ECOLOGICAL ASSESSMENT

Jardine South Road Widening

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Approval for issue

Megan Davis		21 September 2022

Prepared by:

RPS

Natalie May
Senior Environment Scientist

135 Abbott Street
Cairns QLD 4870

T +61 7 4031 1336
E natalie.may@rpsgroup.com.au

Prepared for:

RECS Consulting Engineers and Building Design

Peter Dutaillis
Principal Engineer

26-30 Macrossan Street
Port Douglas QLD 4877

T +61 408 866090
E peter@recs.net.au

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1 INTRODUCTION

RPS Australia East Pty Ltd has been engaged by RECS Consulting Engineers and Building Design to conduct an Ecological Assessment to provide further information on flora and fauna species potentially inhabiting the area, presence of introduced species, and provide information on potential direct and indirect impacts vegetation clearing may have on a vegetation corridor alongside the Northern Bypass Road situated South-west of the Jardine Ferry refer to **Figure 1.**

The Ecological Assessment Report has been undertaken by qualified RPS Environmental Scientist with over 10 years' experience of conducting ecological field assessments.

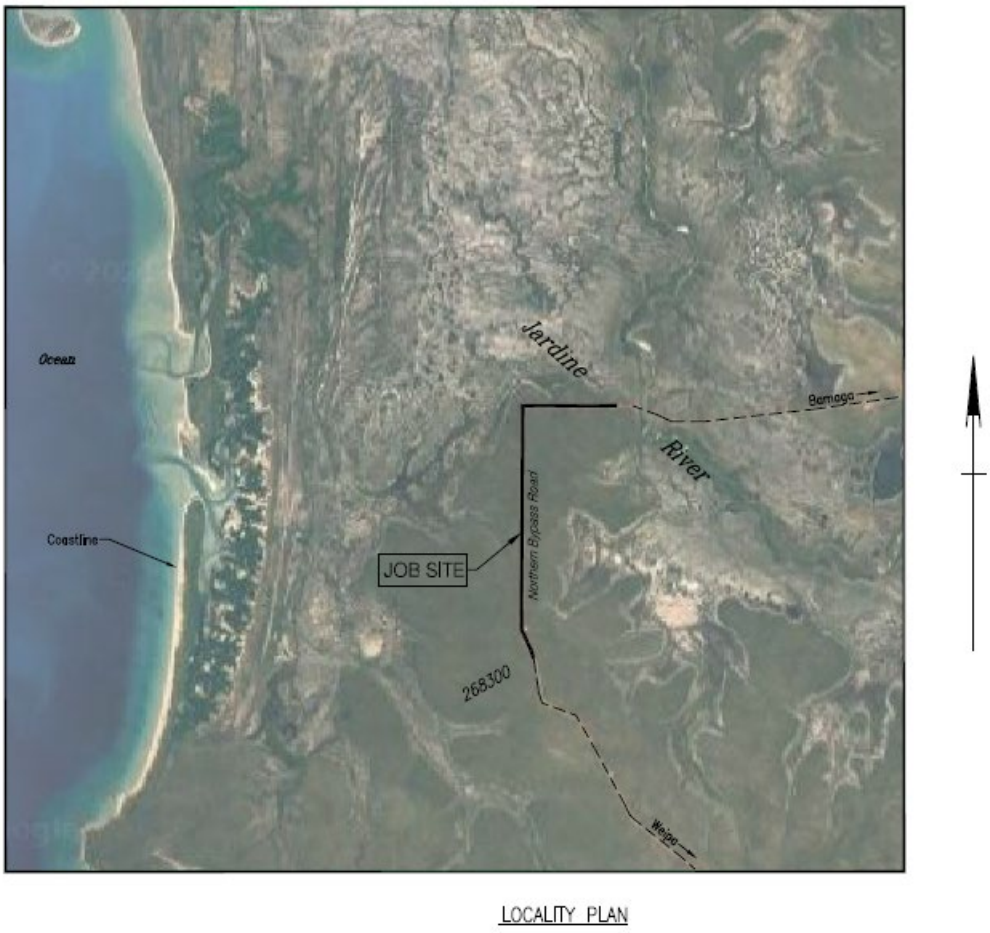

Figure 1 Proposed Survey Area

2 RELEVANT LEGISLATION

2.1 Commonwealth Legislation

2.1.1 Environmental Protection and Biodiversity Conservation Act 1999

The objectives of the EPBC Act are to:

- Provide for the protection of the environment, especially Matters of National Environmental Significance (MNES)
- Conserve Australian biodiversity
- Provide a streamlined national environmental assessment and approvals process
- Enhance the protection and management of important natural and cultural places
- Control the international movements of plants and animals (wildlife), wildlife specimens and products made or derived from wildlife
- Promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources
- Recognise the role of Indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity
- Promote the use of Indigenous people's knowledge of biodiversity with the involvement of, an in cooperation with, the owners of the knowledge.

The EPBC Act focusses Australian Government interests on the protection of the following MNES:

- World heritage properties
- National heritage places
- Wetlands of international importance (also known as 'Ramsar' wetlands)
- Nationally threatened species and ecological communities
- Migratory species
- Commonwealth marine areas
- Great Barrier Reef Marine Park
- Nuclear actions (including uranium mining)
- A water resources, in relation to coal seam gas development and large coal mining development.

Actions that will or may have a significant impact on MNES should be referred to the Commonwealth Department of Agriculture, Water and Environment (DAWE) for assessment under the EPBC Act.

2.2 State (Queensland) Legislation

2.2.1 Environmental Protection Act 1994

The objective of the EP Act is to protect the environment and give provision for development in a way that allows ecological processes to be maintained (i.e. ecologically sustainable development). In accordance with Section 319 of the EP Act, the requirements of a *general environmental duty* are that *a person must not carry out any activity that causes, or is likely to cause environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm.* The requirements apply to development projects.

2.2.2 Nature Conservation Act 1992

The NC Act is the principal legislation that provides for the protection of native flora and fauna (protected wildlife). The NC Act is administered by the Department of Environment and Science. Under the NC Act, native wildlife (flora and fauna) are classified into different categories of conservation significance in recognition of how threatened it is and what action sit needs to be taken to protect it. Certain authorisations or permits under the NC Act are required prior to clearing listed threatened plant species, interfering with an animal breeding place, or removing protected animals unless the activity is exempt.

2.2.3 Vegetation Management Act 1999 and Planning Act 2016

The VM Act is administered by the Department of Resources. The VM Act, in conjunction with the Planning Act, regulates the clearing of woody native vegetation in Queensland unless the clearing is made exempt from the approval requirements under the Planning Act. The VM Act's objectives include the conservation of remnant REs, prevention of the loss of biodiversity, maintenance of ecological processes, and conservation of vegetation in areas of high nature conservation value or lands vulnerable to land degradation. According to the Planning Regulation 2017 (Planning Reg), Schedule 21, clearing for premises under development approval is exempt clearing work if:

- The approval is for a development application for which the chief executive is a referral agency in relation to vegetation clearing; or
- The approval is for a development application –
  - That relates only to lots of less than 5ha; and
  - For which a local government is the prescribed assessment manager.

The VM Act classes are used for determining offset requirements for significant residual impacts to REs under provisions of the EO Act.

2.2.4 Environmental Offsets Act 2014

The EO Act, Environmental Offsets Regulation 2014 (EO Reg), and associated policies and guidelines provide a framework for defining the offset obligations where significant residual impacts to Matters of State Environmental Significance (MSES), MNES or Matters of Local Environmental Significance (MLES) occur.

2.3 Local Government Legislation

MLES are environmental values that are generally listed in a local government planning scheme. The North Peninsula Area Regional Council (NPARC) has not nominated MLES for the local government area. The NPARC Planning Scheme provides planning (2014) for assessable development, with a specific overlay code that addresses developments in environmentally sensitive areas, including mapped as MSES.

3 METHODS

The ecological assessment was informed by a desk-based assessment and field survey.

3.1 Desk-based assessment

A desk-based assessment was undertaken to identify ecological values with reference to the following information.

- Results from searches of the following databases and/or information portals:
  - EPBC Act Protected Matters Search Tool (PMST). A report was generated for an area within 1km of a point central to the project site (refer to Appendix D).
  - Queensland Department of Environment and Science Wildlife Online database. A report was generated for an area within 10km of a point central to the project (Appendix E).
  - Atlas of Living Australia portal. A species list was generated for an area within 10km of the project site (Appendix F).
- Regional Ecosystem Mapping and description database
- Regulated vegetation mapping
- NC Act Protected Plants Flora Survey Trigger Map
- MSES environmental report for the project site (Appendix G)
- Essential habitat mapping
- VM Act watercourse mapping
- Queensland wetland mapping
- Topographic mapping, aerial imagery and surface geology mapping available via Queensland Globe
- Commonwealth Species Profile and Threats database
- Literature relevant to flora and fauna species known to occur in the region.
- Commonwealth, Queensland and local environmental legislation relevant to the scope.

3.2 Field Survey

RPS Senior Environmental Scientist Natalie May undertook a field survey on 12th of September 2022. The following was undertaken:

- Confirmation of RE and Regulated Vegetation mapping and Regulated Vegetation mapping via quaternary vegetation assessments consistent with the methods of Nelder et al (2020).
- Review and confirmation of identification of significant trees (i.e. dbh of 200mm).
- Opportunistic observations of T/NT flora and T/NT&M fauna.
- Assessment of potential habitat for T/NT flora species.
- Assessment of potential habitat for T/NT&M fauna species.
- Searches for potential fauna breeding places.

4 RESULTS

4.1 Weather

Bamaga is one of the hottest places in Australia. It experiences exceptionally high overnight temperatures, rainfall and humidity levels. Daytime temperatures, wind speed and numbers of cloudy days are above average. Numbers of clear days are below average (©2022 Digital Atlas Pty Limited).

Bamaga has a wet and a dry season. The wet season in Bamaga begins around November and ends around May. Over the course of the wet season, Bamaga receives around 1671.6mm of rain. By comparison, in the dry season from June to October, less than 86.5mm of rain falls in total. At the height of the wet season in January it rains on average 19.6 days in that one month. Indeed, Bamaga has experienced as much as 238.3mm in a single December day. The wettest month on record is January with 895.1mm of rain falling (©2022 Digital Atlas Pty Limited).

Temperatures in the wet season average between 29.9 and 32.1^{O}C during the day and 24.3 and 25.5^{O}C overnight. Temperatures in the dry season average between 28.3 and 30.7^{O}C during the day and 22.7 and 24.2^{O}C at night (©2022 Digital Atlas Pty Limited).

Temperatures during the survey on Monday the 12th of September 2022 had a low of 26.0 degrees with a high of 32.5 degrees. Light rain fell during the afternoon. Overcast humid conditions were present as well as strong winds.

4.2 Watercourses and wetlands

There are no watercourses or wetland areas mapped within the project site (refer to **Figure 2**), site survey confirmed there are no watercourses and/or wetlands present on the project site.

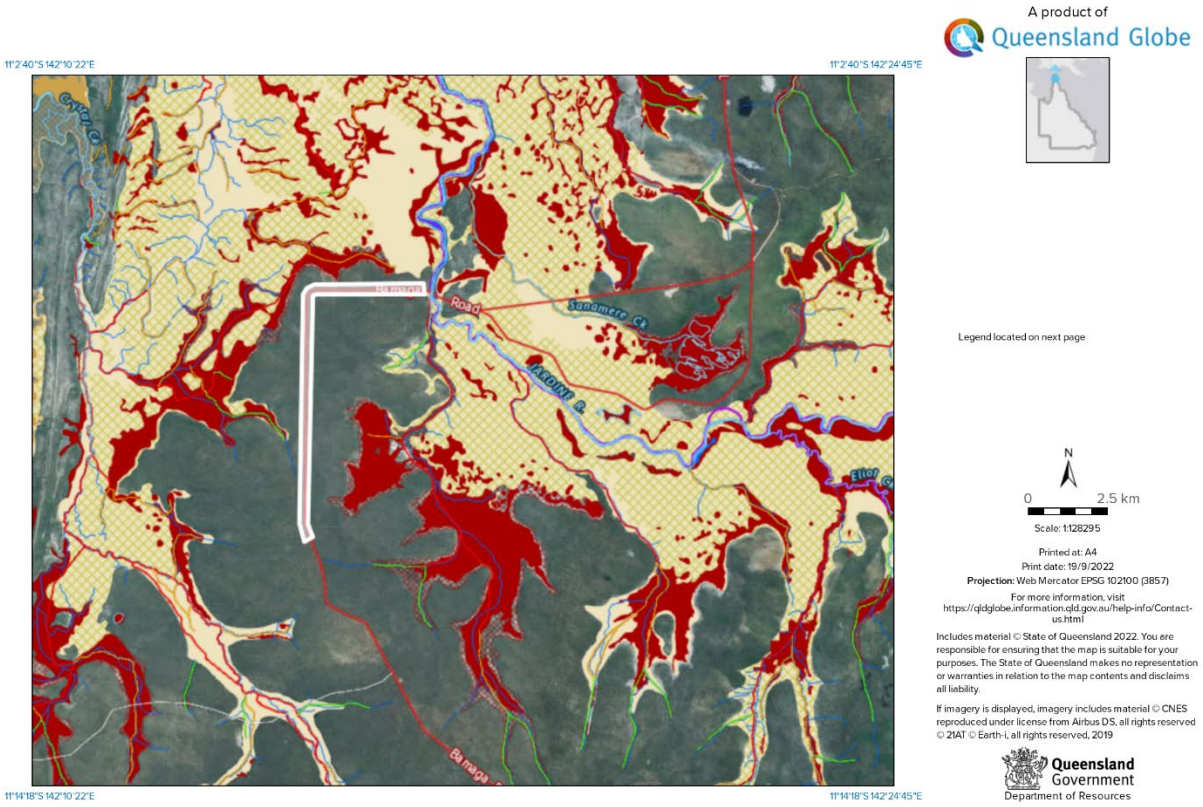

Figure 2 Mapped watercourses and wetlands near the project site.

4.3 Flora

4.3.1 Vegetation communities

Remnant vegetation communities in Queensland are classified as Regional Ecosystems (RE) for the administration of the *Vegetation Management Act 1999* (VMA). Sattler and Williams (1999) describe regional ecosystems as:

"Communities of vegetation that are consistently associated with a particular combination of geology, landform, and soil in a bioregion".

Regional Ecosystem mapping in Queensland divides vegetation into three broad categories: remnant, non-remnant and high value regrowth vegetation. **Table 1** outlines the definitions of each of these categories.

Table 1 Description of Vegetation Classifications

Vegetation Classification	Definition
Remnant Vegetation (Category A)	Areas subject to compliance notices, offsets and voluntarydeclarations.
Remnant Vegetation (Category B)	Remnant vegetation is vegetation which has never been cleared or vegetation which has been cleared but has regrown to meet the following: 50% of the original undisturbed canopy cover; 70% of the original undisturbed canopy height; and Composed of the same floristic species that would exist if thevegetation community were undisturbed.
Reef Regrowth watercourse vegetation (Category R)	Native woody vegetation on freehold land, Indigenous land or leasehold land granted for agriculture or grazingpurposes, located within 50 metres of a watercourse in the Burdekin, Mackay, Whitsunday and Wet Tropics Great Barrier Reef catchments (if there is no native vegetation within 50 metres of a regrowth watercourse, the code does not apply).
High Value Regrowth Vegetation (Category C)	High value regrowth is mature native vegetation which hasnot been cleared since 31 December 1989.
Non-remnant Vegetation (Category X)	Non-remnant vegetation is vegetation which has been cleared and has yet not regrown to the meet the definition ofremnant vegetation.

4.3.1.1 Regional Ecosystems

Table 2 provides a detailed description of the three (3) ecosystems present within the project area.

Table 2 Description of Regional Ecosystem Present

Regional Ecosystem	Description	Vegetation Management Act class	Biodiversity status
3.5.36	Woodland to tall open forest of *Eucalyptus tetrodonta* (Darwin stringybark) and *Corymbia nesophila* (Melville Island	Least Concern	No Concern at Present

Regional Ecosystem	Description	Vegetation Management Act class	Biodiversity status
	bloodwood) woodland +/- *C. stockeri* (gum topped bloodwood). Occurs on undulating plains and tertiary plateaus. Vegetation communities in this regional ecosystem include: 3.5.36a: Woodland of *Eucalyptus tetrodonta* (Darwin stringybark) and *Corymbia nesophila* (Melville Island bloodwood) +/- *Erythrophleum chlorostachys* (Cooktown ironwood) +/- *C. stockeri* (gum topped bloodwood). The sparse to mid-dense subcanopy often contains canopy species +/- Grevillea glauca (*clothespeg Grevillea*) +/- *Parinari nonda* (nonda plum) +/- *Acacia rothii.* The sparse to dense shrub layer also contains canopy species +/- *Coelospermum reticulatum* (medicine bush) +/- *Planchonia careya* (cocky apple) +/- *Persoonia falcata* (geebung). The sparse to dense grassy ground layer can be dominated by *Heteropogon triticeus* (giant spear grass), *Aristida spp*. (three-awned speargrass), *Sarga plumosum* (plume sorghum) and *Alloteropsis semialata* (cockatoo grass). Occurs on undulating and eroded tertiary plains. Not a Wetland. 3.5.36b: Woodland to open forest of *Eucalyptus tetrodonta* (Darwin stringybark) and *Corymbia nesophila* (Melville Island bloodwood) +/- *Erythrophleum chlorostachys* (Cooktown		

Regional Ecosystem	Description	Vegetation Management Act class	Biodiversity status
	ironwood) +/- *C. stockeri* (gum topped bloodwood). The sparse to mid-dense subcanopy is often dominated by *Eucalyptus tetrodonta, Erythrophleum chlorostachys* and *Grevillea glauca* (clothespeg Grevillea). The open to mid-dense shrublayer includes juvenile canopy species +/- *Planchonia careya* (cocky apple) +/- *Coelospermum reticulatum* (medicine bush) +/- Acacia rothii +/- *Xylomelum scottianum*. The mid-dense to dense grassy ground layer is dominated by *Heteropogon triticeus* (giant spear grass), *Alloteropsis semialata* (cockatoo grass) and *Sarga plumosum* (plume sorghum). Occurs on sands on tertiary plateaus. Not a Wetland.		

4.3.2 Essential habitat

The site is mapped as containing the following:

- 5 High Ecological Significance wetlands on the map of Referable Wetlands.
- 8e Regulated Vegetation - intersecting a watercourse.
- 8f Regulated Vegetation - within 100m of a Vegetation Management Wetland.

Refer to **Figure 3-4** below for mapping of essential habitat and regulated vegetation and **Appendix A** for a copy of the Matters of State Environmental Significance Environmental Report.

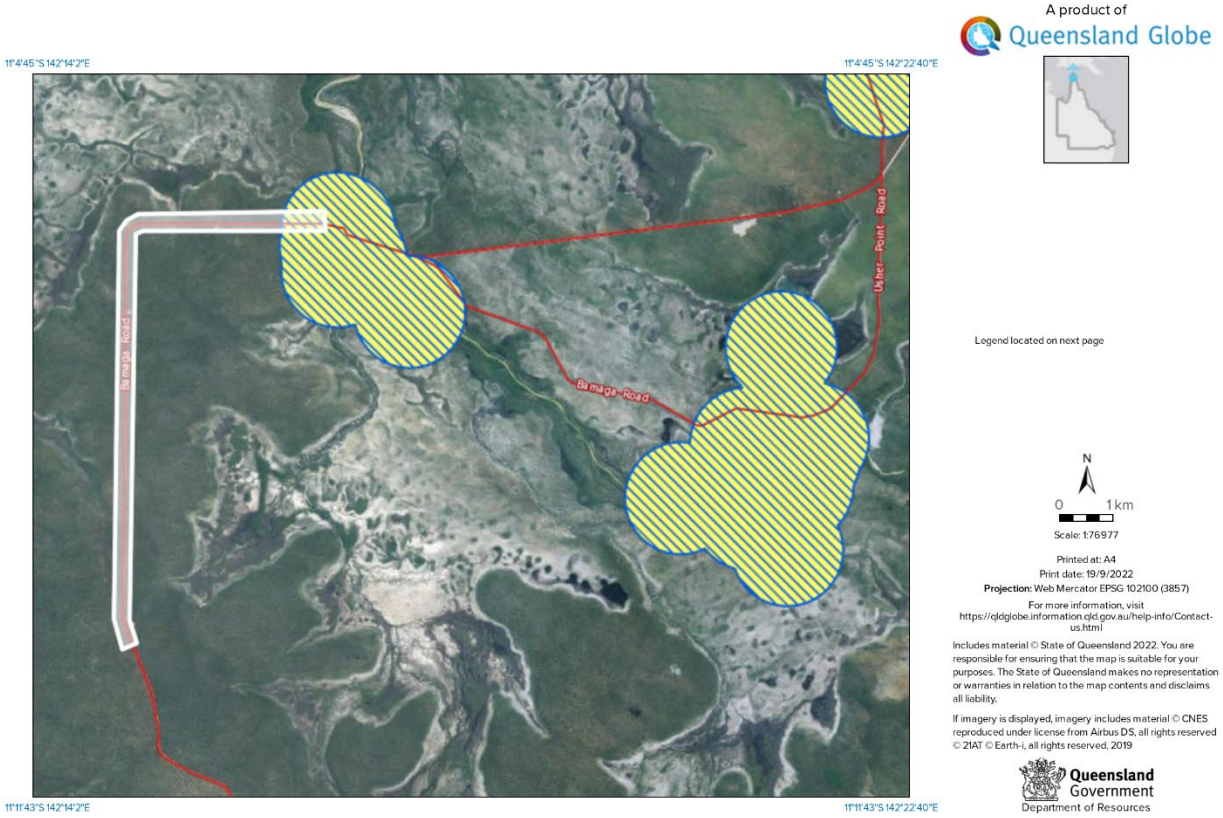

Figure 3 MSES Species Threatened (Endangered or vulnerable) wildlife and special least of concern animals

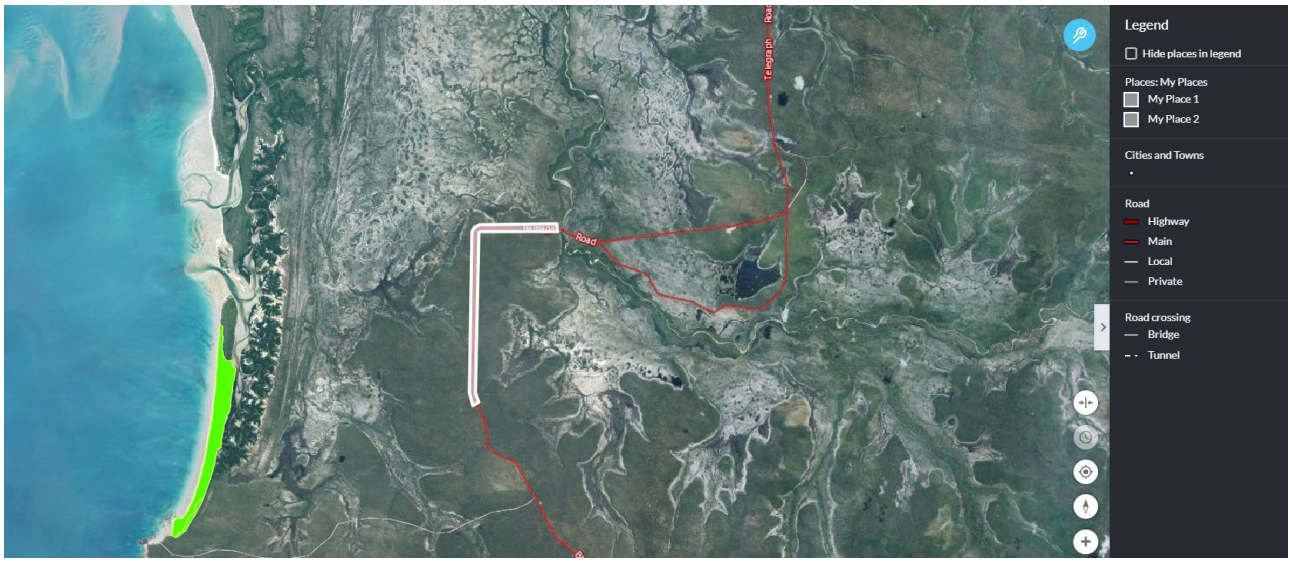

Figure 4 MSES Regulated Vegetation

4.3.3 T/NT Flora

The Flora Survey Trigger Map shows the proposed impact area/s does enter a high flora risk area, refer to **Appendix B** for Flora Survey Trigger Map. Regional ecosystem mapping for the site is provided in **Figure 5**. Seven (7) T/NT flora species have been identified to inhabit the area via database searches (**Appendix C and D**). One (1) T/NT species have been identified to potentially inhabit the site through likelihood of occurrence (**Appendix E**), assessment of significance has been carried out the impact the project may cause to these species identified (**Appendix F**). However, no T/NT flora species were observed inhabiting the site during field survey. It is noted one (1) Special Least of Concern Species (*Xanthorrhoea johnsonii*) was observed inhabiting the site. It is recommended to retransplant all specimens that are within the clearing line. Refer to Figure 6 – 7 for images of *Xanthorrhoea johnsonii.*

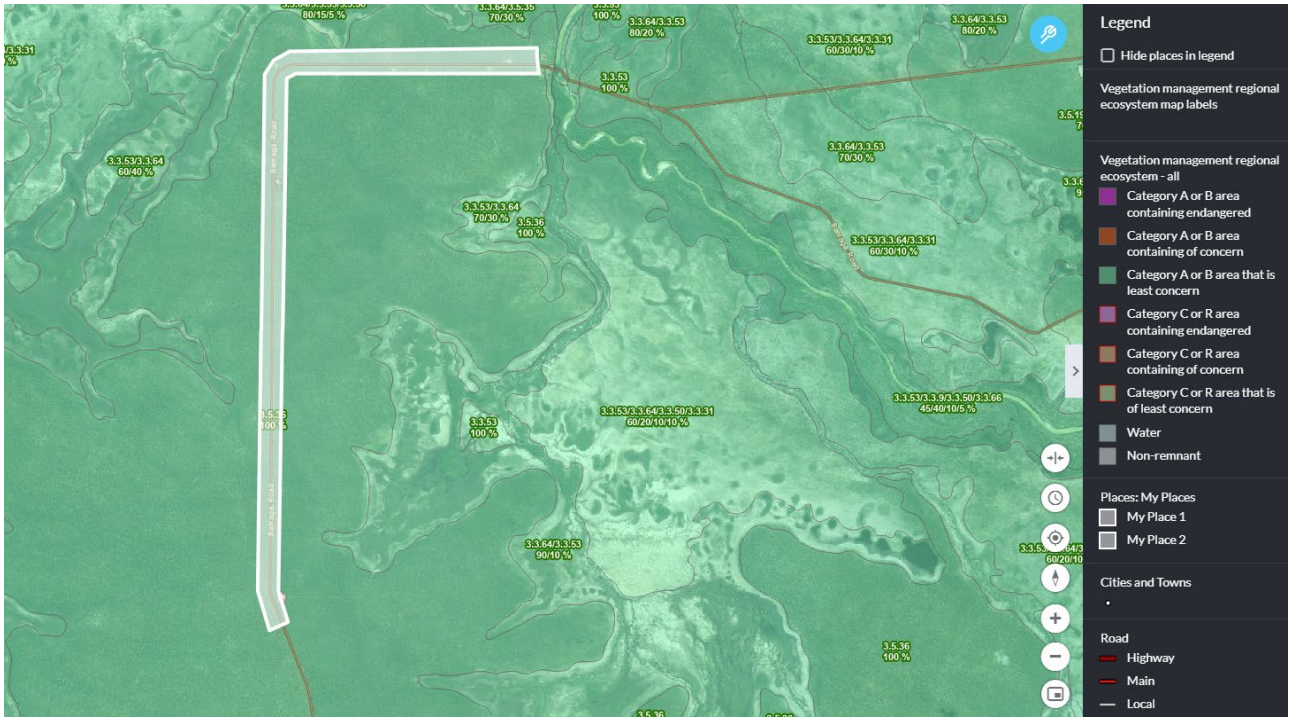

Figure 5 Regional Ecosystem Mapping – Project Site

Figure 6 ***Xanthorrhoea johnsonii*** **found inhabiting project site.**

Figure 7 ***Xanthorrhoea johnsonii*** **inhabiting project site.**

4.4 Fauna

4.4.1 T/NT&M Fauna

Protected Matters and WildNet Search was carried out on the 19th of September 2022, thirty (30) threatened fauna species were identified to potentially occur / inhabit the site, forty-eight (48) migratory species, and seven (7) threatened flora species were identified to potentially occur on the site. A likelihood of occurrence was drafted which showed seven (7) potential species that may inhabit the site refer to **Appendix E**.

It is noted marine species such as fish, sharks, turtles, whales, crocodiles, and dolphins were listed in the PMST and Wildnet. These species that inhabit the ocean did not undergo a likelihood of occurrence as there is no potential these species would be inhabiting the site.

4.4.2 Fauna Breeding Places

Significant living and stage hollow bearing trees (hollows 10> in diameter) were observed inhabiting the project site. Each significant hollow bearing tree has potential for fauna inhabitancy/breeding. It is recommended to flag these trees with bright coloured paint and/or tape and gather a GPS point. These trees require further assessment and additional attention before, during, and after vegetation clearing. **Figure 8 - 10** show site with potential significant trees, ground burrows, and hollows.

Figure 8 **Potential Significant tree, hollowed trunk with worn entrance indicating active habitat.**

Figure 9 Potential Significant termite mound, ground burrow for terrestrial species.

Figure 10 Potential Significant tree, several hollowed out branches with a potential hollowed trunk.

4.4.3 Fauna Movement

The project site forms part of a large area of remnant Eucalypt open forestry within the north, south, east, and west. There is a break within the centre of the ecosystem from a main dirt road. Fauna movement opportunities are influenced by the presence of the nearby wetlands, estuaries, and available food. The project site is beside the main dirt road from the Jardine Ferry heading south. The project site shows a healthy ecosystem with minimal disease affected plants and minimal weeds inhabitancy on the site. The site is surrounded by forestry north, south, east, and west. There is a break within the fauna corridor due to the main dirt road. Fauna opportunity for movement and inhabitancy is moderate within and around the project site.

4.4.4 MSES Wildlife Habitat

There have been no T/NT species recorded within the project area, refer to **Appendix A**.

5 POTENTIAL IMPACTS

The proposed road widening of the project site will require vegetation clearing of remnant vegetation. The vegetation clearing will entail clearing of mature trees bearing hollow, stag hollowed out dead trees, juvenile trees, shrubs, and ground cover over an area approximately 11 km strip clearing 10 to 30 metres north and south from the already cleared road area. In the absence of controls from the project activities, the following is relevant to terrestrial ecological values that may cause potential impact:

- Loss of habitat flora and fauna.
- Fauna mortality.
- Breeding/life cycle disruption.

It was identified no significant impacts to the regional ecosystem/s within site are likely to occur as a result of the proposed road widening. There are potential impacts to fauna species, fauna breeding areas and Special Least of Concern flora species. Below are potential impacts to fauna and flora species within the area:

- Loss of breeding habitat.
- Direct mortality during clearing.
- Disruption of the lifecycle.

5.1.1 Fauna and Fauna Breeding Places

Least of Concern, T/NT, and M fauna have potential to occur within the project area. The following assessment of impacts applies to fauna and fauna breeding places.

Clearing for proposed road widening will remove an insignificant area of a regional ecosystem that is widespread in the broader landscape.

The removal of this habitat is unlikely to result in significant impacts to fauna assessed as having potential to occur. However, there are risks of impacts to breeding places. These are relevant to Least of Concern, T/NT, and M native species. The recommendations provided in **Section 8** are relevant to managing this risk.

6 PERMITS AND LICENCING REQUIREMENTS

The following permits and licences are applicable to the removal of vegetation for the proposed development.

- EPBC Referral to determine whether the proposed action is approved under the Environmental Protection and Biodiversity Conservation Act 1999.
- Species Management Program (SMP) for tampering with animal breeding areas (high risk of impacts) (high risk impacts SMP).
- Species Management Program (SMP) for tampering with animal breeding areas (low risk of impacts) (low risk impacts SMP).
- Protected plant harvesting licence.
- Development application with Northern Peninsula Area Regional Council.

7 POTENTIAL OFFSET REQUIREMENTS

The removal of habitat regarding MNES and MSES within the project site, including breeding habitat for EVNT species may trigger an offset requirement. The application of an offset is determined by the regulator (DAWE for MNES and DoR for MSES). It is recommended to obtain further advice from the regulator/s on the requirements of the offset.

8 IMPACT MANAGEMENT RECOMMENDATIONS

Below are recommendations for reducing potential impacts to the ecological values of the activities the project will produce. The below recommendations apply to species likely to occur within the project site and species having potential to occur within the project site.

- **Recommendation 1**: Sit a pre EPBC referral meeting to determine whether the proposed action will need formal assessment and approval under the Environmental Protection and Biodiversity Conservation Act 1999.
- **Recommendation 2**: Lodge a Low-risk Impacts Species Management Program to the Department of Environmental Science to manage the risk of impacts to the animal breeding places for Least of Concern fauna.
- **Recommendation 3:** Lodge a High-risk Impacts Species Management Program to the Department of Environmental Science to manage the risk of impacts to the animal breeding places for EVNT fauna.
- **Recommendation 4:** Apply for a Protected Plant Harvesting License for transplantation of *Xanthorrhoea johnsonii*.
- **Recommendation 5**: Prior to clearing, habitat features such as trees, logs, termite mounds, and ground burrows should be inspected for fauna. If nesting or roosting fauna are found, clearing activities within that area should cease until breeding season has finished and/or appropriate management and approval requirements are ascertained and implemented. This action should be completed by a qualified experienced ecologist with spotter/catcher skills.
- **Recommendation 6:** Transfer hollow logs from felled trees and logs on the ground into a habitat within 50m-75m near the project area.

9 SUMMARY AND CONCLUSIONS

The project site contains potential breeding areas for threatened, near threatened, migratory, and least of concern fauna species. Without correct controls the proposed road widening action has potential to impact MNES and MSES. The recommendations provided in **Section 8** should be applied to reduce any possible risk of significant impacts and to address the regulatory requirements.

10 REFERENCES

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Appendix A Matters of State Environmental Significance Environmental Report

Queensland Government

Department of Environment and Science

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest
Longitude: 142.2499 Latitude: -11.1153 with 2 kilometre radius

Environmental Reports - General Information

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

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

Figures in tables may be affected by rounding.

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

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

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

Disclaimer

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

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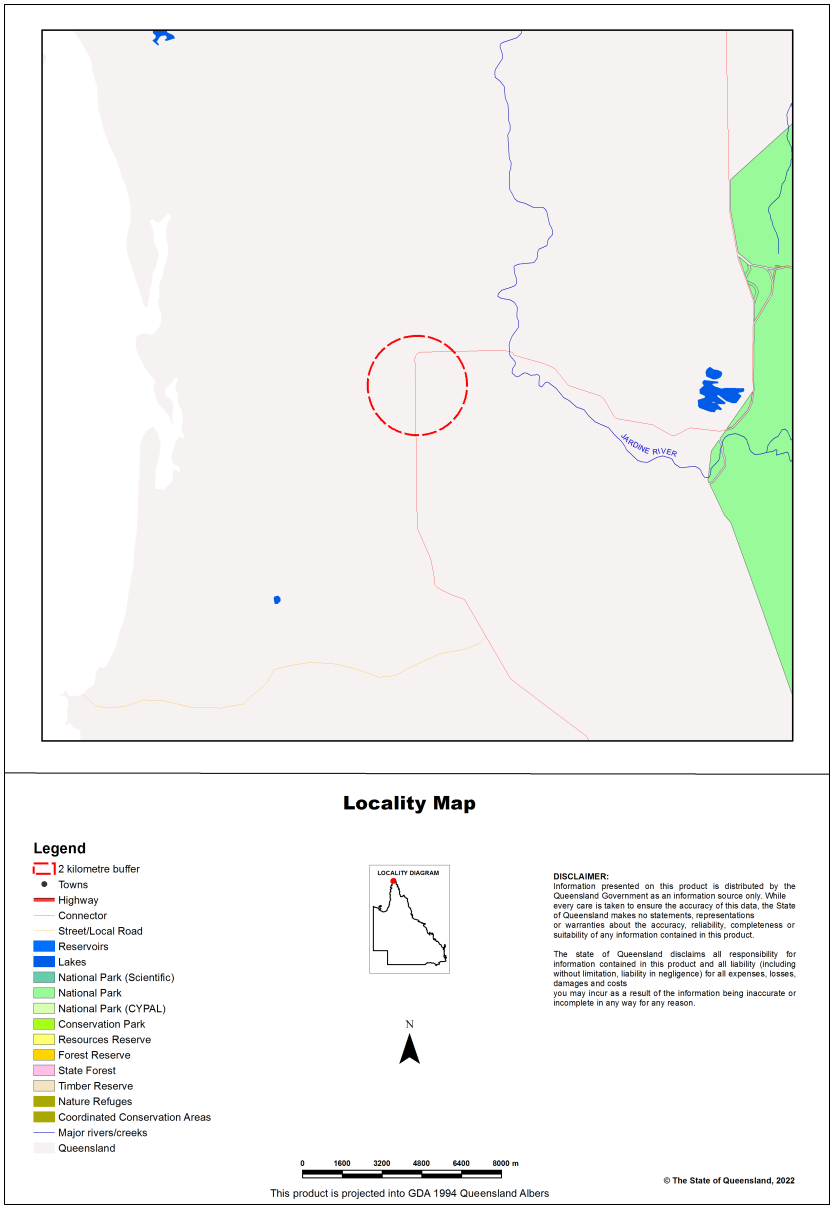
Assessment Area Details

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

Table 1: Summary table, details for AOI Longitude: 142.2499 Latitude: -11.1153

Size (ha)	1,256.55
Local Government(s)	Northern Peninsula Area Regional
Bioregion(s)	Cape York Peninsula
Subregion(s)	Jardine - Pascoe Sandstones
Catchment(s)	Jardine, Ducie



Matters of State Environmental Significance (MSES)

MSES Categories

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

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

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

The SPP defines matters of state environmental significance as:

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

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

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

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

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

    • Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;

    • Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;

    • Category R areas on the regulated vegetation management map;

    • Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;

    • Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;

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

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

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

- Legally secured offset areas.

MSES Values Present

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

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0.0 ha	0.0 %
1b Protected Areas- nature refuges	0.0 ha	0.0 %
1c Protected Areas- special wildlife reserves	0.0 ha	0.0 %
2 State Marine Parks- highly protected zones	0.0 ha	0.0 %
3 Fish habitat areas (A and B areas)	0.0 ha	0.0 %
4 Strategic Environmental Areas (SEA)	0.0 ha	0.0 %
5 High Ecological Significance wetlands on the map of Referable Wetlands	131.14 ha	10.4%
6a High Ecological Value (HEV) wetlands	0.0 ha	0.0 %
6b High Ecological Value (HEV) waterways	0.0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	0.0 ha	0.0 %
7b Special least concern animals	0.0 ha	0.0 %
7c i Koala habitat area - core (SEQ)	0.0 ha	0.0 %
7c ii Koala habitat area - locally refined (SEQ)	0.0 ha	0.0 %
7d Sea turtle nesting areas	0.0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	0.0 ha	0.0 %
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	0.0 ha	0.0 %
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0.0 ha	0.0 %
8d Regulated Vegetation - Essential habitat	0.0 ha	0.0 %
8e Regulated Vegetation - intersecting a watercourse	0.6 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	234.98 ha	18.7%
9a Legally secured offset areas- offset register areas	0.0 ha	0.0 %
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0.0 ha	0.0 %

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(no results)

1b. Protected Areas - nature refuges

(no results)

1c. Protected Areas - special wildlife reserves

(no results)

2. State Marine Parks - highly protected zones

(no results)

3. Fish habitat areas (A and B areas)

(no results)

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

MSES - Wetlands and Waterways

4. Strategic Environmental Areas (SEA)

(no results)

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

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

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

(no results)

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

(no results)

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

MSES - Species

7a. Threatened (endangered or vulnerable) wildlife

Not applicable

7b. Special least concern animals

Not applicable

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

Not applicable

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

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
Boronia keysii		V	None
Calyptorhynchus lathami	Glossy black cockatoo	V	None
Casuarius casuarius johnsonii	Sthn population cassowary	E	None
Crinia tinnula	Wallum froglet	V	None
Denisonia maculata	Ornamental snake	V	None
Litoria freycineti	Wallum rocketfrog	V	None
Litoria olongburensis	Wallum sedgefrog	V	None
Macadamia integrifolia		V	None
Macadamia ternifolia		V	None
Macadamia tetraphylla		V	None
Melaleuca irbyana		E	None
Petaurus gracilis	Mahogany Glider	E	None
Petrogale persephone	Proserpine rock-wallaby	E	None
Pezoporus wallicus wallicus	Eastern ground parrot	V	None
Phascolarctos cinereus	Koala - outside SEQ*	V	None
Taudactylus pleione	Kroombit tinkerfrog	E	None
Xeromys myoides	Water Mouse	V	None

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

Threatened (endangered or vulnerable) wildlife species records

(no results)

Special least concern animal species records

(no results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

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

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

To request a species list for an area, or search for a species profile, access Wildlife Online at:
https://www.qld.gov.au/environment/plants-animals/species-list/

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

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:
https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/
For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:
https://environment.ehp.qld.gov.au/regional-ecosystems/

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

Not applicable

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

Not applicable

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

Not applicable

8d. Regulated Vegetation - Essential habitat

Not applicable

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

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

Regulated vegetation map category	Map number
B	7375

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

MSES - Offsets

9a. Legally secured offset areas - offset register areas

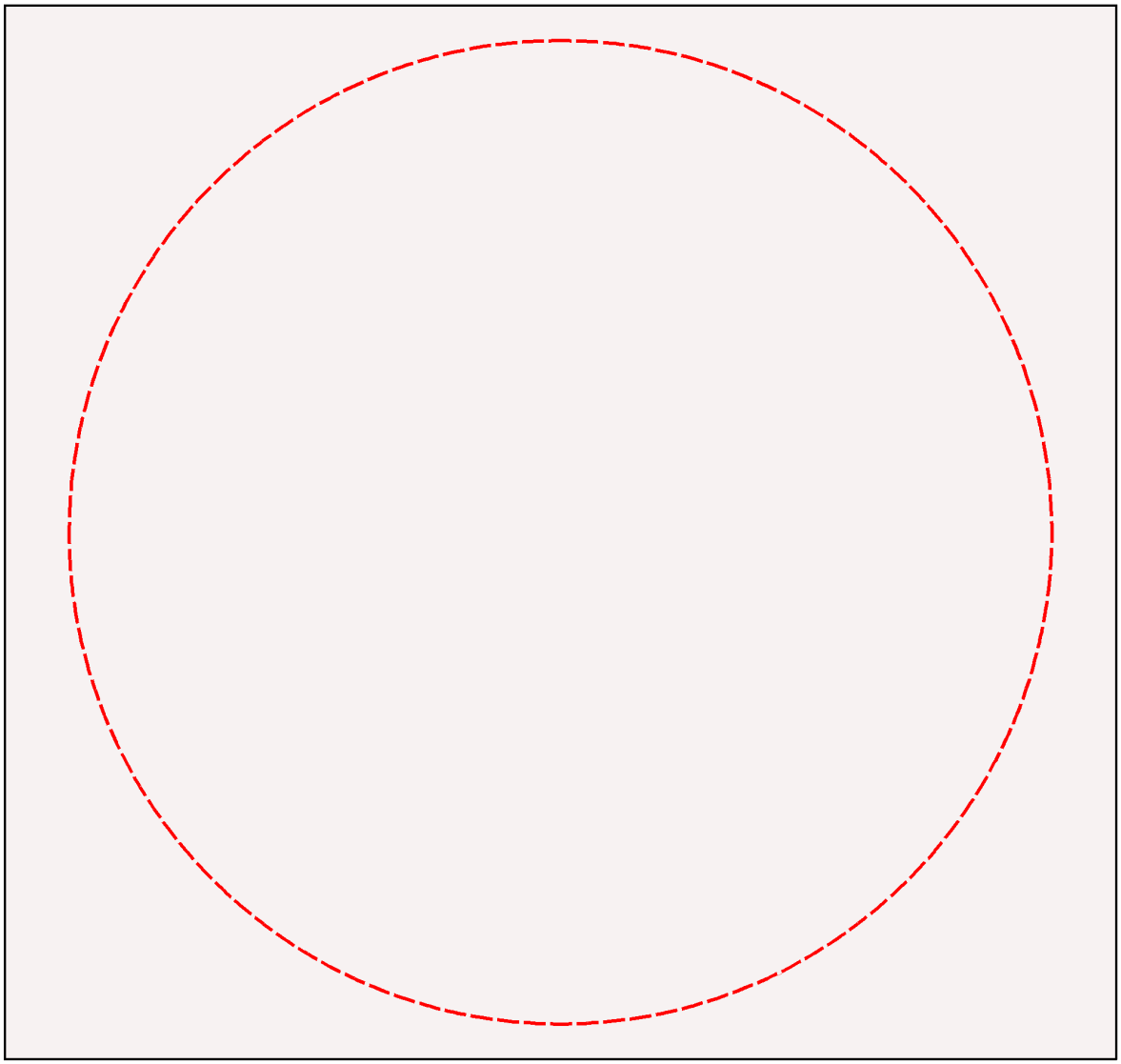
(no results)

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

(no results)

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

Map 1 - MSES - State Conservation Areas

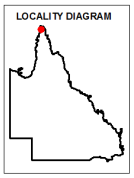


MSES - State Conservation Areas

Area of Interest

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

LOCALITY DIAGRAM



N

0 240 480 720 960 1200 m

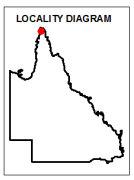
This product is projected into GDA 1994 Queensland Albers

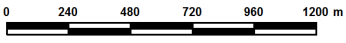
Map 2 - MSES - Wetlands and Waterways

MSES - Wetlands and Waterways

Area of Interest

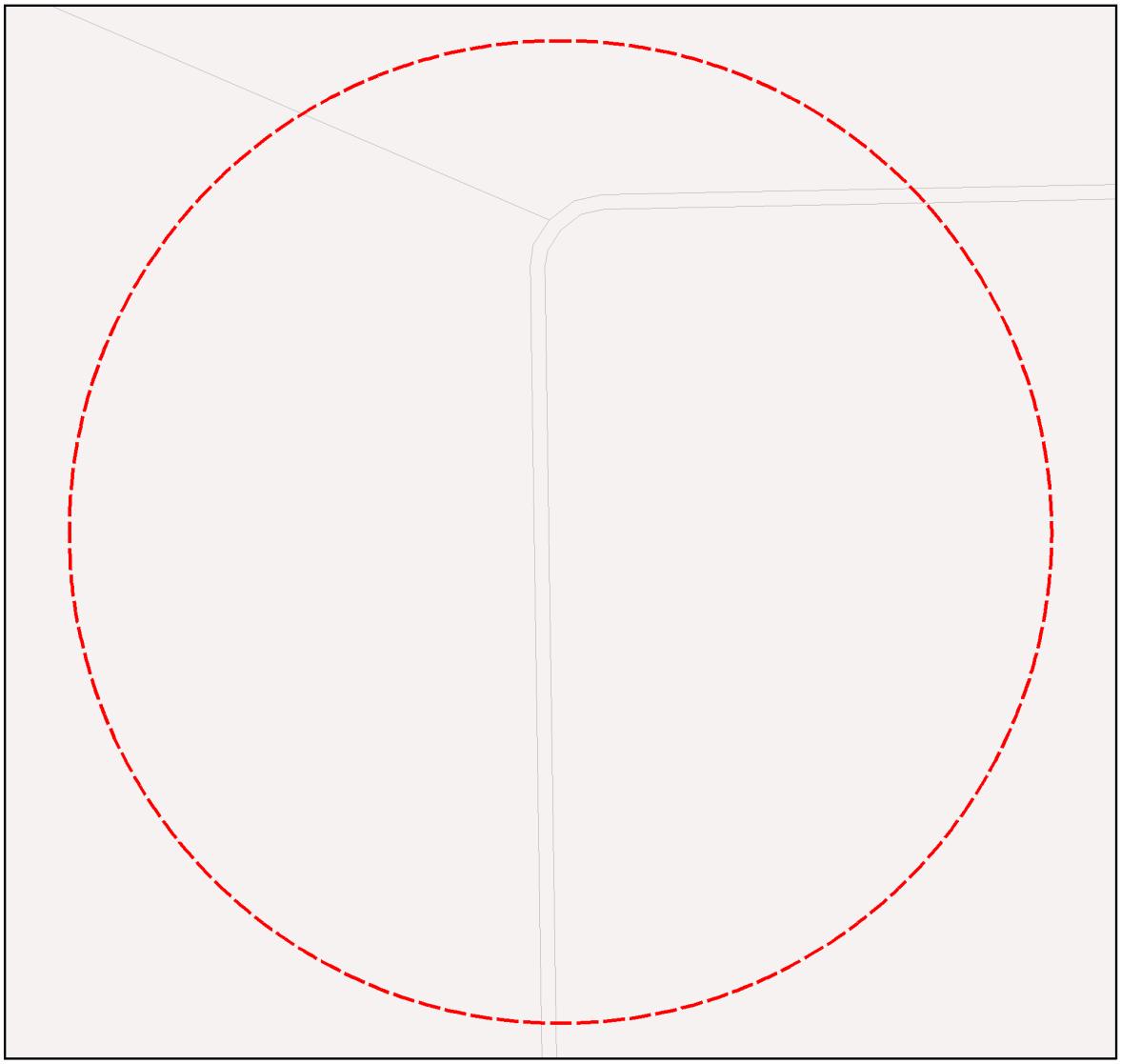
- 2 kilometre buffer
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Declared high ecological value waters (watercourse)
- Strategic environmental area (designated precinct)
- Declared high ecological value waters (wetland)
- High ecological significance wetlands





This product is projected into GDA 1994 Queensland Albers

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

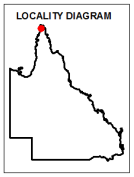


MSES - Species
Threatened (endangered or vulnerable) wildlife and special least concern animals

Area of Interest

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

LOCALITY DIAGRAM



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N

0 240 480 720 960 1200 m

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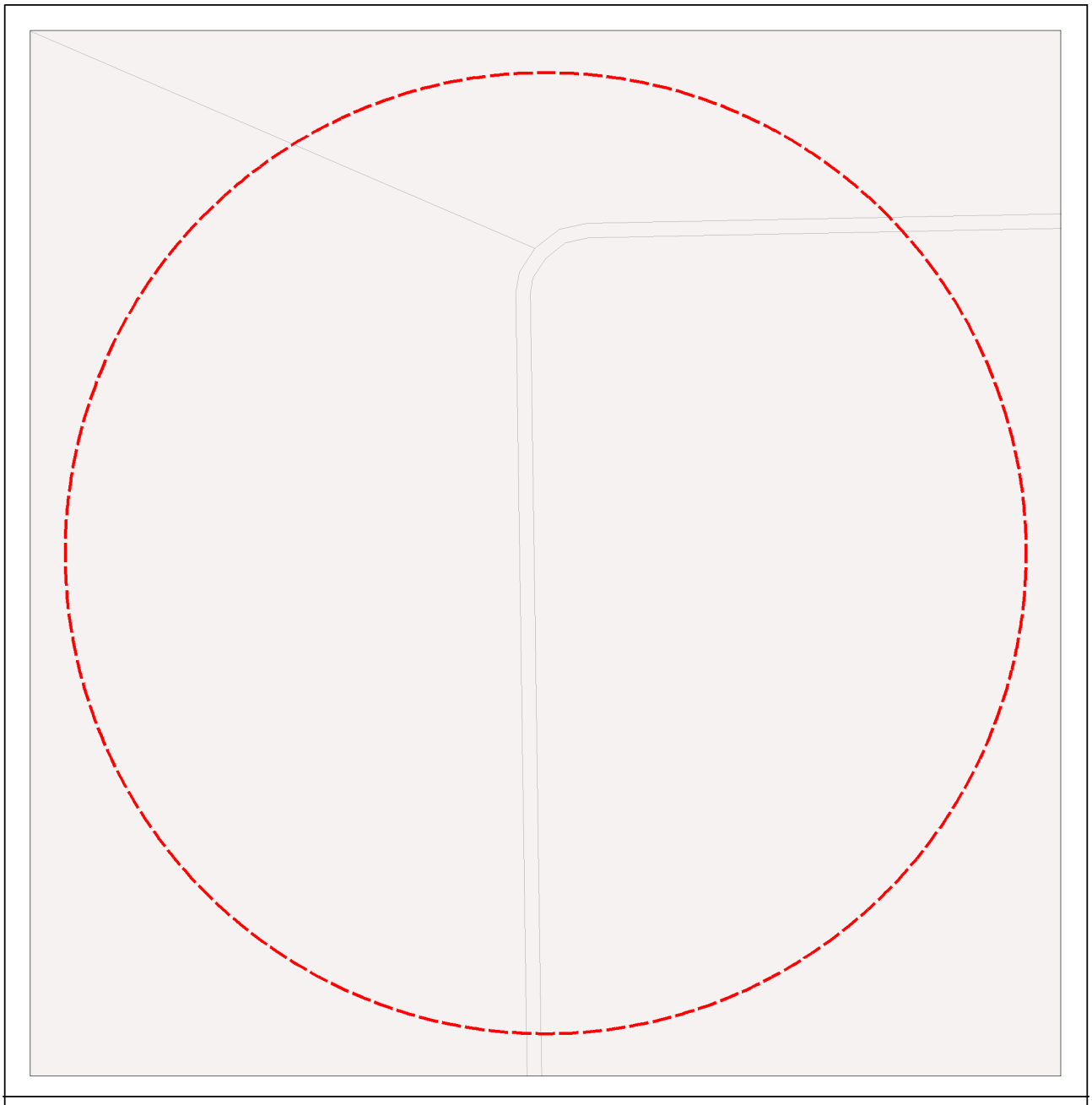
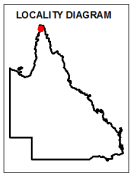
Map 3b - MSES - Species - Koala habitat area (SEQ)



MSES - Species
Koala habitat area (SEQ)

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

LOCALITY DIAGRAM



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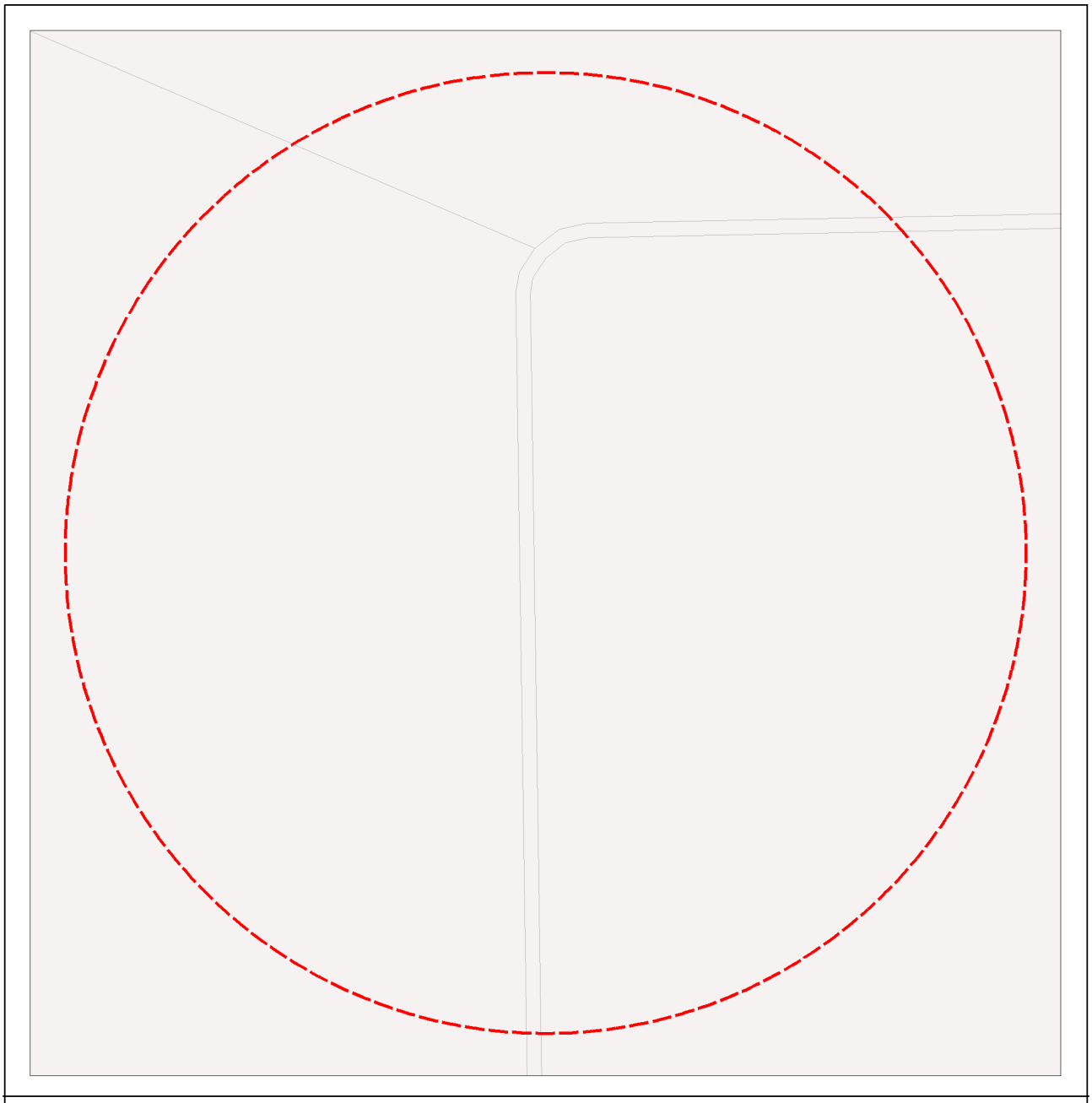
The represented layers for SEQ 'koala habitat area-core' and 'koala habitat area- locally refined' in MSES are sourced directly from the regulatory mapping under the Nature Conservation (Koala) Conservation Plan 2017. Whilst every effort is made to ensure the information remains current, there may be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

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

0 220 440 660 880 1,100 m

This product is projected into GDA 1994 Queensland Albers

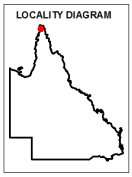
Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)



MSES - Wildlife habitat (sea turtle nesting areas)

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

LOCALITY DIAGRAM



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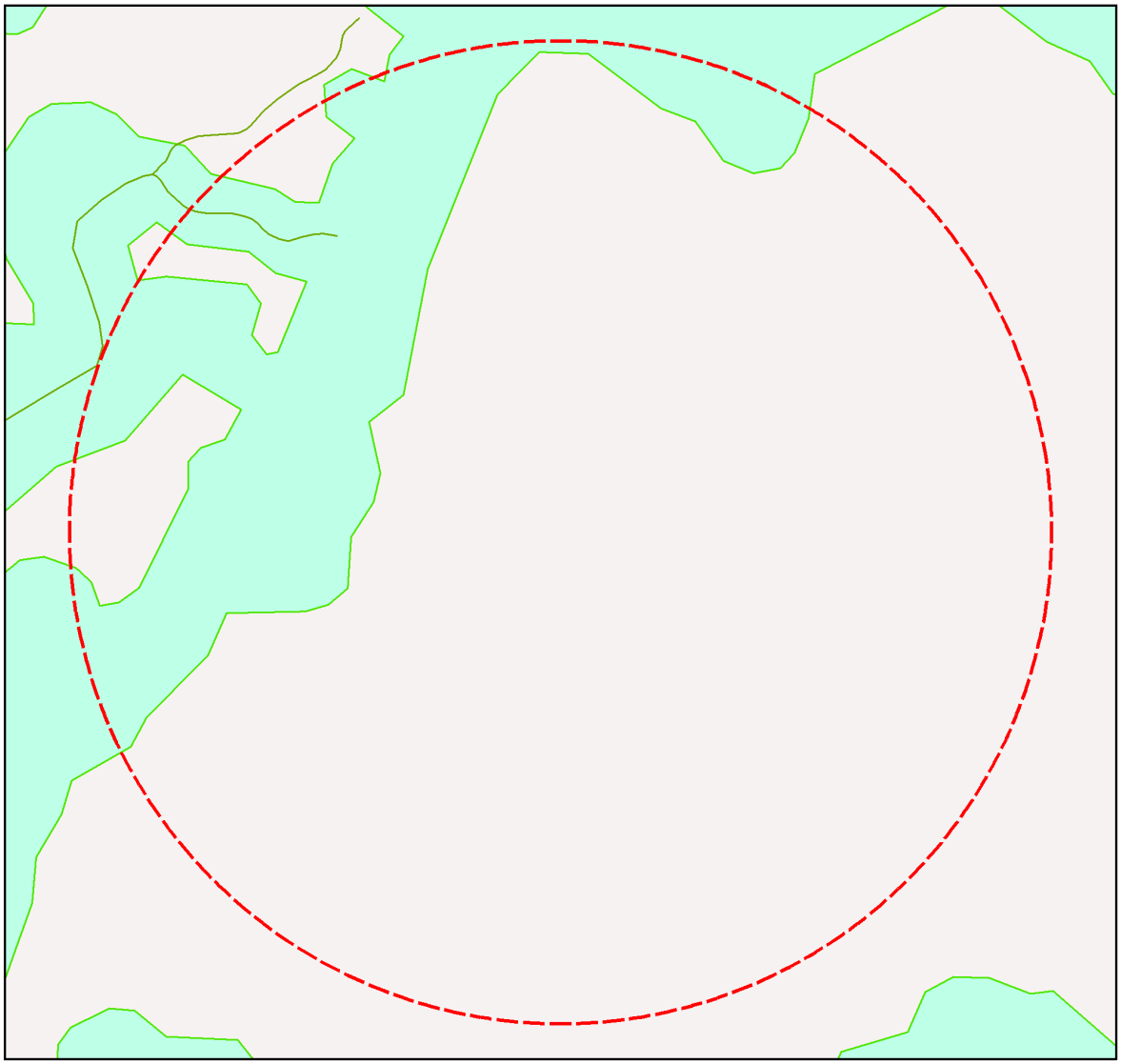
MSES mapping of sea turtle nesting areas identifies beaches where the recorded number of turtle nests are over 1% of the turtle species or genetic stock. The linework is also deliberately extended along nearby rocky coastlines and headlands to recognise that significant numbers of nesting adults and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

0 220 440 660 880 1,100 m

This product is projected into GDA 1994 Queensland Albers

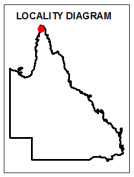
Map 4 - MSES - Regulated Vegetation



MSES - Regulated Vegetation

Area of Interest

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

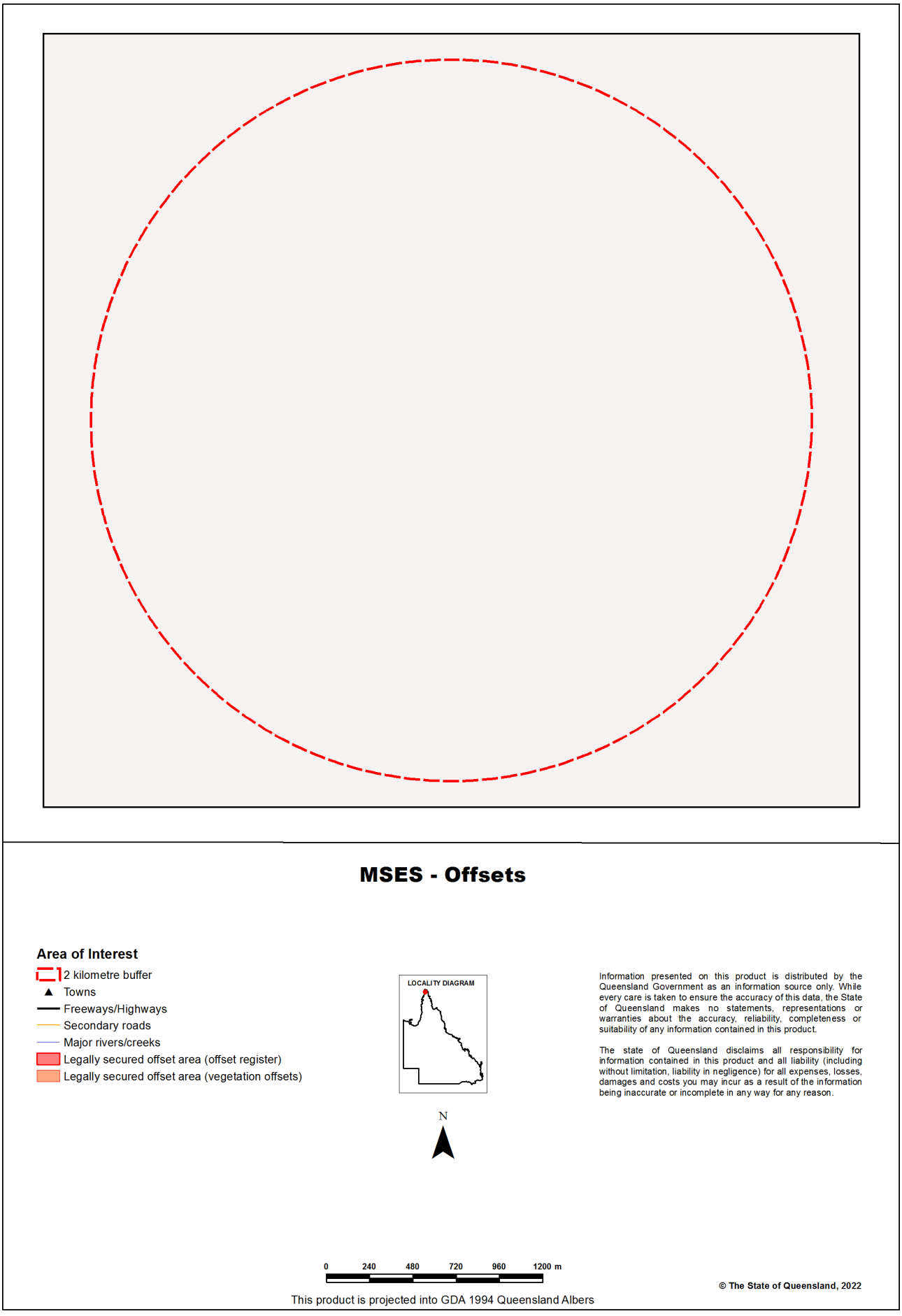


N

0 240 480 720 960 1200 m

This product is projected into GDA 1994 Queensland Albers

Map 5 - MSES - Offset Areas



Appendices

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

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

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

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

Appendix 2 - Source Data

The datasets listed below are available on request from:

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

- Matters of State environmental significance

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

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

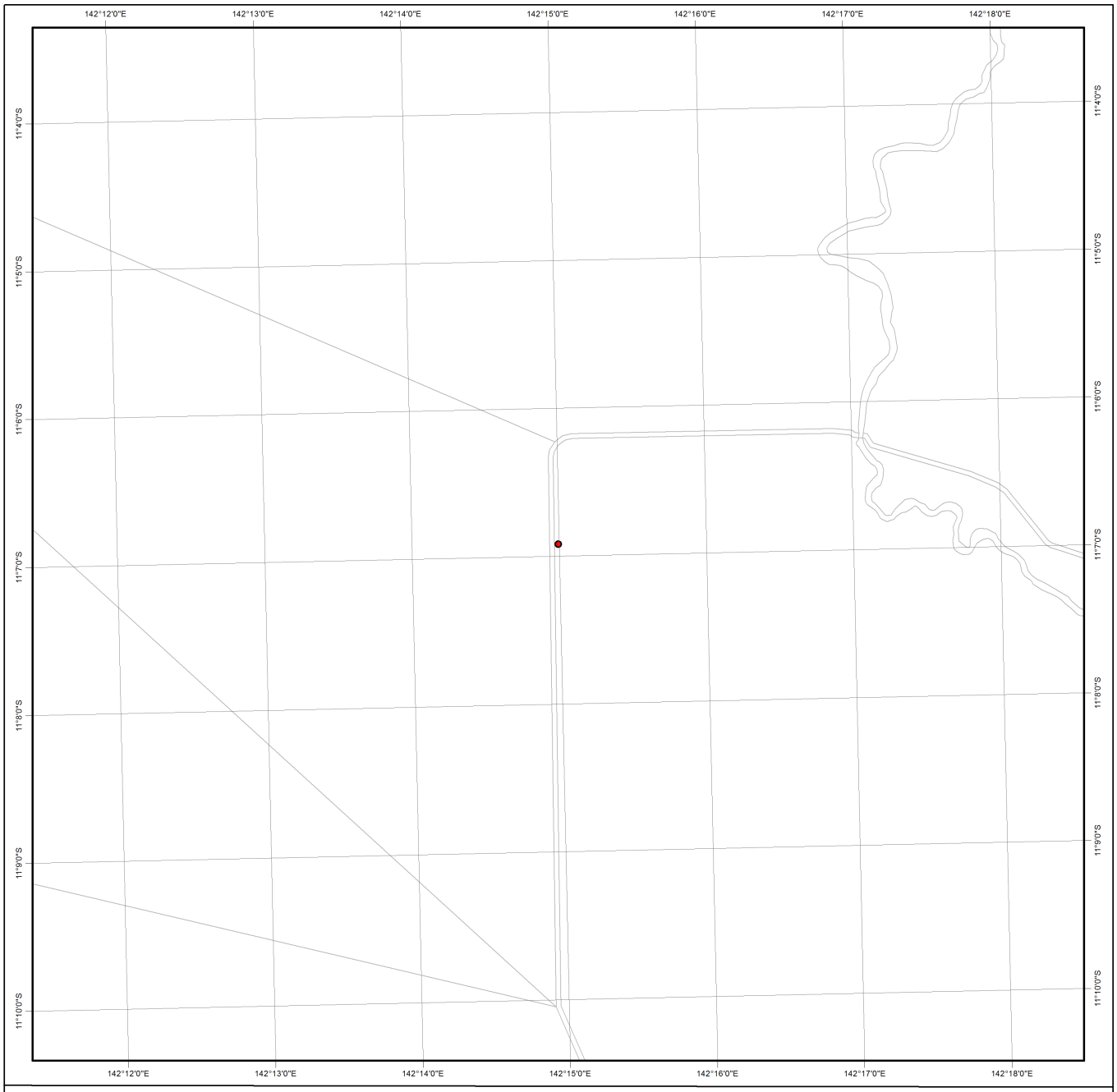
MSES layers	**current QSpatial data (http://qspatial.information.qld.gov.au)**
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine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

Appendix 3 - Acronyms and Abbreviations

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

Appendix B Flora Survey Trigger Map

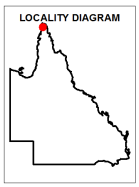
19/09/2022 15:18:13
Longitude: 142.2499 Latitude: -11.1153



Protected Plants Flora Survey Trigger Map

Legend

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



N

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

This product is projected into:
GDA 1994 Queensland Albers

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

Land parcel boundaries are provided as locational aid only.

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

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

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

Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where threatened and near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see section 89 of the Act.

Please see the Department of Environment and Science webpage on the clearing of protected plants for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map

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

Species information

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

Appendix C Wildnet Searches

Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Queensland status: All
Records: All
Date: All
Latitude: -11.1153
Longitude: 142.2499
Distance: 10
Email: natalie.may@rpsgroup.com.au
Date submitted: Monday 19 Sep 2022 15:18:24
Date extracted: Monday 19 Sep 2022 15:20:04

The number of records retrieved = 129

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	*Rhinella marina*	cane toad	Y			3
animals	amphibians	Hylidae	*Litoria infrafrenata*	white lipped treefrog		C		3
animals	amphibians	Hylidae	*Litoria nasuta*	striped rocketfrog		C		2
animals	amphibians	Ranidae	*Papurana daemeli*	Australian woodfrog		C		8
animals	birds	Acanthizidae	*Gerygone magnirostris*	large-billed gerygone		C		1
animals	birds	Accipitridae	*Haliaeetus leucogaster*	white-bellied sea-eagle		C		1
animals	birds	Alcedinidae	*Ceyx azureus*	azure kingfisher		C		4
animals	birds	Alcedinidae	*Ceyx pusillus*	little kingfisher		C		1
animals	birds	Anatidae	*Nettapus pulchellus*	green pygmy-goose		C		1
animals	birds	Anhingidae	*Anhinga novaehollandiae*	Australasian darter		C		1
animals	birds	Ardeidae	*Ardea alba modesta*	eastern great egret		C		1
animals	birds	Ardeidae	*Butorides striata*	striated heron		C		1
animals	birds	Ardeidae	*Egretta garzetta*	little egret		C		1
animals	birds	Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo		C		5
animals	birds	Cacatuidae	*Probosciger aterrimus macgillivrayi*	palm cockatoo		E	V	3
animals	birds	Campephagidae	*Coracina papuensis*	white-bellied cuckoo-shrike		C		3
animals	birds	Campephagidae	*Lalage leucomela*	varied triller		C		1
animals	birds	Caprimulgidae	*Caprimulgus macrurus*	large-tailed nightjar		C		4
animals	birds	Charadriidae	*Elseyornis melanops*	black-fronted dotterel		C		1
animals	birds	Charadriidae	*Vanellus miles*	masked lapwing		C		1
animals	birds	Ciconiidae	*Ephippiorhynchus asiaticus*	black-necked stork		C		2
animals	birds	Columbidae	*Ducula bicolor*	pied imperial-pigeon		C		5
animals	birds	Columbidae	*Geopelia humeralis*	bar-shouldered dove		C		1
animals	birds	Columbidae	*Geopelia placida*	peaceful dove		C		2
animals	birds	Columbidae	*Ptilinopus magnificus*	wompoo fruit-dove		C		3
animals	birds	Corvidae	*Corvus orru*	Torresian crow		C		4
animals	birds	Cuculidae	*Centropus phasianinus*	pheasant coucal		C		3
animals	birds	Cuculidae	*Scythrops novaehollandiae*	channel-billed cuckoo		C		2
animals	birds	Dicruridae	*Dicrurus bracteatus*	spangled drongo		C		2
animals	birds	Estrildidae	*Taeniopygia bichenovii*	double-barred finch		C		1
animals	birds	Halcyonidae	*Dacelo leachii*	blue-winged kookaburra		C		4
animals	birds	Halcyonidae	*Todiramphus sanctus*	sacred kingfisher		C		1
animals	birds	Jacanidae	*Irediparra gallinacea*	comb-crested jacana		C		1
animals	birds	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren		C		1
animals	birds	Megapodiidae	*Alectura lathami*	Australian brush-turkey		C		2
animals	birds	Meliphagidae	*Meliphaga notata*	yellow-spotted honeyeater		C		2
animals	birds	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater		C		1
animals	birds	Meliphagidae	*Microptilotis gracilis*	graceful honeyeater		C		7
animals	birds	Meliphagidae	*Philemon argenticeps*	silver-crowned friarbird		C		2
animals	birds	Meliphagidae	*Philemon buceroides*	helmeted friarbird		C		1
animals	birds	Meliphagidae	*Ramsayornis modestus*	brown-backed honeyeater		C		2
animals	birds	Meliphagidae	*Stomiopera flava*	yellow honeyeater		C		2
animals	birds	Meliphagidae	*Trichodere cockerelli*	white-streaked honeyeater		C		1
animals	birds	Monarchidae	*Myiagra alecto*	shining flycatcher		C		2
animals	birds	Nectariniidae	*Dicaeum hirundinaceum*	mistletoebird		C		1
animals	birds	Otididae	*Ardeotis australis*	Australian bustard		C		1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Pardalotidae	*Pardalotus rubricatus*	red-browed pardalote		C		1
animals	birds	Phalacrocoracidae	*Microcarbo melanoleucos*	little pied cormorant		C		4
animals	birds	Podargidae	*Podargus papuensis*	Papuan frogmouth		C		1
animals	birds	Psittacidae	*Aprosmictus erythropterus*	red-winged parrot		C		1
animals	birds	Psittacidae	*Platycercus adscitus*	pale-headed rosella		C		2
animals	birds	Psittacidae	*Trichoglossus moluccanus*	rainbow lorikeet		C		7
animals	birds	Ptilonorhynchidae	*Chlamydera cerviniventris*	fawn-breasted bowerbird		C		4
animals	birds	Ptilonorhynchidae	*Chlamydera nuchalis*	great bowerbird		C		2
animals	birds	Strigidae	*Ninox boobook*	southern boobook		C		2
animals	birds	Threskiornithidae	*Platalea flavipes*	yellow-billed spoonbill		C		1
animals	birds	Threskiornithidae	*Threskiornis molucca*	Australian white ibis		C		2
animals	mammals	Canidae	*Canis familiaris*	dog	Y			1
animals	mammals	Macropodidae	*Notamacropus agilis*	agile wallaby		C		2
animals	mammals	Suidae	*Sus scrofa*	pig	Y			2
animals	ray-finned fishes	Ambassidae	*Ambassis macleayi*	Macleay's glassfish				1
animals	ray-finned fishes	Ambassidae	*Denariusa australis*	pennyfish				1
animals	ray-finned fishes	Anguillidae	*Anguilla reinhardtii*	longfin eel				1
animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia maccullochi*	McCulloch's rainbowfish				1
animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia nigrans*	blackbanded rainbowfish				1
animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia splendida inornata*	checkered rainbowfish				2
animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia trifasciata*	banded rainbowfish				1
animals	ray-finned fishes	Plotosidae	*Porochilus obbesi*	Obbes' catfish				1
animals	ray-finned fishes	Plotosidae	*Porochilus rendahli*	Rendahl's catfish				1
animals	ray-finned fishes	Pseudomugilidae	*Pseudomugil gertrudae*	spotted blue eye				1
animals	reptiles	Acrochordidae	*Acrochordus arafurae*	Arafura file snake		C		6
animals	reptiles	Agamidae	*Lophognathus gilberti sensu lato*	Gilbert's dragon		C		1
animals	reptiles	Agamidae	*Tropicagama temporalis*	swamplands lashtail		C		3
animals	reptiles	Chelidae	*Emydura subglobosa angkibaanya*	Jardine River turtle		CR		3
animals	reptiles	Colubridae	*Boiga irregularis*	brown tree snake		C		2
animals	reptiles	Colubridae	*Dendrelaphis punctulatus*	green tree snake		C		1
animals	reptiles	Crocodylidae	*Crocodylus porosus*	estuarine crocodile		V		4
animals	reptiles	Elapidae	*Demansia papuensis*	greater black whipsnake		C		1
animals	reptiles	Elapidae	*Oxyuranus scutellatus*	coastal taipan		C		1
animals	reptiles	Scincidae	*Cryptoblepharus virgatus*	striped snake-eyed skink		C		1
plants	land plants	Aizoaceae	*Trianthema compacta*			C		1/1
plants	land plants	Anacardiaceae	*Blepharocarya involucrigera*			C		1/1
plants	land plants	Apocynaceae	*Hoya australis subsp. sanae*			C		1/1
plants	land plants	Apocynaceae	*Leichhardtia connivens*			C		1/1
plants	land plants	Apocynaceae	*Sarcolobus hullsii*			C		1/1
plants	land plants	Aquifoliaceae	*Ilex arnhemensis subsp. ferdinandi*			C		1/1
plants	land plants	Araliaceae	*Trachymene tenuifolia*			C		1/1
plants	land plants	Arecaceae	*Livistona muelleri*	dwarf fan palm		SL		1/1
plants	land plants	Casuarinaceae	*Allocasuarina littoralis*			C		1/1
plants	land plants	Celastraceae	*Denhamia cunninghamii*			C		1/1
plants	land plants	Celastraceae	*Denhamia peninsularis*			C		2/2
plants	land plants	Chrysobalanaceae	*Parinari nonda*			C		2/2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Convolvulaceae	*Ipomoea diversifolia*			C		1/1
plants	land plants	Cupressaceae	*Callitris intratropica*	coast cypress pine		C		1/1
plants	land plants	Cyperaceae	*Cyperus scaber*			C		1/1
plants	land plants	Eriocaulaceae	*Eriocaulon clarksonii*			C		1/1
plants	land plants	Hydatellaceae	*Trithuria lanterna*			C		1/1
plants	land plants	Johnsoniaceae	*Caesia setifera*			C		1/1
plants	land plants	Lamiaceae	*Clerodendrum costatum*			C		1/1
plants	land plants	Leguminosae	*Acacia crassicarpa*			C		1/1
plants	land plants	Leguminosae	*Acacia simsii*			C		1/1
plants	land plants	Leguminosae	*Stylosanthes*					20
plants	land plants	Lentibulariaceae	*Utricularia bifida*			SL		1/1
plants	land plants	Lentibulariaceae	*Utricularia caerulea*	blue bladderwort		SL		1/1
plants	land plants	Lentibulariaceae	*Utricularia chrysantha*			SL		1/1
plants	land plants	Lentibulariaceae	*Utricularia uliginosa*	asian bladderwort		SL		1/1
plants	land plants	Linderniaceae	*Lindernia subulata*			C		1/1
plants	land plants	Loganiaceae	*Mitrasacme stellata*			C		1/1
plants	land plants	Memecylaceae	*Memecylon pauciflorum*			C		1/1
plants	land plants	Myrtaceae	*Corymbia nesophila*			C		1/1
plants	land plants	Myrtaceae	*Thryptomene oligandra*			C		1/1
plants	land plants	Myrtaceae	*Welchiodendron longivalve*			C		1/1
plants	land plants	Myrtaceae	*Xanthostemon xerophilus*			C		1/1
plants	land plants	Nepenthaceae	*Nepenthes tenax*			SL		1/1
plants	land plants	Orchidaceae	*Bromheadia pulchra*			SL		1/1
plants	land plants	Phyllanthaceae	*Phyllanthus virgatus*			C		1/1
plants	land plants	Phyllanthaceae	*Synostemon elachophyllus subsp. latior*			C		1/1
plants	land plants	Picrodendraceae	*Petalostigma pubescens*	quinine tree		C		1/1
plants	land plants	Poaceae	*Eriachne pallescens var. pallescens*			C		1/1
plants	land plants	Poaceae	*Panicum seminudum var. seminudum*			C		1/1
plants	land plants	Proteaceae	*Grevillea parallela*			C		1/1
plants	land plants	Rhamnaceae	*Alphitonia pomaderroides*			C		1/1
plants	land plants	Rubiaceae	*Larsenaikia ochreata*			C		1/1
plants	land plants	Santalaceae	*Anthobolus filifolius*			C		1/1
plants	land plants	Sapindaceae	*Dodonaea polyandra*			C		1/1
plants	land plants	Sapotaceae	*Manilkara kauki*			C		1/1
plants	land plants	Sapotaceae	*Planchonella pohlmaniana*			C		1/1
plants	land plants	Stylidiaceae	*Stylidium foveolatum*			SL		1/1
plants	land plants	Verbenaceae	*Stachytarpheta jamaicensis*	Jamaica snakeweed	Y			2

CODES

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

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

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

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

Appendix D Protected Matters Search

Australian Government
Department of Agriculture, Water and the Environment

EPBC Act Protected Matters Report

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

Report created: 19-Sep-2022

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	37
Listed Migratory Species:	48

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

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 Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	93
Whales and Other Cetaceans:	10
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	2

Extra Information

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

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	2
EPBC Act Referrals:	1
Key Ecological Features (Marine):	None
Biologically Important Areas:	8
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Species			[Resource Information]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Casuarius casuarius johnsonii Southern Cassowary, Australian Cassowary, Double-wattled Cassowary [25986]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Probosciger aterrimus macgillivrayi](#) Palm Cockatoo (Australian) [67033]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Rostratula australis](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area	In feature area
[Tyto novaehollandiae kimberli](#) Masked Owl (northern) [26048]	Vulnerable	Species or species habitat may occur within area	In feature area
MAMMAL			
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
[Dasyurus hallucatus](#) Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area	In feature area
[Hipposideros semoni](#) Semon's Leaf-nosed Bat, Greater Wart-nosed Horseshoe-bat [180]	Vulnerable	Species or species habitat may occur within area	In feature area
[Macroderma gigas](#) Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In feature area
[Rhinolophus robertsi](#) Large-eared Horseshoe Bat, Greater Large-eared Horseshoe Bat [87639]	Vulnerable	Species or species habitat may occur within area	In feature area
[Saccolaimus saccolaimus nudicluniatus](#) Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat may occur within area	In feature area
[Xeromys myoides](#) Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat likely to occur within area	In feature area
PLANT			
[Bruguiera x hainesii](#) Haines's Orange Mangrove [91351]	Critically Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calophyllum bicolor [11371]	Vulnerable	Species or species habitat may occur within area	In feature area
Cepobaculum carronii an orchid [78700]	Vulnerable	Species or species habitat known to occur within area	In feature area
Dendrobium bigibbum Cooktown Orchid [10306]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Dendrobium johannis Chocolate Tea Tree Orchid [13585]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eleocharis retroflexa a sedge [23672]	Vulnerable	Species or species habitat known to occur within area	In feature area
Xylopia monosperma a shrub [82030]	Endangered	Species or species habitat likely to occur within area	In buffer area only
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area	In buffer area only
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In buffer area only
SHARK			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Glyphis glyphis Speartooth Shark [82453]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In feature area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus Common Noddy [825]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area	In buffer area only
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only
[Phaethon lepturus](#) White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
[Sternula albifrons](#) Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
[Anoxypristis cuspidata](#) Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area	In buffer area only
[Balaenoptera edeni](#) Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
[Carcharodon carcharias](#) White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In buffer area only
[Crocodylus porosus](#) Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dugong dugon Dugong [28]		Species or species habitat known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area	In buffer area only
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding known to occur within area	In buffer area only
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In buffer area only
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In buffer area only
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In feature area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sousa sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Migratory Terrestrial Species

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Cecropis daurica](#) Red-rumped Swallow [80610]		Species or species habitat may occur within area	In feature area
[Cuculus optatus](#) Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Hirundo rustica](#) Barn Swallow [662]		Species or species habitat may occur within area	In feature area
[Monarcha frater](#) Black-winged Monarch [607]		Species or species habitat may occur within area	In buffer area only
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat may occur within area	In feature area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat likely to occur within area	In feature area
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
[Symposiachrus trivirgatus as Monarcha trivirgatus](#) Spectacled Monarch [83946]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area	In feature area
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat may occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat may occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat likely to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
[Calonectris leucomelas](#) Streaked Shearwater [1077]		Species or species habitat may occur within area	In buffer area only
[Cecropis daurica as Hirundo daurica](#) Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area	In feature area
[Chalcites osculans as Chrysococcyx osculans](#) Black-eared Cuckoo [83425]		Species or species habitat may occur within area overfly marine area	In feature area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Fregata ariel](#) Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area overfly marine area	In feature area
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat may occur within area overfly marine area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat may occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha frater Black-winged Monarch [607]		Species or species habitat may occur within area overfly marine area	In buffer area only
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In buffer area only
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
[Rostratula australis as Rostratula benghalensis (sensu lato)](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area
[Sternula albifrons as Sterna albifrons](#) Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
[Symposiachrus trivirgatus as Monarcha trivirgatus](#) Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area	In feature area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]		Species or species habitat may occur within area overfly marine area	In feature area
Fish			
[Acentronura tentaculata](#) Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In buffer area only
[Campichthys tricarinatus](#) Three-keel Pipefish [66192]		Species or species habitat may occur within area	In buffer area only
[Choeroichthys brachysoma](#) Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area	In buffer area only
[Choeroichthys suillus](#) Pig-snouted Pipefish [66198]		Species or species habitat may occur within area	In buffer area only
[Corythoichthys amplexus](#) Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area	In buffer area only
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area	In buffer area only
Corythoichthys ocellatus Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area	In buffer area only
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area	In buffer area only
Cosmocampus maxweberi Maxweber's Pipefish [66209]		Species or species habitat may occur within area	In buffer area only
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area	In buffer area only
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area	In buffer area only
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area	In buffer area only
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area	In buffer area only
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area	In buffer area only
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area	In buffer area only
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area	In buffer area only
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area	In buffer area only
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area	In buffer area only
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In buffer area only
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area	In buffer area only
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area	In buffer area only
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area	In buffer area only
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area	In buffer area only
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area	In buffer area only
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area	In buffer area only
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area	In buffer area only
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In buffer area only
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In buffer area only
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In buffer area only
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area	In buffer area only
Mammal			
Dugong dugon Dugong [28]		Species or species habitat known to occur within area	In buffer area only
Reptile			
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area	In buffer area only
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area	In buffer area only
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area	In buffer area only
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In buffer area only
Chitulia ornata as Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [87377]		Species or species habitat may occur within area	In buffer area only
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area	In feature area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In buffer area only
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area	In buffer area only
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area	In buffer area only
Enhydrina schistosa Beaked Seasnake [1126]		Species or species habitat may occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area	In buffer area only
Hydrophis atriceps Black-headed Seasnake [1101]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area	In buffer area only
Hydrophis macdowelli as Hydrophis mcdowelli Small-headed Seasnake [75601]		Species or species habitat may occur within area	In buffer area only
Lapemis curtus as Lapemis hardwickii Spine-bellied Seasnake [83554]		Species or species habitat may occur within area	In buffer area only
Laticauda colubrina a sea krait [1092]		Species or species habitat may occur within area	In buffer area only
Laticauda laticaudata a sea krait [1093]		Species or species habitat may occur within area	In buffer area only
Leioselasma pacifica as Hydrophis pacificus Large-headed Seasnake, Pacific Seasnake [87378]		Species or species habitat may occur within area	In buffer area only
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding known to occur within area	In buffer area only
Microcephalophis gracilis as Hydrophis gracilis Slender Seasnake [87375]		Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In buffer area only
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area	In buffer area only

Whales and Other Cetaceans			[Resource Information]
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only
Orcaella heinsohni as Orcaella brevirostris Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Sousa sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only

Habitat Critical to the Survival of Marine Turtles			
Scientific Name	Behaviour	Presence	Buffer Status
Aug - Sep			
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur	In buffer area only
May - Jul			

Scientific Name	Behaviour	Presence	Buffer Status
Lepidochelys olivacea			
Olive Ridley Turtle [1767]	Nesting	Known to occur	In buffer area only

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Jardine River	National Park	QLD	In buffer area only

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status
Jardine River Wetlands Aggregation	QLD	In feature area
Skardon River - Cotterell River Aggregation	QLD	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Installation of Underground Optical Fibre Cable, Batavia Downs to Bamanga	2006/2709	Not Controlled Action	Completed	In buffer area only

Biologically Important Areas

Scientific Name	Behaviour	Presence	Buffer Status
Dolphins			
Sousa chinensis			
Indo-Pacific Humpback Dolphin [50]	Foraging	Likely to occur	In buffer area only
Tursiops aduncus			
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur	In buffer area only
Marine Turtles			
Chelonia mydas			
Green Turtle [1765]	Foraging	Likely to occur	In buffer area only
Eretmochelys imbricata			
Hawksbill Turtle [1766]	Internesting	Likely to occur	In buffer area only
Lepidochelys olivacea			
Olive Ridley Turtle [1767]	Internesting	Likely to occur	In buffer area only

Scientific Name	Behaviour	Presence	Buffer Status
Natator depressus			
Flatback Turtle [59257]	Internesting	Likely to occur	In buffer area only
Seabirds			
Anous stolidus			
Common Noddy [825]	Breeding	Known to occur	In feature area
Fregata ariel			
Lesser Frigatebird [1012]	Foraging	Likely to occur	In buffer area only

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

Department of Agriculture Water and the Environment
GPO Box 858
Canberra City ACT 2601 Australia
+61 2 6274 1111

Appendix E Likelihood of Occurrence

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Mammals					
Dasyurus hallucatus	Northern Quoll	E	E	The Northern Quoll occupies a diversity of habitats across its range which includes rocky areas, eucalypt forest and woodlands, rainforests, sandy lowlands and beaches, shrubland, grasslands and desert. Northern Quoll are also known to occupy non rocky lowland habitats such as beach-scrub communities in central Queensland. Northern Quoll habitat generally encompasses some form of rocky area for denning purposes with surrounding vegetated habitats used for foraging and dispersal. Rocky habitats are usually of high relief, often rugged and dissected but can also include tor fields or caves in low lying areas such as in Western Australia. Eucalypt forest or woodland habitats usually have a high structural diversity containing large diameter trees, termite mounds or hollow logs for denning purposes. Dens are made in rock crevices, tree holes or occasionally termite mounds. Northern Quolls sometimes occur around human dwellings and campgrounds. Northern Quolls appear to be most abundant in habitats within 150 km of the coast.	**Potential – Assessment of Significance required**
Hipposideros semoni	Semon's Leaf-nosed Bat	V	V	Semon's Leaf-nosed Bat is found in tropical rainforest, monsoon forest, wet sclerophyll forest and open savannah woodland. This species does not have an obligatory requirement for cave roosts. Daytime roost sites include tree hollows, deserted buildings in rainforest, road culverts and shallow caves amongst granite boulders or in fissures. They appear to prefer rainforest and are more likely to be tree-dwelling than cave-dwelling.	**Potential – Assessment of Significance required**

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Macroderma gigas	Ghost Bat	E	V	Ghost Bats have been recorded in both arid regions (Pilbara region) and rainforest areas (north Queensland). *Macroderma gigas* roost in caves, old mine tunnels and in deep cracks in rocks. They usually roost in colonies but, because many of their roosting sites are being destroyed, it is rare to find large colonies. Ghost Bats are distributed widely but patchily across the northern half of Australia and are found in a variety of tropical habitats. Perhaps the species' most famous roosting and nesting sites, and largest colonies, are at Mount Etna caves, near Rockhampton in Queensland. Macroderma gigas or the Ghost Bat is found in Northern Australia where it has a scattered distribution. It is found north of 29°S in Western Australia, Northern Territories, and Queensland.	**Unlikely**, lack of habitat present. This species inhabits caves, old mine tunnels and in deep cracks in rocks. Ideal habitat not present.
Rhinolophus robe	Large-eared Horseshoe Bat	V	V	Daytime roosting habitat for the Greater Large-eared Horseshoe Bat includes caves and underground mines located in rainforest, and open eucalypt forest and woodland. The Greater Large-eared Horseshoe Bat occurs only in northern Queensland, from the Iron Range southwards to Townsville and west to the karst regions of Chillagoe and Mitchell-Palmer.	**Unlikely**, lack of habitat present. This species inhabits caves, old mine tunnels and in deep cracks in rocks. Ideal habitat not present.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Saccolaimus saccolaimus nudicluniatus	Bare-rumped Sheath-tailed Bat	V	V	The Bare-rumped Sheathtail Bat occurs mostly in lowland areas, typically in a range of woodland, forest and open environments The habitat adjacent to the roost in the Jerona Fauna Sanctuary at Ayr in north Queensland was in Poplar Gum (*Eucalyptus platyphylla*) woodland, typical of the alluvial plains adjacent to the lower Burdekin and Houghton Rivers, near Townsville. Adjacent to this habitat were woodlands dominated by Carbeen (*E. tessellaris*) and Ghost Gum (*E. papuana*). At Iron Range, Queensland, roosts were located in Darwin Stringybark woodland (*E. tetrodonta*) with Clarkson's Bloodwood (*Corymbia clarksoniana*) and Carbeen subdominant. Adjacent to the roost was a narrow strip of gallery forest along a seasonally dry watercourse and less than one kilometre away were large patches of rainforest associated with the Claudie River floodplain. The specimen from Attack Creek, north of Coen, Queensland was collected in riverine vine forest with adjacent open forest/woodland. In either case it was not known if individuals foraged over some or all of the vegetation communities in the vicinity of the roost. The Kakadu National Park specimens were collected from open Pandanus woodland fringing the sedgelands of the South Alligator River. The Bare-rumped Sheathtail Bat has been suggested to forage over habitat edges such as the edge of rainforest and in forest clearings. There is no information is available on foraging habitat shifts between the dry and wet seasons. The small number of confirmed roosts located in Australia have all been in tree hollows. Overseas other subspecies (perhaps distinct species to the form(s) occurring in Australia) commonly roost in caves, overhangs and man-made structures. However, in Australia no individuals have been found roosting in caves. For example, a survey conducted of about 1000 coastal caves in the Wet Tropics region failed to locate this species.	**Potential – Assessment of Significance required**
Xeromys myoides	Water Mouse	V	V	The Water Mouse has been recorded in saline and coastal freshwater habitats in the Northern Territory and Queensland, specifically distributed in coastal areas from Round Hill Head in north to South Stradbroke Island on the Gold Coast, Great Sandy Strait and Moreton Bay, Fraser Island, Russell and North and South Stradbroke Islands in the Redlands. The Water Mouse inhabit intertidal mudflats of estuaries, lagoons, mangroves, as well as beaches, rocky shores and around lakes, dams and floodwaters.	**Unlikely**, Ideal habitat not present.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Birds					
Calidris canutus	Red Knot	E	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	**Unlikely**, suitable habitat not present.
Calidris ferruginea	Curlew Sandpiper	CE	CE	The Curlew Sandpiper is distributed around most of the Australian coastline (including Tasmania). The Curlew Sandpiper breeds in Siberia and migrates to Australia (as well as Africa and Asia) for the non-breeding period, arriving in Australia between August and November, and departing between March and mid-April. It generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes inland.	**Unlikely**, suitable habitat not present.
Casuarius casuarius johnsonii	Southern Cassowary	E	E	In Australia the Southern Cassowary is found in far north Queensland's tropical rainforests, melaleuca swamps and mangrove forests. The dense habitat and the Cassowary's secretive nature make individuals difficult to see. In certain areas birds come near human habitation seeking food. Throughout their range, Southern Cassowaries live alone, and inhabit the same area all year round. Southern Cassowaries are found in northern Queensland. The species is also found through New Guinea and eastern Indonesia.	**Unlikely,** Ideal habitat not present. No reported sightings from local community.
Charadrius leschenaultii	Greater Sand Plover	E	E	In the non-breeding grounds in Australasia, the species is almost entirely coastal, inhabiting littoral and estuarine habitats. They mainly occur on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks, as well as sandy estuarine lagoons, and inshore reefs, rock platforms, small rocky islands or sand cays on coral reefs. They are occasionally recorded on near-coastal saltworks and salt-lakes, including marginal saltmarsh, and on brackish swamps. They seldom occur at shallow freshwater wetlands. Once, during a severe drought, the species was recorded in a poorly grassed paddock with large bare areas, more than 1 km from the nearest water.	**Unlikely**, suitable habitat not present. The Greater Sand Plover does not Breed in Australia therefore the species would only be passing through the site foraging for food.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Erythrotriorchis radiatus	Red Goshawk	E	V	Occurs in a patchy, widespread distribution across coastal and sub-coastal regions of northern and eastern Australia. Inhabits tall open forests and woodlands, tropical savannas traversed by wooded or forested rivers, and the edges of rainforests, usually on fertile soils. Prefers areas with large prey populations (birds), and permanent water.	**Potential – Assessment of Significance required**
Esacus magnirostris	Beach stone curlew	V		The Beach Stone-Curlew has been observed around the north coast of Australia and associated islands from near Onslow in Western Australia to the Manning River in New South Wales. The species has largely disappeared from the south-eastern part of its former range and is now rarely recorded on ocean beaches in New South Wales. The Beach Stone-Curlew occurs on open, undisturbed beaches, islands, reefs, and estuarine intertidal sand and mudflats, preferring beaches with estuaries or mangroves nearby. However, this species also frequents river mouths, offshore sandbars associated with coral atolls, reefs and rock platforms and coastal lagoons.	**Unlikely,** Ideal habitat not present.
Hirundapus caudacutus	White-throated Needletail	V	V	White-throated Needletails often occur in large numbers over eastern and northern Australia. White-throated Needletails are aerial birds and for a time it was commonly believed that they did not land while in Australia. It has now been observed that birds will roost in trees infrequently. Migratory and usually seen in eastern Australia from October to April. Breeds in forests in south-eastern Siberia, Mongolia, the Korean Penninsula and northern Japan June-August. Most often seen in eastern Australia before storms, low pressure troughs and approaching cold fronts and occasionally bushfire. These conditions are often used by insects to swarm (eg termites and ants) or tend to lift insects away from the surface which favours sighting of White-throated Needletails as they feed. More common in coastal areas, less so inland. Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland.	**Potential** However this species would only be passing through, Breeding occurs in south-eastern Siberia, Mongolia, the Korean Penninsula and northern Japan June-August therefore it is **unlikely** this species would inhabit the site.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Limosa lapponica baueri	Nunivak Bar-tailed Godwit	V	V	The Bar-tailed Godwit is found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh. It has been sighted in coastal sewage farms and saltworks, salt-lakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats. It is rarely found on inland wetlands or in areas of short grass, such as farmland, paddocks and airstrips, although it is commonly recorded in paddocks at some locations overseas.	**Unlikely**, Ideal habitat not present.
Numenius madagascariensis	Eastern Curlew	CE	CE	The Eastern Curlew is widespread in coastal regions in the north-east and south of Australia, including Tasmania, and scattered in other coastal areas. It is rarely seen inland. It breeds in Russia and north-eastern China. On passage, they are commonly seen in Japan, Korea and Borneo. Small numbers visit New Zealand. The Eastern Curlew is found on intertidal mudflats and sandflats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours and lagoons.	**Unlikely**, suitable habitat not present.
Proboscigeraterrimus macgillivrayi	Palm Cockatoo (Australian)	V	V	In Australia, subspecies *macgillivrayi* is confined to the northern Cape York Peninsula, from Pormpuraaw on the west coast to Princess Charlotte Bay on the east. In New Guinea, it is widespread and tolerant of degraded forest habitats, mostly in the lowlands and foothills but occasionally up to 1,350 m. They live in tropical rainforests and tropical woodlands, particularly in the zone between the two, where the dominant tree species are acacias and eucalypts, particularly paperbarks.	**Potential – Assessment of Significance required**
Rostratula australis	Australian Painted Snipe	E	E	Endemic to Australia, the Australian Painted Snipe has been recorded in all mainland states, where the records are widely and sparsely scattered, though most records have come from eastern Australia, and most of these records are from the Murray–Darling Basin. There are also historical records from Tasmania. The Australian Painted Snipe inhabits many different types of shallow, brackish or freshwater terrestrial wetlands, especially temporary ones which have muddy margins and small, low-lying islands. Suitable wetlands usually support a mosaic of low, patchy vegetation, as well as lignum and cane-grass.	**Unlikely**, suitable habitat not present.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Tyto novaehollandiae kimberli	Masked Owl (northern)	V	V	In northern Australia, the Masked Owl has been recorded from riparian forest, rainforest, open forest, *Melaleuca* swamps and the edges of mangroves, as well as along the margins of sugar cane fields. It occurs along the southern rim of the Gulf of Carpentaria, Cape York Peninsula and south to Atherton Tablelands and the Einasleigh-Burdekin divide.	**Potential – Assessment of Significance required**
Plant					
Bruguiera x hainesii	Haines's Orange Mangrove	CE	CE	Creek beds, estuaries, mudflats, and small inlet areas. This species is sound in the coastal line of far north Queensland.	**Unlikely**, suitable habitat not present.
Calophyllum bicolor		V	V	*Calophyllum bicolor* is found in evergreen rainforest habitat with permanently wet organic substrate formed from springs and is often found close to spring heads. It does not occur on stream banks away from the spring heads. The species is currently known from 17 populations on Cape York Peninsula, including conservation areas (Kullla (McIwraith National Park), Unigan Nature Reserve and Olive River Reserve), with a recorded population size of approximately 2000 plants. Distribution is from Bamaga in the north, around to Weipa in the west and Captain Billy's Landing on the east coast with an estimated extent of occurrence of 25,000 km2. The species is also found in Indonesia and Papua New Guinea.	**Unlikely**, suitable habitat not present. Species are found close to natural water springs.
Cepobaculum carronii	An Orchid	V	V	Occurs in stunted open forests, especially adjacent to low-lying areas subject to occasional flooding. It is often found growing on *Melaleuca viridiflora* in bright, exposed situations and survives on trees on the margins of monsoonal thickets. The flowers are long-lasting and pollinated by wasps and hornets. Occurs in far north-eastern Queensland from Bamaga to McIlwraith Range. Altitude: 200-600 m. Also occurs in New Guinea.	**Unlikely** Project site lays on altitude of 40m. This species is found inhabiting areas between 200m – 600m altitude.
Dendrobium bigibbum	Cooktown Orchid	V	V	This orchid species grows on trees and rocks in rainforest, coastal scrub, near rivers, in swamps and open forest in tropical Queensland, southern New Guinea and a single island in Indonesia.	**Potential – Assessment of Significance required**

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Dendrobium johannis	Chocolate Tea Tree Orchid	V	V	*Dendrobium johannis* is found on Cape York Peninsula on the east coast north of about the Stewart River and Coen. It extends into the Torres Strait and southern Papua New Guinea	**Unlikely** Outside of locality.
Eleocharis retroflexa	A sedge	V	V	*Diplazium cordifolium* is known from north-east Queensland. This species is found around Cairns, Herberton, and Wooroonooran, and mostly occurs on private land. This species has had a large decline in population numbers in the past but is not considered to be in decline at present. The population size and extent of occurrence of this species are unknown. *Diplazium cordifolium* is found in rainforest, along creek banks. It is usually found below 80-100 m altitude, although one population in Palmerston valley grows at 475 m altitude. This species occurs within the Wet Tropics (Queensland) Natural Resource Management Region. The distribution of this species is not known to overlap with any EPBC Act-listed threatened ecological community.	**Unlikely** within project area, unsuitable habitat, the project is not along a creek bank area.
Xylopia monosperma	A Shrub	E	E	*Xylopia monosperma* is known from five locations in the Northern Territory and an unknown number of locations in Queensland. In the Northern Territory, populations are located on Bathurst Island and Melville Island. Queensland populations occur from Cape York to Mount Tozer. An estimated 250 individuals occur in the Northern Territory with a 150ha area of occupancy. Population size and occurrence is unknown in Queensland. No known populations are conserved in reserves. This species occurs within the Northern Territory and Cape York (Queensland) Natural Resource Management Regions. *Xylopia monosperma* occurs in simple sclerophyll/notophyll vine forest. Climate is characterised by hot, wet summers and hot winters with annual precipitation of 1600–2200 mm. This species is found on Tertiary alluvium over sandstones in the Northern Territory and yellow soils derived from sandstone in Queensland. Associated vegetation in the Northern Territory includes *Syzygium nervosum, Melaleuca spp., Acacia spp., Luisia teretifolia, Thrixspermum congestum, Mapania macrocephala, Freycinetia percostata,* and *Elaeocarpus miegei.* Associated species in Queensland include *Asteromyrtus myrtifolia, Asteromyrtus brassii, Blepharocarya involucrigera, Canthium lamprophyllus, Endiandra glauca, Flindersia ifflaiana,* and *Syzygium angophoroides.*	**Unlikely,** This species has been identifed inhabiting Weipa, 430 km south west of the site. There are not records of this species inhabiting the area.
Migratory Species					

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Anous stolidus	Common Noddy			During the breeding season, the Common Noddy usually occurs on or near islands, on rocky islets and stacks with precipitous cliffs, or on shoals or cays of coral or sand. When not at the nest, individuals will remain close to the nest, foraging in the surrounding waters. Birds may nest in bushes, saltbush, or other low vegetation. They may also nest on the ground in Pigface (*Carpobrotus* spp.) or grass, on bare rock, on top of rocks protruding above vegetation, on shingle beaches, among coral rubble or in sand close to grassy areas. The species has also been recorded nesting in the forks of tall trees, at the top of Coconut Palms (*Cocos nucifera*), in holes in dead timber and on tree-stumps. On Lord Howe, Kermadec and Christmas Islands, many nests are built on cliff ledges. Although the species is obviously quite flexible in regards to nesting locations, pairs appear to select nesting habitat based on a hierarchy of preference. During the non-breeding period, the species occurs in groups throughout the pelagic zone (open ocean).	**Unlikely**, suitable habitat not present.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Apus pacificus	Fork-tailed Swift			The Fork-tailed Swift is almost exclusively aerial, flying from less then 1 m to at least 300 m above ground and probably much higher. In Australia, they mostly occur over inland plains but sometimes above foothills or in coastal areas. They often occur over cliffs and beaches and also over islands and sometimes well out to sea. They also occur over settled areas, including towns, urban areas and cities. They mostly occur over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh. They are also found at treeless grassland and sandplains covered with spinifex, open farmland and inland and coastal sand-dunes. The sometimes occur above rainforests, wet sclerophyll forest or open forest or plantations of pines. They forage aerially, up to hundreds of metres above ground, but also less then 1 m above open areas or over water. They often occur in areas of updraughts, especially around cliffs. They are said to search along edges of low-pressure systems, which assist flight. Low-flying Swifts are said to be precursors of unsettled weather, possibly because insect prey fly at a lower altitude when the air is humid and when the air density is low. They sometimes feed aerially among tree-tops in open forest. They probably roost aerially but are occasionally observed to land. They were once recorded roosting in trees, using a bare exposed branch emergent above the foliage. Sometimes they loaf in the air, by allowing strong winds to support them. There have been rare records of loafing elsewhere including Swifts briefly resting on ground and alighting on wire netting of a tennis court. Once, one was seen attempting to land on the wall of a lighthouse.	**Possible,** The Fork-tailed Swift inhabits an array of different habitats however due to air disturbance and land disturbance from human inhabitancy and human activities. It is **Unlikely** this species would occur on site.
Calonectris leucomelas	Streaked Shearwater			This species is pelagic, but is also found in inshore waters. It occurs in the Pacific Ocean, nesting in Japan and the Korean Peninsula, predominantly on their offshore islands. After breeding, the streaked shearwater migrate south, feeding in the seas off northern New Guinea, the Arafura Sea, and the South China Sea. *Calonectris leucomelas* have also been reported well off the west coast of the United States, from the southern coast of India, from New Zealand, and Australia.	**Unlikely**, suitable habitat not present.
Fregata ariel	Lesser Frigatebird			The lesser frigatebird (*Fregata ariel*) is a seabird of the frigatebird family *Fregatidae*. At around 75 cm (30 in) in length, it is the smallest species of frigatebird. It occurs over tropical and subtropical waters across the Indian and Pacific Oceans as well as off the Atlantic coast of Brazil.	**Unlikely**, suitable habitat not present.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Fregata minor	Great Frigatebird			Great Frigatebirds populate parts of the tropical and subtropical oceans. The five races combined have a range extending from the tropical African East coast and Madagascar across the Indian Ocean, via the South-east Asian islands (including Indonesia and New Guinea) and the South China Sea through to the Pacific Ocean. There they can be found from the Australian East coast to California in the USA and farther South, to about -30 degrees latitude. There is a separate population in the South Atlantic Ocean, to the East of Brazil. Along the Australian continental coast they can occasionally be found anywhere from the Top End of the NT in the West to Fraser Island, QLD, in the East. Strays are found only rarely farther South along the Australian East coast, to about the NSW Central Coast. Great Frigatebirds spend most of the non-breeding season on the seas around their breeding colonies, which are located on oceanic islands. They will enter continental coastal waters only infrequently.	**Unlikely**, suitable habitat not present.
Sternula albifrons	Little Tern			In Australia, Little Terns inhabit sheltered coastal environments, including lagoons, estuaries, river mouths and deltas, lakes, bays, harbours and inlets, especially those with exposed sandbanks or sand-spits, and also on exposed ocean beaches. Little Terns are widespread on islands off the Northern Territory coast but appear to be less often on offshore continental islands or coral cays off Queensland. In the Northern Territory, Little Terns are commonly seen in sandy coastal habitats and in mangrove-mudflat habitats along the coast or in bays and estuaries, but not recorded on wetlands more than 1 km from the coast.	**Unlikely**, suitable habitat not present.
Cecropis daurica	Red-rumped Swallow			The red-rumped swallow breeds across southern Europe and Asia east to southern Siberia and Japan. These populations, along with Moroccan birds, are migratory, wintering in sub-Saharan Africa or south Asia. There are resident races in Africa in a broad belt from West Africa east to Ethiopia and then south to Tanzania, and most Indian and Sri Lanka breeders are also year-round residents. The African and Asian subspecies may undertake local seasonal movements. This species is a regular vagrant outside its breeding range. Prefers open hillside habitat.	**Unlikely**, suitable habitat not present. Species does not breed in Austraila.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Cuculus optatus	Oriental Cuckoo			Forest, Monsoon forests; wet sclerophyll forests; paperbark swamps; mangroves. Northern and eastern Australia; Non breeding migrant.	**Possible,** This species inhabits an array of different habitats however due to air disturbance and land disturbance from human inhabitancy and human activities. It is **Unlikely** this species would inhabit the site. The species may fly or forage near the project site.
Hirundapus caudacutus	White-throated Needletail	V	V	White-throated Needletails often occur in large numbers over eastern and northern Australia. White-throated Needletails are aerial birds and for a time it was commonly believed that they did not land while in Australia. It has now been observed that birds will roost in trees infrequently. Migratory and usually seen in eastern Australia from October to April. Breeds in forests in south-eastern Siberia, Mongolia, the Korean Penninsula and northern Japan June-August. Most often seen in eastern Australia before storms, low pressure troughs and approaching cold fronts and occasionally bushfire. These conditions are often used by insects to swarm (eg termites and ants) or tend to lift insects away from the surface which favours sighting of White-throated Needletails as they feed. More common in coastal areas, less so inland. Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland.	**Possible,** suitable habitat present. However this species does not breed in Australia therefore this species may utilize the project site for foraging.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
hirundo rustica	Barn Swallow			The Barn Swallow breeds throughout the northern hemisphere in temperate and subtropical regions of North America, Europe, northern Africa and Asia. The species migrates to the southern hemisphere to spend the boreal winter. The subspecies *H.r. gutteralis* breeds in east Asia (China, Japan and Taiwan) and reaches northern Australia annually. When breeding in Europe and north Africa, the Barn Swallow utilises open country with water or low moist green vegetation, such as pastures and farm crops, near margins of wetlands and human settlements. The species usually avoids densely populated areas. The Barn Swallow occurs from sea level up to about 3000 m above sea level. The bird prefers areas with a good supply of accessible artificial structures, such as barns, sheds and bridges for nesting and plenty of overhead wires or bare branches and twigs for perching, sunning and preening.	**Unlikely**, suitable habitat not present.
Monarcha frater	Black-winged Monarch			The black-winged monarch (Monarcha frater) is a species of bird in the family Monarchidae. It is found in Australia and on New Guinea. Its natural habitats are subtropical or tropical moist lowland forests and subtropical or tropical moist montane forests.	**Possible,** suitable habitat present. However, this species is more likely to utilize the project site for foraging due to the road traffic and dust disturbance.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Monarcha melanopsis	Black-faced Monarch			The Black-faced Monarch mainly occurs in rainforest ecosystems, including semi-deciduous vine-thickets, complex notophyll vine-forest, tropical (mesophyll) rainforest, subtropical (notophyll) rainforest, mesophyll (broadleaf) thicket/shrubland, warm temperate rainforest, dry (monsoon) rainforest and (occasionally) cool temperate rainforest. The species also occurs in selectively logged and 20—30 years old regrowth rainforest. It is also sometimes found in nearby open eucalypt forests (mainly wet sclerophyll forests), especially in gullies with a dense, shrubby understorey as well as in dry sclerophyll forests and woodlands, often with a patchy understorey. The species especially occurs in 'marginal' habitats during winter or during passage (migration). Other areas in which the Black-faced Monarch may be found include: gullies in mountain areas or coastal foothills, softwood scrub dominated by Brigalow (*Acacia harpophylla)* (Leach 1995), coastal scrub dominated by Coast Banksia (*Banksia integrifolia*) and Southern Mahogany (*Eucalyptus botryiodes*), occasionally among mangroves and sometimes in suburban parks and gardens	**Possible,** suitable habitat present. However this species breeds in south-eastern Australia therefore this species may utilize the project site for foraging.
Myiagra cyanoleuca	Satin Flycatcher			Satin Flycatchers mainly inhabit eucalypt forests, often near wetlands or watercourses. They generally occur in moister, taller forests than the Leaden Flycatcher, *Myiagra rebecula*, often occurring in gullies. They also occur in eucalypt woodlands with open understorey and grass ground cover and are generally absent from rainforest. In south-eastern Australia, they occur at elevations of up to 1400 m above sea level, and in the ACT, they occur mainly between 800 m above sea level and the tree line.	**Possible,** suitable habitat present. However this species breeds in south-eastern Australia therefore this species may utilize the project site for foraging.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Rhipidura rufifrons	Rufous Fantail			In east and south-east Australia, the Rufous Fantail mainly inhabits wet sclerophyll forests, often in gullies dominated by eucalypts such as Tallow-wood (*Eucalyptus microcorys*), Mountain Grey Gum (*E. cypellocarpa*), Narrow-leaved Peppermint (*E. radiata*), Mountain Ash (*E. regnans*), Alpine Ash (*E. delegatensis*), Blackbutt (*E. pilularis*) or Red Mahogany (*E. resinifera*); usually with a dense shrubby understorey often including ferns. They also occur in subtropical and temperate rainforests; for example near Bega in south-east NSW, where they are recorded in temperate Lilly Pilly (*Acmena smithi*) rainforest, with Grey Myrtle (*Backhousia myrtifolia*), Sassafras (*Doryphora sassafras*) and Sweet Pittosporum (*Pittosporum undulatum*) subdominants. They occasionally occur in secondary regrowth, following logging or disturbance in forests or rainforests. When on passage, they are sometimes recorded in drier sclerophyll forests and woodlands, including Spotted Gum (*Eucalyptus maculata*), Yellow Box (*E. melliodora*), ironbarks or stringybarks, often with a shrubby or heath understorey. They are also recorded from parks and gardens when on passage. In north and north-east Australia, they often occur in tropical rainforest and monsoon rainforests, including semi-evergreen mesophyll vine forests, semi-deciduous vine thickets or thickets of Paperbarks (*Melaleuca* spp.).	**Unlikely**, The project is near a wetland however the Rufous Fantail prefer eucalypt dominated gullies, therefore it is **unlikely** the species would be inhabiting the area.
Symposiachrus trivirgatus as Monarcha trivirgatus	Spectacled Monarch			Spectacled Monarch usually considered a denizen of the dense rainforests and moist eucalypt forests of eastern and north-eastern Australia, the Spectacled Monarch sometimes also inhabits mangroves and other densely vegetated habitats.	**Possible,** suitable habitat present. However this species breeds in south-eastern Australia therefore this species may utilize the project site for foraging.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Actitis hypoleucos	Common Sandpiper			The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow, and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags.	**Unlikely**, suitable habitat not present.
Calidris acuminata	Sharp-tailed Sandpiper			The Sharp-tailed Sandpiper is a summer migrant from Arctic Siberia, being found on wetlands throughout Australia. It is also found in Indonesia, Papua New Guinea, the Solomon Islands, New Caledonia and New Zealand. It is a vagrant to India, Europe, western North America, Fiji and other parts of the central Pacific region. The Sharp-tailed Sandpiper prefers the grassy edges of shallow inland freshwater wetlands. It is also found around sewage farms, flooded fields, mudflats, mangroves, rocky shores and beaches. Its breeding habitat in Siberia is the peat-hummock and lichen tundra of the high Arctic.	**Unlikely**, suitable habitat not present.
Calidris melanotos	Pectoral Sandpiper			In Australasia, the Pectoral Sandpiper prefers shallow fresh to saline wetlands. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. The species is usually found in coastal or near coastal habitat but occasionally found further inland. It prefers wetlands that have open fringing mudflats and low, emergent or fringing vegetation, such as grass or samphire. The species has also been recorded in swamp overgrown with lignum. They forage in shallow water or soft mud at the edge of wetlands.	**Unlikely**, suitable habitat not present.
Gallinago hardwickii	Latham's Snipe			In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies). However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity.	**Unlikely**, suitable habitat not present.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Limnodromus semipalmatus	Asian Dowitcher			The Asian Dowitcher breeds in isolated colonies in central and eastern Siberia, Mongolia and north-east China. In Russia it is found between Omsk and Tara, around the Barnaul district and the south and south-eastern shores of Lake Baikal and the Chita district. In north-west Mongolia the species is found around Lake Orok-nor. In north-east China the species is found near Qigihar in Heilongjiang. The main non-breeding areas are believed to be the east and south-east coasts of Sumatra. Some are known to winter in peninsular Thailand and Malaysia. Vagrants are also known to occur at the Bay of Bengal, Borneo, New Guinea, New Zealand, Philippines and Japan. The Asian Dowitcher is a passage migrant in Hong Kong and Indochina. he Asian Dowitcher occurs in sheltered coastal Environments, such as embayments, coastal lagoons, estuaries and tidal creeks. They are known to frequent shallow water and exposed mudflats or sandflats. In Australia the Port Hedland Saltworks provides crucial habitat for the species. The species is commonly found in the round ponds and channels of saltworks and sewage farms. It is also found at near-coastal swamps and lakes.	**Unlikely**, suitable habitat not present.
Limosa lapponica	Bar-tailed Godwit	V	V	The Bar-tailed Godwit is found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh. It has been sighted in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats. It is rarely found on inland wetlands or in areas of short grass, such as farmland, paddocks and airstrips, although it is commonly recorded in paddocks at some locations overseas.	**Unlikely**, suitable habitat not present.

Scientific name	Common name	NC Act Conservation Status	EPBC Act Conservation Status	Habitat and Distribution	Likelihood of Occurrence
Pandion haliaetus	Osprey			Eastern Ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. They are mostly found in coastal areas but occasionally travel inland along major rivers, particularly in northern Australia. They require extensive areas of open fresh, brackish or saline water for foraging. They frequent a variety of wetland habitats including inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs and large lakes and waterholes. They exhibit a preference for coastal cliffs and elevated islands in some parts of their range, but may also occur on low sandy, muddy or rocky shores and over coral cays. They may occur over atypical habitats such as heath, woodland or forest when travelling to and from foraging sites. Eastern Ospreys occur sympatrically and sometimes interact with White-bellied Sea-Eagles.	**Unlikely**, suitable habitat not present.
Tringa nebularia	Common Greenshank			The Common Greenshank is found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass. Habitats include embayments, harbours, river estuaries, deltas and lagoons and are recorded less often in round tidal pools, rock-flats and rock platforms. The species uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and salt flats. It will also use artificial wetlands, including sewage farms and saltworks dams, inundated rice crops and bores. The edges of the wetlands used are generally of mud or clay, occasionally of sand, and may be bare or with emergent or fringing vegetation, including short sedges and saltmarsh, mangroves, thickets of rushes, and dead or live trees. It was once recorded with Black-winged Stilts (*Himantopus himantopus*) in pasture but are generally not found in dry grassland.	**Unlikely**, suitable habitat not present.

1 Conservation status as listed under Queensland NC Act and Commonwealth EPBC Act.

CE – Critically Endangered

E - Endangered

V - Vulnerable

NT – Near Threatened

MI – Migratory

LC – Least Concern

Appendix F Assessment of Significance

Table 3 EPBC AoS

Significant Impact Criteria	Northern Quoll (*Dasyurus hallucatus)*
Lead to a long-term decrease in the size of an important population.	The project is surrounded by non remnant and remnant bushland which is not experencing any land disturbance. Project requirements are to relocate all saveable habitat features such as hollow ground dewelling logs. These habitat features are to be relocated within 1 km of the project area. During vegetation clearing activities, an ecologist trained with spotter catching abilities will be present onsite to assess and relocate all fauna to a save area. Therefore it is highly unlikely the project will lead to a long-term decrease in the size of an important population.
Reduce the area of occupancy of an important population.	The project is surrounded by non remnant and remnant bushland which is not experencing any land disturbance and/or vegetation clearing. Project requirements are to relocate all saveable habitat features such as hollow ground dewelling logs. These habitat features are to be relocated within 1 km of the project area. During vegetation clearing activities, an ecologist trained with spotter catching abilities will be present onsite to assess and relocate all fauna to a save area. Therefore it is highly unlikely the project will reduce the area of occupancy of an important population.
Fragment an existing important population into two or more populations.	Highly unlikely, the project is situated near a fauna corridor break (main road). The project is expanding onto already noise and vibration disturbed. The project will not cause any isolation of vegetation or clear an extra-large area that would lead to a species population fragment. It is highly unlikely the project will fragment an existing important population into two or more populations.
Adversely affect habitat critical to the survival of a species.	The project is surrounded by non remnant and remnant bushland which is not experencing any land disturbance and/or vegetation clearing. It is unlikely the project will adversely affect habitat critical to the survival of a species.
Disrupt the breeding cycle of an important population.	**Potential** if vegetation clearing occurs during mating season June to August. It is unlikely the project would disrupt the breeding cycle of an important population outside of breeding season.
Modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	The National Recovery Plan for the Northern Quoll defines habitat critical to Northern Quoll survival as “that where northern quolls are least exposed to threats or least likely to be in the future. Given the threats outlined [in the Recovery Plan], two particular broad habitat types fall into this category: rocky areas and offshore islands”. The site is not an offshore island, and the site does not consist of rocky areas. The area is considered to represent suboptimal habitat for the Northern Quoll and does not constitute high value breeding or foraging habitat. Therefore, it is unlikely the project will modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species’ habitat.	The project is not likely to result in invasive species becoming established. The invasive species most likely to pose a threat to Northern Quoll are already established in the area (i.e. Cane Toad, Dingo/Dog, feral Pig). Therefore, it is unlikely the project will

Significant Impact Criteria	Northern Quoll (*Dasyurus hallucatus)*
	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.
Introduce disease that may cause the species to decline.	It is unlikely the project will Introduce disease that may cause the species to decline.
Interfere substantially with the recovery of the species.	• The relatively small-scale impacts, on the periphery of potential Northern Quoll habitat, are not likely to interfere with the recovery of the species. • The overall objective of the National Recovery Plan for the Northern Quoll is to "minimise the rate of decline of the northern quoll in Australia, and ensure that viable populations remain in each of the major regions of distribution into the future". It aims to achieve this via eight specific objectives: • "Protect northern quoll populations on offshore islands from invasion and establishment of cane toads, cats and other potential invasive species. • Foster the recovery of northern quoll sub-populations in areas where the species has survived alongside cane toads. • Halt northern quoll declines in areas not yet colonised by cane toads. • Halt declines in areas recently colonised by cane toads. • Maintain secure populations and source animals for future reintroductions/ introductions, if they become appropriate. • Reduce the risk of northern quoll populations being impacted by disease. • Reduce the impact of feral predators on northern quolls. • Raise public awareness of the plight of northern quolls and the need for biosecurity of islands and WA." It is unlikely the proposed pit expansion will not interfere with the above mentioned purposes.

Table 4 EPBC Act AoS

Significant Residual Impact Criteria	Semon's Leaf-nose Bat *(Hipposideros semoni)* and Bear-rumped Sheathtail Bat (*Saccolaimus saccolaimus nudicluniatus*)
Lead to a long-term decrease in the size of an important population.	**Unlikely**. Suitable habitat occurs within the survey area. These species distribution is poorly known but occurs in far north QLD. Known to use a variety of forested habitat types and a range of roost sites (e.g. caves, disused buildings, road culverts, tree hollows). Suitable foraging and roosting habitat such as tree hollows, will be impacted by the pit expansion. However these species are highly mobile species and have the abilitiy to flee when they feel threatened. To add database searches did not return any records in the local area (Wildnet 2022), it is unlikely the project will lead to a long-term decrease in the size of an important population of these species.
Reduce the area of occupancy of an important population.	**Unlikely**. As database searches did not return any records in the local area (Wildnet 2022), it is unlikely the project would reduce the area of occupancy of an important population.
Fragment an existing important population into two or more populations.	**Unlikely**. These are highly mobile species and no database searches did not return any records in the local area (Wildnet 2022). Although potential forgaing and roosting habitat occurs

Significant Residual Impact Criteria	Semon's Leaf-nose Bat *(Hipposideros semoni)* and Bear-rumped Sheathtail Bat (*Saccolaimus saccolaimus nudicluniatus*)
	on site it is unlikely that an existing important population would be fragmented as a result of the project.
Adversely affect habitat critical to the survival of a species.	**Potentially**. Database searches did not return any records in the local area (Wildnet 2022), however suitable habtiat occurs on site for foraging and roosting. Whilst the habitat on site has not been declared as critical habitat, there are areas suitable for roosts. The Recovery Plan (Thomson et al. 2001) identifies the following threat for these species '*disturbance of roosting and maternity populations in natural cave systems and old, abandoned mine sites may occur through insensitive commercial, recreational or scientific activities by visitors or as a result of new or renewed mining or quarrying activities.*' Subsequently, as the proposal includes impacts to potential roosting habitat of these species, it could constitue an adverse affect to critical habitat for the Semon's - Leaf-Nosed Bat and Bear-rumped Sheathtail Bat.
Disrupt the breeding cycle of an important population.	**Potentially**. Database searches did not return any records in the local area (Wildnet 2022), however if these species were inhabiting tree hollows during clearing activities, it is possible the project activities may disrupt the breeding cycle of these species.
Modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	**Unlikely**. Database searches did not return any records in the local area (Wildnet 2022), suitable forgaing and roosting habitat is present. Proposal impacts are unlikely to be significant enough to modify, destroy, remove or isolate habitat such that this species declined
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	**Unlikely**. There may be an increase in invasive species due to the project as it involves ground disturbance and modification due to earthworks. However, as weed management protocols would be followed during all works, and this species was not recorded in wildnet database records, it is suggested that any impacts would be marginal.
Introduce disease that may cause the species to decline.	**Unlikely**. The project is unlikely to introduce a disease that may cause the species to decline.
Interfere substantially with the recovery of the species.	**Unlikely**. Database searches did not return any records in the local area (Wildnet 2022), however suitable habtiat is available on site. Proposal impacts on potential habitat for this species is unlikely to be significant enough to interfere subtantially with the recovery of this species.

Table 5 EPBC Act AoS

Significant Residual Impact Criteria	Red Goshawk (*Erythrotriorchis radiatus*)
Lead to a long-term decrease in the size of an important population.	**Unlikely**. This species was not detected during site survey nor a large nest observed during the site survey, it is unlikely this species is inhabiting the site. However, this species has a home range of 120 km – 200km and therefore this species could use the project site for perching or foraging. It is unlikely the project will lead to a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population.	**Unlikely**. This species was not detected during site survey nor a large nest observed during the site survey, it is unlikely this species is inhabiting the site. The project site would be more than likely only utilised for foraging. It is unlikely the project

Significant Residual Impact Criteria	Red Goshawk (*Erythrotriorchis radiatus*)
	activities will reduce the area of occupancy of an important population.
Fragment an existing important population into two or more populations.	**Unlikely**. This species is a highly mobile species. It is unlikely project activities will cause fragment to an existing important population into two or more populations.
Adversely affect habitat critical to the survival of a species.	**Unlikely**. This species was not detected during site survey nor a large nest observed during the site survey, it is unlikely this species is inhabiting the site. However, this species has a home range of 120 km – 200km and therefore this species could use the project site for perching or foraging. It is unlikely the project will adversely affect habitat critical to the survival of a species.
Disrupt the breeding cycle of an important population.	**Unlikely**. This species was not detected during site survey nor a large nest observed during the site survey, it is unlikely this species is inhabiting the site.it is unlikely the impacts by the proposed works will disrupt the breeding cycle of an important population.
Modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	**Unlikely**. Highly mobile species. It is unlikely the project activities will modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	**Unlikely**. There may be an increase in invasive species due to the project as it involves ground disturbance and modification due to earthworks. However, as weed management protocols would be followed during all works, it is suggested that any impacts would be marginal.Therefore it is unlikely the project would result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.
Introduce disease that may cause the species to decline.	**Unlikely**. The project is unlikely to introduce a disease that may cause the species to decline.
Interfere substantially with the recovery of the species.	**Unlikely**. This species was not detected during site survey nor a large nest observed during the site survey, it is unlikely this species is inhabiting the site. Proposal impacts on potential habitat for this species, is unlikely to be significant enough to interfere subtantially with the recovery of this species.

Table 6 EPBC Act AoS

Significant Residual Impact Criteria	Masked Owl (*Tyto novaehollandiae kimberli*)
Lead to a long-term decrease in the size of an important population.	**Unlikely**. The Masked Owl are predominantly a solitary species and primarily inhabit eucalypt open forests and woodlands with open understories and closed monsoon forests. This species inhabits hollowed trees and has a roaming range 150 km – 300km. There is potential this species may be inhabiting the site however this species is a solitary species and a highly mobile species. Therefore, it is unlikely the protect activities that occur in the day would lead to a long-term decrease in the size of an important population.
Reduce the area of occupancy of an important population.	**Unlikely**. Highly mobile and solitary species. It is unlikely the project activities that will be occurring in the day will reduce the area of occupancy of an important population.
Fragment an existing important population into two or more populations.	**Unlikely**. The Masked Owl are predominantly a solitary species. It is unlikely project activities will cause fragment to an existing important population into two or more populations.

Significant Residual Impact Criteria	Masked Owl (*Tyto novaehollandiae kimberli*)
Adversely affect habitat critical to the survival of a species.	**Highly unlikely.** The Masked Owl primarily inhabit eucalypt open forests and woodlands with open understories and closed monsoon forests. These types of forestry are surrounding the project area. The forests surrounding the project are undisturbed and natural bushland, ideal for this species. Therefore it is unlikely the project activities will adversely affect habitat critical to the survival of a species.
Disrupt the breeding cycle of an important population.	**Potential.** The Masked Owl have no breeding season as the breed when conditions are ideal. However Masked Owls have a roaming range of 200 – 300 km and are solitary species therefore, it is unlikely the project will disrupt the breeding cycle of an important population.
Modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	**Highly unlikely.** Highly mobile species. It is unlikely project activities will modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	**Highly unlikely.** Highly mobile species. It is unlikely project activities will result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.
Introduce disease that may cause the species to decline.	**Unlikely**. Highly mobile species. It is unlikely the project activities will introduce disease that may cause the species to decline.
Interfere substantially with the recovery of the species.	**Unlikely**. It is unlikely the project activities will interfere substantially with the recovery of the species.

Table 7 NC Act AoS

Significant Residual Impact Criteria	Palm Cockatoo – Australian *(Probosciger aterrimus macgillivrayi)*
Lead to a long-term decrease in the size of an important population.	**Unlikely**. This species was not detected during site survey however Palm Cockatoos were heard near the site flying over therefore, the site is within roaming range. No Palm Cockatoos were observed onsite, though hollow trees are present for potenial nesting. Vegetation will be cleared with an ecologist / spotter catcher present with aims to identify any potential breeding habitat and avoid area if possible or safely relocate wildlife during clearing process. Therefore, it is unlikely the project will lead to a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population.	**Unlikely**. Highly mobile. It is unlikely the project activities that will be occurring in the day will reduce the extent of occurrence of the species.
Fragment an existing important population into two or more populations.	**Unlikely**. This species is a highly mobile species. It is unlikely project activities will cause fragment to an existing important population into two or more populations.
Adversely affect habitat critical to the survival of a species.	**Unlikely.** Highly mobile species. It is unlikely project activities will result in genetically distinct populations forming as a result of habitat isolation.
Disrupt the breeding cycle of an important population.	**Potenial.** There are singificant hollow trees present onsite which show potential for Palm Cockatoo breeding. Breeding for Palm cockatoos occur August to January. Therefore it is unlikely the project would disrupt the breeding cycle of an important population out of breeding season February to July.
Modify, destroy, remove, or isolate or decrease the availability or quality of habitat	**Unlikely**. Highly mobile species. It is unlikely the project activities will introduce disease that may cause the species to decline.

Significant Residual Impact Criteria	Palm Cockatoo – Australian *(Probosciger aterrimus macgillivrayi)*
to the extent that the species is likely to decline.	
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	**Highly unlikely.** Highly mobile species. It is unlikely project activities will result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.
Introduce disease that may cause the species to decline.	**Unlikely**. Highly mobile species. It is unlikely the project activities will introduce disease that may cause the species to decline.
Interfere substantially with the recovery of the species.	**Unlikely**. It is unlikely the project activities will interfere substantially with the recovery of the species.

Table 8 EPBC Act AoS

Significant Residual Impact Criteria	Cooktown Orchid *(Dendrobium bigibbum)*
Lead to a long-term decrease in the size of an important population.	**Unlikely**. This species was not identified inhabiting the site during site survey. If this speices is identifed inhabiting the site during vegetation removal, habitat will be GPS marked, setioned off, and theatened flora species translocation protocol will be actioned out. Therefore it is unlikely the project will lead to a long-term decrease in the size of an important population.
Reduce the area of occupancy of an important population.	**Unlikely**. This species was not identified inhabiting the site during site survey. If this speices is identifed inhabiting the site during vegetation removal, habitat will be GPS marked, setioned off, and theatened flora species translocation protocol will be actioned out. Therefore it is unlikely the project will l reduce the area of occupancy of an important population.
Fragment an existing important population into two or more populations.	**Unlikely**. If found this species will be relocated therefore the species will thrive and seed disperse within 1 km of found location. It is unlikely project activities will cause fragment to an existing important population into two or more populations.
Adversely affect habitat critical to the survival of a species.	**Unlikely**. If found this species will be relocated therefore the species will thrive and seed disperse within 1 km of found location. It is unlikely project activities will adversely affect habitat critical to the survival of a species.
Disrupt the breeding cycle of an important population.	**Unlikely.** There may be an increase in invasive species due to the project as it involves ground disturbance and modification due to earthworks. However, as weed management protocols would be followed during all works, and this species was not recorded during surveys in the project site, it is anticipated that any impacts would be marginal.
Modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	**Unlikely**. If found this species will be relocated therefore the species will thrive and seed disperse within 1 km of found location. It is unlikely project activities will modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	**Unlikely.** There may be an increase in invasive species due to the project as it involves ground disturbance and modification due to earthworks. However, as weed management protocols would be followed during all works, and this species was not recorded during surveys in the project site, it is anticipated that any impacts would be marginal**.**
Introduce disease that may cause the species to decline.	**Unlikely.** It is unlikely the project activities will introduce disease that may cause species to decline.

Significant Residual Impact Criteria	Cooktown Orchid *(Dendrobium bigibbum)*
Interfere substantially with the recovery of the species.	**Unlikely**. If found this species will be relocated therefore the species will thrive and seed disperse within 1 km of found location. It is unlikely project activities will interfere substantially with the recovery of the species.