994* (Qld) (EP Act)
- *Environmental Protection (Air) Policy 2008* (Qld) (EPP Air 2008)
- *National Environment Protection (Ambient Air Quality) Measure* (Air Quality NEPM); and
- *National Environment Protection (Air Toxics) Measure* (Air Toxics NEPM).

As per the TMR manual, completing an upgrade to an existing road is a Category 2 Project and use of the TMR's road air quality performance criteria is required. A summary of air pollutant guideline levels that should not be exceeded at sensitive locations for the criteria pollutants identified in Table 13.

Table 13 TMR criteria air pollutant guideline levels

Air Quality Indicator	Air Quality Guideline			
	Micrograms per m^3 (except where noted)	Parts per million (except where noted)	Averaging time	Source[A]
Ambient levels				
Nitrogen dioxide	62	0.03	1yr	EPP
	250	0.12	1hr	EPP
Sulphur dioxide	570	0.2	1hr	EPP
	230	0.08	24hr	EPP
	57	0.02	1yr	EPP
Particles (as PM_{10})	50[B] (operation)	N/A	24hr	EPP
Particles (as $PM_{2.5}$)	25 (operation)	N/A	24hr	EPP
	8 (operation)	N/A	1yr	EPP
Insoluble dust deposition	4g/m^2/month (construction)	N/A	1 month	DEHP

Note A: EPP Queensland Environmental Protection (Air) Policy (2008)
DEHP Queensland Department of Environment and Heritage Protection informal dust deposition guideline

Note B: Level not to be exceeded more than 5 times per year.

TMR have requested that air monitoring is to take place for the duration of construction. Air quality monitoring is to be carried out in accordance with Table 13.

Visual Amenity

The Project's landscape concept masterplan has been developed (AECOM, 2017d). The masterplan has incorporated the recommendations provided from the LVA where feasible. The masterplan identifies areas which will undergo the following treatments:

- Grass seed hydro mulch
- Planted verge for screening and amenity
- Planted median shrubs for screening and amenity
- Key nodal planting for journey points, landscaped shrub beds where planting is selected for foliage and form
- Riparian zone rehabilitation works
- Reinstatement planting to areas of remnant vegetation (AECOM, 2017d).

Native species will be used in areas where the purpose is to enhance existing native vegetation and Bauhinia spp. will be used in select areas to offset the loss of Bauhinia planted by service groups in the past as a commemoration activity.

Landscaping for the Project is required to comply with MRTS16 Landscape Works.

13.0 Resource Use and Management

13.1 Assessment Methodology

The following sources were reviewed to address resource use and management:

- Queensland Globe Geoscientific Information (location of key resource areas)
- Rockhampton Regional Council Landfill (Rockhampton Regional Council, 2017); and
- Industrial Land Use Study (GHD, 2010).

13.2 Existing Factors

Given the Project area is situated in Rockhampton, access and availability of resources is not considered an issue for this Project. The major earthworks materials for embankment and pavement are expected to be sourced from established quarries in Rockhampton. The Lakes Creek Road Landfill in Rockhampton takes commercial and domestic waste.

Planning studies conducted by Rockhampton Regional Council identified the Parkhurst Industrial Area as a key supply area for the containing vacant industrial land supply in the Region. However the growth and development of the industrial uses within the Parkhurst area is restricted by issues relating to tenure, native title, drainage and infrastructure provisions (GHD, 2010).

13.3 Potential Impacts / Opportunities

The contractor and TMR have general obligations to store and manage waste appropriately to prevent environmental harm. The Environmental Management Plan Construction is to include management measures for water use, waste and material storage and identify impacts on resources and opportunities for re-using, recycling and reducing waste.

Contractors should consider reduction in use of virgin material and opportunities to use recycled materials including construction waste from other sites. Consideration should be given to sources that may be able to supply excess material as fill to parts of the Project. If feasible some materials should be sourced from locations which minimise haulage distances to reduce emissions and impacts to traffic (social disruption), although it is acknowledged that this is not feasible for specialised materials where procurement options are limited. On site stockpiling should be kept to a minimum to reduce the risk of loss of materials. Where materials cannot be recycled on site, consider reuse of waste material on other projects. Waste that is generated and cannot be used should be regularly removed and disposed off-site to an approved waste facility.

13.4 Approvals & Legislative Requirements

TMR is required, under the *Waste Reduction and Recycling Act 2011*, to annually report on the volumes of waste generated, reused, recycled and disposed to landfill (TMR, 2017). The Project Waste Reporting Guideline provides guidance to Contractors, Contract Administrator and Environmental Officers on the reporting process in accordance with the Technical Specifications MRTS51 Environmental Management.

14.0 Special Areas and Land Tenures

14.1 Assessment Methodology

The following data sources were reviewed to address special areas and land tenures:

- DA Mapping System, SARA Layers Transport and Infrastructure (Department of Infrastructure, Local Government and Planning, 2016)
- DA Mapping System, SARA Layers Environment and Heritage, Coastal Protection (Department of Infrastructure, Local Government and Planning, 2016)
- Queensland Globe (Planning Cadastre) for Wetland Protection Areas and Conservation Areas
- Queensland Globe (Land Parcels Tenure)
- Australia's Ramsar Sites (Department of the Environment and Energy, 2016)
- Directory of Important Wetlands in Australia (Department of the Environment and Energy, 2016); and
- EPBC Act Protected Matters Search Tool.

14.2 Existing Factors

Great Barrier Reef Marine Park and Great Barrier Reef World Heritage Area

The Great Barrier Reef World Heritage Property is approximately 59 km downstream.

Ramsar Wetlands

There are no Ramsar Wetlands within the Project area.

Directory of Important Wetlands

There are no Important Wetlands within the Project area.

Wetland Protection Areas

There are no Wetland Protection Areas within the Project area.

State Controlled Road Declaration

The proposed extent of the Rockhampton Northern Access Upgrade will need to be notified to Rockhampton Regional Council and Livingstone Shire Council as a state controlled road declaration and published in the Queensland Government Gazette with the required road spatial dimensions.

Coastal Management District & Coastal Hazards

The Project area is not located within a Coastal Management District and therefore is not impacted by costal hazards. The coast is situated approximately 30 km east of the Project area.

Land Tenure

The Project area is comprised mainly of road reserve and freehold land. Four reserve lots (land reserved by the Department of Natural Resources and Mines for community or public purposes) are also contained within the Project area (refer Table 14).

Table 14 Resumption Requirements (AECOM, 2017e)

Address	Property Description	Infrastructure Impact
296 Boundary Road, Parkhurst (Lot 220 LN2565)	St Peter's Church/Heritage Village Site	• Letterbox to be relocated • Entry sign to be relocated • Alternative car park entrance and gate to be relocated
777 Yaamba Road, Parkhurst (Lot 1 RP604139 and Lot 2 RP604139)	Sibelco (Former QCL Plant)	• Existing gate house to be relocated • Existing building to be removed
859-865 Yaamba Road, Parkhurst (Lot 4 SP229024)	VCV Rockhampton	• Exiting dwelling o be removed • Existing gate and fence to be relocated
859-865 Yaamba Road, Parkhurst (Lot 3 SP229024)	Mack Trucks VOLVO UD Trucks	• Existing gate to be relocated • Existing letterbox to be relocated • Existing “Mack”, “UD Trucks” and “Volvo” signs to be relocated • Existing driveway lighting to be removed
873-881 Yaamba Road, Parkhurst (Lot 2 RP608417 and Lot 1 RP602261)	Nu-Tank Guardian Campers	• 12 car parking bays removed • Electrical switchboard (ergon) to be relocated • Existing gate to be relocated
11 Mason Avenue, Parkhurst (Lot 100 SP264578)	Parkhurst State School	• Existing fence and school signs to be reinstated after property acquisition
982 Yaamba Road, Parkhurst (Lot 22 SP171783)	Residential Property	• Existing brick wall entrance/gate to be relocated
1007-1009 Yaamba Road, Parkhurst (Lot 40 SP169165)	Bruce Highway North Park	• Outlet protection required for large culvert structure. Outlet protection to extend into council land.
1011-1021 Yaamba Road, Parkhurst (Lot 1 RP618493)	Nation Wide Hire Brad's Car Caravan & RV Servicing & Repairs	• 11 truck parking spaces set back • Fence and gates to be relocated • Existing letterbox to be relocated
1012 Yaamba Road, Parkhurst (Lot 5 RP619210)	The Blue Motor Inn	• Stone pitching to be removed
1033 Yaamba Road, Parkhurst (Lot 5 SP226571)	Westco Truck Sales	• Existing “Westco Trucks Sales” sign to be relocated

No Commonwealth Land is in the Project resumption footprint, nor any State Parks, State Forests or National Parks.

Native Title

Native title assessment for all land that requires resumption would be completed internally by the TMR Native Title Unit. Action as required in accordance with State Government Native Title Work Procedures must be reassessed after 12 months unless works have substantially commenced.

14.3 Potential Impacts / Opportunities

State Controlled Road Declaration

To provide the opportunity for PUP works to be carried out ahead of road construction, land resumptions will be required to be gazetted as a state controlled road under the *Transport Infrastructure Act 1994.*

Native Title

Once Native Title assessments are complete, action as required in accordance with State Government Native Title Work Procedures. This must be re-assessed after 12 months, unless works have substantially commenced. This assessment should be completed as soon as possible in detailed design phase to avoid any potential delays.

14.4 Approvals & Legislative Requirements

Native Title

Assessment in accordance with whole-of government work procedures in accordance with *Commonwealth Native Title Act 1993* and *Native Title (Queensland) Act 1993* as outlined in TMR's Organisational Policy (Department of Transport and Main Roads, 2016b).

Land Resumption

Acquisition requirements will be necessary under the *Acquisition of Land Act 1967*.

15.0 Other Activity Requirements

15.1 Assessment Methodology

This assessment is based on other activities identified by the Project team.

15.2 Existing Factors

The Project area is situated within and close to a variety of industrial land uses. A mining lease (ML5786) covers Lot 3 RP601877, Lot 69 CP910378 and Lot 327 LN1763. Lot 69 CP910378 is within the Project area. There are two pre-casting yard within 3 km and a quarry is located approximately 13km south east from the Project area.

The Project area contains services including Ergon Energy high voltage assets, gas main, telecommunications, optic fibre and the undergrounding of 3.96 km of 600mm diameter water pipeline.

There are no sites with unexploded ordnance (UXO) mapped within or adjacent to the Project area.

15.3 Potential Impacts / Opportunities

As the Project area is situated in close proximity to industrial land uses such as the quarry and two pre-casting yards, it is not expected that there will be a need for concrete batching and chemical storage on site. The Project will be able to access material from the existing quarry. The Contractor will be responsible for identifying appropriate sites and arranging access and any approvals for laydown areas and site facilities.

15.4 Approvals & Legislative Requirements

None anticipated.

16.0 Potential Environmental Offsets

Schedule 2 of the Environmental Offset Regulation 2014 prescribes that the Matters of State Environmental Significant (MSES), which trigger an offsetting requirement where a development application is required. This section aims to identify MSES that are triggered. Table 15 provides a list of the MSES as listed in Schedule 2 of the Environmental Offset Regulation 2014 found in the Project construction area and the prescribed environmental matters to be assessed for the Project as it progresses to detailed design.

For the RNAU Project the potential offset requirements are primarily driven by compliance with SDAP for:

- State Code 10: Taking or interfering with water
- State Code 18: Constructing or raising waterway barrier works in fish habitats; and
- State Code 22: Environmentally relevant activities.

These would apply should the related prescribed activities be triggered by the final design of proposed road infrastructure and construction requirements.

Once it is determined an offset may be required under the above requirements, the activity will require assessment to determine if there is a significant residual impact under the relevant guidelines.

Table 15 Matters of State Environmental Significance occurring in the Project construction footprint.

Section	Matters of State Environmental Significance[3]	Prescribed MSES in Project footprint	Prescribed Activity
Regulated vegetation	Endangered regional ecosystems.	No	-
	Of concern regional ecosystems	Yes, a small portion of RE 11.3.4 occurs within the Project area between Limestone Creek and Boundary Road on the western side of Bruce Highway	Not if clearing works occur when the clearing area is a state controlled road
	A regional ecosystem that intersects with an area shown as a wetland on the vegetation management wetlands map (to the extent of the intersection).	No	-
	An area of essential habitat on the essential habitat map for an animal that is endangered wildlife or vulnerable wildlife or a plant that is endangered wildlife or vulnerable wildlife.	No	-
	Permanent removal of vegetation within the defined distance of a watercourse - Category R of the VMA Regulated Vegetation	Yes, small area of vegetation around Limestone and Ramsay Creek may need to be permanently removed.	Not if clearing works occur when the clearing area is a state controlled road
Connectivity areas	A prescribed regional ecosystem— (a) to the extent the ecosystem contains remnant vegetation; and (b) if the ecosystem contains an area of land that is required for ecosystem	Yes, a small portion of RE 11.3.25a and RE 11.3.4 occur within the Project area between Limestone Creek and Boundary Road on the	Not if clearing works occur when the clearing area is a state controlled road

[3] As defined by Schedule 2 of the *Environmental Offset Regulation 2014* as prescribed environmental matters – matters of State environmental significance.

Section	Matters of State Environmental Significance[3]	Prescribed MSES in Project footprint	Prescribed Activity
	functioning (a connectivity area). (Except if located within an urban area)	western side of Bruce Highway. Limestone Creek and associated vegetation can be considered a 'Connectivity area'.	
	If the administering agency is satisfied, having had regard to criteria in the environmental offsets policy about connectivity areas, that— (a) the connectivity area is of sufficient size or configured in a way that maintains ecosystem functioning; and (b) the prescribed regional ecosystem will remain despite a threatening process within the meaning of the Nature Conservation Act 1992. (Except if located within an urban area)	Not applicable	
Wetlands and watercourses	A wetland in a wetland protection area or of high ecological significance shown on the map of referable wetlands	No	-
	A wetland or watercourse in high ecological value waters.	No (the reaches of Limestone Creek within the conservation park are mapped as HEV waters however this is outside the upgrade area)	-
Designated precinct in in strategic environmental areas	Designated precinct as defined in the Regional Planning Interests Regulation 2014.	No	-
Protected wildlife habitat	An area that is shown as a high risk area on the flora survey trigger map and that contains plants that are endangered wildlife or vulnerable wildlife.	No	
	An area that is not shown as a high risk area on the flora survey trigger map, to the extent the area contains plants that are endangered wildlife or vulnerable wildlife.	No	
	A non-juvenile koala habitat tree located in an area shown as bushland habitat, high value rehabilitation habitat or medium value rehabilitation habitat on the map called 'Map of Assessable Development Area Koala Habitat Values' that applies under the South East Queensland Koala Conservation State Planning Regulatory Provisions.	No	

Section	Matters of State Environmental Significance[3]	Prescribed MSES in Project footprint	Prescribed Activity
	A habitat for an animal that is endangered wildlife or vulnerable wildlife or a special least concern animal (echidna, platypus and koala). (where habitat is defined as an area of land used by an animal for foraging, roosting, nesting or breeding)	Potential habitat for threatened turtle	
Protected areas	A protected area[4].	No	-
Highly protected zones of State marine parks	A highly protected area of a relevant Queensland marine park (i.e. conservation park zone, marine national park zone, or preservation zone or another area prescribed under a regulation or zoning plan under the Marine Parks Act 2004 as a highly protected area).	No	-
Fish habitat areas	An area declared under the Fisheries Act 1994 to be a fish habitat area.	No	-
Waterway providing for fish passage	Any part of a waterway providing for passage of fish and not located within an urban area – only if the construction, installation or modification of waterway barrier works carried out under an authority will limit the passage of fish along the waterway.	Yes	Area is urban
Marine plants	A marine plant within the meaning of the Fisheries Act 1994 (except if located within an urban area [(5)]).	No	-
Legally secured offset areas	A legally secured offset area.	No	

[4] *Note—*
Protected areas are defined by the Offset Act as a protected area of a class mentioned in Section 14 of the *Nature Conservation Act 1992*, other than a coordinated conservation area under the *Nature Conservation Act 1992*.
[5] Schedule 26 of SP Regulations defines urban area as:
"urban area means—(a) an area identified in a gazette notice by the chief executive as an urban area; or (b) if no gazette notice has been published—an area identified as an area intended specifically for urban purposes, including future urban purposes (but not rural residential or future rural residential purposes) on a map in a planning scheme that—

(i) identifies the areas using cadastral boundaries; and (ii) is used exclusively or primarily to assess development applications."

"an urban purpose means purposes for which land is used in cities or towns, including residential, industrial, sporting, recreation and commercial purposes, but not including environmental, conservation, rural, natural or wilderness area purposes."

17.0 Conclusions and Recommendations

The following table summarises the outcomes of the environmental assessment undertaken for the RNAU Business Case.

Table 16 Environmental Assessment Summary

CONSTRAINTS, OPPORTUNITIES & RECOMMENDED MITIGATION MEASURES					
Factor	**No.**	**Constraint / Opportunity**	**Recommended Mitigation Measures**	**Approval Required**	**Page Reference**
Water	1	'Yet to be mapped' watercourses	Requires a watercourse determination from DNRM. If the creeks are considered a watercourse under the *Water Act 2000* the works will either need to be compliant with the riverine protection permit exemption or seek a permit.	No if the works can comply with the riverine protection permit exemption requirements (WSS/2013/726, Version 1.02)	12
	2	Creek banks and bed profiles will require restoration post installation of infrastructure and after the completion of construction activities.	Detailed design for bridges and culverts to meet code requirements where feasible.	Yes if not code compliant	12
	3	Sources of and access to non-potable water for construction.	Contractor to consult with Fitzroy River Water to determine feasibility of sourcing non potable water from the barrage storage or existing water allocation holders.	Yes	12
			Contractor to review opportunity to store and use water from sediment dentition ponds during construction.	No	12
	4	Increased risk of hydrocarbons and petroleum products from road upgrade	Ongoing water quality sampling and definition of water quality objectives for Project site waterways	No	12
	5	Burial of pile caps in waterway beds	Confirm extraction volumes in waterway.	Yes ERA 16	Appendix A
Soil / Land	6	Sediment and erosion controls will be implemented to avoid land degradation during construction.	Development of a Concept Sediment and Erosion Control Plan to manage the potential disturbance of sediment and erosion based on soil sampling findings, erosion risk rating and RUSLE modelling.	Yes	16

CONSTRAINTS, OPPORTUNITIES & RECOMMENDED MITIGATION MEASURES					
Factor	**No.**	**Constraint / Opportunity**	**Recommended Mitigation Measures**	**Approval Required**	**Page Reference**
	7	Potential presence of contaminated land	Visual verification survey to further categorise risk. If needed, sampling for contaminants.	Disposal permit	16
	8	Possible presence of PASS/ASS	Testing for and preparation of an Acid Sulfate Soil Management Plan by Contractor if required.	No	16
Biodiversity	9	Presence of 'Of Concern' regional ecosystem within Limestone Creek which is not mapped as regulated vegetation and requires a small are of clearance to facilitate the creation of two new bridges as well as between Limestone Creek and Boundary Road	Discuss value of Limestone Creek vegetation and implications with DNRM. Opportunity to rehabilitate riparian area and boundary of works at Limestone Creek consistent with regional ecosystem characteristics to mitigate Project impact and improve riparian health and water quality, and public amenity in area.	No if clearing occurs on state controlled road reserve under the *Planning Act 2016* exemption requirements	22
	10	Works in waterways will require revegetation with appropriate native species to comply with relevant codes and / or permit requirements if WBB or RPP permits are triggered.	Revegetation specifications could be prepared during detailed design to inform construction tender.	Yes	22
	11	The removal of *Eucalyptus raveretiana* (Vulnerable – EPBC Act)	Undertake an EPBC self-assessment to determine level of impact and need for a referral	EPBC referral	22
	12	No protected plants found within the Project footprint and clearing impact area	Seek an exempt clearing notification from DEHP within specified timeframes under NCA regulations.	No	22
	13	Fish and turtle habitat at Limestone Creek	Detailed design to minimise impact of bridges and associated works on habitat by considering fish passage design requirements.	Waterway Barrier works application	27
	14	Presence of restricted invasive plant pests in Project area	Opportunity to improve riparian condition and general Project landscape quality	Contractor to develop weed management control plan	30

CONSTRAINTS, OPPORTUNITIES & RECOMMENDED MITIGATION MEASURES					
Factor	**No.**	**Constraint / Opportunity**	**Recommended Mitigation Measures**	**Approval Required**	**Page Reference**
	15	Potential habitat for two EPBC listed turtle species	Undertake specialised turtle survey during nesting season 2017 to understand likely habitat values and risk to determine need for EPBC self-assessment.	EPBC referral	27
	16	DAF waterways	Bridges over Limestone and Ramsay Creeks are likely to trigger Waterway Barrier Applications A new culvert under the duplicated land on the DAF green waterway south of Stirling Drive will also require a development application as it is not considered accepted development.	Yes	27
	17	Potential for damage to fish and turtle during works	Spotter catcher on site during clearing works in riparian areas. Spotter catcher to hold damage mitigation permit. Avoid construction in high flow events.	Yes	Appendix A
Cultural Heritage	18	Five Category 5 high risk cultural heritage areas not previously assessed	Undertake heritage impact assessment and traditional owner walk over.	Duty of Care Obligation	33
	19	Development of a CHMA.	Negotiation of CHMA with relevant native title parties.	Duty of Care Obligation	33
Health and Amenity	20	Potential for sensitive receptors to be impacted by noise, vibration and dust.	Noise assessment during detailed design. Vibration assessment by Contractor during construction period. Air quality monitoring set as a requirement in MRTS51 annexures.	No	43

CONSTRAINTS, OPPORTUNITIES & RECOMMENDED MITIGATION MEASURES					
Factor	**No.**	**Constraint / Opportunity**	**Recommended Mitigation Measures**	**Approval Required**	**Page Reference**
	21	Potential for sensitive receptors to be impacted by landscape changes.	Landscape and visual impact assessment undertaken identified mitigation measures to be implemented which include retaining existing buffer vegetation where possible during construction, rehabilitation planting to embankments / disturbed areas and new street tree planting where possible. Landscaping is required to comply with MRTS16 Landscape Works.	No	45
Resource Use and Waste	22	Potential for construction contractor to take water from waterways.	Taking of water from waterway occurs in compliance with *'Exemption requirements for constructing authorities for the take of water without a water entitlement'* (WWS/2013/666) otherwise a water authority must be gained.	Possible	10
	23	Reporting of volumes of waste generated from construction.	Annually report on the volumes of waste generated, reused, recycled and disposed to landfill in accordance with the TMR Project Waste Reporting guideline.	No	48
Special Areas & Tenure	24	Gazettal and notification requirements for a State Controlled Road.	TMR to undertake gazettal during detailed design so that works do not trigger a VMA development application.	No	48
	25	Resumption requirements over state land, road reserve and land in trust	TMR to undertake Native Title notification.	No	48
Activities	26	None applicable	-	-	51

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Appendix A

Approvals Register

Appendix A Approvals Register

The approval register below provides information the approvals required on the assumption that land required to facilitate the works has be resumed by TMR prior to construction commencing.

Legislation	Approval	Authority	Triggered by	Required	Permit requirements	Timeframe	Fee for application
Commonwealth Legislation							
Environment Protection and Biodiversity Conservation Act 1999 **(EPBC Act)**	EPBC Act Referral	DoEE[17]	Significant impacts on Matters of National Environmental Significance (MNES).	**Unlikely.** The EPBC Act Protected Matters Report identified a large number of listed threatened species to potentially occur within a 20 km radius of the Project Area. The Flora and Fauna Technical Report identified MNES potentially affected by the Project could include: • Fitzroy River Turtle, *Rheodytes leukops* – Vulnerable (EPBC and NCA) • Southern Snapping Turtle, *Elseya albagula* – Critically Endangered (EPBC) • Black Ironbox, *Eucalyptus raveretiana* – Vulnerable (EPBC) The proposed works will require the removal of six Black Ironbox (*Eucalyptus raveretiana*) individuals in Limestone Creek area and require temporary works in the creek bed and banks. Field survey to determine if nesting habitat is present in the construction footprint is recommended. This information would support a decision on the need for an EPBC self-assessment.	The environment assessment and approval process is provided on the DoEE website.	20 business days for decision on whether an action is considered to be uncontrolled or controlled. Timeframes on assessment post action decision vary.	$6,577.00 minimum fees. Further costs may be applicable based on assessment process.

[17] Department of Environment and Energy (DoEE)

Legislation	Approval	Authority	Triggered by	Required	Permit requirements	Timeframe	Fee for application
Native Title Act 1993	Obtaining no objection for works.	National Native Title Tribunal; DNRM[18]; Australian Government ComLaw (Federal Court of Australia)	Native title notification is required to undertake works on the following tenures: • Unallocated State Land • Reserve to the State • Land in trust • Local government road reserve • Road reserve under the *Land Act 1994* • Road under the *Transport Infrastructure Act 1994*	**Yes.** Based on the RNAU Property Resumptions Report (AECOM, June 2017) the following resumptions are on land that may require native title notification. • Lot 70 LN2378 - Reserve • Lot 207 LN1609 - Reserve • Lot 220 LN2565 - Reserve • Lot 135 LN2469 - Reserve • Lot 69 CP910378 - State Land • Lot 327 LN1763 - Reserve • Lot 22 SP134380 - Lands Lease • Lot 40 SP 169165 – Reserve. TMR to confirm that the existing gazetted road reserve process for state and local roads has extinguished native title.	N/A	N/A	N/A
Queensland Legislation							
Planning Act 2016	Development Permit	DILGP[19]	Assessable development prescribed under Section 20 of the Planning Regulation 2017. Each of the assessable development components are assessed through the process outlined in the DA Rules and assessed against assessment benchmarks and referral agency matters. The Acts identified below gives power to the *Planning Act 2016* for the purpose of assessable development.	**Yes.** The following items identify whether a Development Permit is required for each activity or area.	Each application must be: • made to the Assessment Manager • be accompanied by mandatory supporting information • be accompanied by the prescribed fee • require Owners consent of the land • DA Form 1 – Development application details • Relevant DA for as per each line item below https://planning.dilgp.qld.gov.au/planning/resources	DA timeline (17 weeks average).[20]	Please see applicable sections below.
Vegetation Management Act 1999 *Managed under Planning Act 2016.*	Development Permit – *Clearing native vegetation*	DILGP, DNRM[21]	Clearing of native vegetation.	**No.** The Project area is identified as Category X on the Regulated Vegetation Management Map. Field survey identified remnant vegetation within areas mapped as Category X at Limestone Creek: Survey identified the following regional ecosystems: • RE 11.3.4 (Of Concern) • RE 11.3.25a (Least Concern). The level of remnant vegetation to be cleared is estimated as 2,971 m^2. This figure is based on an indicative construction footprint as defined from the resumption line and assuming 15 m will be required as a construction footprint either side of each new bridge. Clearing Category A, B, C and R areas are considered exempt clearing works for the purpose of	N/A	N/A	N/A

[18] Department of Natural Resources and Mines (DNRM)
[19] Department of Infrastructure Local Government and Planning
[20] Assuming the application is referred, but no compliance action notice or public notification requirements.
[21] Department of Natural Resources and Mines (DNRM)

Legislation	Approval	Authority	Triggered by	Required	Permit requirements	Timeframe	Fee for application
				state controlled roads (on land generally) for road works carried out on the State Controlled road or ancillary works and encroachments[22] under Section 50 of the *Transport Infrastructure Act 1994*. Clearing Category R and X is exempt clearing work on a road under the *Land Act 1994* if it is carried out or authorised to be carried out by the chief executive of the department in which the *Transport Infrastructure Act 1994* is administered and it is: 1. Necessary to construct or maintain road infrastructure or to source construction material for roads; or 2. Is in an area shown on the regulated vegetation map as a Category R or X area.			
Vegetation Management Act 1999	Relevant purpose determination	DNRM	Clearing of native vegetation for a relevant purpose.	**No.** The clearing works are to facilitate the duplication of the existing road.	N/A	N/A	N/A
Coastal Protection and Management Act 1995 Managed under *Planning Act 2016*.	Development Permit – Tidal works.	DILGP; DEHP[23]	Works in, on or above tidal water.	**No.** The Project area is not within a tidal area and is located over 30 km from the coast.	N/A	N/A	N/A
Fisheries Act 1994 *Managed under Planning Act 2016.*	Development Permit– *Waterway barrier works*	DILGP; DAF[24]	Constructing or raising **permanent** waterway barrier works within an assessable waterway. *Waterway barrier works means a dam, weir or other barrier across a waterway if the barrier limits fish stock access and movement along a waterway*	**Yes.** The proposed alignment intersects three waterways. Under the *Fisheries Act 1994* they are identified as the following: • Limestone Creek: High (Red) • Small creek (unknown name): Low (Green) • Ramsay Creek: Moderate (Amber). If works within the waterways can comply with the accepted development requirements for operational work that is constructing or raising a waterway barrier works an approval will not be required. Accepted development requirements are outlined in this documentation: https://www.daf.qld.gov.au/fisheries/habitats/fisheries-development/accepted-development At this stage of design development some of the Ramsay Creek bridge piles appear to be in the low flow channel (ponds). Abutment revetment works at Ramsay Creek may also need to extend into the waterway (note the detailed design has yet to be finalised).	If a Development Permit is required: • DA Form 1 • Description of stream morphology and hydrology and likely impacts associated with works. • Description of aquatic ecology habitat and likely impacts associated with works. • Design to fish passage standards where practical. • Assessment against relevant assessment criteria.	As above	To be determined

[22] Ancillary works and encroachments are defined as including cane railways, monorails, bridges overhead conveyors or other overhead structures, tunnels, rest area facilities, monuments and statutes, advertising signs or devices, traffic and service signs, bores, wells, pumps, water pipes culverts etc. , tanks, cables, paths or bikeways, grids or other stock facilities, buildings, shelters and awnings, poles lightning and gates, and any of the following activities: drilling, clearing, trimming, slashing, landscaping, planting, burning off, removing trees, road safety related activities, sporting, camping, mining stock, holding meetings, markets etc.
[23] Department of Environment and Heritage Protection (DEHP)
[24] Department of Agriculture and Fisheries (DAF)

Legislation	Approval	Authority	Triggered by	Required	Permit requirements	Timeframe	Fee for application
				There appears to be very little differentiation in the depth of the Limestone Creek channel with Pier 3 in or just off the lowest point of the channel. A pre-lodgement meeting with DAF to determine whether the bridges would be considered assessable development is recommended. Culverts for intentional duplications are not considered to be accepted development and will require a development application. This applies to the DAF green waterway south of Stirling Road.			
		DAF	Constructing or raising **temporary** waterway barrier works within an assessable waterway. *Waterway barrier works means a dam, weir or other barrier across a waterway if the barrier limits fish stock access and movement along a waterway*	**Unlikely.** The proposed alignment intersects three waterways. Under the *Fisheries Act 1994* they are identified as the following: • Limestone Creek: High (Red) • Small creek (unknown name): Low (Green) • Ramsay Creek: Moderate (Amber). The construction of bridges in Limestone and Ramsay creeks may require temporary waterway barriers within the creeks. If works within the waterways can comply with the accepted development requirements for operational work an approval would not be required. Temporary works in Limestone Creek would need to be completed in 180 calendar days and at Ramsay Creek and the unnamed waterway within 360 days. It is assumed that all bridge and culvert works in these locations can be completed within these timeframes.	If a Development Permit is required: • DA Form 1 • Description of stream morphology and hydrology and likely impacts associated with works. • Description of aquatic ecology habitat and likely impacts associated with works. • Design to fish passage standards where practical. • Assessment against relevant assessment criteria.	As above	TBA
	Development Permit – *Removal, destruction or damage of marine plants*	DILGP; DAF	Removal, destruction or damage of marine plants.	**No.** The field survey found no marine plants in the Project area.	N/A	N/A	N/A
	Development Permit – *Operational work in a Fish Habitat Area*	DILGP; DAF	Operational work completely of party within a declared Fish Habitat Area (FHA).	**No.** There is no FHA mapped within the Project area.	N/A	N/A	N/A

Legislation	Approval	Authority	Triggered by	Required	Permit requirements	Timeframe	Fee for application
Water Act 2000 *Managed under Planning Act 2016.*	Development Permit – *Operational works that is taking or interfering with water from a watercourse, lake or spring*	DILGP, DNRM	Works that take or interfere with water in a watercourse, lake or spring.	**Unknown.** The three creeks are mapped a 'yet to be mapped' under the *Water Act 2000.* It is recommended waterway delineation is obtained from DNRM. Assessment of the final design solution to determine if interference within a waterway is required.	• DA Form 1 • Assessment against State Code 10 Taking or interfering with water	As above	To be determined
			The taking of water by a constructing authority.	**Unknown.** If the works can comply with the *Exemption requirements for constructing authorities for the take of water without a water entitlement* (WSS/2013/666, Version 3.02) no approval is required. It is unlikely there will be sufficient water in the waterways that cross the Project area for the duration of the construction period. Should the Contractor consider taking water from the Fitzroy Barrage Water Storage they should have regard to Fitzroy River Water requirements in relation to any take of allocated water. It is expected that there may be restrictions under the ROP.	The minimum requirements outlined below must be achieved for *Exemption requirements for constructing authorities for the take of water without a water entitlement* to apply: Requirements are outlined in this document: https://www.dnrm.qld.gov.au/?a=109113:policy_registry/exemption-taking-water-without-entitlement.pdf To apply for a water allocation from the Fitzroy River Barrage Water Supply Scheme the applicant must: 1. Be an owner or lessee of a water allocation under the *Water Act 2000* 2. Complete the standard water supply contract application form For a water allocation holder to assign water to some else as a temporary trade they must • Be a medium priority water allocation holder • Complete the seasonal water assignment transfer form and submit to Fitzroy River Water. http://www.rockhamptonregion.qld.gov.au/CouncilServices/Fitzroy-River-Water/Water-allocations-and-trading	N/A	
Water Act 2000	Riverine Protection Permit	DNRM	Activities in a defined watercourse that may trigger approval include: • diverting the watercourse • filling • excavation.	**Unknown.** If Limestone and Ramsay Creek are considered watercourses under the *Water Act 2000* by DNRM then Riverine Protection Permit may be required. If the design and construction method cannot meet the public entity exemption requirements in *Riverine protection permit exemption requirements (WSS/2013/726)*, then no RPP will be required.	Minimum requirements in *Riverine protection permit exemption requirements (WSS/2013/726)* are outlined in this document: https://www.dnrm.qld.gov.au/?a=109113:policy_registry/riverine-protection-permit-exemption-requirements.pdf	N/A	No fee
Environmental Protection Act 1994 *Managed under Planning Act 2016.*	Development Permit – *Concurrence Environmentally Relevant Activity*	DILGP; DEHP	An Environmentally Relevant Activity (ERA) listed in Schedule 2 of the Environmental Protection Regulation 2008 that is listed as a Concurrence ERA.	**See below**	N/A	N/A	N/A

Legislation	Approval	Authority	Triggered by	Required	Permit requirements	Timeframe	Fee for application
	Development Permit –	DILGP; DEHP	Chemical storage (the relevant activity) consists of storing— (a) 50t or more of chemicals of dangerous goods class 1 or class 2, division 2.3 in containers of at least 10m^3; or (b) 50t or more of chemicals of dangerous goods class 6, division 6.1 in containers capable of holding at least 900kg of the chemicals; or (c) more than 500m^3 of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3; or (d) the following quantities of other chemicals in containers of at least 10m^3— (i) 200t or more, if they are solids or gases; (ii) 200m^3 or more, if they are liquids.	**No.** The proposed works are not likely to involve the storage of large quantities of chemicals.	N/A	N/A	N/A
	Development Permit –	DILGP; DEHP	Dredging a total of 1,000 tonne or more of material from the bed of naturally occurring surface waters, in a year; and/or Extracting, other than by dredging, a total of 5,000 tonne or more of material, in a year, from an area (ERA 16).	**Unlikely.** Excavation to place pile caps into each creek bed will be necessary for all new bridge works in Limestone and Ramsay Creeks. Current estimated volumes based on indicative dimensions indicate that excavated volumes are unlikely to trigger ERA 16. This should be reviewed as design details are finalised. Note it is assumed there will be no borrow pits required for this Project.	N/A	N/A	N/A
	Development Permit – *High impact earthworks in a wetland protection area.*	DILGP; DEHP	Undertaking operational work that involves changing the form of land, or placing a structure on land, in a way that diverts water to or from wetland.	**No.** No wetland protection areas are mapped within the Project area.	N/A	N/A	N/A
	Disposal Permit	DEHP	Disposal permit to remove contaminated soil for treatment or disposal from land listed on the Environmental Management Register (EMR) or Contaminated Land Register (CLR).	**Unknown.** A desktop review of the lots listed on the EMR has recommended field verification to determine further requirements.	Complete the Application form for a disposal permit for contaminated soil - ESR/2015/1832 (formerly EM1015) (DOCX) including all required supporting information.	10 bd	No fee
Environmental Offset Act 2014	Environmental Offset	DILGP[25]	Offset requirements result through a prescribed activity under this Act having a significant residual impact on a prescribed environmental matter (Matter of State Environmental Significance (MSES)[26])' Offset requirements are triggered and facilitated through the Development Permit process.	**Unlikely.** The most likely prescribed activity which could impact on a prescribed environmental matter relates to waterway barrier works in Limestone Creek. Given that the bridges are not likely to have a permanent impact on fish or turtle passage it is unlikely to be a significant residual impact.	During the Development Application Process, and assessment against the State Development Assessment Provisions and the Significant Residual Impact Guidelines will be required to determine if an offset is required, and the value, for negotiation DILGP.	Undertaken within the DA Timeframes for relevant Development Permits.	Offsetting costs are determined during the assessment process.

[25] In conjunction with: DAF for fisheries resources; DNRM for native vegetation clearance; DEHP for wetlands etc.
[26] Currently this is triggered where a significant residual impact occurs on a MSES where permit requirements for works are for an activity prescribed under Section 9 (c) of the Act, in accordance with Schedule 1 of the Environmental Offsets Regulation 2014

Legislation	Approval	Authority	Triggered by	Required	Permit requirements	Timeframe	Fee for application
Nature Conservation Act 1992	Clearing Permit	DEHP	The clearing of Endangered, Vulnerable, or Near Threatened plants (EVNT) under the NC Act.	**No.** Field survey under the NCA flora survey guidelines in high risk trigger areas did not identify any NCA protected plants in the Project and clearing impact areas. An Exempt Clearing Notification will be required.	An Exempt Clearing Notification will need to be submitted to DEHP within one year of the survey being undertaken through EHP's online licensing system. A completed exempt clearing notification form accompanied with a protected plant survey report will need to be submitted. TMR will be required to register with Connect (EHPs on line licensing system) https://www.ehp.qld.gov.au/licences-permits/plants-animals/protected-plants/	Up to 40 days.	Not required for exemption notification
	Damage Mitigation Permit– *Removal and relocation of wildlife and tampering with a breeding place.*	DEHP	A Damage Mitigation Permit is required when removing or relocating wildlife. If not specifically authorised by the Damage Mitigation Permit, a Species Management Program will be required for any protected species breeding places that are likely to be impacted by construction.	**Yes.** The works will require the removal of vegetation. A spotter catcher will be required for the duration of the clearing of vegetation during the construction phase of the Project – this will be a requirement of the CEMP. The spotter catcher will be required to hold a Damage Mitigation Permit.	This item needs to be considered when developing a construction environmental management plan. A licenced spotter catcher will be required. Complete application form: https://www.ehp.qld.gov.au/licences-permits/plants-animals/native_animal_management.html Species Management Program requirements for Breeding Places: Least Concern Species –Low Risk Impact https://www.ehp.qld.gov.au/licences-permits/plants-animals/documents/tp-wl-smp-low-risk.pdf Colonial Breeders, ENVT Species and Special Least Concern Species - High Risk https://www.ehp.qld.gov.au/licences-permits/plants-animals/documents/tp-wl-smp-high-risk.pdf	Up to 40 days.	To be confirmed.
Local Planning Requirements							
Rockhampton Region Planning Scheme	Development Permit – *Operational Works*	Rockhampton Regional Council	Operational works as defined under Schedule 2 of the *Planning Act 2016*: "*means work, other than building work or plumbing or drainage work, in, on, over or under premises that materially affects premises or the use of premises*".	**No.** Operational work undertaken by a Public Sector Entity (DTMR) is not assessable under the Planning Scheme through Schedule 6 Part 3 of the Planning Regulation 2017 if the work is: (a). carried out by or for a public sector entity authorised under a State law to carry out the work; and (b). is not development stated in section 26 of Schedule 6 of the regulations as other development.	N/A	N/A	N/A
	Development Permit – *Other Works*	Rockhampton Regional Council	Other development as defined in section 26 Schedule 6 Part 3 of the Planning Regulation as including excavating, crushing, screening, cutting, filling, preparing construction material (including concrete), storing materials, removing vegetation, building dams, fences, site offices and worker accommodation. The Rockhampton Region Planning Scheme 2015 generally makes filling and excavation work 'code assessable' development where:	**Yes.** A permanent detention pond is proposed on Lot 3 RP601877 to collect and treat overland flow from the road and surrounding environment. The site is in a medium impact industrial zone with a range of overlays including ASS and flood overlays and within a Priority Infrastructure Area. Note this site is also within a high risk protected plant trigger area and is on the EMR.	Code Assessment DA Form 1 Respond to planning scheme requirements for code assessment and relevant overlays and the Design Guideline for Operational Works and Building Works	Assessment period likely to be 15+ weeks	To be determined

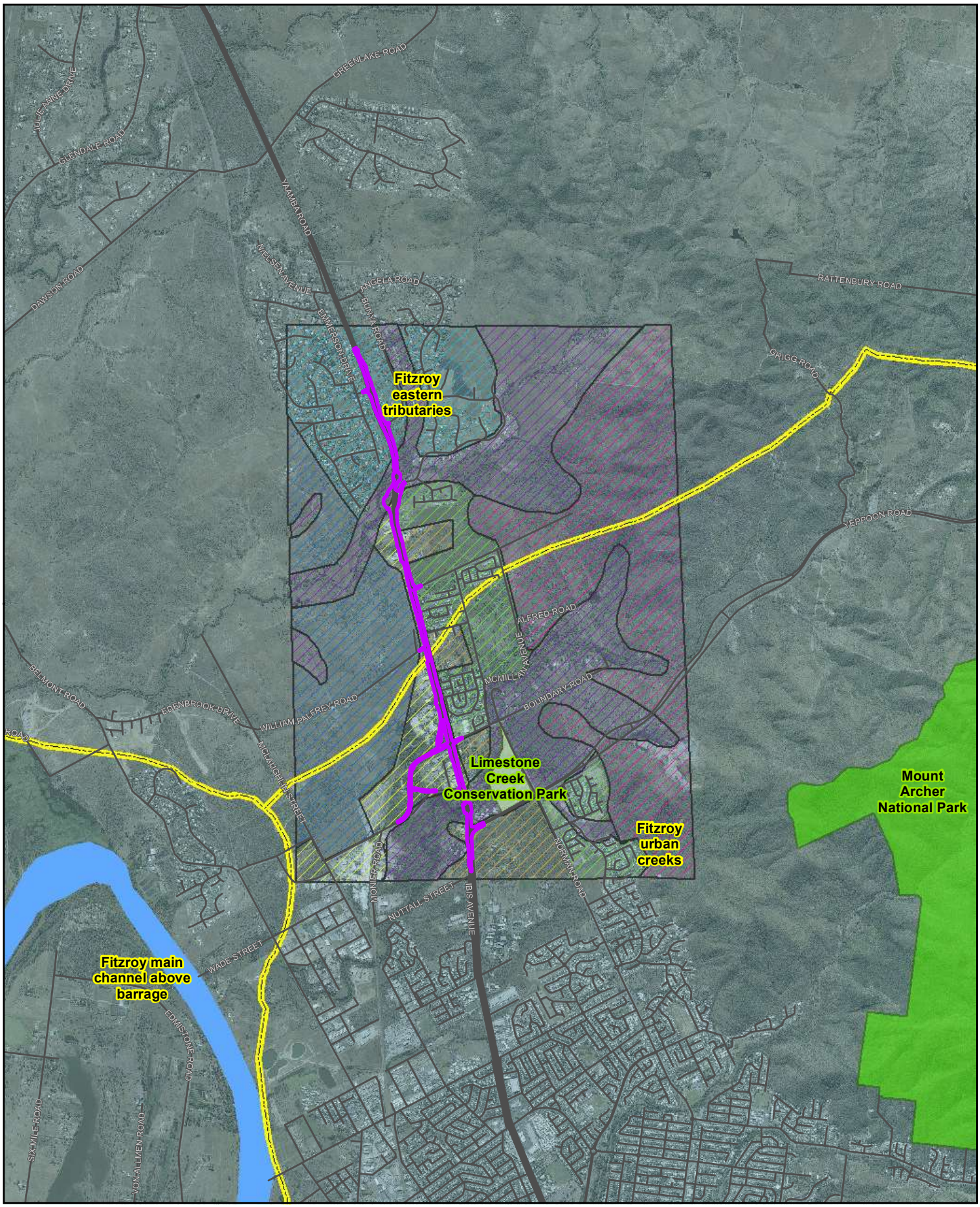
Legislation	Approval	Authority	Triggered by	Required	Permit requirements	Timeframe	Fee for application
			• within 1.5m of a lot boundary and of a height of 300mm or greater; • of a height or depth of one metre or greater or of a volume of one hundred cubic metres or greater; or • for land within a flood hazard overlay, refer to Planning Scheme Policy SC6.11.4.3 which identifies that any filling which exceeds a height of 100mm above ground level				
Duty of Care Requirements							
Environmental Protection Act 1994	Duty of care obligation – *not an approval*	DEHP	Any activity undertaken by any person.	**Yes.** General environmental duty and duty to notify environmental harm apply.	• General environmental duty - a person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all practical measures to prevent or minimise the harm. • Duty to notify environmental harm – applies to a person who, while carrying out an activity, becomes aware that serious or material environmental harm is caused or threatened by the persons or someone else's act or omission in carrying out the activity. • Management Plans are recommended to specifically consider any risk of potential environmental harm.	At all times.	N/A
Aboriginal and Cultural Heritage Act 2003	Duty of care obligation – *not an approval*	DATSIP[27]	Any activity undertaken by any person.	**Yes.** A Cultural Heritage Risk Assessment (May 2017) of the modified Project footprint has identified potential high risk Category 4 and 5 areas which require further cultural heritage assessment to determine the level of ground disturbance at each site. These areas are not covered by the existing cultural heritage field agreement (CHFA) which was completed between TMR and Darumbal Enterprises on 24/3/14, following a site survey for Stage 1 of the Project (State of Queensland & Darumbal Enterprises Corporation / Darumbal Native Title Applicants, 24 March 2014). Proposed works extend into potentially uncleared vegetation and waterways.	• Section 23 of the Act states that 'a person who carries out an activity must take all reasonable and practical measures to ensure the activity does not harm Aboriginal cultural heritage (the cultural heritage duty of care)'. • These guidelines, gazetted under Section 28 of the Act, identify reasonable and practicable measures for managing activities in order to avoid or minimise harm Aboriginal cultural heritage. • Management Plans are recommended to include these requirements.	At all times.	N/A
Queensland Heritage Act 1992	Duty of care and duty to notify obligations – *not an approval*	DEHP	Works undertaken within and adjacent to a listed heritage site.	**Yes** No mapped Queensland Heritage areas exist within the vicinity of the alignment. However, the proponent still must implement duty of care for unexpected finds.	• Section 89 of the *Queensland Heritage Act 1992* requires a person to notify DEHP of an archaeological artefact that is an important source of information about an aspect of Queensland history. • This notice must be given as soon as practicable after the person discovers the item. Section 90 stipulates that it is an offence to interfere with an	At all times.	N/A

[27] DATSIP. Department of Torres Strait Islander Partnerships

Legislation	Approval	Authority	Triggered by	Required	Permit requirements	Timeframe	Fee for application
					archaeological artefact once notice has been given of the artefact to the chief executive. • Management Plans are recommended to include these requirements.		
Biosecurity Act 2014	General biosecurity obligation – *not an approval*	DAF	Individuals and organisations whose activities pose a biosecurity risk must: • take all reasonable and practical steps to prevent or minimise each biosecurity risk • minimise the likelihood of causing a 'biosecurity event', and limit the consequences if such an event is caused • prevent or minimise the harmful effects a risk could have, and not do anything that might make any harmful effects worse. For restrictive invasive plants this includes not distributed the invasive plant either by sale or gift, release it into the environment.	**Yes.** A field survey of the Project area identified eight Category 3 restrictive invasive plants under the *Biosecurity Act 2014* and a range of invasive plants.	• The proponent should implement weed and pest management provisions within Management Plans for the works.	N/A	N/A

Appendix B

Environmental Constraints within the Project



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N

Coordinate System: GDA 1994 MGA Zone 56
Projection: Transverse Mercator

0 325 650 1,300
Metres
1:50,000 (when printed at A4)

Legend

Landscape Types

- LCT1: Elevated Forest
- LCT2: Natural/Recreation Creek
- LCT3: Lowland Rural
- LCT 4: Acreage Residential
- LCT5: Suburban Residential
- LCT6: Industrial/Warehouse/Quarry
- LCT7: Commercial Tourist/Institutional

- Mount Archer National Park
- Limestone Creek Conservation Area
- Fitzroy River Sub-basin Environmental Values
- Fitzroy Barrage and the Storage Area
- Indicative Construction Footprint

Data sources:
Rockhampton Imagery from SISP Imagery 2016

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RNAU Road Alignment Design

Broader Project Area Values

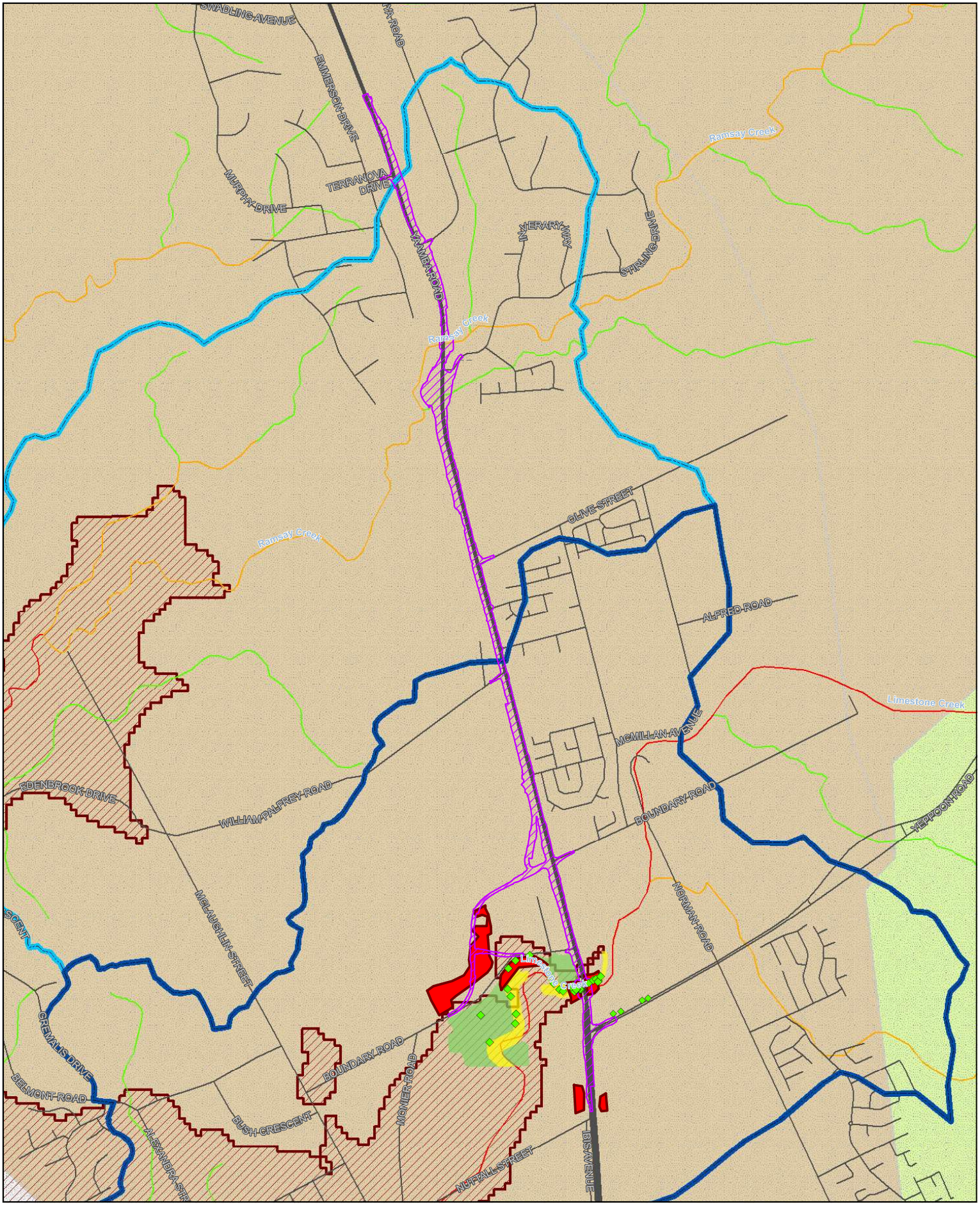
PROJECT ID	60528953
CREATED BY	joaquin.rivera
LAST MODIFIED	RiveraJ3 - 30/06/2017
VERSION:	2

Figure 2

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Filename: P:\605X\60528953\4. Tech Work Area\4.99 GIS\02_MXDs\P60528953_RNAU_BroardProjectArea_20170227_V1_A4P.mxd

A4 size



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N

Coordinate System: GDA 1994 MGA Zone 56
Projection: Transverse Mercator

0 170 340 680
Metres
1:18,000 (when printed at A4)

Legend

- Eucalyptus raveretiana
- Cultural Heritage Risk Areas
- Indicative Construction Footprint
- Hydraulic Model Extent Limestone Creek
- Hydraulic Model Extent Ramsay Creek

Soil Types

- Sodosol
- Tenosol
- Vertosol

Acid Sulfate Soils

- Land between 5 and 20 m AHD

Field Verified Regional Ecosystems

- 11.3.25a
- 11.3.4

DAF classified waterways

- 1 - Low
- 2 - Moderate
- 3 - High

Data sources:
Rockhampton Imagery from SISP Imagery 2016

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RNAU
Road Alignment Design

Environmental and Heritage Constraints Map

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CREATED BY	joaquin.rivera
LAST MODIFIED	RiveraJ3 - 30/06/2017
VERSION:	2

Figure 1

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A3 size

Appendix C

Flora and Fauna Field Survey

AECOM Imagine it. Delivered.

Department of Transport and Main Roads
07-Sep-2017
Doc No. REP-00042

Rockhampton Northern Access Upgrade

Preliminary Flora and Fauna Technical Report



Rockhampton Northern Access Upgrade

Preliminary Flora and Fauna Technical Report

Client: Department of Transport and Main Roads

ABN: 39 407 690 291

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07-Sep-2017

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Quality Information

Document Rockhampton Northern Access Upgrade

Ref 60528953

Date 07-Sep-2017

Prepared by RTI Act Schedule 4 - partial

Reviewed by RTI Act Schedule 4 - partial

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
0	03-Aug-2017	For TMR Review	RTI Act Schedule 4 - partial	
1	07-Sep-2017	For Issue	RTI Act Schedule 4 - partial	RTI Act Schedule 4 - partial

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Executive Summary

The Rockhampton North Access Upgrade (RNAU) project is a section of the Bruce Highway located approximately 8 km north of the Rockhampton city centre. The project focuses on addressing road safety, congestion and capacity needs along the highway through the Parkhurst area. The project area for the RNAU extends for a length of 5.3 km from near the intersection of Yeppoon Road through to the intersection with Terranova Drive.

This assessment was undertaken with the objective of supporting the Review of Environmental Factors (REF) for the RNAU project by gathering supporting evidence relating to ecological values which may require protecting or may be impacted by the construction and/or operation of proposed highway upgrade. This information is to be used to provide recommendations and mitigation from an ecological impact perspective.

The assessment was undertaken based on a desktop environmental assessment which included a likelihood of occurrence assessment based on searches of relevant State and Federal databases regarding conservation listed flora, fauna and other relevant environmental aspects. The likelihood assessment was further developed with the support of high level on site fauna habitat assessment and a Protected Plant Survey under the NCA regulations.

Outcomes of the investigation indicate that the highest risk impact exists at a species level on the following EVNT listed species:

- Black Ironbox*, Eucalyptus raveretiana* – Vulnerable (EPBC) - Present
- Fitzroy River Turtle, *Rheodytes leukops* –Vulnerable (EPBC and NCA) - Moderate likelihood of occurrence; and
- Southern Snapping Turtle, *Elseya albagula* - Critically Endangered (EPBC) - Moderate likelihood of occurrence.

A total of 52 individual *E. raevertiana* trees were identified within 100 metres of the current project design footprint. Of these, six individuals currently stand to be either removed or disturbed. In consideration of the marginal habitat quality, the high incidence of weed introduction and the current lack of recruitment in the area immediately surrounding the existing bridge infrastructure and within the proposed project footprint it is considered unlikely that the loss of these six individuals will cause significant impact to the species at a local regional or national level.

Given the current level of information available from site investigations to date the potential impact to either of these turtle species is difficult to quantify and requires further field investigation to better determine suitability of habitat both within and surrounding the project footprint.

1.0 Introduction

1.1 Project Background

The Bruce Highway is a critical strategic link for the state of Queensland that provides connectivity to all coastal and regional towns from Brisbane to Cairns. Over the section of the highway north of Rockhampton, it not only serves as the national highway, but also acts as the only arterial road to service the industrial, commercial and residential developments in the vicinity of Parkhurst. Accordingly, the Bruce Highway forms a central part of the local road network and is the only road route into and out of Rockhampton.

The Rockhampton North Access Upgrade (RNAU) project is a section of the Bruce Highway located approximately 8 km north of the Rockhampton city centre. The project focuses on addressing road safety, congestion and capacity needs along the highway through the Parkhurst area. The project area for the RNAU extends for a length of 5.3 km from near the intersection of Yeppoon Road through to the intersection with Terranova Drive.

The RNAU project was identified in a number of strategic and planning studies as a key priority and strategically important regional link for the Rockhampton region. The RNAU project and associated priority needs and service requirements for this section of the Bruce Highway were first identified in the 2010 Strategic Assessment of Service Requirements (SASR) that was completed as part of the Fitzroy River Floodplain and Road Planning Study.

In 2012, the RNAU project was prioritised as part of the Queensland Government's *Bruce Highway Action Plan*. The 10 year action plan focused on three priority areas for fixing the Bruce Highway including safety, flooding and capacity. The RNAU project section Yeppoon Road to Boundary Road (north) was included as a high priority 1 (delivery in years 1 to 4) and the section from Boundary Road (north) to Terranova Drive as high priority 3 (delivery in years 8 – 10).

A subsequent study investigated the two sections (stages) of the RNAU project in more detail and an On-Q Business Case for the section from Yeppoon Road to Boundary Road (north) was completed in 2013. The On-Q Business Case showed that there would be greater benefits realised if both sections of the RNAU were delivered together.

Due to the complexity of the project and the estimated capital costs of the RNAU project exceeding the $50m threshold, the project was then assessed through the PAF process. The Preliminary Evaluation for the RNAU project investigated potential options for the highway from the intersection of Yeppoon Road to just north of Ramsay Creek Bridge, a total length of 3.9 km.

As part of the Business Case phase of the RNAU project, the investigation area for the RNAU project has been extended to include the section of the highway from the Ramsay Creek Bridge to Terranova Drive.

1.2 Assessment Objectives

This assessment was undertaken with the objective of supporting the Review of Environmental Factors (REF) for the RNAU project by gathering supporting evidence relating to ecological values which may require protecting or may be impacted by the construction and/or operation of proposed highway upgrade. This information is to be used to provide recommendations and mitigation measures from an ecological impact perspective. Specifically this assessment is intended to:

- Identify the key flora and fauna values of the proposed Project and wider area (20 kilometre radius of the Study Area), through desktop and field studies, including:
    - Threatened Ecological Communities (TECs) and Regional Ecosystems (REs) listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and or the Queensland *Vegetation Management Act 1999* (VM Act)
    - Important fauna habitat types
    - Observed and potentially occurring threatened and near threatened flora and fauna species listed under the EPBC Act and / or Queensland *Nature Conservation Act 1992* (NC Act)

- Other flora species populations of conservation significance such as marine plants protected under the Queensland *Fisheries Act 1994* (the Fisheries Act)
- General flora and fauna values
- Significant weeds and animal pest species and infestations (including those under the *Biosecurity Act 2014*)
- Other sensitive ecological areas such as national and conservation parks, wetlands and waterways
- Identify potential impacts on these ecological features and values that may result from activities associated with the proposed Project; and
- Identify appropriate mitigation measures to help avoid and minimise potential impacts on these ecological features and values.

1.3 Relevant State and National Policy and Legislation

Throughout the assessment process consideration has been given to the following biodiversity legislation and policies:

Commonwealth

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

State

- *Vegetation Management Act 1999* (VM Act)
- *Nature Conservation Act 1992* (NC Act)
- *Fisheries Act 1994*
- *Biosecurity Act 2014*
- *Environmental Protection Act 1994* (EP Act)
- *Planning Act 2016*
- *Coastal Protection and Management Act 1995*
- *Water Act 2000*
- *Environmental Offset Act 2014*.

An introduction to the above biodiversity legislation and policy and the implications on the Project is provided in **Section 6** of this report.

2.0 Methods

2.1 Taxonomic Nomenclature

Taxonomic nomenclature of flora is discussed in this report follows *The Census of Queensland Flora 2014* (Bostock, P.D. & Holland, A.E., 2016) and is updated with more recent taxonomic reviews where relevant.

Species nomenclature for fauna has been adapted to reflect species taxonomy used in the Department of Environment and Heritage Protection (DEHP) Wildlife Online database. This includes common names and the capitalisation convention for common names used by that database.

2.2 Conservation Status Classification

2.2.1 Ecological and Vegetation Communities

Significant ecological and vegetation communities are listed under the EPBC Act as critically endangered, endangered or vulnerable and / or the VM Act as Endangered, Of Concern or Least Concern (i.e. Category B remnant vegetation). High value regrowth vegetation (Category C) and reef regrowth vegetation (Category R) are also recognised.

Significant wetlands include those considered of international (Ramsar listed), national (listed under the Directory of Important Wetlands) or State (mapped by the DEHP as referable wetlands) significance.

2.2.2 Conservation Listed Species

Threatened flora and fauna species are defined as those taxa listed as presumed extinct, endangered or vulnerable under the EPBC Act and / or NC Act and near threatened species are defined as those taxa listed as near threatened under the NC Act. Collectively, these species are referred to as EVNT (Endangered, Vulnerable and Near Threatened) species.

Marine plants are defined as those native flora species growing on or adjacent to tidal lands as defined under the *Fisheries Act 1994*. More specifically, these include mangroves, seagrasses, salt couch, samphire (succulent) vegetation and adjacent plants, such as *Melaleuca* (paper barks) and *Casuarina* (coastal she-oaks).

2.2.3 Weed and Pest Species

Significant weed and pest species include those non-native taxa listed as weeds of national significance under the *Australian Weeds Strategy* (Natural Resource Management Ministerial Council, 2007) and declared plants and/or pests of Queensland as listed under the *Biosecurity Act 2014*. Locally significant weed species are also identified under the Rockhampton Regional Council Pest Management Plan (Rockhampton Regional Council, 2012).

All other non-native species are considered environmental weed species.

2.3 Literature and Database Review

Flora, fauna, habitat and related environmental values were assessed by way of a desktop review undertaken in January 2017. The following databases and search results were used to complete this assessment:

- A review of the Department of the Environment and Energy (DOEE) Protected Matters Search Tool to identify potential Matters of National Environmental Significance within the wider study area including wetlands of international significance (Ramsar listed wetlands), critical habitat areas, threatened ecological communities, threatened flora and fauna species and other matters including conservation areas such as national parks (Appendix A).
- A review of the Department of Natural Resources and Mines (DNRM) regulated vegetation management mapping and RE description database to identify vegetation communities and essential habitat areas mapped within the wider study area (Appendix A).
- A review of the DEHP Wildlife Online database (Appendix A) to identify all flora and fauna species known or likely to occur within the wider study area.
- A review of the DEHP protected plant flora survey trigger mapping to identify high risk areas for protected plants within the vicinity of the Project area (Appendix A).
- A review of the DNRM essential habitat mapping to identify essential habitat areas mapped within the wider study area (Appendix A).
- A review of the Department of Agriculture and Fisheries (DAF) Waterway Barrier Works (WWBW) mapping (Appendix A).
- A review of the DEHP Referable Wetlands mapping to identify wetland protection areas and wetlands of high and general ecological significance within the wider study area (Appendix A); and
- A review of satellite imagery to identify vegetation patterns and gain an appreciation of the proximity of the proposed project area to sensitive areas.

2.4 Site Investigation

A site walk over was undertaken by an AECOM flora ecologist and fauna ecologist on 22 January 2017 and continued over 03-04 May 2017 to consider ecological aspects and potential habitat availability of the areas within and surrounding the Project area. The focus of the assessment was on designated creek crossings and environmental points of interest.

Specifically the site investigation included:

- A protected plants survey undertaken in accordance with the *Flora Survey Guidelines – Protected Plants, Nature Conservation Act 1992* ('the Guidelines') (DEHP, 2016). The main objective of the protected plants survey was to locate any 'Endangered', 'Vulnerable', or 'Near Threatened' (EVNT) plants that may occur within the Project Area, and a 100 m buffer around the Project Area. This area is termed the 'Clearing Impact Area' (CIA) in the Guidelines, and is the required survey area for a protected plant survey.
- Ground truthing of regional ecosystem mapping in accordance with the *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland* (Neldner, V. et al, 2012). The survey included two tertiary sites within native regrowth vegetation to consider potential remnant status.
- Habitat assessment and characterisation with specific consideration of EVNT flora and fauna species and migratory fauna species.
- Opportunistic searches for EVNT listed fauna species identified from the desktop review.

2.5 Likelihood of Occurrence of Threatened Species and Ecological Communities

As with most biological assessments, the presence or absence of particular species of flora or fauna over time cannot be definitively determined by a single site assessment. Therefore a methodology which assesses the likelihood of the presence of Commonwealth and State listed threatened species within a site has been applied. This method identifies the habitat requirements of species of conservation significance and their potential to occur on site. Based on the outcomes of the field survey, an examination of whether the site contains any suitable habitat for individual species occurs followed by an assessment of the likelihood of species occurrence based on those results.

Likelihood categories provided include:

- Unlikely: No preferred habitat on the site. Species unlikely to be present on the site at any time or season.
- Low: Some of the preferred habitat present on the site. Species may infrequently visit the site on-route for foraging but will not roost or otherwise depend on on-site habitats for their survival. Migratory and aerial foraging birds may overfly the site.
- Moderate: Site contains some of the preferred habitat required to support a population of the species.
- High: Site contains the preferred habitat which is likely to support a population of the species, including roost sites.
- Present: Species directly observed on the site or recently recorded at the site. Preferred habitat is present on the site.

This process is to be used as a guide and is not to be used to authoritatively confirm species presence or absence. Details on the likelihood of occurrence of threatened species are discussed for EVNT and migratory species in Section 4 with full assessment available in Appendix B.

2.6 Assumptions and Limitations

This assessment has been undertaken to provide a broad overview of biodiversity assets within the study site. The study effort, combined with information available from other sources, is considered suitable to assess the overall ecological values of the site. However, the following limitations apply:

- Potential impacts associated with the project including extent of remnant vegetation to be cleared are based on the proposed development layout and location of ancillary infrastructure as of the design at 7 June 2017.
- The conservation status of flora and fauna species, vegetation communities and taxonomic nomenclature cited in this report are current as of the 1 June 2017.
- The Queensland Department of Natural Resources and Mines (DNRM) vegetation mapping is correct except in those locations where site specific surveys identified inaccuracies at the local scale. Existing RE mapping and noted inaccuracies with this mapping have been used to determine proposed clearing requirements for the proposed project.
- It is recognised that the information gained from these databases has caveats attached to it regarding the robustness or completeness of the information. The absence of any specimen record for a particular species from an area does not imply that that species does not occur in the area. Databases contain information based on a combination of actual records and modelled distributions of species according to their ecological characteristics.
- As seasonal field surveys were not undertaken, the precautionary approach was adopted throughout this assessment. As such, species that could potentially occur within the Study Area (as identified through ecological databases and the habitat knowledge of the ecologists) have been assumed to occur in the Project Area.

- No targeted fauna survey was undertaken for this assessment. This assessment is based on the potential suitability of habitat likely to be present for significant species detected on existing databases, and based on two day site walkover.
- A number of significant flora species have the potential to occur within the proposed study area and were not detected during the current surveys. This may or may not be due to climatic conditions and seasonal timing or the protected plant survey and additional targeted searches within areas of suitable habitat could detect the presence of these species.
- The information regarding flora and fauna species gathered during fieldwork for this project is not considered to be conclusive, as limitations may have resulted in some species remaining undetected. ***Flora surveys were not undertaken in the optimal conditions for this site. Although the timing was within the typical wet season months the region had not received any significant rains or wet season like weather patterns and this may have affected detectability of some species.***
- The spatial analysis of biodiversity attributes is complex and has significant limitations when it is driven by historical record data such as the Wildlife Online database and EPBC Act Protected Matters Search Tool. The timing of surveys and incidental observations may not correspond with ideal sampling periods; there may be limited survey effort in the area if it is extensively private land; and some species have naturally low detectability rates.
- On site data collection to inform mapping was conducted using hand-held (uncorrected) iPad unit paired with a Garmin GPS unit, the pdf maps program and aerial photo interpretation. The accuracy uncorrected GPS is subject to the accuracy of the unit and access to satellite information (generally < 6 metres). As such, these points should not be relied on for design purposes.
- Discussion surrounding biodiversity assets such as RE and essential habitat under the VM Act are made under the assumption that TMR intend to make the necessary changes to their road corridor to ensure that all proposed construction works will occur within a State Controlled Road Corridor, and hence exemptions are assumed to apply.

3.0 Existing Terrestrial Environment

3.1 Bioregional Context

The Project area occurs within the Brigalow Belt Bioregion, which covers the 500-750 mm rainfall area between the Queensland – New South Wales border in the south, up to Townsville in the north. The Bioregion is characterised by the tree species *Acacia harpophylla* (brigalow) that forms forest and woodland on clay soils. Brigalow does not predominate across the entire region, with the bioregion including a range of ecosystems including eucalypt forest and woodland, grassland, dry rainforest, cypress pine woodland and riparian communities (Sattler, P., Williams 1999).

Within the Brigalow Belt Bioregion, the project area occurs within the Marlborough Plains Province as defined by Sattler, P., Williams (1999).

3.2 Environmentally Sensitive Areas

No environmentally sensitive areas are within the Project Area.

3.3 Matters of National Environmental Significance

Matters of National Environmental Significance (MNES) for the Project Area were analysed on 1 June 2017 using the DOEE EPBC Act Protected Matters Search Tool (PMST). A 20 kilometre radius from the site was investigated (Appendix A). This tool lists those species or species habitat and vegetation communities that may occur, or are likely to occur within the buffered area. MNES identified for the project area are included in **Table 1**.

Table 1 Protected Matters Search Tool Results Summary

Matters Of National Environmental Significance	Results
World Heritage Properties	1
National Heritage Places	1
Wetlands of International Importance	None
Great Barrier Reef Marine Park	None
Commonwealth Marine Areas	None
Listed Threatened Ecological Communities	4
Listed Threatened Species	49
Listed Migratory Species	27

Discussion on potential likelihood of occurrence and consideration of potential impact to MNES for each of the current alignment options are presented in Sections 4 and 5.

4.0 Site Investigation Findings

4.1 Flora

The field survey identified 153 flora species from 112 genera and 47 families. Of this number, 64 were introduced species, this being approximately 40% of the total species recorded. Families which recorded the most number of species were Poaceae (25 taxa), Myrtaceae (22 taxa), Mimosaceae (12 taxa) and Fabaceae (12 taxa). See Appendix D for a full species list.

4.1.1 Plant Communities and Regional Ecosystems

A majority of the Project Area has been historically cleared or thinned of native vegetation and subject to agricultural, mining and land development practices (AECOM, 2017). As such the Project Area has not been mapped on the vegetation management map to contain remnant regional ecosystems.

No remnant Regional Ecosystems (REs) are mapped for the Project Area on the vegetation management supporting map (Appendix A). Despite this, a review of aerial photography and an initial site drive through identified an area of significant regrowth vegetation south of Boundary Road, in association with Limestone Creek. Two flora sites (equivalent of tertiary sites) were completed in these areas. Findings describe that regrowth vegetation at both sites has advanced to a state that can be considered remnant vegetation status. The two plant communities identified are described in Table 2 , along with the RE that they represent. The locations of the sites are shown on Figure 1, with the field data provided as Appendix C).

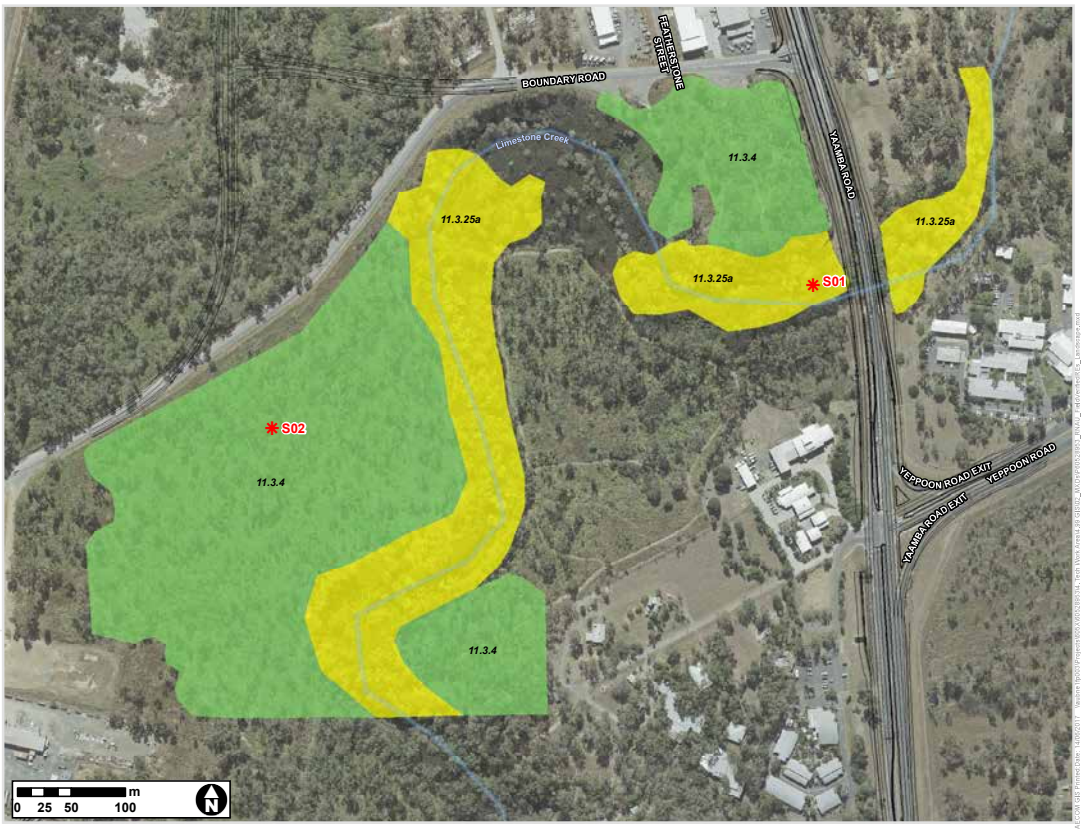
Neither of the two REs are considered to represent Threatened Ecological Communities (TECs). Most of this vegetation occurs outside of the proposed alignment; however a small length on the western side of Bruce Highway between Limestone Creek and Boundary Road may need to be cleared.

Table 2 Significant Vegetation Communities Present in the Stage 1 Alignment

Community Description	Status*	Presence within the Alignment
Open forest of *Eucalyptus tereticornis*, *Corymbia tessellaris* and *Eucalyptus platyphylla* (RE 11.3.4)	-, OC	on 1 June 2017 th between Limestone Creek and Boundary Road)
Open forest of *Eucalyptus raveretiana* and *Melaleuca fluviatilis* over low open forest of **Leucaena leucocephala* and *Casuarina cunninghamiana* (RE 11.3.25a)	-, LC	Yes (small portion at Limestone Creek)

*Status: 1 = EPBC Act, 2 = VM Act, CE = critically endangered, EN = endangered, VU = vulnerable, OC = of concern, LC = least concern.





LEGEND

- Flora Site
- Project Area
- Major Creeks
- Minor Creeks

Field Verified Regional Ecosystems

- 11.3.25a
- 11.3.4

AECOM

SIZE	COORDINATE SYSTEM
A3	GDA 1994 MGA Zone 56

TITLE

Figure 1:
Field Verified
Regional Ecosystems

REPORT

PRELIMINARY FLORA AND FAUNA TECHNICAL REPORT

DISCLAIMER

Spatial data used under licence from The State of Queensland 2017.

AECOM makes no representations or warranties of any kind, about the accuracy, reliability, completeness, suitability or fitness for purpose in relation to the map content.

4.1.2 EVNT Flora

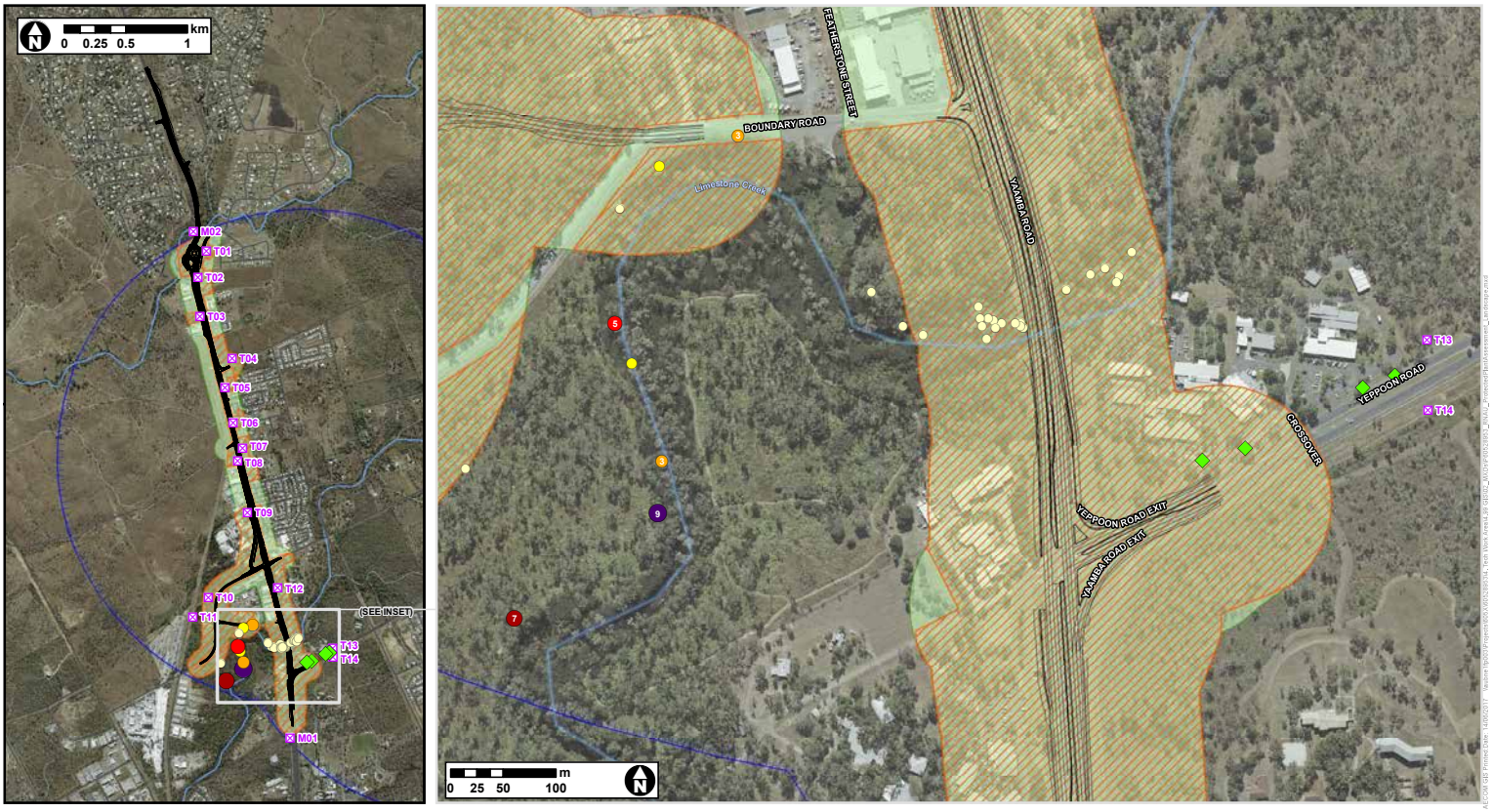
The online searches conducted for the Project Area (PMST and Wildlife Online) identified 21 species of flora occurring, or potentially occurring within 20 km of the Project area. These species are listed in Appendix B), along with a likelihood of occurrence rating. The species that were identified as having a moderate to high likelihood of occurring within the Project area are:

- *Eucalyptus raveretiana* – Vulnerable (EPBC) (Present)
- *Stackhousia tryonii* – Near Threatened (NC Act) (Moderate)
- *Samadera bidwillii* – Vulnerable (EPBC and NC Act) (Moderate).

Two timed-meanders and fourteen transects were undertaken across the CIA in February and May 2017 (AECOM, 2017b). The locations of these surveys are provided on Figure 2. No EVNT species listed under the NC Act were identified during the survey. However, fifty two individuals of black ironbox (*Eucalyptus raveretiana*), were identified within the CIA (Figure 2). These trees were identified along Limestone Creek at the southern end of the Project Area. An additional four individuals were identified along Yeppoon Road and two within gardens of the Sibelco site, however, these individuals have been planted, and do not occur naturally therefore do not require consideration for impact assessment, offsets nor clearing permits. Field survey data collected for the assessment is provided in Appendix C).



Plate 1 Black ironbox (*Eucalyptus raveretiana*) identified along Limestone Creek within the Project Area



LEGEND

- Protected plant survey locations
- Eucalyptus raveretiana (planted)

Eucalyptus raveretiana (number of trees)

- 1
- 2
- 3
- 5
- 7
- 9

- Project Area
- Major Creeks
- Minor Creeks
- Clearing Impact Area
- Reduced Clearing Impact Area
- Flora Survey Trigger

AECOM

SIZE: A3

COORDINATE SYSTEM: GDA 1994 MGA Zone 56

TITLE

Figure 2:
Protected Plant Assessment

REPORT

PRELIMINARY FLORA AND FAUNA TECHNICAL REPORT

DISCLAIMER

Spatial data used under licence from The State of Queensland 2017.

AECOM makes no representations or warranties of any kind, about the accuracy, reliability, completeness, suitability or fitness for purpose in relation to the map content.

4.1.3 Marine Plants

No marine plants occur within the Project Area.

4.1.4 Weed Species

A total of 64 introduced (weed) species were recorded during the surveys (Appendix D). Of these species, six are listed as Class 3 Restricted Matter; with an additional two listed as Invasive species under the Queensland *Biosecurity Act 2014*. Four are listed as Weeds of National Significance (WONS). The species are as follows:

Biosecurity Act:

- Restricted Matter, Class 3:
  - *Schinus terebinthifolius*
  - *Cryptostegia grandiflora*
  - *Harrisia martinii*
  - *Tamarix aphylla*
  - *Lantana camara*
  - *Lantana montevidensis*
- Invasive Matter:
  - *Opuntia stricta*
  - *Vachellia farnesiana*

Weeds of National Significance:

- *Cryptostegia grandiflora*
- *Harrisia martinii*
- *Tamarix aphylla*
- *Lantana camara.*

4.2 Fauna

4.2.1 EVNT Fauna

There were 44 EVNT fauna species identified in the EPBC Act PMST and Wildlife Online desktop searches with potential to occur within a 20 kilometre radius surrounding the proposed Project Area (see Appendix A). Discussion on the likelihood of occurrence and potential for impact to these species can be found in Appendix B.

Those nationally listed fauna species that have at least a moderate likelihood of occurrence within the Project Area as identified through the likelihood of occurrence assessment (Appendix B) include:

- Fitzroy River Turtle, *Rheodytes leukops* – Vulnerable (EPBC and NC Act)
- Southern Snapping Turtle, *Elseya albagula* – Critically Endangered (EPBC Act).

4.2.1.1 Fitzroy River Turtle, *Rheodytes leukops,* Vulnerable (EPBC) Vulnerable (NCA) Moderate

Due to its physiological adaptation to cloacal breath, the Fitzroy river turtle is generally attributed to fast-flowing clear freshwater rivers and rivers with large deep pools with rocky, gravelly or sandy substrates, connected by shallow riffles, (Department of Environment and Energy, 2017), commonly in association with *E. tereticornis*, *Casuarina cunninghamiana*, *Callistemon viminalis*, *Melaleuca linariifolia* (Tucker et al, 2001)and *Vallisneria* sp. (Cogger, 2000). The bulk of records for this species are associated with the large primary streams of the Fitzroy River system; the Nogoa, Comet, MacKenzie, Connors, Isaac, Dawson and Fitzroy Rivers. Queensland Museum records however, show a 2004 record for Fitzroy River Turtle on the downstream side of Mud Island in the Mouth of the

Fitzroy River. This is an estuarine mangrove environment over soft silts. Queensland Museum records show also a 2002 record for this species in the vicinity of Winding Reach some twenty-five kilometres downstream of the Fitzroy River Barrage. This location is also an estuarine habitat over fine silts. These records imply presence of this species in habitats widely varying from commonly-cited typical or "type" habitats.

The habitat associated with Limestone Creek contains some of the key habitat preferences of the Fitzroy river turtle including deep clear pools connected by shallow riffle zones, sandy to gravelly substrate and suitable aquatic and riparian vegetation (further description in Section 4.6.1). Although Limestone Creek was not flowing at the time of either survey nor is it likely to outside of local rain events, this is not considered to preclude the presence of Fitzroy River turtle from the system and therefore the area is considered potential habitat. As described above the species has been recorded in several locations outside of the typical habitat description and Limestone Creek is otherwise considered suitable habitat for this species.

In addition to this a photo of a turtle suspected to possibly be a Fitzroy River Turtle was taken at Limestone Creek during previous surveys for earlier stages of this project, although it could not be conclusively identified (DTMR, 2014).

4.2.1.2 Southern Snapping Turtle, *Elseya albagula,* Critically Endangered (EPBC), Moderate

The Southern or white-throated snapping turtle is only found in the Burnett, Fitzroy, Raglan and Mary river drainages of south-east Queensland. Like the Fitzroy River Turtle the Southern snapping turtle is capable of cloacal respiration and therefore prefers permanent flowing water habitats where there are suitable shelters and refuges (e.g. fallen trees). This species is known to also occur in non-flowing waters but at much lower densities (Threatened Species Scientific Committee, 2014).

The Southern Snapping Turtle has similar habitat requirements to the Fitzroy River Turtle due to their shared physiological adaptation to cloacal respiration. As such it is considered that the habitat within Limestone Creek provides suitable requirements for this species and based on this their likelihood of occurrence has been considered moderate.

4.2.2 Special Least Concern Fauna

There were 23 Special Least Concern fauna species under the NC Act identified in the Wildlife Online desktop searches with potential to occur within a 20 kilometre radius surrounding the proposed Project Area (see Appendix A).

The majority of these species are either migratory (discussed below) or Australian iconic terrestrial mammals such as the echidna. Given the nature of the project, being a road duplication undertaken within a heavily disturbed road corridor in an urban environment, it is considered unlikely that any special least concern animals or species will experience significant impact from this project. If these species were to live within or surrounding the project area there is potential for short term displacement due to construction activities, particularly noise and physical activity, however this is expected to only during construction phases of the project.

4.3 Migratory Species

There were 30 Migratory fauna species identified in the EPBC Act PMST and Wildlife Online desktop searches with potential to occur within a 20 kilometre radius surrounding the proposed Project Area (see Appendix A).

During the site investigations no feeding, roosting or breeding habitat was identified for any of these migratory species. Additionally many of these species identified are marine only species and therefore the habitat within the site is considered unsuitable. Additionally, as stated above the nature of the project, being a road duplication undertaken within a heavily disturbed road corridor in an urban environment further reduces the potential for and migratory animals or species to experience significant impact from this project. If there were to be any migratory species present at site, there is potential for short term displacement due to construction activities, particularly noise and physical activity however this is expected to only during construction phases of the project. Indirect impacts such as downstream contamination of waterways due to site water run off will be managed

appropriately through the use of a site specific CEMP and therefore risk of such an impact is considered unlikely.

4.4 Essential Habitat

No essential habitat areas have been identified as present within or surrounding the project area.

4.5 Watercourses

4.5.1 DAF Waterways

There are two mapped waterways located within the project area, Limestone Creek located at the Southern end of the project and Ramsay Creek located at the northern end of the project. Limestone Creek is a stream order 3 and a red (high) risk waterway under the DAF waterway mapping. Ramsay Creek is a stream order 2 creek and an amber (moderate) risk waterway under the DAF mapping. Both water courses are ephemeral in nature and were not flowing at the time of either site visit however both creeks received significant flows in late May 2017 (in between both site visits).

Ramsay Creek was difficult to access other than areas directly below the existing bridge structure to determine upstream and downstream environments (see Plate 2). Areas around the bridge were heavily overgrown and impacted by para grass and gross pollution.



Plate 2 Ramsay Creek as viewed downstream from underneath existing bridge structure

Limestone Creek was traversed at least 100 metres upstream and downstream during the February survey however changes in standing water levels made upstream and downstream environments less accessible at the May survey. One large isolated water body was observed upstream of the bridge (Plate 3). Riparian vegetation included mature Melaleuca and Eucalypt sp. The water column was algae rich and supported a dense community of *Valisneria* sp. with *Potemogeton* and *Nymphaea* sp. also present. Downstream a large isolated waterbody was observed (Plate 4) connected to smaller

pools in the vicinity of the bridge by a narrow rocky stream bed which would form a shallow riffle area during times of flow (Plate 5). Riparian vegetation was heavily infested with *Leucaena* sp. and introduced grasses with canopy species including *E. tereticornis*, *E. raveretiana* and *Melaleuca* sp. The bed was a coarse, heavily silted sand and the surface of the water was almost entirely covered in scum however water below this was quite clear and the bed was visible through the water. The water body was observed to contained watermilfoil, *Vallisneria* sp. and a small area of *Nymphacea* sp., however access to the full waterbody was not possible and the condition of the water surface was such that observation of the water column prohibited other than close to the bank. Small fish were observed in the water.



Plate 3 Upstream of bridge on Limestone Creek



Plate 4 Downstream of bridge Limestone Creek



Plate 5 Riffle zone connecting pools downstream of bridge

4.6 Wetlands and Wetland Protection Areas

No wetland or wetland protection areas have been identified as present within or surrounding the project area.

5.0 Potential Impacts

5.1 Key Potential Impacts

The key potential impacts associated with this project are largely restricted to a species specific level. The construction footprint for the most part is largely contained within existing road corridor which is heavily impacted, largely cleared and situated within a busy urban/residential and industrial area. Given the proximity to the existing Bruce Highway and the design for waterway crossings including bridges which are the lowest impact solutions, the operation of the final structure has a low likelihood of causing significant impact or additional cumulative impact on the ecological values of the area at a local or regional level. Key impacts are considered to surround construction activities and direct habitat loss. These impacts may include:

- Vegetation clearing and habitat loss
- Potential impacts to species of conservation significance and for the turtles, this includes predation of or destruction of nesting habitat in river banks, flow regulation or blockages / barriers to water flow and migration, reduction of water quality, loss or riparian habitat, presence of dense stands of aquatic weeds.

Likely impacts on key elements within the project area are discussed below.

5.1.1 Vegetation Clearing and Habitat Loss

Regional Ecosystems

The Project has the potential to impact on a small area of RE 11.3.25a (Least Concern) and RE 11.3.4 (Of Concern) between Limestone Creek and Boundary Road on the western side of the Bruce Highway. Based on a construction footprint which encompasses the resumption boundaries and 15 m either side of each new bridge, remnant vegetation clearance is estimated to be of the order of 2,971.01 m^2. This vegetation has not been mapped on the remnant RE map, as it was historically cleared. It has regrown to a state that meets the criteria for remnant status. It is in a highly degraded state, with high levels of weed introduction. The impacts of the project are not considered to be significant for these two regional ecosystems.

5.1.2 Potential Impacts to species of conservation significance

Flora

There is the potential that the project may need to remove and/or disturb up to 6 individuals of *Eucalyptus raveretiana*. +The total number of species identified in proximity to the Project area (100 m around the Project footprint) was 52, which means that Project has the potential to impact 11% of the population around Limestone Creek.

Records from Atlas of Living Australia (ALA, 2017), shows the species being distributed from Rockhampton in the south to Townsville in the north, with numerous records being recorded from the Rockhampton area. Rockhampton appears to be the southernmost extent of this species distribution (with the exception of a few outlier records).

Population data discussed in the literature for Black Ironbox is limited, although it is locally common on some permanent streams, but absent from many others (Bean, 2011) in (Department of the Environment and Energy, 2016). Twenty-three sites are known (Halford, 1997) and there are likely to be many subpopulations, probably at least 100 (Bean, 2011) in (Department of the Environment and Energy, 2016).

Little evidence of recruitment was found within the project footprint close to the Limestone Creek Bridge with dense riparian vegetation and exotic species inhibiting recruitment. The section close to the bridge should therefore be regarded as marginal habitat for this species particularly if compared to upstream areas where suitable habitat is likely abundant. The area that would be impacted by bridge duplication works is dominated by weeds preventing regrowth.

Recruitment of Black Ironbox require good light levels for germination as the very small seeds hold little food reserves. Therefore, the area impacted does not represent potential future habitat that is important for recruitment of Black Ironbox without an event that changes these conditions. It has been noted elsewhere that the species is highly capable of regenerating following disturbance (BAAM, 2011).

It is unlikely that the project will have a significant impact on the species, considering the marginal habitat around the bridge, and the high incidence of weed introduction.

Fauna

From discussion in Section 4.3.1 and the likelihood of occurrence assessment (Appendix B) the following EVNT species are considered to potentially be impacted by the project:

- Fitzroy River Turtle, *Rheodytes leukops* – Vulnerable (EPBC and NC Act); and
- Southern Snapping Turtle, *Elseya albagula* – Critically Endangered (EPBC).

Each of the above species, if present will likely experience some level of displacement from the area during construction. Physical disturbance will vary during the construction program given that the project is linear and habitat areas are limited to Limestone Creek and potentially Ramsay Creek. Highest risk will be construction of the waterway crossing sections and disturbance of bed and banks in the construction area, particularly of the new Limestone Creek section. Primary impacts are expected to include construction noise and vibration, particularly during pile driving and earthworks, but also likely to include visual impact. Degree of impact will depend greatly on the population densities of the respective species and on availability of suitable alternative habitat. If suitable habitat, not impacted by construction, was available downstream of the current bridge surrounds on Limestone Creek this would be ideal however if the turtles attempt to traverse over land in search of new habitat risk of direct mortality is high given the proximity to roads with high traffic load including high heavy vehicle traffic load. If suitable habitat is not present downstream then the turtles will be forced to leave Limestone Creek where interaction with traffic risk is high and further investigations would be required to determine if suitable habitat was available with a suitable radius to Limestone Creek.

The significance of this type of impact requires further field investigations including targeted turtle surveys to provide further information regarding likelihood of occurrence and or nesting habitat suitability. If no turtles are identified in the watercourse and or banks of the creek following suitable survey the risk of impact would be expected to be lowered greatly. If Southern Snapping Turtle in particular are identified within Limestone Creek the significance of potential impact will increase greatly as this species is critically endangered and the loss of even one individual is likely significant to the species, even more so if it is a male as their population numbers are critically low. Additionally given both species physiological adaptation to cloacal respiration strong consideration into environmental controls to monitor and limit sediment and other water pollutant loads in downstream environments will be of high importance.

6.0 Legislative and Approval Requirements

6.1 Commonwealth Government

6.1.1 Environment Protection and Biodiversity Conservation Act 1999

At the Commonwealth level, the EPBC Act provides the legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places, which is defined in the Act as MNES. MNES include world heritage sites and national heritage places, wetlands of international importance, nationally threatened species and ecological communities, migratory species, Commonwealth marine areas, nuclear actions and the Great Barrier Reef Marine Park.

Under the EPBC Act, an action will require approval from the Commonwealth Environment Minister if the action will have or is likely to have a significant impact on an MNES.

MNES potentially affected by the Project include:

- Fitzroy River Turtle, *Rheodytes leukops* – Vulnerable (EPBC and NCA)
- Southern Snapping Turtle, *Elseya albagula* – Critically Endangered (EPBC)
- Black Ironbox*, Eucalyptus raveretiana* – Vulnerable (EPBC) (Present); and
- Quassia (*Samadera bidwillii*) – Vulnerable (EPBC and NC Act) was considered to have a 'Moderate' likelihood of occurring within the Project area.

6.2 Queensland Government

6.2.1 Nature Conservation Act 1992

The NC Act provides a comprehensive strategy for the conservation and management of Queensland's native animals and plants. Under this Act, approval is required to remove or destroy threatened flora and fauna species and protected areas and to remove or destroy least concern plants as defined under the *Nature Conservation (Protected Plants) Conservation Plan 2000*. Additional clearing restrictions apply to the removal of Type A Restricted Plants under the *Nature Conservation (Administration) Regulation 2006*. Under the NCA, the clearing of plants is described as the taking, disturbance or injury of plants.

In Queensland, all indigenous plants are considered 'protected plants' under the NC Act and plants are divided into three categories: threatened (i.e. extinct, endangered, vulnerable), near threatened and least concern as listed under the *Nature Conservation (Wildlife) Regulation 2006.*

Least Concern Plants

All native plants recorded on and adjacent to the Study Area are considered least concern under the NC Act.

Threatened Flora Species

No EVNT flora species were identified within the Project area or CIA as part of the protected plant survey. Two EVNT species have a moderate likelihood of occurring within the Project Area, these species are:

- *Stackhousia tryonii* (NT)
- *Samadera bidwillii* (V).

Neither of these species were identified within the protected plant assessment area.

Threatened Fauna Species

Throughout the field investigation no threatened fauna species (NCA) were identified in proximity to the proposed project footprint however one species has been identified, Fitzroy River Turtle, *Rheodytes leukops* – Vulnerable (EPBC and NCA), as having a moderate likelihood of occurrence with further field investigations recommended.

In addition to this 23 special least concern species (NCA) were identified in the Wildlife Online desktop search with potential to occur within a 20 kilometre radius surrounding the proposed project area.

A *Species Management Program for tampering with animal breeding places* (SMP) (EHP, 2013b) notes that TMR has been provided an exemption by EHP for most species that are listed as least concern fauna under the NCA. The SMP states that least concern species that are colonial breeders or special least concern animals require a damage mitigation permit or separate SMP under the *Nature Conservation (Wildlife Management) Regulation 2006*. TMR holds a SMP for Colonial Breeding Species for the North Queensland region which could be revised to form a basis for a SMP for Central Queensland (DTMR, 2016).

A damage mitigation permit may be required under the NC Act for removal of fauna within the proposed alignment. This may be required at any time, particularly as fauna may inhabit the project site at any time during construction. A licensed 'spotter-catcher' will also be required as it is an offence under the NCA to capture and relocate protected species without the appropriate licences and permits.

6.2.2 Vegetation Management Act 1999

The VM Act seeks to protect native vegetation from unregulated clearing in order to preserve remnant endangered vegetation, maintain biodiversity and ecological processes and prevent land degradation from unsustainable land practices. Approval requirements for regulated development are provided for through the Planning Act.

The conservation status of remnant vegetation in Queensland is recognised under this Act and includes three categories: endangered, of concern and least concern.

Clearing of regulated vegetation is exempt for the purposes of a state-controlled road.

6.2.3 Fisheries Act 1994

The Fisheries Act applies the principles of ecologically sustainable development to provide for the 'use, conservation and enhancement' of fisheries resources and fish habitats. Protecting fish passage and fisheries habitats is paramount in ensuring the sustainability of fish and other aquatic species.

Fish species can move between freshwater and marine habitats and between waterways and flood ponding areas in the wet season in different stages of their life cycle, it is important to maintain these regimes for ecological sustainability reasons. The Fisheries Act defines a waterway as including "…a river, creek, stream, watercourse or inlet of the sea". Approval requirements for assessable development are provided through Planning Act 2016.

The Study Area transects three waterways under DAF's waterway classification, Limestone Creek (red – high impact), Ramsay Creek (amber – moderate impact) and an unnamed waterway (green – low impact).

Preventing the passage of fish, even temporarily, along a waterway (including ephemeral waterways) can trigger assessable development under the Fisheries Act and the Planning Act. The Department of Agriculture and Fisheries (DAF) have evaluated waterways across Queensland according to their value for fish habitat and passage. This information is provided in a spatial format and is utilised to determine what type of assessment is/may be required.

No marine plants were observed were observed with or surrounding the project footprint for which a permit to clear would be required.

No declared fish habitat areas are located within or surrounding the project.

6.2.4 Biosecurity Act 2014

The *Biosecurity Act 2014* (the Act) came into effect on 1 July 2016. The Act's intent is to improve Queensland's biosecurity preparedness and response capabilities, and imposes a general biosecurity obligation to all individuals and organisations whose activities pose a biosecurity risk to ensure activities do not spread a pest, disease or contaminant. These responsibilities include:

- taking all reasonable and practical steps to prevent or minimise each biosecurity risk

- minimising the likelihood of the risk causing a biosecurity event and limit the consequences of such an event; and
- preventing or minimising the adverse effects the biosecurity risk could have and refrain from doing anything that might exacerbate the adverse effects.

A biosecurity risk is considered to exist when anyone deals with any pest, disease or contaminant, or with something that could carry one of these factors. This includes, for example, moving diseased plant material, or associated soil or equipment, off a property. Everyone is obligated to take all reasonable and practical steps to minimise the risks associated with invasive plants under their control, known as the general Biosecurity duty of care.

The Act and associated regulation sets out zones and movement restrictions in Queensland as follows:

Cattle Tick Biosecurity Zone

The Project area is situated within a Cattle Tick Infested Zone and is defined as "part of the State identified as the cattle tick infested zone on the cattle tick biosecurity zone map and is established as a biosecurity zone for cattle ticks" under the Biosecurity Regulations 2016.

A cattle tick is identified as:

- *Rhipecephalus (Boophilus) australis*
- *Rhipecephalus (Boophilus) microplus.*

Given the Project is for the duplication of an existing section of highway and associated works, it is unlikely to involve cattle tick carriers and spread cattle ticks.

Sugar Cane Biosecurity Zone

The Project assessment area is within Sugar Cane Biosecurity Zone 3 (Abbotts Point to Rockhampton). The Project area is located in close proximity to the zone boundary and has the potential to transport sugar cane pest carriers via construction plant and materials.

A sugar cane pest carrier is defined as:

a. a vegetative part of a sugar cane plant; or

b. soil, or other growing mediums, in which a sugar cane plant has been grown; or

c. an appliance that has come into contact with a part of a sugar cane plant mentioned in (a) or soil mentioned in (b).

Sugar cane pest carriers must not be moved from a place outside of Queensland into a biosecurity zone or from a place within a biosecurity zone to any place outside of that zone unless:

- risk minimisation requirements for a sugar cane pest carrier are met; and
- a biosecurity certificate from an inspector or accredited certifier has been obtained.

The works are to meet the MRTS51 requirements for pest and weed control. These requirements will be incorporated into the CEMP.

Pest Species

Reflecting the substantial land modification within the survey area, 64 exotic flora species were recorded. Of these species, six are classified as Category 3 restricted invasive plants under the *Biosecurity Act 2014* and four as Weeds of National Significance (WONS). These species are listed in Appendix E.

Table 3 Introduced flora identified during field surveys

Scientific Name	Common Name	Status (* introduced) / Category[1]
Schinus terebinthifolius	Brazilian Pepper	C3

Scientific Name	Common Name	Status (* introduced) / Category[1]
Cryptostegia grandiflora	Rubber vine	C3, WONS
Harrisia martinii	Harrisia cactus	C3, WONS
Tamarix aphylla	Athel pine	C3, WONS
Lantana camara	Lantana	C3, WONS
Lantana montevidensis	Creeping Lantana	C3

1. Restricted invasive categories and restrictions in Queensland are:
Categories 1 & 2: the species must be reported within 24 hours Biosecurity Queensland on 13 25 23; Category 3: the invasive plant must not be distributed either by sale or gift, or released into the environment; Category 4: the invasive plant must not be moved; Category 5: the invasive plant must not be kept.

No pest fauna species were recorded during the field surveys; however the Wildlife Online and EPBC protected matters searches generated the following pest fauna species list (Table 4).

Table 4 Invasive animals potentially occurring within the project assessment area (Queensland Government, 2016).

Scientific Name	Common Name	Status / Category [1]
Rhinella marina	Cane toad	
Capra hircus	Goat	Category 3
Felis catus	Cat	Category 3
Cervus timorensis *Axis axis* *Cervus elaphus* *Dama dama*	Feral deer (Rusa, Chital, Red and Fallow)	Category 3
Lepus capensis	Brown hare	
Mus musculus	House mouse	
Oryctolagus cuniculus	European rabbit	Category 3
Rattus rattus	Black / Ship rat	
Sus scrofa	Pig	Category 3
Vulpes vulpes	Red Fox	Category 3
Canus lupus familarus	Dog	Category 3
Gambusia helbrock	Mosquito fish	
Poecillia reticula	Guppy	

1. Restricted invasive categories and restrictions in Queensland are:
Categories 1 & 2: the species must be reported within 24 hours Biosecurity Queensland on 13 25 23; Category 3: the invasive plant must not be distributed either by sale or gift, or released into the environment; Category 4: the invasive plant must not be moved; Category 5: the invasive plant must not be kept.

6.2.5 Environmental Offset Act 2014

Schedule 2 of the *Environmental Offset Regulation 2014* prescribes the Matters of State Environmental Significant (MSES), which trigger an offsetting requirement when a development application is required. Table 5 provides a list of the MSES as listed in Schedule 2 of the Environmental Offsets Regulation 2014 found in the project area.

Once it is determined an offset may be required under the above requirements based upon the requirement for a prescribed activity, the activity will require assessment to determine if there is a significant residual impact under the relevant guidelines. Table 5 identifies the presence of prescribed

MSES only, the project REF determines whether there is likely to be a prescribed activity based on the design requirements.

For the RNAU project potential offset requirements are primarily driven by the project's compliance with SDAP for:

- State Code 10: Taking or interfering with water
- State Code 18: Constructing or raising waterway barrier works in fish habitats
- State Code 22: Environmentally relevant activities.

Once it is determined an offset may be required under the above requirements, the activity will require assessment to determine if there is a significant residual impact under the relevant guidelines.

Table 5 Matters of State Environmental Significance occurring in the project construction footprint.

Section	Matters of State Environmental Significance[1]	Prescribed MSES in project footprint
Regulated vegetation	Endangered regional ecosystems.	No
	Of concern regional ecosystems	Yes, a small portion of RE 11.3.4 occurs within the Project Area between Limestone Creek and Boundary Road on the western side of Bruce Highway
	A regional ecosystem that intersects with an area shown as a wetland on the vegetation management wetlands map (to the extent of the intersection).	No
	An area of essential habitat on the essential habitat map for an animal that is endangered wildlife or vulnerable wildlife or a plant that is endangered wildlife or vulnerable wildlife.	No
	Permanent removal of vegetation within the defined distance of a watercourse -Category R of the VMA Regulated Vegetation	Yes, small area of vegetation around Limestone and Ramsay Creek may need to be permanently removed.
Connectivity areas	A prescribed regional ecosystem— (a) to the extent the ecosystem contains remnant vegetation; and (b) if the ecosystem contains an area of land that is required for ecosystem functioning (a connectivity area). (Except if located within an urban area)	Yes, a small portion of RE 11.3.25a and RE 11.3.4 occur within the Project Area between Limestone Creek and Boundary Road on the western side of Bruce Highway. Limestone Creek and associated vegetation can be considered a 'Connectivity area'.
	If the administering agency is satisfied, having had regard to criteria in the environmental offsets policy about connectivity areas, that— (a) the connectivity area is of sufficient size or configured in a way that maintains ecosystem functioning; and (b) the prescribed regional ecosystem will	Not applicable

[1] As defined by Schedule 2 of the *Environmental Offset Regulation 2014* as prescribed environmental matters – matters of State environmental significance.

Section	Matters of State Environmental Significance[1]	Prescribed MSES in project footprint
	remain despite a threatening process within the meaning of the Nature Conservation Act 1992. (Except if located within an urban area)	
Wetlands and watercourses	A wetland in a wetland protection area or of high ecological significance shown on the map of referable wetlands	No
	A wetland or watercourse in high ecological value waters.	No (the reaches of Limestone Creek within the conservation park are mapped as HEV waters however this is outside the upgrade area)
Designated precinct in in strategic environmental areas	Designated precinct as defined in the Regional Planning Interests Regulation 2014.	No
Protected wildlife habitat	An area that is shown as a high risk area on the flora survey trigger map and that contains plants that are endangered wildlife or vulnerable wildlife.	No
	An area that is not shown as a high risk area on the flora survey trigger map, to the extent the area contains plants that are endangered wildlife or vulnerable wildlife.	No
	A non-juvenile koala habitat tree located in an area shown as bushland habitat, high value rehabilitation habitat or medium value rehabilitation habitat on the map called 'Map of Assessable Development Area Koala Habitat Values' that applies under the South East Queensland Koala Conservation State Planning Regulatory Provisions.	No
	A habitat for an animal that is endangered wildlife or vulnerable wildlife or a special least concern animal (echidna, platypus and koala). (where habitat is defined as an area of land used by an animal for foraging, roosting, nesting or breeding)	Potential habitat for threatened turtle
Protected areas	A protected area[2].	No
Highly protected zones of State marine	A highly protected area of a relevant Queensland marine park (i.e. conservation park zone, marine national park zone, or preservation zone or another area prescribed	No

[2] *Note—*
Protected areas are defined by the Offset Act as a protected area of a class mentioned in Section 14 of the *Nature Conservation Act 1992*, other than a coordinated conservation area under the *Nature Conservation Act 1992*.

Section	Matters of State Environmental Significance[1]	Prescribed MSES in project footprint
parks	under a regulation or zoning plan under the Marine Parks Act 2004 as a highly protected area).	
Fish habitat areas	An area declared under the Fisheries Act 1994 to be a fish habitat area.	No
Waterway providing for fish passage	Any part of a waterway providing for passage of fish and not located within an urban area – only if the construction, installation or modification of waterway barrier works carried out under an authority will limit the passage of fish along the waterway.	Yes
Marine plants	A marine plant within the meaning of the Fisheries Act 1994 (except if located within an urban area [(3)]).	No
Legally secured offset areas	A legally secured offset area.	No

[3] Schedule 26 of SP Regulations defines urban area as:

"urban area means—(a) an area identified in a gazette notice by the chief executive as an urban area; or (b) if no gazette notice has been published—an area identified as an area intended specifically for urban purposes, including future urban purposes (but not rural residential or future rural residential purposes) on a map in a planning scheme that—

(i) identifies the areas using cadastral boundaries; and (ii) is used exclusively or primarily to assess development applications."

"urban purposes means purposes for which land is used in cities or towns, including residential, industrial, sporting, recreation and commercial purposes, but not including environmental, conservation, rural, natural or wilderness area purposes."

7.0 Mitigation and Rehabilitation Recommendations

Mitigation measures recommended to minimise the potential impacts of the proposed Project on the terrestrial flora and fauna values on site include:

- Ensure all personnel are aware of the key ecological issues on site, mitigation measures and policies / restrictions related to vegetation clearing prior to the commencement of works.
- Clearing should be limited to the minimum possible extent that is necessary for construction where practicable. The clearing footprint should be delineated and no-go zones of any sensitive areas established. Existing tracks and open areas should be utilised where possible.
- Where clearing is unavoidable, clearing should be undertaken in such a way as to minimise disturbance. Clearing should be undertaken in dry weather conditions to reduce soil disturbance. Where clearing is required during wet weather conditions, sediment control measures should be implemented such as sediment trap devices to reduce sediment runoff and loss of topsoil.
- Clearly mark any native trees to be removed (including *Eucalyptus raveretiana*) and avoid disturbance to the canopy and root zones of adjacent trees outside of the disturbance footprint.
- Limit the removal of whole trees where practicable. An arborist should undertake the removal or pruning of trees within the Project area.
- Access roads and cleared areas should be watered during construction to minimise dust emissions and loss of topsoil.
- Clearing of native vegetation in and adjacent to drainage lines should be restricted where practicable.
- Areas cleared during construction which are not designated for infrastructure should be rehabilitated to reduce the potential for sediment runoff and erosion. Landscaping and revegetation should be employed in these areas to promote soil stabilisation and discourage weed establishment. Any landscaping proposed should consider native, endemic species where practicable.
- Regeneration and revegetation efforts should be employed in cleared areas that are not required during operation to promote native biodiversity, reduce weed invasion and improve habitat quality. Revegetation / reseeding efforts should be based on soil types, existing location vegetation characteristics and endemism of selected species and should involve the implementation of a monitoring program (annual to biannual).
- Erosion control measures should be implemented to reduce sediment loss through run-off and vegetation clearing in erosion prone areas should be avoided.
- All hazardous substances and materials including fuels, oils and chemicals should be stored, handled and disposed of in such a way as to minimise potential leakage to the environment.
- Develop and implement a Weed Management Plan to manage weeds that may impact on the natural plant biodiversity values of the Study Area and surrounding land. This plan should focus on prevention and awareness, early detection and monitoring and control.
- Areas disturbed by construction will be revegetated as soon as possible to limit the chance of weed incursion, or erosion.
- Consideration of offsets may be applicable.
- Preclearance surveys prior to clearing should be implemented.
- A licenced fauna spotter catcher is to be engaged during all clearing works.
- A suitable EMP and CEMP documents should be prepared to clearly document site specific and design specific risks and control measures.

8.0 Conclusion and Recommendations

The Rockhampton Northern Access Upgrade primarily involves a construction footprint, largely contained within existing road corridor which is currently heavily impacted, largely cleared and situated within a busy urban/residential and industrial area. Given the proximity to the existing Bruce Highway and the design for waterway crossings to require bridges which are the lowest impact solutions the operation of the final structure has a low likelihood of causing significant impact or additional cumulative impact on the ecological values of the area at a local or regional level. The highest risk impact exists at a species level with impact and potential impact on the following EVNT listed species:

- Black Ironbox*, Eucalyptus raveretiana* – Vulnerable (EPBC) (Present)
- Fitzroy River Turtle, *Rheodytes leukops* – Vulnerable (EPBC and NCA)
- Southern Snapping Turtle, *Elseya albagula* – Critically Endangered (EPBC).

A total of 52 individual *E. raevertiana* were identified within 100 metres of the current project design footprint. Of these, six individuals currently stand to be either removed or disturbed. In consideration of the marginal habitat quality, the high incidence of weed introduction and the current lack of recruitment in the area immediately surrounding the existing bridge infrastructure and within the proposed project footprint it is considered unlikely that the loss of these six individuals will cause significant impact to the species on a local regional or national level.

Given the current level of information available from site investigations to date the potential impact to either of these turtle species is difficult to quantify and requires further field investigation to better determine suitability of habitat both within and surrounding the project footprint, particularly for nesting habitat following survey guidelines for threatened reptiles as relevant (Sadlier et al, 2004). Should either species be present, displacement during construction is expected. Depending on the availability of suitable alternative habitat and the condition on which the site is left post construction displacement may be temporary or may result in local population loss/permanent displacement. Given the proximity of the project to major roadways with heavy traffic loads displacement of turtles has the potential to cause direct loss of individuals should they migrate across land in search of refuge from the disturbance area. For either species this will require careful consideration as to the significance of direct loss of individuals but particular for the Southern Snapping Turtle which is genuinely rare as reflected by its critically endangered status.

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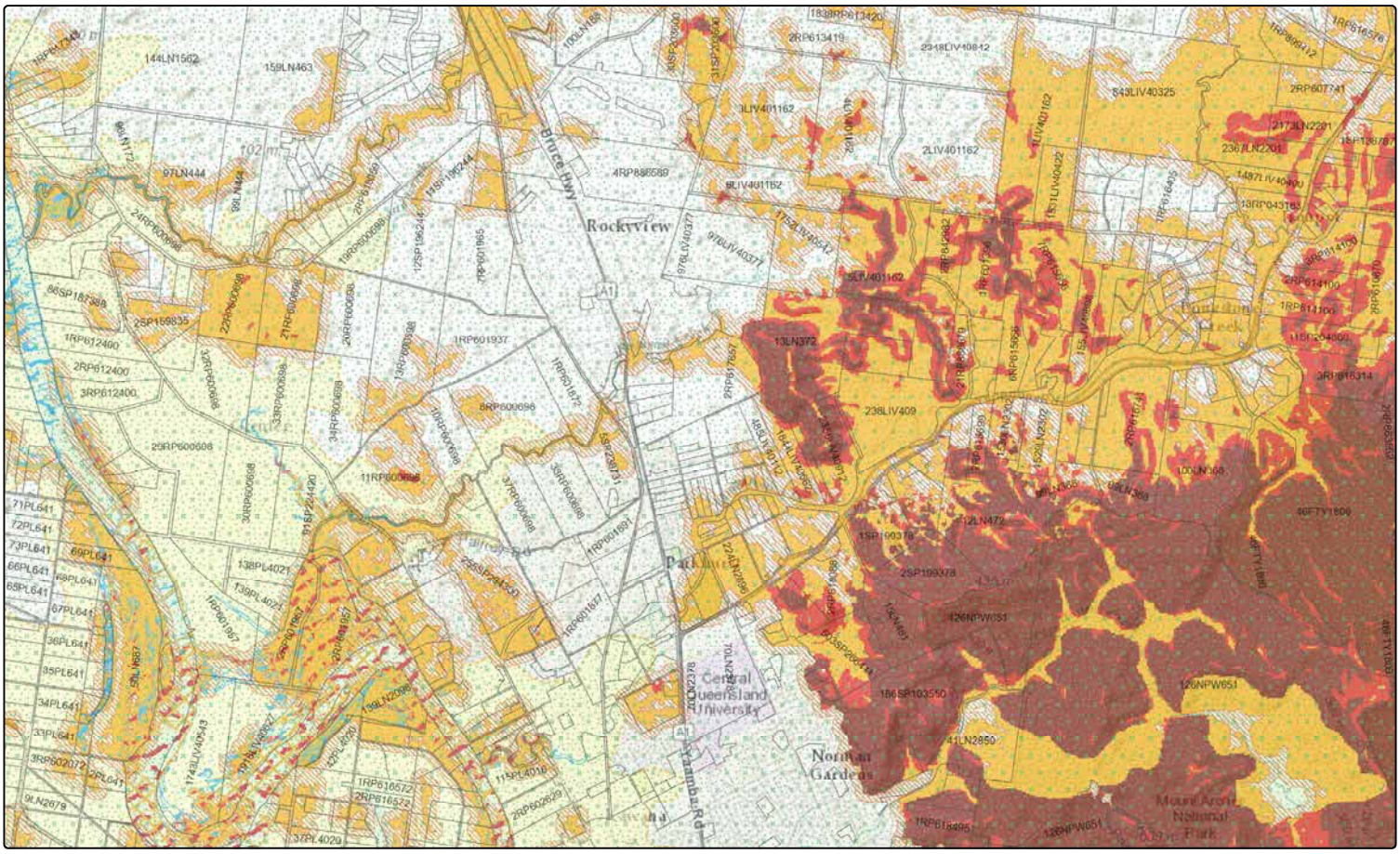
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Appendix A

Literature Review and Database Records



DA Mapping System – Print Screen

Department of Infrastructure, Local Government and Planning

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Metres

Date: 14/07/2017

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Legend

Cadastre (100k)

Cadastre (100k)

Flood hazard area - local Government flood mapping area

Flood hazard area - local Government flood mapping area

Erosion prone area

Erosion prone area

High storm tide inundation area

High storm tide inundation area

Medium storm tide inundation area

Medium storm tide inundation area

Bushfire prone area

Very High Potential Bushfire Intensity

High Potential Bushfire Intensity

Medium Potential Bushfire Intensity

Potential Impact Buffer

Flood hazard area - Level 1 - Queensland floodplain assessment overlay

Flood hazard area - Level 1 - Queensland floodplain assessment overlay

Queensland Government

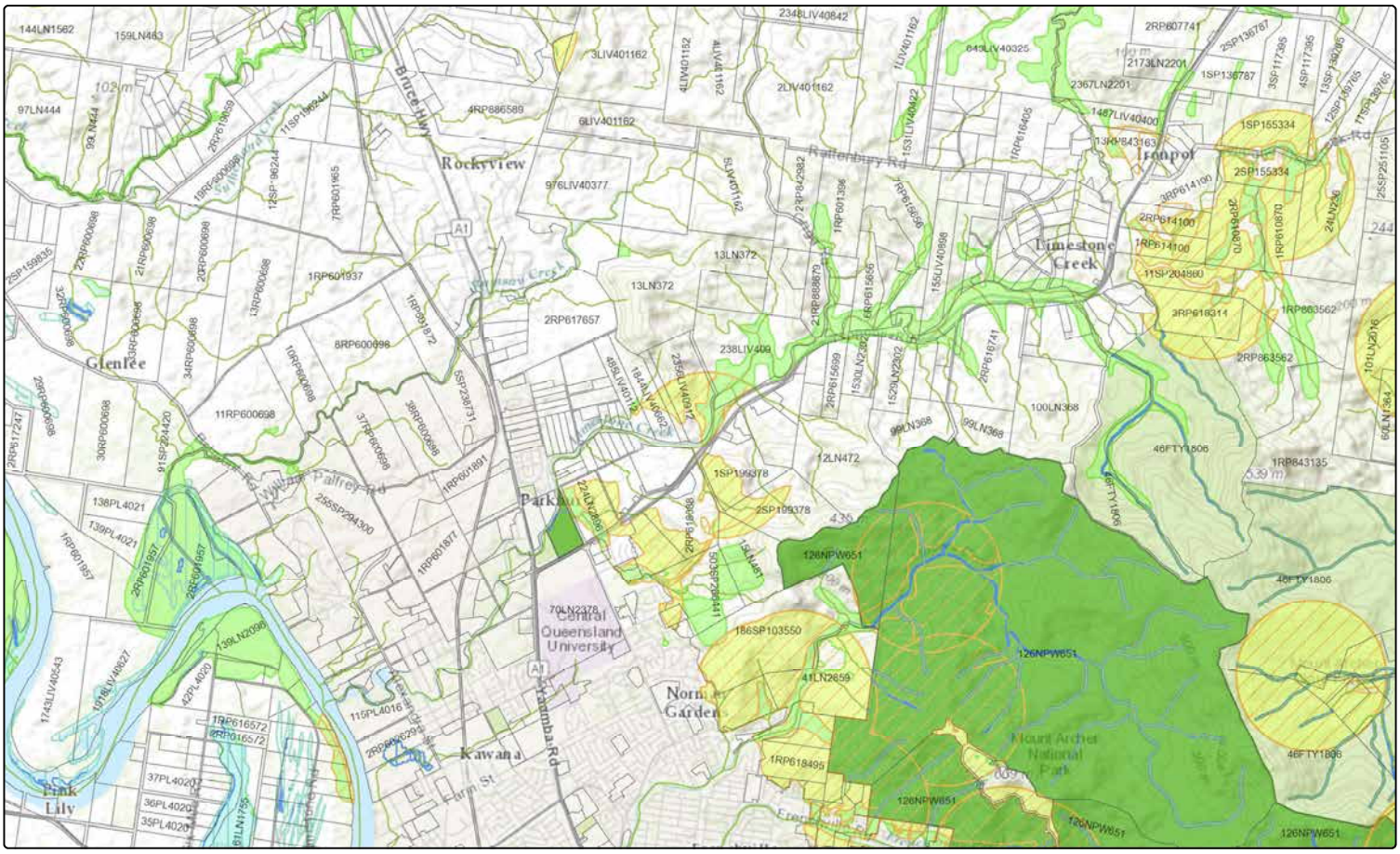
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DA Mapping System – Print Screen

Date: 14/07/2017

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State Planning Policy

Making or amending a local planning instrument and designating land for community infrastructure

Department of Infrastructure, Local Government and Planning

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0 1,100 2,200 3,300 4,400

Metres

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Legend

Cadastre (100k)

Cadastre (100k)

MSES - Regulated vegetation (intersecting a watercourse)

MSES - Regulated vegetation (intersecting a watercourse)

MSES - High ecological value waters (watercourse)

MSES - High ecological value waters (watercourse)

MSES - Wildlife habitat

MSES - Wildlife habitat

MSES - Strategic environmental areas (designated precinct)

MSES - Strategic environmental areas (designated precinct)

MSES - High ecological significance wetlands

MSES - High ecological significance wetlands

MSES - High ecological value waters (wetland)

MSES - High ecological value waters (wetland)

MSES - Legally secured offset area (offset register)

MSES - Legally secured offset area (offset register)

MSES - Legally secured offset area (regulated vegetation offsets)

MSES - Legally secured offset area (regulated vegetation offsets)

MSES - Protected areas (estate)

MSES - Protected areas (estate)

MSES - Protected areas (nature refuge)

MSES - Protected areas (nature refuge)

MSES - Marine park

MSES - Marine park

MSES - Declared fish habitat area

MSES - Declared fish habitat area

MSES - Regulated vegetation (category B)

MSES - Regulated vegetation (category B)

MSES - Regulated vegetation (category C)

MSES - Regulated vegetation (category C)

MSES - Regulated vegetation (category R)

MSES - Regulated vegetation (category R)

MSES - Regulated vegetation (essential habitat)

MSES - Regulated vegetation (essential habitat)

MSES - Regulated vegetation (wetland)

MSES - Regulated vegetation (wetland)

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0 1,100 2,200 3,300 4,400

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Legend

Cadastre (100k)

Cadastre (100k)

Slightly disturbed waters

Slightly disturbed waters

Climatic regions - stormwater management design objectives

Climatic regions - stormwater management design objectives

Urban water supply storage

Urban water supply storage

High ecological value water areas

High ecological value water areas

Water resource catchments

Water resource catchments

Water supply buffer area

Water supply buffer area

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Protected Plants Flora Survey Trigger Map

Legend

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

LOCALITY DIAGRAM



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

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Vegetation management report

For Lot: C Plan: RP860160

Current as at 01/06/2017

Queensland Government

This publication has been compiled by Operations Support, Department of Natural Resources and Mines.

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Overview

The management and clearing of native vegetation in Queensland is regulated by the *Vegetation Management Act 1999*, the Vegetation Management Regulation 2009, the *Sustainable Planning Act 2009* and the Sustainable Planning Regulation 2009 in conjunction with associated policies and codes. These legislation, policies and codes are referred to as the Vegetation Management Framework.

Many routine vegetation management activities can be carried out under exemptions or self-assessable codes under the *Vegetation Management Act 1999*. Other activities may require you to apply for a development approval under the *Sustainable Planning Act 2009*. The requirements for a permit depend on the type of vegetation, the land tenure (e.g. freehold or leasehold land), the location, and the extent and purpose of the proposed clearing. In urban areas, vegetation may be regulated by local government provisions even if it is not regulated vegetation under the VMA.

The information in this report will assist you to determine the options for managing vegetation on your property. Based on the lot on plan you have supplied, this report provides the following detailed information:

1. *Property region* - the local government area, bioregion(s), subregion(s), catchment(s) and any applicable area management plans associated with your property.
2. *Vegetation management framework* - an explanation of the options that may be available to manage vegetation on your property.
3. *Property details for the specified Lot on Plan* - specific information about your property including land tenure, vegetation categories, regional ecosystems, watercourses, wetlands, essential habitat, land suitability and protected plants.
4. *Maps* - a series of colour maps to assist in identifying regulated vegetation on your property including:

- regulated vegetation management map
- vegetation management map
- land suitability map
- protected plants map.

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1. Property regions

Table 1 provides a summary of the regions that property Lot: C Plan: RP860160 is located within.

Table 1: Property regions

Local Government(s)
Livingstone Shire

Bioregion(s)	Subregion(s)
Brigalow Belt	Marlborough Plains

Catchment(s)
Fitzroy

Area Management Plan(s): Nil

2. Vegetation management framework

Vegetation clearing is regulated under the *Vegetation Management Act 1999* (VMA) and the *Sustainable Planning Act 2009* (SPA). A development approval is required to clear where the clearing is not exempt under the SPA, or where it cannot be carried out under a self-assessable clearing code or an area management plan under the VMA.

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

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

a) grass or non-woody herbage;
b) a plant within a grassland regional ecosystem; and
c) a mangrove.

The regulated vegetation management map, the vegetation management map, the land suitability map and the protected plants map provided in section 4 and the information provided in section 2 and 3 of this report will assist you in identifying clearing suitability and enable you to determine whether your proposed clearing is:

- exempt;
- requires notification and compliance with a self-assessable code or area management plan; or
- requires a development approval.

2.1 Exemptions

The vegetation management framework allows clearing for certain purposes without approval, known as an exemption.

Areas that are mapped as Category X (white in colour) on the regulated vegetation management map (section 5.1) on most State land tenures are exempt and therefore do not require a development approval or notification.

There are other exemptions that apply to a range of routine property management activities. A list of these is available at https://www.qld.gov.au/environment/land/vegetation/exemptions/.

Although vegetation management laws may allow clearing under an exemption, there may be other state, local or Commonwealth laws that apply. Exemptions may not apply if the vegetation is subject to permit conditions, a covenant, an offset or restrictions as a result of unlawful clearing.

2.2 Self-assessable codes

Some clearing activities can be undertaken using a self-assessable vegetation clearing code and notification process. The codes can be downloaded at
https://www.qld.gov.au/environment/land/vegetation/codes/

If you intend to clear vegetation under a self-assessable vegetation clearing code, you must notify the department before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at
https://apps.dnrm.qld.gov.au/vegetation/

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing. 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.

If an area management plan applies to your property, it will be listed in Table 1 of this report.

To clear under an existing AMP, you must notify the DNRM before clearing starts and follow the conditions listed in the AMP. You can download the area management clearing notification form and obtain a copy of the relevant AMP at
https://www.qld.gov.au/environment/land/vegetation/area-plans/

2.4 Development approvals

If your proposed clearing is not exempt, or is not permitted under a self-assessable 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/vegetation/applying/

3. Property details for Lot: C Plan: RP860160

3.1 Tenure

All of the lot, plan and tenure information associated with property Lot: C Plan: RP860160, including links to relevant Smart Maps, are listed in Table 2. The tenure of the property (whether it is freehold, leasehold, or other) may be viewed by clicking on the Smart Map link(s) provided.

Table 2: Lot, plan and tenure information for the property

Tenure	Lot	Plan	Link to property on SmartMap
Easement	C	RP860160	http://globe.information.qld.gov.au/cgi-bin/SmartMapgen.py?q=C\RP860160
Freehold	10	RP860165	http://globe.information.qld.gov.au/cgi-bin/SmartMapgen.py?q=10\RP860165
Easement	A	RP606902	http://globe.information.qld.gov.au/cgi-bin/SmartMapgen.py?q=A\RP606902

The tenure of the land determines whether certain exemptions are applicable.

Some self-assessable codes apply only to freehold and leasehold land granted for grazing and agricultural purposes.

3.2 Vegetation categories

Vegetation categories are shown on the regulated vegetation management map in section 5.1 of this report. Descriptions for these categories are shown in Table 3.

Table 3

Category	Colour on Map	Description	Requirements
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Clearing requires a development approval, exemption, or self-assessable clearing code or area management plan notification.
B	dark blue	Remnant vegetation areas	Clearing requires a development approval, exemption, or self-assessable clearing code or area management plan notification.
C	light blue	High-value regrowth areas	Clearing requires exemption, or self-assessable clearing code or area management plan notification.
R	yellow	Regrowth within 50m of a watercourse in the priority reef catchment areas	Clearing requires exemption, or self-assessable clearing code or area management plan notification.
X	white	Areas not regulated under the *Vegetation Management Act 1999*	No permit or notification required on all but certain state land tenures.

The vegetation categories on this property are listed in Table 4.

Table 4: Vegetation categories for subject property

Vegetation category
Category X

3.3 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 5.2 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

(no results)

rem_leastc	is vegetation category A or B with a VMA status of least concern
rem_oc	is vegetation category A or B with a VMA status of concern
rem_end	is vegetation category A or B with a VMA status of endangered
hvr_leastc	is vegetation category C or R with a VMA status of least concern
hvr_oc	is vegetation category C or R with a VMA status of concern
hvr_end	is vegetation category C or R with a VMA status of endangered

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:

- exemptions
- performance outcomes in State Development Assessment Provisions (SDAP)
- self-assessable codes.

Some clearing purposes are limited to a particular group of regional ecosystems (e.g. encroachment) and some self-assessable codes allow clearing only in certain regional ecosystems.

3.4 Watercourses

Vegetation management watercourses for this property are shown on the vegetation management supporting map in section 5.2.

3.5 Wetlands

There are no vegetation management wetlands present on this property.

3.6 Essential habitat

Any essential habitat on this property will be shown on the vegetation management supporting map in section 5.2.

Essential habitat identifies areas in which species of wildlife that are endangered, vulnerable, rare or near threatened under the *Nature Conservation Act 1992* have been known to occur. These important habitat areas are protected under the VMA.

If essential habitat is identified on this property, the information about the protected wildlife species is provided in Table 6 below (if no table is displayed below, there has not been any essential habitat identified on this property). The species label is shown on the vegetation management supporting map in section 5.2. The essential habitat factors are stated in the columns marked with an asterisk.

Table 6: Endangered, vulnerable, or near threatened wildlife species identified within the property (if no table is shown below, there is no essential habitat identified on the property)

Additional essential habitat information

3.7 Land suitability

Land suitability mapping and information is required if you are applying to clear vegetation for high value or irrigated high value agriculture. Land suitability assessment addresses the capacity of land to sustain specific land uses such as cropping, irrigated agriculture and forestry.

A land suitability map for this property is provided in section 5.3. The map provides detailed land suitability, agricultural land classification, or soil and land resource mapping data where it is available.

The land suitability project that applies to this property is shown in Table 7 and Table 8.

Table 7: Land suitability project details for this property

Project name	Project code	Start date	Scale
Land Systems of the Capricornia Coast, Central Queensland	CCL3	1990-01-01 00:00:00	250000
Lower Fitzroy River Irrigation Study	LFZ	1998-01-01 00:00:00	100000

Table 8: Available land suitability project reports for this property

Project name	Availability of report
Land Systems of the Capricornia Coast, Central Queensland	Map only. Available at www.publications.qld.gov.au
Lower Fitzroy River Irrigation Study	Available at www.publications.qld.gov.au

3.8 Protected plants

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992*. The Act endeavours to ensure that protected plants (whole plants or protected plant parts) are not illegally removed from the wild or illegally traded.

Prior to clearing, you must check the flora survey trigger map to determine if the clearing is within a high risk area. The trigger map for this property is provided in section 5.4.

If your property is in a high risk area, a flora survey must be undertaken and a clearing permit may be required for clearing endangered, vulnerable and near threatened plants (EVNT plants) and their supporting habitat.

If a flora survey identifies that EVNT plants are not present or can be avoided by 100m, the clearing activity may be exempt from a permit. An exempt clearing notification form is required. This form can be downloaded at
http://www.ehp.qld.gov.au/licences-permits/plants-animals/protected-plants/

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that EVNT plants are present.

Clearing of least concern plants is exempt from requiring a clearing permit within a low risk area.

To be eligible for certain clearing exemptions you need to keep a copy of the map for the area subject to clearing. Protected plants flora survey trigger maps are valid for a period of 12 months from the date of request. After 12 months you will need to obtain a new protected plants flora survey trigger map to determine clearing requirements for your area of interest. This can be accessed online at
http://www.ehp.qld.gov.au/licences-permits/plants-animals/protected-plants/map-request.php

For further information or assistance on the protected plants flora survey trigger map for this property, please contact the Department of Environment and Heritage Protection at
palm@ehp.qld.gov.au

3.9 Emissions Reduction Fund (ERF)

The ERF is an Australian Government scheme which offers incentives for businesses and communities across the economy to reduce emissions.

Under the ERF, farmers can earn money from activities such as planting (and keeping) trees, managing regrowth vegetation and adopting more sustainable agricultural practices.

The purpose of a project is to remove greenhouse gases from the atmosphere. Each project will provide new economic opportunities for farmers, forest growers and land managers.

Further information on ERF is available at https://www.qld.gov.au/environment/land/state/use/carbon-rights/

4. Contacts for further information

For further information on vegetation management:
Phone 135VEG (135 834)
Email vegetation@dnrm.qld.gov.au
Visit www.dnrm.qld.gov.au/our-department/contact-us/vegetation-contacts to submit an online enquiry.

5. Maps

The maps included in this report may also be requested individually at:

https://www.dnrm.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form

and

http://www.ehp.qld.gov.au/licences-permits/plants-animals/protected-plants/map-request.php

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories to determine clearing requirements. These maps are updated monthly to show new property maps of assessable vegetation

Vegetation management supporting map

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

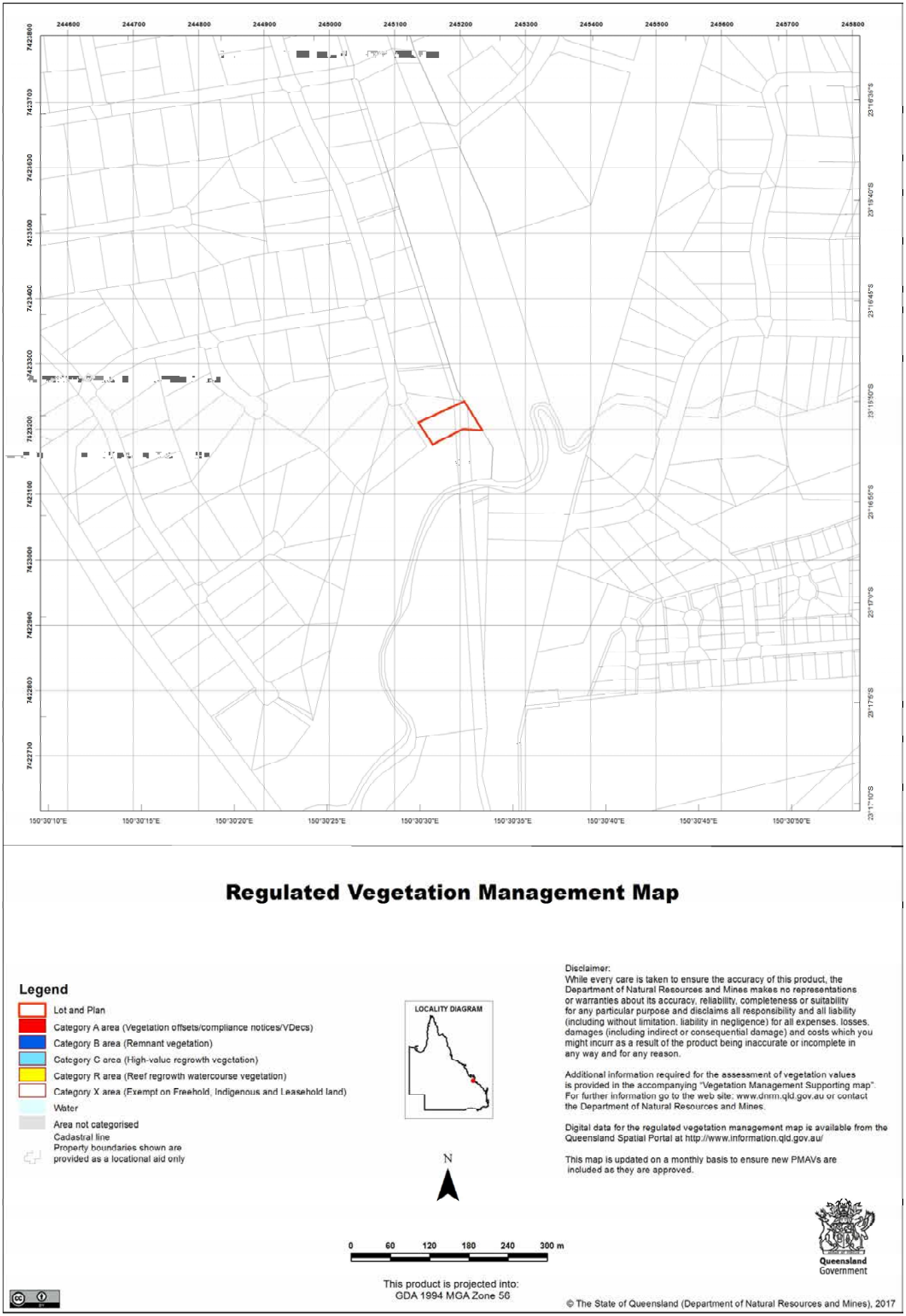
Land suitability map

The land suitability map assists with identifying the land suitability category under the high value and irrigated high value agriculture vegetation clearing purpose.

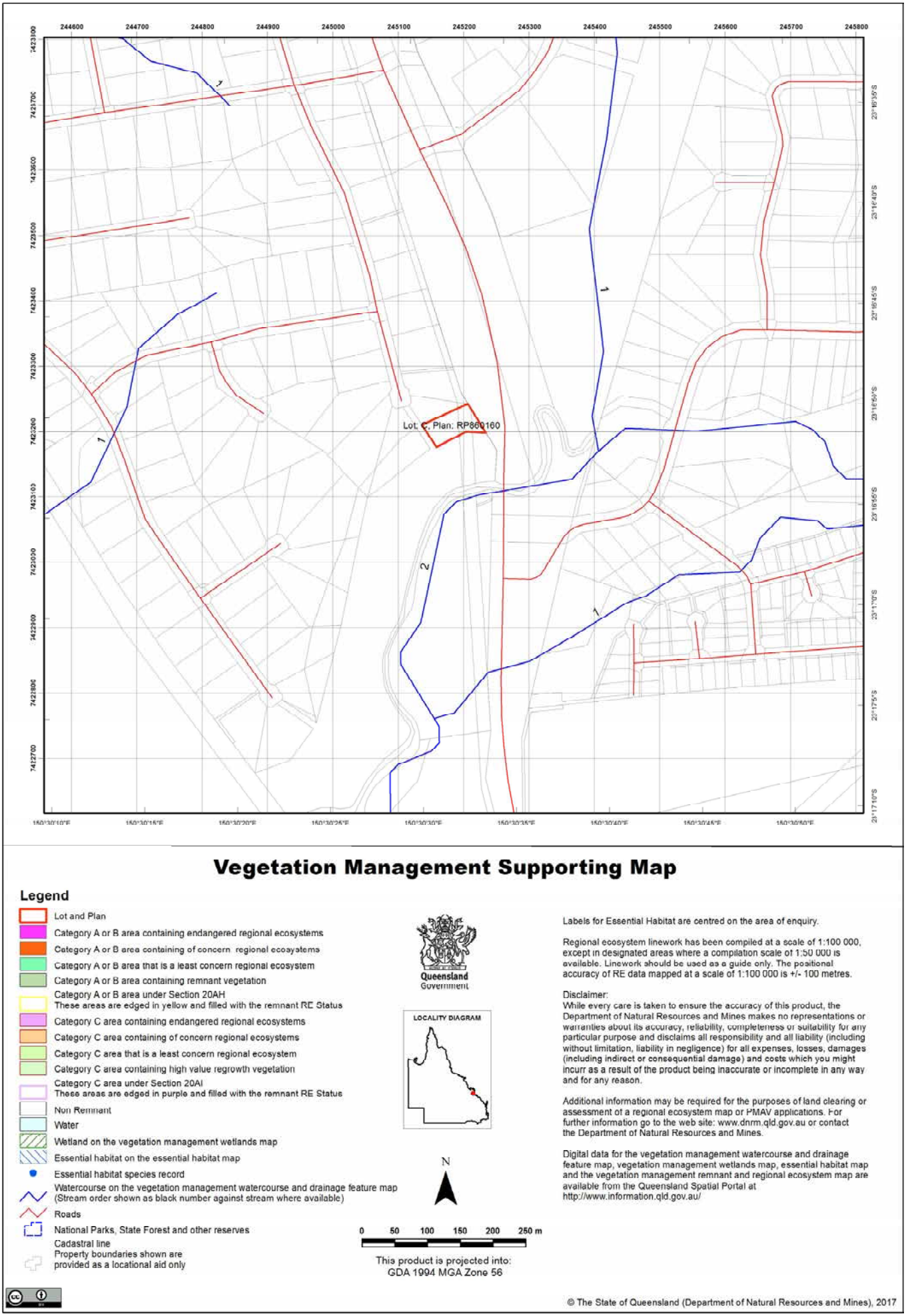
Protected plants map

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

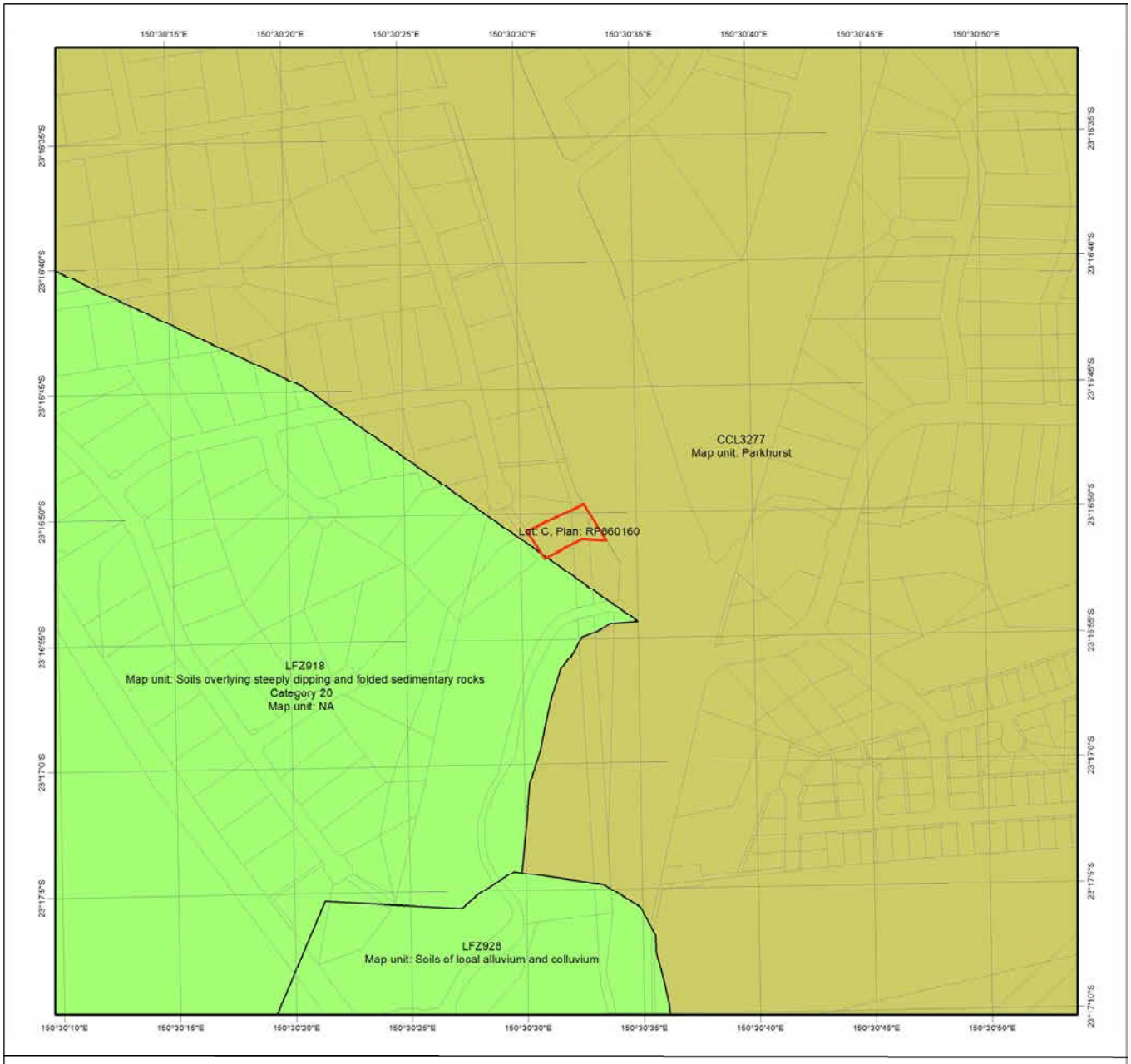
5.1 Regulated vegetation management map



5.2 Vegetation management supporting map



5.3 Land suitability map



Land Suitability Overview Map

Legend

- Lot and Plan
- Cadastral Boundaries
- Land suitability mapping 1:100,000 scale or better (Category 2 or 3*)
- Land suitability mapping greater than 1:100,000 scale (Category 4)
- No mapping available (Category 4)

* Category 3 applies to applications where there is some land resource mapping or information available however it either does not cover the entire area, or the land suitability mapping and information does not identify the land as suitable for the proposed crop and management systems.

LOCALITY DIAGRAM



Important information

The Land Suitability Overview Map assists with identifying the Land Suitability category under the high value and irrigated high value agriculture vegetation clearing purpose. This map provides detailed land suitability, agricultural land classification, or soil and land resource mapping data where it is available on the selected lots. Where no data is available, the maps will be blank, with no mapping visible.

Further information on these categories is available in the Guideline for applying to clear for high-value or irrigated high-value agriculture (www.dnrm.qld.gov.au).

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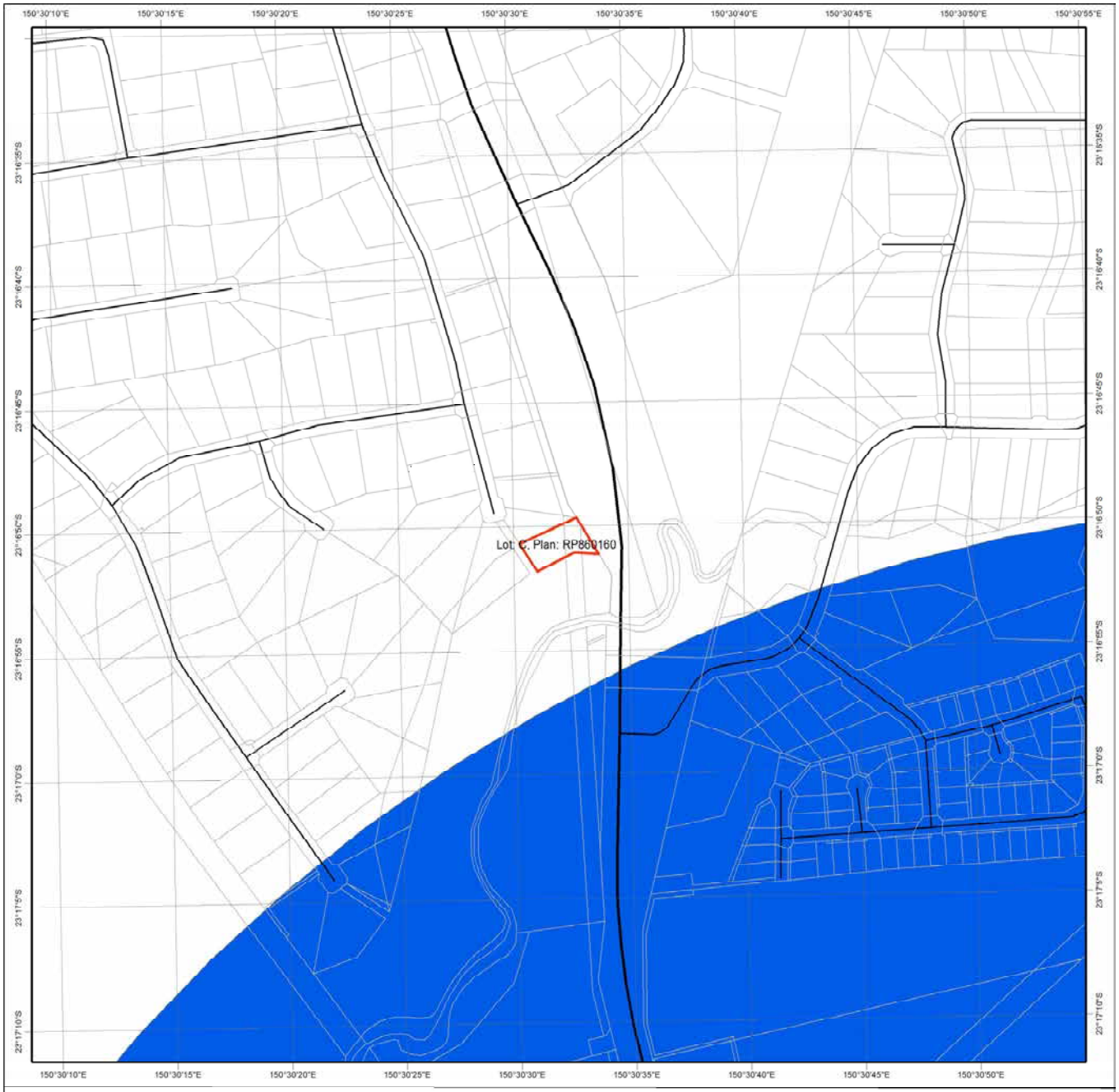
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0 50 100 150 200 250 m

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5.4 Protected plants map



Protected Plants Flora Survey Trigger Map

Legend

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

LOCALITY DIAGRAM



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EPBC Act Protected Matters Report

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

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

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

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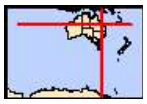
Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements



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Coordinates
Buffer: 20.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	1
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	49
Listed Migratory Species:	30

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	3
Commonwealth Heritage Places:	1
Listed Marine Species:	32
Whales and Other Cetaceans:	2
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

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

State and Territory Reserves:	7
Regional Forest Agreements:	None
Invasive Species:	36
Nationally Important Wetlands:	3
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

World Heritage Properties [Resource Information]

Name	State	Status
Great Barrier Reef	QLD	Declared property

National Heritage Properties [Resource Information]

Name	State	Status
Natural		
Great Barrier Reef	QLD	Listed place

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
Brigalow (Acacia harpophylla dominant and co-dominant)	Endangered	Community known to occur within area
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	Endangered	Community likely to occur within area
Weeping Myall Woodlands	Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Epthianura crocea macgregori Capricorn Yellow Chat, Yellow Chat (Dawson) [67090]	Critically Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed	Critically Endangered	Species or species

Name	Status	Type of Presence
Godwit (menzbieri) [86432]		habitat may occur within area
Macronectes giganteus		
Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Neochmia ruficauda ruficauda		
Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Poephila cincta cincta		
Southern Black-throated Finch [64447]	Endangered	Species or species habitat likely to occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Turnix melanogaster		
Black-breasted Button-quail [923]	Vulnerable	Species or species habitat known to occur within area
Mammals		
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
Dasyurus hallucatus		
Northern Quoll, Digul [331]	Endangered	Species or species habitat known to occur within area
Macroderma gigas		
Ghost Bat [174]	Vulnerable	Breeding known to occur within area
Nyctophilus corbeni		
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area
Petauroides volans		
Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Xeromys myoides		
Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat likely to occur within area
Other		
Cycas megacarpa		
[55794]	Endangered	Species or species habitat known to occur within area
Cycas ophiolitica		
[55797]	Endangered	Species or species habitat known to occur within area
Plants		

Name	Status	Type of Presence
Corymbia xanthope Glen Geddes Bloodwood [64021]	Vulnerable	Species or species habitat known to occur within area
Cossinia australiana Cossinia [3066]	Endangered	Species or species habitat likely to occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus raveretiana Black Ironbox [16344]	Vulnerable	Species or species habitat known to occur within area
Marsdenia brevifolia [64585]	Vulnerable	Species or species habitat known to occur within area
Parsonsia larcomensis Mt Larcom Silk Pod [64587]	Vulnerable	Species or species habitat known to occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area
Pimelea leptospermoides [20849]	Vulnerable	Species or species habitat likely to occur within area
Pultenaea setulosa [2705]	Vulnerable	Species or species habitat known to occur within area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area
Tectaria devexa [14767]	Endangered	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Denisonia maculata Ornamental Snake [1193]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area
Elseya albagula Southern Snapping Turtle, White-throated Snapping Turtle [81648]	Critically Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Rheodytes leukops Fitzroy River Turtle, Fitzroy Tortoise, Fitzroy Turtle, White-eyed River Diver [1761]	Vulnerable	Species or species habitat known to occur within area
Sharks		
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Migratory Marine Species		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or

Name	Threatened	Type of Presence
		related behaviour known to occur within area
Orcaella brevirostris Irrawaddy Dolphin [45]		Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat likely to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur

Name	Threatened	Type of Presence within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Defence - LOGISTIC SUPPORT DEPOT - ROCKHAMPTON
Defence - ROCKHAMPTON AIRFIELD
Defence - ROCKHAMPTON TRAINING DEPOT

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
ABC Radio Studios	QLD	Listed place

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species

Name	Threatened	Type of Presence
		habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Cuculus saturatus Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour likely

Name	Threatened	Type of Presence
		to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Whales and other Cetaceans [Resource Information]

Name	Status	Type of Presence
Mammals		
Orcaella brevirostris Irrawaddy Dolphin [45]		Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Boyle's Ridge	QLD
Limestone Creek	QLD
Long Island Bend	QLD
Mount Archer	QLD
Mount Etna Caves	QLD
Mount Jim Crow	QLD
Rockhampton Pistol Club	QLD

Invasive Species [Resource Information]

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

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
Plants		
Acacia nilotica subsp. indica Prickly Acacia [6196]		Species or species habitat may occur within area
Andropogon gayanus Gamba Grass [66895]		Species or species habitat likely to occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [31754]		Species or species habitat likely to occur within area
Jatropha gossypifolia Cotton-leaved Physic-Nut, Bellyache Bush, Cotton-leaf Physic Nut, Cotton-leaf Jatropha, Black Physic Nut [7507]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Protasparagus plumosus Climbing Asparagus-fern, Ferny Asparagus [11747]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Vachellia nilotica Prickly Acacia, Blackthorn, Prickly Mimosa, Black Piquant, Babul [84351]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area

Nationally Important Wetlands	[Resource Information]
Name	State
Fitzroy River Delta	QLD
Fitzroy River Floodplain	QLD
Hedlow Wetlands	QLD

Caveat

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

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-23.2946 150.5119

Acknowledgements

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

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

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

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

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Department of Natural Resources and Mines



Vegetation management report

For Lot: 2 Plan: RP604139

Current as at 01/06/2017

Queensland Government

This publication has been compiled by Operations Support, Department of Natural Resources and Mines.

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Overview

The management and clearing of native vegetation in Queensland is regulated by the *Vegetation Management Act 1999*, the Vegetation Management Regulation 2009, the *Sustainable Planning Act 2009* and the Sustainable Planning Regulation 2009 in conjunction with associated policies and codes. These legislation, policies and codes are referred to as the Vegetation Management Framework.

Many routine vegetation management activities can be carried out under exemptions or self-assessable codes under the *Vegetation Management Act 1999*. Other activities may require you to apply for a development approval under the *Sustainable Planning Act 2009*. The requirements for a permit depend on the type of vegetation, the land tenure (e.g. freehold or leasehold land), the location, and the extent and purpose of the proposed clearing. In urban areas, vegetation may be regulated by local government provisions even if it is not regulated vegetation under the VMA.

The information in this report will assist you to determine the options for managing vegetation on your property. Based on the lot on plan you have supplied, this report provides the following detailed information:

1. *Property region* - the local government area, bioregion(s), subregion(s), catchment(s) and any applicable area management plans associated with your property.
2. *Vegetation management framework* - an explanation of the options that may be available to manage vegetation on your property.
3. *Property details for the specified Lot on Plan* - specific information about your property including land tenure, vegetation categories, regional ecosystems, watercourses, wetlands, essential habitat, land suitability and protected plants.
4. *Maps* - a series of colour maps to assist in identifying regulated vegetation on your property including:

- regulated vegetation management map
- vegetation management map
- land suitability map
- protected plants map.

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1. Property regions

Table 1 provides a summary of the regions that property Lot: 2 Plan: RP604139 is located within.

Table 1: Property regions

Local Government(s)
Rockhampton Regional

Bioregion(s)	Subregion(s)
Brigalow Belt	Marlborough Plains

Catchment(s)
Fitzroy

Area Management Plan(s): Nil

2. Vegetation management framework

Vegetation clearing is regulated under the *Vegetation Management Act 1999* (VMA) and the *Sustainable Planning Act 2009* (SPA). A development approval is required to clear where the clearing is not exempt under the SPA, or where it cannot be carried out under a self-assessable clearing code or an area management plan under the VMA.

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

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

a) grass or non-woody herbage;
b) a plant within a grassland regional ecosystem; and
c) a mangrove.

The regulated vegetation management map, the vegetation management map, the land suitability map and the protected plants map provided in section 4 and the information provided in section 2 and 3 of this report will assist you in identifying clearing suitability and enable you to determine whether your proposed clearing is:

- exempt;
- requires notification and compliance with a self-assessable code or area management plan; or
- requires a development approval.

2.1 Exemptions

The vegetation management framework allows clearing for certain purposes without approval, known as an exemption.

Areas that are mapped as Category X (white in colour) on the regulated vegetation management map (section 5.1) on most State land tenures are exempt and therefore do not require a development approval or notification.

There are other exemptions that apply to a range of routine property management activities. A list of these is available at https://www.qld.gov.au/environment/land/vegetation/exemptions/.

Although vegetation management laws may allow clearing under an exemption, there may be other state, local or Commonwealth laws that apply. Exemptions may not apply if the vegetation is subject to permit conditions, a covenant, an offset or restrictions as a result of unlawful clearing.

2.2 Self-assessable codes

Some clearing activities can be undertaken using a self-assessable vegetation clearing code and notification process. The codes can be downloaded at
https://www.qld.gov.au/environment/land/vegetation/codes/

If you intend to clear vegetation under a self-assessable vegetation clearing code, you must notify the department before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at
https://apps.dnrm.qld.gov.au/vegetation/

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing. 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.

If an area management plan applies to your property, it will be listed in Table 1 of this report.

To clear under an existing AMP, you must notify the DNRM before clearing starts and follow the conditions listed in the AMP. You can download the area management clearing notification form and obtain a copy of the relevant AMP at
https://www.qld.gov.au/environment/land/vegetation/area-plans/

2.4 Development approvals

If your proposed clearing is not exempt, or is not permitted under a self-assessable 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/vegetation/applying/

3. Property details for Lot: 2 Plan: RP604139

3.1 Tenure

All of the lot, plan and tenure information associated with property Lot: 2 Plan: RP604139, including links to relevant Smart Maps, are listed in Table 2. The tenure of the property (whether it is freehold, leasehold, or other) may be viewed by clicking on the Smart Map link(s) provided.

Table 2: Lot, plan and tenure information for the property

Tenure	Lot	Plan	Link to property on SmartMap
Freehold	2	RP604139	http://globe.information.qld.gov.au/cgi-bin/SmartMapgen.py?q=2\RP604139

The tenure of the land determines whether certain exemptions are applicable.

Some self-assessable codes apply only to freehold and leasehold land granted for grazing and agricultural purposes.

3.2 Vegetation categories

Vegetation categories are shown on the regulated vegetation management map in section 5.1 of this report. Descriptions for these categories are shown in Table 3.

Table 3

Category	Colour on Map	Description	Requirements
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Clearing requires a development approval, exemption, or self-assessable clearing code or area management plan notification.
B	dark blue	Remnant vegetation areas	Clearing requires a development approval, exemption, or self-assessable clearing code or area management plan notification.
C	light blue	High-value regrowth areas	Clearing requires exemption, or self-assessable clearing code or area management plan notification.
R	yellow	Regrowth within 50m of a watercourse in the priority reef catchment areas	Clearing requires exemption, or self-assessable clearing code or area management plan notification.
X	white	Areas not regulated under the *Vegetation Management Act 1999*	No permit or notification required on all but certain state land tenures.

The vegetation categories on this property are listed in Table 4.

Table 4: Vegetation categories for subject property

Vegetation category
Category X

3.3 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 5.2 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

(no results)

rem_leastc	is vegetation category A or B with a VMA status of least concern
rem_oc	is vegetation category A or B with a VMA status of concern
rem_end	is vegetation category A or B with a VMA status of endangered
hvr_leastc	is vegetation category C or R with a VMA status of least concern
hvr_oc	is vegetation category C or R with a VMA status of concern
hvr_end	is vegetation category C or R with a VMA status of endangered

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:

- exemptions
- performance outcomes in State Development Assessment Provisions (SDAP)
- self-assessable codes.

Some clearing purposes are limited to a particular group of regional ecosystems (e.g. encroachment) and some self-assessable codes allow clearing only in certain regional ecosystems.

3.4 Watercourses

Vegetation management watercourses for this property are shown on the vegetation management supporting map in section 5.2.

3.5 Wetlands

There are no vegetation management wetlands present on this property.

3.6 Essential habitat

Any essential habitat on this property will be shown on the vegetation management supporting map in section 5.2.

Essential habitat identifies areas in which species of wildlife that are endangered, vulnerable, rare or near threatened under the *Nature Conservation Act 1992* have been known to occur. These important habitat areas are protected under the VMA.

If essential habitat is identified on this property, the information about the protected wildlife species is provided in Table 6 below (if no table is displayed below, there has not been any essential habitat identified on this property). The species label is shown on the vegetation management supporting map in section 5.2. The essential habitat factors are stated in the columns marked with an asterisk.

Table 6: Endangered, vulnerable, or near threatened wildlife species identified within the property (if no table is shown below, there is no essential habitat identified on the property)

Additional essential habitat information

3.7 Land suitability

Land suitability mapping and information is required if you are applying to clear vegetation for high value or irrigated high value agriculture. Land suitability assessment addresses the capacity of land to sustain specific land uses such as cropping, irrigated agriculture and forestry.

A land suitability map for this property is provided in section 5.3. The map provides detailed land suitability, agricultural land classification, or soil and land resource mapping data where it is available.

The land suitability project that applies to this property is shown in Table 7 and Table 8.

Table 7: Land suitability project details for this property

Project name	Project code	Start date	Scale
Land Systems of the Capricornia Coast, Central Queensland	CCL3	1990-01-01 00:00:00	250000

Table 8: Available land suitability project reports for this property

Project name	Availability of report
Land Systems of the Capricornia Coast, Central Queensland	Map only. Available at www.publications.qld.gov.au

3.8 Protected plants

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992*. The Act endeavours to ensure that protected plants (whole plants or protected plant parts) are not illegally removed from the wild or illegally traded.

Prior to clearing, you must check the flora survey trigger map to determine if the clearing is within a high risk area. The trigger map for this property is provided in section 5.4.

If your property is in a high risk area, a flora survey must be undertaken and a clearing permit may be required for clearing endangered, vulnerable and near threatened plants (EVNT plants) and their supporting habitat.

If a flora survey identifies that EVNT plants are not present or can be avoided by 100m, the clearing activity may be exempt from a permit. An exempt clearing notification form is required. This form can be downloaded at
http://www.ehp.qld.gov.au/licences-permits/plants-animals/protected-plants/

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that EVNT plants are present.

Clearing of least concern plants is exempt from requiring a clearing permit within a low risk area.

To be eligible for certain clearing exemptions you need to keep a copy of the map for the area subject to clearing. Protected plants flora survey trigger maps are valid for a period of 12 months from the date of request. After 12 months you will need to obtain a new protected plants flora survey trigger map to determine clearing requirements for your area of interest. This can be accessed online at
http://www.ehp.qld.gov.au/licences-permits/plants-animals/protected-plants/map-request.php

For further information or assistance on the protected plants flora survey trigger map for this property, please contact the Department of Environment and Heritage Protection at
palm@ehp.qld.gov.au

3.9 Emissions Reduction Fund (ERF)

The ERF is an Australian Government scheme which offers incentives for businesses and communities across the economy to reduce emissions.

Under the ERF, farmers can earn money from activities such as planting (and keeping) trees, managing regrowth vegetation and adopting more sustainable agricultural practices.

The purpose of a project is to remove greenhouse gases from the atmosphere. Each project will provide new economic opportunities for farmers, forest growers and land managers.

Further information on ERF is available at https://www.qld.gov.au/environment/land/state/use/carbon-rights/

4. Contacts for further information

For further information on vegetation management:
Phone 135VEG (135 834)
Email vegetation@dnrm.qld.gov.au
Visit www.dnrm.qld.gov.au/our-department/contact-us/vegetation-contacts to submit an online enquiry.

5. Maps

The maps included in this report may also be requested individually at:

https://www.dnrm.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form

and

http://www.ehp.qld.gov.au/licences-permits/plants-animals/protected-plants/map-request.php

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories to determine clearing requirements. These maps are updated monthly to show new property maps of assessable vegetation

Vegetation management supporting map

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

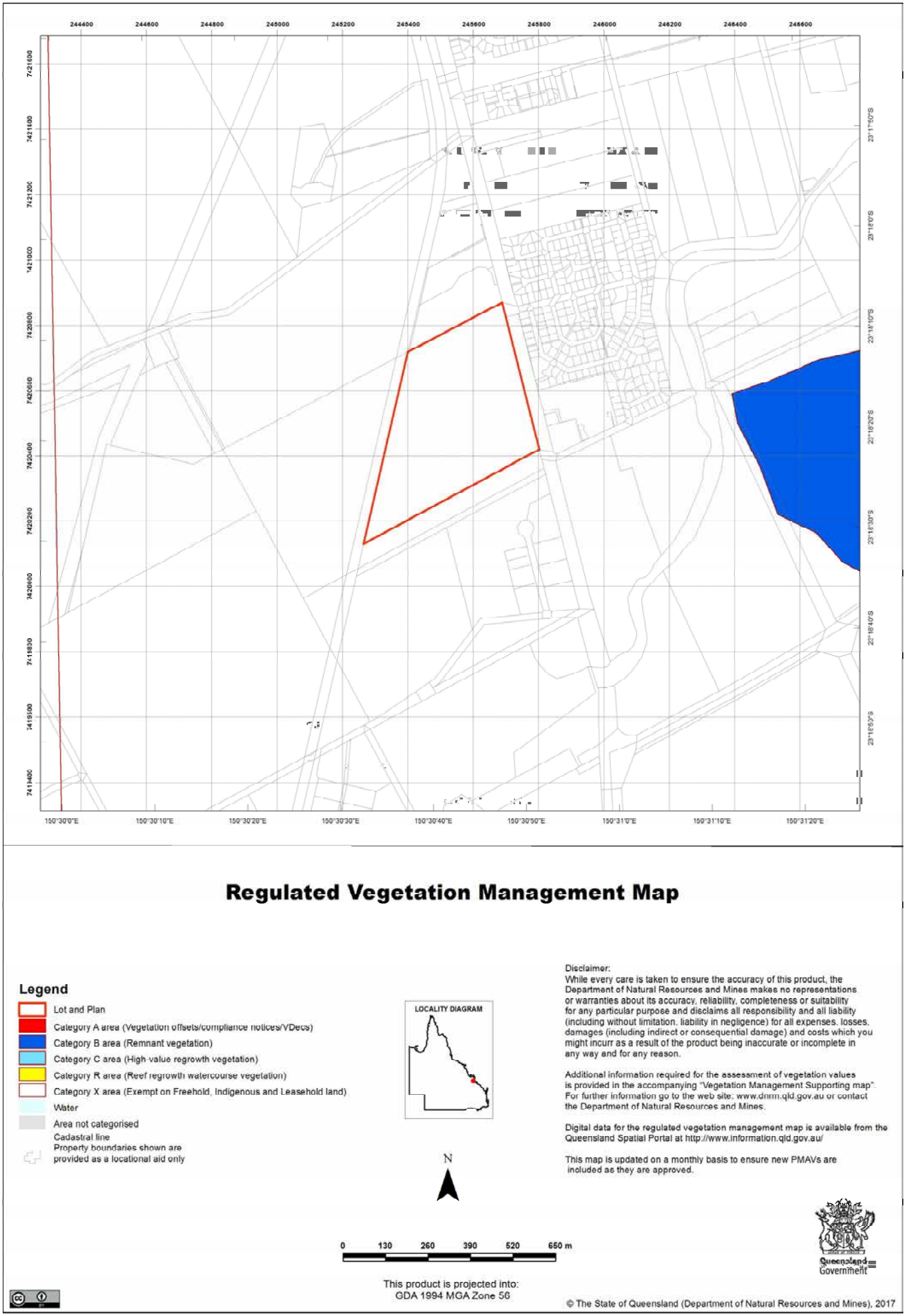
Land suitability map

The land suitability map assists with identifying the land suitability category under the high value and irrigated high value agriculture vegetation clearing purpose.

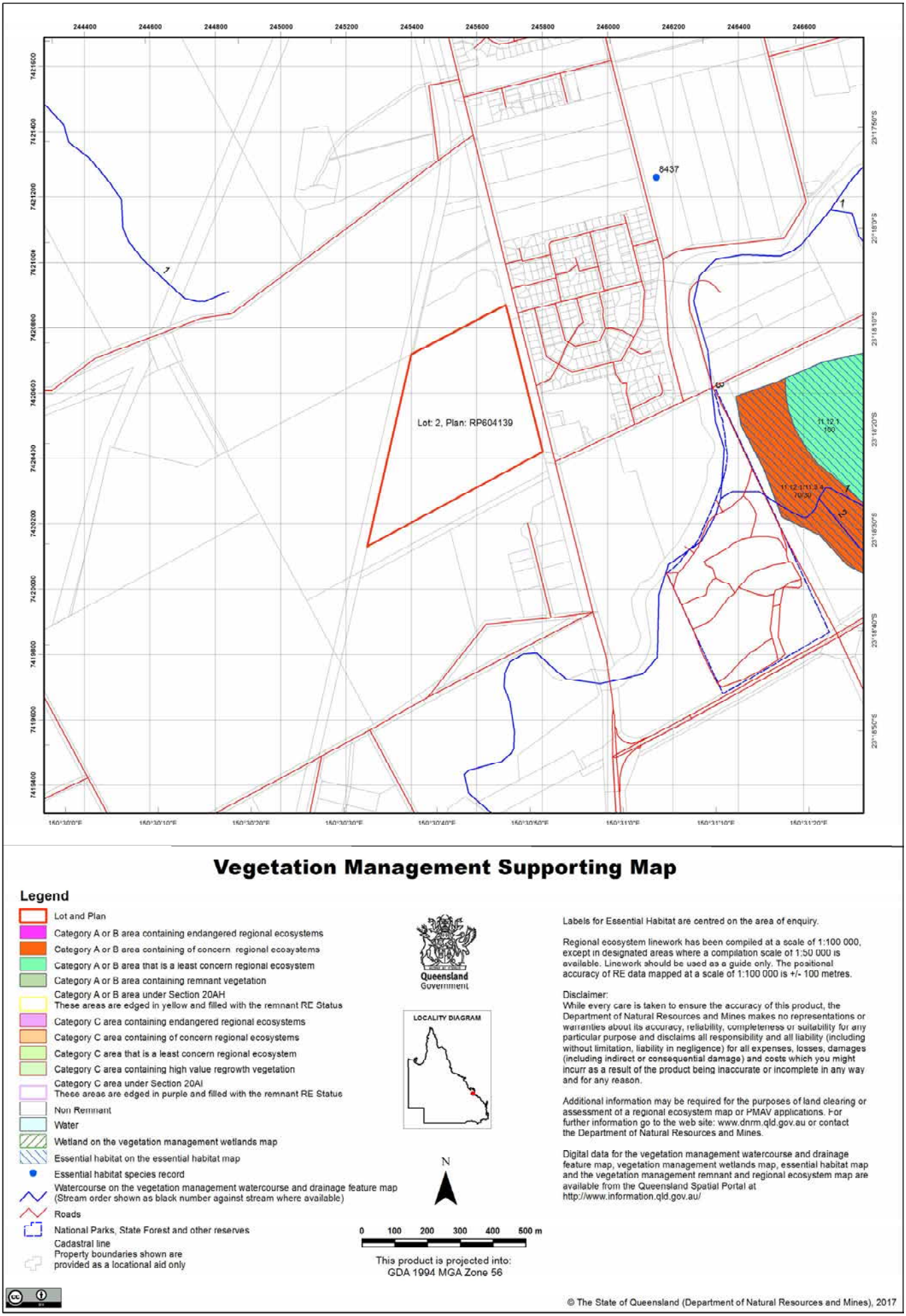
Protected plants map

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

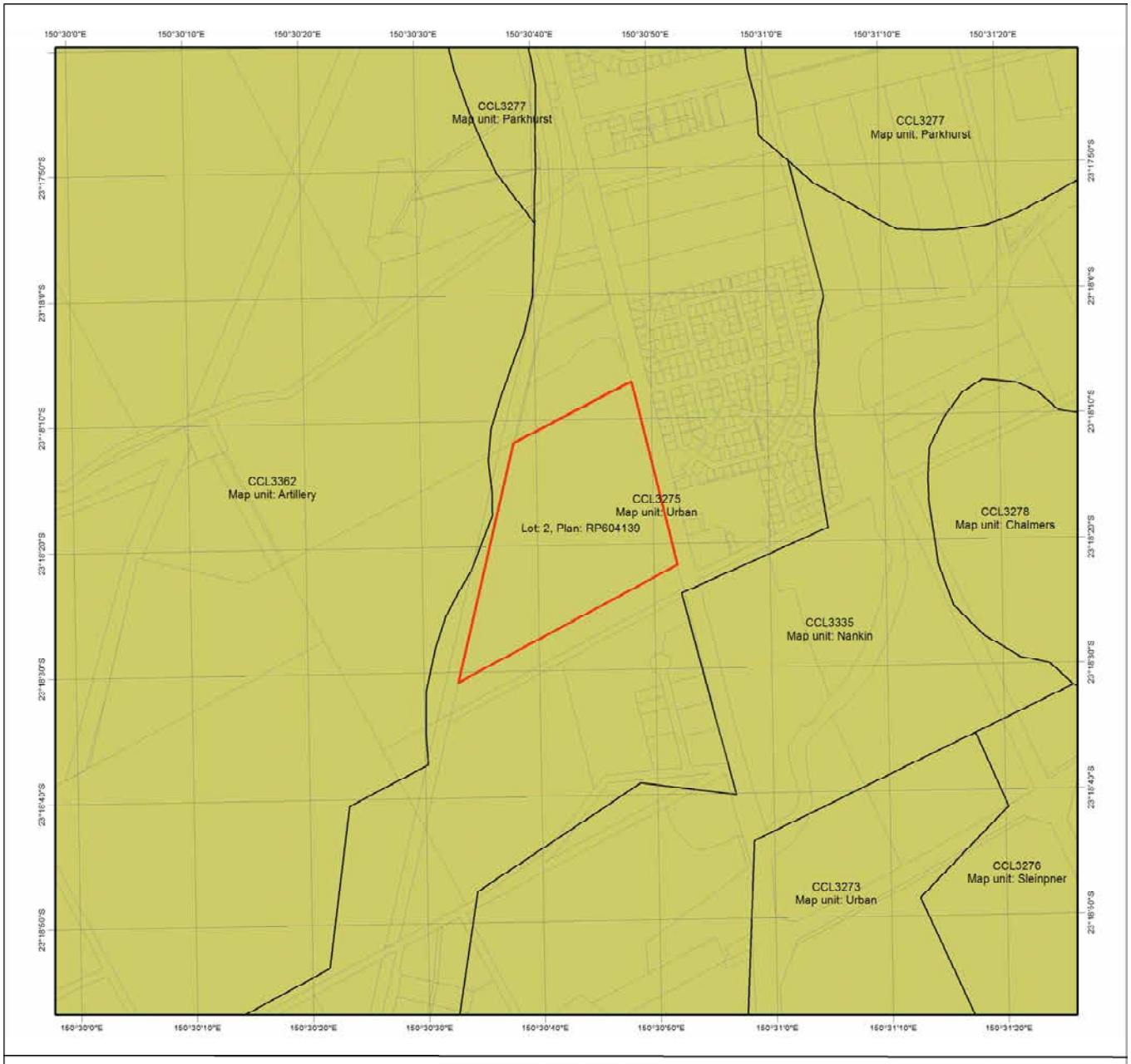
5.1 Regulated vegetation management map



5.2 Vegetation management supporting map



5.3 Land suitability map



Land Suitability Overview Map

Legend

- Lot and Plan
- Cadastral Boundaries
- Land suitability mapping 1:100,000 scale or better (Category 2 or 3*)
- Land suitability mapping greater than 1:100,000 scale (Category 4)
- No mapping available (Category 4)

* Category 3 applies to applications where there is some land resource mapping or information available however it either does not cover the entire area, or the land suitability mapping and information does not identify the land as suitable for the proposed crop and management systems.

LOCALITY DIAGRAM



Important information

The Land Suitability Overview Map assists with identifying the Land Suitability category under the high value and irrigated high value agriculture vegetation clearing purpose. This map provides detailed land suitability, agricultural land classification, or soil and land resource mapping data where it is available on the selected lots. Where no data is available, the maps will be blank, with no mapping visible.

Further information on these categories is available in the Guideline for applying to clear for high-value or irrigated high-value agriculture (www.dnrm.qld.gov.au).

Disclaimer
All persons and organisations by using this map take all responsibility for assessing the relevance and accuracy of the map contents for their purpose and accept all risks associated with its use. The State of Queensland (as represented by the Department of Natural Resources and Mines) makes no representations or warranties in relation to the map contents, and, to the extent permitted by law, excludes or limits all warranties relating to correctness, accuracy, reliability, completeness or currency and all disclaims all liability for any direct, indirect and consequential costs, losses, damages and expenses incurred in any way (including but not limited to that arising from negligence) in connection with any use of or reliance on the map contents.

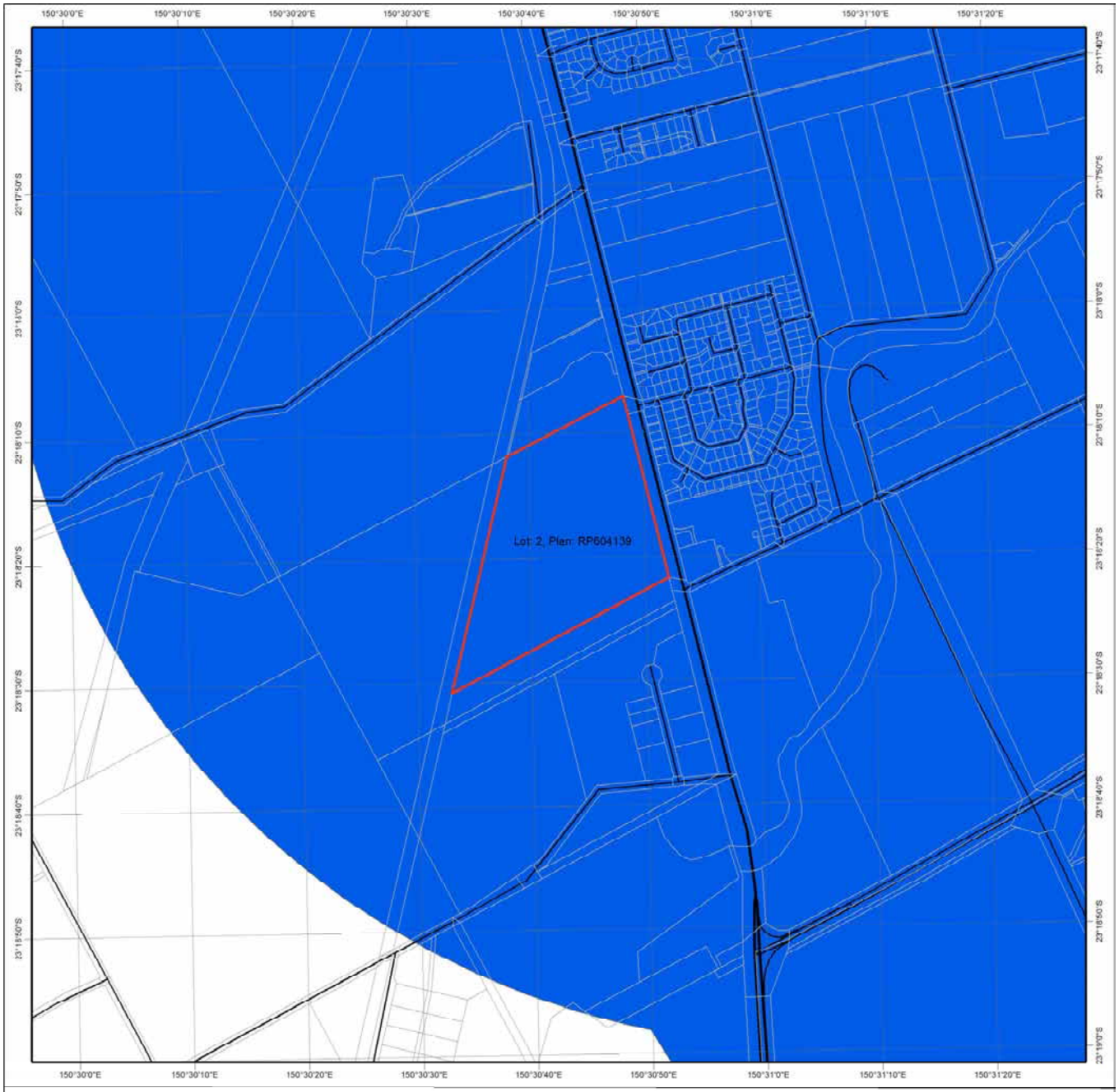
N

0 100 200 300 400 500 m

This product is projected into:
GDA 1994 MGA Zone 56

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5.4 Protected plants map



Protected Plants Flora Survey Trigger Map

Legend

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

LOCALITY DIAGRAM



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

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

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

N

0 100 200 300 400 500 m

This product is projected into:
GDA 1994 MGA Zone 56

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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Queensland Government

AUDAX AT FIDELIS

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Status: All
Records: All
Date: All
Latitude: -23.2946
Longitude: 150.5119
Distance: 20
Email:
Date submitted: Thursday 01 Jun 2017 09:59:55
Date extracted: Thursday 01 Jun 2017 10:00:02

The number of records retrieved = 1668

Disclaimer

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

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

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Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	*Rhinella marina*	cane toad	Y			28
animals	amphibians	Hylidae	*Litoria nasuta*	striped rocketfrog		C		1
animals	amphibians	Hylidae	*Cyclorana alboguttata*	greenstripe frog		C		3/1
animals	amphibians	Hylidae	*Litoria latopalmata*	broad palmed rocketfrog		C		1
animals	amphibians	Hylidae	*Litoria gracilenta*	graceful treefrog		C		9/7
animals	amphibians	Hylidae	*Cyclorana brevipes*	superb collared frog		C		6/5
animals	amphibians	Hylidae	*Litoria wilcoxii*	eastern stony creek frog		C		1
animals	amphibians	Hylidae	*Litoria caerulea*	common green treefrog		C		31/17
animals	amphibians	Hylidae	*Litoria rubella*	ruddy treefrog		C		5
animals	amphibians	Hylidae	*Litoria fallax*	eastern sedgefrog		C		10/5
animals	amphibians	Hylidae	*Cyclorana novaehollandiae*	eastern snapping frog		C		1/1
animals	amphibians	Hylidae	*Litoria rothii*	northern laughing treefrog		C		3/1
animals	amphibians	Hylidae	*Litoria inermis*	bumpy rocketfrog		C		2
animals	amphibians	Limnodynastidae	*Limnodynastes terraereginae*	scarlet sided pobblebonk		C		11/7
animals	amphibians	Limnodynastidae	*Limnodynastes tasmaniensis*	spotted grassfrog		C		9/3
animals	amphibians	Limnodynastidae	*Platyplectrum ornatum*	ornate burrowing frog		C		7/1
animals	amphibians	Limnodynastidae	*Limnodynastes salmini*	salmon striped frog		C		6/1
animals	amphibians	Limnodynastidae	*Limnodynastes peronii*	striped marshfrog		C		4/2
animals	amphibians	Myobatrachidae	*Pseudophryne major*	great brown broodfrog		C		13/11
animals	amphibians	Myobatrachidae	*Crinia deserticola*	chirping froglet		C		1
animals	amphibians	Myobatrachidae	*Uperoleia rugosa*	chubby gungan		C		5/5
animals	birds	Acanthizidae	*Acanthiza nana*	yellow thornbill		C		6
animals	birds	Acanthizidae	*Smicrornis brevirostris*	weebill		C		5
animals	birds	Acanthizidae	*Sericornis magnirostra*	large-billed scrubwren		C		2
animals	birds	Acanthizidae	*Acanthiza chrysorrhoa*	yellow-rumped thornbill		C		4
animals	birds	Acanthizidae	*Acanthiza pusilla*	brown thornbill		C		2
animals	birds	Acanthizidae	*Acanthiza reguloides*	buff-rumped thornbill		C		5/3
animals	birds	Acanthizidae	*Gerygone palpebrosa*	fairy gerygone		C		37
animals	birds	Acanthizidae	*Gerygone olivacea*	white-throated gerygone		C		146
animals	birds	Acanthizidae	*Sericornis frontalis*	white-browed scrubwren		C		23/2
animals	birds	Accipitridae	*Lophoictinia isura*	square-tailed kite		C		12/1
animals	birds	Accipitridae	*Accipiter fasciatus*	brown goshawk		C		7
animals	birds	Accipitridae	*Circus approximans*	swamp harrier		C		16
animals	birds	Accipitridae	*Pandion cristatus*	eastern osprey		SL		8
animals	birds	Accipitridae	*Elanus axillaris*	black-shouldered kite		C		31
animals	birds	Accipitridae	*Circus assimilis*	spotted harrier		C		15
animals	birds	Accipitridae	*Haliastur indus*	brahminy kite		C		20
animals	birds	Accipitridae	*Milvus migrans*	black kite		C		57/1
animals	birds	Accipitridae	*Aquila audax*	wedge-tailed eagle		C		72
animals	birds	Accipitridae	*Erythrotriorchis radiatus*	red goshawk		E	V	1
animals	birds	Accipitridae	*Accipiter novaehollandiae*	grey goshawk		C		3/1
animals	birds	Accipitridae	*Hamirostra melanosternon*	black-breasted buzzard		C		2
animals	birds	Accipitridae	*Accipiter cirrocephalus*	collared sparrowhawk		C		7/1
animals	birds	Accipitridae	*Hieraaetus morphnoides*	little eagle		C		1
animals	birds	Accipitridae	*Haliaeetus leucogaster*	white-bellied sea-eagle		C		36/2
animals	birds	Accipitridae	*Haliastur sphenurus*	whistling kite		C		197

Queensland Government Wildlife Online - Extract Date 01/06/2017 at 10:00:02

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Accipitridae	*Aviceda subcristata*	Pacific baza		C		20
animals	birds	Acrocephalidae	*Acrocephalus australis*	Australian reed-warbler		C		43
animals	birds	Aegothelidae	*Aegotheles cristatus*	Australian owlet-nightjar		C		5/1
animals	birds	Alaudidae	*Mirafra javanica*	Horsfield's bushlark		C		95
animals	birds	Alcedinidae	*Ceyx azureus*	azure kingfisher		C		6
animals	birds	Anatidae	*Cygnus atratus*	black swan		C		128
animals	birds	Anatidae	*Tadorna radjah*	radjah shelduck		C		7
animals	birds	Anatidae	*Anas gracilis*	grey teal		C		156
animals	birds	Anatidae	*Anas castanea*	chestnut teal		C		10
animals	birds	Anatidae	*Anas rhynchotis*	Australasian shoveler		C		28
animals	birds	Anatidae	*Aythya australis*	hardhead		C		100
animals	birds	Anatidae	*Biziura lobata*	musk duck		C		4
animals	birds	Anatidae	*Anas superciliosa*	Pacific black duck		C		201
animals	birds	Anatidae	*Malacorhynchus membranaceus*	pink-eared duck		C		6
animals	birds	Anatidae	*Nettapus coromandelianus*	cotton pygmy-goose		C		112/1
animals	birds	Anatidae	*Stictonetta naevosa*	freckled duck		C		6
animals	birds	Anatidae	*Nettapus pulchellus*	green pygmy-goose		C		6
animals	birds	Anatidae	*Dendrocygna arcuata*	wandering whistling-duck		C		48/1
animals	birds	Anatidae	*Dendrocygna eytoni*	plumed whistling-duck		C		50
animals	birds	Anatidae	*Anas platyrhynchos*	northern mallard	Y			27
animals	birds	Anatidae	*Chenonetta jubata*	Australian wood duck		C		165
animals	birds	Anhingidae	*Anhinga novaehollandiae*	Australasian darter		C		134
animals	birds	Anseranatidae	*Anseranas semipalmata*	magpie goose		C		132
animals	birds	Apodidae	*Hirundapus caudacutus*	white-throated needletail		SL		2
animals	birds	Apodidae	*Apus pacificus*	fork-tailed swift		SL		4
animals	birds	Ardeidae	*Bubulcus ibis*	cattle egret		C		76
animals	birds	Ardeidae	*Ardea pacifica*	white-necked heron		C		53
animals	birds	Ardeidae	*Egretta novaehollandiae*	white-faced heron		C		127
animals	birds	Ardeidae	*Nycticorax caledonicus*	nankeen night-heron		C		22/1
animals	birds	Ardeidae	*Ixobrychus flavicollis*	black bittern		C		5/1
animals	birds	Ardeidae	*Ardea alba modesta*	eastern great egret		C		130
animals	birds	Ardeidae	*Ixobrychus dubius*	Australian little bittern		C		1
animals	birds	Ardeidae	*Egretta garzetta*	little egret		C		58
animals	birds	Ardeidae	*Ardea intermedia*	intermediate egret		C		148
animals	birds	Artamidae	*Artamus minor*	little woodswallow		C		1
animals	birds	Artamidae	*Artamus superciliosus*	white-browed woodswallow		C		3/1
animals	birds	Artamidae	*Artamus leucorynchus*	white-breasted woodswallow		C		25/1
animals	birds	Artamidae	*Cracticus torquatus*	grey butcherbird		C		10
animals	birds	Artamidae	*Cracticus nigrogularis*	pied butcherbird		C		326/2
animals	birds	Artamidae	*Strepera graculina*	pied currawong		C		287/1
animals	birds	Artamidae	*Cracticus tibicen*	Australian magpie		C		371/1
animals	birds	Artamidae	*Artamus cinereus*	black-faced woodswallow		C		61/3
animals	birds	Artamidae	*Artamus cyanopterus*	dusky woodswallow		C		2
animals	birds	Burhinidae	*Burhinus grallarius*	bush stone-curlew		C		121
animals	birds	Cacatuidae	*Nymphicus hollandicus*	cockatiel		C		49
animals	birds	Cacatuidae	*Lophochroa leadbeateri*	Major Mitchell's cockatoo		V		1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo		C		188
animals	birds	Cacatuidae	*Calyptorhynchus banksii*	red-tailed black-cockatoo		C		83
animals	birds	Cacatuidae	*Calyptorhynchus lathami erebus*	glossy black-cockatoo (northern)		V		4
animals	birds	Cacatuidae	*Eolophus roseicapilla*	galah		C		209
animals	birds	Cacatuidae	*Cacatua tenuirostris*	long-billed corella	Y	C		16
animals	birds	Cacatuidae	*Cacatua sanguinea*	little corella		C		37
animals	birds	Campephagidae	*Coracina tenuirostris*	cicadabird		C		23/1
animals	birds	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike		C		260
animals	birds	Campephagidae	*Coracina maxima*	ground cuckoo-shrike		C		3
animals	birds	Campephagidae	*Lalage tricolor*	white-winged triller		C		22
animals	birds	Campephagidae	*Lalage leucomela*	varied triller		C		44
animals	birds	Campephagidae	*Coracina lineata*	barred cuckoo-shrike		C		5
animals	birds	Campephagidae	*Coracina papuensis*	white-bellied cuckoo-shrike		C		20
animals	birds	Caprimulgidae	*Caprimulgus macrurus*	large-tailed nightjar		C		2
animals	birds	Casuariidae	*Dromaius novaehollandiae*	emu		C		2
animals	birds	Charadriidae	*Pluvialis fulva*	Pacific golden plover		SL		1
animals	birds	Charadriidae	*Elseyornis melanops*	black-fronted dotterel		C		70
animals	birds	Charadriidae	*Erythrogonys cinctus*	red-kneed dotterel		C		27
animals	birds	Charadriidae	*Charadrius ruficapillus*	red-capped plover		C		1
animals	birds	Charadriidae	*Vanellus miles novaehollandiae*	masked lapwing (southern subspecies)		C		247/1
animals	birds	Charadriidae	*Vanellus miles*	masked lapwing		C		93
animals	birds	Ciconiidae	*Ephippiorhynchus asiaticus*	black-necked stork		C		24
animals	birds	Cisticolidae	*Cisticola exilis*	golden-headed cisticola		C		188
animals	birds	Cisticolidae	*Cisticola juncidis laveryi*	zitting cisticola		C		2
animals	birds	Climacteridae	*Cormobates leucophaea metastasis*	white-throated treecreeper (southern)		C		7
animals	birds	Climacteridae	*Climacteris picumnus*	brown treecreeper		C		6
animals	birds	Columbidae	*Chalcophaps indica*	emerald dove		C		14
animals	birds	Columbidae	*Geopelia humeralis*	bar-shouldered dove		C		139/2
animals	birds	Columbidae	*Ptilinopus superbus*	superb fruit-dove		C		4
animals	birds	Columbidae	*Ptilinopus magnificus*	wompoo fruit-dove		C		5/2
animals	birds	Columbidae	*Macropygia amboinensis*	brown cuckoo-dove		C		9
animals	birds	Columbidae	*Streptopelia chinensis*	spotted dove	Y			132
animals	birds	Columbidae	*Leucosarcia melanoleuca*	wonga pigeon		C		4
animals	birds	Columbidae	*Lopholaimus antarcticus*	topknot pigeon		C		6
animals	birds	Columbidae	*Geophaps scripta scripta*	squatter pigeon (southern subspecies)		V	V	196/5
animals	birds	Columbidae	*Columba livia*	rock dove	Y			17
animals	birds	Columbidae	*Ptilinopus regina*	rose-crowned fruit-dove		C		8
animals	birds	Columbidae	*Phaps chalcoptera*	common bronzewing		C		2
animals	birds	Columbidae	*Geopelia striata*	peaceful dove		C		318/1
animals	birds	Columbidae	*Geophaps scripta*	squatter pigeon		C		1
animals	birds	Columbidae	*Ocyphaps lophotes*	crested pigeon		C		266
animals	birds	Coraciidae	*Eurystomus orientalis*	dollarbird		C		36
animals	birds	Corcoracidae	*Struthidea cinerea*	apostlebird		C		21
animals	birds	Corcoracidae	*Corcorax melanorhamphos*	white-winged chough		C		12
animals	birds	Corvidae	*Corvus coronoides*	Australian raven		C		2
animals	birds	Corvidae	*Corvus orru*	Torresian crow		C		326

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Cuculidae	*Centropus phasianinus*	pheasant coucal		C		199
animals	birds	Cuculidae	*Cacomantis variolosus*	brush cuckoo		C		5
animals	birds	Cuculidae	*Eudynamys orientalis*	eastern koel		C		129/1
animals	birds	Cuculidae	*Chalcites minutillus*	little bronze-cuckoo		C		1
animals	birds	Cuculidae	*Chalcites minutillus russatus*	Gould's bronze-cuckoo		C		3
animals	birds	Cuculidae	*Chalcites lucidus*	shining bronze-cuckoo		C		8
animals	birds	Cuculidae	*Chalcites basalis*	Horsfield's bronze-cuckoo		C		47/3
animals	birds	Cuculidae	*Chalcites minutillus barnardi*	little bronze-cuckoo		C		1
animals	birds	Cuculidae	*Cacomantis flabelliformis*	fan-tailed cuckoo		C		17
animals	birds	Cuculidae	*Scythrops novaehollandiae*	channel-billed cuckoo		C		107/4
animals	birds	Cuculidae	*Cacomantis pallidus*	pallid cuckoo		C		35/1
animals	birds	Dicruridae	*Dicrurus bracteatus*	spangled drongo		C		55
animals	birds	Estrildidae	*Neochmia modesta*	plum-headed finch		C		14/2
animals	birds	Estrildidae	*Neochmia phaeton*	crimson finch		C		2/2
animals	birds	Estrildidae	*Neochmia ruficauda*	star finch		C		7/4
animals	birds	Estrildidae	*Lonchura punctulata*	nutmeg mannikin	Y			26
animals	birds	Estrildidae	*Taeniopygia bichenovii*	double-barred finch		C		145/1
animals	birds	Estrildidae	*Neochmia temporalis*	red-browed finch		C		4
animals	birds	Estrildidae	*Taeniopygia guttata*	zebra finch		C		3/1
animals	birds	Estrildidae	*Poephila cincta cincta*	black-throated finch (white-rumped subspecies)		E	E	1
animals	birds	Estrildidae	*Lonchura castaneothorax*	chestnut-breasted mannikin		C		16
animals	birds	Eurostopodidae	*Eurostopodus argus*	spotted nightjar		C		2/1
animals	birds	Falconidae	*Falco berigora*	brown falcon		C		44
animals	birds	Falconidae	*Falco subniger*	black falcon		C		2
animals	birds	Falconidae	*Falco longipennis*	Australian hobby		C		14/2
animals	birds	Falconidae	*Falco cenchroides*	nankeen kestrel		C		143
animals	birds	Falconidae	*Falco peregrinus*	peregrine falcon		C		5
animals	birds	Glareolidae	*Stiltia isabella*	Australian pratincole		C		1
animals	birds	Gruidae	*Grus rubicunda*	brolga		C		23
animals	birds	Halcyonidae	*Tanysiptera sylvia*	buff-breasted paradise-kingfisher		C		1
animals	birds	Halcyonidae	*Todiramphus macleayii*	forest kingfisher		C		102/1
animals	birds	Halcyonidae	*Todiramphus sanctus*	sacred kingfisher		C		53
animals	birds	Halcyonidae	*Dacelo leachii*	blue-winged kookaburra		C		105
animals	birds	Halcyonidae	*Todiramphus pyrrhopygius*	red-backed kingfisher		C		7
animals	birds	Halcyonidae	*Dacelo novaeguineae*	laughing kookaburra		C		274/1
animals	birds	Hirundinidae	*Petrochelidon nigricans*	tree martin		C		18
animals	birds	Hirundinidae	*Petrochelidon ariel*	fairy martin		C		136
animals	birds	Hirundinidae	*Hirundo neoxena*	welcome swallow		C		82
animals	birds	Jacanidae	*Irediparra gallinacea*	comb-crested jacana		C		93/1
animals	birds	Laridae	*Chlidonias hybrida*	whiskered tern		C		43
animals	birds	Laridae	*Hydroprogne caspia*	Caspian tern		SL		25
animals	birds	Laridae	*Sternula albifrons*	little tern		SL		1
animals	birds	Laridae	*Gelochelidon nilotica*	gull-billed tern		SL		12
animals	birds	Laridae	*Thalasseus bergii*	crested tern		SL		1/1
animals	birds	Laridae	*Chroicocephalus novaehollandiae*	silver gull		C		24

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Laridae	*Anous minutus*	black noddy		C		2/2
animals	birds	Laridae	*Anous stolidus*	common noddy		SL		1
animals	birds	Laridae	*Sterna striata*	white-fronted tern		C		1/1
animals	birds	Laridae	*Chlidonias leucopterus*	white-winged black tern		SL		2
animals	birds	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren		C		242/4
animals	birds	Maluridae	*Malurus cyaneus*	superb fairy-wren		C		2
animals	birds	Megaluridae	*Megalurus gramineus*	little grassbird		C		2
animals	birds	Megaluridae	*Megalurus timoriensis*	tawny grassbird		C		15
animals	birds	Megaluridae	*Cincloramphus mathewsi*	rufous songlark		C		4
animals	birds	Megapodiidae	*Alectura lathami*	Australian brush-turkey		C		34
animals	birds	Meliphagidae	*Manorina flavigula*	yellow-throated miner		C		4
animals	birds	Meliphagidae	*Epthianura crocea macgregori*	yellow chat (Dawson)		E	CE	5/1
animals	birds	Meliphagidae	*Acanthorhynchus tenuirostris*	eastern spinebill		C		1
animals	birds	Meliphagidae	*Melithreptus brevirostris*	brown-headed honeyeater		C		2
animals	birds	Meliphagidae	*Plectorhyncha lanceolata*	striped honeyeater		C		3/1
animals	birds	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater		C		249/1
animals	birds	Meliphagidae	*Acanthagenys rufogularis*	spiny-cheeked honeyeater		C		2
animals	birds	Meliphagidae	*Gavicalis fasciogularis*	mangrove honeyeater		C		7
animals	birds	Meliphagidae	*Conopophila rufogularis*	rufous-throated honeyeater		C		1
animals	birds	Meliphagidae	*Philemon citreogularis*	little friarbird		C		224/7
animals	birds	Meliphagidae	*Ptilotula fusca*	fuscous honeyeater		C		1
animals	birds	Meliphagidae	*Myzomela obscura*	dusky honeyeater		C		21
animals	birds	Meliphagidae	*Stomiopera flava*	yellow honeyeater		C		2
animals	birds	Meliphagidae	*Epthianura crocea*	yellow chat		V		1
animals	birds	Meliphagidae	*Meliphaga lewinii*	Lewin's honeyeater		C		68/1
animals	birds	Meliphagidae	*Ptilotula plumula*	grey-fronted honeyeater		C		2
animals	birds	Meliphagidae	*Entomyzon cyanotis*	blue-faced honeyeater		C		302/3
animals	birds	Meliphagidae	*Gavicalis virescens*	singing honeyeater		C		1
animals	birds	Meliphagidae	*Philemon buceroides*	helmeted friarbird		C		1
animals	birds	Meliphagidae	*Gavicalis versicolor*	varied honeyeater		C		1
animals	birds	Meliphagidae	*Lichmera indistincta*	brown honeyeater		C		290
animals	birds	Meliphagidae	*Melithreptus gularis*	black-chinned honeyeater		C		5
animals	birds	Meliphagidae	*Melithreptus lunatus*	white-naped honeyeater		C		5
animals	birds	Meliphagidae	*Philemon argenticeps*	silver-crowned friarbird		C		2
animals	birds	Meliphagidae	*Philemon corniculatus*	noisy friarbird		C		187
animals	birds	Meliphagidae	*Ptilotula penicillata*	white-plumed honeyeater		C		1
animals	birds	Meliphagidae	*Ramsayornis fasciatus*	bar-breasted honeyeater		C		30
animals	birds	Meliphagidae	*Manorina melanocephala*	noisy miner		C		305/3
animals	birds	Meliphagidae	*Myzomela sanguinolenta*	scarlet honeyeater		C		26
animals	birds	Meropidae	*Merops ornatus*	rainbow bee-eater		C		65
animals	birds	Monarchidae	*Myiagra sp.*					1
animals	birds	Monarchidae	*Myiagra rubecula*	leaden flycatcher		C		64
animals	birds	Monarchidae	*Myiagra inquieta*	restless flycatcher		C		10/1
animals	birds	Monarchidae	*Myiagra cyanoleuca*	satin flycatcher		SL		3
animals	birds	Monarchidae	*Symposiachrus trivirgatus*	spectacled monarch		SL		23
animals	birds	Monarchidae	*Carterornis leucotis*	white-eared monarch		C		16

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Monarchidae	*Monarcha melanopsis*	black-faced monarch		SL		12
animals	birds	Monarchidae	*Grallina cyanoleuca*	magpie-lark		C		384
animals	birds	Motacillidae	*Anthus novaeseelandiae*	Australasian pipit		C		155
animals	birds	Nectariniidae	*Nectarinia jugularis*	olive-backed sunbird		C		1
animals	birds	Nectariniidae	*Dicaeum hirundinaceum*	mistletoebird		C		152
animals	birds	Neosittidae	*Daphoenositta chrysoptera*	varied sittella		C		10/2
animals	birds	Oriolidae	*Oriolus sagittatus*	olive-backed oriole		C		62/1
animals	birds	Oriolidae	*Sphecotheres vieilloti*	Australasian figbird		C		240/1
animals	birds	Otididae	*Ardeotis australis*	Australian bustard		C		21
animals	birds	Pachycephalidae	*Colluricincla harmonica*	grey shrike-thrush		C		28/1
animals	birds	Pachycephalidae	*Falcunculus frontatus*	crested shrike-tit		C		1
animals	birds	Pachycephalidae	*Colluricincla megarhyncha*	little shrike-thrush		C		65/1
animals	birds	Pachycephalidae	*Pachycephala pectoralis*	golden whistler		C		14/2
animals	birds	Pachycephalidae	*Pachycephala rufiventris*	rufous whistler		C		121
animals	birds	Paradisaeidae	*Ptiloris paradiseus*	paradise riflebird		C		1
animals	birds	Pardalotidae	*Pardalotus rubricatus*	red-browed pardalote		C		1
animals	birds	Pardalotidae	*Pardalotus striatus*	striated pardalote		C		234/4
animals	birds	Pardalotidae	*Pardalotus punctatus*	spotted pardalote		C		5
animals	birds	Passeridae	*Passer domesticus*	house sparrow	Y			33
animals	birds	Pelecanidae	*Pelecanus conspicillatus*	Australian pelican		C		134
animals	birds	Petroicidae	*Petroica rosea*	rose robin		C		3
animals	birds	Petroicidae	*Microeca fascinans*	jacky winter		C		3
animals	birds	Petroicidae	*Eopsaltria australis*	eastern yellow robin		C		17
animals	birds	Phalacrocoracidae	*Phalacrocorax sulcirostris*	little black cormorant		C		127
animals	birds	Phalacrocoracidae	*Microcarbo melanoleucos*	little pied cormorant		C		130
animals	birds	Phalacrocoracidae	*Phalacrocorax varius*	pied cormorant		C		37
animals	birds	Phalacrocoracidae	*Phalacrocorax carbo*	great cormorant		C		30
animals	birds	Phasianidae	*Coturnix pectoralis*	stubble quail		C		1
animals	birds	Phasianidae	*Pavo cristatus*	Indian peafowl	Y			20
animals	birds	Phasianidae	*Coturnix ypsilophora*	brown quail		C		21
animals	birds	Phasianidae	*Excalfactoria chinensis*	king quail		C		1
animals	birds	Podargidae	*Podargus strigoides*	tawny frogmouth		C		18/1
animals	birds	Podicipedidae	*Poliocephalus poliocephalus*	hoary-headed grebe		C		8
animals	birds	Podicipedidae	*Tachybaptus novaehollandiae*	Australasian grebe		C		119/2
animals	birds	Podicipedidae	*Podiceps cristatus*	great crested grebe		C		11
animals	birds	Pomatostomidae	*Pomatostomus temporalis*	grey-crowned babbler		C		210
animals	birds	Procellariidae	*Macronectes giganteus*	southern giant-petrel		E	E	1
animals	birds	Procellariidae	*Pterodroma nigripennis*	black-winged petrel		C		1/1
animals	birds	Psittacidae	*Trichoglossus haematodus moluccanus*	rainbow lorikeet		C		358/1
animals	birds	Psittacidae	*Platycercus adscitus palliceps*	pale-headed rosella (southern form)		C		1
animals	birds	Psittacidae	*Trichoglossus chlorolepidotus*	scaly-breasted lorikeet		C		124/2
animals	birds	Psittacidae	*Barnardius zonarius barnardi*	mallee ringneck		C		1
animals	birds	Psittacidae	*Aprosmictus erythropterus*	red-winged parrot		C		169/1
animals	birds	Psittacidae	*Melopsittacus undulatus*	budgerigar		C		3
animals	birds	Psittacidae	*Glossopsitta concinna*	musk lorikeet		C		1
animals	birds	Psittacidae	*Platycercus adscitus*	pale-headed rosella		C		298/5

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Psittacidae	*Alisterus scapularis*	Australian king-parrot		C		6
animals	birds	Psittacidae	*Barnardius zonarius*	Australian ringneck		C		1
animals	birds	Psittacidae	*Parvipsitta pusilla*	little lorikeet		C		7
animals	birds	Psittacidae	*Lathamus discolor*	swift parrot		E	CE	1
animals	birds	Psophodidae	*Cinclosoma punctatum*	spotted quail-thrush		C		1
animals	birds	Psophodidae	*Psophodes olivaceus*	eastern whipbird		C		2/2
animals	birds	Ptilonorhynchidae	*Sericulus chrysocephalus*	regent bowerbird		C		1
animals	birds	Rallidae	*Fulica atra*	Eurasian coot		C		85
animals	birds	Rallidae	*Porzana pusilla*	Baillon's crake		C		2
animals	birds	Rallidae	*Gallirallus philippensis*	buff-banded rail		C		10
animals	birds	Rallidae	*Amaurornis moluccana*	pale-vented bush-hen		C		4
animals	birds	Rallidae	*Porphyrio melanotus*	purple swamphen		C		108
animals	birds	Rallidae	*Gallinula tenebrosa*	dusky moorhen		C		137
animals	birds	Rallidae	*Tribonyx ventralis*	black-tailed native-hen		C		6
animals	birds	Rallidae	*Porzana fluminea*	Australian spotted crake		C		1
animals	birds	Rallidae	*Porzana tabuensis*	spotless crake		C		1
animals	birds	Recurvirostridae	*Himantopus himantopus*	black-winged stilt		C		88
animals	birds	Recurvirostridae	*Recurvirostra novaehollandiae*	red-necked avocet		C		13
animals	birds	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail		C		292
animals	birds	Rhipiduridae	*Rhipidura rufifrons*	rufous fantail		SL		37
animals	birds	Rhipiduridae	*Rhipidura albiscapa*	grey fantail		C		128
animals	birds	Rostratulidae	*Rostratula australis*	Australian painted snipe		V	E	6/2
animals	birds	Scolopacidae	*Calidris ferruginea*	curlew sandpiper		E	CE	6
animals	birds	Scolopacidae	*Calidris ruficollis*	red-necked stint		SL		1
animals	birds	Scolopacidae	*Tringa nebularia*	common greenshank		SL		6
animals	birds	Scolopacidae	*Calidris acuminata*	sharp-tailed sandpiper		SL		25
animals	birds	Scolopacidae	*Gallinago hardwickii*	Latham's snipe		SL		39/2
animals	birds	Scolopacidae	*Limosa limosa*	black-tailed godwit		SL		18
animals	birds	Scolopacidae	*Limosa lapponica baueri*	Western Alaskan bar-tailed godwit		V	V	3
animals	birds	Scolopacidae	*Tringa brevipes*	grey-tailed tattler		SL		1
animals	birds	Scolopacidae	*Tringa stagnatilis*	marsh sandpiper		SL		39
animals	birds	Strigidae	*Ninox rufa queenslandica*	rufous owl (southern subspecies)		C		1
animals	birds	Strigidae	*Ninox boobook*	southern boobook		C		20
animals	birds	Strigidae	*Ninox connivens*	barking owl		C		1/1
animals	birds	Sturnidae	*Sturnus vulgaris*	common starling	Y			8
animals	birds	Sturnidae	*Acridotheres tristis*	common myna	Y			1
animals	birds	Threskiornithidae	*Plegadis falcinellus*	glossy ibis		SL		57
animals	birds	Threskiornithidae	*Platalea flavipes*	yellow-billed spoonbill		C		57
animals	birds	Threskiornithidae	*Threskiornis molucca*	Australian white ibis		C		143/1
animals	birds	Threskiornithidae	*Threskiornis spinicollis*	straw-necked ibis		C		246
animals	birds	Threskiornithidae	*Platalea regia*	royal spoonbill		C		106/1
animals	birds	Timaliidae	*Zosterops lateralis*	silvereye		C		21
animals	birds	Turnicidae	*Turnix maculosus*	red-backed button-quail		C		3
animals	birds	Turnicidae	*Turnix varius*	painted button-quail		C		2
animals	birds	Turnicidae	*Turnix melanogaster*	black-breasted button-quail		V	V	2
animals	birds	Tytonidae	*Tyto delicatula*	eastern barn owl		C		8/2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	insects	Lycaenidae	*Jalmenus eubulus*	pale imperial hairstreak		V		3
animals	insects	Nymphalidae	*Libythea geoffroy nicevillei*	purple beak				1
animals	insects	Nymphalidae	*Phaedyma shepherdi*					2
animals	mammals	Acrobatidae	*Acrobates pygmaeus*	feathertail glider		C		2
animals	mammals	Canidae	*Canis sp.*					1
animals	mammals	Canidae	*Vulpes vulpes*	red fox	Y			5
animals	mammals	Canidae	*Canis lupus dingo*	dingo				4
animals	mammals	Canidae	*Canis lupus familiaris*	dog	Y			2
animals	mammals	Dasyuridae	*Planigale ingrami*	long-tailed planigale		C		2
animals	mammals	Dasyuridae	*Sminthopsis macroura*	stripe-faced dunnart		C		1/1
animals	mammals	Dasyuridae	*Phascogale tapoatafa tapoatafa*	brush-tailed phascogale		C		1
animals	mammals	Dasyuridae	*Dasyurus maculatus maculatus*	spotted-tailed quoll (southern subspecies)		V	E	1
animals	mammals	Dasyuridae	*Antechinus sp.*					1
animals	mammals	Dasyuridae	*Dasyurus hallucatus*	northern quoll		C	E	2
animals	mammals	Emballonuridae	*Taphozous troughtoni*	Troughton's sheathtail bat		C		18/5
animals	mammals	Felidae	*Felis catus*	cat	Y			5
animals	mammals	Leporidae	*Lepus europaeus*	European brown hare	Y			1
animals	mammals	Leporidae	*Oryctolagus cuniculus*	rabbit	Y			1
animals	mammals	Macropodidae	*Thylogale stigmatica*	red-legged pademelon		C		1
animals	mammals	Macropodidae	*Petrogale inornata*	unadorned rock-wallaby		C		24/10
animals	mammals	Macropodidae	*Petrogale herberti*	Herbert's rock-wallaby		C		1/1
animals	mammals	Macropodidae	*Macropus giganteus*	eastern grey kangaroo		C		5
animals	mammals	Macropodidae	*Macropus parryi*	whiptail wallaby		C		7
animals	mammals	Macropodidae	*Macropus agilis*	agile wallaby		C		5
animals	mammals	Macropodidae	*Macropus sp.*					2
animals	mammals	Macropodidae	*Wallabia bicolor*	swamp wallaby		C		6
animals	mammals	Macropodidae	*Macropus dorsalis*	black-striped wallaby		C		4
animals	mammals	Megadermatidae	*Macroderma gigas*	ghost bat		E	V	116/23
animals	mammals	Miniopteridae	*Miniopterus schreibersii oceanensis*	eastern bent-wing bat		C		10/7
animals	mammals	Miniopteridae	*Miniopterus australis*	little bent-wing bat		C		13/1
animals	mammals	Molossidae	*Chaerephon jobensis*	northern freetail bat		C		2
animals	mammals	Muridae	*Melomys sp.*					3
animals	mammals	Muridae	*Mus musculus*	house mouse	Y			5
animals	mammals	Muridae	*Rattus fuscipes*	bush rat		C		1
animals	mammals	Muridae	*Hydromys chrysogaster*	water rat		C		9/1
animals	mammals	Ornithorhynchidae	*Ornithorhynchus anatinus*	platypus		SL		2
animals	mammals	Peramelidae	*Perameles nasuta*	long-nosed bandicoot		C		3
animals	mammals	Peramelidae	*Isoodon macrourus*	northern brown bandicoot		C		15
animals	mammals	Petauridae	*Petaurus norfolcensis*	squirrel glider		C		1/1
animals	mammals	Petauridae	*Petaurus breviceps*	sugar glider		C		4
animals	mammals	Petauridae	*Petaurus sp.*					1
animals	mammals	Phalangeridae	*Trichosurus vulpecula*	common brushtail possum		C		11
animals	mammals	Phascolarctidae	*Phascolarctos cinereus*	koala		V	V	6
animals	mammals	Potoroidae	*Aepyprymnus rufescens*	rufous bettong		C		9/2
animals	mammals	Pseudocheiridae	*Pseudocheirus peregrinus*	common ringtail possum		C		2

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animals	mammals	Pteropodidae	*Pteropus sp.*					1
animals	mammals	Pteropodidae	*Pteropus scapulatus*	little red flying-fox		C		2
animals	mammals	Pteropodidae	*Pteropus alecto*	black flying-fox		C		5
animals	mammals	Rhinolophidae	*Rhinolophus megaphyllus*	eastern horseshoe-bat		C		11/2
animals	mammals	Suidae	*Sus scrofa*	pig	Y			5
animals	mammals	Tachyglossidae	*Tachyglossus aculeatus*	short-beaked echidna		SL		16/1
animals	mammals	Vespertilionidae	*Vespadelus pumilus*	eastern forest bat		C		1
animals	mammals	Vespertilionidae	*Myotis macropus*	large-footed myotis		C		2
animals	mammals	Vespertilionidae	*Chalinolobus gouldii*	Gould's wattled bat		C		3/1
animals	mammals	Vespertilionidae	*Scotorepens balstoni*	inland broad-nosed bat		C		1
animals	mammals	Vespertilionidae	*Vespadelus troughtoni*	eastern cave bat		C		25/25
animals	mammals	Vespertilionidae	*Scotorepens greyii*	little broad-nosed bat		C		1
animals	ray-finned fishes	Ambassidae	*Ambassis agassizii*	Agassiz's glassfish				10/1
animals	ray-finned fishes	Anguillidae	*Anguilla reinhardtii*	longfin eel				10
animals	ray-finned fishes	Apogonidae	*Glossamia aprion*	mouth almighty				11
animals	ray-finned fishes	Ariidae	*Neoarius graeffei*	blue catfish				11
animals	ray-finned fishes	Atherinidae	*Craterocephalus stercusmuscarum*	flyspecked hardyhead				9
animals	ray-finned fishes	Belonidae	*Strongylura krefftii*	freshwater longtom				4
animals	ray-finned fishes	Centropomidae	*Lates calcarifer*	barramundi				4
animals	ray-finned fishes	Clupeidae	*Nematalosa erebi*	bony bream				47
animals	ray-finned fishes	Eleotridae	*Gobiomorphus australis*	striped gudgeon				1
animals	ray-finned fishes	Eleotridae	*Oxyeleotris lineolata*	sleepy cod				5
animals	ray-finned fishes	Eleotridae	*Hypseleotris galii*	firetail gudgeon				2
animals	ray-finned fishes	Eleotridae	*Hypseleotris species 1*	Midgley's carp gudgeon				2
animals	ray-finned fishes	Eleotridae	*Hypseleotris klunzingeri*	western carp gudgeon				4
animals	ray-finned fishes	Eleotridae	*Hypseleotris compressa*	empire gudgeon				5
animals	ray-finned fishes	Eleotridae	*Mogurnda adspersa*	southern purplespotted gudgeon				9/1
animals	ray-finned fishes	Hemiramphidae	*Arrhamphus sclerolepis*	snubnose garfish				2
animals	ray-finned fishes	Megalopidae	*Megalops cyprinoides*	oxeye herring				1
animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia splendida splendida*	eastern rainbowfish				10/1
animals	ray-finned fishes	Mugilidae	*Mugil cephalus*	sea mullet				3
animals	ray-finned fishes	Mugilidae	*Trachystoma petardi*	pinkeye mullet				1
animals	ray-finned fishes	Osteoglossidae	*Scleropages leichardti*	southern saratoga				1
animals	ray-finned fishes	Percichthyidae	*Macquaria ambigua*	golden perch				1
animals	ray-finned fishes	Plotosidae	*Neosilurus hyrtlii*	Hyrtl's catfish				1
animals	ray-finned fishes	Poeciliidae	*Poecilia reticulata*	guppy	Y			4
animals	ray-finned fishes	Poeciliidae	*Gambusia holbrooki*	mosquitofish	Y			2
animals	ray-finned fishes	Pseudomugilidae	*Pseudomugil signifer*	Pacific blue eye				3
animals	ray-finned fishes	Scorpaenidae	*Notesthes robusta*	bullrout				1
animals	ray-finned fishes	Synbranchidae	*Ophisternon gutturale*	swamp eel				2
animals	ray-finned fishes	Terapontidae	*Scortum hillii*	leathery grunter				2
animals	ray-finned fishes	Terapontidae	*Amniataba percoides*	barred grunter				23
animals	ray-finned fishes	Terapontidae	*Leiopotherapon unicolor*	spangled perch				13
animals	reptiles	Agamidae	*Pogona barbata*	bearded dragon		C		7
animals	reptiles	Agamidae	*Diporiphora sp.*					1
animals	reptiles	Agamidae	*Intellagama lesueurii*	eastern water dragon		C		3

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animals	reptiles	Agamidae	*Diporiphora australis*	tommy roundhead		C		3
animals	reptiles	Agamidae	*Chlamydosaurus kingii*	frilled lizard		C		8/1
animals	reptiles	Boidae	*Morelia spilota*	carpet python		C		8
animals	reptiles	Boidae	*Antaresia maculosa*	spotted python		C		9/2
animals	reptiles	Boidae	*Aspidites melanocephalus*	black-headed python		C		2
animals	reptiles	Carphodactylidae	*Nephrurus asper*	spiny knob-tailed gecko		C		3/3
animals	reptiles	Chelidae	*Rheodytes leukops*	Fitzroy River turtle		V	V	2
animals	reptiles	Chelidae	*Elseya albagula*	southern snapping turtle		E	CE	3
animals	reptiles	Chelidae	*Chelodina longicollis*	eastern snake-necked turtle		C		4
animals	reptiles	Chelidae	*Wollumbinia latisternum*	saw-shelled turtle		C		2
animals	reptiles	Chelidae	*Emydura macquarii krefftii*	Krefft's river turtle		C		19/1
animals	reptiles	Chelidae	*Chelodina expansa*	broad-shelled river turtle		C		2
animals	reptiles	Colubridae	*Boiga irregularis*	brown tree snake		C		7
animals	reptiles	Colubridae	*Tropidonophis mairii*	freshwater snake		C		14/7
animals	reptiles	Colubridae	*Dendrelaphis punctulatus*	green tree snake		C		13/6
animals	reptiles	Crocodylidae	*Crocodylus porosus*	estuarine crocodile		V		1
animals	reptiles	Diplodactylidae	*Oedura tryoni*	southern spotted velvet gecko		C		1/1
animals	reptiles	Diplodactylidae	*Amalosia rhombifer*	zig-zag gecko		C		1/1
animals	reptiles	Diplodactylidae	*Oedura monilis*	ocellated velvet gecko		C		2/2
animals	reptiles	Elapidae	*Oxyuranus scutellatus*	coastal taipan		C		4
animals	reptiles	Elapidae	*Pseudechis australis*	king brown snake		C		3
animals	reptiles	Elapidae	*Vermicella annulata*	bandy-bandy		C		4/1
animals	reptiles	Elapidae	*Pseudonaja textilis*	eastern brown snake		C		7/1
animals	reptiles	Elapidae	*Suta suta*	myall snake		C		1/1
animals	reptiles	Elapidae	*Demansia sp.*					1
animals	reptiles	Elapidae	*Furina diadema*	red-naped snake		C		7/3
animals	reptiles	Elapidae	*Demansia torquata*	collared whipsnake		C		1/1
animals	reptiles	Elapidae	*Hemiaspis damelii*	grey snake		E		12/11
animals	reptiles	Elapidae	*Hemiaspis signata*	black-bellied swamp snake		C		1
animals	reptiles	Elapidae	*Denisonia maculata*	ornamental snake		V	V	20/19
animals	reptiles	Elapidae	*Cacophis harriettae*	white-crowned snake		C		7/1
animals	reptiles	Elapidae	*Cryptophis boschmai*	Carpentaria whip snake		C		3/3
animals	reptiles	Elapidae	*Demansia psammophis*	yellow-faced whipsnake		C		1
animals	reptiles	Elapidae	*Pseudechis porphyriacus*	red-bellied black snake		C		4/1
animals	reptiles	Elapidae	*Cryptophis nigrostriatus*	black-striped snake		C		2/2
animals	reptiles	Elapidae	*Demansia vestigiata*	lesser black whipsnake		C		3/3
animals	reptiles	Elapidae	*Pseudechis guttatus*	spotted black snake		C		2/2
animals	reptiles	Elapidae	*Hoplocephalus bitorquatus*	pale-headed snake		C		11/11
animals	reptiles	Gekkonidae	*Gehyra dubia*	dubious dtella		C		5
animals	reptiles	Gekkonidae	*Heteronotia binoei*	Bynoe's gecko		C		7/2
animals	reptiles	Pygopodidae	*Delma tincta*	excitable delma		C		2/1
animals	reptiles	Pygopodidae	*Pygopus lepidopodus*	common scaly-foot		C		2/2
animals	reptiles	Pygopodidae	*Pygopus schraderi*	eastern hooded scaly-foot		C		1/1
animals	reptiles	Pygopodidae	*Lialis burtonis*	Burton's legless lizard		C		7/1
animals	reptiles	Scincidae	*Cryptoblepharus sp.*					1
animals	reptiles	Scincidae	*Cryptoblepharus virgatus sensu lato*			C		7/3

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	reptiles	Scincidae	*Cryptoblepharus pulcher pulcher*	elegant snake-eyed skink		C		5
animals	reptiles	Scincidae	*Glaphyromorphus crassicaudus*	Cape York mulch-skink		C		1
animals	reptiles	Scincidae	*Carlia pectoralis sensu lato*			C		6/1
animals	reptiles	Scincidae	*Carlia sp.*					1
animals	reptiles	Scincidae	*Carlia munda*	shaded-litter rainbow-skink		C		2/1
animals	reptiles	Scincidae	*Carlia vivax*	tussock rainbow-skink		C		2/1
animals	reptiles	Scincidae	*Concinnia tenuis*	bar-sided skink		C		6/2
animals	reptiles	Scincidae	*Eulamprus quoyii*	eastern water skink		C		11/9
animals	reptiles	Scincidae	*Bellatorias major*	land mullet		C		1
animals	reptiles	Scincidae	*Carlia schmeltzii*	robust rainbow-skink		C		9/6
animals	reptiles	Scincidae	*Concinnia martini*	dark bar-sided skink		C		1/1
animals	reptiles	Scincidae	*Bellatorias frerei*	major skink		C		1/1
animals	reptiles	Scincidae	*Ctenotus spaldingi*	straight-browed ctenotus		C		4/1
animals	reptiles	Scincidae	*Tiliqua scincoides*	eastern blue-tongued lizard		C		5
animals	reptiles	Scincidae	*Lygisaurus foliorum*	tree-base litter-skink		C		4/2
animals	reptiles	Scincidae	*Ctenotus taeniolatus*	copper-tailed skink		C		5
animals	reptiles	Scincidae	*Anomalopus verreauxii*	three-clawed worm-skink		C		2
animals	reptiles	Scincidae	*Lampropholis delicata*	dark-flecked garden sunskink		C		3/1
animals	reptiles	Scincidae	*Morethia taeniopleura*	fire-tailed skink		C		1
animals	reptiles	Scincidae	*Anomalopus brevicollis*	short-necked worm-skink		C		32/32
animals	reptiles	Scincidae	*Lampropholis guichenoti*	pale-flecked garden sunskink		C		2
animals	reptiles	Scincidae	*Cyclodomorphus gerrardii*	pink-tongued lizard		C		6/6
animals	reptiles	Scincidae	*Eremiascincus fasciolatus*	narrow-banded sand swimmer		C		1/1
animals	reptiles	Scincidae	*Glaphyromorphus punctulatus*	fine-spotted mulch-skink		C		2/2
animals	reptiles	Typhlopidae	*Anilios unguirostris*	claw-snouted blind snake		C		2/2
animals	reptiles	Typhlopidae	*Anilios sp.*					1
animals	reptiles	Varanidae	*Varanus gouldii*	sand monitor		C		2
animals	reptiles	Varanidae	*Varanus varius*	lace monitor		C		2
animals	reptiles	Varanidae	*Varanus tristis*	black-tailed monitor		C		1
animals	uncertain	Indeterminate	*Indeterminate*	Unknown or Code Pending		C		33
fungi	club fungi	Basidiomycota	*Psilocybe cubensis*			C		1/1
fungi	club fungi	Basidiomycota	*Geastrum triplex*			C		1/1
fungi	club fungi	Basidiomycota	*Bovista aestivalis*			C		1/1
fungi	club fungi	Basidiomycota	*Hexagonia hirta*			C		2/2
fungi	club fungi	Basidiomycota	*Fomitiporia robusta*			C		1/1
fungi	club fungi	Basidiomycota	*Leucoagaricus fimetarius*			C		1/1
fungi	club fungi	Basidiomycota	*Loweporus tephroporus*			C		1/1
fungi	sac fungi	Chrysothricaceae	*Chrysothrix xanthina*			C		1/1
fungi	sac fungi	Haematommaceae	*Haematomma*			C		2/2
fungi	sac fungi	Lecanoraceae	*Lecanora*			C		2/2
fungi	sac fungi	Lichen	*Lichen*			C		1/1
fungi	sac fungi	Parmeliaceae	*Parmotrema tinctorum*			C		1/1
fungi	sac fungi	Parmeliaceae	*Parmotrema austrosinense*			C		2/2
fungi	sac fungi	Parmeliaceae	*Parmotrema gardneri*			C		1/1
fungi	sac fungi	Peltigeraceae	*Peltigera polydactylon*			C		1/1
fungi	sac fungi	Pertusariaceae	*Pertusaria*			C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
fungi	sac fungi	Physciaceae	*Dirinaria confluens*			C		2/2
fungi	sac fungi	Physciaceae	*Buellia demutans*			C		1/1
fungi	sac fungi	Physciaceae	*Buellia*			C		1/1
fungi	sac fungi	Ramalinaceae	*Ramalina confirmata*			C		1/1
fungi	sac fungi	Ramalinaceae	*Ramalina litorea*			C		1/1
fungi	sac fungi	Ramalinaceae	*Ramalina inflata subsp. perpusilla*			C		1/1
fungi	sac fungi	Teloschistaceae	*Caloplaca*			C		1/1
fungi	sac fungi	Usneaceae	*Usnea nidifica*			C		2/2
plants	conifers	Araucariaceae	*Araucaria cunninghamii*	hoop pine		C		6
plants	conifers	Araucariaceae	*Araucaria cunninghamii var. cunninghamii*			C		1/1
plants	cycads	Cycadaceae	*Cycas*			C		1
plants	cycads	Cycadaceae	*Cycas megacarpa*			E	E	8
plants	cycads	Cycadaceae	*Cycas ophiolitica*	Marlborough blue		E	E	52/39
plants	cycads	Zamiaceae	*Macrozamia miquelii*			C		29/9
plants	cycads	Zamiaceae	*Macrozamia serpentina*			E		4/4
plants	ferns	Adiantaceae	*Cheilanthes sieberi*			C		8
plants	ferns	Adiantaceae	*Cheilanthes distans*	bristly cloak fern		C		1
plants	ferns	Adiantaceae	*Doryopteris concolor*			C		7/2
plants	ferns	Adiantaceae	*Paraceterach muelleri*			C		1/1
plants	ferns	Adiantaceae	*Cheilanthes tenuifolia*	rock fern		C		2/1
plants	ferns	Adiantaceae	*Adiantum hispidulum var. minus*			C		1/1
plants	ferns	Adiantaceae	*Adiantum hispidulum var. hispidulum*			C		3/3
plants	ferns	Adiantaceae	*Adiantum aethiopicum*			C		7
plants	ferns	Adiantaceae	*Cheilanthes brownii*			C		1/1
plants	ferns	Adiantaceae	*Adiantum hispidulum*			C		14
plants	ferns	Adiantaceae	*Adiantum atroviride*			C		3/2
plants	ferns	Adiantaceae	*Adiantum formosum*			C		1
plants	ferns	Adiantaceae	*Pellaea falcata*			C		2
plants	ferns	Adiantaceae	*Pellaea nana*			C		3/2
plants	ferns	Adiantaceae	*Cheilanthes*			C		3
plants	ferns	Adiantaceae	*Adiantum*			C		1
plants	ferns	Aspleniaceae	*Asplenium paleaceum*	scaly asplenium		C		5/2
plants	ferns	Azollaceae	*Azolla pinnata*	ferny azolla		C		2/1
plants	ferns	Azollaceae	*Azolla*					1
plants	ferns	Blechnaceae	*Doodia dissecta*			C		1/1
plants	ferns	Blechnaceae	*Blechnum nudum*	fishbone water fern		C		1
plants	ferns	Davalliaceae	*Davallia pyxidata*			C		1
plants	ferns	Dennstaedtiaceae	*Pteridium aquilinum subsp. wightianum*			C		1
plants	ferns	Dennstaedtiaceae	*Pteridium esculentum*	common bracken		C		2
plants	ferns	Dicksoniaceae	*Calochlaena dubia*			C		1
plants	ferns	Dryopteridaceae	*Tectaria devexa var. devexa*			E	E	6/3
plants	ferns	Marsileaceae	*Marsilea mutica*	shiny nardoo		C		1
plants	ferns	Ophioglossaceae	*Ophioglossum reticulatum*			C		2/2
plants	ferns	Polypodiaceae	*Pyrrosia confluens*			C		2
plants	ferns	Polypodiaceae	*Pyrrosia rupestris*	rock felt fern		C		3
plants	ferns	Polypodiaceae	*Drynaria sparsisora*			C		9/2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	ferns	Polypodiaceae	*Pyrrosia confluens var. confluens*			C		1/1
plants	ferns	Polypodiaceae	*Microsorum punctatum*			C		12/2
plants	ferns	Polypodiaceae	*Drynaria*					1
plants	ferns	Polypodiaceae	*Drynaria rigidula*			C		8
plants	ferns	Pteridaceae	*Acrostichum speciosum*	mangrove fern		C		1
plants	ferns	Salviniaceae	*Salvinia molesta*	salvinia	Y			6/6
plants	ferns	Schizaeaceae	*Lygodium microphyllum*	snake fern		C		1
plants	ferns	Schizaeaceae	*Schizaea dichotoma*	branched comb fern		C		1
plants	higher dicots	Acanthaceae	*Rostellularia adscendens*			C		8/2
plants	higher dicots	Acanthaceae	*Graptophyllum excelsum*			NT		15/10
plants	higher dicots	Acanthaceae	*Pseuderanthemum tenellum*			C		1
plants	higher dicots	Acanthaceae	*Harnieria hygrophiloides*	white karambal		C		7/4
plants	higher dicots	Acanthaceae	*Thunbergia grandiflora*	sky flower	Y			1/1
plants	higher dicots	Acanthaceae	*Rhaphidospora cavernarum*			V		2
plants	higher dicots	Acanthaceae	*Brunoniella australis*	blue trumpet		C		4/1
plants	higher dicots	Acanthaceae	*Hypoestes floribunda*			C		1/1
plants	higher dicots	Acanthaceae	*Brunoniella acaulis*			C		1
plants	higher dicots	Acanthaceae	*Justicia betonica*		Y			3/3
plants	higher dicots	Acanthaceae	*Ruellia simplex*		Y			3/3
plants	higher dicots	Acanthaceae	*Pseuderanthemum*			C		1
plants	higher dicots	Acanthaceae	*Graptophyllum*			C		1
plants	higher dicots	Acanthaceae	*Rostellularia adscendens var. hispida*			C		1/1
plants	higher dicots	Acanthaceae	*Pseuderanthemum variabile*	pastel flower		C		10
plants	higher dicots	Acanthaceae	*Asystasia gangetica subsp. gangetica*		Y			1/1
plants	higher dicots	Aizoaceae	*Trianthema portulacastrum*	black pigweed	Y			4/3
plants	higher dicots	Amaranthaceae	*Alternanthera*			C		2
plants	higher dicots	Amaranthaceae	*Alternanthera denticulata*	lesser joyweed		C		1/1
plants	higher dicots	Amaranthaceae	*Achyranthes aspera*			C		4
plants	higher dicots	Amaranthaceae	*Alternanthera ficoidea*		Y			2/2
plants	higher dicots	Amaranthaceae	*Gomphrena celosioides*	gomphrena weed	Y			6/5
plants	higher dicots	Amaranthaceae	*Alternanthera pungens*	khaki weed	Y			2/2
plants	higher dicots	Amaranthaceae	*Amaranthus viridis*	green amaranth	Y			7/6
plants	higher dicots	Amaranthaceae	*Guilleminea densa*	small matweed	Y			2/2
plants	higher dicots	Amaranthaceae	*Deeringia amaranthoides*	redberry		C		8/2
plants	higher dicots	Anacardiaceae	*Euroschinus falcatus var. falcatus*			C		2/1
plants	higher dicots	Anacardiaceae	*Pleiogynium timorense*	Burdekin plum		C		32/3
plants	higher dicots	Anacardiaceae	*Euroschinus falcatus*			C		36
plants	higher dicots	Anacardiaceae	*Mangifera indica*	mango	Y			4/4
plants	higher dicots	Anacardiaceae	*Rhus taitensis*	sumac		C		1
plants	higher dicots	Anacardiaceae	*Schinus terebinthifolius*		Y			7/6
plants	higher dicots	Apiaceae	*Centella asiatica*			C		1
plants	higher dicots	Apiaceae	*Cyclospermum leptophyllum*		Y			2/2
plants	higher dicots	Apocynaceae	*Cryptostegia grandiflora*	rubber vine	Y			67/14
plants	higher dicots	Apocynaceae	*Gomphocarpus physocarpus*	balloon cottonbush	Y			6/4
plants	higher dicots	Apocynaceae	*Parsonsia eucalyptophylla*	gargaloo		C		1/1
plants	higher dicots	Apocynaceae	*Hoya australis subsp. australis*			C		2/2

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plants	higher dicots	Apocynaceae	*Cynanchum viminale subsp. australe*			C		3
plants	higher dicots	Apocynaceae	*Cynanchum viminale subsp. brunonianum*			C		5/2
plants	higher dicots	Apocynaceae	*Marsdenia viridiflora subsp. viridiflora*			C		1/1
plants	higher dicots	Apocynaceae	*Marsdenia*			C		1
plants	higher dicots	Apocynaceae	*Carissa ovata*	currantbush		C		56/1
plants	higher dicots	Apocynaceae	*Hoya australis*			C		12
plants	higher dicots	Apocynaceae	*Parsonsia fulva*	furry silkpod		C		3
plants	higher dicots	Apocynaceae	*Parsonsia rotata*	veinless silkpod		C		1/1
plants	higher dicots	Apocynaceae	*Alyxia ruscifolia*			C		33/1
plants	higher dicots	Apocynaceae	*Cascabela thevetia*	yellow oleander	Y			7/7
plants	higher dicots	Apocynaceae	*Parsonsia velutina*	hairy silkpod		C		7/1
plants	higher dicots	Apocynaceae	*Secamone elliptica*			C		16/2
plants	higher dicots	Apocynaceae	*Alstonia constricta*	bitterbark		C		31
plants	higher dicots	Apocynaceae	*Catharanthus roseus*	pink periwinkle	Y			3/3
plants	higher dicots	Apocynaceae	*Parsonsia straminea*	monkey rope		C		5
plants	higher dicots	Apocynaceae	*Vincetoxicum ovatum*			C		8/3
plants	higher dicots	Apocynaceae	*Marsdenia brevifolia*			V	V	4/4
plants	higher dicots	Apocynaceae	*Marsdenia micradenia*	gymnema		C		9/4
plants	higher dicots	Apocynaceae	*Marsdenia pleiadenia*			C		5/1
plants	higher dicots	Apocynaceae	*Parsonsia lanceolata*	northern silkpod		C		11/4
plants	higher dicots	Apocynaceae	*Sarcostemma viminale*					7
plants	higher dicots	Apocynaceae	*Asclepias curassavica*	red-head cottonbush	Y			12/6
plants	higher dicots	Apocynaceae	*Marsdenia viridiflora*			C		1
plants	higher dicots	Apocynaceae	*Parsonsia larcomensis*			V	V	5/5
plants	higher dicots	Apocynaceae	*Rauvolfia tetraphylla*		Y			8/8
plants	higher dicots	Apocynaceae	*Parsonsia paulforsteri*			C		7/1
plants	higher dicots	Apocynaceae	*Gomphocarpus fruticosus*	narrow-leaved cotton bush	Y			1
plants	higher dicots	Apocynaceae	*Heterostemma acuminatum*			C		6/1
plants	higher dicots	Apocynaceae	*Parsonsia plaesiophylla*			C		9/3
plants	higher dicots	Apocynaceae	*Acokanthera oblongifolia*	bushman's poison	Y			1/1
plants	higher dicots	Araliaceae	*Polyscias elegans*	celery wood		C		20
plants	higher dicots	Araliaceae	*Schefflera actinophylla*	umbrella tree		C		10
plants	higher dicots	Araliaceae	*Hydrocotyle acutiloba*			C		1/1
plants	higher dicots	Asteraceae	*Cirsium vulgare*	spear thistle	Y			1/1
plants	higher dicots	Asteraceae	*Blumea saxatilis*			C		1/1
plants	higher dicots	Asteraceae	*Pluchea xanthina*			C		1/1
plants	higher dicots	Asteraceae	*Camptacra barbata*			C		5/5
plants	higher dicots	Asteraceae	*Eclipta prostrata*	white eclipta	Y			2/2
plants	higher dicots	Asteraceae	*Olearia canescens*			C		2
plants	higher dicots	Asteraceae	*Schkuhria pinnata*		Y			2/2
plants	higher dicots	Asteraceae	*Sonchus oleraceus*	common sowthistle	Y			5/3
plants	higher dicots	Asteraceae	*Tridax procumbens*	tridax daisy	Y			3/2
plants	higher dicots	Asteraceae	*Coronidium cymosum*			C		1/1
plants	higher dicots	Asteraceae	*Emilia sonchifolia*		Y			3
plants	higher dicots	Asteraceae	*Peripleura bicolor*			C		1/1
plants	higher dicots	Asteraceae	*Podolepis neglecta*			C		1/1

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plants	higher dicots	Asteraceae	*Ageratum conyzoides*	billygoat weed	Y			1
plants	higher dicots	Asteraceae	*Coronidium rupicola*			C		1
plants	higher dicots	Asteraceae	*Praxelis clematidea*		Y			1/1
plants	higher dicots	Asteraceae	*Wollastonia biflora*			C		1
plants	higher dicots	Asteraceae	*Calyptocarpus vialis*	creeping cinderella weed	Y			7/7
plants	higher dicots	Asteraceae	*Erigeron bonariensis*		Y			3/1
plants	higher dicots	Asteraceae	*Erigeron sumatrensis*		Y			2/2
plants	higher dicots	Asteraceae	*Rhodanthe polyphylla*			C		1
plants	higher dicots	Asteraceae	*Xanthium occidentale*		Y			2/1
plants	higher dicots	Asteraceae	*Ageratum houstonianum*	blue billygoat weed	Y			1
plants	higher dicots	Asteraceae	*Baccharis halimifolia*	groundsel bush	Y			1/1
plants	higher dicots	Asteraceae	*Cyanthillium cinereum*			C		8/2
plants	higher dicots	Asteraceae	*Podolepis arachnoidea*	clustered copper-wire daisy		C		1
plants	higher dicots	Asteraceae	*Senecio brigalowensis*			C		2/2
plants	higher dicots	Asteraceae	*Senecio prenanthoides*			C		1/1
plants	higher dicots	Asteraceae	*Solenogyne bellioides*			C		1
plants	higher dicots	Asteraceae	*Coronidium lanuginosum*			C		1/1
plants	higher dicots	Asteraceae	*Eschenbachia leucantha*			C		1/1
plants	higher dicots	Asteraceae	*Pterocaulon serrulatum*			C		1
plants	higher dicots	Asteraceae	*Sigesbeckia orientalis*	Indian weed		C		2
plants	higher dicots	Asteraceae	*Xerochrysum bracteatum*	golden everlasting daisy		C		1
plants	higher dicots	Asteraceae	*Eschenbachia aegyptiaca*			C		2/2
plants	higher dicots	Asteraceae	*Ozothamnus cassinioides*			C		1/1
plants	higher dicots	Asteraceae	*Sphagneticola trilobata*		Y			2/2
plants	higher dicots	Asteraceae	*Parthenium hysterophorus*	parthenium weed	Y			4/4
plants	higher dicots	Asteraceae	*Symphyotrichum subulatum*		Y			2/1
plants	higher dicots	Asteraceae	*Chrysocephalum apiculatum*	yellow buttons		C		2/1
plants	higher dicots	Asteraceae	*Sigesbeckia australiensis*			C		1
plants	higher dicots	Asteraceae	*Synedrellopsis grisebachii*		Y			2/2
plants	higher dicots	Asteraceae	*Apowollastonia spilanthoides*			C		4/1
plants	higher dicots	Asteraceae	*Peripleura hispidula var. setosa*			C		3/2
plants	higher dicots	Asteraceae	*Acmella grandiflora var. brachyglossa*			C		1/1
plants	higher dicots	Asteraceae	*Conyza*					1
plants	higher dicots	Asteraceae	*Calotis*			C		1
plants	higher dicots	Asteraceae	*Epaltes*			C		1
plants	higher dicots	Asteraceae	*Ageratum*			C		1
plants	higher dicots	Asteraceae	*Bidens pilosa*		Y			5/3
plants	higher dicots	Asteraceae	*Apowollastonia*			C		2
plants	higher dicots	Asteraceae	*Chrysocephalum*			C		1
plants	higher dicots	Asteraceae	*Calotis cuneata*			C		1/1
plants	higher dicots	Basellaceae	*Anredera cordifolia*	Madeira vine	Y			2
plants	higher dicots	Bignoniaceae	*Tecoma stans*	tecoma	Y			1
plants	higher dicots	Bignoniaceae	*Pandorea pandorana*	wonga vine		C		13/1
plants	higher dicots	Bignoniaceae	*Spathodea campanulata subsp. nilotica*		Y			1/1
plants	higher dicots	Boraginaceae	*Trichodesma zeylanicum*			C		2
plants	higher dicots	Boraginaceae	*Heliotropium ovalifolium*			C		1/1

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plants	higher dicots	Boraginaceae	*Heliotropium amplexicaule*	blue heliotrope	Y			2/2
plants	higher dicots	Boraginaceae	*Ehretia acuminata var. acuminata*			C		1
plants	higher dicots	Boraginaceae	*Ehretia membranifolia*	weeping koda		C		32/1
plants	higher dicots	Boraginaceae	*Heliotropium indicum*		Y			7/6
plants	higher dicots	Boraginaceae	*Cordia dichotoma*			C		18/3
plants	higher dicots	Boraginaceae	*Ehretia*			C		1
plants	higher dicots	Boraginaceae	*Cordia sinensis*		Y			7/7
plants	higher dicots	Brassicaceae	*Lepidium bonariense*	Argentine peppercress	Y			4/3
plants	higher dicots	Byttneriaceae	*Commersonia bartramia*	brown kurrajong		C		1
plants	higher dicots	Byttneriaceae	*Waltheria indica*			C		1/1
plants	higher dicots	Byttneriaceae	*Seringia*			C		1/1
plants	higher dicots	Byttneriaceae	*Seringia lanceolata*			C		1
plants	higher dicots	Cactaceae	*Acanthocereus tetragonus*	sword pear	Y			1/1
plants	higher dicots	Cactaceae	*Opuntia streptacantha*	cardona pear	Y			2/2
plants	higher dicots	Cactaceae	*Opuntia tomentosa*	velvety tree pear	Y			3/2
plants	higher dicots	Cactaceae	*Harrisia martinii*		Y			2/1
plants	higher dicots	Cactaceae	*Opuntia stricta*		Y			18/3
plants	higher dicots	Cactaceae	*Opuntia*			C		1
plants	higher dicots	Caesalpiniaceae	*Cassia*			C		1
plants	higher dicots	Caesalpiniaceae	*Chamaecrista absus var. absus*			C		2
plants	higher dicots	Caesalpiniaceae	*Senna pendula var. glabrata*	Easter cassia	Y			6/5
plants	higher dicots	Caesalpiniaceae	*Haematoxylum campechianum*	logwood tree	Y			3/3
plants	higher dicots	Caesalpiniaceae	*Caesalpinia scortechinii*	large prickle vine				1
plants	higher dicots	Caesalpiniaceae	*Peltophorum pterocarpum*	yellow poinciana	Y			4/4
plants	higher dicots	Caesalpiniaceae	*Chamaecrista mimosoides*	dwarf cassia		C		1
plants	higher dicots	Caesalpiniaceae	*Chamaecrista concinna*			C		1/1
plants	higher dicots	Caesalpiniaceae	*Schotia brachypetala*	kaffir bean	Y			1/1
plants	higher dicots	Caesalpiniaceae	*Parkinsonia aculeata*	parkinsonia	Y			8/7
plants	higher dicots	Caesalpiniaceae	*Lysiphyllum carronii*	ebony tree		C		4
plants	higher dicots	Caesalpiniaceae	*Barklya syringifolia*	golden shower tree		C		3/1
plants	higher dicots	Caesalpiniaceae	*Senna coronilloides*			C		1
plants	higher dicots	Caesalpiniaceae	*Senna barronfieldii*			C		1/1
plants	higher dicots	Caesalpiniaceae	*Lysiphyllum hookeri*	Queensland ebony		C		33/2
plants	higher dicots	Caesalpiniaceae	*Senna gaudichaudii*			C		7/2
plants	higher dicots	Caesalpiniaceae	*Bauhinia variegata*		Y			1/1
plants	higher dicots	Caesalpiniaceae	*Tamarindus indica*		Y			4/4
plants	higher dicots	Caesalpiniaceae	*Cassia tomentella*			C		51/7
plants	higher dicots	Caesalpiniaceae	*Bauhinia purpurea*		Y			2/2
plants	higher dicots	Caesalpiniaceae	*Chamaecrista rotundifolia var. rotundifolia*		Y			1/1
plants	higher dicots	Caesalpiniaceae	*Caesalpinia*			C		1
plants	higher dicots	Caesalpiniaceae	*Lysiphyllum*			C		1
plants	higher dicots	Caesalpiniaceae	*Senna alata*		Y			1/1
plants	higher dicots	Caesalpiniaceae	*Delonix regia*	poinciana	Y			2/2
plants	higher dicots	Caesalpiniaceae	*Cassia fistula*	Indian laburnum	Y			1/1
plants	higher dicots	Caesalpiniaceae	*Senna barclayana*			C		5/4
plants	higher dicots	Caesalpiniaceae	*Bauhinia galpinii*		Y			1/1

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plants	higher dicots	Campanulaceae	*Wahlenbergia*			C		1
plants	higher dicots	Campanulaceae	*Isotoma axillaris*	australian harebell		C		1/1
plants	higher dicots	Capparaceae	*Capparis humistrata*			E		1/1
plants	higher dicots	Capparaceae	*Capparis lucida*			C		1
plants	higher dicots	Capparaceae	*Capparis ornans*			C		8/2
plants	higher dicots	Capparaceae	*Capparis arborea*	brush caper berry		C		15
plants	higher dicots	Capparaceae	*Capparis canescens*			C		11
plants	higher dicots	Capparaceae	*Capparis lasiantha*	nipan		C		9/2
plants	higher dicots	Capparaceae	*Apophyllum anomalum*	broom bush		C		4
plants	higher dicots	Capparaceae	*Capparis mitchellii*			C		1
plants	higher dicots	Capparaceae	*Capparis loranthifolia*			C		12
plants	higher dicots	Caricaceae	*Carica papaya*	pawpaw	Y			1/1
plants	higher dicots	Carpodetaceae	*Abrophyllum ornans*			C		2/1
plants	higher dicots	Casuarinaceae	*Allocasuarina torulosa*			C		20/3
plants	higher dicots	Casuarinaceae	*Allocasuarina littoralis*			C		1
plants	higher dicots	Casuarinaceae	*Casuarina cunninghamiana*			C		34
plants	higher dicots	Casuarinaceae	*Casuarina cristata*	belah		C		37/1
plants	higher dicots	Casuarinaceae	*Casuarina glauca*	swamp she-oak		C		1
plants	higher dicots	Casuarinaceae	*Casuarina*					2
plants	higher dicots	Casuarinaceae	*Casuarina cunninghamiana subsp. cunninghamiana*			C		3/2
plants	higher dicots	Celastraceae	*Pleurostylia opposita*			C		4
plants	higher dicots	Celastraceae	*Denhamia pittosporoides*			C		18
plants	higher dicots	Celastraceae	*Elaeodendron melanocarpum*			C		15/2
plants	higher dicots	Celastraceae	*Elaeodendron australe var. australe*			C		1/1
plants	higher dicots	Celastraceae	*Elaeodendron australe var. integrifolium*			C		2/1
plants	higher dicots	Celastraceae	*Denhamia pittosporoides subsp. pittosporoides*			C		4/4
plants	higher dicots	Celastraceae	*Celastraceae*			C		1
plants	higher dicots	Celastraceae	*Denhamia disperma*			C		20/3
plants	higher dicots	Celastraceae	*Denhamia oleaster*			C		4
plants	higher dicots	Celastraceae	*Siphonodon australis*	ivorywood		C		24/1
plants	higher dicots	Celastraceae	*Denhamia cunninghamii*			C		13/1
plants	higher dicots	Celastraceae	*Elaeodendron australe*			C		18
plants	higher dicots	Chenopodiaceae	*Einadia hastata*			C		4
plants	higher dicots	Chenopodiaceae	*Maireana*			C		1
plants	higher dicots	Chenopodiaceae	*Chenopodium album*	fat-hen	Y			2/1
plants	higher dicots	Chenopodiaceae	*Einadia nutans subsp. linifolia*			C		1/1
plants	higher dicots	Chenopodiaceae	*Einadia trigonos subsp. stellulata*			C		2/1
plants	higher dicots	Chenopodiaceae	*Suaeda*			C		1
plants	higher dicots	Chenopodiaceae	*Sclerolaena tetracuspis*	brigalow burr		C		1
plants	higher dicots	Chenopodiaceae	*Dysphania ambrosioides*		Y			1/1
plants	higher dicots	Chenopodiaceae	*Enchylaena tomentosa*			C		1
plants	higher dicots	Chenopodiaceae	*Salsola australis*			C		2/1
plants	higher dicots	Cleomaceae	*Cleome*			C		1/1
plants	higher dicots	Combretaceae	*Terminalia porphyrocarpa*			C		40/8
plants	higher dicots	Combretaceae	*Terminalia sericocarpa*	damson		C		1
plants	higher dicots	Combretaceae	*Terminalia oblongata*			C		2

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plants	higher dicots	Combretaceae	*Terminalia*			C		1
plants	higher dicots	Combretaceae	*Terminalia muelleri*			C		2
plants	higher dicots	Convolvulaceae	*Convolvulus*			C		1
plants	higher dicots	Convolvulaceae	*Evolvulus alsinoides*			C		1/1
plants	higher dicots	Convolvulaceae	*Polymeria calycina*	pink bindweed		C		1/1
plants	higher dicots	Convolvulaceae	*Ipomoea polymorpha*			C		2/1
plants	higher dicots	Convolvulaceae	*Polymeria pusilla*			C		1/1
plants	higher dicots	Convolvulaceae	*Merremia dissecta*		Y			3/3
plants	higher dicots	Convolvulaceae	*Ipomoea carnea subsp. fistulosa*		Y			3/3
plants	higher dicots	Convolvulaceae	*Dichondra*			C		1/1
plants	higher dicots	Convolvulaceae	*Polymeria*			C		1
plants	higher dicots	Convolvulaceae	*Ipomoea cairica*		Y			2
plants	higher dicots	Convolvulaceae	*Ipomoea plebeia*	bellvine		C		3
plants	higher dicots	Convolvulaceae	*Cuscuta australis*	Australian dodder		C		1/1
plants	higher dicots	Cornaceae	*Alangium villosum subsp. tomentosum*			C		9/1
plants	higher dicots	Crassulaceae	*Bryophyllum*		Y			1
plants	higher dicots	Crassulaceae	*Bryophyllum delagoense*		Y			6/3
plants	higher dicots	Crassulaceae	*Bryophyllum x houghtonii*		Y			2/2
plants	higher dicots	Cucurbitaceae	*Coccinia grandis*		Y			1/1
plants	higher dicots	Cucurbitaceae	*Diplocyclos palmatus*			C		5
plants	higher dicots	Dilleniaceae	*Hibbertia*			C		1
plants	higher dicots	Dilleniaceae	*Hibbertia stricta*			C		4/1
plants	higher dicots	Droseraceae	*Drosera lunata*			C		1/1
plants	higher dicots	Ebenaceae	*Diospyros australis*	black plum		C		16/2
plants	higher dicots	Ebenaceae	*Diospyros geminata*	scaly ebony		C		31/2
plants	higher dicots	Ebenaceae	*Diospyros fasciculosa*	grey ebony		C		11/1
plants	higher dicots	Ebenaceae	*Diospyros humilis*	small-leaved ebony		C		55/4
plants	higher dicots	Elaeocarpaceae	*Elaeocarpus obovatus*	blueberry ash		C		16/2
plants	higher dicots	Elaeocarpaceae	*Elaeocarpus reticulatus*	ash quandong		C		1
plants	higher dicots	Ericaceae	*Leucopogon mitchellii*			C		7/5
plants	higher dicots	Ericaceae	*Leucopogon imbricatus*			C		1/1
plants	higher dicots	Ericaceae	*Leucopogon*			C		8/8
plants	higher dicots	Ericaceae	*Leucopogon cuspidatus*			C		9/7
plants	higher dicots	Erythroxylaceae	*Erythroxylum australe*	cocaine tree		C		11
plants	higher dicots	Erythroxylaceae	*Erythroxylum sp. (Splityard Creek L.Pedley 5360)*			C		2/2
plants	higher dicots	Euphorbiaceae	*Bertya*			C		4
plants	higher dicots	Euphorbiaceae	*Beyeria viscosa*			C		3/2
plants	higher dicots	Euphorbiaceae	*Euphorbia hirta*		Y			4/3
plants	higher dicots	Euphorbiaceae	*Croton insularis*	Queensland cascarilla		C		10
plants	higher dicots	Euphorbiaceae	*Ricinus communis*	castor oil bush	Y			4/4
plants	higher dicots	Euphorbiaceae	*Acalypha eremorum*	soft acalypha		C		8/2
plants	higher dicots	Euphorbiaceae	*Mallotus discolor*	white kamala		C		3
plants	higher dicots	Euphorbiaceae	*Manihot esculenta*		Y			1/1
plants	higher dicots	Euphorbiaceae	*Baloghia inophylla*	scrub bloodwood		C		17/2
plants	higher dicots	Euphorbiaceae	*Bertya pedicellata*			NT		1/1
plants	higher dicots	Euphorbiaceae	*Macaranga tanarius*	macaranga		C		4

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plants	higher dicots	Euphorbiaceae	*Acalypha capillipes*	small-leaved acalypha		C		6
plants	higher dicots	Euphorbiaceae	*Croton phebalioides*	narrow-leaved croton		C		9/1
plants	higher dicots	Euphorbiaceae	*Euphorbia tannensis*			C		1
plants	higher dicots	Euphorbiaceae	*Mallotus ficifolius*			C		3/3
plants	higher dicots	Euphorbiaceae	*Alchornea ilicifolia*	native holly		C		20/4
plants	higher dicots	Euphorbiaceae	*Excoecaria agallocha*	milky mangrove		C		1/1
plants	higher dicots	Euphorbiaceae	*Croton acronychioides*	thick-leaved croton		C		23/6
plants	higher dicots	Euphorbiaceae	*Euphorbia cyathophora*	dwarf poinsettia	Y			8/7
plants	higher dicots	Euphorbiaceae	*Euphorbia dallachyana*			C		1
plants	higher dicots	Euphorbiaceae	*Euphorbia ophiolitica*			C		1/1
plants	higher dicots	Euphorbiaceae	*Mallotus claoxyloides*	green kamala		C		13/2
plants	higher dicots	Euphorbiaceae	*Mallotus philippensis*	red kamala		C		60
plants	higher dicots	Euphorbiaceae	*Claoxylon tenerifolium*	Queensland brittlewood		C		3
plants	higher dicots	Euphorbiaceae	*Euphorbia heterophylla*		Y			3/3
plants	higher dicots	Euphorbiaceae	*Euphorbia hyssopifolia*		Y			1/1
plants	higher dicots	Euphorbiaceae	*Excoecaria dallachyana*	scrub poison tree		C		21
plants	higher dicots	Euphorbiaceae	*Jatropha gossypiifolia*	bellyache bush	Y			1/1
plants	higher dicots	Euphorbiaceae	*Tragia novae-hollandiae*	stinging-vine		C		2/1
plants	higher dicots	Euphorbiaceae	*Homalanthus populifolius*			C		3/2
plants	higher dicots	Euphorbiaceae	*Homalanthus novoguineensis*			C		1/1
plants	higher dicots	Euphorbiaceae	*Adriana tomentosa var. tomentosa*			C		1/1
plants	higher dicots	Euphorbiaceae	*Euphorbia tannensis subsp. eremophila*			C		2/1
plants	higher dicots	Euphorbiaceae	*Claoxylon tenerifolium subsp. tenerifolium*			C		1/1
plants	higher dicots	Fabaceae	*Sesbania cannabina*			C		1
plants	higher dicots	Fabaceae	*Zornia dyctiocarpa*			C		1/1
plants	higher dicots	Fabaceae	*Aeschynomene indica*	budda pea		C		1/1
plants	higher dicots	Fabaceae	*Crotalaria calycina*			C		2/1
plants	higher dicots	Fabaceae	*Desmodium tortuosum*	Florida beggar-weed	Y			2/2
plants	higher dicots	Fabaceae	*Desmodium triflorum*		Y			1
plants	higher dicots	Fabaceae	*Galactia tenuiflora*			C		1
plants	higher dicots	Fabaceae	*Glycine clandestina*			C		1
plants	higher dicots	Fabaceae	*Stylosanthes scabra*		Y			10/8
plants	higher dicots	Fabaceae	*Crotalaria goreensis*	gambia pea	Y			1/1
plants	higher dicots	Fabaceae	*Cullen australasicum*			C		2/1
plants	higher dicots	Fabaceae	*Flemingia parviflora*	flemingia		C		9/1
plants	higher dicots	Fabaceae	*Indigofera linifolia*			C		2/1
plants	higher dicots	Fabaceae	*Indigofera pratensis*			C		6/2
plants	higher dicots	Fabaceae	*Indigofera tinctoria*		Y			6/5
plants	higher dicots	Fabaceae	*Pycnospora lutescens*	pycnospora		C		2/1
plants	higher dicots	Fabaceae	*Chorizema parviflorum*	eastern flame pea		C		4/2
plants	higher dicots	Fabaceae	*Crotalaria lanceolata*		Y			3
plants	higher dicots	Fabaceae	*Desmodium brachypodum*	large ticktrefoil		C		1
plants	higher dicots	Fabaceae	*Erythrina vespertilio*			C		9
plants	higher dicots	Fabaceae	*Hardenbergia violacea*			C		5/1
plants	higher dicots	Fabaceae	*Swainsona galegifolia*	smooth Darling pea		C		3/1
plants	higher dicots	Fabaceae	*Crotalaria spectabilis*	showy rattlepod	Y			1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Fabaceae	*Austrosteenisia blackii*	bloodvine		C		40
plants	higher dicots	Fabaceae	*Indigofera suffruticosa*		Y			1/1
plants	higher dicots	Fabaceae	*Swainsona queenslandica*			C		1/1
plants	higher dicots	Fabaceae	*Desmodium rhytidophyllum*			C		7/1
plants	higher dicots	Fabaceae	*Desmodium trichostachyum*			C		1
plants	higher dicots	Fabaceae	*Macroptilium lathyroides*		Y			7/4
plants	higher dicots	Fabaceae	*Rhynchosia acuminatissima*			C		2/1
plants	higher dicots	Fabaceae	*Macroptilium atropurpureum*	siratro	Y			3/2
plants	higher dicots	Fabaceae	*Medicago sativa subsp. sativa*		Y			1/1
plants	higher dicots	Fabaceae	*Rhynchosia minima var. minima*			C		1
plants	higher dicots	Fabaceae	*Vigna vexillata var. youngiana*			C		1
plants	higher dicots	Fabaceae	*Crotalaria incana subsp. incana*		Y			3/2
plants	higher dicots	Fabaceae	*Crotalaria pallida var. obovata*		Y			6/5
plants	higher dicots	Fabaceae	*Galactia tenuiflora var. lucida*			C		1/1
plants	higher dicots	Fabaceae	*Neonotonia wightii var. wightii*		Y			1/1
plants	higher dicots	Fabaceae	*Rhynchosia minima var. australis*			C		2/1
plants	higher dicots	Fabaceae	*Sesbania cannabina var. cannabina*			C		2/2
plants	higher dicots	Fabaceae	*Vigna vexillata var. angustifolia*			C		1/1
plants	higher dicots	Fabaceae	*Macrotyloma axillare var. axillare*		Y			2/2
plants	higher dicots	Fabaceae	*Zornia dyctiocarpa var. dyctiocarpa*			C		1
plants	higher dicots	Fabaceae	*Austrosteenisia blackii var. blackii*			C		2/2
plants	higher dicots	Fabaceae	*Cajanus reticulatus var. reticulatus*			C		2/1
plants	higher dicots	Fabaceae	*Crotalaria medicaginea var. neglecta*			C		1/1
plants	higher dicots	Fabaceae	*Crotalaria incana subsp. purpurascens*		Y			1/1
plants	higher dicots	Fabaceae	*Crotalaria lanceolata subsp. lanceolata*		Y			2/2
plants	higher dicots	Fabaceae	*Stylosanthes guianensis var. guianensis*		Y			1/1
plants	higher dicots	Fabaceae	*Macroptilium lathyroides var. semierectum*		Y			2/2
plants	higher dicots	Fabaceae	*Zornia*			C		2
plants	higher dicots	Fabaceae	*Glycine*			C		6
plants	higher dicots	Fabaceae	*Fabaceae*			C		1
plants	higher dicots	Fabaceae	*Sesbania*			C		2
plants	higher dicots	Fabaceae	*Desmodium*			C		5
plants	higher dicots	Fabaceae	*Swainsona*			C		1
plants	higher dicots	Fabaceae	*Uraria picta*			C		1/1
plants	higher dicots	Fabaceae	*Vigna luteola*	dalrymple vigna	Y			2/2
plants	higher dicots	Fabaceae	*Canavalia rosea*	coastal jack bean		C		3
plants	higher dicots	Fabaceae	*Desmodium gunnii*			C		1
plants	higher dicots	Fabaceae	*Glycine tabacina*	glycine pea		C		1
plants	higher dicots	Fabaceae	*Mirbelia pungens*			C		1/1
plants	higher dicots	Fabaceae	*Clitoria ternatea*	butterfly pea	Y			3/2
plants	higher dicots	Fabaceae	*Crotalaria juncea*	sunhemp	Y			1/1
plants	higher dicots	Fabaceae	*Flemingia lineata*			C		1/1
plants	higher dicots	Fabaceae	*Glycine cyrtoloba*			C		1
plants	higher dicots	Fabaceae	*Crotalaria montana*			C		3
plants	higher dicots	Fabaceae	*Crotalaria pallida*		Y			3
plants	higher dicots	Fabaceae	*Desmodium muelleri*			C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Fabaceae	*Glycine tomentella*	woolly glycine		C		1
plants	higher dicots	Fabaceae	*Indigofera hirsuta*	hairy indigo		C		3
plants	higher dicots	Fabaceae	*Indigofera linnaei*	Birdsville indigo		C		1/1
plants	higher dicots	Fabaceae	*Jacksonia scoparia*			C		6/1
plants	higher dicots	Fabaceae	*Kennedia rubicunda*	red Kennedy pea		C		2/1
plants	higher dicots	Fabaceae	*Pultenaea setulosa*			V	V	2/2
plants	higher dicots	Flacourtiaceae	*Casearia*			C		2
plants	higher dicots	Flacourtiaceae	*Scolopia braunii*	flintwood		C		14/1
plants	higher dicots	Flacourtiaceae	*Xylosma terrae-reginae*	xylosma		C		9/5
plants	higher dicots	Flacourtiaceae	*Homalium alnifolium*	homalium		C		19/7
plants	higher dicots	Flacourtiaceae	*Flacourtia indica*		Y			1/1
plants	higher dicots	Gentianaceae	*Schenkia australis*			C		1/1
plants	higher dicots	Goodeniaceae	*Goodenia*			C		1
plants	higher dicots	Goodeniaceae	*Goodenia grandiflora*			C		2/1
plants	higher dicots	Goodeniaceae	*Goodenia glabra*			C		1/1
plants	higher dicots	Goodeniaceae	*Brunonia australis*	blue pincushion		C		1
plants	higher dicots	Gyrostemonaceae	*Codonocarpus attenuatus*			C		1/1
plants	higher dicots	Haloragaceae	*Haloragis heterophylla*	rough raspweed		C		1/1
plants	higher dicots	Haloragaceae	*Gonocarpus chinensis subsp. verrucosus*			C		1/1
plants	higher dicots	Haloragaceae	*Myriophyllum verrucosum*	water milfoil		C		2/2
plants	higher dicots	Haloragaceae	*Myriophyllum muricatum*			C		1/1
plants	higher dicots	Lamiaceae	*Mentha*			C		1
plants	higher dicots	Lamiaceae	*Plectranthus parviflorus*			C		1
plants	higher dicots	Lamiaceae	*Clerodendrum floribundum*			C		27/1
plants	higher dicots	Lamiaceae	*Plectranthus graveolens*	flea bush		C		15/5
plants	higher dicots	Lamiaceae	*Clerodendrum tomentosum*			C		8/1
plants	higher dicots	Lamiaceae	*Callicarpa pedunculata*	velvet leaf		C		3/1
plants	higher dicots	Lamiaceae	*Pityrodia salviifolia*	pityrodia		C		1
plants	higher dicots	Lamiaceae	*Leucas lavandulifolia*		Y			8/7
plants	higher dicots	Lamiaceae	*Glossocarya hemiderma*			C		13/3
plants	higher dicots	Lamiaceae	*Glossocarya*					1
plants	higher dicots	Lamiaceae	*Plectranthus*			C		5/2
plants	higher dicots	Lamiaceae	*Ajuga australis*	Australian bugle		C		7/1
plants	higher dicots	Lamiaceae	*Vitex acuminata*			C		3
plants	higher dicots	Lamiaceae	*Vitex melicopea*			C		20/4
plants	higher dicots	Lamiaceae	*Gmelina elliptica*	badhara bush	Y			5/4
plants	higher dicots	Lamiaceae	*Ocimum americanum*		Y			6/5
plants	higher dicots	Lamiaceae	*Anisomeles moschata*			C		1/1
plants	higher dicots	Lamiaceae	*Callicarpa thozetii*			E		3/3
plants	higher dicots	Lamiaceae	*Clerodendrum inerme*	coastal lolly bush		C		3
plants	higher dicots	Lamiaceae	*Gmelina philippensis*		Y			2/2
plants	higher dicots	Lamiaceae	*Leonotis nepetifolia*		Y			9/8
plants	higher dicots	Lamiaceae	*Anisomeles malabarica*			C		1
plants	higher dicots	Lamiaceae	*Glossocarya calcicola*			C		1
plants	higher dicots	Lecythidaceae	*Planchonia careya*	cockatoo apple		C		16/1
plants	higher dicots	Loganiaceae	*Strychnos psilosperma*	strychnine tree		C		19/8

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Loranthaceae	*Dendrophthoe glabrescens*			C		4/4
plants	higher dicots	Loranthaceae	*Amyema biniflora*			C		1/1
plants	higher dicots	Loranthaceae	*Amyema miquelii*			C		1/1
plants	higher dicots	Loranthaceae	*Amyema pendula subsp. longifolia*			C		1/1
plants	higher dicots	Loranthaceae	*Amyema congener subsp. rotundifolia*			C		2
plants	higher dicots	Loranthaceae	*Amyema quandang*			C		1
plants	higher dicots	Lythraceae	*Lagerstroemia indica*		Y			1/1
plants	higher dicots	Malpighiaceae	*Stigmaphyllon australiense*			C		4/4
plants	higher dicots	Malpighiaceae	*Stigmaphyllon timoriense*			C		1
plants	higher dicots	Malvaceae	*Abutilon auritum*	Chinese lantern		C		8/2
plants	higher dicots	Malvaceae	*Sida hackettiana*			C		3
plants	higher dicots	Malvaceae	*Sida rhombifolia*		Y			7/1
plants	higher dicots	Malvaceae	*Abutilon guineense*		Y			3/3
plants	higher dicots	Malvaceae	*Abutilon oxycarpum*			C		13
plants	higher dicots	Malvaceae	*Hibiscus splendens*	pink hibiscus		C		10/5
plants	higher dicots	Malvaceae	*Hibiscus vitifolius*			C		2/2
plants	higher dicots	Malvaceae	*Hibiscus divaricatus*			C		3/1
plants	higher dicots	Malvaceae	*Hibiscus rosasinensis*		Y			1/1
plants	higher dicots	Malvaceae	*Hibiscus heterophyllus*			C		27
plants	higher dicots	Malvaceae	*Hibiscus tridactylites*			C		2
plants	higher dicots	Malvaceae	*Malvastrum americanum var. americanum*		Y			2/1
plants	higher dicots	Malvaceae	*Sida sp. (Greenvale R.J.Fensham 1150)*			C		1/1
plants	higher dicots	Malvaceae	*Malvastrum coromandelianum subsp. coromandelianum*		Y			2/2
plants	higher dicots	Malvaceae	*Sida*			C		4
plants	higher dicots	Malvaceae	*Abelmoschus*					1
plants	higher dicots	Malvaceae	*Sida spinosa*	spiny sida	Y			3/3
plants	higher dicots	Malvaceae	*Urena lobata*	urena weed	Y			1/1
plants	higher dicots	Malvaceae	*Sida cordifolia*		Y			5/1
plants	higher dicots	Martyniaceae	*Proboscidea lutea*		Y			1/1
plants	higher dicots	Meliaceae	*Toona ciliata*	red cedar		C		4
plants	higher dicots	Meliaceae	*Owenia venosa*	crow's apple		C		15/2
plants	higher dicots	Meliaceae	*Dysoxylum gaudichaudianum*	ivory mahogany		C		3/1
plants	higher dicots	Meliaceae	*Melia azedarach*	white cedar		C		23
plants	higher dicots	Meliaceae	*Turraea pubescens*	native honeysuckle		C		22/7
plants	higher dicots	Menyanthaceae	*Nymphoides indica*	water snowflake		C		1
plants	higher dicots	Mimosaceae	*Albizia lebbeck*	Indian siris		C		10/9
plants	higher dicots	Mimosaceae	*Acacia salicina*	doolan		C		20/3
plants	higher dicots	Mimosaceae	*Prosopis pallida*		Y			2/2
plants	higher dicots	Mimosaceae	*Acacia concurrens*			C		1
plants	higher dicots	Mimosaceae	*Acacia flavescens*	toothed wattle		C		1
plants	higher dicots	Mimosaceae	*Acacia juncifolia*			C		1
plants	higher dicots	Mimosaceae	*Acacia leptocarpa*	north coast wattle		C		2
plants	higher dicots	Mimosaceae	*Albizia canescens*			C		5/1
plants	higher dicots	Mimosaceae	*Acacia aulacocarpa*			C		34
plants	higher dicots	Mimosaceae	*Acacia harpophylla*	brigalow		C		30
plants	higher dicots	Mimosaceae	*Acacia spectabilis*	pilliga wattle		C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Mimosaceae	*Vachellia nilotica*	prickly acacia	Y			5/5
plants	higher dicots	Mimosaceae	*Acacia leptostachya*	Townsville wattle		C		2/2
plants	higher dicots	Mimosaceae	*Vachellia bidwillii*			C		16/7
plants	higher dicots	Mimosaceae	*Acacia fasciculifera*	scaly bark		C		85/5
plants	higher dicots	Mimosaceae	*Vachellia farnesiana*		Y			3/2
plants	higher dicots	Mimosaceae	*Leucaena leucocephala*		Y			1
plants	higher dicots	Mimosaceae	*Acaciella angustissima*	white ball acacia	Y			1/1
plants	higher dicots	Mimosaceae	*Desmanthus pernambucanus*		Y			10/9
plants	higher dicots	Mimosaceae	*Archidendropsis basaltica*	red lancewood		C		5
plants	higher dicots	Mimosaceae	*Pararchidendron pruinosum*			C		3/1
plants	higher dicots	Mimosaceae	*Archidendropsis thozetiana*			C		5/1
plants	higher dicots	Mimosaceae	*Mimosa pudica var. unijuga*		Y			1/1
plants	higher dicots	Mimosaceae	*Acacia blakei subsp. blakei*			C		1/1
plants	higher dicots	Mimosaceae	*Acacia crassa subsp. longicoma*			C		5/1
plants	higher dicots	Mimosaceae	*Neptunia gracilis forma gracilis*			C		1/1
plants	higher dicots	Mimosaceae	*Acacia leiocalyx subsp. leiocalyx*			C		3/3
plants	higher dicots	Mimosaceae	*Acacia disparrima subsp. disparrima*			C		7/2
plants	higher dicots	Mimosaceae	*Acacia sp. (Canoona S.T.Blake 15321)*			C		5/5
plants	higher dicots	Mimosaceae	*Leucaena leucocephala subsp. glabrata*		Y			4/4
plants	higher dicots	Mimosaceae	*Leucaena leucocephala subsp. leucocephala*		Y			13/12
plants	higher dicots	Mimosaceae	*Acacia*			C		11
plants	higher dicots	Mimosaceae	*Vachellia*			C		1/1
plants	higher dicots	Mimosaceae	*Archidendron*					1
plants	higher dicots	Mimosaceae	*Acacia decora*	pretty wattle		C		8/4
plants	higher dicots	Mimosaceae	*Acacia simsii*			C		1/1
plants	higher dicots	Mimosaceae	*Mimosa pudica*		Y			1
plants	higher dicots	Mimosaceae	*Acacia excelsa*			C		1
plants	higher dicots	Mimosaceae	*Acacia implexa*	lightwood		C		3/1
plants	higher dicots	Mimosaceae	*Acacia julifera*			C		1
plants	higher dicots	Mimosaceae	*Acacia maidenii*	Maiden's wattle		C		14/3
plants	higher dicots	Mimosaceae	*Acacia leiocalyx*			C		11
plants	higher dicots	Molluginaceae	*Glinus lotoides*	hairy carpet weed		C		5/4
plants	higher dicots	Moraceae	*Morus alba*	white mulberry	Y			1/1
plants	higher dicots	Moraceae	*Ficus virens*			C		8
plants	higher dicots	Moraceae	*Ficus fraseri*	white sandpaper fig		C		5
plants	higher dicots	Moraceae	*Ficus obliqua*			C		25/3
plants	higher dicots	Moraceae	*Ficus coronata*	creek sandpaper fig		C		2
plants	higher dicots	Moraceae	*Ficus opposita*			C		71
plants	higher dicots	Moraceae	*Streblus brunonianus*	whalebone tree		C		23/2
plants	higher dicots	Moraceae	*Maclura cochinchinensis*	cockspur thorn		C		3
plants	higher dicots	Moraceae	*Ficus virens var. virens*			C		7/2
plants	higher dicots	Moraceae	*Ficus racemosa var. racemosa*			C		15
plants	higher dicots	Moraceae	*Trophis scandens subsp. scandens*			C		30/1
plants	higher dicots	Moraceae	*Ficus rubiginosa forma rubiginosa*			C		1
plants	higher dicots	Moraceae	*Ficus*			C		6
plants	higher dicots	Moraceae	*Streblus*					1

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plants	higher dicots	Myrsinaceae	*Myrsine serpenticola*			E		2/2
plants	higher dicots	Myrsinaceae	*Myrsine variabilis*			C		21/3
plants	higher dicots	Myrtaceae	*Eucalyptus raveretiana*	black ironbox		C	V	24/5
plants	higher dicots	Myrtaceae	*Leptospermum neglectum*			C		13/4
plants	higher dicots	Myrtaceae	*Lophostemon suaveolens*	swamp box		C		24/1
plants	higher dicots	Myrtaceae	*Melaleuca linariifolia*	snow-in summer		C		8
plants	higher dicots	Myrtaceae	*Eucalyptus melanophloia*			C		9
plants	higher dicots	Myrtaceae	*Eucalyptus tereticornis*			C		61
plants	higher dicots	Myrtaceae	*Melaleuca quinquenervia*	swamp paperbark		C		5/1
plants	higher dicots	Myrtaceae	*Leptospermum polygalifolium*	tantoon		C		1
plants	higher dicots	Myrtaceae	*Eucalyptus fibrosa subsp. fibrosa*			C		4/4
plants	higher dicots	Myrtaceae	*Corymbia citriodora subsp. citriodora*			C		1/1
plants	higher dicots	Myrtaceae	*Eucalyptus platyphylla x E.tereticornis*			C		2/2
plants	higher dicots	Myrtaceae	*Eucalyptus tereticornis subsp. tereticornis*			C		2/2
plants	higher dicots	Myrtaceae	*Melaleuca*			C		7
plants	higher dicots	Myrtaceae	*Backhousia*			C		1
plants	higher dicots	Myrtaceae	*Eucalyptus*			C		2
plants	higher dicots	Myrtaceae	*Lophostemon*			C		1
plants	higher dicots	Myrtaceae	*Leptospermum*			C		2/1
plants	higher dicots	Myrtaceae	*Psidium guajava*	guava	Y			5/5
plants	higher dicots	Myrtaceae	*Gossia bidwillii*			C		21/4
plants	higher dicots	Myrtaceae	*Syzygium oleosum*	blue cherry		C		2
plants	higher dicots	Myrtaceae	*Backhousia kingii*			C		6/4
plants	higher dicots	Myrtaceae	*Corymbia xanthope*	Glen Geddes bloodwood		V	V	6/3
plants	higher dicots	Myrtaceae	*Eucalyptus crebra*	narrow-leaved red ironbark		C		58/5
plants	higher dicots	Myrtaceae	*Gossia acmenoides*			C		3
plants	higher dicots	Myrtaceae	*Melaleuca citrina*			C		1
plants	higher dicots	Myrtaceae	*Melaleuca nervosa*			C		19/2
plants	higher dicots	Myrtaceae	*Psidium guineense*	cherry guava	Y			1
plants	higher dicots	Myrtaceae	*Sannantha collina*			C		2/2
plants	higher dicots	Myrtaceae	*Syzygium australe*	scrub cherry		C		8/2
plants	higher dicots	Myrtaceae	*Corymbia polycarpa*	long-fruited bloodwood		C		1
plants	higher dicots	Myrtaceae	*Eucalyptus exserta*	Queensland peppermint		C		11/1
plants	higher dicots	Myrtaceae	*Eucalyptus fibrosa*			C		9
plants	higher dicots	Myrtaceae	*Lithomyrtus obtusa*			C		1
plants	higher dicots	Myrtaceae	*Melaleuca dealbata*	swamp tea-tree		C		4/2
plants	higher dicots	Myrtaceae	*Melaleuca polandii*			C		8
plants	higher dicots	Myrtaceae	*Rhodamnia argentea*	white myrtle		C		1/1
plants	higher dicots	Myrtaceae	*Corymbia citriodora*	spotted gum		C		4
plants	higher dicots	Myrtaceae	*Corymbia intermedia*	pink bloodwood		C		22/1
plants	higher dicots	Myrtaceae	*Corymbia torelliana*	cadaghi		C		1
plants	higher dicots	Myrtaceae	*Eucalyptus coolabah*	coolabah		C		12/1
plants	higher dicots	Myrtaceae	*Eucalyptus populnea*	poplar box		C		8
plants	higher dicots	Myrtaceae	*Melaleuca bracteata*			C		48/1
plants	higher dicots	Myrtaceae	*Melaleuca viminalis*			C		7
plants	higher dicots	Myrtaceae	*Backhousia oligantha*			E		3/3

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Myrtaceae	*Corymbia dallachiana*			C		26
plants	higher dicots	Myrtaceae	*Corymbia tessellaris*	Moreton Bay ash		C		45
plants	higher dicots	Myrtaceae	*Eucalyptus moluccana*	gum-topped box		C		3/1
plants	higher dicots	Myrtaceae	*Melaleuca hemisticta*			C		5/4
plants	higher dicots	Myrtaceae	*Rhodomyrtus trineura*			C		3
plants	higher dicots	Myrtaceae	*Corymbia clarksoniana*			C		5/1
plants	higher dicots	Myrtaceae	*Eucalyptus acmenoides*			C		5/1
plants	higher dicots	Myrtaceae	*Eucalyptus portuensis*			C		4/1
plants	higher dicots	Myrtaceae	*Lophostemon confertus*	brush box		C		24/3
plants	higher dicots	Myrtaceae	*Melaleuca fluviatilis*			C		1/1
plants	higher dicots	Myrtaceae	*Melaleuca leucadendra*	broad-leaved tea-tree		C		5/1
plants	higher dicots	Myrtaceae	*Melaleuca viridiflora*			C		2
plants	higher dicots	Myrtaceae	*Backhousia subargentea*			C		1/1
plants	higher dicots	Myrtaceae	*Corymbia erythrophloia*	variable-barked bloodwood		C		19/5
plants	higher dicots	Myrtaceae	*Eucalyptus platyphylla*	poplar gum		C		6/2
plants	higher dicots	Nyctaginaceae	*Pisonia aculeata*	thorny pisonia		C		7/2
plants	higher dicots	Nyctaginaceae	*Boerhavia burbidgeana*			C		1/1
plants	higher dicots	Nyctaginaceae	*Bougainvillea glabra*		Y			1/1
plants	higher dicots	Ochnaceae	*Ochna serrulata*	ochna	Y			2/2
plants	higher dicots	Oleaceae	*Notelaea microcarpa var. microcarpa*					5
plants	higher dicots	Oleaceae	*Olea paniculata*			C		6
plants	higher dicots	Oleaceae	*Jasminum didymum subsp. racemosum*			C		13/2
plants	higher dicots	Oleaceae	*Notelaea microcarpa*			C		23/1
plants	higher dicots	Oleaceae	*Chionanthus ramiflorus*	northern olive		C		10
plants	higher dicots	Oleaceae	*Jasminum simplicifolium*			C		36
plants	higher dicots	Oleaceae	*Jasminum didymum subsp. lineare*			C		4
plants	higher dicots	Oleaceae	*Jasminum simplicifolium subsp. australiense*			C		13/1
plants	higher dicots	Oleaceae	*Jasminum didymum*			C		33
plants	higher dicots	Onagraceae	*Ludwigia peploides subsp. montevidensis*			C		2
plants	higher dicots	Onagraceae	*Ludwigia octovalvis*	willow primrose		C		1
plants	higher dicots	Onagraceae	*Ludwigia*			C		2/2
plants	higher dicots	Orobanchaceae	*Centranthera cochinchinensis*			C		1/1
plants	higher dicots	Oxalidaceae	*Oxalis*			C		1
plants	higher dicots	Oxalidaceae	*Oxalis corniculata*		Y			2
plants	higher dicots	Passifloraceae	*Passiflora suberosa*	corky passion flower	Y			30
plants	higher dicots	Passifloraceae	*Passiflora pallida*		Y			2/2
plants	higher dicots	Passifloraceae	*Passiflora foetida*		Y			16/8
plants	higher dicots	Passifloraceae	*Passiflora edulis*		Y			1
plants	higher dicots	Passifloraceae	*Passiflora subpeltata*	white passion flower	Y			2/1
plants	higher dicots	Passifloraceae	*Passiflora*			C		2
plants	higher dicots	Pentapetaceae	*Melhania oblongifolia*			C		1
plants	higher dicots	Petiveriaceae	*Rivina humilis*		Y			17/2
plants	higher dicots	Petiveriaceae	*Monococcus echinophorus*	burr bush		C		4
plants	higher dicots	Phyllanthaceae	*Bridelia leichhardtii*			C		49/4
plants	higher dicots	Phyllanthaceae	*Phyllanthus virgatus*			C		2/1
plants	higher dicots	Phyllanthaceae	*Breynia oblongifolia*			C		54/4

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Phyllanthaceae	*Flueggea leucopyrus*			C		14/2
plants	higher dicots	Phyllanthaceae	*Phyllanthus gunnii*			C		5/1
plants	higher dicots	Phyllanthaceae	*Glochidion ferdinandi*			C		2
plants	higher dicots	Phyllanthaceae	*Glochidion lobocarpum*			C		24/1
plants	higher dicots	Phyllanthaceae	*Glochidion sumatranum*	umbrella cheese tree		C		4
plants	higher dicots	Phyllanthaceae	*Synostemon albiflorus*			C		4/3
plants	higher dicots	Phyllanthaceae	*Cleistanthus cunninghamii*	omega		C		1
plants	higher dicots	Phyllanthaceae	*Cleistanthus dallachyanus*			C		2/1
plants	higher dicots	Phyllanthaceae	*Phyllanthus subcrenulatus*			C		7/3
plants	higher dicots	Phyllanthaceae	*Phyllanthus novae-hollandiae*			C		3/1
plants	higher dicots	Phyllanthaceae	*Actephila lindleyi*	actephila		C		10/4
plants	higher dicots	Phyllanthaceae	*Phyllanthus maderaspatensis var. maderaspatensis*			C		1/1
plants	higher dicots	Phyllanthaceae	*Phyllanthus*			C		1
plants	higher dicots	Phyllanthaceae	*Bridelia exaltata*			C		4
plants	higher dicots	Phytolaccaceae	*Phytolacca octandra*	inkweed	Y			2/1
plants	higher dicots	Picrodendraceae	*Dissiliaria muelleri*	Mueller's redheart		C		7/5
plants	higher dicots	Picrodendraceae	*Petalostigma pubescens*	quinine tree		C		9
plants	higher dicots	Pittosporaceae	*Auranticarpa rhombifolia*			C		11/2
plants	higher dicots	Pittosporaceae	*Pittosporum*			C		2
plants	higher dicots	Pittosporaceae	*Bursaria incana*			C		3
plants	higher dicots	Pittosporaceae	*Hymenosporum flavum*	native frangipani		C		3
plants	higher dicots	Pittosporaceae	*Pittosporum ferrugineum subsp. linifolium*			C		1/1
plants	higher dicots	Pittosporaceae	*Bursaria spinosa subsp. spinosa*			C		4
plants	higher dicots	Pittosporaceae	*Bursaria*			C		1/1
plants	higher dicots	Pittosporaceae	*Pittosporum ferrugineum*			C		5
plants	higher dicots	Pittosporaceae	*Pittosporum spinescens*			C		39/4
plants	higher dicots	Pittosporaceae	*Pittosporum venulosum*			C		3
plants	higher dicots	Plantaginaceae	*Plantago*			C		1
plants	higher dicots	Plantaginaceae	*Mecardonia procumbens*		Y			1/1
plants	higher dicots	Plantaginaceae	*Scoparia dulcis*	scoparia	Y			2/2
plants	higher dicots	Plantaginaceae	*Bacopa monnieri*			C		3/3
plants	higher dicots	Plumbaginaceae	*Plumbago zeylanica*	native plumbago		C		6/1
plants	higher dicots	Polygalaceae	*Comesperma esulifolium*	match heads		C		1/1
plants	higher dicots	Polygalaceae	*Polygala virgata*		Y			1/1
plants	higher dicots	Polygalaceae	*Polygala triflora*			C		1/1
plants	higher dicots	Polygonaceae	*Antigonon leptopus*		Y			3/3
plants	higher dicots	Polygonaceae	*Persicaria attenuata*			C		2/2
plants	higher dicots	Polygonaceae	*Persicaria orientalis*	princes feathers		C		3/3
plants	higher dicots	Polygonaceae	*Persicaria lapathifolia*	pale knotweed		C		1/1
plants	higher dicots	Polygonaceae	*Rumex crispus*	curled dock	Y			1/1
plants	higher dicots	Polygonaceae	*Rumex brownii*	swamp dock		C		2
plants	higher dicots	Polygonaceae	*Persicaria*			C		2
plants	higher dicots	Polygonaceae	*Duma florulenta*			C		1/1
plants	higher dicots	Portulacaceae	*Portulaca australis*			C		2/2
plants	higher dicots	Portulacaceae	*Calandrinia pickeringii*			C		1
plants	higher dicots	Portulacaceae	*Portulaca oleracea*	pigweed	Y			1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Portulacaceae	*Portulaca bicolor*			C		2/1
plants	higher dicots	Proteaceae	*Grevillea helmsiae*			C		8/3
plants	higher dicots	Proteaceae	*Banksia integrifolia*			C		1
plants	higher dicots	Proteaceae	*Banksia integrifolia subsp. compar*			C		1/1
plants	higher dicots	Proteaceae	*Grevillea*			C		1
plants	higher dicots	Proteaceae	*Grevillea banksii*			C		10/3
plants	higher dicots	Proteaceae	*Grevillea reptans*			C		1/1
plants	higher dicots	Proteaceae	*Grevillea striata*	beefwood		C		1
plants	higher dicots	Putranjivaceae	*Drypetes deplanchei*	grey boxwood		C		61/4
plants	higher dicots	Rhamnaceae	*Ziziphus mauritiana*	Indian jujube	Y			7/7
plants	higher dicots	Rhamnaceae	*Alphitonia excelsa*	soap tree		C		62/1
plants	higher dicots	Rhamnaceae	*Rhamnella vitiensis*			C		6/2
plants	higher dicots	Rosaceae	*Rubus moluccanus*			C		1
plants	higher dicots	Rosaceae	*Rubus moluccanus var. trilobus*			C		1/1
plants	higher dicots	Rosaceae	*Rubus probus*			C		2/1
plants	higher dicots	Rubiaceae	*Psydrax odorata forma buxifolia*			C		8
plants	higher dicots	Rubiaceae	*Timonius timon var. timon*			C		13/2
plants	higher dicots	Rubiaceae	*Cyclophyllum coprosmoides*			C		13
plants	higher dicots	Rubiaceae	*Oldenlandia coerulescens*			C		1/1
plants	higher dicots	Rubiaceae	*Coelospermum reticulatum*			C		13
plants	higher dicots	Rubiaceae	*Psychotria loniceroides*	hairy psychotria		C		7
plants	higher dicots	Rubiaceae	*Hodgkinsonia ovatiflora*	golden ash		C		3/1
plants	higher dicots	Rubiaceae	*Gynochthodes canthoides*			C		1
plants	higher dicots	Rubiaceae	*Psychotria*			C		1/1
plants	higher dicots	Rubiaceae	*Aidia racemosa*			C		19/2
plants	higher dicots	Rubiaceae	*Timonius timon*			C		1
plants	higher dicots	Rubiaceae	*Pomax umbellata*			C		1
plants	higher dicots	Rubiaceae	*Psydrax odorata*			C		40/1
plants	higher dicots	Rubiaceae	*Psydrax longipes*			C		2/2
plants	higher dicots	Rubiaceae	*Psydrax attenuata*			C		2
plants	higher dicots	Rubiaceae	*Psydrax oleifolia*			C		10
plants	higher dicots	Rubiaceae	*Nauclea orientalis*	Leichhardt tree		C		4
plants	higher dicots	Rubiaceae	*Antirhea putaminosa*			C		13/4
plants	higher dicots	Rubiaceae	*Tarenna dallachiana*			C		1
plants	higher dicots	Rubiaceae	*Psydrax lamprophylla*			C		2
plants	higher dicots	Rubiaceae	*Pavetta australiensis*			C		9
plants	higher dicots	Rubiaceae	*Psychotria daphnoides*			C		15/5
plants	higher dicots	Rubiaceae	*Richardia brasiliensis*	white eye	Y			1/1
plants	higher dicots	Rubiaceae	*Spermacoce brachystema*			C		1/1
plants	higher dicots	Rubiaceae	*Spermacoce multicaulis*			C		3/3
plants	higher dicots	Rubiaceae	*Triflorensia ixoroides*			C		6/1
plants	higher dicots	Rubiaceae	*Everistia vacciniifolia*			C		3/1
plants	higher dicots	Rubiaceae	*Psydrax odorata forma australiana*			C		1/1
plants	higher dicots	Rubiaceae	*Psydrax odorata subsp. australiana*			C		1/1
plants	higher dicots	Rubiaceae	*Psychotria daphnoides var. angustifolia*			C		1/1
plants	higher dicots	Rubiaceae	*Pavetta australiensis var. australiensis*			C		3/3

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plants	higher dicots	Rubiaceae	*Cyclophyllum coprosmoides var. coprosmoides*			C		1/1
plants	higher dicots	Rubiaceae	*Everistia vacciniifolia forma vacciniifolia*			C		1/1
plants	higher dicots	Rubiaceae	*Psydrax*			C		1/1
plants	higher dicots	Rutaceae	*Phebalium woombye*	wallum phebalium		C		10/5
plants	higher dicots	Rutaceae	*Acronychia laevis*	glossy acronychia		C		19/4
plants	higher dicots	Rutaceae	*Acronychia*			C		1
plants	higher dicots	Rutaceae	*Sarcomelicope simplicifolia subsp. simplicifolia*	yellow aspen		C		7/3
plants	higher dicots	Rutaceae	*Bosistoa pentacocca subsp. connaricarpa*			C		2/1
plants	higher dicots	Rutaceae	*Murraya paniculata cv. Exotica*		Y			2/2
plants	higher dicots	Rutaceae	*Zanthoxylum brachyacanthum*			C		8/2
plants	higher dicots	Rutaceae	*Dinosperma erythrococcum*			C		4
plants	higher dicots	Rutaceae	*Bouchardatia neurococca*	union nut		C		1
plants	higher dicots	Rutaceae	*Murraya ovatifoliolata*			C		4/4
plants	higher dicots	Rutaceae	*Acronychia imperforata*	beach acronychia		C		1
plants	higher dicots	Rutaceae	*Acronychia pauciflora*	soft acronychia		C		7/1
plants	higher dicots	Rutaceae	*Glycosmis trifoliata*			C		5/1
plants	higher dicots	Rutaceae	*Bosistoa medicinalis*			C		1
plants	higher dicots	Rutaceae	*Geijera salicifolia*	brush wilga		C		65/3
plants	higher dicots	Rutaceae	*Coatesia paniculata*			C		7/1
plants	higher dicots	Rutaceae	*Geijera parviflora*	wilga		C		1
plants	higher dicots	Rutaceae	*Micromelum minutum*	clusterberry		C		12/1
plants	higher dicots	Rutaceae	*Murraya paniculata*			C		16
plants	higher dicots	Santalaceae	*Exocarpos latifolius*			C		25/1
plants	higher dicots	Sapindaceae	*Atalaya rigida*			C		3
plants	higher dicots	Sapindaceae	*Dodonaea viscosa*			C		13
plants	higher dicots	Sapindaceae	*Harpullia hillii*			C		8/2
plants	higher dicots	Sapindaceae	*Serjania exarata*		Y			1/1
plants	higher dicots	Sapindaceae	*Atalaya calcicola*			C		5/4
plants	higher dicots	Sapindaceae	*Harpullia pendula*			C		12/3
plants	higher dicots	Sapindaceae	*Jagera pseudorhus*			C		23
plants	higher dicots	Sapindaceae	*Alectryon connatus*	grey birds-eye		C		19/2
plants	higher dicots	Sapindaceae	*Arytera divaricata*	coogera		C		21/4
plants	higher dicots	Sapindaceae	*Atalaya hemiglauca*			C		5/1
plants	higher dicots	Sapindaceae	*Atalaya multiflora*	broad-leaved whitewood		C		8/5
plants	higher dicots	Sapindaceae	*Atalaya salicifolia*			C		5
plants	higher dicots	Sapindaceae	*Dodonaea lanceolata*			C		1
plants	higher dicots	Sapindaceae	*Alectryon tomentosus*			C		11/2
plants	higher dicots	Sapindaceae	*Alectryon subdentatus*			C		7/1
plants	higher dicots	Sapindaceae	*Elattostachys nervosa*	green tamarind		C		1
plants	higher dicots	Sapindaceae	*Mischocarpus anodontus*	veiny pearfruit		C		2/1
plants	higher dicots	Sapindaceae	*Alectryon diversifolius*	scrub boonaree		C		42
plants	higher dicots	Sapindaceae	*Cupaniopsis wadsworthii*			C		37/2
plants	higher dicots	Sapindaceae	*Elattostachys bidwillii*			C		2/2
plants	higher dicots	Sapindaceae	*Elattostachys xylocarpa*	white tamarind		C		39
plants	higher dicots	Sapindaceae	*Rhysotoechia bifoliolata*			C		2
plants	higher dicots	Sapindaceae	*Cupaniopsis anacardioides*	tuckeroo		C		57/1

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plants	higher dicots	Sapindaceae	*Cardiospermum halicacabum var. halicacabum*		Y			4/4
plants	higher dicots	Sapindaceae	*Alectryon*			C		1
plants	higher dicots	Sapotaceae	*Planchonella*			C		1
plants	higher dicots	Sapotaceae	*Sersalisia sericea*			C		7
plants	higher dicots	Sapotaceae	*Planchonella cotinifolia*			C		14
plants	higher dicots	Sapotaceae	*Planchonella pohlmaniana*			C		11/1
plants	higher dicots	Sapotaceae	*Planchonella cotinifolia var. pubescens*			C		10/3
plants	higher dicots	Sapotaceae	*Planchonella cotinifolia var. cotinifolia*			C		1/1
plants	higher dicots	Scrophulariaceae	*Eremophila mitchellii*			C		3
plants	higher dicots	Scrophulariaceae	*Eremophila bignoniiflora*	eurah		C		2/1
plants	higher dicots	Scrophulariaceae	*Myoporum acuminatum*	coastal boobialla		C		20/1
plants	higher dicots	Scrophulariaceae	*Eremophila deserti*			C		1
plants	higher dicots	Scrophulariaceae	*Eremophila debilis*	winter apple		C		11/1
plants	higher dicots	Simaroubaceae	*Ailanthus triphysa*	white siris		C		7
plants	higher dicots	Solanaceae	*Solanum*			C		1
plants	higher dicots	Solanaceae	*Capsicum annuum var. glabriusculum*		Y			4/3
plants	higher dicots	Solanaceae	*Solanum seaforthianum*	Brazilian nightshade	Y			20/3
plants	higher dicots	Solanaceae	*Solanum stelligerum*	devil's needles		C		6/2
plants	higher dicots	Solanaceae	*Solanum furfuraceum*			C		3/2
plants	higher dicots	Solanaceae	*Lycianthes shanesii*			C		11/6
plants	higher dicots	Solanaceae	*Capsicum frutescens*		Y			3/2
plants	higher dicots	Solanaceae	*Solanum nodiflorum*		Y			5/1
plants	higher dicots	Solanaceae	*Physalis peruviana*		Y			1/1
plants	higher dicots	Solanaceae	*Physalis*		Y			1
plants	higher dicots	Solanaceae	*Datura inoxia*		Y			2/2
plants	higher dicots	Solanaceae	*Solanum nigrum*		Y			6
plants	higher dicots	Solanaceae	*Solanum opacum*	green berry nightshade		C		1/1
plants	higher dicots	Solanaceae	*Solanum torvum*	devil's fig	Y			6/2
plants	higher dicots	Solanaceae	*Solanum esuriale*	quena		C		1
plants	higher dicots	Solanaceae	*Solanum erianthum*	potato tree	Y			2
plants	higher dicots	Solanaceae	*Nicotiana forsteri*			C		3/3
plants	higher dicots	Solanaceae	*Nicotiana velutina*			C		2
plants	higher dicots	Sparrmanniaceae	*Grewia latifolia*	dysentery plant		C		34/1
plants	higher dicots	Sparrmanniaceae	*Corchorus hygrophilus*			V		1/1
plants	higher dicots	Stackhousiaceae	*Stackhousia tryonii*			NT		22/15
plants	higher dicots	Stackhousiaceae	*Stackhousia monogyna*	creamy candles		C		2/2
plants	higher dicots	Sterculiaceae	*Brachychiton populneus*			C		1
plants	higher dicots	Sterculiaceae	*Brachychiton australis*	broad-leaved bottle tree		C		4
plants	higher dicots	Sterculiaceae	*Sterculia quadrifida*	peanut tree		C		12
plants	higher dicots	Sterculiaceae	*Brachychiton rupestris*			C		10
plants	higher dicots	Stylidiaceae	*Stylidium graminifolium*	grassy-leaved trigger-flower		C		1/1
plants	higher dicots	Thymelaeaceae	*Pimelea*			C		1
plants	higher dicots	Thymelaeaceae	*Wikstroemia indica*	tie bush		C		2
plants	higher dicots	Thymelaeaceae	*Pimelea leptospermoides*			NT	V	23/15
plants	higher dicots	Thymelaeaceae	*Thecanthes cornucopiae*					1
plants	higher dicots	Thymelaeaceae	*Pimelea cornucopiae*			C		1/1

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Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Ulmaceae	*Trema tomentosa*			C		6/1
plants	higher dicots	Ulmaceae	*Aphananthe philippinensis*			C		27/2
plants	higher dicots	Ulmaceae	*Trema tomentosa var. aspera*			C		6/2
plants	higher dicots	Ulmaceae	*Celtis paniculata*	native celtis		C		8/1
plants	higher dicots	Urticaceae	*Dendrocnide photinophylla*	shiny-leaved stinging tree		C		9/1
plants	higher dicots	Urticaceae	*Pipturus argenteus*	white nettle		C		7/1
plants	higher dicots	Verbenaceae	*Phyla canescens*		Y			1/1
plants	higher dicots	Verbenaceae	*Stachytarpheta jamaicensis*	Jamaica snakeweed	Y			23/7
plants	higher dicots	Verbenaceae	*Stachytarpheta cayennensis*		Y			1/1
plants	higher dicots	Verbenaceae	*Glandularia aristigera*		Y			4/3
plants	higher dicots	Verbenaceae	*Lantana montevidensis*	creeping lantana	Y			11/5
plants	higher dicots	Verbenaceae	*Lantana*		Y			1/1
plants	higher dicots	Verbenaceae	*Duranta erecta*	duranta	Y			2/2
plants	higher dicots	Verbenaceae	*Lantana camara*	lantana	Y			50/9
plants	higher dicots	Verbenaceae	*Stachytarpheta*					1
plants	higher dicots	Verbenaceae	*Verbena litoralis var. litoralis*		Y			1/1
plants	higher dicots	Verbenaceae	*Phyla nodiflora*	carpetweed		C		1
plants	higher dicots	Verbenaceae	*Verbena africana*			C		1/1
plants	higher dicots	Verbenaceae	*Verbena incompta*		Y			1/1
plants	higher dicots	Verbenaceae	*Verbena bonariensis*	purpletop	Y			1
plants	higher dicots	Verbenaceae	*Verbena gaudichaudii*			C		2/2
plants	higher dicots	Violaceae	*Hybanthus stellarioides*					1
plants	higher dicots	Violaceae	*Hybanthus enneaspermus*					4
plants	higher dicots	Violaceae	*Hybanthus*			C		1
plants	higher dicots	Viscaceae	*Viscum articulatum*	flat mistletoe		C		2
plants	higher dicots	Viscaceae	*Notothixos incanus*			C		1/1
plants	higher dicots	Vitaceae	*Cissus oblonga*			C		26/2
plants	higher dicots	Vitaceae	*Cissus reniformis*			C		3
plants	higher dicots	Vitaceae	*Cayratia saponaria*			C		5/1
plants	higher dicots	Vitaceae	*Tetrastigma nitens*	shining grape		C		11
plants	higher dicots	Vitaceae	*Cissus cardiophylla*			C		3/3
plants	higher dicots	Vitaceae	*Clematicissus opaca*			C		24
plants	higher dicots	Vitaceae	*Cissus repens*			C		9
plants	higher dicots	Vitaceae	*Cayratia acris*	hairy grape		C		14/3
plants	higher dicots	Vitaceae	*Cissus hastata*			C		2
plants	higher dicots	Zygophyllaceae	*Tribulus*			C		1/1
plants	lower dicots	Annonaceae	*Polyalthia nitidissima*	polyalthia		C		16
plants	lower dicots	Annonaceae	*Melodorum leichhardtii*			C		19/2
plants	lower dicots	Aristolochiaceae	*Aristolochia thozetii*			C		4/1
plants	lower dicots	Aristolochiaceae	*Aristolochia elegans*	calico-flower	Y			5/1
plants	lower dicots	Avicenniaceae	*Avicennia marina subsp. eucalyptifolia*			C		1/1
plants	lower dicots	Ceratophyllaceae	*Ceratophyllum demersum*	hornwort		C		3
plants	lower dicots	Hernandiaceae	*Gyrocarpus americanus subsp. americanus*			C		3/1
plants	lower dicots	Hernandiaceae	*Gyrocarpus americanus*			C		5
plants	lower dicots	Lauraceae	*Litsea fawcettiana*			C		4/2
plants	lower dicots	Lauraceae	*Neolitsea dealbata*	white bolly gum		C		2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	lower dicots	Lauraceae	*Cassytha filiformis*	dodder laurel		C		2
plants	lower dicots	Lauraceae	*Cinnamomum camphora*	camphor laurel	Y			1/1
plants	lower dicots	Lauraceae	*Neolitsea australiensis*	green bolly gum		C		2
plants	lower dicots	Lauraceae	*Cryptocarya triplinervis*			C		28
plants	lower dicots	Lauraceae	*Cryptocarya triplinervis var. pubens*			C		1/1
plants	lower dicots	Lauraceae	*Endiandra muelleri*			C		1
plants	lower dicots	Lauraceae	*Cassytha pubescens*	downy devil's twine		C		4
plants	lower dicots	Lauraceae	*Neolitsea brassii*			C		5/2
plants	lower dicots	Lauraceae	*Litsea reticulata*			C		4
plants	lower dicots	Lauraceae	*Cryptocarya*			C		1
plants	lower dicots	Lauraceae	*Cassytha*			C		1
plants	lower dicots	Lauraceae	*Cryptocarya hypospodia*	north Queensland purple laurel		C		12/2
plants	lower dicots	Lauraceae	*Cryptocarya vulgaris*			C		1
plants	lower dicots	Lauraceae	*Cryptocarya bidwillii*	yellow laurel		C		8/1
plants	lower dicots	Menispermaceae	*Stephania japonica var. japonica*			C		1
plants	lower dicots	Menispermaceae	*Tinospora smilacina*	snakevine		C		6
plants	lower dicots	Menispermaceae	*Stephania japonica*			C		3
plants	lower dicots	Menispermaceae	*Pleogyne australis*	wiry grape		C		16/4
plants	lower dicots	Menispermaceae	*Hypserpa decumbens*			C		4
plants	lower dicots	Menispermaceae	*Pachygone ovata*			C		1
plants	lower dicots	Menispermaceae	*Legnephora moorei*			C		8/2
plants	lower dicots	Nelumbonaceae	*Nelumbo nucifera*	pink waterlily		C		1/1
plants	lower dicots	Nymphaeaceae	*Nymphaea gigantea*			C		1
plants	lower dicots	Papaveraceae	*Argemone ochroleuca subsp. ochroleuca*	Mexican poppy	Y			4/4
plants	lower dicots	Phrymaceae	*Mimulus gracilis*	slender monkey flower		C		1/1
plants	lower dicots	Piperaceae	*Piper hederaceum*			C		5
plants	lower dicots	Piperaceae	*Piper hederaceum var. hederaceum*			C		1/1
plants	lower dicots	Piperaceae	*Peperomia blanda var. floribunda*			C		6/1
plants	lower dicots	Piperaceae	*Peperomia tetraphylla*			C		2
plants	lower dicots	Piperaceae	*Peperomia*			C		2
plants	lower dicots	Ranunculaceae	*Clematis glycinoides*			C		3
plants	lower dicots	Ranunculaceae	*Ranunculus lappaceus*	common buttercup		C		1/1
plants	monocots	Agavaceae	*Agave sisalana*	sisal hemp	Y			2/1
plants	monocots	Agavaceae	*Furcraea foetida*		Y			1/1
plants	monocots	Amaryllidaceae	*Zephyranthes candida*		Y			1/1
plants	monocots	Araceae	*Alocasia brisbanensis*			C		4
plants	monocots	Araceae	*Typhonium brownii*	black arum lily		C		3
plants	monocots	Araceae	*Gymnostachys anceps*	settler's flax		C		10/1
plants	monocots	Araceae	*Syngonium podophyllum*		Y			1/1
plants	monocots	Arecaceae	*Ptychosperma elegans*	solitaire palm		C		2/1
plants	monocots	Arecaceae	*Livistona drudei*	Halifax fan palm		V		1
plants	monocots	Arecaceae	*Livistona decora*			C		9/2
plants	monocots	Arecaceae	*Phoenix dactylifera*		Y			1
plants	monocots	Asparagaceae	*Asparagus racemosus*	native asparagus		C		3/3
plants	monocots	Asparagaceae	*Asparagus plumosus*	feathered asparagus fern	Y			3
plants	monocots	Colchicaceae	*Iphigenia*			C		1

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plants	monocots	Colchicaceae	*Iphigenia indica*			C		3/3
plants	monocots	Commelinaceae	*Murdannia graminea*	murdannia		C		1
plants	monocots	Commelinaceae	*Commelina diffusa*	wandering jew		C		11
plants	monocots	Commelinaceae	*Tradescantia pallida*		Y			1/1
plants	monocots	Commelinaceae	*Commelina*			C		1
plants	monocots	Commelinaceae	*Aneilema acuminatum*			C		1/1
plants	monocots	Commelinaceae	*Commelina lanceolata*			C		1
plants	monocots	Commelinaceae	*Callisia repens*		Y			1/1
plants	monocots	Cyperaceae	*Cyperus gracilis*			C		3
plants	monocots	Cyperaceae	*Cyperus rotundus*	nutgrass	Y			2/2
plants	monocots	Cyperaceae	*Cyperus difformis*	rice sedge		C		2/1
plants	monocots	Cyperaceae	*Cyperus digitatus*			C		2/1
plants	monocots	Cyperaceae	*Cyperus microcephalus subsp. microcephalus*			C		2/2
plants	monocots	Cyperaceae	*Cyperus scariosus*			C		1/1
plants	monocots	Cyperaceae	*Eleocharis dulcis*			C		1
plants	monocots	Cyperaceae	*Abildgaardia ovata*			C		4/2
plants	monocots	Cyperaceae	*Cyperus compressus*		Y			1/1
plants	monocots	Cyperaceae	*Scleria sphacelata*			C		3/3
plants	monocots	Cyperaceae	*Bulbostylis barbata*			C		3/2
plants	monocots	Cyperaceae	*Cyperus perangustus*			C		1/1
plants	monocots	Cyperaceae	*Cyperus involucratus*		Y			3/3
plants	monocots	Cyperaceae	*Cyperus polystachyos*			C		1
plants	monocots	Cyperaceae	*Cyperus sesquiflorus*		Y			2/2
plants	monocots	Cyperaceae	*Cyperus sphaeroideus*			C		1/1
plants	monocots	Cyperaceae	*Scleria mackaviensis*			C		4/2
plants	monocots	Cyperaceae	*Cyperus alopecuroides*			C		1/1
plants	monocots	Cyperaceae	*Fimbristylis dichotoma*	common fringe-rush		C		4/3
plants	monocots	Cyperaceae	*Eleocharis dietrichiana*			C		1/1
plants	monocots	Cyperaceae	*Fimbristylis acicularis*			C		1/1
plants	monocots	Cyperaceae	*Fimbristylis aestivalis*			C		1/1
plants	monocots	Cyperaceae	*Eleocharis philippinensis*			C		1/1
plants	monocots	Cyperaceae	*Schoenus ornithopodioides*			C		1
plants	monocots	Cyperaceae	*Fimbristylis cinnamometorum*			C		1/1
plants	monocots	Cyperaceae	*Scleria lithosperma var. lithosperma*			C		1/1
plants	monocots	Cyperaceae	*Cyperus enervis*			C		2
plants	monocots	Cyperaceae	*Cyperus scaber*			C		1
plants	monocots	Cyperaceae	*Cyperus fulvus*			C		2/1
plants	monocots	Cyperaceae	*Gahnia aspera*			C		21/2
plants	monocots	Cyperaceae	*Baumea juncea*	bare twigrush		C		1/1
plants	monocots	Cyperaceae	*Fimbristylis*			C		2
plants	monocots	Cyperaceae	*Scleria*			C		3
plants	monocots	Cyperaceae	*Cyperus*			C		4
plants	monocots	Cyperaceae	*Gahnia*			C		4
plants	monocots	Cyperaceae	*Cyperus exaltatus*	tall flatsedge		C		2/2
plants	monocots	Dioscoreaceae	*Dioscorea bulbifera*			C		1/1
plants	monocots	Dioscoreaceae	*Dioscorea transversa*	native yam		C		13

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	monocots	Dracaenaceae	*Sansevieria trifasciata var. trifasciata*		Y			2/2
plants	monocots	Flagellariaceae	*Flagellaria indica*	whip vine		C		1
plants	monocots	Heliconiaceae	*Heliconia*			C		1/1
plants	monocots	Hemerocallidaceae	*Dianella*			C		16
plants	monocots	Hemerocallidaceae	*Geitonoplesium cymosum*	scrambling lily		C		17/1
plants	monocots	Hemerocallidaceae	*Dianella revoluta*			C		2
plants	monocots	Hemerocallidaceae	*Dianella caerulea*			C		14/1
plants	monocots	Hemerocallidaceae	*Dianella nervosa*			C		3/2
plants	monocots	Hemerocallidaceae	*Dianella caerulea var. vannata*			C		2/2
plants	monocots	Hemerocallidaceae	*Dianella rara*			C		1/1
plants	monocots	Hydrocharitaceae	*Ottelia ovalifolia subsp. ovalifolia*			C		1/1
plants	monocots	Hydrocharitaceae	*Ottelia*			C		3
plants	monocots	Hydrocharitaceae	*Blyxa*			C		1
plants	monocots	Hypoxidaceae	*Curculigo ensifolia*			C		1
plants	monocots	Hypoxidaceae	*Hypoxis pratensis var. pratensis*			C		1
plants	monocots	Johnsoniaceae	*Tricoryne elatior*	yellow autumn lily		C		2/1
plants	monocots	Juncaceae	*Juncus polyanthemus*			C		1/1
plants	monocots	Laxmanniaceae	*Lomandra*			C		11
plants	monocots	Laxmanniaceae	*Cordyline*			C		3
plants	monocots	Laxmanniaceae	*Laxmannia gracilis*	slender wire lily		C		2/1
plants	monocots	Laxmanniaceae	*Lomandra longifolia*			C		16/2
plants	monocots	Laxmanniaceae	*Lomandra multiflora subsp. multiflora*			C		3/1
plants	monocots	Laxmanniaceae	*Cordyline murchisoniae*			C		9/3
plants	monocots	Laxmanniaceae	*Lomandra confertifolia*			C		1
plants	monocots	Laxmanniaceae	*Lomandra confertifolia subsp. pallida*			C		4/2
plants	monocots	Laxmanniaceae	*Eustrephus latifolius*	wombat berry		C		22/2
plants	monocots	Najadaceae	*Najas*			C		1
plants	monocots	Orchidaceae	*Dendrobium discolor*			C		3
plants	monocots	Orchidaceae	*Dipodium variegatum*			C		1/1
plants	monocots	Orchidaceae	*Dockrillia bowmanii*	scrub pencil orchid		C		2/1
plants	monocots	Orchidaceae	*Acianthus fornicatus*	pixie caps		C		2/2
plants	monocots	Orchidaceae	*Geodorum densiflorum*	pink nodding orchid		C		9/2
plants	monocots	Orchidaceae	*Dockrillia mortii*			C		2
plants	monocots	Orchidaceae	*Habenaria propinquior*			C		1/1
plants	monocots	Orchidaceae	*Dockrillia teretifolia*	rat's tail orchid		C		3
plants	monocots	Orchidaceae	*Cymbidium canaliculatum*			C		2
plants	monocots	Orchidaceae	*Corybas*			C		1
plants	monocots	Orchidaceae	*Dendrobium*			C		1
plants	monocots	Orchidaceae	*Corybas aconitiflorus*			C		1/1
plants	monocots	Pandanaceae	*Pandanus tectorius*			C		1
plants	monocots	Poaceae	*Diplachne fusca var. fusca*			C		2/2
plants	monocots	Poaceae	*Eriochloa pseudoacrotricha*			C		1
plants	monocots	Poaceae	*Schizachyrium pseudeulalia*			C		1/1
plants	monocots	Poaceae	*Hyparrhenia rufa subsp. rufa*		Y			1/1
plants	monocots	Poaceae	*Cynodon dactylon var. dactylon*		Y			1/1
plants	monocots	Poaceae	*Dinebra decipiens var. asthenes*			C		2/1

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plants	monocots	Poaceae	*Sorghum nitidum forma aristatum*			C		5/4
plants	monocots	Poaceae	*Dinebra decipiens var. decipiens*			C		1
plants	monocots	Poaceae	*Megathyrsus maximus var. maximus*		Y			10
plants	monocots	Poaceae	*Chloris divaricata var. divaricata*	slender chloris		C		2
plants	monocots	Poaceae	*Hymenachne amplexicaulis cv. Olive*		Y			4/4
plants	monocots	Poaceae	*Megathyrsus maximus var. coloratus*		Y			1/1
plants	monocots	Poaceae	*Bothriochloa bladhii subsp. bladhii*			C		2/2
plants	monocots	Poaceae	*Eriachne pallescens var. pallescens*			C		1/1
plants	monocots	Poaceae	*Megathyrsus maximus var. pubiglumis*		Y			4/3
plants	monocots	Poaceae	*Aristida queenslandica var. queenslandica*			C		4/4
plants	monocots	Poaceae	*Paspalum dilatatum*	paspalum	Y			1
plants	monocots	Poaceae	*Setaria sphacelata*		Y			1/1
plants	monocots	Poaceae	*Aristida perniciosa*			C		1
plants	monocots	Poaceae	*Chrysopogon filipes*			C		1/1
plants	monocots	Poaceae	*Cymbopogon obtectus*			C		2/2
plants	monocots	Poaceae	*Digitaria didactyla*	Queensland blue couch	Y			2
plants	monocots	Poaceae	*Imperata cylindrica*	blady grass		C		11
plants	monocots	Poaceae	*Ischaemum triticeum*			C		1/1
plants	monocots	Poaceae	*Megathyrsus maximus*		Y			7
plants	monocots	Poaceae	*Melinis minutiflora*	molasses grass	Y			2/1
plants	monocots	Poaceae	*Panicum larcomianum*			C		1/1
plants	monocots	Poaceae	*Paspalidium distans*	shotgrass		C		2/1
plants	monocots	Poaceae	*Paspalidium gracile*	slender panic		C		7/2
plants	monocots	Poaceae	*Bothriochloa bladhii*			C		1
plants	monocots	Poaceae	*Cymbopogon refractus*	barbed-wire grass		C		6
plants	monocots	Poaceae	*Panicum decompositum*			C		1
plants	monocots	Poaceae	*Phragmites australis*	common reed		C		1
plants	monocots	Poaceae	*Sorghum arundinaceum*	Rhodesian Sudan grass	Y			2/2
plants	monocots	Poaceae	*Sporobolus elongatus*			C		1
plants	monocots	Poaceae	*Themeda quadrivalvis*	grader grass	Y			2/1
plants	monocots	Poaceae	*Whiteochloa airoides*			C		1/1
plants	monocots	Poaceae	*Cenchrus polystachios*		Y			1
plants	monocots	Poaceae	*Dichanthium annulatum*	sheda grass	Y			3/3
plants	monocots	Poaceae	*Dichanthium aristatum*	angleton grass	Y			1
plants	monocots	Poaceae	*Eragrostis leptocarpa*	drooping lovegrass		C		1
plants	monocots	Poaceae	*Eragrostis parviflora*	weeping lovegrass		C		1/1
plants	monocots	Poaceae	*Eragrostis tenuifolia*	elastic grass	Y			2/2
plants	monocots	Poaceae	*Heteropogon contortus*	black speargrass		C		24
plants	monocots	Poaceae	*Heteropogon triticeus*	giant speargrass		C		15/3
plants	monocots	Poaceae	*Iseilema vaginiflorum*	red flinders grass		C		1/1
plants	monocots	Poaceae	*Oplismenus imbecillis*			C		1
plants	monocots	Poaceae	*Sporobolus natalensis*		Y			2/2
plants	monocots	Poaceae	*Sporobolus virginicus*	sand couch		C		1
plants	monocots	Poaceae	*Alloteropsis semialata*	cockatoo grass		C		3
plants	monocots	Poaceae	*Arundinella nepalensis*	reedgrass		C		9/4
plants	monocots	Poaceae	*Bothriochloa decipiens*			C		1

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plants	monocots	Poaceae	*Cleistochloa subjuncea*			C		1/1
plants	monocots	Poaceae	*Enteropogon acicularis*	curly windmill grass		C		1
plants	monocots	Poaceae	*Enteropogon unispiceus*			C		4/3
plants	monocots	Poaceae	*Eragrostis cilianensis*		Y			1/1
plants	monocots	Poaceae	*Moorochloa eruciformis*		Y			1/1
plants	monocots	Poaceae	*Panicum queenslandicum*			C		3/2
plants	monocots	Poaceae	*Paspalum scrobiculatum*	ditch millet		C		1
plants	monocots	Poaceae	*Urochloa mosambicensis*	sabi grass	Y			4/2
plants	monocots	Poaceae	*Ancistrachne uncinulata*	hooky grass		C		10
plants	monocots	Poaceae	*Dactyloctenium radulans*	button grass		C		1/1
plants	monocots	Poaceae	*Eragrostis megalosperma*			C		1/1
plants	monocots	Poaceae	*Eragrostis spartinoides*			C		2/2
plants	monocots	Poaceae	*Paspalidium constrictum*			C		1/1
plants	monocots	Poaceae	*Polypogon monspeliensis*	annual beardgrass	Y			1/1
plants	monocots	Poaceae	*Sporobolus jacquemontii*		Y			1/1
plants	monocots	Poaceae	*Stenotaphrum secundatum*	buffalo grass	Y			1
plants	monocots	Poaceae	*Austrostipa aristiglumis*	plains grass		C		1
plants	monocots	Poaceae	*Capillipedium spicigerum*	spicytop		C		5/1
plants	monocots	Poaceae	*Dactyloctenium aegyptium*	coast button grass	Y			3/3
plants	monocots	Poaceae	*Paspalidium albovillosum*			C		2/2
plants	monocots	Poaceae	*Paspalidium scabrifolium*			C		1/1
plants	monocots	Poaceae	*Sporobolus australasicus*			C		1
plants	monocots	Poaceae	*Capillipedium parviflorum*	scented top		C		1/1
plants	monocots	Poaceae	*Cymbopogon queenslandicus*			C		2
plants	monocots	Poaceae	*Digitaria divaricatissima*	spreading umbrella grass		C		2/1
plants	monocots	Poaceae	*Dichanthium sericeum*			C		3
plants	monocots	Poaceae	*Digitaria parviflora*			C		3/1
plants	monocots	Poaceae	*Oplismenus burmannii*			C		1/1
plants	monocots	Poaceae	*Dichanthium sericeum subsp. sericeum*			C		3/3
plants	monocots	Poaceae	*Aristida queenslandica var. dissimilis*			C		1/1
plants	monocots	Poaceae	*Panicum decompositum var. decompositum*			C		1/1
plants	monocots	Poaceae	*Leersia*			C		1
plants	monocots	Poaceae	*Aristida*			C		7/1
plants	monocots	Poaceae	*Urochloa*			C		1
plants	monocots	Poaceae	*Digitaria*			C		1
plants	monocots	Poaceae	*Enneapogon*			C		1
plants	monocots	Poaceae	*Eragrostis*			C		1
plants	monocots	Poaceae	*Paspalidium*			C		1
plants	monocots	Poaceae	*Pseudoraphis*			C		1
plants	monocots	Poaceae	*Phyllostachys*			C		1/1
plants	monocots	Poaceae	*Chloris gayana*	rhodes grass	Y			7/4
plants	monocots	Poaceae	*Melinis repens*	red natal grass	Y			14/4
plants	monocots	Poaceae	*Panicum simile*			C		3/2
plants	monocots	Poaceae	*Aristida spuria*			C		4/2
plants	monocots	Poaceae	*Chloris inflata*	purpletop chloris	Y			6/3
plants	monocots	Poaceae	*Eleusine indica*	crowsfoot grass	Y			1/1

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plants	monocots	Poaceae	*Panicum effusum*			C		5/1
plants	monocots	Poaceae	*Sorghum bicolor*	forage sorghum	Y			2/2
plants	monocots	Poaceae	*Sorghum nitidum*			C		7
plants	monocots	Poaceae	*Sorghum x almum*		Y			2/1
plants	monocots	Poaceae	*Urochloa mutica*		Y			5/3
plants	monocots	Poaceae	*Aristida lignosa*			C		1/1
plants	monocots	Poaceae	*Cynodon dactylon*		Y			1
plants	monocots	Poaceae	*Hyparrhenia rufa*		Y			1/1
plants	monocots	Poaceae	*Ottochloa nodosa*			C		3/1
plants	monocots	Poaceae	*Sarga leiocladum*			C		3/1
plants	monocots	Poaceae	*Themeda triandra*	kangaroo grass		C		22/2
plants	monocots	Poaceae	*Cenchrus setaceus*		Y			6/5
plants	monocots	Poaceae	*Dichanthium tenue*	small bluegrass		C		1/1
plants	monocots	Poaceae	*Entolasia stricta*	wiry panic		C		5/1
plants	monocots	Poaceae	*Eriochloa procera*	slender cupgrass		C		2/2
plants	monocots	Poaceae	*Panicum paludosum*	swamp panic		C		1/1
plants	monocots	Poaceae	*Sorghum halepense*	Johnson grass	Y			1
plants	monocots	Poaceae	*Sporobolus caroli*	fairy grass		C		2/1
plants	monocots	Poaceae	*Sporobolus creber*			C		2
plants	monocots	Poaceae	*Andropogon gayanus*	gamba grass	Y			1/1
plants	monocots	Poaceae	*Cenchrus echinatus*	Mossman River grass	Y			2/2
plants	monocots	Poaceae	*Chloris ventricosa*	tall chloris		C		3/1
plants	monocots	Poaceae	*Chrysopogon fallax*			C		4
plants	monocots	Poaceae	*Cymbopogon martini*		Y			2/2
plants	monocots	Poaceae	*Echinochloa colona*	awnless barnyard grass	Y			4/3
plants	monocots	Poaceae	*Eragrostis brownii*	Brown's lovegrass		C		2
plants	monocots	Poaceae	*Eragrostis sororia*			C		3/1
plants	monocots	Poaceae	*Oplismenus aemulus*	creeping shade grass		C		9
plants	monocots	Poaceae	*Panicum mitchellii*			C		3/3
plants	monocots	Poaceae	*Paspalidium gausum*			C		4/2
plants	monocots	Pontederiaceae	*Eichhornia crassipes*	water hyacinth	Y			2/1
plants	monocots	Pontederiaceae	*Monochoria cyanea*			C		1/1
plants	monocots	Potamogetonaceae	*Potamogeton*			C		1
plants	monocots	Ripogonaceae	*Ripogonum brevifolium*	small-leaved supplejack		C		2/1
plants	monocots	Ripogonaceae	*Ripogonum album*	white supplejack		C		1
plants	monocots	Smilacaceae	*Smilax calophylla*			C		1
plants	monocots	Smilacaceae	*Smilax glyciphylla*	sweet sarsaparilla		C		1
plants	monocots	Smilacaceae	*Smilax sp. (Watson River J.R.Clarkson 4075A)*			C		1/1
plants	monocots	Smilacaceae	*Smilax australis*	barbed-wire vine		C		13
plants	monocots	Typhaceae	*Typha domingensis*			C		1
plants	monocots	Xanthorrhoeaceae	*Xanthorrhoea glauca subsp. glauca*			C		1/1
plants	monocots	Xanthorrhoeaceae	*Xanthorrhoea latifolia*			C		2
plants	monocots	Xanthorrhoeaceae	*Xanthorrhoea johnsonii*			C		1/1
plants	monocots	Xanthorrhoeaceae	*Xanthorrhoea*			C		7
plants	monocots	Xanthorrhoeaceae	*Xanthorrhoea latifolia subsp. latifolia*			C		14/2
plants	monocots	Zingiberaceae	*Alpinia caerulea*	wild ginger		C		3

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	mosses	Bryaceae	*Gemmabryum coronatum*			C		1/1
plants	mosses	Bryophyte	*Bryophyte*			C		1/1
plants	mosses	Dicranaceae	*Sclerodontium pallidum subsp. pallidum*			C		2/2
plants	mosses	Entodontaceae	*Entodon mackaviensis*			C		1/1
plants	mosses	Fissidentaceae	*Fissidens*			C		2/2
plants	mosses	Orthotrichaceae	*Macromitrium*			C		2/2
plants	mosses	Orthotrichaceae	*Macromitrium repandum*			C		1/1
plants	mosses	Pottiaceae	*Weissia sp. (Victoria Park H.Tryon AQ645533)*			C		1/1
plants	mosses	Sematophyllaceae	*Sematophyllum*			C		1/1
plants	uncertain	Indet.	*Indet.*			C		3
plants	whisk ferns	Psilotaceae	*Psilotum nudum*	skeleton fork fern		C		1/1
plants		Streptophyceae	*Nitella myriotricha*			C		1/1
protists	blue-green algae	Cyanophyceae	*Aphanizomenon flos-aquae*			C		1/1
protists	yellow-green algae	Xanthophyceae	*Phyllosiphon arisari*			C		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 in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ( ).

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

Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).
This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Appendix B

Likelihood of Occurrence Tables

Appendix B Likelihood of Occurrence Tables

Table 6 RNAU Likelihood of Occurrence - Birds

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
Birds						
Botaurus poiciloptilus	Australasian Bittern	E	LC	Present in Australia, New Caledonia and New Zealand. In Australia, core range is the south and east (including Tasmania) and the south-west of Western Australia, with apparently isolated records and perhaps populations elsewhere around coastal regions (DOE 2013). The species favours freshwater wetlands (Morcombe, 2000; Marchant and Higgins, 1990) and rarely, estuarine or tidal wetlands (Marchant and Higgins 1990). Its preferred microhabitats are shallow water with tall vegetation such as rushes, reeds and sedges (Marchant and Higgins, 1990) or trampled vegetation adjacent to deep-water pools (Morcombe 2000; Marchant and Higgins 1990). The Project site is within the known range of this species as accepted by DOE (2013).	No	Unlikely
Calidris canutus	Red Knot	E Marine Migratory	E	In Australasia the Red Knot mainly inhabit intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. They are occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps (Higgins and Davies 1996).		Unlikely
Calidris ferruginea	Curlew Sandpiper	CE Marine Migratory	E	Habitat includes, intertidal mudflats surrounding estuaries lagoons, mangroves, around dams, floodwaters, flooded saltbush surrounds of inland lakes (DoE, 2015).	None Observed	Unlikely
Epthianura crocea macgregori	Yellow chat {Dawson}	CE	E	Distribution of the species includes northern Australia from Kimberley in Western Australia to western Queensland (Pizzey & Knight 1997). The subspecies *Epthianura crocea macgregori* is restricted to coastal areas of central Queensland (DoE 2012). The latter is known to breed at three	None Observed	Unlikely

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
				locations Torilla Plain, Fitzroy River Delta and Curtis Island (DoE, 2012, Houston and Melzer, 2008). *Epthianura crocea macgregori* inhabits wetlands in marine plain areas that have variable tidal inputs and are seasonally inundated (DOE 2012). Subspecies *macgregori is* known from the Port Alma district (circa 40klm south) and is historically known from some 13 km to the west south-west of the site (Houston and Metzler, 2008). Yellow chat nest in shrubs or sedges over water (Pizzey and Knight, 1997), during spring and summer (Houston, 2011).		
Erythrotriorchis radiatus	Red goshawk	V	E	Distributed around coastal east and north Australia (Morcombe, 2000 and Barret *et al*.,2003), this species is rarely encountered (Morcombe, 2000). It shows a preference for wooded and forested areas (Marchant and Higgins, 1993) typically with high bird numbers and biodiversity (Debus and Czechura, 1988)	Yes	Low
Geophaps scripta scripta	Squatter pigeon {southern subspecies}	V	V	The squatter pigeon is endemic to north-eastern Australia where it ranges from Cape York Peninsula in Queensland to northern New South Wales (Pizzey and Knight, 1997). There have been no confirmed records in New South Wales however for several decades (DOE, 2012a). The southern subspecies extends north to the Burdekin-Lynd divide in central Queensland where it may hybridise with the northern subspecies (Garnett & Crowley 2000, DOE 2012a). The species has suffered an historical decline in numbers during the past century, but the population now appears stable and the species is considered locally abundant in some areas (DOE, 2012a). The habitat of Geophaps scripta scripta includes primarily grassy eucalypt woodlands or open forests, but it is also found in open pastures with little tree cover, scrubs or even disturbed habitats (Garnett & Crowley 2000, DOE, 2012a). The species forages on the ground where it feeds primarily on the seeds of grasses and herbs, and may also consume invertebrates (Crome 1976, DOE, 2012a). Access to drinking water appears to be a daily necessity for the species and a requirement of their habitat may be the presence of water in its vicinity (DOE 2012a). They nest in a shallow depression on the ground primarily during early dry season (Pizzey & Knight 1997).	None Observed	Unlikely

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
Lathamus discolor	Swift parrot	CE Marine	E	A small parrot (Morcombe, 2000) of the south and east of Australia (Barrett 2003 and Morcombe, 2000). The species breeds only in Tasmania (Barrett *et al.,* 2003) ranging north during non-breeding season (winter months) (Barrett *et al.* 2003)	None Observed	Unlikely
Limosa lapponica bauera	Bar-Tailed Godwit	V	V	The bar-tailed godwit (northern Siberian) occurs mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It has also been recorded in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats (Higgins and Davies, 1996).		Unlikely
Limosa lapponica menzbieri	Northern Siberian Bar-tailed Godwit	CE	SL	As above.		Unlikely
Lophochroa leadbeateri	Major Mitchell's Cockatoo		V	A medium-sized and attractive cockatoo (Morcombe, 2000), the species is more commonly recorded from inland and southern Australia, with smaller populations to the west (Barrett *et al.* 2003, Morcombe, 2000)	None Observed	Unlikely
Macronectes giganteus	Southern Giant Petrel	E	E	Marine habitat includes inshore and open sea areas, favouring the edges of the continental shelf (DoE, 2015). Common over south coast of Australia. Breeding grounds located on Antarctic and sub-Antarctic islands and mainland. This species is marine only and therefore unlikely to be present or impacted by the Project.	No	Unlikely
Neochmia ruficauda ruficauda	Star Finch (eastern))	E	E	The Star Finch (eastern) occurs in central Queensland and its population is extremely limited. Garnett and Crowley (2000) considered it critically endangered; Higgins *et al* .(2006) considered it had an estimated total population of 50 individuals, and Garnett *et al.* (2005) considered it possibly already extinct. The distribution of this subspecies is poorly known, and it has disappeared from much of its former range. The most recent records occur in an area from near Wowan, north to Bowen, west to beyond Winton. The area of occupancy is estimated to be 20 km², although all population estimates are considered to have low reliability. The distribution of the Star Finch (eastern) overlaps with the following EPBC Act-listed threatened ecological communities:	None Observed	Unlikely

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
				• Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions, • The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin, • Bluegrass (Dichanthium spp.) dominant grasslands of the Brigalow Belt Bioregions (North and South), • Brigalow (*Acacia harpophylla* dominant and co-dominant), and • White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Approved Conservation advice for *Neochmia ruficauda ruficauda*, 2008).		
Numenius madagascariensis	Eastern curlew	CE Marine Migratory	E	Distributed through coastal areas of Australia and New Zealand. It uses a variety of coastal, tidal and wetlands that provide suitable foraging habitat for its probing habit.	None Observed	Unlikely
Poephila cincta cincta	Black-throated finch (white-rumped subspecies)	E	E	A social, small finch feeding primarily on grass seed (Morcombe 2000). It occurs mainly in grassy, open woodlands and forests, typically dominated by *Eucalyptus*, *Corymbia* and *Melaleuca*, and occasionally in tussock grasslands or other habitats (for example freshwater wetlands), often along or near watercourses, or in the vicinity of water (Baldwin 1976; Britton & Britton 2000; BTF Recovery Team 2004; Ley & Cook 2001; NRA 2005; Wieneke 1989 in DOE 2013h). It is generally never far from water (Morcombe 2000) and it is likely that permanent sources of water (and the habitat surrounding these) provide refuge for Black-throated Finches (southern) during the dry season, especially during drought years (NRA 2007 in DOE 2013h).	Marginal	Low

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
Rostratula australis	Australian Painted Snipe	E Marine	V	Widespread throughout Australia, but more commonly anticipated from eastern states (Barrett et al. 2003; Blakers et al. 1984; Marchant & Higgins 1993; Rogers et al. 2005 in DOE 2013j) , the species preferred habitat is the margins and shallows of well vegetated, permanent or ephemeral wetlands Morcombe (2000). Preference is often cited for low dense cover such as lignum (Marchant & Higgins 1993) tea tree (Leach et al. 1987), though the species is also cited as occurring in inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains (DOE 2013k).	None Observed	Unlikely
Thalassarche impavida	Campbell Albatross	V Marine	LC	The Campbell Albatross is a non-breeding visitor to Australian waters. Non-breeding birds are most commonly seen foraging over the oceanic continental slopes off Tasmania, Victoria and New South Wales (EA, 2001f). After breeding, birds move north and may enter Australia's temperate shelf waters (Marchant and Higgins 1990).		Unlikely
Turnix melanogaster	Black-breasted Button-quail	V	V	Endemic to south and eastern Queensland and Northern New South Wales. The black-breasted button-quail is usually associated with the drier rainforest, vine forests and thickets. A crucial foraging requirement is a deep leaf litter layer. References: DOE 2012a, Pizzey & Knight 1997, Slater 1994.	None Observed	Unlikely

Table 7 RNAU Likelihood of Occurrence - Mammals

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
Mammals						
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	Known from scattered occurrences in eastern central Qld to central NSW (Van Dyck and Strahan, 2008), generally in close association with sandstone escarpments (NSW DECC 2007 in DOE 2013l), cliff lines or rocky terrain (DERM, 2011). Known from Blackdown Tableland (Menkhorst and Knight, 2001).	None Observed	Unlikely

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
Dasyurus hallucatus	Northern Quoll	E	LC	Distributed through northern Australia from the Pilbara in Western Australia to Central Queensland generally within 200 kilometres of the coast. Found in a variety of habitats from eucalypt forests or rainforests to grasslands and desert. Typical habitat commonly includes rocky areas that provide refuge and den sites, although it is also known to use tree hollows as dens (DOE, 2012a, Menkhorst and Knight , 2001, Van Dyck and Strahan 2008).	None Observed	Unlikely
Dasyurus maculatus maculatus	Spotted-tailed quoll	E	E	Spot-tailed quolls are found in a range of forest environments, from rainforest to open woodland. They require forest with suitable den sites such as rock crevices, caves, hollow logs, burrows and tree hollows. They have a large home range and can cover more than six km overnight. The spot-tailed quoll was once common throughout southeastern Australia, including Tasmania. However, since European settlement it has become rare across most of its range.		Unlikely
Macroderma gigas	Ghost Bat	V	E	A carnivorous bat with patchy distribution across northern Australia. Generally associated with caves, roack shelters, overhangs and mine shafts.	None Observed	Unlikely
Nyctophilus corbeni	South-eastern Long-eared Bat	V	V	The distribution of *Nyctophilus corbeni* includes south-eastern Australia primarily through the Murray-Darling Basin and the western slopes of the Great Dividing Range (Churchill 2008, DOE 2012a). The habitat of eastern long-eared bat comprises primarily a range of woodland vegetation types but also includes open forests and vine thickets (Churchill 2008, DOE 2012a). This species is typically considered an "inland" species and is a bat of forests and woodlands, heavily dependent on tree hollow habitat in which it roosts(Churchill 2008)	Marginal	Low
Petauroides volans	Greater Glider	V	V	The greater glider is an arboreal nocturnal marsupial, largely restricted to eucalypt forests and woodlands. It is primarily folivorous, with a diet mostly comprising eucalypt leaves, and occasionally flowers (Kehl & Borsboom 1984; Kavanagh & Lambert 1990; van der Ree et al., 2004). It is typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows (Andrews		Unlikely

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
				et al., 1994; Smith et al., 1994, 1995; Kavanagh 2000; Eyre 2004; van der Ree *et al.,* 2004; Vanderduys *et al.,* 2012). The distribution may be patchy even in suitable habitat (Kavanagh, 2000). The greater glider favours forests with a diversity of eucalypt species, due to seasonal variation in its preferred tree species (Kavanagh, 1984).		
Phascolarctos cinereus	Koala	V	V	Endemic to eastern and southern Australia. The koala inhabits eucalypt forests and woodlands. (Menkhorst and Knight, 2001,Van Dyck and Strahan 2008). Occurrence is discontinuous through its range due to abitat fragmentation. Population densities in Central Qld can be low compared to South East Qld with populations as low as 0.01 Koalas/ha (Melzer *et al*.,2000).	Yes	Low
Pteropus poliocephalus	Grey-headed Flying-fox	V	LC	The distribution of the Grey-headed flying-fox extends along coastal eastern Australia from Rockhampton, Queensland, through NSW to Victoria utilising a wide range of forest and woodland communities, depending on availability of fruit and flowers (Churchill 2008).	Marginal	Unlikely
Xeromys myoides	Water Mouse	V	V	Habitat includes mangroves and the associated saltmarsh, sedgelands, clay pans, heathlands and freshwater wetlands. The Central Queensland population is recorded to occur from Proserpine south to approximately Gladstone (DoE, 2015).	None Observed	Unlikely

Table 8 Likelihood of Occurrence Reptiles

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
Reptiles						
Caretta caretta	Loggerhead Turtle	E Marine Migratory	E	Marine,tropical, sub-tropical and temperate waters throughout the world. In Australia occurs in the waters surrounding coral and rocky reefs, seagrass beds and muddy bays (DoE, 2015). This species is marine only and therefore unlikely to be present or impacted by the project.	No (Marine Only)	Unlikely

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
Chelodina mydas	Green turtle	V Marine Migratory	V	Marine. Tropical and sub-tropical waters throughout the world (DoE, 2015). This species is marine only and therefore unlikely to be present or impacted by the project.	No (Marine Only)	Unlikely
Delma torquata	Collared Delma	V	V	Endemic to south-eastern Queensland where it is recorded from disjunct localities. The habitat of collared delma typically includes rocky terrain associated with ridges and hilltops with sparse vegetation, although it has also been recorded from other habitats (DOE 2012a, Ryan 2006, Wilson, 2005). Surface structure in the form of rocks, logs, bark and other coarse woody debris, and mats of leaf litter (typically 30–100 mm thick) appears to be an essential characteristic of the Collared Delma microhabitat and is always present where the species occurs (Brigalow Belt Reptiles Workshop, 2010; DOE 2013o).	None Observed	Unlikely
Denisonia maculata	Ornamental Snake	V	V	A small nocturnal (Cogger, 2000) snake of localised occurrence (Wilson, 2005, Cogger, 2000) The species is known to prefer woodlands and open forests associated with moist areas, particularly gilgai (melon-hole) mounds and depressions in Queensland Regional Ecosystem Land Zone 4, but also lake margins and wetlands (Agnew 2010 pers. comm.; Brigalow Belt Reptiles Workshop 2010; DOE 2013m)	None Observed	Unlikely
Dermochelys coriacea	Leatherback Turtle	E Marine Migratory	E	Marine tropical and temperate waters throughout the world. Has been recorded feeding in coastal waters off all states of Australia (DoE, 2014). This species is marine only and therefore unlikely to be present or impacted by the project.	No (Marine Only)	Unlikely
Egernia rugosa	Yakka Skink	V	V	Endemic of to eastern, central and northern Queensland where it has a fragmented distribution. Yakka skinks live in communal burrows or cavities amongst partially buried rocks and logs, within a variety of vegetated habitats (Cogger, 2000, DOE, 2012a and Wilson, 2005). Generally this species is associated with dry open forests, woodlands and rocky areas (Wilson, 2005)	Marginal	Low

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
Elseya albagula	Southern Snapping Turtle	CE	LC	The white-throated snapping turtle is only found in the Burnett, Fitzroy, Raglan and Mary river drainages of south-east Queensland. It prefers permanent flowing water habitats where there are suitable shelters and refuges (e.g. fallen trees).	Yes	Moderate
Eretmochelys imbricata	Hawksbill turtle	V Marine Migratory	E	Marine tropical subtropical and temperate waters throughout the world. Prefers to feed on sub-tidal and tidal coral and rocky reefs (DoE, 2015). This species is marine only and therefore unlikely to be present or impacted by the project.	No (Marine Only)	Unlikely
Furina dunmalli	Dunmall's Snake	V	V	Endemic to southern and eastern Queensland and northern New South Wales. Its habitat is recorded variably as associated with floodplains of deep-cracking black soils, brigalow vegetation and open forest or woodland vegetation on sandstone derived soils (Cogger, 2000 and DOE, 2012a, Wilson, 2005). The species is considered secretive and difficult to detect (DOE, 2013n).	None Observed	Unlikely
Hemiaspis damelii	Grey Snake		E	Endemic to southern and eastern Queensland and northern New South Wales. The grey snake is generally associated with heavy cracking clay soils of the Brigalow belt and Lockyer Valley in dry sclerophyll forests or woodlands, particularly in association with moist areas or waterways. (Cogger 2000 and Wilson 2005).	None Observed	Unlikely
Lepidochelys olivacea	Olive Ridley Turtle	E Marine Migratory	E	Marine tropical and subtropical waters throughout the world. No concentrated nesting has been found in Australia with no nesting records for eastern Australia (DoE, 2015).	No (Marine Only)	Unlikely
Natator depressus	Flat-backed Turtle	V Marine, Migratory	V	Marine species found around reefs. This species is marine only and therefore unlikely to be present or impacted by the project (DoE, 2015).	No (Marine Only)	Unlikely
Rheodytes leukops	Fitzroy River Turtle	V	V	Fitzroy River Turtles are generally attributed to fast-flowing clear freshwater rivers (Wilson, 2005) and rivers with large deep pools with rocky, gravelly or sandy substrates, connected by shallow riffles, (Department of Sustainability, Environment, Water, Population and Communities, 2012), commonly in association with *Eucalyptus*.	Yes	Moderate

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
				tereticornis, *Casuarina cunninghamiana*, *Callistemon viminalis*, *Melaleuca linariifolia* (Tucker *et al.,* 2001) and *Vallisneria* sp (Cogger *et al.,* 2000 in Department of Sustainability, Environment, Water, Population and Communities, 2012). The bulk of records for this species are associated with the large primary streams of the Fitzroy River system; the Nogoa, Comet, MacKenzie, Connors, Isaac, Dawson and Fitzroy Rivers. Queensland Museum records however, show a 2004 record for Fitzroy River Turtle on the downstream side of Mud Island in the Mouth of the Fitzroy River. This is an estuarine mangrove environment over soft silts. Queensland Museum records show also a 2002 record for this species in the vicinity of Winding Reach some twenty-five (25) kilometres downstream of the Fitzroy River Barrage. This location is also an estuarine habitat over fine silts. These records imply presence of this species in habitats widely varying from commonly-cited typical or "type" habitats.		

Table 9 Likelihood of Occurrence - Sharks

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
Sharks						
Pristis zijsron	Green Sawfish	V Migratory		Habitat includes inshore marine waters, estuaries, river mouths, embankments and along sandy and muddy beaches (DoE, 2015).	No	Unlikely

Table 10 Likelihood of Occurrence - Insects

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act (National)	NC Act (QLD)			
Insects						
Jalmenus eubulus	Pale Imperial Hairstreak		V	*Jalmenus eubulus* is endemic to Australia and associated with eucalypt or acacia woodland and shrubland (Braby, 2000). Acacias are the primary foodplant (Braby, 2000). The species breeds only in old-growth forest and does not appear to colonise regrowth habitats following clearing or other major disturbance (Common and Waterhouse, 1981)	None Observed	Unlikely

Table 11 Likelihood of Occurrence - Flora

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act	NC Act			
Cycas megacarpa		E	E	*Cycas megacarpa* is found in woodland, open woodland and open forests, often in conjunction with a grassy understory. This species is found in habitat dominated by *Eucalyptus crebra* and *Corymbia citriodora* as well as *Corymbia erythrophloia*, *Eucalyptus melanophloia* and *Lophostemon confertus*.	Prior to vegetation clearing habitat suitable for *Cycas megacarpa* would have been present onsite (i.e. 11.12.1 and 11.11.15). However, regrowth of these communities are degraded and unlikely to support this species. The protected plant survey did not identify this species.	Low
Cycas ophiolitica		E	E	*Cycas ophiolitica* grows on hills and slopes in sparse, grassy open forest at altitude ranges from 80–400 m above sea level. Although this species reaches its best development on red clay soils near Marlborough, it is more frequently found on shallow, stony, infertile soils, which are developed on sandstone and serpentinite, and is associated with species such as Corymbia dallachiana, C. erythrophloia, C. xanthope and Eucalyptus fibrosa. Cycas ophiolitica has also been found	Regrowth communities on alluvial loams (e.g. 11.3.4) may be suitable for this species, however, these communities are degraded and unlikely to support this species. The protected plant survey did not identify this species.	Low

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act	NC Act			
				on mudstone in association with Corymbia dallachiana, C. erythrophloia and Eucalyptus crebra, and on alluvial loams with Corymbia intermedia, Eucalyptus drepanophylla and E. tereticornis.		
Tectaria devexa var. *devexa*		E	E	*Tectaria devexa* var. *devexa* typically grows in thin pockets of soil on the walls and floor near the entrance to limestone caves. It can occur deeper within the cave in situations where sufficient natural light and moisture are available to support plant growth.	No	Unlikely
Graptophyllum excelsum		-	NT	This species is restricted to Queensland, extending from near Mt Larcom north to the Chillagoe- Mt Mungana area. Typically it grows on rocky hillsides in semi-evergreen vine-thickets.	No	Unlikely
Marsdenia brevifolia		V	V	North of Rockhampton, *Marsdenia brevifolia* grows on serpentine rock outcrops or crumbly black soils derived from serpentine in eucalypt woodland, often with Broad-leaved Ironbark (*Eucalyptus fibrosa*) and *Corymbia xanthope*.	No	Unlikely
Parsonsia larcomensis		V	V	Occurs in open heathland and shrubland at or near the summits of mountain peaks from 350 to 750 m elevations and is restricted to central east and south-east Queensland.	No	Unlikely
Capparis humistrata		-	E	*Capparis humistrata* grows in eucalypt woodland with a shrubby understorey, on stony hard ridges and serpentinite soil. It also occurs on the margins of Brigalow forest on sandy soil.	No	Unlikely

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act	NC Act			
Bertya pedicellata		-	NT	Near Rockhampton, Bertya pedicellata is known from Mount Jim Crow National Park where it grows in heath on dark-brown loam over trachyte.	No	Unlikely
Pultenaea setulosa		V	V	In Queensland, *Pultenaea setulosa* grows on serpentinite substrates in *Eucalyptus fibrosa* and/or *Corymbia xanthope* woodlands or open forests.	No	Unlikely
Callicarpa thozetii		-	E	*Callicarpa thozetii* grows on shallow, stony, clay loam soils on slopes in open eucalyptus forest of *Eucalyptus acmenoides*, *E. citriodora*, and *E. intermedia*.	No	Unlikely
Eucalyptus raveretiana	Black iron box	V	-	Black ironbox usually grows along watercourses, and sometimes on river flats or open woodland. Soil varies from sand through to heavy clay. Altitudinal range is 0–300 m and the climate of the area is sub-tropical with an annual rainfall of 650–1100 m.	Yes, habitat suitable for black iron box occurs along Limestone and Ramsay Creek	Present
Corymbia xanthope	Glen Geddes Bloodwood	V	V	*Corymbia xanthope* occurs in woodlands with *Eucalyptus fibrosa* on ridges or hill slopes on serpentinite geology with sandy soils.	No	Unlikely
Backhousia oligantha		-	E	Near Rockhampton, Backhousia oligantha occurs within the Mount Archer National Park, on steep rocky mountain slopes on skeletal soils in low shrubland.	No	Unlikely
Stackhousia tryonii		-	NT	Clay loam soils on serpentine geology, associated with *Eucalyptus* spp. woodland. Disturbed areas, including roadsides.	Potential habitat onsite includes *Eucalypt* spp. woodland on alluvial soils (11.3.4). The protected plant survey did not identify this species.	Moderate
Corchorus hygrophilus		-	V	*Corchorus hygrophilus* occurs on vine forest margins or in sclerophyll forest adjacent to	No	Unlikely

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act	NC Act			
				vine forest. It grows among boulders and on soils derived from granite or limestone.		
Pimelea leptospermoides		V	NT	This species grows on stony hillsides and sandy clay in *Eucalyptus fibrosa* and *Corymbia xanthope* open woodland.	No	Unlikely
Livistona drudei	Halifax fan palm	-	V	*Livistona drudei* occurs in Melaleuca swamp-forest and fringes of gallery- or tropical-rainforest bordering on eucalypt forest.	No	Unlikely
Cossinia australiana	Cossinia	V	V	Cossinia is known from fragmented relict patches of Araucarian vineforests or vine thickets on fertile soils in central and southern Queensland.	No	Unlikely
Dichanthium setosum		E	LC	*Dichanthium setosum* occurs in heavy soils (predominantly cracking clays or alluvium, often in gilgai) in woodland or open woodland usually dominated by Acacia (brigalow) and/or Eucalyptus species.	Potential habitat for Dichanthium setosum includes Eucalypt spp. woodland on alluvial soils (11.3.4). This habitat however has been historically cleared and is regrowth, with a heavily disturbed understorey.	Low
Phaius australis	Lesser swamp-orchid	E	E	*Phaius australis* is commonly associated with coastal wet heath/sedgeland wetlands, swampy grassland or swampy forest and often where broad-leaved paperbark or swamp Mahogany grows. It is typically restricted to swamp-forest margins, where it occurs in swamp sclerophyll forest, swampy rainforest, or fringing open forest.	No	Unlikely

Scientific Name	Common Name	Conservation Status		Habitat Preference	Habitat Present on Site?	Likelihood of Occurrence
		EPBC Act	NC Act			
Samadera bidwillii	Quassia	V	V	Quassia commonly occurs in lowland rainforest or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland. Quassia is commonly found in areas adjacent to both temporary and permanent watercourses in locations up to 510 m altitude.	Habitat potentially present around Limestone Creek	Moderate

Appendix C

Vegetation Survey Field Data

Rapid Flora Site

SITE INFORMATION

Project	Rockhampton RNAU	Site No.	S1
Date	22/02/2017	Latitiude	-23.312432°
Observers	GT	Longitude	150.515892°
Bioregion	11 - Brigalow Belt	Datum/Zone	GDA'94/ 56K
Mapped RE	Non-remnant	Landform	Creek, with basalt
Confirmed RE	RE 11.3.25a	Soils	Alluvial soil
Landzone	3 - Alluvial	Photo No.	Yes

VEGETATION STRUCTURAL DESCRIPTION

Open forest of *Eucalyptus raveretiana* and *Melaleuca fluviatalis* over low open forest of **Leucaena leucocephala* and *Casuarina cunninghamiana*

GENERAL SITE COMMENTS/DISTURBANCE/VEGETATION CONDITION

Limestone creek

SPECIES

Coll. No.	Species	Stratum	Height (m)	Cover (%)*
	Eucalyptus raveretiana	T1	15-20	50
	Melaleuca fluviatilis	T1	10-15	5
	Ficus sp.	T1	10-12	2
	Leucaena leucocephala	T2	5-8	50
	Casuarina cunninghamiana	T2	5-8	10
	Melaleuca viminalis	T2	8	2
	Eucalyptus sp.	T3	4	1
	Ruellia simplex	G	0.6	90
	Megathyrsus maximus	G	1	5

*visual estimate of cover

PHOTOS





Rapid Flora Site

SITE INFORMATION

Project	Rockhampton RNAU	Site No.	S2
Date	22/02/2017	Latitude	-23.313554°
Observers	GT	Longitude	150.510977°
Bioregion	11 - Brigalow Belt	Datum/Zone	GDA'94/ 56K
Mapped RE	Non-remnant	Landform	Flat plain
Confirmed RE	RE 11.3.4	Soils	Alluvial
Landzone	3 - Alluvial	Photo No.	Yes

VEGETATION STRUCTURAL DESCRIPTION

Open Forest of *Eucalyptus tereticornis* , *Corymbia tessellaris* and *Eucalyptus platyphylla*

GENERAL SITE COMMENTS/DISTURBANCE/VEGETATION CONDITION

Regrowth vegetation

SPECIES

Coll. No.	Species	Stratum	Height (m)	Cover (%)*
	Eucalyptus tereticornis	T1	10-15	31.6
	Corymbia tessellaris	T1	10-15	18
	Eucalyptus platyphylla	T1	10-15	8
	Corymbia tessellaris	T2	8	4
	Corymbia intermedia	T2	9	10
	Passiflora foetida	G		
	Heteropogon contortus	G		
	Stylosanthes scabra	G		
	Sida hackettiana	G		
	Breynia oblongifolia	G		
	Lantana montevidensis	G		
	Themeda triandra	G		
	Acacia leiocalyx			Opp.
	Eucalyptus crebra			Opp.
	Angophora floribunda			Opp.

*cover measures along a 50 x 10 m transect

PHOTOS





Rockhamptom RNAU Protected Plants Survey, 2017

Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Acacia salicina*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Opuntia stricta*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Corymbia erythrophloia*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Corymbia tessellaris*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Albizia lebbeck*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Megathyrsus maximus*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Eucalyptus melanophloia*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Lantana camara*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Macroptilium atropurpureum*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Hybanthus stellarioides*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Stylosanthes scabra*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Bothriochloa* sp.
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Cynodon dactylon*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Lantana montevidensis*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Crotalaria* sp.
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Tridax procumbens*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Atalaya hemiglauca*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	0 to 5	*Passiflora foetida*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Euphorbia cyathopoda*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Eremophila debilis*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Acacia* sp.
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Alphitonia excelsa*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Petalostigma pubescens*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Carissa ovata*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Themeda triandra*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Heteropogon contortus*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Sarga leiocladum*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Aristida* sp.
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Eucalyptus crebra*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Eucalyptus platyphylla*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Gomphrena celosioides*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Alternanthera pungens*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	5 to 10	*Leucaena leucocephala*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	10 to 15	*Angophora leiocarpa*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	10 to 15	*Typha domingensis*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	10 to 15	*Acacia farnesiana*

Rockhamptom RNAU Protected Plants Survey, 2017

Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	10 to 15	*Amyema miquelii*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	10 to 15	*Erigeron bonariensis*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	10 to 15	*Chloris gayana*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	10 to 15	*Arecaceae* sp.
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	10 to 15	*Sorghum halepensis*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	10 to 15	*Melinis repens*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	10 to 15	*Angophora floribunda*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	15 to 20	*Delonix regia*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	15 to 20	*Murrayana paniculatum*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	15 to 20	*Bauhinia* sp.
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	15 to 20	*Hibiscus tiliaceus*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	15 to 20	*Corymbia torelliana*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	15 to 20	*Ficus* sp.
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	15 to 20	*Eucalyptus tereticornis*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	15 to 20	*Schefflera actinophylla*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	15 to 20	*Melaleuca bracteata*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	15 to 20	*Cirsium vulgare*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	15 to 20	*Macroptilium lathyroides*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	15 to 20	*Portulaca filifolia*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	20 to 25	*Enteropogon ramosus*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	20 to 25	*Urochloa* sp.
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	20 to 25	*Casuarina* sp.
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	20 to 25	*Archidendropsis basaltica*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	20 to 25	*Brachychiton rupestris*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	25 to 30	*Ricinus communis*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	25 to 30	*Eucalyptus raveretiana*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	25 to 30	*Ruellia simplex*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	25 to 30	*Cyperus involucratus*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	30 to 35	*Myriophyllum aquaticum*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	30 to 35	*Eustrephus latifolius*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	30 to 35	*Lysimachia arvensis*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	30 to 35	*Persicaria* sp.
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	30 to 35	*Geijera salicifolia*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	30 to 35	*Melaleuca fluviatilis*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	30 to 35	*Casuarina cunninghamiana*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	30 to 35	*Melaleuca viminalis*

Rockhamptom RNAU Protected Plants Survey, 2017

Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	35 to 40	*Sida cordifolia*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	35 to 40	*Corymbia intermedia*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	35 to 40	*Bidens pilosa*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	40 to 45	*Melia azedarach*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	40 to 45	*Breynia oblongifolia*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	40 to 45	*Gomphocarpus physocarpus*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	45 to 50	NA
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	50 to 55	*Agave* sp.
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	55 to 60	*Imperata cylindrica*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	55 to 60	*Leonotis nepetifolia*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	60 to 65	NA
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	65 to 70	*Lomandra* sp.
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	70 to 75	*Lysiphyllum hookeri*
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	75 to 80	NA
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	80 to 85	NA
Meander 1	Timed meander	-23.31909	150.51638	M01	22/02/2017	GT	85 to 90	NA
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	0 to 5	*Eucalyptus camaldulensis*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	0 to 5	*Albizia lebbeck*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	0 to 5	*Megathyrsus maximus*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	0 to 5	*Euphorbia cyathophora*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	0 to 5	*Acacia salicina*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	0 to 5	*Lantana camara*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	0 to 5	*Leonotis nepetifolia*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	0 to 5	*Melia azedarach*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	0 to 5	*Cryptostegia grandiflora*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	0 to 5	*Cyperus* sp.
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	0 to 5	*Urochloa* sp.
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	0 to 5	*Erigeron bonariensis*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	0 to 5	*Ficus* sp.
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	5 to 10	*Corymbia tessellaris*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	5 to 10	*Gomphrena celosioides*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	5 to 10	*Cynodon dactylon*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	5 to 10	*Melaleuca fluviatilis*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	5 to 10	*Geijera salicina*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	5 to 10	*Casuarina cunninghamiana*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	5 to 10	*Angophora floribunda*

Rockhamptom RNAU Protected Plants Survey, 2017

Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	5 to 10	*Themeda quadrivalvis*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	5 to 10	*Chloris gayana*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	10 to 15	*Sida hackettiana*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	10 to 15	*Lantana montevidensis*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	10 to 15	*Leucaena leucocephala*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	10 to 15	*Macroptilium atropurpureum*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	10 to 15	*Heteropogon contortus*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	10 to 15	*Passiflora foetida*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	10 to 15	*Cenchrus ciliaris*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	15 to 20	*Stylosanthes scabra*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	15 to 20	*Glandularia aristigera*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	15 to 20	*Melaleuca leucadendron*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	15 to 20	*Angophora leiocarpa*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	15 to 20	*Bothriochloa pertusa*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	20 to 25	*Eucalyptus crebra*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	20 to 25	*Tridax procumbens*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	25 to 30	*Bougainvillea* sp.
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	25 to 30	*Arecaceae* sp.
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	30 to 35	*Tabebuia aurea*
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	35 to 40	N/A
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	40 to 45	N/A
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	45 to 50	N/A
Meander 2	Timed meander	-23.28179	150.50952	M02	22/02/2017	GT	50 to 55	N/A
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Corymbia tessellaris*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Planchonia careya*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Eucalyptus platyphylla*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Eucalyptus crebra*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Bothriochloa pertusa*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Eriocereus martinii*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Stylosanthes scabra*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Gomphrena celosioides*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Cyanthillium cinereum*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Eremophila debilis*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Eucalyptus dallachiana*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Acacia salicina*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Ficus oppositifolia*

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Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Eucalyptus tereticornis*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Melaleuca leucadendra*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Urochloa mosambicensis*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Portulaca oleracea*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Macroptilium atropurpureum*
Transect 1	Transect	23.2833	150.5104	T01	4/06/2017	CT	N/A	*Cyperus gracilis*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Bothriochloa pertusa*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Melinis repens*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Macroptilium atropurpureum*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Chloris gayana*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Albizia* sp.
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Acacia salicina*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Buckinghamia celsissima*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Macroptilium lathyroides*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Corymbia tessellaris*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Mimosa pudica*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Tridax procumbens*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Gomphrena celosioides*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Malvastrum americanum*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Echinochloa colona*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Stylosanthes scabra*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Sesbania cannabina*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Sorghum* sp.
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Eucalyptus tereticornis*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Urochloa mosambicensis*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Indigofera linifolia*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Dactyloctenium radulans*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Cynodon dactylon*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Heteropogon contortus*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Stachytarpheta jamaicensis*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Passiflora foetida*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Vachellia bidwillii*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Hyparrhenia rufa*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Trianthema portulacastrum*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Eucalyptus crebra*
Transect 2	Transect	23.2852	150.5097	T02	4/06/2017	CT	N/A	*Panicum effusum*

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Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Eucalyptus tereticornis*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Lantana camara*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Melia azedarach*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Acacia salicina*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Megathyrsus maximus*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Sida* sp.
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Echinochloa colona*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Sesbania cannabina*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Cryptostegia grandiflora*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Cynodon dactylon*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Sorghum halepense*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Schinus terebinthifolius*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Stachytarpheta jamaicensis*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Passiflora foetida*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Bothriochloa pertusa*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Typha domingensis*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Glandularia aristigera*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Macroptilium lathyroides*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Bidens pilosa*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Tridax procumbens*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Hyparrhenia rufa*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Bothriochloa pertusa*
Transect 3	Transect	23.2881	150.5098	T03	4/06/2017	CT	N/A	*Dactyloctenium radulans*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Stylosanthes scabra*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Bothriochloa pertusa*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Stachytarpheta jamaicensis*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Acacia salicina*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Schinus terebinthifolius*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Tamarix aphylla*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Gomphrena celosioides*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Megathyrsus maximus*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Macroptilium lathyroides*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Sida hackettiana*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Lantana camara*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Alphitonia excelsa*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Malvastrum americanum*

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Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Sida cordifolia*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Rhynchosia minima*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Breynia oblongifolia*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Cryptostegia grandiflora*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Bidens pilosa*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Acacia disparrima*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Cenchrus ciliaris*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Heteropogon contortus*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Dichanthium sericeum*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Lantana montevidensis*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Tribulus terrestris*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Achyranthes aspera*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Eucalyptus melanophloia*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Syagrus romanzoffiana*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Corymbia torelliana*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Schefflera actinophylla*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Glandularia aristigera*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Dactyloctenium radulans*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Eriocereus martinii*
Transect 4	Transect	23.2912	150.5123	T04	4/06/2017	CT	N/A	*Bryophyllum delagoense*
Transect 5	Transect	23.2933	150.5117	T05	4/06/2017	CT	N/A	*Corymbia torelliana*
Transect 5	Transect	23.2933	150.5117	T05	4/06/2017	CT	N/A	*Dypsis lutescens*
Transect 5	Transect	23.2933	150.5117	T05	4/06/2017	CT	N/A	*Bothriochloa pertusa*
Transect 5	Transect	23.2933	150.5117	T05	4/06/2017	CT	N/A	*Tridax procumbens*
Transect 5	Transect	23.2933	150.5117	T05	4/06/2017	CT	N/A	*Megathyrsus maximus*
Transect 5	Transect	23.2933	150.5117	T05	4/06/2017	CT	N/A	*Plumeria* sp.
Transect 5	Transect	23.2933	150.5117	T05	4/06/2017	CT	N/A	*Eucalyptus crebra*
Transect 5	Transect	23.2933	150.5117	T05	4/06/2017	CT	N/A	*Melaleuca leucadendra*
Transect 5	Transect	23.2933	150.5117	T05	4/06/2017	CT	N/A	*Macrozamia miquelii*
Transect 5	Transect	23.2933	150.5117	T05	4/06/2017	CT	N/A	*Gomphrena celosioides*
Transect 5	Transect	23.2933	150.5117	T05	4/06/2017	CT	N/A	*Melia azedarach*
Transect 5	Transect	23.2933	150.5117	T05	4/06/2017	CT	N/A	*Licuala ramsayi*
Transect 5	Transect	23.2933	150.5117	T05	4/06/2017	CT	N/A	*Cycas* sp. (planted)
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Bothriochloa pertusa*
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Chloris gayana*
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Trianthema portulacastrum*

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Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Gomphrena celosioides*
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Urochloa mosambicensis*
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Tridax procumbens*
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Melaleuca viminalis*
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Delonix regina*
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Corymbia torelliana*
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Megathyrsus maximus*
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Malvastrum americanum*
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Catharanthus roseus*
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Lomandra longifolia*
Transect 6	Transect	23.2959	150.5123	T06	4/06/2017	CT	N/A	*Bauhinia* sp.
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Bothriochloa pertusa*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Chloris gayana*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Melinis repens*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Gomphrena celosioides*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Portulaca oleracea*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Cynodon dactylon*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Urochloa mosambicensis*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Tridax procumbens*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Macroptilium atropupureum*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Macroptilium lathyroides*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Cenchrus echinatus*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Megathyrsus maximus*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Malvastrum americanum*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Delonix regina*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Albizia lebbeck*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Portulaca pilosa*
Transect 7	Transect	23.2978	150.513	T07	4/06/2017	CT	N/A	*Trianthema portulacastrum*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Chloris gayana*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Melinis repens*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Bothriochloa pertusa*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Bauhinia* sp.
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Buckinghamia celsissima*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Bidens pilosa*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Megathyrsus maximus*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Albizia lebbeck*

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Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Gomphrena celosioides*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Maroptilium atropurpureum*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Lantana camara*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Breynia oblongifolia*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Passiflora foetida*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Dactyloctenium radulans*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Acacia salicina*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Leucaena leucocephala*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Stachytarpheta jamaicensis*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Cryptostegia grandiflora*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Alphitonia excelsa*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Vachellia bidwillii*
Transect 8	Transect	23.2987	150.5126	T08	4/06/2017	CT	N/A	*Echinochloa colona*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Bothriochloa pertusa*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Albizia lebbeck*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Pennisetum* sp.
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Plumeria* sp.
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Eucalyptus tereticornis*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Melinis repens*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Corymbia torelliana*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Corymbia citriodora*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Megathyrsus maximus*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Bidens pilosa*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Stachytarpheta jamaicensis*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Clitoria ternatea*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Macroptilium atropurpureum*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Malvastrum americanum*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Eriocereus martinii*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Acacia salicina*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Tridax procumbens*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Koelreuteria paniculata*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Passiflora foetida*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Lantana camara*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Leucaena leucocephala*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Delonix regina*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Melaleuca bracteata*

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Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Brachychiton australis*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Melaleuca linariifolia*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Gomphrena celosioides*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Stylosanthes scabra*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Sorghum halepense*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Breynia oblongifolia*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Indigofera linifolia*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Corymbia tessellaris*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Indigofera linifolia*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Sida cordifolia*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Macadamia* sp. (planted)
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Portulaca pilosa*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Schefflera actinophylla*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Eucalyptus platyphylla*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Tipuana tipu*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Ficus virens*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Eucalyptus* sp.
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Opuntia stricta*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Heteropogon contortus*
Transect 9	Transect	23.3025	150.5133	T09	4/06/2017	CT	N/A	*Ficus oppositifolia*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Melinis repens*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Megathyrsus maximus*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Passiflora foetida*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Chloris gayana*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Stachytarpheta jamaicensis*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Bothriochloa pertusa*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Cynodon dactylon*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Macroptilium atropurpureum*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Stylosanthes scabra*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Mimosa pudica*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Gomphrena celasoides*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Macroptilium lathyroides*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Leucaena leucocephala*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Acacia salicina*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Lantana camara*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Eucalyptus tereticornis*

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Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Cenchrus ciliaris*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Opuntia stricta*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Portulaca pilosa*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Erythrina vespertilio*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Tridax procumbens*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Sida hackettiana*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Corymbia tessellaris*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Echinochloa colona*
Transect 10	Transect	23.3087	150.5101	T10	4/06/2017	CT	N/A	*Corymbia intermedia*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Megathyrsus maximus*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Eucalyptus moluccana*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Lantana camara*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Leucaena leucocephala*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Corymbia torelliana*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Passiflora foetida*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Clitoria ternatea*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Hyparrhenia rufa*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Indigofera linifolia*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Vachellia bidwillii*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Acacia salicina*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Eucalyptus tereticornis*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Melinis repens*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Corymbia citriodora*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Cryptostegia grandiflora*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Malvastrum americanum*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Sorghum halepense*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Eucalyptus crebra*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Eucalyptus platyphylla*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Stachytarpheta jamaicensis*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Stylosanthes scabra*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Corymbia intermedia*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Albizia lebbeck*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Urochloa mosambicensis*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Acacia salicina*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Cyanthillium cinereum*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Melaleuca leucadendra*

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Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Rhynchosia minima*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Allocasuarina littoralis*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Breynia oblongifolia*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Sida hackettiana*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Emelia sonchifolia*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Glycine tabacina*
Transect 11	Transect	23.3101	150.5088	T11	4/06/2017	CT	N/A	*Lophostemon confertus*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Eucalyptus crebra*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Eucalyptus tereticornis*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Melaleuca leucadendra*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Alphitonia excelsa*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Corymbia tessellaris*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Bothriochloa pertusa*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Gomphrena celosioides*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Acacia salicina*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Cyperus gracilis*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Alternanthera pungens*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Malvastrum americanum*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Eucalyptus moluccana*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Cynodon dactylon*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Indigofera linnaei*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Grevillea robusta*
Transect 12	Transect	23.3081	150.5156	T12	4/06/2017	CT	N/A	*Melaleuca viminalis*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Corymbia dallachiana*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Eucalyptus melanophloia*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Corymbia erythrophloia*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Leucaena leucocephala*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Melinis repens*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Chloris gayana*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Vachellia bidwillii*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Breynia oblongifolia*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Acacia salicina*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Heteropogon contortus*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Gomphrena celosioides*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Passiflora foetida*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Indigofera linifolia*

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Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Megathyrsus maximus*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Stylosanthes scabra*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Hybanthus* sp.
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Emilia sonchifolia*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Alstonia constricta*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Corymbia tessellaris*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Bidens pilosa*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Macroptilium atropurpureum*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Corymbia intermedia*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Eustrephus latifolius*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Opuntia stricta*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Urochloa mosambicensis*
Transect 13	Transect	23.3126	150.5199	T13	4/06/2017	CT	N/A	*Tridax procumbens*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Megathyrsus maximus*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Chloris gayana*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Acacia salicina*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Bothriochloa pertusa*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Clitoria ternatea*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Macroptilium atropurpureum*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Lantana camara*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Corymbia dallachiana*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Albizia lebbeck*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Gomphrena celosioides*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Passiflora foetida*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Gomphocarpus physocarpus*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Stachytarpheta jamaicensis*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Neptunia gracilis*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Stylosanthes scabra*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Glycine tabacina*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Eremophila debilis*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Leucaena leucocephala*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Cymbopogon refractus*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Themeda triandra*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Atalaya hemiglauca*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Cryptostegia grandiflora*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Dichanthium sericeum*

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Site	Survey Type	Lat	Long	GPS ID	Date	Collector	Time	*Species*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Opuntia stricta*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Eucalyptus tereticornis*
Transect 14	Transect	23.3132	150.5199	T14	4/06/2017	CT	N/A	*Erigeron bonariensis*

Appendix D

Flora Species Field List

Flora species recorded within the Project Area in February and May 2017

* denotes an introduced species, C3 = Class 3 restricted plant under the Biosecurity Act, WONS = Weeds of National Significance

FAMILY		SPECIES
ACANTHACEAE	*	*Ruellia simplex*
AGAVACEAE	*	*Agave americana*
AIZOACEAE	*	*Trianthema portulacastrum*
AMARANTHACEAE		*Achyranthes aspera*
	*	*Alternanthera pungens*
	*	*Gomphrena celosioides*
ANACARDIACEAE	*, C3	*Schinus terebinthifolius*
APOCYNACEAE		*Alstonia constricta*
		Carissa ovata
	*	*Catharanthus roseus*
	*, C3, WONS	*Cryptostegia grandiflora*
	*	*Gomphocarpus physocarpus*
	*	*Plumeria* sp.
ARALIACEAE		*Schefflera actinophylla*
ARECACEAE	*	*Arecaceae* sp.
	*	*Dypsis lutescens*
		Licuala ramsayi
	*	*Syagrus romanzoffiana*
ASTERACEAE	*	*Bidens pilosa*
	*	*Cirsium vulgare*
		Cyanthillium cinereum
	*	*Emilia sonchifolia*
	*	*Erigeron bonariensis*
	*	*Tridax procumbens*
BIGNONIACEAE	*	*Tabebuia aurea*
CACTACEAE	*, C3	*Harrisia martinii*
	*, WONS	*Opuntia stricta*
CAESALPINIACEAE	*	*Bauhinia* sp.
	*	*Delonix regia*
		Lysiphyllum hookeri
CASUARINACEAE		*Allocasuarina littoralis*
		Casuarina cunninghamiana
		Casuarina sp.
CRASSULACEAE	*	*Bryophyllum delagoense*
CYCADACEAE		*Cycas sp.* (planted)
CYPERACEAE		*Cyperus gracilis*
	*	*Cyperus involucratus*

Flora species recorded within the Project Area in February and May 2017

* denotes an introduced species, C3 = Class 3 restricted plant under the Biosecurity Act, WONS = Weeds of National Significance

FAMILY		SPECIES
EUPHORBIACEAE	*	*Euphorbia cyathophora*
	*	*Ricinus communis*
FABACEAE	*	*Clitoria ternatea*
	*	*Crotalaria* sp.
		Erythrina vespertilio
		Glycine tabacina
		Indigofera linifolia
		Indigofera linnaei
	*	*Macroptilium atropurpureum*
	*	*Macroptilium lathyroides*
		Rhynchosia minima
		Sesbania cannabina
	*	*Stylosanthes scabra*
	*	*Tipuana tipu*
HALORAGACEAE	*	*Myriophyllum aquaticum*
LAMIACEAE	*	*Leonotis nepetifolia*
LAXMANNIACEAE		*Eustrephus latifolius*
		Lomandra longifolia
		Lomandra sp.
LECYTHIDACEAE		*Planchonia careya*
LORANTHACEAE		*Amyema miquelii*
MALVACEAE		*Hibiscus tiliaceus*
	*	*Malvastrum americanum*
		Sida hackettiana
		Sida sp.
MELIACEAE		*Melia azedarach*
MIMOSACEAE		*Acacia disparrima* subsp. *disparrima*
		Acacia leiocalyx subsp. *leiocalyx*
		Acacia salicina
		Acacia sp.
		Albizia lebbeck
		Albizia sp.
		Archidendropsis basaltica
	*	*Leucaena leucocephala*
	*	*Mimosa pudica*
		Neptunia gracilis
		Vachellia bidwillii
	*	*Vachellia farnesiana*
MORACEAE		*Ficus opposita*
		Ficus sp.
		Ficus virens

Flora species recorded within the Project Area in February and May 2017

* denotes an introduced species, C3 = Class 3 restricted plant under the Biosecurity Act, WONS = Weeds of National Significance

FAMILY		SPECIES
MYRSINACEAE	*	*Lysimachia arvensis*
MYRTACEAE		*Angophora floribunda*
		Angophora leiocarpa
		Corymbia citriodora
		Corymbia dallachiana
		Corymbia erythrophloia
		Corymbia intermedia
		Corymbia tessellaris
		Corymbia torelliana
		Eucalyptus camaldulensis
		Eucalyptus crebra
		Eucalyptus melanophloia
		Eucalyptus moluccana
		Eucalyptus platyphylla
		Eucalyptus raveretiana
		Eucalyptus sp.
		Eucalyptus tereticornis
		Lophostemon confertus
		Melaleuca bracteata
		Melaleuca fluviatilis
		Melaleuca leucadendra
		Melaleuca linariifolia
		Melaleuca viminalis
NYCTAGINACEAE	*	*Bougainvillea glabra*
PASSIFLORACEAE	*	*Passiflora foetida*
PHYLLANTHACEAE		*Breynia oblongifolia*
PICRODENDRACEAE		*Petalostigma pubescens*
POACEAE		*Aristida* sp.
	*	*Bothriochloa pertusa*
		Bothriochloa sp.
	*	*Cenchrus ciliaris*
	*	*Cenchrus echinatus*
	*	*Chloris gayana*
		Cymbopogon refractus
	*	*Cynodon dactylon*
		Dactyloctenium radulans
		Dichanthium sericeum
	*	*Echinochloa colona*
		Enteropogon ramosus
		Heteropogon contortus
	*	*Hyparrhenia rufa*
		Imperata cylindrica
	*	*Megathyrsus maximus*
	*	*Melinis repens*
		Panicum effusum
		Sarga leiocladum
	*	*Sorghum halepense*
		Sorghum sp.

Flora species recorded within the Project Area in February and May 2017

* denotes an introduced species, C3 = Class 3 restricted plant under the Biosecurity Act, WONS = Weeds of National Significance

FAMILY		SPECIES
POACEAE	*	*Themeda quadrivalvis*
		Themeda triandra
	*	*Urochloa mosambicensis*
	*	*Urochloa* sp.
PORTULACACEAE		*Portulaca filifolia*
	*	*Portulaca oleracea*
	*	*Portulaca pilosa*
PROTEACEAE		*Buckinghamia celsissima*
		Grevillea robusta
		Macadamia sp. (planted)
RHAMNACEAE		*Alphitonia excelsa*
RUTACEAE		*Geijera salicifolia*
	*	*Murraya paniculata*
SAPINDACEAE		*Atalaya hemiglauca*
	*	*Koelreuteria elegans* subsp. *formosana*
SCROPHULARIACEAE		*Eremophila debilis*
STERCULIACEAE		*Brachychiton australis*
		Brachychiton rupestris
TAMARICACEAE	*, C3, WONS	*Tamarix aphylla*
TYPHACEAE		*Typha* sp.
VERBENACEAE	*	*Glandularia aristigera*
	*, C3, WONS	*Lantana camara*
	*, C3	*Lantana montevidensis*
	*	*Stachytarpheta jamaicensis*
VIOLACEAE		*Hybanthus stellarioides*
ZAMIACEAE		*Macrozamia miquelii*
ZYGOPHYLLACEAE		*Tribulus terrestris*

Appendix D

Protected Plant Survey

AECOM

Department of Transport and Main Roads
10-Jul-2017
Doc.No. 60528953 REP-00039

Rockhampton Northern Access Upgrade

Protected Plant Survey



Rockhampton Northern Access Upgrade

Protected Plant Survey

Client: Department of Transport and Main Roads

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1.0 Introduction

AECOM Australia Pty Ltd (AECOM) was commissioned by the Department of Transport and Main Roads (DTMR) to undertake a protected plants survey for the Rockhampton Northern Access Upgrade (RNAU) Project ('the Project'). The proposed Project starts 250 m south of the Rockhampton – Yeppoon Road intersection on the Bruce Highway and continues 5.3 km to the north and ends approximately 400 m north of Terranova Drive. The project footprint will be herein referred to as 'the Project area' (Figure 1).

A protected plants survey is required under the Queensland *Nature Conservation Act 1992* (NC Act) if:

a) a project or activity proposes to clear native plants that are 'in the wild',

b) the area to be cleared is shown in blue (i.e. high risk) on the flora survey trigger map, and

c) there are no relevant exemptions (DEHP, 2017).

As the Project will require the clearing of native plants in the wild and the Project area does occur within a high risk area on the flora survey trigger map (Appendix A, Figure 2), a protected plants survey is required. No relevant exemptions are applicable to the Project.

Under Section 257 of the *Nature Conservation (Wildlife Management) Regulation 2006* ('the Regulation'), this survey is required to be undertaken in accordance with the *Flora Survey Guidelines – Protected Plants, Nature Conservation Act 1992* ('the Guidelines') (DEHP 2016).

1.1 Project description

The purpose of the RNAU Project is to improve connectivity and capacity of the national highway which also acts as the only arterial road to service the industrial, commercial and residential developments within the Parkhurst area. The proposed project involves the following elements and activities:

- The alignment is a generally straight alignment with a bridge at each end; the new cross section will be a 4 lane divided carriageway with urban treatments.
- A new 65 m long northbound concrete bridge over Limestone Creek (with the existing bridge to be retained for southbound traffic).
- A new 65 m long separate pedestrian and cyclist bridge over Limestone Creek.
- The upgrade of the un-signalised intersection at Olive Street to signals and the un-signalised intersection at Stirling Drive to a roundabout.
- The upgrade of an existing signalised T-Intersection at Boundary Road (north) to 4 way signals.
- Un-signalised intersections at Bunya Road and Terranova Drive.
- Modification of accesses to businesses and private properties and changes to local government roads.
- Several indented bus bays and on street parking provision.
- Highway runoff will be collected by a pit and pipe system with discharge to Limestone and Ramsay Creeks. Existing cross drainage systems will generally remain as is.
- Relocation of services including Ergon Energy high voltage assets, gas main, telecommunications, optic fibre and the undergrounding of 3.96 km of 600 mm diameter water pipeline. This service is currently above ground and poses a significant risk to the traveling public.
- Construction of two service roads, the southern service road from Boundary Road (north) to Nu Tank Sales and the northern service road from William Palfrey Road to Stirling Drive.
- Construction of a new 33 m long southbound bridge over Ramsay Creek (with the existing bridge retained for northbound traffic).

The works are intended to be undertaken January 2018 through to June 2019.

1.2 Project objective

The main objective of the protected plants survey is to locate any 'Endangered', 'Vulnerable', or 'Near Threatened' (EVNT) plants that may occur within the Project area, and a 100 m buffer around the Project area. This area is termed the 'Clearing Impact Area' (CIA) in the Guidelines, and is the required survey area for a protected plant survey.

If EVNT plants are identified within the CIA, an application for a protected plants clearing permit would be required to be submitted to the Department of Environment and Heritage Protection (DEHP). Alternatively, if no EVNT species are identified, the proposed clearing would be exempt, and following notification to the DEHP, a clearing permit would not be required.

1.3 Project scope

To execute a protected plants survey in accordance with the Guidelines, the following scope of works is required and has been completed:

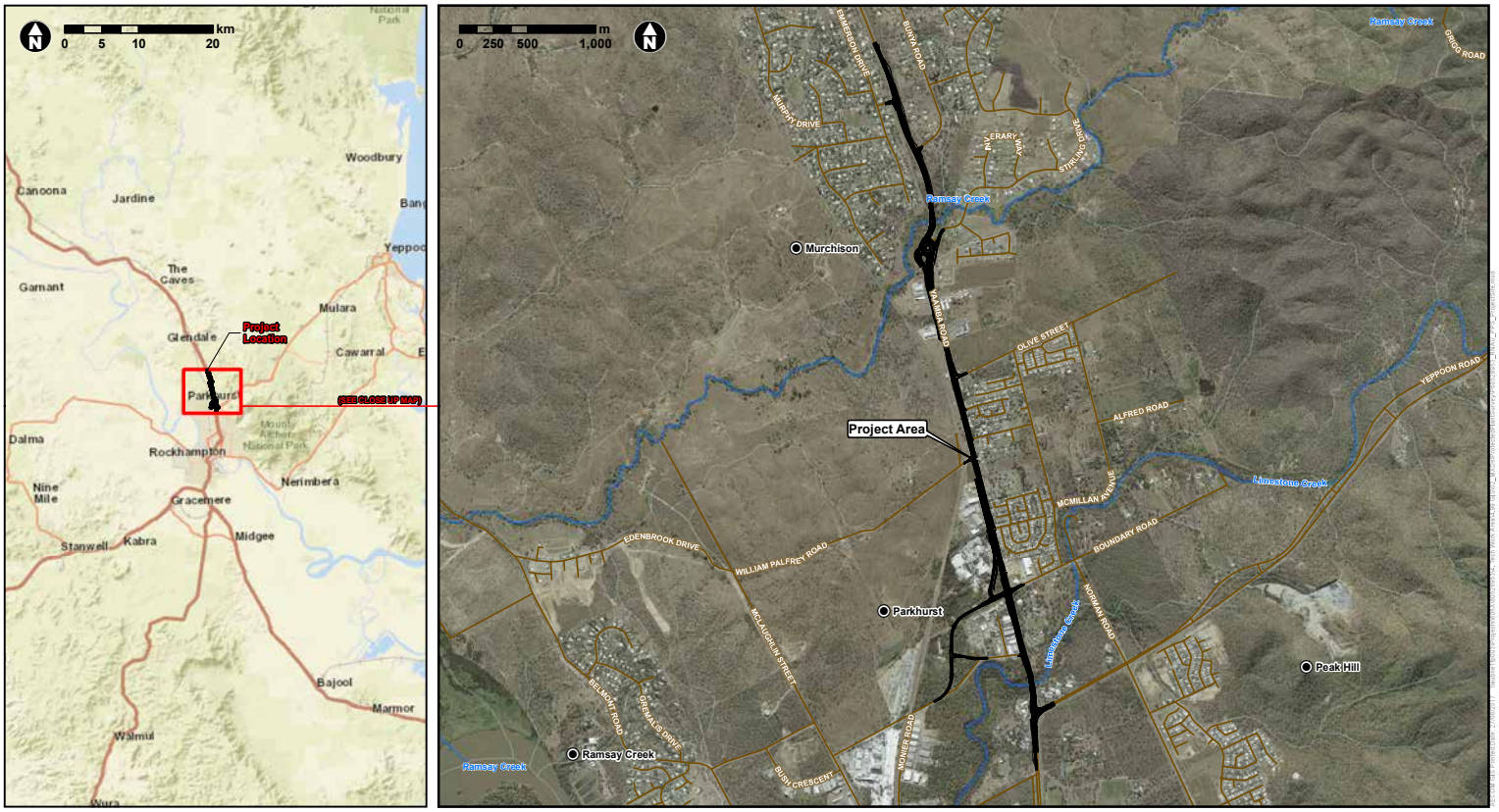
- A desktop assessment of the flora and vegetation values of the Project area using online databases, published and unpublished literature. The desktop assessment specifically identified the following flora and vegetation values:
  - EVNT species that are known or likely to occur within the Project area and surrounds
  - Habitat requirements, distribution and biology of the EVNT species identified
  - Taxonomic descriptions, illustrations and photographs of EVNT species identified, to assist in field identification of target species
  - Habitat values of the Project area, including the presence and type of remnant vegetation.
- A protected plants field survey undertaken by a suitably qualified person, to confirm the presence (or otherwise) of EVNT species within the CIA. If EVNT species are identified, a population survey and habitat assessment of the EVNT species will be undertaken.
- Documentation of the protected plants survey, including:
  - Description of the locality and proposed project including land use, CIA and the dates clearing is expected to occur.
  - Results of the desktop assessment, including a description of the EVNT species likely to occur within the Project area: accepted scientific name, conservation status, and distribution and habitat requirements.
  - Description of the methodology employed to undertake the field survey, including justification of survey timing and effort, and any limitations/assumptions associated with the survey.
  - Results of the survey, including description of the EVNT species identified (if applicable) within the CIA, including their location on site and an estimate of the population size. Global Positioning System (GPS) coordinates for any EVNT species or boundaries of communities.
  - Description of supporting habitat around EVNT species within the CIA.
  - Map illustrating the proposed Project area, CIA, location of on-ground surveys and population of EVNT species (if applicable).

1.4 Assumptions and limitations

The following assumptions and limitations apply to the assessment:

- The intent of the survey was to inform a clearing permit application under the NC Act only, if required. As such, the survey and survey report did not assess the requirements for any permits or approvals to clear or disturb any matters of national environmental significance listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or any vegetation community under the Queensland *Vegetation Management Act 1999* (VM Act) nor is the conservation status of species and communities listed under the EPBC Act or VM Act discussed.

- Information gained from online flora databases (Section 2.3) has caveats attached regarding the robustness or completeness of the information. Data is based on a combination of records (from various sources) combined with modelled distributions of species according to their ecological characteristics. The presence or absence of species identified from these databases is an indication of presence only, and not a definitive list.
- The field survey was undertaken at a time to optimise the identification of EVNT species identified from the database searches. Additional information about the timing of the survey is described in Section 3.3.



LEGEND

- Place
- Project Area
- Road
- Waterway

AECOM

SIZE A3

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 1:
Project Site

REPORT ROCKHAMPTON NORTH UPGRADE ACCESS PROTECTED PLANT SURVEY

DISCLAIMER

Spatial data used under licence from The State of Queensland 2017. Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), Mapmyindia, NGCC, © OpenStreetMap contributors, and the GIS User Community

2.0 Desktop Assessment

2.1 Bioregional setting

The Project area occurs within the Brigalow Belt Bioregion, which covers the 500-750 mm rainfall area between the Queensland – New South Wales border in the south, up to Townsville in the north. The Bioregion is characterised by the tree species *Acacia harpophylla* (brigalow) that forms forest and woodland on clay soils. Brigalow does not predominate across the entire region, with the bioregion including a range of ecosystems including eucalypt forest and woodland, grassland, dry rainforest, cypress pine woodland and riparian communities (Sattler, P., Williams 1999).

Within the Brigalow Belt Bioregion, the Project area occurs within the Marlborough Plains Province as defined by Sattler, P., Williams (1999). The landform of the area is undulating to hilly with a complex geology. The province is dominated by alluvial plains and colluvial slopes, with woodlands of poplar gum (*Eucalyptus platyphylla*), ghost gum (*Corymbia dallachiana*), forest red gum (*E. tereticornis*) and tea tree (*Melaleuca* spp.). Low rises carry narrow leaf ironbark (*E. crebra*). Hillier areas carry narrow leaf ironbark, lemon scented gum (*C. citriodora*), bloodwood (*Corymbia* spp.) and supplejack *Lophostemon* spp.).

2.2 Regional ecosystems

In Queensland, remnant vegetation is described and mapped by the Queensland Herbarium as Regional Ecosystems. Regional Ecosystems (REs) are broad plant communities within a bioregion that consistently occur in association with a particular combination of geology, landform and soil (Neldner et al. 2012). REs are generally defined and mapped at a scale of 1:100,000 across the state of Queensland (1:50,000 in the wet tropics and where more detailed mapping is available e.g. coastal and urban areas), and the certified maps are available on the 'Regulated Vegetation Management Map' (DNRM 2016).

No remnant Regional Ecosystems (REs) are mapped for the Project area on the vegetation management supporting map (Appendix A). The REs that are mapped within 5 km of the Project area are listed below, with a short description from the *Regional Ecosystem Description Database* (REDD) (Queensland Herbarium 2016):

- RE 11.3.2: *Eucalyptus populnea* woodland on alluvial plains
- RE 11.3.3: *Eucalyptus coolabah* woodland on alluvial plains
- RE 11.3.4: *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains
- RE 11.3.27f: *Eucalyptus coolabah* and/or *E. tereticornis* open woodland to woodland fringing swamps
- RE 11.11.15: *Eucalyptus crebra* woodland on deformed metamorphosed sediments and interbedded volcanics
- RE 11.12.1: *Eucalyptus crebra* woodlands on igneous rocks
- RE 11.12.2: *Eucalyptus melanophloia* woodland on igneous rocks
- RE 11.12.3: *Eucalyptus crebra*, *E. tereticornis*, *Angophora leiocarpa* woodland on igneous rocks especially granite, and
- RE 11.12.4: Semi-evergreen vine thicket and microphyll vine forest on igneous rocks.

2.3 EVNT flora

Online database searches were conducted for the Project area, including the 'Protected Matters Search Tool' and 'Wildlife Online' using the central co-ordinate of the Project area (-23.2946, 150.5119), and applying a 20 km buffer around that point (Appendix A). The database searches identified 19 species of flora that have been recorded, or could potentially occur within 20 km of the Project area. These species are listed in Table 1, along with a description of their life-strategy, flowering periods and habitat.

Table 1 EVNT species occurring, or potentially occurring within 20 km of the Project area

Species name	[1]Status (NC Act)	[2]Life Strategy	Flowering period	Habitat Preference
Cycas megacarpa	E	P	NA	*Cycas megacarpa* is found in woodland, open woodland and open forests, often in conjunction with a grassy understory. This species is found in habitat dominated by *Eucalyptus crebra* and *Corymbia citriodora* as well as *Corymbia erythrophloia*, *Eucalyptus melanophloia* and *Lophostemon confertus.* It often grows on undulating to hilly terrain at an altitude of 40–680 m. The soil is typically a well-draining rocky or shallow clay, clay/loam, derived from acid volcanic, ironstone or mudstone.
Cycas ophiolitica	E	P	NA	*Cycas ophiolitica* grows on hills and slopes in sparse, grassy open forest at altitude ranges from 80–400 m above sea level. Although this species reaches its best development on red clay soils near Marlborough, it is more frequently found on shallow, stony, infertile soils, which are developed on sandstone and serpentinite, and is associated with species such as *Corymbia dallachiana*, *C. erythrophloia*, *C. xanthope* and *Eucalyptus fibrosa*. *Cycas ophiolitica* has also been found on mudstone in association with *Corymbia dallachiana*, *C. erythrophloia* and *Eucalyptus crebra*, and on alluvial loams with *Corymbia intermedia*, *Eucalyptus drepanophylla* and *E. tereticornis*.
Tectaria devexa var. *devexa*	E	P	NA	*Tectaria devexa* var. *devexa* typically grows in thin pockets of soil on the walls and floor near the entrance to limestone caves. It can occur deeper within the cave in situations where sufficient natural light and moisture are available to support plant growth.
Graptophyllum excelsum	NT	P	Sept-Dec	This species is restricted to Queensland, extending from near Mt Larcom north to the Chillagoe- Mt Mungana area. Typically it grows on rocky hillsides in semi-evergreen vine-thickets.
Marsdenia brevifolia	V	P	Nov-Feb	North of Rockhampton, *Marsdenia brevifolia* grows on serpentine rock outcrops or crumbly black soils derived from serpentine in eucalypt woodland, often with broad leaved ironbark (*Eucalyptus fibrosa*) and *Corymbia xanthope*.
Parsonsia larcomensis	V	P	Jan-May	Occurs in open heathland and shrubland at or near the summits

Species name	[1]Status (NC Act)	[2]Life Strategy	Flowering period	Habitat Preference
				of mountain peaks from 350 to 750 m elevations and is restricted to central east and south-east Queensland.
Capparis humistrata	E	P	March-Dec	*Capparis humistrata* grows in eucalypt woodland with a shrubby understorey, on stony hard ridges and serpentinite soil. It also occurs on the margins of Brigalow forest on sandy soil.
Bertya pedicellata	NT	P	Nov-Feb	Near Rockhampton, *Bertya pedicellata* is known from Mount Jim Crow National Park where it grows in heath on dark-brown loam over trachyte.
Pultenaea setulosa	V	P	July-Aug	In Queensland, *Pultenaea setulosa* grows on serpentinite substrates in *Eucalyptus fibrosa* and/or *Corymbia xanthope* woodlands or open forests.
Callicarpa thozetii	E	P	Nov-Feb	*Callicarpa thozetii* grows on shallow, stony, clay loam soils on slopes in open eucalyptus forest of *Eucalyptus acmenoides*, *E. citriodora*, and *E. intermedia*.
Corymbia xanthope	V	P	Feb-March	*Corymbia xanthope* occurs in woodlands with *Eucalyptus fibrosa* on ridges or hill slopes on serpentinite geology with sandy soils.
Backhousia oligantha	E	P	Sep-Nov	Near Rockhampton, *Backhousia oligantha* occurs within the Mount Archer National Park, on steep rocky mountain slopes on skeletal soils in low shrubland.
Stackhousia tryonii	NT	P	Sep-Nov	Clay loam soils on serpentine geology, associated with *Eucalyptus* spp. woodland. Disturbed areas, including roadsides.
Corchorus hygrophilus	V	P	Jan-May	*Corchorus hygrophilus* occurs on vine forest margins or in sclerophyll forest adjacent to vine forest. It grows among boulders and on soils derived from granite or limestone.
Pimelea leptospermoides	NT	P	Throughout the year, with peak flowering from May-Oct	This species grows on stony hillsides and sandy clay in *Eucalyptus fibrosa* and *Corymbia xanthope* open woodland.
Livistona drudei	V	P	Aug-March	*Livistona drudei* occurs in Melaleuca swamp-forest and fringes of gallery- or tropical-rainforest bordering on eucalypt forest.

Species name	[1]Status (NC Act)	[2]Life Strategy	Flowering period	Habitat Preference
Cossinia australiana	V	P	Nov-March	Cossinia is known from fragmented relict patches of Araucarian vine forests or vine thickets on fertile soils in central and southern Queensland.
Phaius australis	E	P	Sept-Nov	*Phaius australis* is commonly associated with coastal wet heath/sedgeland wetlands, swampy grassland or swampy forest and often where broad-leaved paperbark or swamp Mahogany grows. It is typically restricted to swamp-forest margins, where it occurs in swamp sclerophyll forest, swampy rainforest, or fringing open forest.
Samadera bidwillii	V	P	Nov-March	Quassia commonly occurs in lowland rainforest or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland. Quassia is commonly found in areas adjacent to both temporary and permanent watercourses in locations up to 510 m altitude.

[1]Conservation status under the NC Act, NT = Near Threatened, V = Vulnerable, E = Endangered, [2] Life Strategy, P = Perennial, A = Annual, G = Geophyte

3.0 Field Methods

3.1 Survey area

The CIA as defined in the Guidelines encompasses the Project's disturbance footprint (i.e. the Project area in Figure 1), and a 100 m buffer around the disturbance footprint. The CIA was reduced in places where the area was devoid of vegetation or was occupied by buildings with extensive hardstand, or residential properties <1,000 m^2. This protected plants survey has been undertaken within the reduced CIA, the extent of which is shown on Figure 2.

3.2 Survey methods

Two ecologists visited the Project area on the 22 February 2017, and again on the 3 – 4 May 2017 and undertook a protected plants survey in accordance with the Guidelines, using the transect method (DEHP 2016; Cropper 1993). This survey follows the methods described in *Management of Endangered Plants* (Cropper 1993). Sixteen transects were undertaken for the site, the locations are shown on Figure 2.

Plant species that could not be identified during the field survey, and which were suspected of being EVNT species were collected, pressed and dried in accordance with the Queensland Herbarium (Bean 2016) procedures. Identification of specimens was undertaken through comparison with named material and through the use of taxonomic keys. Where a specimen could not be identified to species level, it would be lodged with the Queensland Herbarium for formal identification, unless it could confidently be concluded that it was not an EVNT species, in accordance with section 261S of the regulation.

Taxonomic nomenclature cited in this document is based on *The Census of Queensland Flora 2016* (Bostock, P.D, Holland 2016).

3.3 Timing of the survey

A protected plants survey should be undertaken when the target species are most likely to be observable and identifiable to species level. There are two main considerations when determining the timing of a survey:

a) the plant's 'life-strategy', and,

b) flowering and/or fruiting period.

All identified EVNT species identified have a perennial life strategy. Perennial species continue to grow year after year, and therefore are always visible as above ground herbaceous or woody forbs, shrubs and trees. Therefore all species listed in Table 1 would have been observable during the survey.

Secondly, the identification of many plants to species level requires reproductive material, which is in the flowering parts of plants; therefore, for many species a positive identification requires a survey during these times. In addition, species are more observable when they are flowering, and this applies particularly to small or inconspicuous species such as grasses and herbs. A majority of the species' flowering periods identified in Table 1 fall within the timing of the survey.

While the survey was undertaken at a time that is favourable to the detection of most species identified, it is recognised that a single visit over one season cannot always account for 100% of the potential floral diversity present across a survey location. Therefore while all attempts have been made to identify threatened flora species, there is the chance that species are overlooked. In addition, the threatened species identified as part of the desktop assessment, may not cover all threatened species that may occur within the Project area.

3.4 Suitably qualified person

A suitably qualified person conducted the protected plants survey (See Appendix B for curriculum vitae).

4.0 Field Results

4.1 General site description

The Project area follows the alignment of the Bruce Highway starting from 250 m south of the Rockhampton – Yeppoon Road intersection on the Bruce Highway and ends approximately 400 m north of Terranova Drive. The Project area and CIA have been historically cleared and/or thinned of native vegetation for agricultural land as well as housing and industrial development. A large portion of the Project area is paved highway (Bruce Highway). The Project area crosses two river systems, Ramsay Creek in the north and Limestone Creek in the south, with areas of significant native vegetation regrowth observed south of Boundary Road, in association with Limestone Creek. Plates 1-3 below illustrate the Project area.



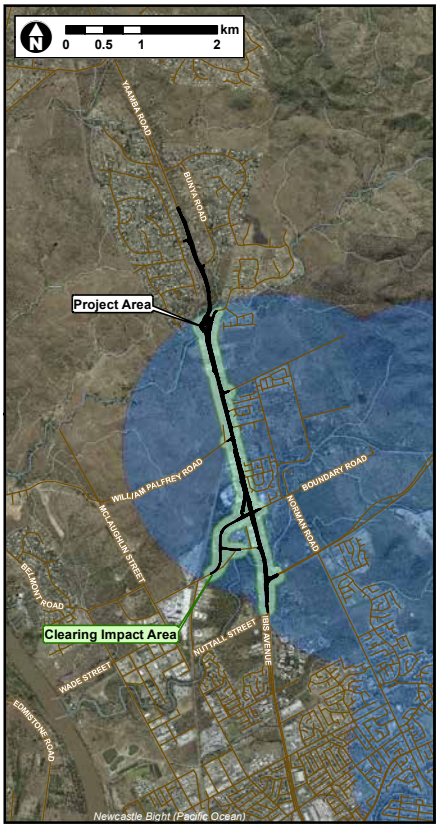
Plate 1 General view of the Bruce Highway Project area, corner of Bunya Road

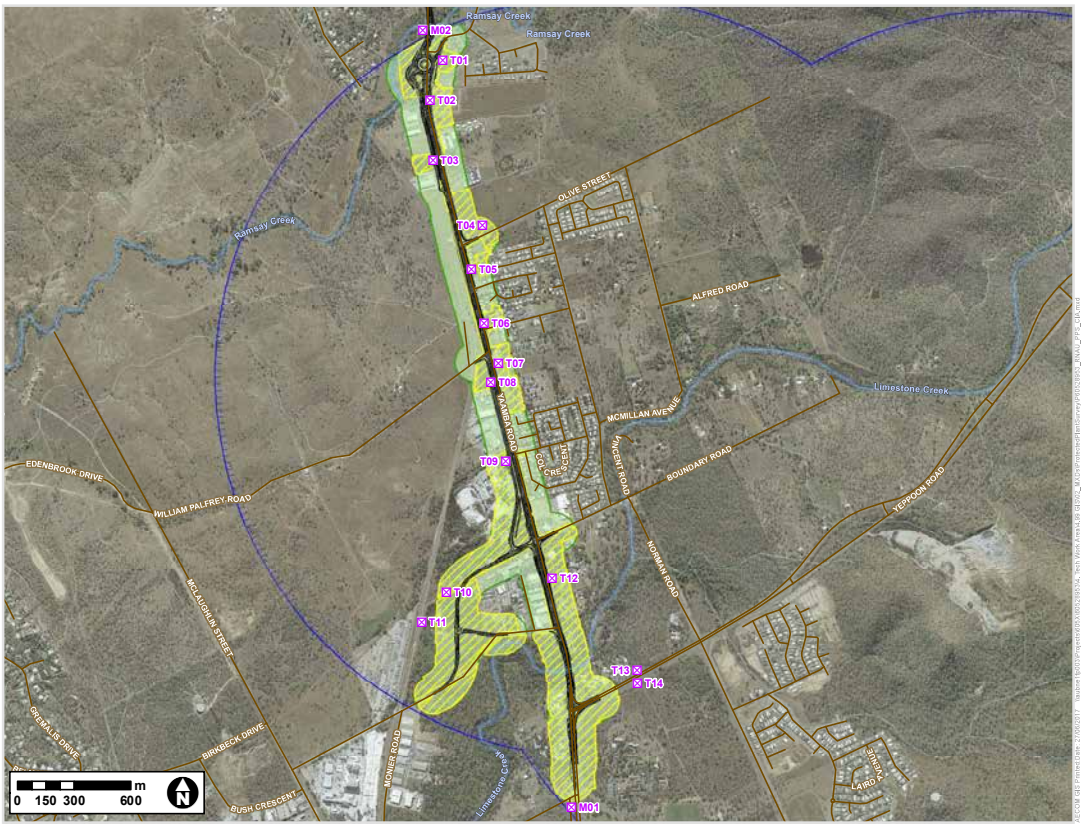


Plate 2 Bruce Highway crossing Limestone Creek



Plate 3 Bruce Highway crossing Ramsay Creek





LEGEND

- Protected plant survey locations
- Project Area
- Road
- Waterway
- Reduced Clearing Impact Area
- Clearing Impact Area
- Flora Survey Trigger

AECOM

SIZE A3

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 2:
Clearing Impact Area

REPORT ROCKHAMPTON NORTH UPGRADE ACCESS PROTECTED PLANT SURVEY

DISCLAIMER

Spatial data used under licence from The State of Queensland 2017.

AECOM makes no representations or warranties of any kind, about the accuracy, reliability, completeness, suitability or fitness for purpose in relation to the map content.

4.2 Flora species

The field survey identified 153 flora species from 112 genera and 47 families. Of this number, 64 were introduced species, this being approximately 40% of the total species recorded. Families which recorded the highest number of species were Poaceae (25 taxa), Myrtaceae (22 taxa), Mimosaceae (12 taxa) and Fabaceae (12 taxa).

Common tree species observed during the course of the survey included Moreton Bay ash (*Corymbia tessellaris*), Queensland blue gum (*Eucalyptus tereticornis*), narrow leaf ironbark (*E. crebra*) and *Corymbia intermedia*. Common shrub and grass species observed included Sally wattle (*Acacia salicina*), soap bush (*Alphitonia excelsa*), Leucaena (**Leucaena leucocephala*), green panic (**Megathyrsus maximus*), creeping blue grass (**Bothriochloa pertusa*) and Rhodes grass (**Chloris gayana*). Appendix C provides a full species list.

No EVNT species listed under the NC Act were identified within the CIA. One species, *Eucalyptus raveretiana*, which is listed as Vulnerable under the EPBC Act was identified along Limestone Creek within the CIA, however this species is not listed under the NC Act.

5.0 Conclusions and Recommendations

The protected plants survey, undertaken on the 22 February and 3-4 May 2017, did not identify any EVNT species listed under the NC Act. As no protected plants were identified within the Project area, the Project is not required to obtain a protected plant permit, and after submission of this report to the DEHP the Project would be considered exempt under section 261ZA of the Regulation. The report must be submitted at least 1 week prior to any clearing work, and no later than 12 months after the completion of the flora survey. Once an exemption is obtained, the clearing must be undertaken within 2 years.

The following measures are proposed to minimise the potential impacts of the proposed Project on native flora in the area:

- Clearly mark the trees to be removed, and avoid disturbance to the canopy and root zones of adjacent trees outside of the disturbance footprint.
- Limit the removal of whole trees where practicable. An arborist should undertake the removal or pruning of trees within the Project site.
- Areas that are disturbed should be stabilised following the completion of works so as to minimise the potential for erosion and runoff.
- Any landscaping proposed should consider native species where practicable.

6.0 References

Bean, T., 2016. *Collection and preserving plant specimens, a manual.*, Brisbane.

Bostock, P.D, Holland, A.E., 2016. *Introduction to the Census of the Queensland Flora 2016*, Brisbane.

Cropper, S., 1993. *Management of Endangered Plants*, Melbourne: CSIRO Publications.

DEHP, 2016. *Flora Survey Guidelines - Protected Plants Nature Conservation Act 1992*, Brisbane.

DNRM, 2016. *Vegetation Management Report*, Brisbane.

Neldner, V. et al., 2012. *Methodology for Survey and Mapping of Vegetation Communities and Regional Ecosystems in Queensland*, Brisbane.

Queensland Herbarium, 2016. *Regional Ecosystem Description Database (REDD)*, Brisbane.

Sattler, P., Williams, R., 1999. *The Conservation Status of Queensland's Bioregional Ecosystems* R. Sattler, P., Williams, ed., Brisbane: Environmental Protection Agency, Queensland Government.

Appendix A

Desktop Searches



Protected Plants Flora Survey Trigger Map

Legend

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

LOCALITY DIAGRAM



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

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

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

N

0 490 980 1,470 1,960 2,450 m

This product is projected into:
GDA 1994 Queensland Albers

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

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EPBC Act Protected Matters Report

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

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

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 24/01/17 15:12:53

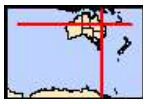
Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements



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

Coordinates
Buffer: 20.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	1
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	49
Listed Migratory Species:	27

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	3
Commonwealth Heritage Places:	1
Listed Marine Species:	29
Whales and Other Cetaceans:	2
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

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

State and Territory Reserves:	7
Regional Forest Agreements:	None
Invasive Species:	36
Nationally Important Wetlands:	3
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

World Heritage Properties		[Resource Information]
Name	State	Status
Great Barrier Reef	QLD	Declared property

National Heritage Properties		[Resource Information]
Name	State	Status
Natural		
Great Barrier Reef	QLD	Listed place

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
Brigalow (Acacia harpophylla dominant and co-dominant)	Endangered	Community known to occur within area
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	Endangered	Community likely to occur within area
Weeping Myall Woodlands	Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Epthianura crocea macgregori Capricorn Yellow Chat, Yellow Chat (Dawson) [67090]	Critically Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed	Critically Endangered	Species or species

Name	Status	Type of Presence
Godwit (menzbieri) [86432]		habitat may occur within area
Macronectes giganteus		
Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Neochmia ruficauda ruficauda		
Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Poephila cincta cincta		
Southern Black-throated Finch [64447]	Endangered	Species or species habitat likely to occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Turnix melanogaster		
Black-breasted Button-quail [923]	Vulnerable	Species or species habitat known to occur within area
Mammals		
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
Dasyurus hallucatus		
Northern Quoll, Digul [331]	Endangered	Species or species habitat known to occur within area
Macroderma gigas		
Ghost Bat [174]	Vulnerable	Breeding known to occur within area
Nyctophilus corbeni		
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area
Petauroides volans		
Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Xeromys myoides		
Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat likely to occur within area
Other		
Cycas megacarpa		
[55794]	Endangered	Species or species habitat known to occur within area
Cycas ophiolitica		
[55797]	Endangered	Species or species habitat known to occur within area
Plants		

Name	Status	Type of Presence
Corymbia xanthope Glen Geddes Bloodwood [64021]	Vulnerable	Species or species habitat known to occur within area
Cossinia australiana Cossinia [3066]	Endangered	Species or species habitat likely to occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus raveretiana Black Ironbox [16344]	Vulnerable	Species or species habitat known to occur within area
Marsdenia brevifolia [64585]	Vulnerable	Species or species habitat known to occur within area
Parsonsia larcomensis Mt Larcom Silk Pod [64587]	Vulnerable	Species or species habitat known to occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area
Pimelea leptospermoides [20849]	Vulnerable	Species or species habitat likely to occur within area
Pultenaea setulosa [2705]	Vulnerable	Species or species habitat known to occur within area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area
Tectaria devexa [14767]	Endangered	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Delma torquata Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Denisonia maculata Ornamental Snake [1193]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area
Elseya albagula Southern Snapping Turtle, White-throated Snapping Turtle [81648]	Critically Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Rheodytes leukops Fitzroy River Turtle, Fitzroy Tortoise, Fitzroy Turtle, White-eyed River Diver [1761]	Vulnerable	Species or species habitat known to occur within area
Sharks		
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific		Species or species

Name	Threatened	Type of Presence
Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Orcaella brevirostris Irrawaddy Dolphin [45]		Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat likely to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Defence - LOGISTIC SUPPORT DEPOT - ROCKHAMPTON
Defence - ROCKHAMPTON AIRFIELD
Defence - ROCKHAMPTON TRAINING DEPOT

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
ABC Radio Studios	QLD	Listed place

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Cuculus saturatus Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Whales and other Cetaceans [Resource Information]

Name	Status	Type of Presence
Mammals		
Orcaella brevirostris Irrawaddy Dolphin [45]		Species or species habitat may occur within area

Name	Status	Type of Presence
Sousa chinensis		
Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Boyle's Ridge	QLD
Limestone Creek	QLD
Long Island Bend	QLD
Mount Archer	QLD
Mount Etna Caves	QLD
Mount Jim Crow	QLD
Rockhampton Pistol Club	QLD

Invasive Species [Resource Information]

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

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Acacia nilotica subsp. indica Prickly Acacia [6196]		Species or species habitat may occur within area
Andropogon gayanus Gamba Grass [66895]		Species or species habitat likely to occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass		Species or species habitat likely to occur

Name	Status	Type of Presence
[31754]		within area
Jatropha gossypifolia Cotton-leaved Physic-Nut, Bellyache Bush, Cotton-leaf Physic Nut, Cotton-leaf Jatropha, Black Physic Nut [7507]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Protasparagus plumosus Climbing Asparagus-fern, Ferny Asparagus [11747]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Vachellia nilotica Prickly Acacia, Blackthorn, Prickly Mimosa, Black Piquant, Babul [84351]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area

Nationally Important Wetlands [Resource Information]

Name	State
Fitzroy River Delta	QLD
Fitzroy River Floodplain	QLD
Hedlow Wetlands	QLD

Caveat

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

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-23.2946 150.5119

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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Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Status: All
Records: All
Date: All
Latitude: -23.2946
Longitude: 150.5119
Distance: 20
Email:
Date submitted: Tuesday 24 Jan 2017 14:11:08
Date extracted: Tuesday 24 Jan 2017 14:20:06

The number of records retrieved = 1664

Disclaimer

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

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

No statements, representations or warranties are made about the accuracy or completeness of this information. The State of Queensland disclaims all responsibility for this information and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs you may incur as a result of the information being inaccurate or incomplete in any way for any reason.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	*Rhinella marina*	cane toad	Y			28
animals	amphibians	Hylidae	*Litoria rothii*	northern laughing treefrog		C		3/1
animals	amphibians	Hylidae	*Cyclorana novaehollandiae*	eastern snapping frog		C		1/1
animals	amphibians	Hylidae	*Cyclorana alboguttata*	greenstripe frog		C		3/1
animals	amphibians	Hylidae	*Litoria latopalmata*	broad palmed rocketfrog		C		1
animals	amphibians	Hylidae	*Litoria gracilenta*	graceful treefrog		C		9/7
animals	amphibians	Hylidae	*Cyclorana brevipes*	superb collared frog		C		6/5
animals	amphibians	Hylidae	*Litoria wilcoxii*	eastern stony creek frog		C		1
animals	amphibians	Hylidae	*Litoria caerulea*	common green treefrog		C		31/17
animals	amphibians	Hylidae	*Litoria fallax*	eastern sedgefrog		C		10/5
animals	amphibians	Hylidae	*Litoria nasuta*	striped rocketfrog		C		1
animals	amphibians	Hylidae	*Litoria inermis*	bumpy rocketfrog		C		2
animals	amphibians	Hylidae	*Litoria rubella*	ruddy treefrog		C		5
animals	amphibians	Limnodynastidae	*Limnodynastes terraereginae*	scarlet sided pobblebonk		C		11/7
animals	amphibians	Limnodynastidae	*Limnodynastes tasmaniensis*	spotted grassfrog		C		9/3
animals	amphibians	Limnodynastidae	*Platyplectrum ornatum*	ornate burrowing frog		C		7/1
animals	amphibians	Limnodynastidae	*Limnodynastes salmini*	salmon striped frog		C		6/1
animals	amphibians	Limnodynastidae	*Limnodynastes peronii*	striped marshfrog		C		4/2
animals	amphibians	Myobatrachidae	*Uperoleia rugosa*	chubby gungan		C		5/5
animals	amphibians	Myobatrachidae	*Pseudophryne major*	great brown broodfrog		C		13/11
animals	amphibians	Myobatrachidae	*Crinia deserticola*	chirping froglet		C		1
animals	birds	Acanthizidae	*Acanthiza nana*	yellow thornbill		C		6
animals	birds	Acanthizidae	*Acanthiza pusilla*	brown thornbill		C		2
animals	birds	Acanthizidae	*Gerygone olivacea*	white-throated gerygone		C		146
animals	birds	Acanthizidae	*Gerygone palpebrosa*	fairy gerygone		C		37
animals	birds	Acanthizidae	*Smicrornis brevirostris*	weebill		C		5
animals	birds	Acanthizidae	*Sericornis frontalis*	white-browed scrubwren		C		23/2
animals	birds	Acanthizidae	*Acanthiza chrysorrhoa*	yellow-rumped thornbill		C		4
animals	birds	Acanthizidae	*Sericornis magnirostra*	large-billed scrubwren		C		2
animals	birds	Acanthizidae	*Acanthiza reguloides*	buff-rumped thornbill		C		5/3
animals	birds	Accipitridae	*Circus approximans*	swamp harrier		C		16
animals	birds	Accipitridae	*Lophoictinia isura*	square-tailed kite		C		12/1
animals	birds	Accipitridae	*Accipiter fasciatus*	brown goshawk		C		7
animals	birds	Accipitridae	*Aviceda subcristata*	Pacific baza		C		20
animals	birds	Accipitridae	*Haliastur sphenurus*	whistling kite		C		196
animals	birds	Accipitridae	*Haliaeetus leucogaster*	white-bellied sea-eagle		C		36/2
animals	birds	Accipitridae	*Hieraaetus morphnoides*	little eagle		C		1
animals	birds	Accipitridae	*Accipiter cirrocephalus*	collared sparrowhawk		C		7/1
animals	birds	Accipitridae	*Hamirostra melanosternon*	black-breasted buzzard		C		2
animals	birds	Accipitridae	*Accipiter novaehollandiae*	grey goshawk		C		3/1
animals	birds	Accipitridae	*Erythrotriorchis radiatus*	red goshawk		E	V	1
animals	birds	Accipitridae	*Aquila audax*	wedge-tailed eagle		C		71
animals	birds	Accipitridae	*Milvus migrans*	black kite		C		57/1
animals	birds	Accipitridae	*Haliastur indus*	brahminy kite		C		19
animals	birds	Accipitridae	*Circus assimilis*	spotted harrier		C		15
animals	birds	Accipitridae	*Elanus axillaris*	black-shouldered kite		C		31

Queensland Government Wildlife Online - Extract Date 24/01/2017 at 14:20:06

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Accipitridae	*Pandion cristatus*	eastern osprey		SL		8
animals	birds	Acrocephalidae	*Acrocephalus australis*	Australian reed-warbler		C		43
animals	birds	Aegothelidae	*Aegotheles cristatus*	Australian owlet-nightjar		C		5/1
animals	birds	Alaudidae	*Mirafra javanica*	Horsfield's bushlark		C		95
animals	birds	Alcedinidae	*Ceyx azureus*	azure kingfisher		C		6
animals	birds	Anatidae	*Biziura lobata*	musk duck		C		4
animals	birds	Anatidae	*Anas castanea*	chestnut teal		C		10
animals	birds	Anatidae	*Tadorna radjah*	radjah shelduck		C		7
animals	birds	Anatidae	*Anas rhynchotis*	Australasian shoveler		C		28
animals	birds	Anatidae	*Aythya australis*	hardhead		C		100
animals	birds	Anatidae	*Anas superciliosa*	Pacific black duck		C		200
animals	birds	Anatidae	*Chenonetta jubata*	Australian wood duck		C		164
animals	birds	Anatidae	*Anas platyrhynchos*	northern mallard	Y			27
animals	birds	Anatidae	*Dendrocygna eytoni*	plumed whistling-duck		C		49
animals	birds	Anatidae	*Dendrocygna arcuata*	wandering whistling-duck		C		48/1
animals	birds	Anatidae	*Nettapus pulchellus*	green pygmy-goose		C		6
animals	birds	Anatidae	*Stictonetta naevosa*	freckled duck		C		6
animals	birds	Anatidae	*Nettapus coromandelianus*	cotton pygmy-goose		C		111/1
animals	birds	Anatidae	*Malacorhynchus membranaceus*	pink-eared duck		C		6
animals	birds	Anatidae	*Anas gracilis*	grey teal		C		155
animals	birds	Anatidae	*Cygnus atratus*	black swan		C		128
animals	birds	Anhingidae	*Anhinga novaehollandiae*	Australasian darter		C		133
animals	birds	Anseranatidae	*Anseranas semipalmata*	magpie goose		C		132
animals	birds	Apodidae	*Apus pacificus*	fork-tailed swift		SL		4
animals	birds	Apodidae	*Hirundapus caudacutus*	white-throated needletail		SL		2
animals	birds	Ardeidae	*Ixobrychus dubius*	Australian little bittern		C		1
animals	birds	Ardeidae	*Ardea alba modesta*	eastern great egret		C		129
animals	birds	Ardeidae	*Ixobrychus flavicollis*	black bittern		C		5/1
animals	birds	Ardeidae	*Nycticorax caledonicus*	nankeen night-heron		C		22/1
animals	birds	Ardeidae	*Egretta novaehollandiae*	white-faced heron		C		127
animals	birds	Ardeidae	*Egretta garzetta*	little egret		C		57
animals	birds	Ardeidae	*Bubulcus ibis*	cattle egret		C		76
animals	birds	Ardeidae	*Ardea pacifica*	white-necked heron		C		53
animals	birds	Ardeidae	*Ardea intermedia*	intermediate egret		C		148
animals	birds	Artamidae	*Strepera graculina*	pied currawong		C		286/1
animals	birds	Artamidae	*Artamus cyanopterus*	dusky woodswallow		C		2
animals	birds	Artamidae	*Cracticus torquatus*	grey butcherbird		C		10
animals	birds	Artamidae	*Artamus leucorynchus*	white-breasted woodswallow		C		24/1
animals	birds	Artamidae	*Cracticus tibicen*	Australian magpie		C		370/1
animals	birds	Artamidae	*Cracticus nigrogularis*	pied butcherbird		C		325/2
animals	birds	Artamidae	*Artamus cinereus*	black-faced woodswallow		C		61/3
animals	birds	Artamidae	*Artamus minor*	little woodswallow		C		1
animals	birds	Artamidae	*Artamus superciliosus*	white-browed woodswallow		C		3/1
animals	birds	Burhinidae	*Burhinus grallarius*	bush stone-curlew		C		121
animals	birds	Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo		C		187
animals	birds	Cacatuidae	*Cacatua sanguinea*	little corella		C		36

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Cacatuidae	*Cacatua tenuirostris*	long-billed corella	Y	C		16
animals	birds	Cacatuidae	*Eolophus roseicapilla*	galah		C		209
animals	birds	Cacatuidae	*Nymphicus hollandicus*	cockatiel		C		49
animals	birds	Cacatuidae	*Lophochroa leadbeateri*	Major Mitchell's cockatoo		V		1
animals	birds	Cacatuidae	*Calyptorhynchus lathami erebus*	glossy black-cockatoo (northern)		V		4
animals	birds	Cacatuidae	*Calyptorhynchus banksii*	red-tailed black-cockatoo		C		82
animals	birds	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike		C		260
animals	birds	Campephagidae	*Coracina tenuirostris*	cicadabird		C		23/1
animals	birds	Campephagidae	*Coracina papuensis*	white-bellied cuckoo-shrike		C		20
animals	birds	Campephagidae	*Lalage leucomela*	varied triller		C		44
animals	birds	Campephagidae	*Coracina lineata*	barred cuckoo-shrike		C		5
animals	birds	Campephagidae	*Lalage tricolor*	white-winged triller		C		22
animals	birds	Campephagidae	*Coracina maxima*	ground cuckoo-shrike		C		3
animals	birds	Caprimulgidae	*Caprimulgus macrurus*	large-tailed nightjar		C		2
animals	birds	Casuariidae	*Dromaius novaehollandiae*	emu		C		2
animals	birds	Charadriidae	*Elseyornis melanops*	black-fronted dotterel		C		70
animals	birds	Charadriidae	*Pluvialis fulva*	Pacific golden plover		SL		1
animals	birds	Charadriidae	*Erythrogonys cinctus*	red-kneed dotterel		C		27
animals	birds	Charadriidae	*Vanellus miles novaehollandiae*	masked lapwing (southern subspecies)		C		247/1
animals	birds	Charadriidae	*Charadrius ruficapillus*	red-capped plover		C		1
animals	birds	Charadriidae	*Vanellus miles*	masked lapwing		C		92
animals	birds	Ciconiidae	*Ephippiorhynchus asiaticus*	black-necked stork		C		24
animals	birds	Cisticolidae	*Cisticola juncidis laveryi*	zitting cisticola		C		2
animals	birds	Cisticolidae	*Cisticola exilis*	golden-headed cisticola		C		187
animals	birds	Climacteridae	*Climacteris picumnus*	brown treecreeper		C		6
animals	birds	Climacteridae	*Cormobates leucophaea metastasis*	white-throated treecreeper (southern)		C		7
animals	birds	Columbidae	*Phaps chalcoptera*	common bronzewing		C		2
animals	birds	Columbidae	*Ptilinopus regina*	rose-crowned fruit-dove		C		8
animals	birds	Columbidae	*Chalcophaps indica*	emerald dove		C		14
animals	birds	Columbidae	*Geopelia humeralis*	bar-shouldered dove		C		139/2
animals	birds	Columbidae	*Ptilinopus superbus*	superb fruit-dove		C		4
animals	birds	Columbidae	*Ptilinopus magnificus*	wompoo fruit-dove		C		5/2
animals	birds	Columbidae	*Macropygia amboinensis*	brown cuckoo-dove		C		9
animals	birds	Columbidae	*Streptopelia chinensis*	spotted dove	Y			131
animals	birds	Columbidae	*Leucosarcia melanoleuca*	wonga pigeon		C		4
animals	birds	Columbidae	*Lopholaimus antarcticus*	topknot pigeon		C		6
animals	birds	Columbidae	*Geophaps scripta scripta*	squatter pigeon (southern subspecies)		V	V	196/5
animals	birds	Columbidae	*Columba livia*	rock dove	Y			17
animals	birds	Columbidae	*Geopelia striata*	peaceful dove		C		316/1
animals	birds	Columbidae	*Geophaps scripta*	squatter pigeon		C		1
animals	birds	Columbidae	*Ocyphaps lophotes*	crested pigeon		C		266
animals	birds	Coraciidae	*Eurystomus orientalis*	dollarbird		C		36
animals	birds	Corcoracidae	*Struthidea cinerea*	apostlebird		C		21
animals	birds	Corcoracidae	*Corcorax melanorhamphos*	white-winged chough		C		12
animals	birds	Corvidae	*Corvus orru*	Torresian crow		C		325
animals	birds	Corvidae	*Corvus coronoides*	Australian raven		C		2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Cuculidae	*Eudynamys orientalis*	eastern koel		C		127/1
animals	birds	Cuculidae	*Cacomantis variolosus*	brush cuckoo		C		5
animals	birds	Cuculidae	*Centropus phasianinus*	pheasant coucal		C		198
animals	birds	Cuculidae	*Cacomantis flabelliformis*	fan-tailed cuckoo		C		17
animals	birds	Cuculidae	*Scythrops novaehollandiae*	channel-billed cuckoo		C		105/4
animals	birds	Cuculidae	*Chalcites minutillus barnardi*	little bronze-cuckoo		C		1
animals	birds	Cuculidae	*Chalcites minutillus russatus*	Gould's bronze-cuckoo		C		3
animals	birds	Cuculidae	*Chalcites basalis*	Horsfield's bronze-cuckoo		C		47/3
animals	birds	Cuculidae	*Chalcites lucidus*	shining bronze-cuckoo		C		8
animals	birds	Cuculidae	*Cacomantis pallidus*	pallid cuckoo		C		35/1
animals	birds	Cuculidae	*Chalcites minutillus*	little bronze-cuckoo		C		1
animals	birds	Dicruridae	*Dicrurus bracteatus*	spangled drongo		C		54
animals	birds	Estrildidae	*Neochmia modesta*	plum-headed finch		C		9/2
animals	birds	Estrildidae	*Neochmia phaeton*	crimson finch		C		2/2
animals	birds	Estrildidae	*Neochmia ruficauda*	star finch		C		7/4
animals	birds	Estrildidae	*Lonchura punctulata*	nutmeg mannikin	Y			25
animals	birds	Estrildidae	*Neochmia temporalis*	red-browed finch		C		4
animals	birds	Estrildidae	*Taeniopygia guttata*	zebra finch		C		3/1
animals	birds	Estrildidae	*Poephila cincta cincta*	black-throated finch (white-rumped subspecies)		E	E	1
animals	birds	Estrildidae	*Taeniopygia bichenovii*	double-barred finch		C		145/1
animals	birds	Estrildidae	*Lonchura castaneothorax*	chestnut-breasted mannikin		C		15
animals	birds	Eurostopodidae	*Eurostopodus argus*	spotted nightjar		C		2/1
animals	birds	Falconidae	*Falco berigora*	brown falcon		C		43
animals	birds	Falconidae	*Falco subniger*	black falcon		C		2
animals	birds	Falconidae	*Falco longipennis*	Australian hobby		C		14/2
animals	birds	Falconidae	*Falco cenchroides*	nankeen kestrel		C		143
animals	birds	Falconidae	*Falco peregrinus*	peregrine falcon		C		5
animals	birds	Glareolidae	*Stiltia isabella*	Australian pratincole		C		1
animals	birds	Gruidae	*Grus rubicunda*	brolga		C		23
animals	birds	Halcyonidae	*Dacelo leachii*	blue-winged kookaburra		C		104
animals	birds	Halcyonidae	*Tanysiptera sylvia*	buff-breasted paradise-kingfisher		C		1
animals	birds	Halcyonidae	*Dacelo novaeguineae*	laughing kookaburra		C		274/1
animals	birds	Halcyonidae	*Todiramphus sanctus*	sacred kingfisher		C		52
animals	birds	Halcyonidae	*Todiramphus macleayii*	forest kingfisher		C		102/1
animals	birds	Halcyonidae	*Todiramphus pyrrhopygius*	red-backed kingfisher		C		7
animals	birds	Hirundinidae	*Hirundo neoxena*	welcome swallow		C		81
animals	birds	Hirundinidae	*Petrochelidon ariel*	fairy martin		C		135
animals	birds	Hirundinidae	*Petrochelidon nigricans*	tree martin		C		18
animals	birds	Jacanidae	*Irediparra gallinacea*	comb-crested jacana		C		92/1
animals	birds	Laridae	*Anous minutus*	black noddy		C		2/2
animals	birds	Laridae	*Anous stolidus*	common noddy		SL		1
animals	birds	Laridae	*Sterna striata*	white-fronted tern		C		1/1
animals	birds	Laridae	*Thalasseus bergii*	crested tern		SL		1/1
animals	birds	Laridae	*Chroicocephalus novaehollandiae*	silver gull		C		24
animals	birds	Laridae	*Hydroprogne caspia*	Caspian tern		SL		25

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Laridae	*Sternula albifrons*	little tern		SL		1
animals	birds	Laridae	*Gelochelidon nilotica*	gull-billed tern		SL		12
animals	birds	Laridae	*Chlidonias leucopterus*	white-winged black tern		SL		2
animals	birds	Laridae	*Chlidonias hybrida*	whiskered tern		C		43
animals	birds	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren		C		242/4
animals	birds	Maluridae	*Malurus cyaneus*	superb fairy-wren		C		2
animals	birds	Megaluridae	*Megalurus gramineus*	little grassbird		C		2
animals	birds	Megaluridae	*Megalurus timoriensis*	tawny grassbird		C		13
animals	birds	Megaluridae	*Cincloramphus mathewsi*	rufous songlark		C		4
animals	birds	Megapodiidae	*Alectura lathami*	Australian brush-turkey		C		34
animals	birds	Meliphagidae	*Entomyzon cyanotis*	blue-faced honeyeater		C		301/3
animals	birds	Meliphagidae	*Epthianura crocea macgregori*	yellow chat (Dawson)		E	CE	5/1
animals	birds	Meliphagidae	*Acanthorhynchus tenuirostris*	eastern spinebill		C		1
animals	birds	Meliphagidae	*Melithreptus brevirostris*	brown-headed honeyeater		C		2
animals	birds	Meliphagidae	*Plectorhyncha lanceolata*	striped honeyeater		C		3/1
animals	birds	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater		C		248/1
animals	birds	Meliphagidae	*Acanthagenys rufogularis*	spiny-cheeked honeyeater		C		2
animals	birds	Meliphagidae	*Gavicalis fasciogularis*	mangrove honeyeater		C		7
animals	birds	Meliphagidae	*Philemon citreogularis*	little friarbird		C		224/7
animals	birds	Meliphagidae	*Myzomela sanguinolenta*	scarlet honeyeater		C		25
animals	birds	Meliphagidae	*Ptilotula fusca*	fuscous honeyeater		C		1
animals	birds	Meliphagidae	*Myzomela obscura*	dusky honeyeater		C		21
animals	birds	Meliphagidae	*Stomiopera flava*	yellow honeyeater		C		2
animals	birds	Meliphagidae	*Epthianura crocea*	yellow chat		V		1
animals	birds	Meliphagidae	*Meliphaga lewinii*	Lewin's honeyeater		C		68/1
animals	birds	Meliphagidae	*Ptilotula plumula*	grey-fronted honeyeater		C		2
animals	birds	Meliphagidae	*Manorina flavigula*	yellow-throated miner		C		4
animals	birds	Meliphagidae	*Gavicalis virescens*	singing honeyeater		C		1
animals	birds	Meliphagidae	*Philemon buceroides*	helmeted friarbird		C		1
animals	birds	Meliphagidae	*Gavicalis versicolor*	varied honeyeater		C		1
animals	birds	Meliphagidae	*Lichmera indistincta*	brown honeyeater		C		289
animals	birds	Meliphagidae	*Melithreptus gularis*	black-chinned honeyeater		C		5
animals	birds	Meliphagidae	*Melithreptus lunatus*	white-naped honeyeater		C		5
animals	birds	Meliphagidae	*Philemon argenticeps*	silver-crowned friarbird		C		2
animals	birds	Meliphagidae	*Philemon corniculatus*	noisy friarbird		C		187
animals	birds	Meliphagidae	*Ptilotula penicillata*	white-plumed honeyeater		C		1
animals	birds	Meliphagidae	*Ramsayornis fasciatus*	bar-breasted honeyeater		C		29
animals	birds	Meliphagidae	*Manorina melanocephala*	noisy miner		C		304/3
animals	birds	Meropidae	*Merops ornatus*	rainbow bee-eater		C		65
animals	birds	Monarchidae	*Myiagra sp.*					1
animals	birds	Monarchidae	*Myiagra rubecula*	leaden flycatcher		C		64
animals	birds	Monarchidae	*Myiagra inquieta*	restless flycatcher		C		10/1
animals	birds	Monarchidae	*Myiagra cyanoleuca*	satin flycatcher		SL		3
animals	birds	Monarchidae	*Symposiachrus trivirgatus*	spectacled monarch		SL		23
animals	birds	Monarchidae	*Carterornis leucotis*	white-eared monarch		C		16
animals	birds	Monarchidae	*Monarcha melanopsis*	black-faced monarch		SL		12

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Monarchidae	*Grallina cyanoleuca*	magpie-lark		C		383
animals	birds	Motacillidae	*Anthus novaeseelandiae*	Australasian pipit		C		155
animals	birds	Nectariniidae	*Nectarinia jugularis*	olive-backed sunbird		C		1
animals	birds	Nectariniidae	*Dicaeum hirundinaceum*	mistletoebird		C		152
animals	birds	Neosittidae	*Daphoenositta chrysoptera*	varied sittella		C		10/2
animals	birds	Oriolidae	*Oriolus sagittatus*	olive-backed oriole		C		61/1
animals	birds	Oriolidae	*Sphecotheres vieilloti*	Australasian figbird		C		239/1
animals	birds	Otididae	*Ardeotis australis*	Australian bustard		C		21
animals	birds	Pachycephalidae	*Colluricincla megarhyncha*	little shrike-thrush		C		65/1
animals	birds	Pachycephalidae	*Pachycephala pectoralis*	golden whistler		C		14/2
animals	birds	Pachycephalidae	*Pachycephala rufiventris*	rufous whistler		C		121
animals	birds	Pachycephalidae	*Falcunculus frontatus*	crested shrike-tit		C		1
animals	birds	Pachycephalidae	*Colluricincla harmonica*	grey shrike-thrush		C		28/1
animals	birds	Paradisaeidae	*Ptiloris paradiseus*	paradise riflebird		C		1
animals	birds	Pardalotidae	*Pardalotus punctatus*	spotted pardalote		C		5
animals	birds	Pardalotidae	*Pardalotus rubricatus*	red-browed pardalote		C		1
animals	birds	Pardalotidae	*Pardalotus striatus*	striated pardalote		C		234/4
animals	birds	Passeridae	*Passer domesticus*	house sparrow	Y			33
animals	birds	Pelecanidae	*Pelecanus conspicillatus*	Australian pelican		C		133
animals	birds	Petroicidae	*Eopsaltria australis*	eastern yellow robin		C		17
animals	birds	Petroicidae	*Microeca fascinans*	jacky winter		C		3
animals	birds	Petroicidae	*Petroica rosea*	rose robin		C		3
animals	birds	Phalacrocoracidae	*Phalacrocorax carbo*	great cormorant		C		30
animals	birds	Phalacrocoracidae	*Phalacrocorax varius*	pied cormorant		C		37
animals	birds	Phalacrocoracidae	*Microcarbo melanoleucos*	little pied cormorant		C		129
animals	birds	Phalacrocoracidae	*Phalacrocorax sulcirostris*	little black cormorant		C		126
animals	birds	Phasianidae	*Coturnix ypsilophora*	brown quail		C		20
animals	birds	Phasianidae	*Coturnix pectoralis*	stubble quail		C		1
animals	birds	Phasianidae	*Pavo cristatus*	Indian peafowl	Y			20
animals	birds	Phasianidae	*Excalfactoria chinensis*	king quail		C		1
animals	birds	Podargidae	*Podargus strigoides*	tawny frogmouth		C		18/1
animals	birds	Podicipedidae	*Tachybaptus novaehollandiae*	Australasian grebe		C		119/2
animals	birds	Podicipedidae	*Poliocephalus poliocephalus*	hoary-headed grebe		C		8
animals	birds	Podicipedidae	*Podiceps cristatus*	great crested grebe		C		11
animals	birds	Pomatostomidae	*Pomatostomus temporalis*	grey-crowned babbler		C		210
animals	birds	Procellariidae	*Macronectes giganteus*	southern giant-petrel		E	E	1
animals	birds	Procellariidae	*Pterodroma nigripennis*	black-winged petrel		C		1/1
animals	birds	Psittacidae	*Barnardius zonarius barnardi*	mallee ringneck		C		1
animals	birds	Psittacidae	*Trichoglossus chlorolepidotus*	scaly-breasted lorikeet		C		123/2
animals	birds	Psittacidae	*Platycercus adscitus palliceps*	pale-headed rosella (southern form)		C		1
animals	birds	Psittacidae	*Trichoglossus haematodus moluccanus*	rainbow lorikeet		C		356/1
animals	birds	Psittacidae	*Lathamus discolor*	swift parrot		E	CE	1
animals	birds	Psittacidae	*Barnardius zonarius*	Australian ringneck		C		1
animals	birds	Psittacidae	*Aprosmictus erythropterus*	red-winged parrot		C		169/1
animals	birds	Psittacidae	*Melopsittacus undulatus*	budgerigar		C		3
animals	birds	Psittacidae	*Glossopsitta concinna*	musk lorikeet		C		1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Psittacidae	*Platycercus adscitus*	pale-headed rosella		C		297/5
animals	birds	Psittacidae	*Alisterus scapularis*	Australian king-parrot		C		6
animals	birds	Psittacidae	*Parvipsitta pusilla*	little lorikeet		C		7
animals	birds	Psophodidae	*Psophodes olivaceus*	eastern whipbird		C		2/2
animals	birds	Psophodidae	*Cinclosoma punctatum*	spotted quail-thrush		C		1
animals	birds	Ptilonorhynchidae	*Sericulus chrysocephalus*	regent bowerbird		C		1
animals	birds	Rallidae	*Fulica atra*	Eurasian coot		C		85
animals	birds	Rallidae	*Porzana pusilla*	Baillon's crake		C		2
animals	birds	Rallidae	*Porzana fluminea*	Australian spotted crake		C		1
animals	birds	Rallidae	*Porzana tabuensis*	spotless crake		C		1
animals	birds	Rallidae	*Tribonyx ventralis*	black-tailed native-hen		C		6
animals	birds	Rallidae	*Gallinula tenebrosa*	dusky moorhen		C		136
animals	birds	Rallidae	*Porphyrio melanotus*	purple swamphen		C		107
animals	birds	Rallidae	*Amaurornis moluccana*	pale-vented bush-hen		C		4
animals	birds	Rallidae	*Gallirallus philippensis*	buff-banded rail		C		10
animals	birds	Recurvirostridae	*Himantopus himantopus*	black-winged stilt		C		88
animals	birds	Recurvirostridae	*Recurvirostra novaehollandiae*	red-necked avocet		C		13
animals	birds	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail		C		291
animals	birds	Rhipiduridae	*Rhipidura rufifrons*	rufous fantail		SL		37
animals	birds	Rhipiduridae	*Rhipidura albiscapa*	grey fantail		C		128
animals	birds	Rostratulidae	*Rostratula australis*	Australian painted snipe		V	E	6/2
animals	birds	Scolopacidae	*Tringa stagnatilis*	marsh sandpiper		SL		39
animals	birds	Scolopacidae	*Limosa limosa*	black-tailed godwit		SL		18
animals	birds	Scolopacidae	*Calidris ferruginea*	curlew sandpiper		SL	CE	6
animals	birds	Scolopacidae	*Calidris ruficollis*	red-necked stint		SL		1
animals	birds	Scolopacidae	*Gallinago hardwickii*	Latham's snipe		SL		39/2
animals	birds	Scolopacidae	*Limosa lapponica baueri*	Western Alaskan bar-tailed godwit		SL	V	3
animals	birds	Scolopacidae	*Tringa brevipes*	grey-tailed tattler		SL		1
animals	birds	Scolopacidae	*Calidris acuminata*	sharp-tailed sandpiper		SL		25
animals	birds	Scolopacidae	*Tringa nebularia*	common greenshank		SL		6
animals	birds	Strigidae	*Ninox rufa queenslandica*	rufous owl (southern subspecies)		C		1
animals	birds	Strigidae	*Ninox boobook*	southern boobook		C		20
animals	birds	Strigidae	*Ninox connivens*	barking owl		C		1/1
animals	birds	Sturnidae	*Sturnus vulgaris*	common starling	Y			8
animals	birds	Sturnidae	*Acridotheres tristis*	common myna	Y			1
animals	birds	Threskiornithidae	*Threskiornis spinicollis*	straw-necked ibis		C		246
animals	birds	Threskiornithidae	*Plegadis falcinellus*	glossy ibis		SL		57
animals	birds	Threskiornithidae	*Platalea flavipes*	yellow-billed spoonbill		C		57
animals	birds	Threskiornithidae	*Platalea regia*	royal spoonbill		C		105/1
animals	birds	Threskiornithidae	*Threskiornis molucca*	Australian white ibis		C		141/1
animals	birds	Timaliidae	*Zosterops lateralis*	silvereye		C		21
animals	birds	Turnicidae	*Turnix maculosus*	red-backed button-quail		C		3
animals	birds	Turnicidae	*Turnix melanogaster*	black-breasted button-quail		V	V	2
animals	birds	Turnicidae	*Turnix varius*	painted button-quail		C		2
animals	birds	Tytonidae	*Tyto delicatula*	eastern barn owl		C		7/2
animals	insects	Lycaenidae	*Jalmenus eubulus*	pale imperial hairstreak		V		3

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	insects	Nymphalidae	*Libythea geoffroy nicevillei*	purple beak				1
animals	insects	Nymphalidae	*Phaedyma shepherdi*					2
animals	mammals	Acrobatidae	*Acrobates pygmaeus*	feathertail glider		C		2
animals	mammals	Canidae	*Vulpes vulpes*	red fox	Y			5
animals	mammals	Canidae	*Canis lupus familiaris*	dog	Y			2
animals	mammals	Canidae	*Canis sp.*					1
animals	mammals	Canidae	*Canis lupus dingo*	dingo				4
animals	mammals	Dasyuridae	*Dasyurus maculatus maculatus*	spotted-tailed quoll (southern subspecies)		V	E	1
animals	mammals	Dasyuridae	*Phascogale tapoatafa tapoatafa*	brush-tailed phascogale		C		1
animals	mammals	Dasyuridae	*Sminthopsis macroura*	stripe-faced dunnart		C		1/1
animals	mammals	Dasyuridae	*Antechinus sp.*					1
animals	mammals	Dasyuridae	*Planigale ingrami*	long-tailed planigale		C		2
animals	mammals	Dasyuridae	*Dasyurus hallucatus*	northern quoll		C	E	2
animals	mammals	Emballonuridae	*Taphozous troughtoni*	Troughton's sheathtail bat		C		18/5
animals	mammals	Felidae	*Felis catus*	cat	Y			5
animals	mammals	Leporidae	*Oryctolagus cuniculus*	rabbit	Y			1
animals	mammals	Leporidae	*Lepus europaeus*	European brown hare	Y			1
animals	mammals	Macropodidae	*Thylogale stigmatica*	red-legged pademelon		C		1
animals	mammals	Macropodidae	*Petrogale inornata*	unadorned rock-wallaby		C		24/10
animals	mammals	Macropodidae	*Petrogale herberti*	Herbert's rock-wallaby		C		1/1
animals	mammals	Macropodidae	*Macropus giganteus*	eastern grey kangaroo		C		5
animals	mammals	Macropodidae	*Wallabia bicolor*	swamp wallaby		C		6
animals	mammals	Macropodidae	*Macropus dorsalis*	black-striped wallaby		C		4
animals	mammals	Macropodidae	*Macropus sp.*					2
animals	mammals	Macropodidae	*Macropus agilis*	agile wallaby		C		5
animals	mammals	Macropodidae	*Macropus parryi*	whiptail wallaby		C		7
animals	mammals	Megadermatidae	*Macroderma gigas*	ghost bat		V	V	116/23
animals	mammals	Miniopteridae	*Miniopterus australis*	little bent-wing bat		C		13/1
animals	mammals	Miniopteridae	*Miniopterus schreibersii oceanensis*	eastern bent-wing bat		C		10/7
animals	mammals	Molossidae	*Chaerephon jobensis*	northern freetail bat		C		2
animals	mammals	Muridae	*Melomys sp.*					3
animals	mammals	Muridae	*Rattus fuscipes*	bush rat		C		1
animals	mammals	Muridae	*Hydromys chrysogaster*	water rat		C		9/1
animals	mammals	Muridae	*Mus musculus*	house mouse	Y			5
animals	mammals	Ornithorhynchidae	*Ornithorhynchus anatinus*	platypus		SL		2
animals	mammals	Peramelidae	*Perameles nasuta*	long-nosed bandicoot		C		3
animals	mammals	Peramelidae	*Isoodon macrourus*	northern brown bandicoot		C		15
animals	mammals	Petauridae	*Petaurus norfolcensis*	squirrel glider		C		1/1
animals	mammals	Petauridae	*Petaurus breviceps*	sugar glider		C		4
animals	mammals	Petauridae	*Petaurus sp.*					1
animals	mammals	Phalangeridae	*Trichosurus vulpecula*	common brushtail possum		C		11
animals	mammals	Phascolarctidae	*Phascolarctos cinereus*	koala		V	V	6
animals	mammals	Potoroidae	*Aepyprymnus rufescens*	rufous bettong		C		9/2
animals	mammals	Pseudocheiridae	*Pseudocheirus peregrinus*	common ringtail possum		C		2
animals	mammals	Pteropodidae	*Pteropus sp.*					1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	mammals	Pteropodidae	*Pteropus alecto*	black flying-fox		C		5
animals	mammals	Pteropodidae	*Pteropus scapulatus*	little red flying-fox		C		2
animals	mammals	Rhinolophidae	*Rhinolophus megaphyllus*	eastern horseshoe-bat		C		11/2
animals	mammals	Suidae	*Sus scrofa*	pig	Y			5
animals	mammals	Tachyglossidae	*Tachyglossus aculeatus*	short-beaked echidna		SL		16/1
animals	mammals	Vespertilionidae	*Chalinolobus gouldii*	Gould's wattled bat		C		3/1
animals	mammals	Vespertilionidae	*Vespadelus troughtoni*	eastern cave bat		C		25/25
animals	mammals	Vespertilionidae	*Myotis macropus*	large-footed myotis		C		2
animals	mammals	Vespertilionidae	*Scotorepens greyii*	little broad-nosed bat		C		1
animals	mammals	Vespertilionidae	*Vespadelus pumilus*	eastern forest bat		C		1
animals	mammals	Vespertilionidae	*Scotorepens balstoni*	inland broad-nosed bat		C		1
animals	ray-finned fishes	Ambassidae	*Ambassis agassizii*	Agassiz's glassfish				10/1
animals	ray-finned fishes	Anguillidae	*Anguilla reinhardtii*	longfin eel				10
animals	ray-finned fishes	Apogonidae	*Glossamia aprion*	mouth almighty				11
animals	ray-finned fishes	Ariidae	*Neoarius graeffei*	blue catfish				11
animals	ray-finned fishes	Atherinidae	*Craterocephalus stercusmuscarum*	flyspecked hardyhead				9
animals	ray-finned fishes	Belonidae	*Strongylura krefftii*	freshwater longtom				4
animals	ray-finned fishes	Centropomidae	*Lates calcarifer*	barramundi				4
animals	ray-finned fishes	Clupeidae	*Nematalosa erebi*	bony bream				47
animals	ray-finned fishes	Eleotridae	*Oxyeleotris lineolata*	sleepy cod				5
animals	ray-finned fishes	Eleotridae	*Gobiomorphus australis*	striped gudgeon				1
animals	ray-finned fishes	Eleotridae	*Hypseleotris species 1*	Midgley's carp gudgeon				2
animals	ray-finned fishes	Eleotridae	*Hypseleotris klunzingeri*	western carp gudgeon				4
animals	ray-finned fishes	Eleotridae	*Hypseleotris galii*	firetail gudgeon				2
animals	ray-finned fishes	Eleotridae	*Mogurnda adspersa*	southern purplespotted gudgeon				9/1
animals	ray-finned fishes	Eleotridae	*Hypseleotris compressa*	empire gudgeon				5
animals	ray-finned fishes	Hemiramphidae	*Arrhamphus sclerolepis*	snubnose garfish				2
animals	ray-finned fishes	Megalopidae	*Megalops cyprinoides*	oxeye herring				1
animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia splendida splendida*	eastern rainbowfish				10/1
animals	ray-finned fishes	Mugilidae	*Trachystoma petardi*	pinkeye mullet				1
animals	ray-finned fishes	Mugilidae	*Mugil cephalus*	sea mullet				3
animals	ray-finned fishes	Osteoglossidae	*Scleropages leichardti*	southern saratoga				1
animals	ray-finned fishes	Percichthyidae	*Macquaria ambigua*	golden perch				1
animals	ray-finned fishes	Plotosidae	*Neosilurus hyrtlii*	Hyrtl's catfish				1
animals	ray-finned fishes	Poeciliidae	*Poecilia reticulata*	guppy	Y			4
animals	ray-finned fishes	Poeciliidae	*Gambusia holbrooki*	mosquitofish	Y			2
animals	ray-finned fishes	Pseudomugilidae	*Pseudomugil signifer*	Pacific blue eye				3
animals	ray-finned fishes	Scorpaenidae	*Notesthes robusta*	bullrout				1
animals	ray-finned fishes	Synbranchidae	*Ophisternon gutturale*	swamp eel				2
animals	ray-finned fishes	Terapontidae	*Leiopotherapon unicolor*	spangled perch				13
animals	ray-finned fishes	Terapontidae	*Scortum hillii*	leathery grunter				2
animals	ray-finned fishes	Terapontidae	*Amniataba percoides*	barred grunter				23
animals	reptiles	Agamidae	*Intellagama lesueurii*	eastern water dragon		C		3
animals	reptiles	Agamidae	*Diporiphora australis*	tommy roundhead		C		3
animals	reptiles	Agamidae	*Chlamydosaurus kingii*	frilled lizard		C		8/1
animals	reptiles	Agamidae	*Diporiphora sp.*					1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	reptiles	Agamidae	*Pogona barbata*	bearded dragon		C		7
animals	reptiles	Boidae	*Aspidites melanocephalus*	black-headed python		C		2
animals	reptiles	Boidae	*Antaresia maculosa*	spotted python		C		9/2
animals	reptiles	Boidae	*Morelia spilota*	carpet python		C		8
animals	reptiles	Carphodactylidae	*Nephrurus asper*	spiny knob-tailed gecko		C		3/3
animals	reptiles	Chelidae	*Wollumbinia latisternum*	saw-shelled turtle		C		2
animals	reptiles	Chelidae	*Emydura macquarii krefftii*	Krefft's river turtle		C		19/1
animals	reptiles	Chelidae	*Chelodina longicollis*	eastern snake-necked turtle		C		4
animals	reptiles	Chelidae	*Rheodytes leukops*	Fitzroy River turtle		V	V	2
animals	reptiles	Chelidae	*Chelodina expansa*	broad-shelled river turtle		C		2
animals	reptiles	Chelidae	*Elseya albagula*	southern snapping turtle		E	CE	3
animals	reptiles	Colubridae	*Boiga irregularis*	brown tree snake		C		7
animals	reptiles	Colubridae	*Tropidonophis mairii*	freshwater snake		C		14/7
animals	reptiles	Colubridae	*Dendrelaphis punctulatus*	green tree snake		C		13/6
animals	reptiles	Crocodylidae	*Crocodylus porosus*	estuarine crocodile		V		1
animals	reptiles	Diplodactylidae	*Oedura tryoni*	southern spotted velvet gecko		C		1/1
animals	reptiles	Diplodactylidae	*Oedura monilis*	ocellated velvet gecko		C		2/2
animals	reptiles	Diplodactylidae	*Amalosia rhombifer*	zig-zag gecko		C		1/1
animals	reptiles	Elapidae	*Cacophis harriettae*	white-crowned snake		C		7/1
animals	reptiles	Elapidae	*Cryptophis boschmai*	Carpentaria whip snake		C		3/3
animals	reptiles	Elapidae	*Demansia psammophis*	yellow-faced whipsnake		C		1
animals	reptiles	Elapidae	*Demansia vestigiata*	lesser black whipsnake		C		3/3
animals	reptiles	Elapidae	*Pseudechis guttatus*	spotted black snake		C		2/2
animals	reptiles	Elapidae	*Pseudonaja textilis*	eastern brown snake		C		7/1
animals	reptiles	Elapidae	*Vermicella annulata*	bandy-bandy		C		4/1
animals	reptiles	Elapidae	*Pseudechis australis*	king brown snake		C		3
animals	reptiles	Elapidae	*Oxyuranus scutellatus*	coastal taipan		C		4
animals	reptiles	Elapidae	*Pseudechis porphyriacus*	red-bellied black snake		C		4/1
animals	reptiles	Elapidae	*Cryptophis nigrostriatus*	black-striped snake		C		2/2
animals	reptiles	Elapidae	*Hoplocephalus bitorquatus*	pale-headed snake		C		11/11
animals	reptiles	Elapidae	*Suta suta*	myall snake		C		1/1
animals	reptiles	Elapidae	*Demansia sp.*					1
animals	reptiles	Elapidae	*Furina diadema*	red-naped snake		C		7/3
animals	reptiles	Elapidae	*Demansia torquata*	collared whipsnake		C		1/1
animals	reptiles	Elapidae	*Hemiaspis damelii*	grey snake		E		12/11
animals	reptiles	Elapidae	*Hemiaspis signata*	black-bellied swamp snake		C		1
animals	reptiles	Elapidae	*Denisonia maculata*	ornamental snake		V	V	20/19
animals	reptiles	Gekkonidae	*Gehyra dubia*	dubious dtella		C		5
animals	reptiles	Gekkonidae	*Heteronotia binoei*	Bynoe's gecko		C		7/2
animals	reptiles	Pygopodidae	*Pygopus lepidopodus*	common scaly-foot		C		2/2
animals	reptiles	Pygopodidae	*Pygopus schraderi*	eastern hooded scaly-foot		C		1/1
animals	reptiles	Pygopodidae	*Delma tincta*	excitable delma		C		2/1
animals	reptiles	Pygopodidae	*Lialis burtonis*	Burton's legless lizard		C		7/1
animals	reptiles	Scincidae	*Glaphyromorphus crassicaudus*	Cape York mulch-skink		C		1
animals	reptiles	Scincidae	*Cryptoblepharus pulcher pulcher*	elegant snake-eyed skink		C		5
animals	reptiles	Scincidae	*Cryptoblepharus virgatus sensu lato*			C		7/3

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animals	reptiles	Scincidae	*Carlia pectoralis sensu lato*			C		6/1
animals	reptiles	Scincidae	*Carlia sp.*					1
animals	reptiles	Scincidae	*Carlia munda*	shaded-litter rainbow-skink		C		2/1
animals	reptiles	Scincidae	*Carlia vivax*	tussock rainbow-skink		C		2/1
animals	reptiles	Scincidae	*Concinnia tenuis*	bar-sided skink		C		6/2
animals	reptiles	Scincidae	*Eulamprus quoyii*	eastern water skink		C		11/9
animals	reptiles	Scincidae	*Bellatorias major*	land mullet		C		1
animals	reptiles	Scincidae	*Carlia schmeltzii*	robust rainbow-skink		C		9/6
animals	reptiles	Scincidae	*Concinnia martini*	dark bar-sided skink		C		1/1
animals	reptiles	Scincidae	*Bellatorias frerei*	major skink		C		1/1
animals	reptiles	Scincidae	*Ctenotus spaldingi*	straight-browed ctenotus		C		4/1
animals	reptiles	Scincidae	*Tiliqua scincoides*	eastern blue-tongued lizard		C		5
animals	reptiles	Scincidae	*Cryptoblepharus sp.*					1
animals	reptiles	Scincidae	*Lygisaurus foliorum*	tree-base litter-skink		C		4/2
animals	reptiles	Scincidae	*Ctenotus taeniolatus*	copper-tailed skink		C		5
animals	reptiles	Scincidae	*Anomalopus verreauxii*	three-clawed worm-skink		C		2
animals	reptiles	Scincidae	*Lampropholis delicata*	dark-flecked garden sunskink		C		3/1
animals	reptiles	Scincidae	*Morethia taeniopleura*	fire-tailed skink		C		1
animals	reptiles	Scincidae	*Anomalopus brevicollis*	short-necked worm-skink		C		32/32
animals	reptiles	Scincidae	*Lampropholis guichenoti*	pale-flecked garden sunskink		C		2
animals	reptiles	Scincidae	*Cyclodomorphus gerrardii*	pink-tongued lizard		C		6/6
animals	reptiles	Scincidae	*Eremiascincus fasciolatus*	narrow-banded sand swimmer		C		1/1
animals	reptiles	Scincidae	*Glaphyromorphus punctulatus*	fine-spotted mulch-skink		C		2/2
animals	reptiles	Typhlopidae	*Anilios unguirostris*	claw-snouted blind snake		C		2/2
animals	reptiles	Typhlopidae	*Anilios sp.*					1
animals	reptiles	Varanidae	*Varanus tristis*	black-tailed monitor		C		1
animals	reptiles	Varanidae	*Varanus varius*	lace monitor		C		2
animals	reptiles	Varanidae	*Varanus gouldii*	sand monitor		C		2
animals	uncertain	Indeterminate	*Indeterminate*	Unknown or Code Pending		C		33
fungi	club fungi	Basidiomycota	*Psilocybe cubensis*			C		1/1
fungi	club fungi	Basidiomycota	*Geastrum triplex*			C		1/1
fungi	club fungi	Basidiomycota	*Bovista aestivalis*			C		1/1
fungi	club fungi	Basidiomycota	*Hexagonia hirta*			C		2/2
fungi	club fungi	Basidiomycota	*Fomitiporia robusta*			C		1/1
fungi	club fungi	Basidiomycota	*Leucoagaricus fimetarius*			C		1/1
fungi	club fungi	Basidiomycota	*Loweporus tephroporus*			C		1/1
fungi	sac fungi	Chrysothricaceae	*Chrysothrix xanthina*			C		1/1
fungi	sac fungi	Haematommaceae	*Haematomma*			C		2/2
fungi	sac fungi	Lecanoraceae	*Lecanora*			C		2/2
fungi	sac fungi	Lichen	*Lichen*			C		1/1
fungi	sac fungi	Parmeliaceae	*Parmotrema tinctorum*			C		1/1
fungi	sac fungi	Parmeliaceae	*Parmotrema austrosinense*			C		2/2
fungi	sac fungi	Parmeliaceae	*Parmotrema gardneri*			C		1/1
fungi	sac fungi	Peltigeraceae	*Peltigera polydactylon*			C		1/1
fungi	sac fungi	Pertusariaceae	*Pertusaria*			C		1/1
fungi	sac fungi	Physciaceae	*Dirinaria confluens*			C		2/2

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fungi	sac fungi	Physciaceae	*Buellia demutans*			C		1/1
fungi	sac fungi	Physciaceae	*Buellia*			C		1/1
fungi	sac fungi	Ramalinaceae	*Ramalina confirmata*			C		1/1
fungi	sac fungi	Ramalinaceae	*Ramalina litorea*			C		1/1
fungi	sac fungi	Ramalinaceae	*Ramalina inflata subsp. perpusilla*			C		1/1
fungi	sac fungi	Teloschistaceae	*Caloplaca*			C		1/1
fungi	sac fungi	Usneaceae	*Usnea nidifica*			C		2/2
plants	conifers	Araucariaceae	*Araucaria cunninghamii*	hoop pine		C		6
plants	conifers	Araucariaceae	*Araucaria cunninghamii var. cunninghamii*			C		1/1
plants	cycads	Cycadaceae	*Cycas*			C		1
plants	cycads	Cycadaceae	*Cycas megacarpa*			E	E	8
plants	cycads	Cycadaceae	*Cycas ophiolitica*	Marlborough blue		E	E	52/39
plants	cycads	Zamiaceae	*Macrozamia miquelii*			C		29/9
plants	cycads	Zamiaceae	*Macrozamia serpentina*			E		4/4
plants	ferns	Adiantaceae	*Adiantum hispidulum var. hispidulum*			C		3/3
plants	ferns	Adiantaceae	*Adiantum*			C		1
plants	ferns	Adiantaceae	*Cheilanthes*			C		3
plants	ferns	Adiantaceae	*Adiantum hispidulum var. minus*			C		1/1
plants	ferns	Adiantaceae	*Cheilanthes tenuifolia*	rock fern		C		2/1
plants	ferns	Adiantaceae	*Paraceterach muelleri*			C		1/1
plants	ferns	Adiantaceae	*Doryopteris concolor*			C		7/2
plants	ferns	Adiantaceae	*Adiantum aethiopicum*			C		7
plants	ferns	Adiantaceae	*Cheilanthes sieberi*			C		8
plants	ferns	Adiantaceae	*Cheilanthes distans*	bristly cloak fern		C		1
plants	ferns	Adiantaceae	*Cheilanthes brownii*			C		1/1
plants	ferns	Adiantaceae	*Adiantum hispidulum*			C		14
plants	ferns	Adiantaceae	*Adiantum atroviride*			C		3/2
plants	ferns	Adiantaceae	*Adiantum formosum*			C		1
plants	ferns	Adiantaceae	*Pellaea falcata*			C		2
plants	ferns	Adiantaceae	*Pellaea nana*			C		3/2
plants	ferns	Aspleniaceae	*Asplenium paleaceum*	scaly asplenium		C		5/2
plants	ferns	Azollaceae	*Azolla pinnata*	ferny azolla		C		2/1
plants	ferns	Azollaceae	*Azolla*					1
plants	ferns	Blechnaceae	*Blechnum nudum*	fishbone water fern		C		1
plants	ferns	Blechnaceae	*Doodia dissecta*			C		1/1
plants	ferns	Davalliaceae	*Davallia pyxidata*			C		1
plants	ferns	Dennstaedtiaceae	*Pteridium aquilinum subsp. wightianum*			C		1
plants	ferns	Dennstaedtiaceae	*Pteridium esculentum*	common bracken		C		2
plants	ferns	Dicksoniaceae	*Calochlaena dubia*			C		1
plants	ferns	Dryopteridaceae	*Tectaria devexa var. devexa*			E	E	6/3
plants	ferns	Marsileaceae	*Marsilea mutica*	shiny nardoo		C		1
plants	ferns	Ophioglossaceae	*Ophioglossum reticulatum*			C		2/2
plants	ferns	Polypodiaceae	*Drynaria*					1
plants	ferns	Polypodiaceae	*Pyrrosia confluens*			C		2
plants	ferns	Polypodiaceae	*Pyrrosia rupestris*	rock felt fern		C		3
plants	ferns	Polypodiaceae	*Drynaria sparsisora*			C		9/2

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plants	ferns	Polypodiaceae	*Microsorum punctatum*			C		12/2
plants	ferns	Polypodiaceae	*Pyrrosia confluens var. confluens*			C		1/1
plants	ferns	Polypodiaceae	*Drynaria rigidula*			C		8
plants	ferns	Pteridaceae	*Acrostichum speciosum*	mangrove fern		C		1
plants	ferns	Salviniaceae	*Salvinia molesta*	salvinia	Y			6/6
plants	ferns	Schizaeaceae	*Schizaea dichotoma*	branched comb fern		C		1
plants	ferns	Schizaeaceae	*Lygodium microphyllum*	snake fern		C		1
plants	higher dicots	Acanthaceae	*Graptophyllum*			C		1
plants	higher dicots	Acanthaceae	*Hypoestes floribunda*			C		1/1
plants	higher dicots	Acanthaceae	*Pseuderanthemum*			C		1
plants	higher dicots	Acanthaceae	*Ruellia simplex*		Y			3/3
plants	higher dicots	Acanthaceae	*Rostellularia adscendens var. hispida*			C		1/1
plants	higher dicots	Acanthaceae	*Thunbergia grandiflora*	sky flower	Y			1/1
plants	higher dicots	Acanthaceae	*Graptophyllum excelsum*			NT		15/10
plants	higher dicots	Acanthaceae	*Brunoniella australis*	blue trumpet		C		4/1
plants	higher dicots	Acanthaceae	*Asystasia gangetica subsp. gangetica*		Y			1/1
plants	higher dicots	Acanthaceae	*Brunoniella acaulis*			C		1
plants	higher dicots	Acanthaceae	*Justicia betonica*		Y			3/3
plants	higher dicots	Acanthaceae	*Harnieria hygrophiloides*	white karambal		C		7/4
plants	higher dicots	Acanthaceae	*Pseuderanthemum tenellum*			C		1
plants	higher dicots	Acanthaceae	*Rhaphidospora cavernarum*			V		2
plants	higher dicots	Acanthaceae	*Rostellularia adscendens*			C		8/2
plants	higher dicots	Acanthaceae	*Pseuderanthemum variabile*	pastel flower		C		10
plants	higher dicots	Aizoaceae	*Trianthema portulacastrum*	black pigweed	Y			4/3
plants	higher dicots	Amaranthaceae	*Alternanthera denticulata*	lesser joyweed		C		1/1
plants	higher dicots	Amaranthaceae	*Deeringia amaranthoides*	redberry		C		8/2
plants	higher dicots	Amaranthaceae	*Alternanthera ficoidea*		Y			2/2
plants	higher dicots	Amaranthaceae	*Amaranthus viridis*	green amaranth	Y			7/6
plants	higher dicots	Amaranthaceae	*Alternanthera pungens*	khaki weed	Y			2/2
plants	higher dicots	Amaranthaceae	*Gomphrena celosioides*	gomphrena weed	Y			6/5
plants	higher dicots	Amaranthaceae	*Achyranthes aspera*			C		4
plants	higher dicots	Amaranthaceae	*Guilleminea densa*	small matweed	Y			2/2
plants	higher dicots	Amaranthaceae	*Alternanthera*			C		2
plants	higher dicots	Anacardiaceae	*Pleiogynium timorense*	Burdekin plum		C		32/3
plants	higher dicots	Anacardiaceae	*Euroschinus falcatus*			C		36
plants	higher dicots	Anacardiaceae	*Mangifera indica*	mango	Y			4/4
plants	higher dicots	Anacardiaceae	*Rhus taitensis*	sumac		C		1
plants	higher dicots	Anacardiaceae	*Schinus terebinthifolius*		Y			7/6
plants	higher dicots	Anacardiaceae	*Euroschinus falcatus var. falcatus*			C		2/1
plants	higher dicots	Apiaceae	*Centella asiatica*			C		1
plants	higher dicots	Apiaceae	*Cyclospermum leptophyllum*		Y			2/2
plants	higher dicots	Apocynaceae	*Parsonsia paulforsteri*			C		7/1
plants	higher dicots	Apocynaceae	*Gomphocarpus fruticosus*	narrow-leaved cotton bush	Y			1
plants	higher dicots	Apocynaceae	*Heterostemma acuminatum*			C		6/1
plants	higher dicots	Apocynaceae	*Parsonsia plaesiophylla*			C		9/3
plants	higher dicots	Apocynaceae	*Acokanthera oblongifolia*	bushman's poison	Y			1/1

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plants	higher dicots	Apocynaceae	*Cryptostegia grandiflora*	rubber vine	Y			67/14
plants	higher dicots	Apocynaceae	*Gomphocarpus physocarpus*	balloon cottonbush	Y			6/4
plants	higher dicots	Apocynaceae	*Parsonsia eucalyptophylla*	gargaloo		C		1/1
plants	higher dicots	Apocynaceae	*Hoya australis subsp. australis*			C		2/2
plants	higher dicots	Apocynaceae	*Cynanchum viminale subsp. australe*			C		3
plants	higher dicots	Apocynaceae	*Cynanchum viminale subsp. brunonianum*			C		5/2
plants	higher dicots	Apocynaceae	*Marsdenia viridiflora subsp. viridiflora*			C		1/1
plants	higher dicots	Apocynaceae	*Marsdenia*			C		1
plants	higher dicots	Apocynaceae	*Carissa ovata*	currantbush		C		56/1
plants	higher dicots	Apocynaceae	*Hoya australis*			C		12
plants	higher dicots	Apocynaceae	*Parsonsia fulva*	furry silkpod		C		3
plants	higher dicots	Apocynaceae	*Parsonsia rotata*	veinless silkpod		C		1/1
plants	higher dicots	Apocynaceae	*Alyxia ruscifolia*			C		33/1
plants	higher dicots	Apocynaceae	*Cascabela thevetia*	yellow oleander	Y			7/7
plants	higher dicots	Apocynaceae	*Parsonsia velutina*	hairy silkpod		C		7/1
plants	higher dicots	Apocynaceae	*Secamone elliptica*			C		16/2
plants	higher dicots	Apocynaceae	*Alstonia constricta*	bitterbark		C		31
plants	higher dicots	Apocynaceae	*Catharanthus roseus*	pink periwinkle	Y			3/3
plants	higher dicots	Apocynaceae	*Parsonsia straminea*	monkey rope		C		5
plants	higher dicots	Apocynaceae	*Vincetoxicum ovatum*			C		8/3
plants	higher dicots	Apocynaceae	*Marsdenia brevifolia*			V	V	4/4
plants	higher dicots	Apocynaceae	*Marsdenia micradenia*	gymnema		C		9/4
plants	higher dicots	Apocynaceae	*Marsdenia pleiadenia*			C		5/1
plants	higher dicots	Apocynaceae	*Parsonsia lanceolata*	northern silkpod		C		11/4
plants	higher dicots	Apocynaceae	*Sarcostemma viminale*					7
plants	higher dicots	Apocynaceae	*Asclepias curassavica*	red-head cottonbush	Y			12/6
plants	higher dicots	Apocynaceae	*Marsdenia viridiflora*			C		1
plants	higher dicots	Apocynaceae	*Parsonsia larcomensis*			V	V	5/5
plants	higher dicots	Apocynaceae	*Rauvolfia tetraphylla*		Y			8/8
plants	higher dicots	Araliaceae	*Hydrocotyle acutiloba*			C		1/1
plants	higher dicots	Araliaceae	*Polyscias elegans*	celery wood		C		20
plants	higher dicots	Araliaceae	*Schefflera actinophylla*	umbrella tree		C		10
plants	higher dicots	Asteraceae	*Senecio prenanthoides*			C		1/1
plants	higher dicots	Asteraceae	*Solenogyne bellioides*			C		1
plants	higher dicots	Asteraceae	*Coronidium lanuginosum*			C		1/1
plants	higher dicots	Asteraceae	*Eschenbachia leucantha*			C		1/1
plants	higher dicots	Asteraceae	*Pterocaulon serrulatum*			C		1
plants	higher dicots	Asteraceae	*Sigesbeckia orientalis*	Indian weed		C		2
plants	higher dicots	Asteraceae	*Xerochrysum bracteatum*	golden everlasting daisy		C		1
plants	higher dicots	Asteraceae	*Eschenbachia aegyptiaca*			C		2/2
plants	higher dicots	Asteraceae	*Ozothamnus cassinioides*			C		1/1
plants	higher dicots	Asteraceae	*Sphagneticola trilobata*		Y			2/2
plants	higher dicots	Asteraceae	*Parthenium hysterophorus*	parthenium weed	Y			4/4
plants	higher dicots	Asteraceae	*Symphyotrichum subulatum*		Y			2/1
plants	higher dicots	Asteraceae	*Chrysocephalum apiculatum*	yellow buttons		C		2/1
plants	higher dicots	Asteraceae	*Sigesbeckia australiensis*			C		1

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plants	higher dicots	Asteraceae	*Synedrellopsis grisebachii*		Y			2/2
plants	higher dicots	Asteraceae	*Apowollastonia spilanthoides*			C		5/2
plants	higher dicots	Asteraceae	*Peripleura hispidula var. setosa*			C		3/2
plants	higher dicots	Asteraceae	*Wollastonia biflora*			C		1
plants	higher dicots	Asteraceae	*Calyptocarpus vialis*	creeping cinderella weed	Y			7/7
plants	higher dicots	Asteraceae	*Erigeron bonariensis*		Y			3/1
plants	higher dicots	Asteraceae	*Erigeron sumatrensis*		Y			2/2
plants	higher dicots	Asteraceae	*Rhodanthe polyphylla*			C		1
plants	higher dicots	Asteraceae	*Xanthium occidentale*		Y			2/1
plants	higher dicots	Asteraceae	*Ageratum houstonianum*	blue billygoat weed	Y			1
plants	higher dicots	Asteraceae	*Baccharis halimifolia*	groundsel bush	Y			1/1
plants	higher dicots	Asteraceae	*Conyza*					1
plants	higher dicots	Asteraceae	*Calotis*			C		1
plants	higher dicots	Asteraceae	*Epaltes*			C		1
plants	higher dicots	Asteraceae	*Ageratum*			C		1
plants	higher dicots	Asteraceae	*Bidens pilosa*		Y			5/3
plants	higher dicots	Asteraceae	*Apowollastonia*			C		2
plants	higher dicots	Asteraceae	*Chrysocephalum*			C		1
plants	higher dicots	Asteraceae	*Calotis cuneata*			C		1/1
plants	higher dicots	Asteraceae	*Cirsium vulgare*	spear thistle	Y			1/1
plants	higher dicots	Asteraceae	*Blumea saxatilis*			C		1/1
plants	higher dicots	Asteraceae	*Pluchea xanthina*			C		1/1
plants	higher dicots	Asteraceae	*Camptacra barbata*			C		5/5
plants	higher dicots	Asteraceae	*Eclipta prostrata*	white eclipta	Y			2/2
plants	higher dicots	Asteraceae	*Olearia canescens*			C		2
plants	higher dicots	Asteraceae	*Schkuhria pinnata*		Y			2/2
plants	higher dicots	Asteraceae	*Sonchus oleraceus*	common sowthistle	Y			5/3
plants	higher dicots	Asteraceae	*Tridax procumbens*	tridax daisy	Y			3/2
plants	higher dicots	Asteraceae	*Coronidium cymosum*			C		1/1
plants	higher dicots	Asteraceae	*Emilia sonchifolia*		Y			3
plants	higher dicots	Asteraceae	*Peripleura bicolor*			C		1/1
plants	higher dicots	Asteraceae	*Podolepis neglecta*			C		1/1
plants	higher dicots	Asteraceae	*Ageratum conyzoides*	billygoat weed	Y			1
plants	higher dicots	Asteraceae	*Coronidium rupicola*			C		1
plants	higher dicots	Asteraceae	*Senecio brigalowensis*			C		1/1
plants	higher dicots	Asteraceae	*Praxelis clematidea*		Y			1/1
plants	higher dicots	Asteraceae	*Cyanthillium cinereum*			C		8/2
plants	higher dicots	Asteraceae	*Podolepis arachnoidea*	clustered copper-wire daisy		C		1
plants	higher dicots	Basellaceae	*Anredera cordifolia*	Madeira vine	Y			2
plants	higher dicots	Bignoniaceae	*Spathodea campanulata subsp. nilotica*		Y			1/1
plants	higher dicots	Bignoniaceae	*Pandorea pandorana*	wonga vine		C		13/1
plants	higher dicots	Bignoniaceae	*Tecoma stans*	tecoma	Y			1
plants	higher dicots	Boraginaceae	*Ehretia*			C		1
plants	higher dicots	Boraginaceae	*Ehretia acuminata var. acuminata*			C		1
plants	higher dicots	Boraginaceae	*Heliotropium amplexicaule*	blue heliotrope	Y			2/2
plants	higher dicots	Boraginaceae	*Heliotropium ovalifolium*			C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Boraginaceae	*Trichodesma zeylanicum*			C		2
plants	higher dicots	Boraginaceae	*Cordia sinensis*		Y			7/7
plants	higher dicots	Boraginaceae	*Cordia dichotoma*			C		18/3
plants	higher dicots	Boraginaceae	*Heliotropium indicum*		Y			7/6
plants	higher dicots	Boraginaceae	*Ehretia membranifolia*	weeping koda		C		32/1
plants	higher dicots	Brassicaceae	*Lepidium bonariense*	Argentine peppercress	Y			4/3
plants	higher dicots	Byttneriaceae	*Seringia*			C		1/1
plants	higher dicots	Byttneriaceae	*Waltheria indica*			C		1/1
plants	higher dicots	Byttneriaceae	*Seringia lanceolata*			C		1
plants	higher dicots	Byttneriaceae	*Commersonia bartramia*	brown kurrajong		C		1
plants	higher dicots	Cactaceae	*Opuntia*			C		1
plants	higher dicots	Cactaceae	*Opuntia stricta*		Y			18/3
plants	higher dicots	Cactaceae	*Harrisia martinii*		Y			2/1
plants	higher dicots	Cactaceae	*Opuntia tomentosa*	velvety tree pear	Y			3/2
plants	higher dicots	Cactaceae	*Opuntia streptacantha*	cardona pear	Y			2/2
plants	higher dicots	Cactaceae	*Acanthocereus tetragonus*	sword pear	Y			1/1
plants	higher dicots	Caesalpiniaceae	*Chamaecrista rotundifolia var. rotundifolia*		Y			1/1
plants	higher dicots	Caesalpiniaceae	*Schotia brachypetala*	kaffir bean	Y			1/1
plants	higher dicots	Caesalpiniaceae	*Senna pendula var. glabrata*	Easter cassia	Y			6/5
plants	higher dicots	Caesalpiniaceae	*Haematoxylum campechianum*	logwood tree	Y			3/3
plants	higher dicots	Caesalpiniaceae	*Caesalpinia scortechinii*	large prickle vine		C		1
plants	higher dicots	Caesalpiniaceae	*Peltophorum pterocarpum*	yellow poinciana	Y			4/4
plants	higher dicots	Caesalpiniaceae	*Chamaecrista mimosoides*	dwarf cassia		C		1
plants	higher dicots	Caesalpiniaceae	*Chamaecrista concinna*			C		1/1
plants	higher dicots	Caesalpiniaceae	*Cassia*			C		1
plants	higher dicots	Caesalpiniaceae	*Caesalpinia*			C		1
plants	higher dicots	Caesalpiniaceae	*Lysiphyllum*			C		1
plants	higher dicots	Caesalpiniaceae	*Senna alata*		Y			1/1
plants	higher dicots	Caesalpiniaceae	*Delonix regia*	poinciana	Y			2/2
plants	higher dicots	Caesalpiniaceae	*Cassia fistula*	Indian laburnum	Y			1/1
plants	higher dicots	Caesalpiniaceae	*Senna barclayana*			C		5/4
plants	higher dicots	Caesalpiniaceae	*Bauhinia galpinii*		Y			1/1
plants	higher dicots	Caesalpiniaceae	*Bauhinia purpurea*		Y			2/2
plants	higher dicots	Caesalpiniaceae	*Cassia tomentella*			C		51/7
plants	higher dicots	Caesalpiniaceae	*Tamarindus indica*		Y			4/4
plants	higher dicots	Caesalpiniaceae	*Bauhinia variegata*		Y			1/1
plants	higher dicots	Caesalpiniaceae	*Senna gaudichaudii*			C		7/2
plants	higher dicots	Caesalpiniaceae	*Lysiphyllum hookeri*	Queensland ebony		C		33/2
plants	higher dicots	Caesalpiniaceae	*Senna barronfieldii*			C		1/1
plants	higher dicots	Caesalpiniaceae	*Senna coronilloides*			C		1
plants	higher dicots	Caesalpiniaceae	*Barklya syringifolia*	golden shower tree		C		3/1
plants	higher dicots	Caesalpiniaceae	*Lysiphyllum carronii*	ebony tree		C		4
plants	higher dicots	Caesalpiniaceae	*Parkinsonia aculeata*	parkinsonia	Y			8/7
plants	higher dicots	Caesalpiniaceae	*Chamaecrista absus var. absus*			C		2
plants	higher dicots	Campanulaceae	*Isotoma axillaris*	australian harebell		C		1/1
plants	higher dicots	Campanulaceae	*Wahlenbergia*			C		1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Capparaceae	*Apophyllum anomalum*	broom bush		C		4
plants	higher dicots	Capparaceae	*Capparis canescens*			C		11
plants	higher dicots	Capparaceae	*Capparis loranthifolia*			C		12
plants	higher dicots	Capparaceae	*Capparis mitchellii*			C		1
plants	higher dicots	Capparaceae	*Capparis humistrata*			E		1/1
plants	higher dicots	Capparaceae	*Capparis lasiantha*	nipan		C		9/2
plants	higher dicots	Capparaceae	*Capparis lucida*			C		1
plants	higher dicots	Capparaceae	*Capparis ornans*			C		8/2
plants	higher dicots	Capparaceae	*Capparis arborea*	brush caper berry		C		15
plants	higher dicots	Caricaceae	*Carica papaya*	pawpaw	Y			1/1
plants	higher dicots	Carpodetaceae	*Abrophyllum ornans*			C		2/1
plants	higher dicots	Casuarinaceae	*Casuarina cunninghamiana*			C		34
plants	higher dicots	Casuarinaceae	*Casuarina*					2
plants	higher dicots	Casuarinaceae	*Casuarina glauca*	swamp she-oak		C		1
plants	higher dicots	Casuarinaceae	*Casuarina cristata*	belah		C		37/1
plants	higher dicots	Casuarinaceae	*Casuarina cunninghamiana subsp. cunninghamiana*			C		3/2
plants	higher dicots	Casuarinaceae	*Allocasuarina littoralis*			C		1
plants	higher dicots	Casuarinaceae	*Allocasuarina torulosa*			C		19/2
plants	higher dicots	Celastraceae	*Celastraceae*			C		1
plants	higher dicots	Celastraceae	*Denhamia disperma*			C		20/3
plants	higher dicots	Celastraceae	*Denhamia oleaster*			C		4
plants	higher dicots	Celastraceae	*Siphonodon australis*	ivorywood		C		24/1
plants	higher dicots	Celastraceae	*Denhamia cunninghamii*			C		13/1
plants	higher dicots	Celastraceae	*Denhamia pittosporoides subsp. pittosporoides*			C		4/4
plants	higher dicots	Celastraceae	*Pleurostylia opposita*			C		4
plants	higher dicots	Celastraceae	*Denhamia pittosporoides*			C		18
plants	higher dicots	Celastraceae	*Elaeodendron melanocarpum*			C		15/2
plants	higher dicots	Celastraceae	*Elaeodendron australe var. australe*			C		1/1
plants	higher dicots	Celastraceae	*Elaeodendron australe var. integrifolium*			C		2/1
plants	higher dicots	Celastraceae	*Elaeodendron australe*			C		18
plants	higher dicots	Chenopodiaceae	*Suaeda*			C		1
plants	higher dicots	Chenopodiaceae	*Maireana*			C		1
plants	higher dicots	Chenopodiaceae	*Einadia hastata*			C		4
plants	higher dicots	Chenopodiaceae	*Chenopodium album*	fat-hen	Y			2/1
plants	higher dicots	Chenopodiaceae	*Einadia trigonos subsp. stellulata*			C		2/1
plants	higher dicots	Chenopodiaceae	*Enchylaena tomentosa*			C		1
plants	higher dicots	Chenopodiaceae	*Dysphania ambrosioides*		Y			1/1
plants	higher dicots	Chenopodiaceae	*Sclerolaena tetracuspis*	brigalow burr		C		1
plants	higher dicots	Chenopodiaceae	*Einadia nutans subsp. linifolia*			C		1/1
plants	higher dicots	Chenopodiaceae	*Salsola australis*			C		2/1
plants	higher dicots	Cleomaceae	*Cleome*			C		1/1
plants	higher dicots	Combretaceae	*Terminalia*			C		1
plants	higher dicots	Combretaceae	*Terminalia muelleri*			C		2
plants	higher dicots	Combretaceae	*Terminalia oblongata*			C		2
plants	higher dicots	Combretaceae	*Terminalia sericocarpa*	damson		C		1
plants	higher dicots	Combretaceae	*Terminalia porphyrocarpa*			C		40/8

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Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Convolvulaceae	*Polymeria*			C		1
plants	higher dicots	Convolvulaceae	*Ipomoea carnea subsp. fistulosa*		Y			3/3
plants	higher dicots	Convolvulaceae	*Evolvulus alsinoides*			C		1/1
plants	higher dicots	Convolvulaceae	*Polymeria calycina*	pink bindweed		C		1/1
plants	higher dicots	Convolvulaceae	*Ipomoea polymorpha*			C		2/1
plants	higher dicots	Convolvulaceae	*Polymeria pusilla*			C		1/1
plants	higher dicots	Convolvulaceae	*Convolvulus*			C		1
plants	higher dicots	Convolvulaceae	*Ipomoea cairica*		Y			2
plants	higher dicots	Convolvulaceae	*Ipomoea plebeia*	bellvine		C		3
plants	higher dicots	Convolvulaceae	*Cuscuta australis*	Australian dodder		C		1/1
plants	higher dicots	Convolvulaceae	*Merremia dissecta*		Y			3/3
plants	higher dicots	Cornaceae	*Alangium villosum subsp. tomentosum*			C		9/1
plants	higher dicots	Crassulaceae	*Bryophyllum delagoense*		Y			6/3
plants	higher dicots	Crassulaceae	*Bryophyllum*			C		1
plants	higher dicots	Crassulaceae	*Bryophyllum x houghtonii*		Y			2/2
plants	higher dicots	Cucurbitaceae	*Coccinia grandis*		Y			1/1
plants	higher dicots	Cucurbitaceae	*Diplocyclos palmatus*			C		5
plants	higher dicots	Dilleniaceae	*Hibbertia*			C		1
plants	higher dicots	Dilleniaceae	*Hibbertia stricta*			C		4/1
plants	higher dicots	Droseraceae	*Drosera lunata*			C		1/1
plants	higher dicots	Ebenaceae	*Diospyros australis*	black plum		C		16/2
plants	higher dicots	Ebenaceae	*Diospyros fasciculosa*	grey ebony		C		11/1
plants	higher dicots	Ebenaceae	*Diospyros humilis*	small-leaved ebony		C		55/4
plants	higher dicots	Ebenaceae	*Diospyros geminata*	scaly ebony		C		31/2
plants	higher dicots	Elaeocarpaceae	*Elaeocarpus reticulatus*	ash quandong		C		1
plants	higher dicots	Elaeocarpaceae	*Elaeocarpus obovatus*	blueberry ash		C		16/2
plants	higher dicots	Ericaceae	*Leucopogon*			C		8/8
plants	higher dicots	Ericaceae	*Leucopogon imbricatus*			C		1/1
plants	higher dicots	Ericaceae	*Leucopogon mitchellii*			C		7/5
plants	higher dicots	Ericaceae	*Leucopogon cuspidatus*			C		9/7
plants	higher dicots	Erythroxylaceae	*Erythroxylum australe*	cocaine tree		C		11
plants	higher dicots	Erythroxylaceae	*Erythroxylum sp. (Splityard Creek L.Pedley 5360)*			C		2/2
plants	higher dicots	Euphorbiaceae	*Mallotus discolor*	white kamala		C		3
plants	higher dicots	Euphorbiaceae	*Manihot esculenta*		Y			1/1
plants	higher dicots	Euphorbiaceae	*Baloghia inophylla*	scrub bloodwood		C		17/2
plants	higher dicots	Euphorbiaceae	*Bertya pedicellata*			NT		1/1
plants	higher dicots	Euphorbiaceae	*Macaranga tanarius*	macaranga		C		4
plants	higher dicots	Euphorbiaceae	*Acalypha capillipes*	small-leaved acalypha		C		6
plants	higher dicots	Euphorbiaceae	*Croton phebalioides*	narrow-leaved croton		C		9/1
plants	higher dicots	Euphorbiaceae	*Euphorbia tannensis*			C		1
plants	higher dicots	Euphorbiaceae	*Mallotus ficifolius*			C		3/3
plants	higher dicots	Euphorbiaceae	*Alchornea ilicifolia*	native holly		C		20/4
plants	higher dicots	Euphorbiaceae	*Excoecaria agallocha*	milky mangrove		C		1/1
plants	higher dicots	Euphorbiaceae	*Croton acronychioides*	thick-leaved croton		C		23/6
plants	higher dicots	Euphorbiaceae	*Euphorbia cyathophora*	dwarf poinsettia	Y			8/7
plants	higher dicots	Euphorbiaceae	*Euphorbia dallachyana*			C		1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Euphorbiaceae	*Euphorbia ophiolitica*			C		1/1
plants	higher dicots	Euphorbiaceae	*Mallotus claoxyloides*	green kamala		C		13/2
plants	higher dicots	Euphorbiaceae	*Mallotus philippensis*	red kamala		C		60
plants	higher dicots	Euphorbiaceae	*Claoxylon tenerifolium*	Queensland brittlewood		C		3
plants	higher dicots	Euphorbiaceae	*Euphorbia heterophylla*		Y			3/3
plants	higher dicots	Euphorbiaceae	*Euphorbia hyssopifolia*		Y			1/1
plants	higher dicots	Euphorbiaceae	*Excoecaria dallachyana*	scrub poison tree		C		21
plants	higher dicots	Euphorbiaceae	*Acalypha eremorum*	soft acalypha		C		8/2
plants	higher dicots	Euphorbiaceae	*Jatropha gossypiifolia*	bellyache bush	Y			1/1
plants	higher dicots	Euphorbiaceae	*Croton insularis*	Queensland cascarilla		C		10
plants	higher dicots	Euphorbiaceae	*Euphorbia hirta*		Y			4/3
plants	higher dicots	Euphorbiaceae	*Beyeria viscosa*			C		3/2
plants	higher dicots	Euphorbiaceae	*Bertya*			C		4
plants	higher dicots	Euphorbiaceae	*Claoxylon tenerifolium subsp. tenerifolium*			C		1/1
plants	higher dicots	Euphorbiaceae	*Euphorbia tannensis subsp. eremophila*			C		2/1
plants	higher dicots	Euphorbiaceae	*Adriana tomentosa var. tomentosa*			C		1/1
plants	higher dicots	Euphorbiaceae	*Homalanthus novoguineensis*			C		1/1
plants	higher dicots	Euphorbiaceae	*Homalanthus populifolius*			C		2/1
plants	higher dicots	Euphorbiaceae	*Tragia novae-hollandiae*	stinging-vine		C		2/1
plants	higher dicots	Euphorbiaceae	*Ricinus communis*	castor oil bush	Y			4/4
plants	higher dicots	Fabaceae	*Canavalia rosea*	coastal jack bean		C		3
plants	higher dicots	Fabaceae	*Desmodium gunnii*			C		1
plants	higher dicots	Fabaceae	*Glycine tabacina*	glycine pea		C		1
plants	higher dicots	Fabaceae	*Mirbelia pungens*			C		1/1
plants	higher dicots	Fabaceae	*Clitoria ternatea*	butterfly pea	Y			3/2
plants	higher dicots	Fabaceae	*Crotalaria juncea*	sunhemp	Y			1/1
plants	higher dicots	Fabaceae	*Flemingia lineata*			C		1/1
plants	higher dicots	Fabaceae	*Glycine cyrtoloba*			C		1
plants	higher dicots	Fabaceae	*Crotalaria montana*			C		3
plants	higher dicots	Fabaceae	*Crotalaria pallida*		Y			3
plants	higher dicots	Fabaceae	*Desmodium muelleri*			C		1/1
plants	higher dicots	Fabaceae	*Glycine tomentella*	woolly glycine		C		1
plants	higher dicots	Fabaceae	*Indigofera hirsuta*	hairy indigo		C		3
plants	higher dicots	Fabaceae	*Indigofera linnaei*	Birdsville indigo		C		1/1
plants	higher dicots	Fabaceae	*Jacksonia scoparia*			C		6/1
plants	higher dicots	Fabaceae	*Kennedia rubicunda*	red Kennedy pea		C		2/1
plants	higher dicots	Fabaceae	*Pultenaea setulosa*			V	V	2/2
plants	higher dicots	Fabaceae	*Sesbania cannabina*			C		1
plants	higher dicots	Fabaceae	*Zornia dyctiocarpa*			C		1/1
plants	higher dicots	Fabaceae	*Aeschynomene indica*	budda pea		C		1/1
plants	higher dicots	Fabaceae	*Crotalaria calycina*			C		2/1
plants	higher dicots	Fabaceae	*Desmodium tortuosum*	Florida beggar-weed	Y			2/2
plants	higher dicots	Fabaceae	*Desmodium triflorum*		Y			1
plants	higher dicots	Fabaceae	*Galactia tenuiflora*			C		1
plants	higher dicots	Fabaceae	*Glycine clandestina*			C		1
plants	higher dicots	Fabaceae	*Stylosanthes scabra*		Y			10/8

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plants	higher dicots	Fabaceae	*Crotalaria goreensis*	gambia pea	Y			1/1
plants	higher dicots	Fabaceae	*Cullen australasicum*			C		2/1
plants	higher dicots	Fabaceae	*Flemingia parviflora*	flemingia		C		9/1
plants	higher dicots	Fabaceae	*Indigofera linifolia*			C		2/1
plants	higher dicots	Fabaceae	*Indigofera pratensis*			C		6/2
plants	higher dicots	Fabaceae	*Indigofera tinctoria*		Y			6/5
plants	higher dicots	Fabaceae	*Pycnospora lutescens*	pycnospora		C		2/1
plants	higher dicots	Fabaceae	*Chorizema parviflorum*	eastern flame pea		C		4/2
plants	higher dicots	Fabaceae	*Crotalaria lanceolata*		Y			3
plants	higher dicots	Fabaceae	*Desmodium brachypodum*	large ticktrefoil		C		1
plants	higher dicots	Fabaceae	*Erythrina vespertilio*			C		9
plants	higher dicots	Fabaceae	*Hardenbergia violacea*			C		5/1
plants	higher dicots	Fabaceae	*Stylosanthes guianensis var. guianensis*		Y			1/1
plants	higher dicots	Fabaceae	*Macroptilium lathyroides var. semierectum*		Y			2/2
plants	higher dicots	Fabaceae	*Swainsona galegifolia*	smooth Darling pea		C		3/1
plants	higher dicots	Fabaceae	*Crotalaria spectabilis*	showy rattlepod	Y			1/1
plants	higher dicots	Fabaceae	*Austrosteenisia blackii*	bloodvine		C		40
plants	higher dicots	Fabaceae	*Indigofera suffruticosa*		Y			1/1
plants	higher dicots	Fabaceae	*Swainsona queenslandica*			C		1/1
plants	higher dicots	Fabaceae	*Desmodium rhytidophyllum*			C		7/1
plants	higher dicots	Fabaceae	*Desmodium trichostachyum*			C		1
plants	higher dicots	Fabaceae	*Macroptilium lathyroides*		Y			7/4
plants	higher dicots	Fabaceae	*Rhynchosia acuminatissima*			C		2/1
plants	higher dicots	Fabaceae	*Macroptilium atropurpureum*	siratro	Y			3/2
plants	higher dicots	Fabaceae	*Medicago sativa subsp. sativa*		Y			1/1
plants	higher dicots	Fabaceae	*Rhynchosia minima var. minima*			C		1
plants	higher dicots	Fabaceae	*Vigna vexillata var. youngiana*			C		1
plants	higher dicots	Fabaceae	*Crotalaria incana subsp. incana*		Y			3/2
plants	higher dicots	Fabaceae	*Crotalaria pallida var. obovata*		Y			6/5
plants	higher dicots	Fabaceae	*Galactia tenuiflora var. lucida*			C		1/1
plants	higher dicots	Fabaceae	*Neonotonia wightii var. wightii*		Y			1/1
plants	higher dicots	Fabaceae	*Rhynchosia minima var. australis*			C		2/1
plants	higher dicots	Fabaceae	*Sesbania cannabina var. cannabina*			C		2/2
plants	higher dicots	Fabaceae	*Vigna vexillata var. angustifolia*			C		1/1
plants	higher dicots	Fabaceae	*Macrotyloma axillare var. axillare*		Y			2/2
plants	higher dicots	Fabaceae	*Zornia dyctiocarpa var. dyctiocarpa*			C		1
plants	higher dicots	Fabaceae	*Austrosteenisia blackii var. blackii*			C		2/2
plants	higher dicots	Fabaceae	*Cajanus reticulatus var. reticulatus*			C		2/1
plants	higher dicots	Fabaceae	*Crotalaria medicaginea var. neglecta*			C		1/1
plants	higher dicots	Fabaceae	*Crotalaria incana subsp. purpurascens*		Y			1/1
plants	higher dicots	Fabaceae	*Crotalaria lanceolata subsp. lanceolata*		Y			2/2
plants	higher dicots	Fabaceae	*Zornia*			C		2
plants	higher dicots	Fabaceae	*Glycine*			C		6
plants	higher dicots	Fabaceae	*Fabaceae*			C		1
plants	higher dicots	Fabaceae	*Sesbania*			C		2
plants	higher dicots	Fabaceae	*Desmodium*			C		5

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plants	higher dicots	Fabaceae	*Swainsona*			C		1
plants	higher dicots	Fabaceae	*Uraria picta*			C		1/1
plants	higher dicots	Fabaceae	*Vigna luteola*	dalrymple vigna	Y			2/2
plants	higher dicots	Flacourtiaceae	*Casearia*			C		2
plants	higher dicots	Flacourtiaceae	*Scolopia braunii*	flintwood		C		14/1
plants	higher dicots	Flacourtiaceae	*Xylosma terrae-reginae*	xylosma		C		9/5
plants	higher dicots	Flacourtiaceae	*Homalium alnifolium*	homalium		C		19/7
plants	higher dicots	Flacourtiaceae	*Flacourtia indica*		Y			1/1
plants	higher dicots	Gentianaceae	*Schenkia australis*			C		1/1
plants	higher dicots	Goodeniaceae	*Goodenia*			C		1
plants	higher dicots	Goodeniaceae	*Goodenia grandiflora*			C		2/1
plants	higher dicots	Goodeniaceae	*Goodenia glabra*			C		1/1
plants	higher dicots	Goodeniaceae	*Brunonia australis*	blue pincushion		C		1
plants	higher dicots	Gyrostemonaceae	*Codonocarpus attenuatus*			C		1/1
plants	higher dicots	Haloragaceae	*Haloragis heterophylla*	rough raspweed		C		1/1
plants	higher dicots	Haloragaceae	*Gonocarpus chinensis subsp. verrucosus*			C		1/1
plants	higher dicots	Haloragaceae	*Myriophyllum verrucosum*	water milfoil		C		2/2
plants	higher dicots	Haloragaceae	*Myriophyllum muricatum*			C		1/1
plants	higher dicots	Lamiaceae	*Gmelina philippensis*		Y			2/2
plants	higher dicots	Lamiaceae	*Leonotis nepetifolia*		Y			9/8
plants	higher dicots	Lamiaceae	*Clerodendrum inerme*	coastal lolly bush		C		3
plants	higher dicots	Lamiaceae	*Callicarpa thozetii*			E		3/3
plants	higher dicots	Lamiaceae	*Anisomeles moschata*			C		1/1
plants	higher dicots	Lamiaceae	*Ocimum americanum*		Y			6/5
plants	higher dicots	Lamiaceae	*Gmelina elliptica*	badhara bush	Y			5/4
plants	higher dicots	Lamiaceae	*Vitex melicopea*			C		20/4
plants	higher dicots	Lamiaceae	*Vitex acuminata*			C		3
plants	higher dicots	Lamiaceae	*Ajuga australis*	Australian bugle		C		7/1
plants	higher dicots	Lamiaceae	*Anisomeles malabarica*			C		1
plants	higher dicots	Lamiaceae	*Glossocarya calcicola*			C		1
plants	higher dicots	Lamiaceae	*Glossocarya hemiderma*			C		12/2
plants	higher dicots	Lamiaceae	*Leucas lavandulifolia*		Y			8/7
plants	higher dicots	Lamiaceae	*Pityrodia salviifolia*	pityrodia		C		1
plants	higher dicots	Lamiaceae	*Callicarpa pedunculata*	velvet leaf		C		3/1
plants	higher dicots	Lamiaceae	*Clerodendrum tomentosum*			C		8/1
plants	higher dicots	Lamiaceae	*Plectranthus graveolens*	flea bush		C		15/5
plants	higher dicots	Lamiaceae	*Clerodendrum floribundum*			C		28/2
plants	higher dicots	Lamiaceae	*Plectranthus parviflorus*			C		1
plants	higher dicots	Lamiaceae	*Mentha*			C		1
plants	higher dicots	Lamiaceae	*Glossocarya*					1
plants	higher dicots	Lamiaceae	*Plectranthus*			C		5/2
plants	higher dicots	Lecythidaceae	*Planchonia careya*	cockatoo apple		C		16/1
plants	higher dicots	Loganiaceae	*Strychnos psilosperma*	strychnine tree		C		19/8
plants	higher dicots	Loranthaceae	*Amyema miquelii*			C		1/1
plants	higher dicots	Loranthaceae	*Amyema quandang*			C		1
plants	higher dicots	Loranthaceae	*Amyema congener subsp. rotundifolia*			C		2

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plants	higher dicots	Loranthaceae	*Amyema pendula subsp. longifolia*			C		1/1
plants	higher dicots	Loranthaceae	*Dendrophthoe glabrescens*			C		4/4
plants	higher dicots	Loranthaceae	*Amyema biniflora*			C		1/1
plants	higher dicots	Lythraceae	*Lagerstroemia indica*		Y			1/1
plants	higher dicots	Malpighiaceae	*Stigmaphyllon timoriense*			C		1
plants	higher dicots	Malpighiaceae	*Stigmaphyllon australiense*			C		4/4
plants	higher dicots	Malvaceae	*Malvastrum coromandelianum subsp. coromandelianum*		Y			2/2
plants	higher dicots	Malvaceae	*Urena lobata*	urena weed	Y			1/1
plants	higher dicots	Malvaceae	*Malvastrum americanum var. americanum*		Y			2/1
plants	higher dicots	Malvaceae	*Hibiscus tridactylites*			C		2
plants	higher dicots	Malvaceae	*Hibiscus heterophyllus*			C		27
plants	higher dicots	Malvaceae	*Hibiscus rosasinensis*		Y			1/1
plants	higher dicots	Malvaceae	*Hibiscus divaricatus*			C		3/1
plants	higher dicots	Malvaceae	*Hibiscus vitifolius*			C		2/2
plants	higher dicots	Malvaceae	*Sida*			C		4
plants	higher dicots	Malvaceae	*Abelmoschus*					1
plants	higher dicots	Malvaceae	*Sida spinosa*	spiny sida	Y			3/3
plants	higher dicots	Malvaceae	*Sida sp. (Greenvale R.J.Fensham 1150)*			C		1/1
plants	higher dicots	Malvaceae	*Sida cordifolia*		Y			5/1
plants	higher dicots	Malvaceae	*Abutilon auritum*	Chinese lantern		C		8/2
plants	higher dicots	Malvaceae	*Sida hackettiana*			C		3
plants	higher dicots	Malvaceae	*Sida rhombifolia*		Y			7/1
plants	higher dicots	Malvaceae	*Abutilon guineense*		Y			3/3
plants	higher dicots	Malvaceae	*Abutilon oxycarpum*			C		13
plants	higher dicots	Malvaceae	*Hibiscus splendens*	pink hibiscus		C		10/5
plants	higher dicots	Martyniaceae	*Proboscidea lutea*		Y			1/1
plants	higher dicots	Meliaceae	*Owenia venosa*	crow's apple		C		15/2
plants	higher dicots	Meliaceae	*Toona ciliata*	red cedar		C		4
plants	higher dicots	Meliaceae	*Dysoxylum gaudichaudianum*	ivory mahogany		C		3/1
plants	higher dicots	Meliaceae	*Turraea pubescens*	native honeysuckle		C		22/7
plants	higher dicots	Meliaceae	*Melia azedarach*	white cedar		C		23
plants	higher dicots	Menyanthaceae	*Nymphoides indica*	water snowflake		C		1
plants	higher dicots	Mimosaceae	*Vachellia bidwillii*			C		16/7
plants	higher dicots	Mimosaceae	*Acacia fasciculifera*	scaly bark		C		85/5
plants	higher dicots	Mimosaceae	*Vachellia farnesiana*		Y			3/2
plants	higher dicots	Mimosaceae	*Leucaena leucocephala*		Y			1
plants	higher dicots	Mimosaceae	*Acaciella angustissima*	white ball acacia	Y			1/1
plants	higher dicots	Mimosaceae	*Desmanthus pernambucanus*		Y			10/9
plants	higher dicots	Mimosaceae	*Archidendropsis basaltica*	red lancewood		C		5
plants	higher dicots	Mimosaceae	*Pararchidendron pruinosum*			C		3/1
plants	higher dicots	Mimosaceae	*Archidendropsis thozetiana*			C		5/1
plants	higher dicots	Mimosaceae	*Mimosa pudica var. unijuga*		Y			1/1
plants	higher dicots	Mimosaceae	*Acacia blakei subsp. blakei*			C		1/1
plants	higher dicots	Mimosaceae	*Acacia crassa subsp. longicoma*			C		5/1
plants	higher dicots	Mimosaceae	*Neptunia gracilis forma gracilis*			C		1/1
plants	higher dicots	Mimosaceae	*Acacia leiocalyx subsp. leiocalyx*			C		3/3

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plants	higher dicots	Mimosaceae	*Acacia disparrima subsp. disparrima*			C		7/2
plants	higher dicots	Mimosaceae	*Acacia sp. (Canoona S.T.Blake 15321)*			C		5/5
plants	higher dicots	Mimosaceae	*Leucaena leucocephala subsp. glabrata*		Y			4/4
plants	higher dicots	Mimosaceae	*Leucaena leucocephala subsp. leucocephala*		Y			13/12
plants	higher dicots	Mimosaceae	*Acacia*			C		11
plants	higher dicots	Mimosaceae	*Vachellia*			C		1/1
plants	higher dicots	Mimosaceae	*Archidendron*					1
plants	higher dicots	Mimosaceae	*Acacia decora*	pretty wattle		C		8/4
plants	higher dicots	Mimosaceae	*Acacia simsii*			C		1/1
plants	higher dicots	Mimosaceae	*Mimosa pudica*		Y			1
plants	higher dicots	Mimosaceae	*Acacia excelsa*			C		1
plants	higher dicots	Mimosaceae	*Acacia implexa*	lightwood		C		3/1
plants	higher dicots	Mimosaceae	*Acacia julifera*			C		1
plants	higher dicots	Mimosaceae	*Acacia maidenii*	Maiden's wattle		C		14/3
plants	higher dicots	Mimosaceae	*Acacia salicina*	doolan		C		20/3
plants	higher dicots	Mimosaceae	*Albizia lebbeck*	Indian siris		C		10/9
plants	higher dicots	Mimosaceae	*Acacia leiocalyx*			C		11
plants	higher dicots	Mimosaceae	*Prosopis pallida*		Y			2/2
plants	higher dicots	Mimosaceae	*Acacia concurrens*			C		1
plants	higher dicots	Mimosaceae	*Acacia flavescens*	toothed wattle		C		1
plants	higher dicots	Mimosaceae	*Acacia juncifolia*			C		1
plants	higher dicots	Mimosaceae	*Acacia leptocarpa*	north coast wattle		C		2
plants	higher dicots	Mimosaceae	*Albizia canescens*			C		5/1
plants	higher dicots	Mimosaceae	*Acacia aulacocarpa*			C		34
plants	higher dicots	Mimosaceae	*Acacia harpophylla*	brigalow		C		30
plants	higher dicots	Mimosaceae	*Acacia spectabilis*	pilliga wattle		C		1/1
plants	higher dicots	Mimosaceae	*Vachellia nilotica*	prickly acacia	Y			5/5
plants	higher dicots	Mimosaceae	*Acacia leptostachya*	Townsville wattle		C		2/2
plants	higher dicots	Molluginaceae	*Glinus lotoides*	hairy carpet weed		C		5/4
plants	higher dicots	Moraceae	*Morus alba*	white mulberry	Y			1/1
plants	higher dicots	Moraceae	*Ficus virens*			C		8
plants	higher dicots	Moraceae	*Ficus fraseri*	white sandpaper fig		C		5
plants	higher dicots	Moraceae	*Ficus obliqua*			C		25/3
plants	higher dicots	Moraceae	*Ficus coronata*	creek sandpaper fig		C		2
plants	higher dicots	Moraceae	*Ficus opposita*			C		71
plants	higher dicots	Moraceae	*Streblus brunonianus*	whalebone tree		C		23/2
plants	higher dicots	Moraceae	*Maclura cochinchinensis*	cockspur thorn		C		3
plants	higher dicots	Moraceae	*Ficus virens var. virens*			C		7/2
plants	higher dicots	Moraceae	*Ficus racemosa var. racemosa*			C		15
plants	higher dicots	Moraceae	*Trophis scandens subsp. scandens*			C		30/1
plants	higher dicots	Moraceae	*Ficus rubiginosa forma rubiginosa*			C		1
plants	higher dicots	Moraceae	*Ficus*			C		6
plants	higher dicots	Moraceae	*Streblus*					1
plants	higher dicots	Myrsinaceae	*Myrsine variabilis*			C		21/3
plants	higher dicots	Myrsinaceae	*Myrsine serpenticola*			E		2/2
plants	higher dicots	Myrtaceae	*Eucalyptus*			C		2

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plants	higher dicots	Myrtaceae	*Lophostemon*			C		1
plants	higher dicots	Myrtaceae	*Leptospermum*			C		2/1
plants	higher dicots	Myrtaceae	*Psidium guajava*	guava	Y			5/5
plants	higher dicots	Myrtaceae	*Gossia bidwillii*			C		21/4
plants	higher dicots	Myrtaceae	*Syzygium oleosum*	blue cherry		C		2
plants	higher dicots	Myrtaceae	*Backhousia kingii*			C		6/4
plants	higher dicots	Myrtaceae	*Corymbia xanthope*	Glen Geddes bloodwood		V	V	6/3
plants	higher dicots	Myrtaceae	*Eucalyptus crebra*	narrow-leaved red ironbark		C		58/5
plants	higher dicots	Myrtaceae	*Gossia acmenoides*			C		3
plants	higher dicots	Myrtaceae	*Melaleuca citrina*			C		1
plants	higher dicots	Myrtaceae	*Lophostemon suaveolens*	swamp box		C		24/1
plants	higher dicots	Myrtaceae	*Melaleuca linariifolia*	snow-in summer		C		8
plants	higher dicots	Myrtaceae	*Eucalyptus melanophloia*			C		9
plants	higher dicots	Myrtaceae	*Eucalyptus tereticornis*			C		61
plants	higher dicots	Myrtaceae	*Melaleuca quinquenervia*	swamp paperbark		C		5/1
plants	higher dicots	Myrtaceae	*Leptospermum polygalifolium*	tantoon		C		1
plants	higher dicots	Myrtaceae	*Eucalyptus fibrosa subsp. fibrosa*			C		4/4
plants	higher dicots	Myrtaceae	*Corymbia citriodora subsp. citriodora*			C		1/1
plants	higher dicots	Myrtaceae	*Eucalyptus platyphylla x E.tereticornis*			C		2/2
plants	higher dicots	Myrtaceae	*Eucalyptus tereticornis subsp. tereticornis*			C		2/2
plants	higher dicots	Myrtaceae	*Melaleuca nervosa*			C		19/2
plants	higher dicots	Myrtaceae	*Psidium guineense*	cherry guava	Y			1
plants	higher dicots	Myrtaceae	*Sannantha collina*			C		2/2
plants	higher dicots	Myrtaceae	*Syzygium australe*	scrub cherry		C		8/2
plants	higher dicots	Myrtaceae	*Corymbia polycarpa*	long-fruited bloodwood		C		1
plants	higher dicots	Myrtaceae	*Eucalyptus exserta*	Queensland peppermint		C		11/1
plants	higher dicots	Myrtaceae	*Eucalyptus fibrosa*			C		9
plants	higher dicots	Myrtaceae	*Lithomyrtus obtusa*			C		1
plants	higher dicots	Myrtaceae	*Melaleuca dealbata*	swamp tea-tree		C		4/2
plants	higher dicots	Myrtaceae	*Melaleuca polandii*			C		8
plants	higher dicots	Myrtaceae	*Rhodamnia argentea*	white myrtle		C		1/1
plants	higher dicots	Myrtaceae	*Corymbia citriodora*	spotted gum		C		4
plants	higher dicots	Myrtaceae	*Corymbia intermedia*	pink bloodwood		C		22/1
plants	higher dicots	Myrtaceae	*Corymbia torelliana*	cadaghi		C		1
plants	higher dicots	Myrtaceae	*Eucalyptus coolabah*	coolabah		C		12/1
plants	higher dicots	Myrtaceae	*Eucalyptus populnea*	poplar box		C		8
plants	higher dicots	Myrtaceae	*Melaleuca bracteata*			C		48/1
plants	higher dicots	Myrtaceae	*Melaleuca viminalis*			C		7
plants	higher dicots	Myrtaceae	*Backhousia oligantha*			E		3/3
plants	higher dicots	Myrtaceae	*Corymbia dallachiana*			C		26
plants	higher dicots	Myrtaceae	*Corymbia tessellaris*	Moreton Bay ash		C		45
plants	higher dicots	Myrtaceae	*Eucalyptus moluccana*	gum-topped box		C		3/1
plants	higher dicots	Myrtaceae	*Melaleuca hemisticta*			C		5/4
plants	higher dicots	Myrtaceae	*Rhodomyrtus trineura*			C		3
plants	higher dicots	Myrtaceae	*Corymbia clarksoniana*			C		5/1
plants	higher dicots	Myrtaceae	*Eucalyptus acmenoides*			C		5/1

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plants	higher dicots	Myrtaceae	*Eucalyptus portuensis*			C		4/1
plants	higher dicots	Myrtaceae	*Lophostemon confertus*	brush box		C		24/3
plants	higher dicots	Myrtaceae	*Melaleuca fluviatilis*			C		1/1
plants	higher dicots	Myrtaceae	*Melaleuca leucadendra*	broad-leaved tea-tree		C		5/1
plants	higher dicots	Myrtaceae	*Melaleuca viridiflora*			C		2
plants	higher dicots	Myrtaceae	*Backhousia subargentea*			C		1/1
plants	higher dicots	Myrtaceae	*Corymbia erythrophloia*	variable-barked bloodwood		C		19/5
plants	higher dicots	Myrtaceae	*Eucalyptus platyphylla*	poplar gum		C		6/2
plants	higher dicots	Myrtaceae	*Eucalyptus raveretiana*	black ironbox		C	V	24/5
plants	higher dicots	Myrtaceae	*Leptospermum neglectum*			C		13/4
plants	higher dicots	Myrtaceae	*Melaleuca*			C		7
plants	higher dicots	Myrtaceae	*Backhousia*			C		1
plants	higher dicots	Nyctaginaceae	*Pisonia aculeata*	thorny pisonia		C		7/2
plants	higher dicots	Nyctaginaceae	*Boerhavia burbidgeana*			C		1/1
plants	higher dicots	Nyctaginaceae	*Bougainvillea glabra*		Y			1/1
plants	higher dicots	Ochnaceae	*Ochna serrulata*	ochna	Y			2/2
plants	higher dicots	Oleaceae	*Olea paniculata*			C		6
plants	higher dicots	Oleaceae	*Jasminum simplicifolium subsp. australiense*			C		13/1
plants	higher dicots	Oleaceae	*Notelaea microcarpa var. microcarpa*			C		6/1
plants	higher dicots	Oleaceae	*Jasminum didymum subsp. racemosum*			C		13/2
plants	higher dicots	Oleaceae	*Jasminum didymum subsp. lineare*			C		4
plants	higher dicots	Oleaceae	*Jasminum simplicifolium*			C		36
plants	higher dicots	Oleaceae	*Jasminum didymum*			C		33
plants	higher dicots	Oleaceae	*Notelaea microcarpa*			C		22
plants	higher dicots	Oleaceae	*Chionanthus ramiflorus*	northern olive		C		10
plants	higher dicots	Onagraceae	*Ludwigia octovalvis*	willow primrose		C		1
plants	higher dicots	Onagraceae	*Ludwigia*			C		2/2
plants	higher dicots	Onagraceae	*Ludwigia peploides subsp. montevidensis*			C		2
plants	higher dicots	Orobanchaceae	*Centranthera cochinchinensis*			C		1/1
plants	higher dicots	Oxalidaceae	*Oxalis*			C		1
plants	higher dicots	Oxalidaceae	*Oxalis corniculata*		Y			2
plants	higher dicots	Passifloraceae	*Passiflora edulis*		Y			1
plants	higher dicots	Passifloraceae	*Passiflora suberosa*	corky passion flower	Y			30
plants	higher dicots	Passifloraceae	*Passiflora pallida*		Y			2/2
plants	higher dicots	Passifloraceae	*Passiflora*			C		2
plants	higher dicots	Passifloraceae	*Passiflora subpeltata*	white passion flower	Y			2/1
plants	higher dicots	Passifloraceae	*Passiflora foetida*		Y			16/8
plants	higher dicots	Pentapetaceae	*Melhania oblongifolia*			C		1
plants	higher dicots	Petiveriaceae	*Monococcus echinophorus*	burr bush		C		4
plants	higher dicots	Petiveriaceae	*Rivina humilis*		Y			17/2
plants	higher dicots	Phyllanthaceae	*Glochidion lobocarpum*			C		24/1
plants	higher dicots	Phyllanthaceae	*Glochidion sumatranum*	umbrella cheese tree		C		4
plants	higher dicots	Phyllanthaceae	*Synostemon albiflorus*			C		4/3
plants	higher dicots	Phyllanthaceae	*Cleistanthus cunninghamii*	omega		C		1
plants	higher dicots	Phyllanthaceae	*Cleistanthus dallachyanus*			C		2/1
plants	higher dicots	Phyllanthaceae	*Phyllanthus subcrenulatus*			C		7/3

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plants	higher dicots	Phyllanthaceae	*Phyllanthus novae-hollandiae*			C		3/1
plants	higher dicots	Phyllanthaceae	*Phyllanthus maderaspatensis var. maderaspatensis*			C		1/1
plants	higher dicots	Phyllanthaceae	*Phyllanthus*			C		1
plants	higher dicots	Phyllanthaceae	*Bridelia exaltata*			C		4
plants	higher dicots	Phyllanthaceae	*Actephila lindleyi*	actephila		C		10/4
plants	higher dicots	Phyllanthaceae	*Phyllanthus gunnii*			C		5/1
plants	higher dicots	Phyllanthaceae	*Flueggea leucopyrus*			C		14/2
plants	higher dicots	Phyllanthaceae	*Breynia oblongifolia*			C		54/4
plants	higher dicots	Phyllanthaceae	*Phyllanthus virgatus*			C		2/1
plants	higher dicots	Phyllanthaceae	*Bridelia leichhardtii*			C		49/4
plants	higher dicots	Phyllanthaceae	*Glochidion ferdinandi*			C		2
plants	higher dicots	Phytolaccaceae	*Phytolacca octandra*	inkweed	Y			2/1
plants	higher dicots	Picrodendraceae	*Dissiliaria muelleri*	Mueller's redheart		C		7/5
plants	higher dicots	Picrodendraceae	*Petalostigma pubescens*	quinine tree		C		9
plants	higher dicots	Pittosporaceae	*Pittosporum spinescens*			C		39/4
plants	higher dicots	Pittosporaceae	*Auranticarpa rhombifolia*			C		11/2
plants	higher dicots	Pittosporaceae	*Pittosporum ferrugineum*			C		5
plants	higher dicots	Pittosporaceae	*Pittosporum venulosum*			C		3
plants	higher dicots	Pittosporaceae	*Hymenosporum flavum*	native frangipani		C		3
plants	higher dicots	Pittosporaceae	*Bursaria incana*			C		3
plants	higher dicots	Pittosporaceae	*Pittosporum*			C		2
plants	higher dicots	Pittosporaceae	*Pittosporum ferrugineum subsp. linifolium*			C		1/1
plants	higher dicots	Pittosporaceae	*Bursaria spinosa subsp. spinosa*			C		4
plants	higher dicots	Pittosporaceae	*Bursaria*			C		1/1
plants	higher dicots	Plantaginaceae	*Plantago*			C		1
plants	higher dicots	Plantaginaceae	*Bacopa monnieri*			C		3/3
plants	higher dicots	Plantaginaceae	*Scoparia dulcis*	scoparia	Y			2/2
plants	higher dicots	Plantaginaceae	*Mecardonia procumbens*		Y			1/1
plants	higher dicots	Plumbaginaceae	*Plumbago zeylanica*	native plumbago		C		6/1
plants	higher dicots	Polygalaceae	*Comesperma esulifolium*	match heads		C		1/1
plants	higher dicots	Polygalaceae	*Polygala virgata*		Y			1/1
plants	higher dicots	Polygalaceae	*Polygala triflora*			C		1/1
plants	higher dicots	Polygonaceae	*Persicaria orientalis*	princes feathers		C		3/3
plants	higher dicots	Polygonaceae	*Persicaria attenuata*			C		2/2
plants	higher dicots	Polygonaceae	*Antigonon leptopus*		Y			3/3
plants	higher dicots	Polygonaceae	*Duma florulenta*			C		1/1
plants	higher dicots	Polygonaceae	*Rumex crispus*	curled dock	Y			1/1
plants	higher dicots	Polygonaceae	*Rumex brownii*	swamp dock		C		2
plants	higher dicots	Polygonaceae	*Persicaria lapathifolia*	pale knotweed		C		1/1
plants	higher dicots	Polygonaceae	*Persicaria*			C		2
plants	higher dicots	Portulacaceae	*Calandrinia pickeringii*			C		1
plants	higher dicots	Portulacaceae	*Portulaca australis*			C		2/2
plants	higher dicots	Portulacaceae	*Portulaca oleracea*	pigweed	Y			1
plants	higher dicots	Portulacaceae	*Portulaca bicolor*			C		2/1
plants	higher dicots	Proteaceae	*Grevillea striata*	beefwood		C		1
plants	higher dicots	Proteaceae	*Grevillea helmsiae*			C		8/3

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plants	higher dicots	Proteaceae	*Banksia integrifolia*			C		1
plants	higher dicots	Proteaceae	*Banksia integrifolia subsp. compar*			C		1/1
plants	higher dicots	Proteaceae	*Grevillea reptans*			C		1/1
plants	higher dicots	Proteaceae	*Grevillea banksii*			C		10/3
plants	higher dicots	Proteaceae	*Grevillea*			C		1
plants	higher dicots	Putranjivaceae	*Drypetes deplanchei*	grey boxwood		C		61/4
plants	higher dicots	Rhamnaceae	*Alphitonia excelsa*	soap tree		C		62/1
plants	higher dicots	Rhamnaceae	*Rhamnella vitiensis*			C		6/2
plants	higher dicots	Rhamnaceae	*Ziziphus mauritiana*	Indian jujube	Y			7/7
plants	higher dicots	Rosaceae	*Rubus moluccanus var. trilobus*			C		1/1
plants	higher dicots	Rosaceae	*Rubus probus*			C		2/1
plants	higher dicots	Rosaceae	*Rubus moluccanus*			C		1
plants	higher dicots	Rubiaceae	*Tarenna dallachiana*			C		1
plants	higher dicots	Rubiaceae	*Psydrax odorata forma buxifolia*			C		8
plants	higher dicots	Rubiaceae	*Nauclea orientalis*	Leichhardt tree		C		4
plants	higher dicots	Rubiaceae	*Psydrax oleifolia*			C		10
plants	higher dicots	Rubiaceae	*Psydrax attenuata*			C		2
plants	higher dicots	Rubiaceae	*Psydrax longipes*			C		2/2
plants	higher dicots	Rubiaceae	*Psydrax odorata*			C		40/1
plants	higher dicots	Rubiaceae	*Pomax umbellata*			C		1
plants	higher dicots	Rubiaceae	*Timonius timon*			C		1
plants	higher dicots	Rubiaceae	*Aidia racemosa*			C		19/2
plants	higher dicots	Rubiaceae	*Psychotria*			C		1/1
plants	higher dicots	Rubiaceae	*Psydrax*			C		1/1
plants	higher dicots	Rubiaceae	*Everistia vacciniifolia forma vacciniifolia*			C		1/1
plants	higher dicots	Rubiaceae	*Cyclophyllum coprosmoides var. coprosmoides*			C		1/1
plants	higher dicots	Rubiaceae	*Pavetta australiensis var. australiensis*			C		3/3
plants	higher dicots	Rubiaceae	*Psychotria daphnoides var. angustifolia*			C		1/1
plants	higher dicots	Rubiaceae	*Psydrax odorata subsp. australiana*			C		1/1
plants	higher dicots	Rubiaceae	*Psydrax odorata forma australiana*			C		1/1
plants	higher dicots	Rubiaceae	*Psydrax lamprophylla*			C		2
plants	higher dicots	Rubiaceae	*Pavetta australiensis*			C		9
plants	higher dicots	Rubiaceae	*Psychotria daphnoides*			C		15/5
plants	higher dicots	Rubiaceae	*Richardia brasiliensis*	white eye	Y			1/1
plants	higher dicots	Rubiaceae	*Spermacoce brachystema*			C		1/1
plants	higher dicots	Rubiaceae	*Spermacoce multicaulis*			C		3/3
plants	higher dicots	Rubiaceae	*Triflorensia ixoroides*			C		6/1
plants	higher dicots	Rubiaceae	*Everistia vacciniifolia*			C		3/1
plants	higher dicots	Rubiaceae	*Gynochthodes canthoides*			C		1
plants	higher dicots	Rubiaceae	*Hodgkinsonia ovatiflora*	golden ash		C		3/1
plants	higher dicots	Rubiaceae	*Psychotria loniceroides*	hairy psychotria		C		7
plants	higher dicots	Rubiaceae	*Coelospermum reticulatum*			C		13
plants	higher dicots	Rubiaceae	*Oldenlandia coerulescens*			C		1/1
plants	higher dicots	Rubiaceae	*Cyclophyllum coprosmoides*			C		13
plants	higher dicots	Rubiaceae	*Timonius timon var. timon*			C		13/2
plants	higher dicots	Rubiaceae	*Antirhea putaminosa*			C		13/4

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Rutaceae	*Acronychia*			C		1
plants	higher dicots	Rutaceae	*Acronychia laevis*	glossy acronychia		C		19/4
plants	higher dicots	Rutaceae	*Sarcomelicope simplicifolia subsp. simplicifolia*	yellow aspen		C		7/3
plants	higher dicots	Rutaceae	*Bosistoa pentacocca subsp. connaricarpa*			C		2/1
plants	higher dicots	Rutaceae	*Murraya paniculata cv. Exotica*		Y			2/2
plants	higher dicots	Rutaceae	*Zanthoxylum brachyacanthum*			C		8/2
plants	higher dicots	Rutaceae	*Dinosperma erythrococcum*			C		4
plants	higher dicots	Rutaceae	*Bouchardatia neurococca*	union nut		C		1
plants	higher dicots	Rutaceae	*Murraya ovatifoliolata*			C		4/4
plants	higher dicots	Rutaceae	*Acronychia imperforata*	beach acronychia		C		1
plants	higher dicots	Rutaceae	*Acronychia pauciflora*	soft acronychia		C		7/1
plants	higher dicots	Rutaceae	*Glycosmis trifoliata*			C		5/1
plants	higher dicots	Rutaceae	*Bosistoa medicinalis*			C		1
plants	higher dicots	Rutaceae	*Geijera salicifolia*	brush wilga		C		65/3
plants	higher dicots	Rutaceae	*Coatesia paniculata*			C		7/1
plants	higher dicots	Rutaceae	*Murraya paniculata*			C		16
plants	higher dicots	Rutaceae	*Phebalium woombye*	wallum phebalium		C		10/5
plants	higher dicots	Rutaceae	*Geijera parviflora*	wilga		C		1
plants	higher dicots	Rutaceae	*Micromelum minutum*	clusterberry		C		12/1
plants	higher dicots	Santalaceae	*Exocarpos latifolius*			C		25/1
plants	higher dicots	Sapindaceae	*Cupaniopsis wadsworthii*			C		37/2
plants	higher dicots	Sapindaceae	*Rhysotoechia bifoliolata*			C		2
plants	higher dicots	Sapindaceae	*Alectryon*			C		1
plants	higher dicots	Sapindaceae	*Atalaya rigida*			C		3
plants	higher dicots	Sapindaceae	*Dodonaea viscosa*			C		13
plants	higher dicots	Sapindaceae	*Harpullia hillii*			C		8/2
plants	higher dicots	Sapindaceae	*Elattostachys xylocarpa*	white tamarind		C		39
plants	higher dicots	Sapindaceae	*Elattostachys bidwillii*			C		2/2
plants	higher dicots	Sapindaceae	*Serjania exarata*		Y			1/1
plants	higher dicots	Sapindaceae	*Atalaya calcicola*			C		5/4
plants	higher dicots	Sapindaceae	*Harpullia pendula*			C		12/3
plants	higher dicots	Sapindaceae	*Jagera pseudorhus*			C		23
plants	higher dicots	Sapindaceae	*Alectryon connatus*	grey birds-eye		C		19/2
plants	higher dicots	Sapindaceae	*Arytera divaricata*	coogera		C		21/4
plants	higher dicots	Sapindaceae	*Atalaya hemiglauca*			C		5/1
plants	higher dicots	Sapindaceae	*Atalaya multiflora*	broad-leaved whitewood		C		8/5
plants	higher dicots	Sapindaceae	*Atalaya salicifolia*			C		5
plants	higher dicots	Sapindaceae	*Dodonaea lanceolata*			C		1
plants	higher dicots	Sapindaceae	*Alectryon tomentosus*			C		11/2
plants	higher dicots	Sapindaceae	*Alectryon subdentatus*			C		7/1
plants	higher dicots	Sapindaceae	*Elattostachys nervosa*	green tamarind		C		1
plants	higher dicots	Sapindaceae	*Mischocarpus anodontus*	veiny pearfruit		C		2/1
plants	higher dicots	Sapindaceae	*Alectryon diversifolius*	scrub boonaree		C		42
plants	higher dicots	Sapindaceae	*Cardiospermum halicacabum var. halicacabum*		Y			4/4
plants	higher dicots	Sapindaceae	*Cupaniopsis anacardioides*	tuckeroo		C		57/1
plants	higher dicots	Sapotaceae	*Planchonella cotinifolia var. cotinifolia*			C		1/1

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plants	higher dicots	Sapotaceae	*Planchonella cotinifolia var. pubescens*			C		10/3
plants	higher dicots	Sapotaceae	*Planchonella pohlmaniana*			C		11/1
plants	higher dicots	Sapotaceae	*Planchonella cotinifolia*			C		14
plants	higher dicots	Sapotaceae	*Sersalisia sericea*			C		7
plants	higher dicots	Sapotaceae	*Planchonella*			C		1
plants	higher dicots	Scrophulariaceae	*Myoporum acuminatum*	coastal boobialla		C		20/1
plants	higher dicots	Scrophulariaceae	*Eremophila mitchellii*			C		3
plants	higher dicots	Scrophulariaceae	*Eremophila bignoniiflora*	eurah		C		2/1
plants	higher dicots	Scrophulariaceae	*Eremophila debilis*	winter apple		C		11/1
plants	higher dicots	Scrophulariaceae	*Eremophila deserti*			C		1
plants	higher dicots	Simaroubaceae	*Ailanthus triphysa*	white siris		C		7
plants	higher dicots	Solanaceae	*Datura inoxia*		Y			2/2
plants	higher dicots	Solanaceae	*Solanum nigrum*		Y			6
plants	higher dicots	Solanaceae	*Solanum opacum*	green berry nightshade		C		1/1
plants	higher dicots	Solanaceae	*Solanum torvum*	devil's fig	Y			6/2
plants	higher dicots	Solanaceae	*Solanum esuriale*	quena		C		1
plants	higher dicots	Solanaceae	*Solanum erianthum*	potato tree	Y			2
plants	higher dicots	Solanaceae	*Nicotiana forsteri*			C		3/3
plants	higher dicots	Solanaceae	*Nicotiana velutina*			C		2
plants	higher dicots	Solanaceae	*Physalis peruviana*		Y			1/1
plants	higher dicots	Solanaceae	*Solanum nodiflorum*		Y			5/1
plants	higher dicots	Solanaceae	*Capsicum frutescens*		Y			3/2
plants	higher dicots	Solanaceae	*Lycianthes shanesii*			C		11/6
plants	higher dicots	Solanaceae	*Solanum furfuraceum*			C		3/2
plants	higher dicots	Solanaceae	*Solanum stelligerum*	devil's needles		C		6/2
plants	higher dicots	Solanaceae	*Solanum seaforthianum*	Brazilian nightshade	Y			20/3
plants	higher dicots	Solanaceae	*Capsicum annuum var. glabriusculum*		Y			4/3
plants	higher dicots	Solanaceae	*Solanum*			C		1
plants	higher dicots	Solanaceae	*Physalis*		Y			1
plants	higher dicots	Sparrmanniaceae	*Grewia latifolia*	dysentery plant		C		34/1
plants	higher dicots	Sparrmanniaceae	*Corchorus hygrophilus*			V		1/1
plants	higher dicots	Stackhousiaceae	*Stackhousia monogyna*	creamy candles		C		2/2
plants	higher dicots	Stackhousiaceae	*Stackhousia tryonii*			NT		22/15
plants	higher dicots	Sterculiaceae	*Brachychiton populneus*			C		1
plants	higher dicots	Sterculiaceae	*Brachychiton australis*	broad-leaved bottle tree		C		4
plants	higher dicots	Sterculiaceae	*Sterculia quadrifida*	peanut tree		C		12
plants	higher dicots	Sterculiaceae	*Brachychiton rupestris*			C		10
plants	higher dicots	Stylidiaceae	*Stylidium graminifolium*	grassy-leaved trigger-flower		C		1/1
plants	higher dicots	Thymelaeaceae	*Wikstroemia indica*	tie bush		C		2
plants	higher dicots	Thymelaeaceae	*Pimelea leptospermoides*			NT	V	23/15
plants	higher dicots	Thymelaeaceae	*Thecanthes cornucopiae*			C		2/1
plants	higher dicots	Thymelaeaceae	*Pimelea*			C		1
plants	higher dicots	Ulmaceae	*Aphananthe philippinensis*			C		27/2
plants	higher dicots	Ulmaceae	*Trema tomentosa var. aspera*			C		6/2
plants	higher dicots	Ulmaceae	*Celtis paniculata*	native celtis		C		8/1
plants	higher dicots	Ulmaceae	*Trema tomentosa*			C		6/1

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plants	higher dicots	Urticaceae	*Pipturus argenteus*	white nettle		C		7/1
plants	higher dicots	Urticaceae	*Dendrocnide photinophylla*	shiny-leaved stinging tree		C		9/1
plants	higher dicots	Verbenaceae	*Verbena litoralis var. litoralis*		Y			1/1
plants	higher dicots	Verbenaceae	*Stachytarpheta jamaicensis*	Jamaica snakeweed	Y			23/7
plants	higher dicots	Verbenaceae	*Stachytarpheta cayennensis*		Y			1/1
plants	higher dicots	Verbenaceae	*Glandularia aristigera*		Y			4/3
plants	higher dicots	Verbenaceae	*Lantana montevidensis*	creeping lantana	Y			11/5
plants	higher dicots	Verbenaceae	*Verbena gaudichaudii*			C		2/2
plants	higher dicots	Verbenaceae	*Verbena bonariensis*	purpletop	Y			1
plants	higher dicots	Verbenaceae	*Verbena incompta*		Y			1/1
plants	higher dicots	Verbenaceae	*Lantana*			C		1/1
plants	higher dicots	Verbenaceae	*Duranta erecta*	duranta	Y			2/2
plants	higher dicots	Verbenaceae	*Lantana camara*	lantana	Y			50/9
plants	higher dicots	Verbenaceae	*Stachytarpheta*					1
plants	higher dicots	Verbenaceae	*Phyla canescens*		Y			1/1
plants	higher dicots	Verbenaceae	*Verbena africana*			C		1/1
plants	higher dicots	Verbenaceae	*Phyla nodiflora*	carpetweed		C		1
plants	higher dicots	Violaceae	*Hybanthus*			C		1
plants	higher dicots	Violaceae	*Hybanthus enneaspermus*			C		4
plants	higher dicots	Violaceae	*Hybanthus stellarioides*			C		1
plants	higher dicots	Viscaceae	*Notothixos incanus*			C		1/1
plants	higher dicots	Viscaceae	*Viscum articulatum*	flat mistletoe		C		2
plants	higher dicots	Vitaceae	*Cissus cardiophylla*			C		3/3
plants	higher dicots	Vitaceae	*Cissus repens*			C		9
plants	higher dicots	Vitaceae	*Clematicissus opaca*			C		24
plants	higher dicots	Vitaceae	*Cissus reniformis*			C		3
plants	higher dicots	Vitaceae	*Cayratia saponaria*			C		5/1
plants	higher dicots	Vitaceae	*Cissus oblonga*			C		26/2
plants	higher dicots	Vitaceae	*Cissus hastata*			C		2
plants	higher dicots	Vitaceae	*Cayratia acris*	hairy grape		C		14/3
plants	higher dicots	Vitaceae	*Tetrastigma nitens*	shining grape		C		11
plants	higher dicots	Zygophyllaceae	*Tribulus*			C		1/1
plants	lower dicots	Annonaceae	*Polyalthia nitidissima*	polyalthia		C		16
plants	lower dicots	Annonaceae	*Melodorum leichhardtii*			C		19/2
plants	lower dicots	Aristolochiaceae	*Aristolochia elegans*	calico-flower	Y			5/1
plants	lower dicots	Aristolochiaceae	*Aristolochia thozetii*			C		4/1
plants	lower dicots	Avicenniaceae	*Avicennia marina subsp. eucalyptifolia*			C		1/1
plants	lower dicots	Ceratophyllaceae	*Ceratophyllum demersum*	hornwort		C		3
plants	lower dicots	Hernandiaceae	*Gyrocarpus americanus*			C		5
plants	lower dicots	Hernandiaceae	*Gyrocarpus americanus subsp. americanus*			C		3/1
plants	lower dicots	Lauraceae	*Cinnamomum camphora*	camphor laurel	Y			1/1
plants	lower dicots	Lauraceae	*Cryptocarya vulgaris*			C		1
plants	lower dicots	Lauraceae	*Cryptocarya bidwillii*	yellow laurel		C		8/1
plants	lower dicots	Lauraceae	*Cryptocarya hypospodia*	north Queensland purple laurel		C		12/2
plants	lower dicots	Lauraceae	*Neolitsea australiensis*	green bolly gum		C		2
plants	lower dicots	Lauraceae	*Cryptocarya triplinervis*			C		28

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	lower dicots	Lauraceae	*Cryptocarya triplinervis var. pubens*			C		1/1
plants	lower dicots	Lauraceae	*Cassytha filiformis*	dodder laurel		C		2
plants	lower dicots	Lauraceae	*Neolitsea dealbata*	white bolly gum		C		2
plants	lower dicots	Lauraceae	*Litsea fawcettiana*			C		4/2
plants	lower dicots	Lauraceae	*Endiandra muelleri*			C		1
plants	lower dicots	Lauraceae	*Cassytha pubescens*	downy devil's twine		C		4
plants	lower dicots	Lauraceae	*Neolitsea brassii*			C		5/2
plants	lower dicots	Lauraceae	*Litsea reticulata*			C		4
plants	lower dicots	Lauraceae	*Cassytha*			C		1
plants	lower dicots	Lauraceae	*Cryptocarya*			C		1
plants	lower dicots	Menispermaceae	*Pleogyne australis*	wiry grape		C		16/4
plants	lower dicots	Menispermaceae	*Legnephora moorei*			C		8/2
plants	lower dicots	Menispermaceae	*Stephania japonica var. japonica*			C		1
plants	lower dicots	Menispermaceae	*Tinospora smilacina*	snakevine		C		6
plants	lower dicots	Menispermaceae	*Stephania japonica*			C		3
plants	lower dicots	Menispermaceae	*Pachygone ovata*			C		1
plants	lower dicots	Menispermaceae	*Hypserpa decumbens*			C		4
plants	lower dicots	Nelumbonaceae	*Nelumbo nucifera*	pink waterlily		C		1/1
plants	lower dicots	Nymphaeaceae	*Nymphaea gigantea*			C		1
plants	lower dicots	Papaveraceae	*Argemone ochroleuca subsp. ochroleuca*	Mexican poppy	Y			4/4
plants	lower dicots	Phrymaceae	*Mimulus gracilis*	slender monkey flower		C		1/1
plants	lower dicots	Piperaceae	*Piper hederaceum*			C		5
plants	lower dicots	Piperaceae	*Peperomia tetraphylla*			C		2
plants	lower dicots	Piperaceae	*Peperomia blanda var. floribunda*			C		6/1
plants	lower dicots	Piperaceae	*Piper hederaceum var. hederaceum*			C		1/1
plants	lower dicots	Piperaceae	*Peperomia*			C		2
plants	lower dicots	Ranunculaceae	*Clematis glycinoides*			C		3
plants	lower dicots	Ranunculaceae	*Ranunculus lappaceus*	common buttercup		C		1/1
plants	monocots	Agavaceae	*Agave sisalana*	sisal hemp	Y			2/1
plants	monocots	Agavaceae	*Furcraea foetida*		Y			1/1
plants	monocots	Amaryllidaceae	*Zephyranthes candida*		Y			1/1
plants	monocots	Araceae	*Typhonium brownii*	black arum lily		C		3
plants	monocots	Araceae	*Gymnostachys anceps*	settler's flax		C		10/1
plants	monocots	Araceae	*Alocasia brisbanensis*			C		4
plants	monocots	Araceae	*Syngonium podophyllum*		Y			1/1
plants	monocots	Arecaceae	*Livistona decora*			C		9/2
plants	monocots	Arecaceae	*Ptychosperma elegans*	solitaire palm		C		2/1
plants	monocots	Arecaceae	*Phoenix dactylifera*		Y			1
plants	monocots	Arecaceae	*Livistona drudei*	Halifax fan palm		V		1
plants	monocots	Asparagaceae	*Asparagus plumosus*	feathered asparagus fern	Y			3
plants	monocots	Asparagaceae	*Asparagus racemosus*	native asparagus		C		3/3
plants	monocots	Colchicaceae	*Iphigenia*			C		1
plants	monocots	Colchicaceae	*Iphigenia indica*			C		3/3
plants	monocots	Commelinaceae	*Commelina lanceolata*			C		1
plants	monocots	Commelinaceae	*Tradescantia pallida*		Y			1/1
plants	monocots	Commelinaceae	*Aneilema acuminatum*			C		1/1

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plants	monocots	Commelinaceae	*Murdannia graminea*	murdannia		C		1
plants	monocots	Commelinaceae	*Commelina diffusa*	wandering jew		C		11
plants	monocots	Commelinaceae	*Callisia repens*		Y			1/1
plants	monocots	Commelinaceae	*Commelina*			C		1
plants	monocots	Cyperaceae	*Baumea juncea*	bare twigrush		C		1/1
plants	monocots	Cyperaceae	*Cyperus*			C		4
plants	monocots	Cyperaceae	*Cyperus fulvus*			C		2/1
plants	monocots	Cyperaceae	*Cyperus scaber*			C		1
plants	monocots	Cyperaceae	*Cyperus enervis*			C		2
plants	monocots	Cyperaceae	*Cyperus gracilis*			C		3
plants	monocots	Cyperaceae	*Cyperus rotundus*	nutgrass	Y			2/2
plants	monocots	Cyperaceae	*Cyperus difformis*	rice sedge		C		2/1
plants	monocots	Cyperaceae	*Cyperus digitatus*			C		2/1
plants	monocots	Cyperaceae	*Cyperus exaltatus*	tall flatsedge		C		2/2
plants	monocots	Cyperaceae	*Cyperus scariosus*			C		1/1
plants	monocots	Cyperaceae	*Eleocharis dulcis*			C		1
plants	monocots	Cyperaceae	*Abildgaardia ovata*			C		4/2
plants	monocots	Cyperaceae	*Cyperus compressus*		Y			1/1
plants	monocots	Cyperaceae	*Scleria sphacelata*			C		3/3
plants	monocots	Cyperaceae	*Bulbostylis barbata*			C		3/2
plants	monocots	Cyperaceae	*Cyperus perangustus*			C		1/1
plants	monocots	Cyperaceae	*Cyperus involucratus*		Y			3/3
plants	monocots	Cyperaceae	*Cyperus polystachyos*			C		1
plants	monocots	Cyperaceae	*Cyperus sesquiflorus*		Y			2/2
plants	monocots	Cyperaceae	*Cyperus sphaeroideus*			C		1/1
plants	monocots	Cyperaceae	*Scleria mackaviensis*			C		4/2
plants	monocots	Cyperaceae	*Cyperus alopecuroides*			C		1/1
plants	monocots	Cyperaceae	*Fimbristylis dichotoma*	common fringe-rush		C		4/3
plants	monocots	Cyperaceae	*Eleocharis dietrichiana*			C		1/1
plants	monocots	Cyperaceae	*Fimbristylis acicularis*			C		1/1
plants	monocots	Cyperaceae	*Fimbristylis aestivalis*			C		1/1
plants	monocots	Cyperaceae	*Eleocharis philippinensis*			C		1/1
plants	monocots	Cyperaceae	*Schoenus ornithopodioides*			C		1
plants	monocots	Cyperaceae	*Fimbristylis*			C		2
plants	monocots	Cyperaceae	*Scleria*			C		3
plants	monocots	Cyperaceae	*Cyperus microcephalus subsp. microcephalus*			C		2/2
plants	monocots	Cyperaceae	*Scleria lithosperma var. lithosperma*			C		1/1
plants	monocots	Cyperaceae	*Fimbristylis cinnamometorum*			C		1/1
plants	monocots	Cyperaceae	*Gahnia*			C		4
plants	monocots	Cyperaceae	*Gahnia aspera*			C		21/2
plants	monocots	Dioscoreaceae	*Dioscorea transversa*	native yam		C		13
plants	monocots	Dioscoreaceae	*Dioscorea bulbifera*			C		1/1
plants	monocots	Dracaenaceae	*Sansevieria trifasciata var. trifasciata*		Y			2/2
plants	monocots	Flagellariaceae	*Flagellaria indica*	whip vine		C		1
plants	monocots	Heliconiaceae	*Heliconia*			C		1/1
plants	monocots	Hemerocallidaceae	*Dianella rara*			C		1/1

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plants	monocots	Hemerocallidaceae	*Dianella*			C		16
plants	monocots	Hemerocallidaceae	*Dianella caerulea var. vannata*			C		2/2
plants	monocots	Hemerocallidaceae	*Dianella nervosa*			C		3/2
plants	monocots	Hemerocallidaceae	*Dianella revoluta*			C		2
plants	monocots	Hemerocallidaceae	*Geitonoplesium cymosum*	scrambling lily		C		17/1
plants	monocots	Hemerocallidaceae	*Dianella caerulea*			C		14/1
plants	monocots	Hydrocharitaceae	*Blyxa*			C		1
plants	monocots	Hydrocharitaceae	*Ottelia ovalifolia subsp. ovalifolia*			C		1/1
plants	monocots	Hydrocharitaceae	*Ottelia*			C		3
plants	monocots	Hypoxidaceae	*Hypoxis pratensis var. pratensis*			C		1
plants	monocots	Hypoxidaceae	*Curculigo ensifolia*			C		1
plants	monocots	Johnsoniaceae	*Tricoryne elatior*	yellow autumn lily		C		2/1
plants	monocots	Juncaceae	*Juncus polyanthemus*			C		1/1
plants	monocots	Laxmanniaceae	*Lomandra multiflora subsp. multiflora*			C		3/1
plants	monocots	Laxmanniaceae	*Lomandra*			C		11
plants	monocots	Laxmanniaceae	*Lomandra confertifolia*			C		1
plants	monocots	Laxmanniaceae	*Lomandra confertifolia subsp. pallida*			C		4/2
plants	monocots	Laxmanniaceae	*Laxmannia gracilis*	slender wire lily		C		2/1
plants	monocots	Laxmanniaceae	*Lomandra longifolia*			C		16/2
plants	monocots	Laxmanniaceae	*Eustrephus latifolius*	wombat berry		C		22/2
plants	monocots	Laxmanniaceae	*Cordyline murchisoniae*			C		9/3
plants	monocots	Laxmanniaceae	*Cordyline*			C		3
plants	monocots	Najadaceae	*Najas*			C		1
plants	monocots	Orchidaceae	*Corybas*			C		1
plants	monocots	Orchidaceae	*Dendrobium*			C		1
plants	monocots	Orchidaceae	*Dockrillia mortii*			C		2
plants	monocots	Orchidaceae	*Dendrobium discolor*			C		3
plants	monocots	Orchidaceae	*Dipodium variegatum*			C		1/1
plants	monocots	Orchidaceae	*Dockrillia bowmanii*	scrub pencil orchid		C		2/1
plants	monocots	Orchidaceae	*Acianthus fornicatus*	pixie caps		C		2/2
plants	monocots	Orchidaceae	*Geodorum densiflorum*	pink nodding orchid		C		9/2
plants	monocots	Orchidaceae	*Corybas aconitiflorus*			C		1/1
plants	monocots	Orchidaceae	*Habenaria propinquior*			C		1/1
plants	monocots	Orchidaceae	*Dockrillia teretifolia*	rat's tail orchid		C		3
plants	monocots	Orchidaceae	*Cymbidium canaliculatum*			C		2
plants	monocots	Pandanaceae	*Pandanus tectorius*			C		1
plants	monocots	Poaceae	*Arundinella nepalensis*	reedgrass		C		9/4
plants	monocots	Poaceae	*Bothriochloa decipiens*			C		1
plants	monocots	Poaceae	*Cleistochloa subjuncea*			C		1/1
plants	monocots	Poaceae	*Enteropogon acicularis*	curly windmill grass		C		1
plants	monocots	Poaceae	*Enteropogon unispiceus*			C		4/3
plants	monocots	Poaceae	*Eragrostis cilianensis*		Y			1/1
plants	monocots	Poaceae	*Moorochloa eruciformis*		Y			1/1
plants	monocots	Poaceae	*Panicum queenslandicum*			C		3/2
plants	monocots	Poaceae	*Paspalum scrobiculatum*	ditch millet		C		1
plants	monocots	Poaceae	*Urochloa mosambicensis*	sabi grass	Y			4/2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	monocots	Poaceae	*Ancistrachne uncinulata*	hooky grass		C		10
plants	monocots	Poaceae	*Dactyloctenium radulans*	button grass		C		1/1
plants	monocots	Poaceae	*Eragrostis megalosperma*			C		1/1
plants	monocots	Poaceae	*Eragrostis spartinoides*			C		2/2
plants	monocots	Poaceae	*Paspalidium constrictum*			C		1/1
plants	monocots	Poaceae	*Polypogon monspeliensis*	annual beardgrass	Y			1/1
plants	monocots	Poaceae	*Sporobolus jacquemontii*		Y			1/1
plants	monocots	Poaceae	*Stenotaphrum secundatum*	buffalo grass	Y			1
plants	monocots	Poaceae	*Austrostipa aristiglumis*	plains grass		C		1
plants	monocots	Poaceae	*Capillipedium spicigerum*	spicytop		C		5/1
plants	monocots	Poaceae	*Dactyloctenium aegyptium*	coast button grass	Y			3/3
plants	monocots	Poaceae	*Paspalidium albovillosum*			C		2/2
plants	monocots	Poaceae	*Paspalidium scabrifolium*			C		1/1
plants	monocots	Poaceae	*Sporobolus australasicus*			C		1
plants	monocots	Poaceae	*Capillipedium parviflorum*	scented top		C		1/1
plants	monocots	Poaceae	*Cymbopogon queenslandicus*			C		2
plants	monocots	Poaceae	*Digitaria divaricatissima*	spreading umbrella grass		C		2/1
plants	monocots	Poaceae	*Diplachne fusca var. fusca*			C		2/2
plants	monocots	Poaceae	*Aristida queenslandica var. queenslandica*			C		4/4
plants	monocots	Poaceae	*Melinis repens*	red natal grass	Y			14/4
plants	monocots	Poaceae	*Panicum simile*			C		3/2
plants	monocots	Poaceae	*Aristida spuria*			C		4/2
plants	monocots	Poaceae	*Chloris inflata*	purpletop chloris	Y			6/3
plants	monocots	Poaceae	*Eleusine indica*	crowsfoot grass	Y			1/1
plants	monocots	Poaceae	*Panicum effusum*			C		5/1
plants	monocots	Poaceae	*Sorghum bicolor*	forage sorghum	Y			2/2
plants	monocots	Poaceae	*Sorghum nitidum*			C		7
plants	monocots	Poaceae	*Sorghum x almum*		Y			2/1
plants	monocots	Poaceae	*Urochloa mutica*		Y			5/3
plants	monocots	Poaceae	*Aristida lignosa*			C		1/1
plants	monocots	Poaceae	*Cynodon dactylon*		Y			1
plants	monocots	Poaceae	*Hyparrhenia rufa*		Y			1/1
plants	monocots	Poaceae	*Ottochloa nodosa*			C		3/1
plants	monocots	Poaceae	*Sarga leiocladum*			C		3/1
plants	monocots	Poaceae	*Themeda triandra*	kangaroo grass		C		22/2
plants	monocots	Poaceae	*Cenchrus setaceus*		Y			6/5
plants	monocots	Poaceae	*Dichanthium tenue*	small bluegrass		C		1/1
plants	monocots	Poaceae	*Entolasia stricta*	wiry panic		C		5/1
plants	monocots	Poaceae	*Eriochloa procera*	slender cupgrass		C		2/2
plants	monocots	Poaceae	*Panicum paludosum*	swamp panic		C		1/1
plants	monocots	Poaceae	*Sorghum halepense*	Johnson grass	Y			1
plants	monocots	Poaceae	*Sporobolus caroli*	fairy grass		C		2/1
plants	monocots	Poaceae	*Sporobolus creber*			C		2
plants	monocots	Poaceae	*Andropogon gayanus*	gamba grass	Y			1/1
plants	monocots	Poaceae	*Cenchrus echinatus*	Mossman River grass	Y			2/2
plants	monocots	Poaceae	*Chloris ventricosa*	tall chloris		C		3/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	monocots	Poaceae	*Chrysopogon fallax*			C		4
plants	monocots	Poaceae	*Cymbopogon martini*		Y			2/2
plants	monocots	Poaceae	*Echinochloa colona*	awnless barnyard grass	Y			4/3
plants	monocots	Poaceae	*Eragrostis brownii*	Brown's lovegrass		C		2
plants	monocots	Poaceae	*Eragrostis sororia*			C		3/1
plants	monocots	Poaceae	*Oplismenus aemulus*	creeping shade grass		C		9
plants	monocots	Poaceae	*Panicum mitchellii*			C		3/3
plants	monocots	Poaceae	*Paspalidium gausum*			C		4/2
plants	monocots	Poaceae	*Paspalum dilatatum*	paspalum	Y			1
plants	monocots	Poaceae	*Eragrostis tenuifolia*	elastic grass	Y			2/2
plants	monocots	Poaceae	*Heteropogon contortus*	black speargrass		C		24
plants	monocots	Poaceae	*Heteropogon triticeus*	giant speargrass		C		15/3
plants	monocots	Poaceae	*Iseilema vaginiflorum*	red flinders grass		C		1/1
plants	monocots	Poaceae	*Oplismenus imbecillis*			C		1
plants	monocots	Poaceae	*Sporobolus natalensis*		Y			2/2
plants	monocots	Poaceae	*Sporobolus virginicus*	sand couch		C		1
plants	monocots	Poaceae	*Alloteropsis semialata*	cockatoo grass		C		3
plants	monocots	Poaceae	*Leersia*			C		1
plants	monocots	Poaceae	*Aristida*			C		7/1
plants	monocots	Poaceae	*Urochloa*			C		1
plants	monocots	Poaceae	*Digitaria*			C		1
plants	monocots	Poaceae	*Enneapogon*			C		1
plants	monocots	Poaceae	*Eragrostis*			C		1
plants	monocots	Poaceae	*Paspalidium*			C		1
plants	monocots	Poaceae	*Pseudoraphis*			C		1
plants	monocots	Poaceae	*Phyllostachys*			C		1/1
plants	monocots	Poaceae	*Chloris gayana*	rhodes grass	Y			7/4
plants	monocots	Poaceae	*Setaria sphacelata*		Y			1/1
plants	monocots	Poaceae	*Aristida perniciosa*			C		1
plants	monocots	Poaceae	*Chrysopogon filipes*			C		1/1
plants	monocots	Poaceae	*Cymbopogon obtectus*			C		2/2
plants	monocots	Poaceae	*Digitaria didactyla*	Queensland blue couch	Y			2
plants	monocots	Poaceae	*Imperata cylindrica*	blady grass		C		11
plants	monocots	Poaceae	*Ischaemum triticeum*			C		1/1
plants	monocots	Poaceae	*Megathyrsus maximus*		Y			7
plants	monocots	Poaceae	*Melinis minutiflora*	molasses grass	Y			2/1
plants	monocots	Poaceae	*Panicum larcomianum*			C		1/1
plants	monocots	Poaceae	*Paspalidium distans*	shotgrass		C		2/1
plants	monocots	Poaceae	*Paspalidium gracile*	slender panic		C		7/2
plants	monocots	Poaceae	*Bothriochloa bladhii*			C		1
plants	monocots	Poaceae	*Cymbopogon refractus*	barbed-wire grass		C		6
plants	monocots	Poaceae	*Dichanthium sericeum*			C		3
plants	monocots	Poaceae	*Digitaria parviflora*			C		3/1
plants	monocots	Poaceae	*Oplismenus burmannii*			C		1/1
plants	monocots	Poaceae	*Panicum decompositum*			C		1
plants	monocots	Poaceae	*Phragmites australis*	common reed		C		1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	monocots	Poaceae	*Sorghum arundinaceum*	Rhodesian Sudan grass	Y			2/2
plants	monocots	Poaceae	*Sporobolus elongatus*			C		1
plants	monocots	Poaceae	*Themeda quadrivalvis*	grader grass	Y			2/1
plants	monocots	Poaceae	*Whiteochloa airoides*			C		1/1
plants	monocots	Poaceae	*Cenchrus polystachios*		Y			1
plants	monocots	Poaceae	*Dichanthium annulatum*	sheda grass	Y			3/3
plants	monocots	Poaceae	*Dichanthium aristatum*	angleton grass	Y			1
plants	monocots	Poaceae	*Eragrostis leptocarpa*	drooping lovegrass		C		1
plants	monocots	Poaceae	*Eragrostis parviflora*	weeping lovegrass		C		1/1
plants	monocots	Poaceae	*Eriochloa pseudoacrotricha*			C		1
plants	monocots	Poaceae	*Schizachyrium pseudeulalia*			C		1/1
plants	monocots	Poaceae	*Hyparrhenia rufa subsp. rufa*		Y			1/1
plants	monocots	Poaceae	*Cynodon dactylon var. dactylon*		Y			1/1
plants	monocots	Poaceae	*Dinebra decipiens var. asthenes*			C		2/1
plants	monocots	Poaceae	*Sorghum nitidum forma aristatum*			C		5/4
plants	monocots	Poaceae	*Dinebra decipiens var. decipiens*			C		1
plants	monocots	Poaceae	*Megathyrsus maximus var. maximus*		Y			10
plants	monocots	Poaceae	*Chloris divaricata var. divaricata*	slender chloris		C		2
plants	monocots	Poaceae	*Hymenachne amplexicaulis cv. Olive*		Y			4/4
plants	monocots	Poaceae	*Megathyrsus maximus var. coloratus*		Y			1/1
plants	monocots	Poaceae	*Bothriochloa bladhii subsp. bladhii*			C		2/2
plants	monocots	Poaceae	*Eriachne pallescens var. pallescens*			C		1/1
plants	monocots	Poaceae	*Megathyrsus maximus var. pubiglumis*		Y			4/3
plants	monocots	Poaceae	*Dichanthium sericeum subsp. sericeum*			C		3/3
plants	monocots	Poaceae	*Aristida queenslandica var. dissimilis*			C		1/1
plants	monocots	Poaceae	*Panicum decompositum var. decompositum*			C		1/1
plants	monocots	Pontederiaceae	*Monochoria cyanea*			C		1/1
plants	monocots	Pontederiaceae	*Eichhornia crassipes*	water hyacinth	Y			2/1
plants	monocots	Potamogetonaceae	*Potamogeton*			C		1
plants	monocots	Ripogonaceae	*Ripogonum brevifolium*	small-leaved supplejack		C		2/1
plants	monocots	Ripogonaceae	*Ripogonum album*	white supplejack		C		1
plants	monocots	Smilacaceae	*Smilax glyciphylla*	sweet sarsaparilla		C		1
plants	monocots	Smilacaceae	*Smilax sp. (Watson River J.R.Clarkson 4075A)*			C		1/1
plants	monocots	Smilacaceae	*Smilax calophylla*			C		1
plants	monocots	Smilacaceae	*Smilax australis*	barbed-wire vine		C		13
plants	monocots	Typhaceae	*Typha domingensis*			C		1
plants	monocots	Xanthorrhoeaceae	*Xanthorrhoea latifolia*			C		2
plants	monocots	Xanthorrhoeaceae	*Xanthorrhoea glauca subsp. glauca*			C		1/1
plants	monocots	Xanthorrhoeaceae	*Xanthorrhoea johnsonii*			C		1/1
plants	monocots	Xanthorrhoeaceae	*Xanthorrhoea latifolia subsp. latifolia*			C		14/2
plants	monocots	Xanthorrhoeaceae	*Xanthorrhoea*			C		7
plants	monocots	Zingiberaceae	*Alpinia caerulea*	wild ginger		C		3
plants	mosses	Bryaceae	*Gemmabryum coronatum*			C		1/1
plants	mosses	Bryophyte	*Bryophyte*			C		1/1
plants	mosses	Dicranaceae	*Sclerodontium pallidum subsp. pallidum*			C		2/2
plants	mosses	Entodontaceae	*Entodon mackaviensis*			C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	mosses	Fissidentaceae	*Fissidens*			C		2/2
plants	mosses	Orthotrichaceae	*Macromitrium repandum*			C		1/1
plants	mosses	Orthotrichaceae	*Macromitrium*			C		2/2
plants	mosses	Pottiaceae	*Weissia sp. (Victoria Park H.Tryon AQ645533)*			C		1/1
plants	mosses	Sematophyllaceae	*Sematophyllum*			C		1/1
plants	uncertain	Indet.	*Indet.*			C		3
plants	whisk ferns	Psilotaceae	*Psilotum nudum*	skeleton fork fern		C		1/1
plants		Streptophyceae	*Nitella myriotricha*			C		1/1
protists	blue-green algae	Cyanophyceae	*Aphanizomenon flos-aquae*			C		1/1
protists	yellow-green algae	Xanthophyceae	*Phyllosiphon arisari*			C		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 in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ( ).

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

Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).
This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Appendix B

Suitably Qualified Person

Pages 322 through 329 redacted for the following reasons:
- -
RTI Act Schedule 4

Appendix C

Species List

Flora species recorded within the Project Area in February and May 2017

* denotes an introduced species, C3 = Class 3 restricted plant under the Biosecurity Act, WONS = Weeds of National Significance

FAMILY		SPECIES
ACANTHACEAE	*	*Ruellia simplex*
AGAVACEAE	*	*Agave americana*
AIZOACEAE	*	*Trianthema portulacastrum*
AMARANTHACEAE		*Achyranthes aspera*
	*	*Alternanthera pungens*
	*	*Gomphrena celosioides*
ANACARDIACEAE	*, C3	*Schinus terebinthifolius*
APOCYNACEAE		*Alstonia constricta*
		Carissa ovata
	*	*Catharanthus roseus*
	*, C3, WONS	*Cryptostegia grandiflora*
	*	*Gomphocarpus physocarpus*
	*	*Plumeria* sp.
ARALIACEAE		*Schefflera actinophylla*
ARECACEAE	*	*Arecaceae* sp.
	*	*Dypsis lutescens*
		Licuala ramsayi
	*	*Syagrus romanzoffiana*
ASTERACEAE	*	*Bidens pilosa*
	*	*Cirsium vulgare*
		Cyanthillium cinereum
	*	*Emilia sonchifolia*
	*	*Erigeron bonariensis*
	*	*Tridax procumbens*
BIGNONIACEAE	*	*Tabebuia aurea*
CACTACEAE	*, C3	*Harrisia martinii*
	*, WONS	*Opuntia stricta*
CAESALPINIACEAE	*	*Bauhinia* sp.
	*	*Delonix regia*
		Lysiphyllum hookeri
CASUARINACEAE		*Allocasuarina littoralis*
		Casuarina cunninghamiana
		Casuarina sp.
CRASSULACEAE	*	*Bryophyllum delagoense*
CYCADACEAE		*Cycas sp.* (planted)
CYPERACEAE		*Cyperus gracilis*
	*	*Cyperus involucratus*

Flora species recorded within the Project Area in February and May 2017

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FAMILY		SPECIES
EUPHORBIACEAE	*	*Euphorbia cyathophora*
	*	*Ricinus communis*
FABACEAE	*	*Clitoria ternatea*
	*	*Crotalaria* sp.
		Erythrina vespertilio
		Glycine tabacina
		Indigofera linifolia
		Indigofera linnaei
	*	*Macroptilium atropurpureum*
	*	*Macroptilium lathyroides*
		Rhynchosia minima
		Sesbania cannabina
	*	*Stylosanthes scabra*
	*	*Tipuana tipu*
HALORAGACEAE	*	*Myriophyllum aquaticum*
LAMIACEAE	*	*Leonotis nepetifolia*
LAXMANNIACEAE		*Eustrephus latifolius*
		Lomandra longifolia
		Lomandra sp.
LECYTHIDACEAE		*Planchonia careya*
LORANTHACEAE		*Amyema miquelii*
MALVACEAE		*Hibiscus tiliaceus*
	*	*Malvastrum americanum*
		Sida hackettiana
		Sida sp.
MELIACEAE		*Melia azedarach*
MIMOSACEAE		*Acacia disparrima* subsp. *disparrima*
		Acacia leiocalyx subsp. *leiocalyx*
		Acacia salicina
		Acacia sp.
		Albizia lebbeck
		Albizia sp.
		Archidendropsis basaltica
	*	*Leucaena leucocephala*
	*	*Mimosa pudica*
		Neptunia gracilis
		Vachellia bidwillii
	*	*Vachellia farnesiana*
MORACEAE		*Ficus opposita*
		Ficus sp.
		Ficus virens

Flora species recorded within the Project Area in February and May 2017

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FAMILY		SPECIES
MYRSINACEAE	*	*Lysimachia arvensis*
MYRTACEAE		*Angophora floribunda*
		Angophora leiocarpa
		Corymbia citriodora
		Corymbia dallachiana
		Corymbia erythrophloia
		Corymbia intermedia
		Corymbia tessellaris
		Corymbia torelliana
		Eucalyptus camaldulensis
		Eucalyptus crebra
		Eucalyptus melanophloia
		Eucalyptus moluccana
		Eucalyptus platyphylla
		Eucalyptus raveretiana
		Eucalyptus sp.
		Eucalyptus tereticornis
		Lophostemon confertus
		Melaleuca bracteata
		Melaleuca fluviatilis
		Melaleuca leucadendra
		Melaleuca linariifolia
		Melaleuca viminalis
NYCTAGINACEAE	*	*Bougainvillea glabra*
PASSIFLORACEAE	*	*Passiflora foetida*
PHYLLANTHACEAE		*Breynia oblongifolia*
PICRODENDRACEAE		*Petalostigma pubescens*
POACEAE		*Aristida* sp.
	*	*Bothriochloa pertusa*
		Bothriochloa sp.
	*	*Cenchrus ciliaris*
	*	*Cenchrus echinatus*
	*	*Chloris gayana*
		Cymbopogon refractus
	*	*Cynodon dactylon*
		Dactyloctenium radulans
		Dichanthium sericeum
	*	*Echinochloa colona*
		Enteropogon ramosus
		Heteropogon contortus
	*	*Hyparrhenia rufa*
		Imperata cylindrica
	*	*Megathyrsus maximus*
	*	*Melinis repens*
		Panicum effusum
		Sarga leiocladum
	*	*Sorghum halepense*
		Sorghum sp.

Flora species recorded within the Project Area in February and May 2017

* denotes an introduced species, C3 = Class 3 restricted plant under the Biosecurity Act, WONS = Weeds of National Significance

FAMILY		SPECIES
POACEAE	*	*Themeda quadrivalvis*
		Themeda triandra
	*	*Urochloa mosambicensis*
	*	*Urochloa* sp.
PORTULACACEAE		*Portulaca filifolia*
	*	*Portulaca oleracea*
	*	*Portulaca pilosa*
PROTEACEAE		*Buckinghamia celsissima*
		Grevillea robusta
		Macadamia sp. (planted)
RHAMNACEAE		*Alphitonia excelsa*
RUTACEAE		*Geijera salicifolia*
	*	*Murraya paniculata*
SAPINDACEAE		*Atalaya hemiglauca*
	*	*Koelreuteria elegans* subsp. *formosana*
SCROPHULARIACEAE		*Eremophila debilis*
STERCULIACEAE		*Brachychiton australis*
		Brachychiton rupestris
TAMARICACEAE	*, C3, WONS	*Tamarix aphylla*
TYPHACEAE		*Typha* sp.
VERBENACEAE	*	*Glandularia aristigera*
	*, C3, WONS	*Lantana camara*
	*, C3	*Lantana montevidensis*
	*	*Stachytarpheta jamaicensis*
VIOLACEAE		*Hybanthus stellarioides*
ZAMIACEAE		*Macrozamia miquelii*
ZYGOPHYLLACEAE		*Tribulus terrestris*

Appendix E

Contaminated Land Desktop Assessment

AECOM

Department of Transport and Main Roads
01-Aug-2017
Doc No. 60528953 REP-00043

Rockhampton Northern Access Upgrade

Desktop Review of Contamination



Rockhampton Northern Access Upgrade

Desktop Review of Contamination

Client: Department of Transport and Main Roads

ABN: 39 407 690 291

Prepared by

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Quality Information

Document Rockhampton Northern Access Upgrade

Ref 60528953

Date 01-Aug-2017

Prepared by

Reviewed by

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
0	01-Aug-2017	For TMR Review		

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1.0 Introduction

The Terms of Reference for the Rockhampton Northern Access Upgrade (RNAU) Environmental Assessment – Section 6 Soil and Land (Table 1) requires soil and land assessment as a high assessment level activity (DTMR 2016). This desktop review of potential site contamination in areas of likely soil disturbance associated with the development and construction of the RNAU is a component of this high level assessment.

1.1 Background

DTMR is currently designing the RNAU which includes a series of improvement works to the Bruce Highway, north of the Rockhampton Central Business District. As part of this process, DTMR has identified the potential for soil and groundwater associated with properties within, or adjacent to, the project corridor to impact upon construction activities planned as part of the RNAU project.

The Queensland Department of Environment and Heritage Protection (EHP) maintain the Environmental Management Register (EMR) in accordance with the contaminated land provisions of the *Environmental Protection Act, 1994*. The EMR is a land-use planning and management register. The EMR provides information on historic and current land use including whether the land has been or is currently used for a notifiable activity, or has been contaminated by a hazardous contaminant. Inclusion of a land parcel on the EMR does not mean the land must be cleaned up or that the current land use must stop.

DTMR has conducted a search of the EMR for properties in the vicinity of the project corridor and has identified that nine land parcels that are within, or abut, the proposed project area, and are included on the EMR.

1.2 Purpose

The purpose of this desktop review is to consider the potential for site contamination to be encountered during the construction activities planned during the RNAU project.

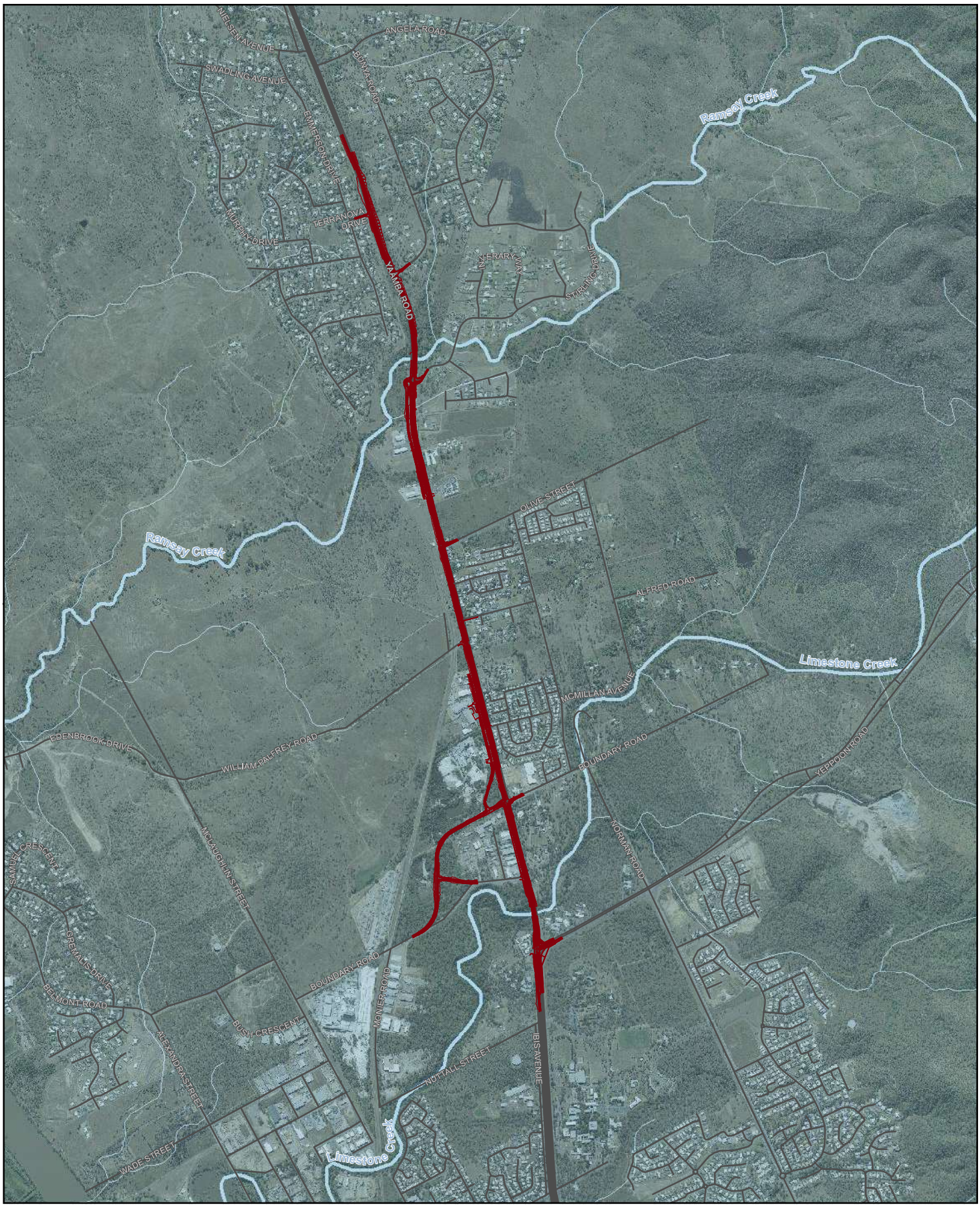
The report considers a "planned disturbance area" which comprises the "RNAU Road alignment design" (**Figure 1**) and the adjacent land parcels as shown in 279/10F/2 RNAU Contaminated Land Map, dated 15 February 2017 (**Appendix A**).

In particular, the desktop review focused on land immediately adjacent to the current Bruce Highway alignment, focusing on areas where soil disturbance is likely to generate excess soil requiring disposal rather than re-use as fill material within the road corridor. For clarity, lots that are included on the EMR and are not located adjacent to the alignment as shown in **Figure 1** were not reviewed as part of this desktop study.

1.3 Approach

This desktop review has been undertaken using a process generally consistent with that presented in the American Section of the International Association for Testing Materials (ASTM) Standard Practice Designation E 1527-13. This process includes identifying Recognised Environmental Conditions (RECs), including historical RECs (HRECs), controlled RECs (CRECs), and '*de minimis'* conditions (DMCs).

A REC is defined by the ASTM standard as "*the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.*" The term includes hazardous substances or petroleum products even under conditions in compliance with laws.



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Coordinate System: GDA 1994 MGA Zone 56
Projection: Transverse Mercator

0 200 400 800
Metres
1:30,000 (when printed at A4)

Legend
- Project Area
- Major roads
- Minor roads
- Major Creeks
- Minor Creeks



Data sources:
Rockhampton Imagery from SISP Imagery 2016

Disclaimer:
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RNAU Road alignment design

SITE LOCATION AND CONTEXT

PROJECT ID	60528953
CREATED BY	joaquin.rivera
LAST MODIFIED	smithc5 - 5/04/2017
VERSION:	1

Figure 1

Filename: P:\605X\60528953\4. Tech Work Area\4.99 GIS\02_MXDs\P60528953_RNAU_SiteLocationMap_20170215_V1_A4P.mxd

A4 size

HRECs are a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls.

CRECs are a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

'*De minimis'* conditions are those situations that do not present a material risk of harm to public health or the environment and generally would not be subject to enforcement action if brought to the attention of the regulating authority.

1.4 Scope of Work

The desktop review comprised a review of historical aerial photography and a review of past environmental reports, documents and plans that were located within and adjacent to the proposed road alignment.

The desktop review was performed in general accordance with the following:

- National Environmental Protection Measure (NEPM) 2013 Schedule B2 Section 2.1 *Guideline on Site Characterisation, Preliminary Site Investigation*;
- Australian Standard AS 4482 (2005) *Standard guide to the investigation and sampling of sites with potentially contaminated soil*; and
- ASTM Standard Practice Designation E 1527-13.

Conclusions reached in this report are based upon the assessment performed and are subject to the limitations presented in Section 1.5 below.

1.5 Study Limitations

This report describes the results of AECOM's review of the potential presence of contaminated land-related liabilities materially affecting the subject property and, more specifically the planned disturbance area. In the conduct of this assessment, AECOM assessed the presence of such problems within the limits of the scope of work in Section 1.4 and as outlined below.

As with any due diligence assessment, there is a certain degree of dependence upon information provided by facility or site representatives, which is not readily verifiable through visual observations or supported by any available written documentation. AECOM shall not be held responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed by facility or site representatives at the time this assessment was performed. In addition, the findings in this report are subject to certain conditions and assumptions, which are noted in the report. Any party reviewing the findings of the report must carefully review and consider all such conditions and assumptions.

This report and all field data and notes were gathered and/or prepared by AECOM in accordance with Section 1.4 and generally accepted engineering and scientific practice in effect at the time of AECOM's assessment of the subject property. The statements, conclusions, and opinions contained in this report are only intended to give approximations of the environmental conditions at the subject property.

As specified in the ASTM standard (referred to below as "this practice"), it is incumbent that the client and any other parties who review and rely upon this report understand the following inherent conditions surrounding a review such as this:

- Uncertainty Not Eliminated – No site assessment can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with a property, and this practice recognizes reasonable limits of time and costs. (Section 4.5.1 of the ASTM standard);

- Not Exhaustive – “All appropriate inquiry” does not mean an exhaustive assessment of a clean property. There is a point at which the cost of information obtained outweighs the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions. One of the purposes of this practice is to identify a balance between the competing goals of limiting the costs and time demands inherent in performing a site assessment and the reduction of uncertainty about unknown conditions resulting from additional information. (Section 4.5.2 of the ASTM Standard); and
- Comparison with Subsequent Inquiry – It should not be concluded or assumed that an inquiry was not an “all appropriate inquiry” merely because the inquiry did not identify RECs in connection with a property. Site assessments must be evaluated based on the reasonableness of judgments made at the time and under the circumstances in which they were made. Subsequent site assessments should not be considered valid standards to judge the appropriateness of any prior assessment based on hindsight, new information, use of developing technology or analytical techniques, or other factors. (Section 4.5.4 of the ASTM Standard).

The passage of time may result in changes in technology, economic conditions, site variations, or regulatory provisions, which would render the report inaccurate. Reliance on this report after the date of issuance as an accurate representation of current site conditions shall be at the user’s sole risk.

1.6 Site-Related Limiting Conditions

The review to date has comprised a desktop review only. Direct inspection of the planned disturbance area by AECOM personnel was not completed.

Groundwater impacts have not been considered within the desktop review. Groundwater management activities, such as de-watering is not considered likely under the proposed development.

1.7 Potential Data Gaps

In undertaking the desktop review, AECOM has identified the following data gaps:

- The collection of Council records on the subject property required the application of a right to information enquiry to the Rockhampton Regional Council and the Livingstone Shire Council. Due to the timescale for producing this report and the long processing time for a right to information enquiry (typically eight weeks), Council records for the subject property have not been searched. Based on the other available current and historical information, AECOM considers the absence of these data will not significantly alter the conclusions of this report.
- It should be noted that not all standard historical sources, as defined per ASTM E1527, were reviewed as part of this assessment. Based on information provided from the remaining standard historical sources, additional historical information obtained from building department records would not likely have assisted in meeting the historical use requirement; therefore, this data gap is not expected to impact the results of this assessment.
- Typically, interviews with current and past owners, operators, and occupants of the subject property, who are likely to have material information regarding the potential for contamination at the subject property, would be conducted to the extent that they can be identified and that the information likely to be obtained is not duplicative of information already obtained from other sources. Such interviews were not completed as part of this assessment. This data gap is not expected to change the outcome of the report based on historical information gathered from other sources, which are documented throughout this report.

2.0 Site Description

2.1 Site Location and Parcel Description

The planned disturbance area follows the alignment of the existing Bruce Highway within the area described as “Rd10F – Chainage 8.136 km to 13.25 km” alignment, and the adjacent land parcels as shown in 279/10F/2 RNAU Contaminated Land Map, dated 15 February 2017 (**Appendix A**).

The planned disturbance area is considered to comprise and be limited to the project alignment itself.

2.2 Site Ownership

A list of land-titles and stated owners and/or operations that are located adjacent to the current Bruce Highway road alignment is provided in **Appendix B**.

2.3 Land Use and Zoning

Land to the south of Ramsay Creek falls within the administrative zone of Rockhampton Regional Council whereas land to the north of Ramsay Creek falls within the administrative zone of Livingstone Shire Council. Review of land-use and zoning under the respective council planning schemes is summarised in the following sections.

2.3.1 Rockhampton Region Planning Scheme (2015)

Reference to the Rockhampton Region Planning Scheme (2015), land adjacent to the planned disturbance area consists of the following classifications/zonings:

- Community Facilities;
- Open Space;
- Low Impact Industry;
- Medium Impact Industry;
- High Impact Industry;
- Local Centre;
- Low density Residential;
- Sport & Recreation;
- Special Purpose; and
- Emerging Communities.

2.3.2 Livingstone Shire Planning Scheme (2015)

Reference to the Livingstone Shire Planning Scheme (2005), Zoning Map Z1 (Glenlee and Glendale) and Zoning Map Z2 (Sandringham and Rockyview), land adjacent to the planned disturbance area consists of the following classifications/zoning:

- Open Space; and
- Park Residential.

3.0 Environmental Setting

3.1 Topography

Based on a review of topographical information provided by the Queensland Government QTopo (http://qtopo.dnrm.qld.gov.au/desktop/ - accessed – 18 June, 2017), the elevation of land in the planned disturbance area ranges between 20 and 40 m Australian Height Datum (mAHD). Land elevation increases to the east of the road alignment to approximately 210 mAHD. No land was identified within the study area below 5 mAHD.

3.2 Soil/Geology

Site and Lot specific geologic information was not identified during the course of this desk top review. Regional geology of the study area was reviewed from the Australia 1:250,000 Geological Series: Rockhampton, Queensland surface geology map (Sheet SF 56-13) published by the Department of Mines. Primary geological units within the study area consist of the following units:

- Qha – Quaternary alluvium, consisting of gravel, sand, silt, clay – primarily within the river and creek alignments;
- Plb – Lower Permian aged Berserker Beds consisting of acid lapilli tuff, vitric and crystal tuff, andesitic and acid flows, agglomerate, tuffaceous conglomerate, mudstone and lithic arenite – located within the proposed road corridor and eastern part of the study area;
- Clr – Carboniferous aged Rockhampton group consisting of mudstone, siltstone, feldspathic and lithic arenite, conglomerate, oolitic limestone & arenite– located west of the highway alignment and railway alignment;
- Pub – Upper Permian Eulogie Park Gabbro consisting of gabbro & diorite – occurring as isolated outcrops within the Lower Permian Berserker Beds tuffs in the east of the study area and east of the road alignment.

Key structural features include a fault indicated to be present west of the road alignment trending north-northwest to south-southeast. The fault forms the primary boundary between the Rockhampton Group mudstones and Berserker Beds tuffs.

The primary geology encountered within the road alignment and proposed expansion is:

- Qha – Quaternary alluvium, within the river and creek alignments that cross the road;
- Plb – Lower Permian aged tuff forming the underlying geology within the proposed road corridor.

3.3 Hydrology

The study area is located within the Fitzroy River catchment. Review of topographic maps (refer to Section 3.1) indicates the presence of two ephemeral creeks flowing from northeast to southwest, including:

- Limestone Creek – crossing the Bruce Highway between the Yeppoon Rd and Boundary Rd junctions; and
- Ramsay Creek – crossing the Bruce Highway approximately 200 m north of the Stirling Drive.

Review of the Department of Natural Resources and Mines flood information (http://dnrm-floodcheck.esriaustraliaonline.com.au/floodcheck/ - accessed 16 June, 2017) indicates the following flood risk levels:

- The study area is located above recorded maximum flood levels recorded between 2010 and 2011; and

- Ramsay Creek and Limestone Creek may potentially flood during modelled extreme events based on the Basin 1 % AEP and Basin Extreme Events layers.

Open unlined drains and swales appear to be present adjacent to the eastern and western carriageways of the road alignment that are not indicated on topographical maps reviewed under the desktop study.

4.0 Site and Area History

Historical information for the subject property and its surrounding is based on AECOM's review and analysis of the following historical sources:

- Aerial photographs dated 1956, 1982, and 2003;
- A search of the Environmental Management Register and the Contaminated Land Register as maintained by the Department of Environment and Heritage Protection.

No documents relating to the site contamination relevant to the project were provided by the project team.

4.1 Site Development

A historical aerial photography survey has been undertaken for the subject property. Copies of select aerial photographs are included in **Appendix C** and relevant historical information obtained from the photographs is summarised in **Table 4.1**.

Table 4.1 Aerial Photography Description

Date	Aerial Photograph Description Adjacent Road Alignment
29 May 1956	Yeppoon Rd - Mason Avenue • East of Bruce Highway – mixed low density residential, agricultural (crops) & potential commercial Mason Avenue - Olive Street • East of Bruce Highway – Low density residential • West of Bruce Highway – potential rail related activity North of Olive Street • Rural/Agricultural land (grassland) with occasional homesteads & houses
27 July 1982 1-48 Run 1 Q4051	Yeppoon Rd - Mason Avenue • East of Bruce Highway - rural/agricultural land (crops & grassland) with occasional homesteads & low density houses. Some indeterminate land disturbance • West of Bruce Highway – undeveloped land, commercial & industrial. Land disturbance observable in Lot 69 on Plan CP910378, Lot 1 and Lot 2 on RP604139 Mason Avenue - Olive Street • East of Bruce Highway – low density residential. Some indeterminate activity on Lot 1 on RP618312 • West of Bruce Highway – potential rail related activity – no change from 1956 North of Olive Street • Rural/Agricultural land (grassland) with occasional homesteads & houses • Potential low density residential north of Ramsay Creek
27 May 2003 095-122 Run 4 QAPc5956	Yeppoon Rd - Mason Avenue • East of Bruce Highway – mixed low density residential , some commercial • West of Bruce Highway – undeveloped land, commercial & industrial. Land disturbance remains observable in Lot 69 on Plan CP910378, Lot 1 and Lot 2 on RP604139 Mason Avenue - Olive Street • East of Bruce Highway – Low density residential. Some indeterminate activity on Lot 1 on RP618312 • West of Bruce Highway – potential rail related activity – potential stockpiles observable North of Olive Street • Rural/Agricultural land (grassland) with occasional homesteads & houses • Potential low density residential north of Ramsay Creek

4.2 Environmental Management Register (EMR) / Contaminated Land Register (CLR) Search Results

The Queensland Department of Environment and Heritage Protection (EHP) administers the *Environmental Protection Act 1994* (the EP Act) which regulates the management of Queensland's environment, within the principles of ecologically sustainable development.

In line with the requirements of the EP Act (1994), the department maintains two public access registers which contain land-use planning information, these being:

- the Environmental Management Register (EMR); and
- the Contaminated Land Register (CLR).

The EMR is a land-use planning and management register. The EMR provides information on historic and current land use including whether the land has been or is currently used for a notifiable activity, or has been contaminated by a hazardous contaminant. Inclusion of a land parcel on the EMR does not mean the land must be cleaned up or that the current land use must stop.

The CLR is a register of 'risk' sites - proven contaminated land which is causing or may cause serious environmental harm. Land is recorded on the CLR when scientific investigation shows it is contaminated and action needs to be taken to remediate or manage the land.

4.2.1 EMR/CLR Search Results

Nine land parcels that are located adjacent to the current road alignment are registered on the EMR.

No land parcels were identified as being registered on the CLR.

Table 4.2 summarises land parcels in south to north order identified as being registered on the EMR together with additional observations from aerial imagery review. Copies of the land title search results indicated as being listed on the EMR are included in **Appendix D**.

Table 4.2 Summary of Lots Registered on the Qld EMR adjacent to proposed Road Corridor

No	Lot & Plan No	Details & Observations
1	Lot 70 LN2378	Central Queensland University – Educational Institution No additional EMR details sighted Aerial imagery review indicates open or vegetated land adjacent to road corridor
2	Lot 92 LN2178	G James Holdings Pty Ltd Glass & Aluminium No additional EMR details sighted Aerial imagery review indicates buildings outside potential road corridor footprint
3	Lot 105 SP108704	Joy Global Australia Pty Ltd – Joy Mining Machinery No additional EMR details sighted Aerial imagery review indicates buildings and lay-down area adjacent to road corridor.
4	Lot 1 RP604139	QMCH Pty Ltd / QMC (Kunawarara) Pty Ltd / QMC REFMAG Pty Ltd No additional EMR details sighted Aerial imagery review indicates vacant land adjacent to road corridor. Unidentified materials located on paved ground approx. 100 m from current road alignment
5	Lot 2 RP604139	QMCH Pty Ltd / QMC (Kunawarara) Pty Ltd / QMC REFMAG Pty Ltd - Sibelco No additional EMR details sighted Aerial imagery review indicates site weighbridge and administration building & parking adjacent to road corridor
6	Lot 4 SP229024	Title not sighted No additional EMR details sighted Aerial imagery review indicates commercial/warehouse buildings
7	Lot 2 RP603056	 No additional EMR details sighted Aerial imagery review indicates potential service station

No	Lot & Plan No	Details & Observations
8	Lot 22 SP134380	State of Queensland - sub-leased to Queensland Rail Ltd No additional EMR details sighted Aerial imagery review indicates open undeveloped land.

4.3 Previous Environmental Reports

No historical environmental reports have been provided by TMR for the study area.

5.0 Findings and Opinions

AECOM performed a desktop review of information relating to within the study area focusing on properties immediately adjacent to the current alignment of the Bruce Highway in general conformance with the stated scope in Section 1.4 and ASTM Practice E 1527-13 to the extent that is reasonably practicable. Any exceptions to, or deletions from, this practice are described in Section 1.3 through 1.5 of this report.

A summary of findings is outlined in **Appendix A** of this report that lists properties indicated to be directly impacted by the proposed road activities and any potential *"de-minimis conditions"*(dmc) or Recognised Environmental Conditions (REC) identified within the limitations of the desktop review.

5.1 Recognized Environmental Conditions

Seven RECs have been identified in the desktop review within the indicated road upgrade alignment as outlined in **Appendix B**. The presence of an REC is based on the listing of a Lot on the Queensland EMR and/or indication of potential release of substances to land via review of aerial imagery.

5.2 Controlled Recognized Environmental Conditions

No CRECs have been identified in the desktop review within the indicated road upgrade alignment.

Reviewed land titles made available for the desk-top review did not include details of sites with Site Management Plans (SMP) attached that outline the presence, type, development restrictions and management of soils and groundwater.

5.3 Historical Recognized Environmental Conditions

No HRECs were identified within the limitations of available information during the desktop review.

5.4 De Minimis Conditions

Potential DMC have been generically identified within the limitations of the desktop review in **Appendix B** based on indicated commercial or industrial land-use identified during the desktop review. Road drains and swales have been identified within the road alignment that receives surface water discharge from potential *dmc* Lots and Lots listed on the Queensland EMR. Sediments accumulated within storm water drains adjacent and downstream of these lots may contain sediments potentially impacted by chemicals to levels that may require management if removed for off-site disposal.

Direct verification of potential *dmc* identified within identified Lots is recommended to verify if the potential for impact to soils within the adjacent road corridor is likely.

5.5 Potential Risk Management Actions

Visual inspection and walkover of planned disturbance areas is recommended within and adjacent to the road alignment focusing on high risk Lots identified with a potential *dmc,* REC, or known listing on the Queensland EMR. Visual inspections and walkovers may identify areas of the proposed road improvement potentially impacted by adjacent activities that require management of soils during the road development. AECOM notes that, the potential *dmc* identified in the desktop review are considered consistent with *dmc* that will arise on similar road construction projects (e.g. oil residues associated with run-off from the road surfaces accumulating in roadside drains) and it is considered that the implementation of environmental controls as commonly applied through a Construction Environmental Management Plan (CEMP) or similar would be an appropriate method for managing risks associated with *dmc*.

Where potential risks of soil contamination are identified during the inspection of high risk Lots, intrusive site investigations, soil sampling and chemical analysis may be required to characterise soils for subsequent management options within the proposed road development work plan to maintain compliance with applicable legislation, regulations and permit requirements where applicable, together with managing human health and ecological risks within required limits. In considering the need for further investigations, the lateral and vertical extent of potential contamination within the respective high risk Lot should be considered in the context of the planned areas of disturbance during the construction activities.

Specific management options for identified contaminated soils may be developed and incorporated into proposed road development plans to identify specific permit requirements for the disturbance, handling, placement within fill areas and/or disposal options of the proposed road development.

6.0 Conclusions

AECOM has performed a desktop review of potential land contamination risks within and adjacent to the planned disturbance area follows the alignment of the existing Bruce Highway within the area described as “Rd10F – Chainage 8.136 km to 13.25 km” alignment.

A total of eight Lots have been identified as registered on the Queensland Environmental Management Register (considered as a Recognised Environmental Condition - REC), indicating the potential for the presence of contamination within the land adjacent to the current Bruce Highway that may have historically impacted land within the Bruce Highway Road corridor. Lots indicated to be contained on the Qld EMR were generally consistent with areas of soil disturbance potentially indicating contaminating activities on historical aerial photography reviewed during the desktop review.

Additional sites adjacent to the Bruce Highway alignment that may contain potential contaminating activities (*de-minimis conditions - dmc*) were identified within remaining industrial land within the study area. An additional *dmc* in the form of drains within the current road reserve potentially containing contaminated sediment originating from adjacent Lots identified as either REC or *dmc* via storm water drainage as also identified.

The presence of Controlled REC defined as Land Titles identified with contamination via inclusion on the Queensland EMR, with a Site Management Plan (SMP) that outlines the type and required management of contamination could be verified during the desktop review. The presence of SMP on land adjacent to the planned disturbance area is considered a data gap for the proposed development activities.

The following recommendations are made based on the findings of the desk top review:

1. Visual verification of identified *dmc* within Lots adjacent to the planned disturbance area is completed to refine the current risk profile for soils. It is considered that the implementation of environmental controls as commonly applied through a Construction Environmental Management Plan (CEMP) or similar would be an appropriate method for managing risks associated with *dmc.*
2. A site inspection of the eight Lots included on the EMR be undertaken in an effort to establish the need for further investigations. In doing so, the lateral and vertical extent of potential contamination within the respective high risk Lot should be considered in the context of the planned areas of disturbance during the construction activities. Chemical analysis of soil samples and verification of the presence of potential soil contamination could then be used to inform environmental management controls to be implemented during the course of construction activities.

Appendix A

Planned Disturbance Area

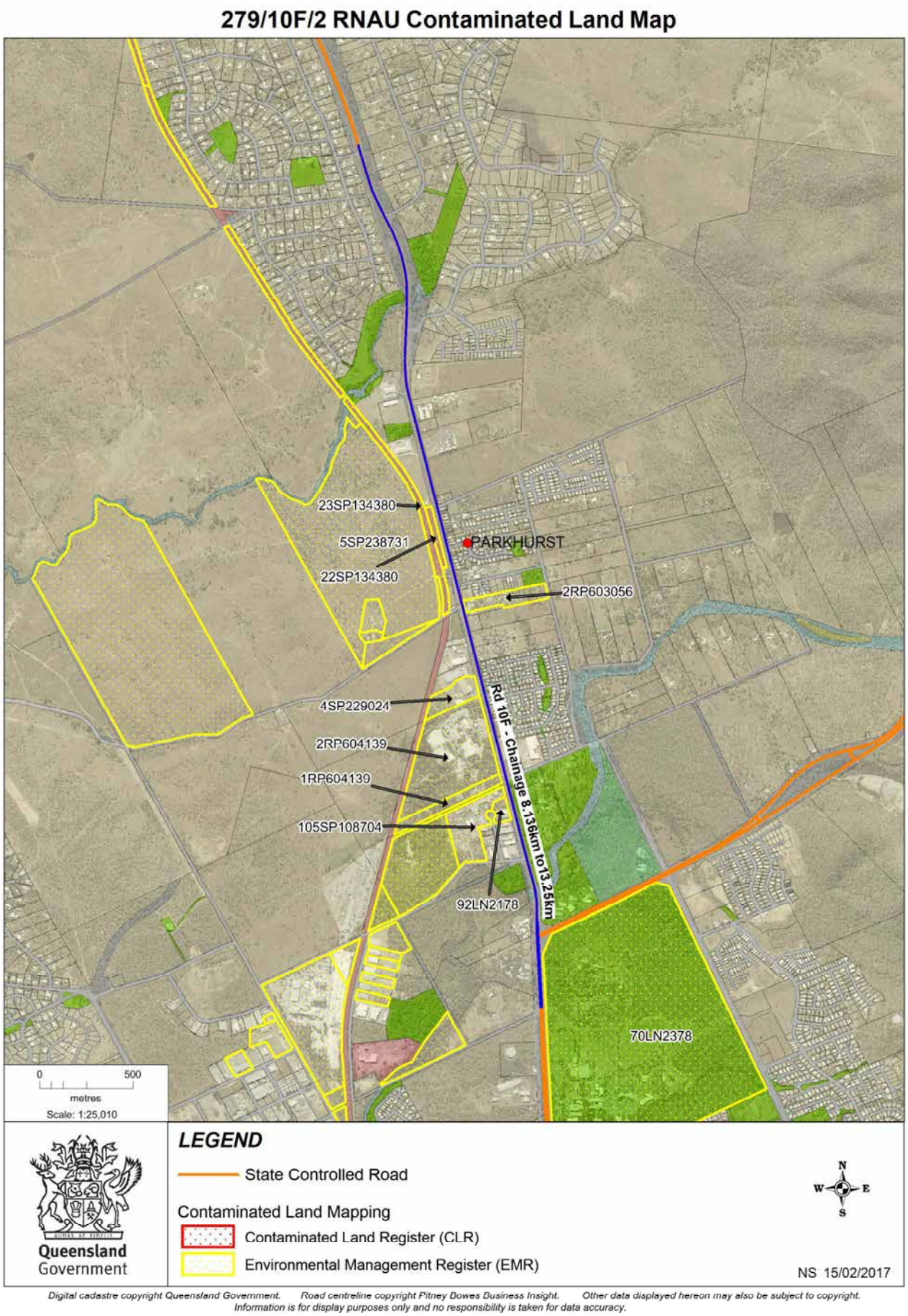


Figure 2 – Lots listed on the EMR and CLR in or near the project upgrade area

Appendix B

Land Title List

Item No.	Property ID	Lot	Plan	Start Chainage	End Chainage	Carrigway	Road	Property Description	Direct Impact by New Road works (Y/N)	CLR/EMR Property	Type	EDA ID	Reg_Site ID	DMC	Description	REC	Description
1		219	LN2518	8140	8140	1	10F	Rockhampton Music Bowl	N	No	-	-	-	N	-	N	
2		70	LN2378	8300	8300	1	10F	Capricornia College	N	EMR	BP	7663	11922	N	-	Y	Registered on Qld EMR Unknown Reason
3		222	LN2628	8300	8300	1	10F	Cultural Centre / Capricorn Motel & Conference Centre	N	No	-	-	-	N	-	N	-
4		223	LN2652	8520	8520	1	10F	Emergency Services	N	No	-	-	-	N	-	N	-
5		7	SP125023	8600	8600	1	10F	Firestation	N	No	-	-	-	Y	Potential diesel storage for gen set in pump station/maintenance depot Visual verification requirec	N	-
6		207	LN1609	8700	8700	1	10F	DPI Rockhampton	N	No	-	-	-	N	-	N	-
7		6	SP125023	8760	8760	1	10F	Limestone Creek	Y	No	-	-	-	N	-	N	-
8		135	LN2469	8900	8900	1	10F	Limestone Creek	N	No	-	-	-	N	-	N	-
9		220	IN2565	9100	9100	1	10F	St Peter's Church	N	No	-	-	-	N	-	N	-
10		2	RP617306	9040	9040	1	10F	Truckline Truck & Trailer Parts	N	No	-	-	-	Y	Industrial Facility of unspecified type & Car Showroom	N	-
11		1	RP617306	9120	9120	1	10F	NPM Constructions	N	No	-	-	-	Y	Industrial Facility of unspecified type	N	
12		78	LN1707	9180	9180	1	10F	Old Car Restorations	N	No	-	-	-	Y	Industrial Facility with potential to contaminate	N	
13		92	LN2178	9300	9300	1	10F	G. James Class and Aluminium	N	EMR	BP	7559	11808	-	Not Applicable	Y	Registered on Qld EMR
14		69	CP910378	9000	9000	1	10F	Boundary Road Extension	Y	No	-	-	-	N	No observable evidence via reviewed imagery		
15		105	SP108704	9400	9400	1	10F	Joe Mining Machinery	N	EMR	NP BP	22153 7780	23901 12045	Y	Industrial Facility with potential to contaminate	Y	Registered on Qld EMR
16		327	LN1763	9400	9400	1	10F	Boundary Road Extension	Y	No	-	-	-	N	-	N	-
17		1	RP604139	9400	9400	1	10F	Boundary Road Extension	Y	EMR	BP	7743	12004	Y	- Visible land disturbance in aerial imagery	Y	Registered on Qld EMR
18		2	RP609987	9500	9500	1	10F	Parkhurst Tavern	N	No	-	-	-	N	-	N	-
19		2	RP604139	9700	9700	1	10F	Sibelco	Y	EMR	BP	7554	11803	Y	- Visible land disturbance in aerial imagery	Y	Registered on Qld EMR
20		15	SP224442	9600	9600	1	10F	Parkhurst Shopping Centre Carpark	Y	No	-	-	-	N	-	N	-
21		189	RP866038	9680	9680	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
22		188	RP866038	9700	9700	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
23		8	RP866472	9740	9740	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
24		184	RP866036	9780	9780	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
25		183	RP866036	9800	9800	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
26		182	RP866036	9820	9820	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
27		181	RP866036	9840	9840	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
28		180	RP866036	9860	9860	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
29		38	RP856812	9880	9880	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
30		39	RP856812	9900	9900	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
31		1	RP608371	10000	10000	1	10F	VCV Rockhampton	Y	No	-	-	-	Y	Potential Industrial facility - unspecified nature	N	-
32		1	RP856812	9940	9940	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
33		71	RP859976	9970	9970	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
34		72	RP859976	9990	9990	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
35		73	RP859976	10020	10020	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
36		74	RP859976	10030	10030	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
37		83	RP860040	10050	10050	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
38		84	RP860040	10060	10060	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
39		85	RP860040	10090	10090	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
40		86	RP860040	10110	10110	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
41		87	RP860040	10130	10130	1	10F	House (no impact on driveway)	Y	No	-	-	-	N	-	N	-
42		2	RP608417	10200	10200	1	10F	Nu-Tank / Guardian Campers	Y	No	-	-	-	Y	Potential Industrial facility	N	-
43		8	RP603507	10200	10200	1	10F	Country Club	Y	No	-	-	-	N	-	N	-
44		1	RP602261	10280	10280	1	10F	Undeveloped	N	No	-	-	-	N	-	N	-
45		9	RP603507	10280	10280	1	10F	Country Club	Y	No	-	-	-	N	-	N	-
46		2	RP602261	10360	10360	1	10F	Future Service Road Extension	N	No	-	-	-	N	-	N	-
47		1	RP609294	10360	10360	1	10F	-	N	No	-	-	-	N	-	N	-
48		1	RP603056	10420	10420	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
49		2	RP603056	10460	10460	1	10F	Parkhursty Convenience Store	Y	EMR	BP	7572	11821	Y	Bulk fuel storage in underground storage tanks	Y	Registered on Qld EMR
50		1	RP607228	10480	10480	1	10F	-	N	No	-	-	-				
51		2	RP607227	10550	10550	1	10F	Undeveloped	N	No	-	-	-	N	-	N	-
52		2	RP864537	10550	10550	1	10F	Undeveloped	Y	No	-	-	-	N	-	N	-
53		1	SP113178	10580	10580	1	10F	House	Y	No	-	-	-	N	-	N	-
54		13	LN1054	10640	10640	1	10F	Parkhurst Primary School	Y	No	-	-	-	N	-	N	-
55		1	RP893616	10680	10680	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
56		22	SP134380	10900	10900	1	10F	Future Service Road Extension	N	EMR	BP NP	12305 25102	35111 41765	N	None identifeid	Y	Registered on Qld EMR
57		1	RP606826	10700	10700	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
58		5	RP618235	10720	10720	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
59		4	RP618235	10740	10740	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
60		3	RP618235	10760	10760	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
61		2	RP618236	10780	10780	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
62		1	RP618236	10800	10800	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
63		2	RP609129	10840	10840	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
64		1	RP609129	10860	10860	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
65		1	RP612769	10880	10880	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
66		2	RP607169	10900	10900	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
67		3	RP607169	10950	10950	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
68		1	SP172946	10940	10940	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
69		1	RP606447	10960	10960	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
70		4	RP606962	10990	10990	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
71		3	RP606962	11010	11010	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
72		0	SP218869	11030	11030	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
73		1	RP606962	11040	11040	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
74		1	RP611477	11100	11100	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
75		2	RP617657	11200	11200	1	10F	Undeveloped	N	No	-	-	-	N	-	N	-
76		41	SP226571	11400	11400	1	10F	Brown and Hurley	Y	No	-	-	-	Y	Potential Industrial facility	N	-
77		22	SP171783	11340	11340	1	10F	Undeveloped	Y	No	-	-	-	N	-	N	-
78		21	SP171783	11420	11420	1	10F	Korte's Resort	Y	No	-	-	-	N	-	N	-
79		40	SP169165	11520	11520	1	10F	Bruce Highway North Park	Y	No	-	-	-	N	-	N	-
80		4	RP619710	11520	11520	1	10F	House (Impact on driveway)	Y	No	-	-	-	N	-	N	-
81		1	RP618493	11650	11650	1	10F	NationWide Hire	Y	No	-	-	-	Y	Potential Industrial facility	N	-
82		5	RP619210	11600	11600	1	10F	The Blue Motor Inn	Y	No	-	-	-	N	-	N	-
83		3	RP619710	11680	11680	1	10F	Casa Nostra	Y	No	-	-	-	N	-	N	-
84		5	SP226571	11800	11800	1	10F	Westco Truck Sales	Y	No	-	-	-	Y	Potential Industrial facility	N	-
85		2	RP614819	11800	11800	1	10F	-	N	No	-	-	-	Y	Potential Industrial facility	N	-
86		3	RP618493	12000	12000	1	10F	Ramsay Park	Y	No	-	-	-	N	-	N	-
87		1	RP614819	12000	12000	1	10F	-	N	No	-	-	-	Y	Potential Industrial facility	N	-
88		1	SP197345	12120	12120	1	10F	House (no impact on driveway)	N	No	-	-	-	N	-	N	-
89		302	RP860159	12200	12200	1	10F	Ramsay Park	Y	No	-	-	-	N	-	N	-
90		104	LN2416	12500	12500	1	10F	Ramsay Creek	N	No	-	-	-	N	-	N	-
91		10	RP860165	12360	12360	1	10F	House (no impact on driveway)	N	No	-	-	-	N	-	N	-
92		9	RP860165	12420	12420	1	10F	House (no impact on driveway)	N	No	-	-	-	N	-	N	-
93		8	RP860165	12480	12480	1	10F	House (no impact on driveway)	N	No	-	-	-	N	-	N	-
94		7	RP860165	12550	12550	1	10F	House (no impact on driveway)	N	No	-	-	-	N	-	N	-
95		6	RP860165	12620	12620	1	10F	House (no impact on driveway)	N	No	-	-	-	N	-	N	-
96		5	RP860161	12680	12680	1	10F	House (no impact on driveway)	N	No	-	-	-	N	-	N	-
97		4	RP860161	12740	12740	1	10F	House (no impact on driveway)	N	No	-	-	-	N	-	N	-
98		3	RP860161	12800	12800	1	10F	House (no impact on driveway)	N	No	-	-	-	N	-	N	-
99		31	RP611310	12700	12700	1	10F	House (no impact on driveway)	N	No	-	-	-	N	-	N	-

Appendix C

Aerial Photography Copies

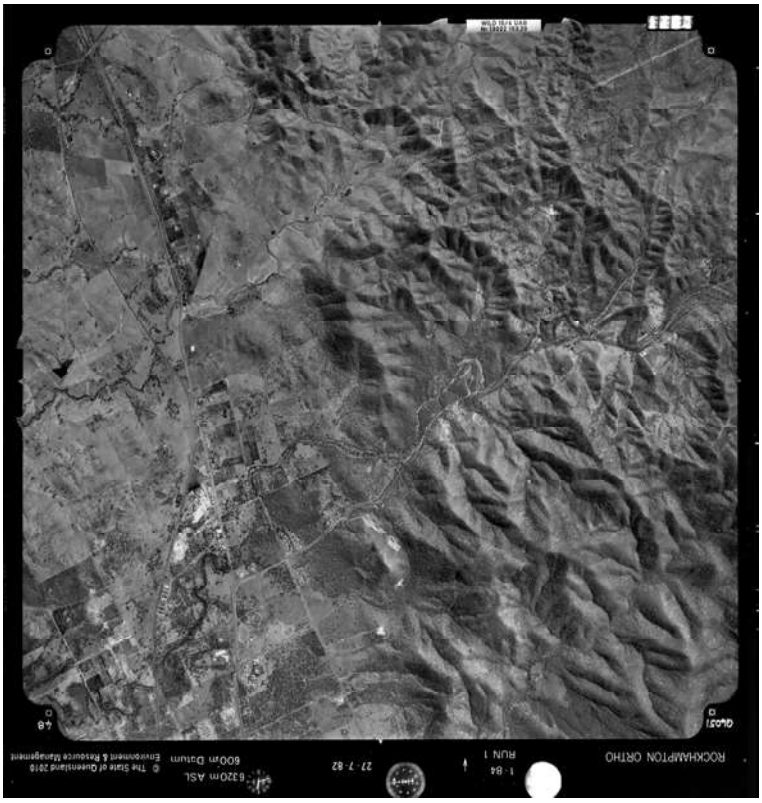
Appendix C Aerial Photography Copies



Parkhurst 1956 (1)



Parkhurst 1956 (2)



Parkhurst 1982



Parkhurst 2003

Appendix D

Titles Search Results for Properties on EMR / CLR

CURRENT TITLE SEARCH

DEPT OF NATURAL RESOURCES AND MINES, QUEENSLAND

Request No: 26191152
Search Date: 15/06/2017 09:07 **Title Reference: 30242154**
Date Created: 28/05/1953

Previous Title: 30156134

REGISTERED OWNER Interest

Dealing No: 714392449 02/04/2012

QMCH PTY LTD A.C.N. 111 293 433	1/2
QMC (KUNWARARA) PTY LTD A.C.N. 009 643 216	2/5
QMC REFMAG PTY LTD A.C.N. 003 858 099	1/10

AS TENANTS IN COMMON

ESTATE AND LAND

Estate in Fee Simple

LOT 1 REGISTERED PLAN 604139
Local Government: ROCKHAMPTON

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 10364014 (POR 274)

ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

** End of Current Title Search **

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Requested By: D-ENQ CITEC CONFIRM

CURRENT TITLE SEARCH

DEPT OF NATURAL RESOURCES AND MINES, QUEENSLAND

Request No: 26191153
Search Date: 15/06/2017 09:07 **Title Reference: 30248131**
Date Created: 12/08/1954

Previous Title: 30148174

REGISTERED OWNER

Dealing No: 714457240 10/05/2012

ESTATE AND LAND

Estate in Fee Simple

LOT 2 REGISTERED PLAN 603056
Local Government: ROCKHAMPTON

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
   Deed of Grant No. 10364019 (POR 201)

2. LEASE No 707855349 30/06/2004 at 15:09
   LUXBURG PTY LTD A.C.N. 101 153 940

3. AMENDMENT OF LEASE No 712116571 17/12/2008 at 12:42
   LEASE: 707855349
   TERM: 17/10/2002 TO 16/10/2012 OPTION 2 X 3 YEARS

4. TRANSFER No 713672057 19/01/2011 at 12:41
   LEASE: 707855349
   MULLER PARK PTY LTD A.C.N. 136 710 177 TRUSTEE
   UNDER INSTRUMENT 713672057

5. MORTGAGE No 713672058 19/01/2011 at 12:41
   COMMONWEALTH BANK OF AUSTRALIA A.B.N. 48 123 123 124
   over
   LEASE: 707855349

6. AMENDMENT OF LEASE No 714343945 02/03/2012 at 16:28
   LEASE: 707855349
   TERM: 17/10/2002 TO 16/10/2012 OPTION 5 YEARS

7. MORTGAGE No 714457243 10/05/2012 at 14:28
   RABOBANK AUSTRALIA LIMITED A.C.N. 001 621 129

ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

CURRENT TITLE SEARCH

DEPT OF NATURAL RESOURCES AND MINES, QUEENSLAND

Request No: 26191153
Search Date: 15/06/2017 09:07 **Title Reference: 30248131**
Date Created: 12/08/1954

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

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Requested By: D-ENQ CITEC CONFIRM

CURRENT TITLE SEARCH

DEPT OF NATURAL RESOURCES AND MINES, QUEENSLAND

Request No: 26191150
Search Date: 15/06/2017 09:07

Title Reference: 30156135
Date Created: 31/10/1927

Previous Title: 30110239

REGISTERED OWNER	Interest
Dealing No: 714392449 02/04/2012	
QMCH PTY LTD A.C.N. 111 293 433	1/2
QMC (KUNWARARA) PTY LTD A.C.N. 009 643 216	2/5
QMC REFMAG PTY LTD A.C.N. 003 858 099	1/10

AS TENANTS IN COMMON

ESTATE AND LAND

Estate in Fee Simple

LOT 2 REGISTERED PLAN 604139
Local Government: ROCKHAMPTON

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
   Deed of Grant No. 10362190 (POR 277)
   Deed of Grant No. 10364014 (POR 274)

ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

** End of Current Title Search **

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Requested By: D-ENQ CITEC CONFIRM

CURRENT STATE TENURE SEARCH

DEPT OF NATURAL RESOURCES AND MINES, QUEENSLAND

Request No: 26191154
Search Date: 15/06/2017 09:07 **Title Reference: 48002269**
Date Created: 27/02/2010

Previous Title: 40008706

LAND DESCRIPTION

Estate in PERPETUITY

LOT 22 SURVEY PLAN 134380
Local Government: ROCKHAMPTON

REGISTERED LESSEE

Dealing No: 712575628 07/07/2009

THE STATE OF QUEENSLAND
(REPRESENTED BY DEPARTMENT OF TRANSPORT AND MAIN ROADS)

PERPETUAL TENURE INFORMATION

For Conditions, Primary Tenure information including Purpose and Term of Tenure, refer to title reference 40008706

ENCUMBRANCES, EASEMENTS AND INTERESTS

1. SUB LEASE No 713429425 26/08/2010 at 11:17
   QUEENSLAND RAIL LIMITED A.C.N. 132 181 090
   OF THE WHOLE OF THE LAND
   TERM: 30/06/2010 TO 30/06/2110 OPTION AS THEREIN STATED

ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

Caution - Charges do not necessarily appear in order of priority

** End of Current State Tenure Search **

Information provided under section 34 Land Title Act(1994) or
section 281 Land Act(1994)

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Requested By: D-ENQ CITEC CONFIRM

CURRENT RESERVE SEARCH

DEPT OF NATURAL RESOURCES AND MINES, QUEENSLAND

Request No: 26191149
Search Date: 15/06/2017 09:07

Title Reference: 49022957
Date GAZETTED: 25/12/1971
PAGE: 1951

Opening Ref: RES 1650
Purpose: EDUCATIONAL INSTITUTION
Sub-Purpose: ADVANCED EDUCATION
Local Name: CENTRAL QUEENSLAND UNIVERSITY
Address: BRUCE HIGHWAY, ROCKHAMPTON 4700
County (R) No: R766
File Ref: RES 12767

TRUSTEES

CENTRAL QUEENSLAND UNIVERSITY Gazetted on 04/10/2002
Page 361-363

LAND DESCRIPTION

LOT 70 CROWN PLAN LN2378 GAZETTED ON 16/10/1982 PAGE 694
Local Government: ROCKHAMPTON

Area: 132.300000 Ha. (SURVEYED)

EASEMENTS AND ENCUMBRANCES

1. LEASE No 705668585 03/06/2002 at 11:49
   HONICL CONSULTANTS PTY LTD A.C.N. 065 506 318
   PART OF THE COMMERCIAL CENTRE (SHOPS 2 AND 3)

2. EASEMENT IN GROSS No 711219362 27/11/2007 at 15:41
   burdening the land
   LIVINGSTONE SHIRE COUNCIL
   over
   EASEMENT A ON SP204913

3. TRUSTEE LEASE No 711498116 12/03/2008 at 15:25
   THE CRECHE AND KINDERGARTEN ASSOCIATION OF QUEENSLAND A.B.N. 19 945 271 234
   OF LEASE C ON SP195012
   TERM: 01/12/2006 TO 30/11/2031 OPTION NIL

4. TRUSTEE LEASE No 714051298 07/09/2011 at 15:15
   CENTRAL QUEENSLAND INDIGENOUS DEVELOPMENT LIMITED A.C.N. 110 812 489
   OF LEASE D ON SP243149
   TERM: 08/03/2011 TO 07/03/2036 OPTION NIL

CURRENT RESERVE SEARCH

DEPT OF NATURAL RESOURCES AND MINES, QUEENSLAND

Request No: 26191149
Search Date: 15/06/2017 09:07

Title Reference: 49022957
Date GAZETTED: 25/12/1971
PAGE: 1951

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
711236484	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	04/12/2007 08:43	CURRENT

UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

Caution - Charges do not necessarily appear in order of priority

** End of Current Reserve Search **

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Requested By: D-ENQ CITEC CONFIRM

CURRENT TITLE SEARCH

DEPT OF NATURAL RESOURCES AND MINES, QUEENSLAND

Request No: 26186793
Search Date: 14/06/2017 14:33 **Title Reference: 30520183**
Date Created: 03/02/1984

REGISTERED OWNER

G JAMES HOLDINGS PTY LTD

ESTATE AND LAND

Estate in Fee Simple

LOT 92 CROWN PLAN LN2178
Local Government: ROCKHAMPTON

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 30520183 (POR 92)

ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

** End of Current Title Search **

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Requested By: D-ENQ QLD GLOBE

CURRENT TITLE SEARCH

DEPT OF NATURAL RESOURCES AND MINES, QUEENSLAND

Request No: 26191151
Search Date: 15/06/2017 09:07 **Title Reference: 50250456**
Date Created: 04/01/1999

Previous Title: 40018135

REGISTERED OWNER

Dealing No: 717842863 16/02/2017

JOY GLOBAL AUSTRALIA PTY LTD A.C.N. 000 049 392

ESTATE AND LAND

Estate in Fee Simple

LOT 105 SURVEY PLAN 108704
Local Government: ROCKHAMPTON

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 30595068 (Lot 80 on CP LN1888)

ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

** End of Current Title Search **

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Requested By: D-ENQ CITEC CONFIRM