



Mission Beach Helipad

Ecological Assessment

October 2022

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Revision History

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4 Elements Consulting

107 Scott Street

Bungalow, QLD 4870

www.4elementsconsulting.com.au

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1.0 Introduction

4 Elements Consulting was commissioned by Gilvear Planning, on behalf of property owner Ray Cronin of Mission Helicopters Pty Ltd, to undertake an ecological assessment on Lots 3 RP732964 Mission Beach Road. A helipad facility is proposed to be constructed on the property. As part of this proposal Mission Helicopters “the client” have outlined a plan to avoid the clearing of any existing native vegetation and provide a buffer planting to riparian vegetation present within the centre of the property.

The ecological assessment below will consider any potential impacts to Matters of National Environmental Significance (MNES) and Matters of State Environmental Significance (MSES) that may potentially occur as a result of the proposal. Recommendations for mitigation will be provided for any potential impacts.

1.1 Site Description

The project site is within the Cassowary Coast Regional Council LGA, located centrally between Wongaling Beach and the township of Mission Beach along the Tully-Mission beach road, the main arterial linking the two population centres (**Figure 1**). The elevational range between within the project site is ~10m asl. The property is ~11 ha in size, which is mostly cleared of remnant vegetation and has been converted to grazing exotic pasture grasses for livestock. An operational raw materials business is located in the north of the property which, although is within the same lot and plan, operates independently from the rest of the property. A second order stream runs through the northern end of the property into Wongaling Creek and is buffered by a narrow riparian corridor (30m width) comprised of remnant vine forest (~0.8 ha).

For the purpose of this report:

- ▶ Lot 3 RP732964 is referred to as the Property (**Figure 1**).
- ▶ Land south of the Raw Materials Supplies is referred to as the Project Site (**Figure 2**).
- ▶ Land within the proposed aviation facility is referred to as the direct impact area (DIA) (**Figure 2**).
- ▶ ~10km of the project site is referred to as the locality; and
- ▶ The Wet Tropics Bioregion is referred to as the region.

1.2 Project Description

The helipad facility is proposed to be established within the central portion of the direct impact area (DIA). Associated infrastructure to service this facility includes a grass helipad (400m²), a hanger (400m²), a single-story office building including storage (621m²), 10 parking spaces, fuel storage and walkways. All infrastructure is to be contained within cleared land that is enclosed by a barbed wire livestock fence, which also excludes the Southern Cassowary from entering. An area of approximately 0.7 ha of grazing paddock directly to the north of Wongaling Creek will be rehabilitated as part of this proposal. Further fencing is proposed on the northern edge of the proposed rehabilitation area. This will direct/concentrate movements of the Southern Cassowary to the west through the Wongaling Creek corridor that is a known crossing location for the Southern Cassowary.

Helicopter operations (take-off and landings) will use a direct eastern flight path from the proposed development to minimise disturbance to residents (**Figure 1**). Once airborne, helicopters will head east over the Coral Sea prior to heading towards intended destinations. Flights over the Djiru, Maria Creek and Japoon National Parks will not occur as a result of activities associated with the proposed development with the flight path over the unnamed reserve designed to be the least impact to local fauna.

The proposed Helipad Facility will provide passenger transport inclusive of island connections from the region's major airports (Cairns and Townsville) to support the local tourism sector. Associated uses including medical transfers, aerial firefighting and search and rescue operations will also be undertaken on an as required basis.

1.3 Proposed Helipad Facility Usage

Two (2) helicopter types have been nominated by the proponent to operate from the proposed aviation facility between the hours of 8am and 6pm.

- ▶ Bell 206L LongRanger with a take-off weight of 1800kg up to 40 movements per day, comprising twenty landings, twenty take-offs and 120 seconds of flat pitch idle per movement. Three helicopter movements in an hour comprising two landings and one take off or one landing and two take-offs. This is estimated to be 180 seconds per flight and 540 seconds (9 minutes) per hour. Total is 120 minutes per day.
- ▶ Robinson R44 with a take-off weight of 1200kg up to 80 movements per day comprising 40 landings, forty take-offs and 120 seconds of flat pitch idle per movement. This includes eight helicopter movements in any one-hour period comprising four landings and four take offs. This is estimated to be 180 seconds per flight and 720 seconds (12 minutes) per hour. Total is 120 minutes per day.

The landing site is to be operated as a one-way pad, with flight path in and out (**Figure 1**). At times when this flight path is unworkable due to poor weather then flights would not operate. An approval for these flights has been granted by the Environment and Planning Court (Judgement 34 of 2021 dated 28 February 2022), with respect to advice provided in Section 3.9 of the Noise Testing Results.

1.4 Study Objectives

The objectives of this assessment were to:

- ▶ Undertake a desktop review and field investigation to identify flora and fauna occurring or considered likely to occur on/or within the project site and direct impact area.
- ▶ Assess the likelihood of the proposed project to have a significant impact on any threatened ecological community, or flora and fauna species or populations listed under Queensland's *Nature Conservation Act 1992* (NCA 1992) and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999).
- ▶ Provide recommendations to reduce impacts to environmental values, sensitive environments, and populations of threatened flora and fauna; and

-
- ▶ identify the necessary approvals and any additional works required to meet ecological statutory requirements.

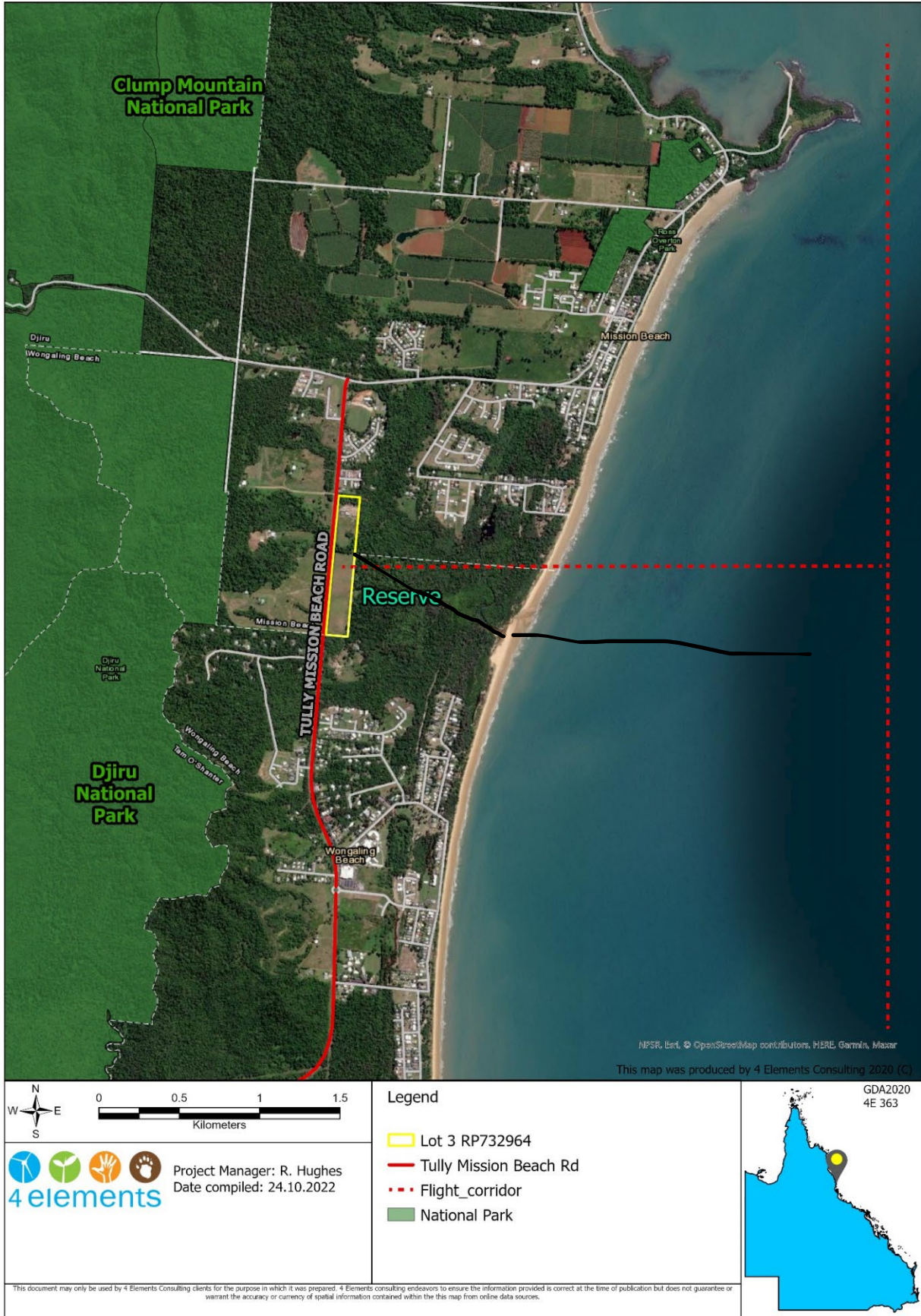


Figure 1. Property Location Context

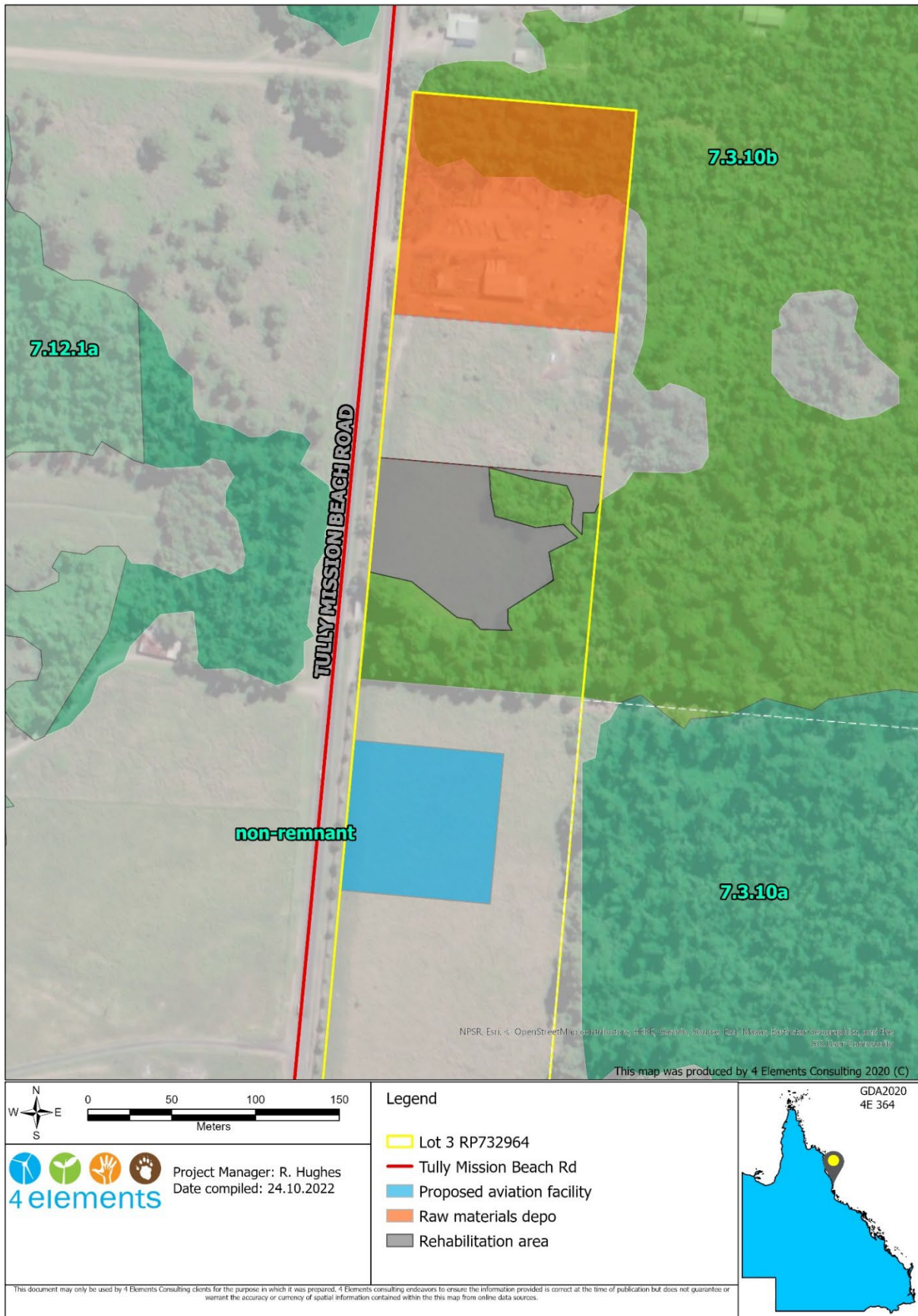


Figure 2. Property and Proposal General Layout and Remnant Vegetation (REDD v12.1)

1.5 Legislative Context

The following legislation, provided in **Table 1**, are relevant to identifying ecological values and to provide guidance for the assessment of potential project impacts and identify environmental constraints to project activities. These legislation and guidance documents have been considered in this report and the reports provided in the Appendices to this report.

Table 1. Statutory Legislation Applied to the Project and Corridors

Legislative Act	Brief Description
Commonwealth Legislation	
<p><i>Environment Protection and Biodiversity Conservation Act 1999</i></p>	<p>The <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) provides a mechanism for assessing the environmental impact of activities and development where "Matters of National Environmental Significance" (NES) may be significantly affected.</p> <p>The Act identifies nine matters of NES, which require consideration and analysis, namely:</p> <ul style="list-style-type: none"> ▶ Ramsar wetland of international importance; ▶ World Heritage properties; ▶ National Heritage places; ▶ Commonwealth Marine areas; ▶ Great Barrier Reef Marine Park; ▶ Nationally listed threatened species and ecological communities; ▶ Nationally listed migratory species; ▶ Nuclear actions (including uranium mining); and ▶ Water resources in relation to coal seam gas and large coal mining development. <p>Where a project or action is believed to potentially cause a significant impact on a matter of NES, it is to be referred to the Australian Government Department of Climate Change, Energy, Environment and Water (DCCEE) for assessment as to whether the action is a 'controlled action' requiring Commonwealth approval for the proposed action. The EPBC Act processes also allow voluntary referral of a project to seek confirmation that a Project will not have significant impacts on matters of NES. Where an action requires Commonwealth approval, a formal assessment process is undertaken in accordance with provisions of relevant legislation.</p>
State Legislation	
<p><i>Vegetation Management Act 1999</i></p>	<p>The <i>Vegetation Management Act 1999</i> (VMA) is the planning initiative underlying regional management of vegetation in Queensland, including clearing of vegetation types, termed Regional Ecosystems (REs).</p> <p>The RE classification is a hierarchical system formed by a three-part code with the primary subdivision being bioregion, followed by land zone, and then vegetation. The biogeographic region or bioregion is the primary level of classification for biodiversity values in Queensland describing where the RE is found on a state-wide basis. Land Zones are geological and geomorphic categories that describe the major geologies and landforms of Queensland.</p>

Legislative Act	Brief Description
	<p>The system is based primarily on geology, with geologic age considered an important determinant. The status of REs is based on their pre-clearing and remnant extent and is gazetted under the act and listed in the RE Description Database (REDD) maintained by the Queensland Department of Environment and Science (DES).</p> <p>The VMA aims to conserve remnant, endangered, and of concern REs, prevent land degradation and further loss of biodiversity, manage the environmental impacts of clearing vegetation and reduce greenhouse emissions. The VMA status of a RE is described in line with the following:</p> <ul style="list-style-type: none"> ▶ Endangered. A RE that is prescribed under the regulation and has either of the following attributes: <ul style="list-style-type: none"> ❖ Less than 10% of its pre-clearing extent remaining; or ❖ From 10% to 30% of its pre-clearing extent remaining and the remnant vegetation remaining is less than 10,000 ha. ▶ Of concern. A RE that is prescribed under the regulation and has either of the following attributes: <ul style="list-style-type: none"> ❖ From 10% to 30% of its pre-clearing extent remaining; or ❖ More than 30% of its pre-clearing extent remaining and the remnant vegetation remaining is less than 10,000 ha; or ▶ Least concern. A RE that is prescribed under the regulation and has more than 30% of its pre-clearing extent remaining and the remnant vegetation remaining is more than 10,000 ha; or ▶ The biodiversity status of a RE is classified by DES based on the condition of remnant vegetation. A RE will have a vegetation management status and/or a biodiversity status of endangered, of concern or least concern; or ▶ Essential Habitat. The VMA also has provision for the regulation of essential habitat for species of state significance. Essential habitat (mapped by DES) is vegetation in which a listed species has been known to occur. Clearing or disturbance to areas of essential habitat will require compensatory habitat measures to be developed. For the project development area, core habitat has been used to describe the combination of critical or essential habitat for both national or state listed significant species.
<p><i>Planning Act 2016</i></p>	<p>The Planning Act (2016) (Qld) establishes the framework for the Queensland planning system. The purpose of the legislation is to establish an efficient and accountable system of land-use planning and development assessment that will lead to ecological sustainability. The Planning Act defines ecological sustainability as a balance between:</p> <ul style="list-style-type: none"> ▶ The protection of ecological processes and natural systems at local, regional, state and national levels; ▶ Economic development; and ▶ The cultural, economic, physical and social wellbeing of Queenslanders. <p>The Planning Regulation (2017) and the State Planning Policy (2017) are to guide local and state government in land use planning and development by defining the Queensland Government policies relating to matters of State interest.</p>

Legislative Act	Brief Description
<p><i>Nature Conservation Act 1999</i></p>	<p>The <i>Nature Conservation Act 1992</i> (NCA) aims to conserve nature through strategies such as dedicating and declaring protected areas for those parts of Queensland with outstanding biological diversity, natural features and wilderness values. The NCA provides for the protection of near threatened, vulnerable and endangered animals and plants.</p> <p><i>Nature Conservation (Wildlife) Regulation 2006.</i></p> <p>In support of the purpose and the provisions of the NCA, the <i>Nature Conservation (Wildlife) Regulation 2006</i> lists all flora and fauna species which are considered to be 'extinct in the wild', 'endangered', 'Vulnerable', 'Near Threatened' and 'Least Concern' wildlife.</p> <p>With respect to clearing activities:</p> <ul style="list-style-type: none"> ▶ The primary purpose of the NC Act is to conserve biodiversity by creating and managing protected areas, managing and protecting native wildlife, and managing the spread of non-native wildlife. Unless authorised, it is an offence under the NC Act to take, keep, use, or move protected flora and fauna for commercial, recreational or other purposes. Where a proposed development will result in such impacts to flora and/or fauna protected under the NC Act, authorisation from DEHP will be required. <p>Under <i>section 332 of the Nature Conservation (Wildlife Management) Regulation 2006</i>, mining operations require an approved Species Management Program (SMP) to undertake any works that will, or potentially will, disturb or interfere with a protected animal breeding place.</p> <p>s332 - Tampering with animal breeding place</p> <p>A person must not, without a reasonable excuse, tamper with an animal breeding place that is being used by a protected animal to incubate or rear the animal's offspring.</p> <p>For subsection (1), an animal breeding place is being used by a protected animal to incubate or rear the animal's offspring if -</p> <ul style="list-style-type: none"> ▶ The animal is preparing, or has prepared, the place for incubating or rearing the animal's offspring; or ▶ The animal is breeding, or is about to breed, and is physically occupying the place; or ▶ The animal and the animal's offspring are physically occupying the place, even if the occupation is only periodical; or ▶ The animal has used the place to incubate or rear the animal's offspring and is of a species generally known to return to the same place to incubate or rear offspring in each breeding season for the animal. <p>Also, subsection (1) does not apply to a person removing or otherwise tampering with the breeding place if -</p> <ul style="list-style-type: none"> ▶ The removal or tampering is part of an approved species management program for animals of the same species; or ▶ The person holds a damage mitigation permit for the animal and the permit authorises the removal or tampering.

Legislative Act	Brief Description
<p><i>Queensland Fisheries Act 1994</i></p>	<p>The <i>Fisheries Act 1994</i> (Fisheries Act) provides for the use, conservation and enhancement of the community's fisheries resources and fish habitat by providing for, amongst other things, the protection of fish habitats.</p> <p>The <i>Fisheries Act</i> has been integrated into the <i>Sustainable Planning Act 2009</i> (SP Act) so that development permits under the SP Act are required for certain operational works that are assessable development under the SP Act.</p> <p>Operation works that are assessable development under the SP Act include waterway barrier works and works in a declared fish habitat.</p>
<p><i>Biosecurity Act (2014)</i></p>	<p>The Queensland Government's <i>Biosecurity Act 2014</i> is administered by the Department of Agriculture and Fisheries (DAF). The Act provides management measures to protect agricultural and tourism industries and the environment from pests, diseases and contaminants. Under the Act, invasive plants and animals are categorised as either a 'Prohibited Matter' or a 'Restricted Matter' and replace the 'Declared' status under the Land Protection (Pest and Stock Route Management) Act 2002 which has been superseded.</p>
<p><i>Environmental Protection Act 1994</i></p>	<p>The <i>Environmental Protection Act 1994</i> (EP Act) provides the key legislative framework for environmental management and protection in Queensland.</p> <p>The EP Act utilises a number of mechanisms to achieve its objectives. Relevant to this project is the requirement for the establishment of a general environmental duty, under Section 319 of the EP Act.</p> <p>Section 319 of the EP Act places a general environmental duty on Mission Helicopters to ensure that 'it does 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'.</p> <p>By undertaking the preparation of this detailed ecological investigation, Mission Helicopters demonstrates that it is cognisant of the responsibilities for environmental protection and management in Queensland.</p>
<p><i>Water Act 2000</i></p>	<p>The purpose of the <i>Water Act 2000</i> is to provide for the sustainable management of water and other resources. Under Section 266 of the <i>Water Act 2000</i>, a riverine protection permit is generally required from the DNRW to:</p> <ul style="list-style-type: none"> ▶ Destroy vegetation in a watercourse; ▶ Excavate in a watercourse; and ▶ Place fill in a watercourse. <p>Additionally, water supply for construction purposes (e.g. access track construction/ compaction, dust suppression etc) may be required. Where this water supply is proposed to be sourced from nearby watercourses, a permit in accordance with Section 237 of the <i>Water Act 2000</i> will be required from DNRW prior to any water being extracted from the watercourse.</p>

1.6 Weed Management Legislation

Weed species can interrupt natural landscape function and may lead to significant economic impacts. Weeds are managed by being declared under on or all the three (3) relevant legislation and or local law outlined below.

1.6.1 Weeds of National Significance

The Australian state and territory governments have compiled a list of invasive plant species based on an assessment process that prioritised these weeds based on their invasiveness, potential for spread and environmental, social and economic impacts. Consideration was also given to their ability to be successfully managed. A list of 20 WoNS was endorsed in 1999 and a further 12 were added in 2012.

1.6.2 Biosecurity Act 2014 (Queensland)

1.6.2.1 *Prohibited Invasive Plant*

Prohibited matter includes a range of invasive plants and invasive animals and other types of pests and diseases listed in the Act. These plants have the potential to have significant impacts and are currently not present or known to be present in Queensland. It is an offence to deal with prohibited matter or fail to report its presence.

1.6.2.2 *Restricted Invasive Plants*

These species are established in Queensland and seriously threaten Queensland's primary industries, natural environment, livestock, human health and people's livelihoods.

Under the *Biosecurity Act 2014*, there are 7 categories of restricted matter (i.e., restricted matter may include matter such as plants, animal diseases, noxious fish, insects, pest animals and weeds).

Restricted invasive plants may fall into 1, a combination of, or all of priority categories 1 to 5 (listed below). Under each, the restricted invasive plant has listed restrictions. The specific restriction requirements also apply to a person when dealing with restricted invasive plants unless they have a restricted matter permit.

Restricted invasive plant categories and restrictions:

- ▶ Category 1: relates to biosecurity matters other than plants.
- ▶ Category 2: the invasive plant must be reported within 24 hours Biosecurity Queensland on 13 25 23.
- ▶ Category 3: the invasive plant must not be distributed either by sale or gift or released into the environment.
- ▶ Category 4: the invasive plant must not be moved.
- ▶ Category 5: the invasive plant must not be kept.

All landowners have a general biosecurity obligation (GBO) under the *Biosecurity Act 2014* to take reasonable and practical steps to minimise the risks associated with invasive plants and animals under their control regardless of its category status. Weeds that are not listed under the *Biosecurity Act 2014* may still be declared at the local government level.

1.6.3 Cassowary Coast Biosecurity Plan (2019-2023)

The Cassowary Coast Regional Council Pest Management Plan has been developed to provide a framework for management of declared and non-declared pest plants and animals in the Cassowary Coast Local Government Area.

The plan also outlines areas of responsibilities for individuals, agencies and organisations involved in pest management. It provides landholders with strategic direction and some simple tools to enable them to set priorities for pest management on their own property.

Under the plan, weed species are allocated a ranking, where weeds with the highest score are given the highest priority for control. The highest score an individual pest plant can receive is 45. This score is based on the listing under national and state legislation, the current distributional extent and potential economic, social and environmental impacts as well as the likelihood of a beneficial control outcome.

The Cassowary Coast Regional Council priority weeds, WoNS and declared weeds *Biosecurity Act 2014* occurring within or near the site are listed in Section 3.3.

2.0 Methodology

2.1 Desktop review Methodology

4 Elements Consulting completed a review of relevant mapping, databases, legislation and associated plans and policies to identify potential matters of ecological significance including species and communities, and other ecological features that may occur on or within proximity planned housing development. This review included an assessment of the following:

- ▶ Wildlife Online database of flora and fauna (DES 2022). This database holds records of plants and animals that have either been sighted or collected within a given radius of the site (a search parameter was prescribed limiting the search area to a 10 km radius around the site). The records held in this database are maintained by DES.
- ▶ Protected Matters database of MNES (DCCEEW 2022). This database applies a range of bio-models to predict the presence of species of flora and fauna and other MNES within a given radius of the site (a search parameter was prescribed limiting the search area to a 10 km radius) as cited under the Commonwealth's EPBC Act.
- ▶ Protected Matters database of MSES (DES, 2022). This database applies a range of bio-models to predict the presence of species of vegetation and other MSES within a given radius of the site (a search parameter was prescribed limiting the search area to 10 km).
- ▶ Review of relevant legislation and associated plans and policies, including but not limited to the QLD NC Act, VM Act, EPBC Act, and the Water Act.
- ▶ Cassowary Coast Regional Council Planning Scheme Environmental Significance Overlay Code Part 8. Identify and protect matters of environmental significance, which include matters of state environmental significance (MSES) as defined under the State Planning Policy 2017 (SPP).
- ▶ Literature review. A range of scientific paper, recovery and conservation plans and other literature were reviewed for a number of related matters (such as targeted threatened species).
- ▶ Digital geological mapping on GeoResGlobe which details surface geology; and
- ▶ Australian Virtual Herbarium (for voucher notes and distribution records of threatened flora species).

2.2 Field Survey Methodology

A field investigation was undertaken over a single day (18 October 2022) by ecologist Ryan Hughes. The entire proposed alignment and an additional ~50m buffer was traversed on foot during this survey. The purpose was to assess the ecological condition of the project site and provide information on the following:

- ▶ Presence of threatened flora and fauna.
- ▶ Presence of invasive weed species and relevant Biosecurity listing.

-
- ▶ Determine the presence of any regulated vegetation (VMA 1999) and/or threatened ecological communities (EPBC Act 1999).
 - ▶ Determine the presence of any mapped waterways and or wetlands.
 - ▶ Assess locations of any locally and regionally significant ecological corridors.

2.3 Habitat Assessment

The proposed alignment traverse included evaluating the area for potential occurrence of threatened flora and fauna species to occur within the target areas. All species are assessed under the *Nature Conservation Act 1992* and the *Environment Protection and Biodiversity Conservation Act 1999*. Recorded features included:

- ▶ Presence/absence of suitable habitat for EVNT species.
- ▶ Condition and disturbance history of habitat.
- ▶ Location of site within known distribution of the species.
- ▶ Connectivity with habitat where species is known to occur.
- ▶ Structural and floristic characteristics of the vegetation.
- ▶ Soil type and structure (visual only).
- ▶ Presence of water in any form e.g., rivers, dams, creeks, drainage lines, soaks.
- ▶ Size and abundance of hollows and coarse woody debris (CWD).
- ▶ Presence of sandbanks, shallow wading areas, rock walls, saltmarsh, roost areas, etc; and
- ▶ presence of mistletoe, nectar, gum, seed, sap sources, browse trees.

3.0 Desktop Analysis Results

3.1 Mapped Vegetation Communities

The site characteristics of mapped vegetation communities on site are detailed in **Table 2** below.

Table 2. Site Values

RE & Biodiversity Status	Description (REDD v 11.1)	Location	Site Value
Wet Tropics Bioregion – Land Zone 3 – Loamy Alluvia			
Re 7.3.10a Of Concern/ Endangered	Mesophyll vine forest. Moderately to poorly-drained alluvial plains, of moderate fertility. Lowlands of the very wet and wet zone. Not a Wetland	Not present within the property. Is mapped along the southeast boundary of the project site. (See Figure 2)	Many areas of this ecosystem are considered refugial in nature and are local centres of endemism. The ecosystem is the habitat for many threatened plant species. Suitable Southern Cassowary habitat. Pre-clear extent = 60 000 ha; 2019 extent = 14 000 ha
RE 7.3.10b Of Concern/ Endangered	Mesophyll vine forest recovering from disturbance, with Acacia spp. canopy or emergent layer. Moderately to poorly-drained alluvial plains, of moderate fertility. Lowlands of the very wet and wet zone. Not a Wetland	Present along riparian corridor along the Wongaling Creek tributary and more extensive towards the east and over Tully Mission Beach Road to the west. (See Figure 2)	Many areas of this ecosystem are considered refugial in nature and are local centres of endemism. The ecosystem is the habitat for many threatened plant species. Suitable Southern Cassowary habitat. Pre-clear extent = 60 000 ha; 2019 extent = 14 000 ha
Wet Tropics Bioregion – Land Zone 12 – Granite and Rhyolite			
RE 7.12.1 Least Concern	Mesophyll to notophyll vine forest. Lowlands and foothills of the very wet and wet rainfall zones. Granite and rhyolite. Not a Wetland	Present within the project site on the southern boundary. (See Figure 2)	The ecosystem is the habitat for many threatened plant species. Suitable Southern Cassowary habitat. Pre-clear extent = 124 000 ha; 2019 extent = 120 000 ha

3.2 Matters of National and State Environmental Significance

Desktop searches for potentially occurring threatened species and habitats were conducted under both the *Environment Protection and Biodiversity Act 1999* (EPBC Act) and the *Nature Conservation Act 1992* (NC Act).

Results from both databases (Protected Matters Search Tool and Wildlife Online Database) are detailed in **Appendix B** and **Appendix C**.

3.3 NC Act Wildlife Online

The Wildlife Online database search tool returned records for 31 NCA listed species. These species comprised three (3) amphibians, nine (9) bird, one (1) insect, three (3) mammal, one (1) reptile and 14 plants. See **Appendix B** for the complete search results.

3.4 EPBC Act Protected Matters Search Tool (Species)

Database searches under the Protected Matters Search Tool (PMST) returned a result of 43 listed threatened species. Due to the location of the property all exclusively marine species (sea turtles, cetaceans, sharks, pelagic birds) were excluded due to a distinct absence of suitable habitat. The refined list of threatened species considered a total of 31 for a potential to occur within the property. This included 11 bird, 1 fish, 1 frog, 11 mammal and 7 plants. **Appendix C** provides the complete search results for the PMST search tool.

An assessment for the potential occurrence of these species on the project site, for both the EPBC and NC threatened species, is provided in **Appendix A**. **Table 3** below provides a summary list for these species and their relevant state and federal legislative listing.

Table 3. PMST (EPBC Act 1999)

Common Name	Scientific Name	Status NC Act	Status EPBC Act
Threatened fauna			
Frogs			
Australian Lace-lid	<i>Litoria dayi</i>	V	V
Common Mistfrog	<i>Litoria rheocola</i>	E	-
Tapping green eyed frog	<i>Litoria serrata</i>	V	-
Reptiles			
Estuarine Crocodile	<i>Crocodylus porosus</i>	V	-
Birds			
Red Knot	<i>Calidris canutus</i>	E	E
Curlew Sandpiper	<i>Calidris ferruginea</i>	CE	E
Great Knot	<i>Calidris tenuirostris</i>	CE	E
Southern Cassowary	<i>Casuaris casuaris johnsonii (Northern)</i>	E	E
Southern Cassowary	<i>Casuaris casuaris johnsonii (Southern)</i>	V	E
Greater Sand Plover	<i>Charadrius leschenaultia</i>	V	V
Macleay's fig-parrot	<i>Cyclopsitta diophthalma macleayana</i>	V	-

Common Name	Scientific Name	Status NC Act	Status EPBC Act
Beach stone-curlew	<i>Esacus magnirostris</i>	V	-
Red Goshawk	<i>Erythrotriorchis radiatus</i>	E	V
Grey Falcon	<i>Falco hypoleucos</i>	-	V
White-throated Needletail	<i>Hirundapus caudacutus</i>	V, Ma, Mi	LC
West Alaskan Bar-tailed Godwit	<i>Limosa lapponica baueri</i>	V	V
Eastern Curlew	<i>Numenius madagascariensis</i>	CE	E
Red-tailed Tropic Bird	<i>Phaethon rubricauda</i>	V	-
Australian Painted Snipe	<i>Rostratula australis</i>	E	V
Masked Owl (northern)	<i>Tyto novaehollandiae kimberli</i>	V	V
Fish			
Opal Cling Goby	<i>Stiphodon semoni</i>	-	CR
Invertebrates			
Apolla Jewel (Wet Tropics Subspecies)	<i>Hypochrysops apollo apolla</i>	V	-
Mammals			
Northern quoll	<i>Dasyurus hallucatus</i>	LC	E
Spotted-tail quoll	<i>Dasyurus maculatus gracilis</i>	E	E
Semon's leaf-nosed bat	<i>Hipposideros semoni</i>	E	V
Black-footed tree rat	<i>Mesembriomys gouldii rattoides</i>	LC	V
Koala	<i>Phascolarctos cinereus</i>	V	V
Mahogany Glider	<i>Petaurus gracilis</i>	E	E
Greater Glider	<i>Petauroides minor</i>	V	V
Spectacled flying-fox	<i>Pteropus conspicillatus</i>	V	V
Large-eared horseshoe bat	<i>Rhinolophus robertsi</i>	V	V
Bare-rumped sheathtail bat	<i>Saccolaimus saccolaimus nudiclunatus</i>	E	V
Coastal Sheathtail	<i>Taphozous australis</i>	NT	-
Water Mouse	<i>Xeromys myoides</i>	V	V
Threatened Flora			
-	<i>Aphyllorchis queenslandica</i>	NT	-
-	<i>Arenga australasica</i>	V	-
-	<i>Buchanania mangoides</i>	V	-
-	<i>Canarium acutifolium</i>	V	V
-	<i>Carex breviscapa</i>	V	-
-	<i>Carronia pedicellata</i>	E	E

Common Name	Scientific Name	Status NC Act	Status EPBC Act
-	<i>Chingia australis</i>	E	E
-	<i>Corybas cerasinus</i>	NT	-
Crystal bells	<i>Didymoplexis pallens</i>	NT	-
-	<i>Dioclea hexandra</i>	V	-
-	<i>Diplazium cordifolium</i>	V	V
-	<i>Habenaria rumphii</i>	NT	-
-	<i>Hedyotis novoguineensis</i>	E	-
Ant plant	<i>Myrmecodia beccarii</i>	V	V
-	<i>Peristylus banfieldii</i>	E	-
Forest swamp orchid	<i>Phaius pictus</i>	V	V
Iron Malletwood	<i>Rhodamnia sessiliflora</i>	E	-
-	<i>Torenia polygonoides</i>	V	-
Velvet jewel orchid	<i>Zeuxine polygonoides</i>	V	V

Key: Ex: extinct, CE/CR: Critically Endangered; E: Endangered; V: Vulnerable; NT: Near Threatened

3.5 EPBC Act and MNES Search tool (Places of Environmental Significance)

Matters of National Environmental Significance (MNES) are matters pursuant to the EPBC Act. The results of the MNES search which provides details on environmentally significant areas and habitat types is provided in **Table 4** below. To conduct this search tool, a 10-kilometre radius buffer was added around a central point on the property. This provides results for all possible MNES matters that are known to occur within 10 km of the property.

Table 4. PMST results (Significant Places)

Category	Result
Matters of National Environmental Significance	
World Heritage Properties	2
National Heritage Places	3
Wetlands of International Importance	None
Great Barrier Reef Marine Park	6
Commonwealth Marine Area	None
Listed Threatened Ecological Communities	3
Listed Threatened Species	44
Listed Migratory Species	56

Category	Result
Other Matters Protected by the EPBC Act	
Commonwealth Land	None
Commonwealth Heritage Places	None
Listed Marine Species	106
Whales and other cetaceans	12
Critical Habitats	None
Commonwealth Reserves Terrestrial	None
Commonwealth Reserves Marine	None
Nationally Important Wetlands	3

3.6 Migratory and Marine Species

A total of 32 migratory and/or marine species (adjusted for the exclusion of species solely dependent on aquatic marine habitats) were identified in the PMST search report. A summarised list of these species is provided in **Table 5** below.

Table 5. Migratory Species

Common name	Scientific name	EPBC Act Status	NCA Act status
Common Noddy	<i>Anous stolidus</i>	Ma	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	Mi, Ma	SLC
Fork-tailed Swift	<i>Apus pacificus</i>	Mi, Ma	SLC
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	Mi, Ma	SLC
Red Knot	<i>Calidris canutus</i>	Mi, E	E
Curlew Sandpiper	<i>Calidris ferruginea</i>	Mi, CE	E
Pectoral Sandpiper	<i>Calidris melanotos</i>	Mi, Ma	SLC
Estuarine Crocodile	<i>Crocodylus porosus</i>	Mi, Ma	V
Oriental Cuckoo	<i>Cuculus opatus</i>	Mi	SLC
Lesser Frigatebird	<i>Fregata ariel</i>	Mi, Ma	SLC
Great Frigatebird	<i>Fregata minor</i>	Mi, Ma	SLC
Swinhoe's Snipe	<i>Gallinago megala</i>	Mi, Ma	SLC
Latham's Snipe	<i>Gallinago hardwickii</i>	Mi, Ma	SLC
Pin-tailed Snipe	<i>Gallinago sternura</i>	Mi, Ma	SLC
White-throated Needletail	<i>Hirundapus caudacutus</i>	V, Ma, Mi	SLC
Bar-tailed Godwit	<i>Limosa lapponica</i>	Mi, V	V
Barn Swallow	<i>Hirundo rustica</i>	Mi	SLC

Black-faced Monarch	<i>Monarcha melanopsis</i>	Mi	SLC
Spectacled Monarch	<i>Monarcha trivirgatus</i>	Mi	SLC
Yellow Wagtail	<i>Motacilla flava</i>	Mi	SLC
Eastern Curlew	<i>Numenius madagascariensis</i>	Mi, CE	E
Little Curlew	<i>Numenius minutus</i>	Mi, Ma	SLC
Whimbrel	<i>Numenius phaeopus</i>	Mi, Ma	SLC
Bridled Tern	<i>Onychoprion anaethetus</i>	Ma	SLC
Rufous Fantail	<i>Rhipidura rufifrons</i>	Mi, Ma	SLC
Osprey	<i>Pandion haliaetus</i>	Mi, Ma	SLC
White-tailed Tropic Bird	<i>Phaethon lepturus</i>	Mi, Ma	SLC
Common Greenshank	<i>Tringa nebularia</i>	Mi, Ma	SLC
Satin Flycatcher	<i>Myiagra cyanoleuca</i>	Mi	SLC
Roseate Tern	<i>Sterna dougallii</i>	Mi	LC
Black-naped Tern	<i>Sterna sumatrana</i>	Ma	LC
Little Tern	<i>Sternula alibifrons</i>	Ma	LC

Key: Mi: Migratory, Ma: Marine, SLC: Special Least Concern

4.0 Field Survey Results

4.1 Vegetation Communities

4.1.1 Wongaling Creek Tributary-Rehabilitation Area

Remnant vegetation was mostly along the water course that runs east through the property (Wongaling Creek) which formed a variable buffer width of between 15m and 30m. This vegetation had been disturbed historically through natural storm processes evident by a highly variable canopy height and relatively small diameter trees (**Plate 1 & 2**).

This vegetation community conformed to the REDD v12.1 Regional Ecosystem 7.3.10a - complex mesophyll vine forest on moderate-poorly drained alluvial soils. A highly diverse closed canopy comprised *Alphitonia petrei*, *Carallia brachiata*, *Elaeocarpus grandis*, *Ficus racemosa* and *Melicope elleryana* to a height of ~18-22m. The dense understory comprised *Myristica insipida*, *Glochidion sumatranum*, *Guioa lasioneura* to a height of ~5-10m. Within this layer the **NC Act (1992) Endangered** understory tree *Rhodamnia sessiliflora* (Iron Malletwood) was commonly recorded. A dense shrub layer comprised *Leea novoguineensis*, *Pandanus solms-laubachii*, *Hornstedtia scottiana* and *Ficus opposita* (1-2m). The ground layer was sparse under the canopy and comprised *Ottochloa* spp., *Oplismenus* spp., *Lomandra hystrix* and *Scleria* spp. The edge of the remnant vegetation was dominated by dense entanglements of native vine species which provided a high level of resilience to non-native plant recruitment into this area as evident by a generally lack of weeds under the canopy. The native vine *Decalobanthus peltatus* was particularly dominant at all layers of the vegetation structure along the sun exposed edges. Weeds such as *Sphagneticola trilobata* (Singapore Daisy) and *Megathyrsus maximus* (Guinea Grass) were dominant immediately outside the canopy of this vegetation and were very only a minor abundance under the canopy.

This vegetation community is listed as **Of Concern** under the *Vegetation Management Act* (1999). This community also conforms to the technical description for the Threatened Ecological Community (TEC) of Tropical Lowland Rainforest of the Wet Tropics listed as **Endangered** under the EPBC Act (1999).

Plate 1. Typical RE 7.3.10a within Wongaling Creek



Plate 2. Typical RE 7.3.10a on upper bank of Wongaling Creek buffer watercourse



4.1.2 Cleared Exotic Pastures- Direct Impact Area

Most of the project site outside of the vegetated Wongaling , including the proposed helipad location, contained exotic pasture species suitable for grazing livestock (**Plate 3**). These areas were providing grazing pasture for livestock or were being regularly slashed to maintain below 1m in height. Dominant species in this community included *Megathyrsus maximus* (Guinea Grass), *Urochloa humidicola* and *Sphagneticola trilobata* (Singapore Daisy).

Plate 3. Exotic Pasture Species Typical of Vegetation Structure Outside of Wongaling Creek (Facing East)



4.2 Threatened Flora – *Rhodamnia Sessiliflora* (Iron Malletwood)

During the field survey a single threatened flora species *Rhodamnia sessiliflora* (Iron Malletwood) was recorded (**Plate 4**). This species is listed as Endangered under the *Nature Conservation Act 1992*. There is no EPBC Act 1999 listing currently for this species.

This species is a wet tropics endemic restricted to the coastal ranges between Rossville and Paluma (AVH 2022). Within this range *Rhodamnia sessiliflora* is widespread occurring on a variety of soil types within the lower structural layer of well-developed vine forest communities between sea level and 1000m asl (Zich et al. 2022). It

is an understory tree within the Myrtaceae family to a height of 10m. It is distinguished by its distinctive three veined leaves which are clothed in dense white hairs when developing (Snow 2007). The bark is red brown in colour and peels off the trunk in long fibrous strips. When flowers are present, they are stalkless (sessile) which is another key distinguishing feature of this species. This species is commonly recorded in naturally disturbed areas within vine forest communities such as along watercourses in near canopy gaps and edges. This species also occurs occasionally within wet sclerophyll forest communities where a well-developed vine forest understory has developed.

Despite being relatively common and widespread within the region, this species is threatened primarily due to the impact of myrtle rust (*Austropuccinia psidii*). This infection is a recent introduction to Australia that impacts a high number of Myrtaceae species within moist forests. Myrtle rust impacts new season growth and flower and fruit material which significantly reduces the ability of plants to grow and reproduce. Most specimens encountered in the field were older plants likely to have been present prior to the arrival of myrtle rust into the bioregion. Flowering, fruiting and recruitment of this species has been uncommonly encountered since the introduction of myrtle rust. As mature plants in a population die, they may not be replaced at a sufficient rate to maintain the population, leading to extinction.

The *Rhodamnia sessiliflora* population were all located along the Wongaling Creek tributary with a total population of ~50 plants (**Figure 3**). The population contained a number of mature specimens of diameters close to 10 cm diameter at breast height (DBH) which is relatively large for this species. Several small plants were observed in the ground layer suggesting potential recruitment within the population. However, due to the suckering nature of this species in response to disturbance through wind and flood impact, it was difficult to determine if these plants had recently germinated or were suckering shoots from the roots of nearby mature plants. Myrtle rust infection was commonly recorded on most plants, however, evidence of impact from infection during the survey was relatively low. Many individuals had examples of new leaf material that had very minor, or no impact recorded (**Plate 4**).

Plate 4. Leaves of *Rhodamnia sessiliflora* on the Project Site with Three-Veined Leaves in Opposite Pairs



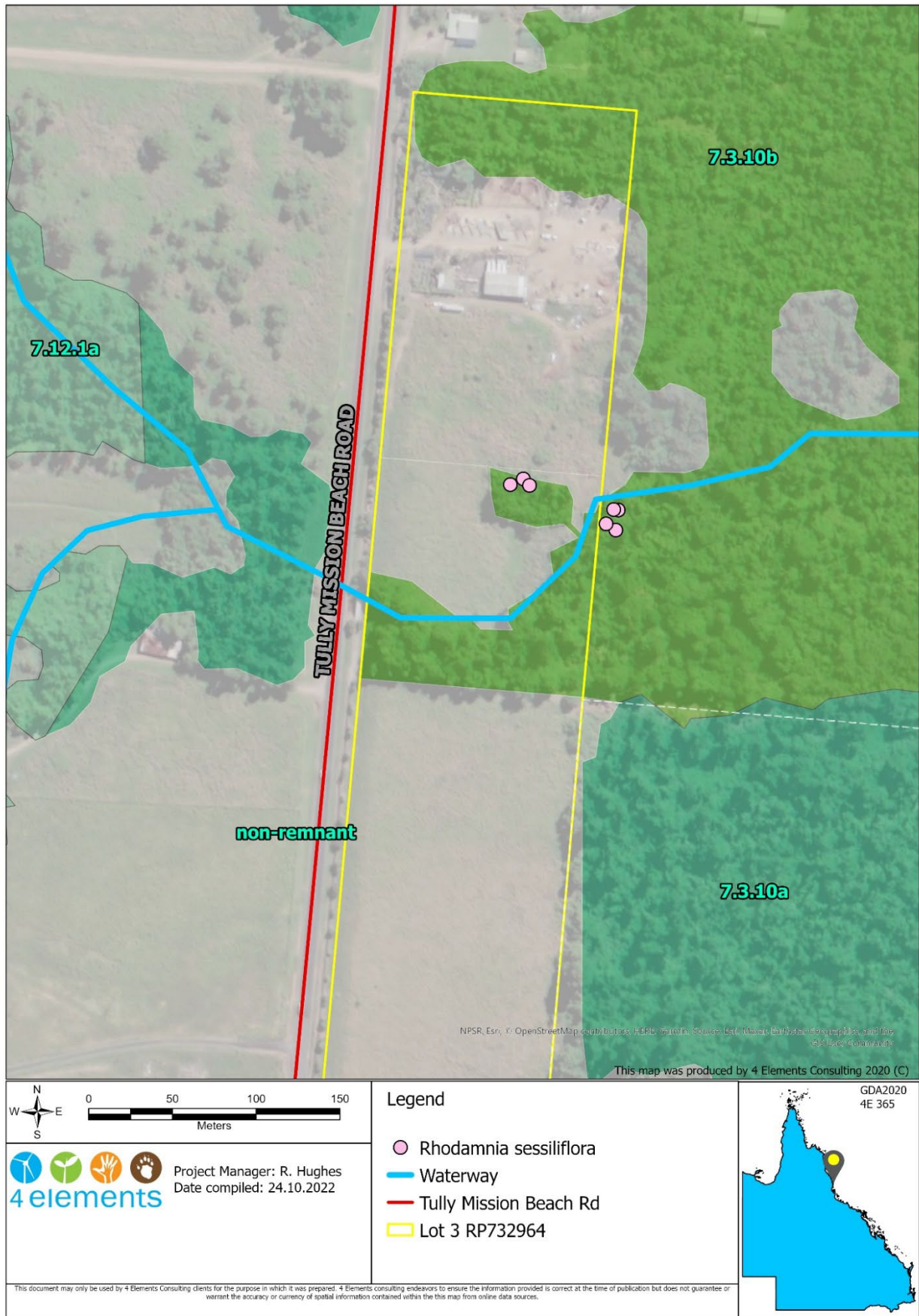


Figure 3. Location of *Rhodamnia sessiliflora* Within the Project Site

4.3 Threatened Fauna

A single (1) threatened fauna was recorded during the field assessment, the Southern Cassowary, listed as Endangered under the EPBC Act (1999) and the NC Act (1992).

4.3.1 *Casuaris casuaris johnsonii* (Southern Cassowary)

Scats confirming presence of this species within the project site were recorded during the field assessment (see **Plate 5**) and numerous records for this species are known to utilise the Wongaling Creek tributary as a corridor to the west into Djiru NP. The corridor is partially interrupted by Tully-Mission Beach Road to the east where the Southern Cassowary must cross the road to move west (see **Plate 6**). All remnant vegetation within the project site and adjacent forested areas conform to high quality Southern Cassowary habitat. It is unknown how many individuals would be reliant on the project site and greater unnamed reserve to the east. Estimates within high quality lowland rainforest habitat suggest 50-100 ha per adult bird is required. Given the size of the reserve to the east (~100 ha), it is likely that a single (1) male would occupy this territory with several other females potentially overlapping this territory. The Mission Beach population is listed under the recovery plan as being one of eight areas considered most at threat by development activity. The Mission Beach population is considered an important population for this species (DCCEEW 2010).

The Southern Cassowary is a member of the ratites, a grouping of large flightless birds that includes other cassowary species in Melanesia. Other related members of the group include the ostriches, emus, rheas and the much smaller Kiwis. The Southern Cassowary occurs within the Wet Tropics and Cape York Bioregion. The Wet Tropics population is located between Townsville and Cooktown which is considered the southern population of the Southern Cassowary. Although it is dependent on dense tropical rainforest communities for foraging and breeding, the usage of other adjacent habitat types including Melaleuca swamps, open Sclerophyll Forests and open paddocks for dispersal between foraging sites is well known (Kutt et al. 2007). Within the Wet Tropics, most individuals are present in the fragmented lowlands with smaller numbers present in the upland forests (Garnett and Kutt 2007, Westcott et al. 2014).

Southern Cassowaries feed on large fleshy rainforest fruits of rainforest trees from a highly diverse range of plant species. Foraging occurs particularly from species within the plant families Apocynaceae, Sapindaceae, Elaeocarpaceae, Lauraceae, Moraceae and Myrtaceae. As individual species vary in fruiting times, the Southern Cassowary needs large areas of suitable habitat that contain high diversity of plant species for foraging. The diet of the Southern Cassowary can also include that of carrion and small vertebrates (Mack & Druliner 2003). Cassowaries require daily access to permanent fresh water for drinking and bathing.

The Southern Cassowary is largely a solitary bird exhibiting high territorial aggression to other individuals (Latch 2007). Males will exclude other males from their territories whilst females will generally overlap the range of a number of male territories. Home ranges vary depending on the seasonal availability of resources between 50ha to 200ha (Latch 2007). Females lay eggs in dense rainforest vegetation between the dry cooler months (June –

October) with eggs then incubated by the male for approximately 50 days. The male then raises the hatchlings for a further year until they reach sub-adult development at which time the young birds must disperse through the landscape into other suitable habitats. The level of mortality of these individuals during dispersal is expected to be higher given they may need to increase use of urban areas in fragmented landscapes.

A key mode of reducing conflicts between highly aggressive birds and maintaining territorial boundaries is to vocalise over long distances through dense vegetation (Mack & Jones 2003). This is achieved through a low frequency booming call which has low degradation and attenuation over large distances in dense vegetation (Perez and Schuchmann 2020, Mack & Jones 2003). This low frequency vocalisation is beneficial for long range communication considering that the Southern Cassowary population occurs at low density and is widely distributed throughout the region.

The impact of human noise in urban environments is an emerging area of research that has mostly focused on small-bodied songbirds (Hu et al. 2009, Moseley et al 2018). Birds vocalise for several critical functions which include warning others of threats, defending territories and advertising during mating (Moseley et al 2018). Noise in urban areas can reduce the ability of birds to effectively communicate in artificially noisy environments which can lead to the exclusion of some species that have lower vocalisation. Vehicle traffic is typically of a lower frequency and so songbirds with a higher vocal frequency are better able to communicate above these sounds in urban areas (Moseley et al. 2018). The call of the Southern Cassowary is considered to be within the infrasound range below typical human hearing with frequencies around 20kHz (Jacob-Hoff et al 2019).

The significant impact guidelines for the Southern Cassowary (DCCEEW 2010) and the recovery plan for the Southern Cassowary (Latch 2007) list habitat clearing as the key threat to the species. This leads to indirect impacts which include fragmentation, habitat degradation through weed incursion, increased interactions between dogs, humans and vehicles, increased disease and increase cyclone impacts. Additionally, there is potential for elevated noise to mask the ability of the Southern Cassowary to vocalise which would impact their ability to communicate with other individuals and possibly avoid habitat where this becomes difficult. There is, however, very limited research on impacts of noise on the Southern Cassowary. Anecdotal evidence exists of the species occurring within noisy urban environments alongside traffic noise and urban activities in the Mission Beach area. With this in mind, it is difficult to determine if intermittent helicopter noise would impact the Southern Cassowary population that is present under the proposed flight path. If it can be determined that the Southern Cassowary would continue to utilise the project site whilst helicopter movements are present, then it is unlikely that a significant impact to this TEC could be justified.

Plate 5. Scat of Southern Cassowary Recorded Immediately to the East of the Proposed Rehabilitation Area



Plate 6. Edge of Wongaling Creek Tributary Looking West to Tully-Mission Beach Road



Plate 7. Wongaling Creek Tributary Looking East from Tully-Mission Beach Road





Figure 4. Location of Southern Cassowary Habitat Within the Project Site and Locality

4.3.2 Habitat attributes

The below **Table 6** outlines the habitat features present within both the project site and the direct impact area (proposed aviation facility). This information was collected during the field assessment and is used to determine the potential occurrence assessment (**Appendix A**) for each threatened species known to occur within the locality.

Table 6. Habitat Attributes Present on the Project Site and Direct Impact Area

Habitat Type	Property Area	Potential Value for Threatened Species
Connectivity	<p>Project site</p> <p>Maintains high connectivity with the surrounding vegetation communities to the east with partial connectivity which is broken by Tully Mission Beach Road which connects through to extensive remnant vine forest within Djiru NP (see Plate 7).</p>	<p>Project site</p> <p>Represents a minor portion of larger foraging ranges for most species occurring or potentially occurring within the project site. Project site represents generic habitat for threatened species EPBC/ NCA Endangered Southern Cassowary, Spectacled Flying Fox, and NC Act Vulnerable Macleay's Fig Parrot.</p>
	<p>Direct Impact Area</p> <p>The proposed aviation facility has no potential for use in connectivity for the Southern Cassowary given it is fenced on all side to prevent access.</p>	<p>Direct Impact Area</p> <p>No value to the Southern Cassowary. Flying fauna such as the Spectacled Flying Fox and Vulnerable Macleay's Fig Parrot will be able to disperse as a flyover as a result of the proposal.</p>
Ground Cover	<p>Project site</p> <p>Ground cover was present throughout the remnant vegetation present along Wongaling Creek tributary. This was in the form of patches of dense sedge and young Pandanus plants.</p>	<p>Project site</p> <p>Generic ground layer habitat was present across the property. May provide generic habitat for a range of common ground dwelling small mammals, amphibians and reptiles. Suitable for movement of the Southern Cassowary. May provide habitat for <i>Litoria serrata</i>, <i>Litoria rheocola</i></p>
	<p>Direct Impact Area</p> <p>The proposed aviation facility is comprised mostly of Guinea Grass pasture and is regularly slashed to below 10cm in height.</p>	<p>Direct Impact Area</p> <p>Although ground cover is very high in this area, the lack of structural diversity would exclude most threatened fauna that could potentially occur within the region.</p>

Habitat Type	Property Area	Potential Value for Threatened Species
Leaf Litter	<p>Project site</p> <p>Leaf litter was relatively minor along the Wongaling Creek tributary given that the site is regularly inundated after rainfall which would remove accumulation for much of the year.</p>	<p>Project site</p> <p>Minimal structural refuge and foraging habitat for a range of common birds, mammals, amphibians and reptiles. The remnant vegetation may provide habitat for <i>Litoria serrata</i>, <i>Litoria rheocola</i>.</p>
	<p>Direct Impact Area</p> <p>A general lack a canopy vegetation within the slashed paddock prevents the accumulation of leaf litter.</p>	<p>Direct Impact Area</p> <p>A general lack of structural diversity in this area would exclude most threatened fauna species from utilization.</p>
Coarse Woody Debris	<p>Project site</p> <p>Present on site throughout, however most debris are small and not hollow bearing. Some larger logs up to 20 cm were recorded within the Wongaling Creek Tributary to the west of the property.</p>	<p>Project site</p> <p>Moderate value. Generic habitat feature. May provide denning and foraging cover for a range of species, particularly small mammals (rodents and microbats) and reptiles. May provide habitat complexity for <i>Litoria serrata</i>, <i>Litoria rheocola</i></p>
	<p>Direct Impact Area</p> <p>A general lack a canopy vegetation within the slashed paddock prevents the accumulation of coarse woody debris.</p>	<p>Direct Impact Area</p> <p>No value.</p>
Tree Hollows	<p>Project site</p> <p>Limited presence of tree hollows given the site appears to be recovering from cyclone Yasi damage approximately 2012. No large diameter old growth trees recorded along Wongaling Creek tributary.</p>	<p>Project site</p> <p>Minimal value on the project site, given the lack of large diameter trees. No arboreal hollows were observed during the site survey. The project site provides limited refuge for obligate hollow denning species.</p>
	<p>Direct Impact Area</p> <p>No trees hollow is present</p>	<p>Direct Impact Area</p> <p>No value</p>
Shrub layer containing Melaleuca, Acacia, Banksia, Xanthorrhoea species	<p>Project site</p> <p>No sclerophyll element to support these species was present. All areas of vegetation dominated by rainforest vegetation</p>	<p>Project site</p> <p>No value</p>

Habitat Type	Property Area	Potential Value for Threatened Species
	Direct Impact Area Not present	Direct Impact Area No value
Sap and Gum Sources	Project site Limited to <i>Acacia</i> spp.	Project site Moderate. Limited numbers of these trees present on site. Rainforest incursion limiting the regrowth of open forest species for sap and gum sources.
	Direct Impact Area Not present	Direct Impact Area No value
Koala browse trees	Project site No sclerophyll element to support these species was present. All areas of vegetation dominated by rainforest vegetation	Project site As a result, the project site is not considered likely to be suitable habitat for koala. No proximate records exist.
	Direct Impact Area Not present	Direct Impact Area No value
Fleshy fruiting species including <i>Ficus</i> spp.	Project site Recorded occasionally in the understorey i.e., <i>Ficus racemosa</i> , <i>F. virens</i> and <i>F. opposita</i> were commonly encountered in the understory with occasional canopy specimens of <i>F. congesta</i> present. <i>Ficus</i> spp. did not dominate the vegetation structure.	Project site <i>Ficus</i> spp. were commonly encountered. Would provide suitable food resource for the Spectacled Flying-fox, Macleay's Fig Parrot and the Southern Cassowary.
	Direct Impact Area Exclusion of a canopy and shrub layer does not permit this resource to form	Direct Impact Area No value

Habitat Type	Property Area	Potential Value for Threatened Species
Small-bodied bird habitat	Project Site Dense stands of emerging rainforest trees, <i>Calamus spp.</i> vine thickets were commonly present.	Project Site Generic small-bodied bird habitat is found throughout the project site in vegetated areas. A variety of vegetation structure and diverse floristic composition would provide habitat to a wide range of foraging and refugial habitat.
	Direct Impact Area Exclusion of a canopy and shrub layer does not permit this resource to form	Direct Impact Area No value
Rock Outcrops	None present	None
Water bodies	Project Site Wongaling Creek Tributary (Second order stream) is located through the remnant vegetation within the rehabilitation area. Late dry season survey recorded large pools of fresh water.	Project Site Suitable as a permanent water source for daily use by the Southern Cassowary.
	Direct Impact Area Not present	Direct Impact Area No value

4.4 Invasive Weeds

Of the 19 species encountered during the survey, all were encountered on the outer edge of remnant vegetation and within the slashed paddocks throughout the project site. All areas under a developed native canopy were relatively free of weeds.

A single Weeds of National Significance (WoNS) (*Lantana camara*) was recorded adjacent remnant vegetation in the north of Wongaling Creek Tributary. This was a common but minor occurrence and did not dominate any area.

No prohibited invasive weeds listed under the *Biosecurity Act 2014* were recorded during the survey.

A single restricted invasive weed (*Lantana camara*) was recorded during the survey.

5.0 Identification of Impacts

The proposed works are to construct a new aviation facility Mission Beach. This proposal will not require the removal of vegetation and proposes to establish an additional 0.7ha of RE 7.3.10. The proposal will however create additional noise to the project site which may have the potential to impact fauna within the project site and under the proposed flight path. The direct and indirect impacts of this proposal are provided in the below **Table 7** and **Table 8**.

Table 7. Direct impacts of the Proposal

Threat	Potential Impact	Project Site Mitigation
Direct Removal of Remnant Vegetation	The proposal does not require the removal of any remnant of regrowth vegetation. It is proposed that additional native vegetation will be established representative of RE 7.3.10 as a buffer to the current Wongaling Creek tributary.	The project will see an increase in remnant vegetation cover as a result of the proposal and this vegetation will be comprised of species within the adjacent remnant vegetation community RE 7.3.10 (see Figure 2). No mitigation proposed.
Direct mortality via clearing works	The proposal does not require the removal of any remnant of regrowth vegetation.	No mitigation proposed.

Table 8. Indirect Impacts of the Proposal

Threat	Potential Impact	Project site Mitigation
Weed Invasion	Disturbance of soil provides the opportunity for weed invasion. Weeds may also be transported to the site from vehicle, people (e.g., on clothing) and potentially via introduced fill material for civil works.	There is the potential for weed propagules to be introduced on vehicles and earthmoving equipment. Exposed soil from earthworks will also be prone to weed invasion. Measures to reduce new weed introductions and further spread on site should be undertaken during the construction phase works. A lack of disturbance to any existing remnant vegetation on the property is a low risk of weed invasion as a result of the proposal.
Noise and Vibration	Noise effects on fauna in Australia are relatively poorly studied. Most evidence	The current allowable usage of the site is for up to 80 individual helicopter

	<p>presented is anecdotal, but suggests most fauna have at least a fair degree of tolerance and adaptation at least to residential noise depending on species, situation, habitat/lifecycle stage affected, habitat significance, etc.</p>	<p>movements per day between the hours of 8am to 6pm with maximum of 10 movements per hour. Noise impacts have been measured for impacts on nearby residential receptors. It is not clear as to whether this may reduce the Southern Cassowary usage of the surrounding habitat. As impacts of this nature are poorly understood it is proposed that mitigation focus on monitoring of Southern Cassowary usage of the project site and unnamed reserve. Then trial helicopter movements on a reduced schedule. If no significant changes in usage are determined, then greater helicopter movements can be justified.</p>
<p>Edge and Fragmentation Affects</p>	<p>The fragmentation and/or isolation of currently intact vegetation via partial/mosaic clearing and establishment of building envelopes and roads can lead to edge effects. Ingress of weeds into areas not previously found. Alterations to microclimate i.e., drying, altered humidity levels, increases light penetration. Increased exposure to wind.</p>	<p>The project will see an increase in remnant vegetation cover as a result of the proposal (see Figure 2).</p> <p>No mitigation proposed.</p>
<p>Pollution</p>	<p>Pollution or contamination of aquatic ecosystems through spillage of or inappropriate usage of petrochemicals, fertilisers and herbicides. These chemicals generally reach adjacent habitats via contaminated runoff, groundwater, sedimentation and erosion.</p> <p>Erosion and sedimentation and eutrophication impacts may occur during the construction phase.</p> <p>The proposed aviation facility occurs within an area of High Ecological Significance Wetland. Without adequate controls,</p>	<p>Risk of pollution of aquatic ecosystems in the study area is reduced if care is taken when refuelling machinery associated with the works. Refuelling must not occur in proximity to water ways or drainage areas.</p>

	degradation of this wetland community may be a significant impact within the project site.	
Altered Hydrological Regimes	Alterations to topography, vegetative cover can increase water shedding rates, concentrate runoff, and affect flood peaks. Soil compaction and construction of hard surfaces can also influence these factors, plus reduce infiltration, which can adversely impact plant growth, aquifer recharge and wetland regimes.	The proposed aviation facility is located within a flat slashed paddock and well outside any potential waterway buffers on state or local government mapping.
Erosion and Sedimentation	Sedimentation and erosion impacts can occur both during the construction and establishment phases. Erosion and sedimentation may occur via fill material and disturbed soils, scouring of exposed soil, earthen banks and habitats adjacent to the development area via stormwater flow.	Implementation of an erosion and sediment control plan will be required prior to commencement of works.

6.0 Significant Impact Assessment

6.1 Matters of National Environmental Significance (MNES) continued

The following table details the guidelines to which a certain application may have a significant impact on a sensitive environmental matter pursuant under the EPBC Act. **Table 9** below details the impact the current project may have for places of national environmental significance. The PMST search tool identified three (3) Threatened Ecological Community (TEC) that may potentially occur on the study. These TECs include:

- ▶ Broad-leaved Tea-tree (*Melaleuca viridiflora*) woodlands in high rainfall coastal north Queensland.
- ▶ Littoral Rainforest and Coastal Vine Thickets of Eastern Australia, and
- ▶ Tropical Lowland Rainforest of the Wet Tropics.

Tropical lowland rainforest of the wet tropics was present within the project site and in the adjacent reserve to the east. As this proposal require no vegetation clearance and will result in a further 0.7 ha of revegetation along Wongaling Creek there is no risk of a significant impact to this TEC.

Table 9. Matters of National Environmental Significance (MNES)

Matters of National Environmental Significance	Triggers
Listed Threatened Ecological Communities	
<p>An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:</p> <ul style="list-style-type: none"> ▶ reduce the extent of an ecological community ▶ fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines ▶ adversely affect habitat critical to the survival of an ecological community ▶ modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns ▶ cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting ▶ cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to: 	<p>Three (3) threatened Ecological Community are considered a potential occurrence under the EPBC act 1999:</p> <p>Broad leaf tea-tree (<i>Melaleuca viridiflora</i>) woodlands in high rainfall coast north Queensland.</p> <p>Littoral Rainforest and Coastal Vine Thickets of Eastern Australia.</p> <p>Tropical Lowland Rainforest of the Wet Tropics</p> <p>The project site does contain the TEC Tropical Lowland Rainforest of the Wet Tropics. No portion of this system is to be cleared as a result of the proposal.</p> <p>As the Southern Cassowary is a keystone species to this community, impacts to the Southern Cassowary population has the potential to impact this TEC.</p>

Matters of National Environmental Significance	Triggers
<ul style="list-style-type: none"> ❖ assisting invasive species, that are harmful to the listed ecological community, to become established, or ❖ causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community, or ❖ interfere with the recovery of an ecological community. 	
World Heritage Property/National Heritage Places	
<p>An action is likely to have a significant impact on natural heritage values of a World Heritage property if there is a real chance or possibility that the action will:</p> <p>Values associated with geology or landscape</p> <ul style="list-style-type: none"> ▶ damage, modify, alter or obscure important geological formations in a World Heritage property ▶ damage, modify, alter or obscure landforms or landscape features, for example, by excavation or infilling of the land surface in a World Heritage property ▶ modify, alter or inhibit landscape processes, for example, by accelerating or increasing susceptibility to erosion, or stabilising mobile landforms, such as sand dunes, in a World Heritage property ▶ divert, impound or channelise a river, wetland or other water body in a World Heritage property, and ▶ substantially increase concentrations of suspended sediment, nutrients, heavy metals, hydrocarbons, or other pollutants or substances in a river, wetland or water body in a World Heritage property. <p>Biological and ecological values</p> <ul style="list-style-type: none"> ▶ reduce the diversity or modify the composition of plant and animal species in all or part of a World Heritage property ▶ fragment, isolate or substantially damage habitat important for the conservation of biological diversity in a World Heritage property ▶ cause a long-term reduction in rare, endemic or unique plant or animal populations or species in a World Heritage property, and 	<p>Wet Tropics of Queensland</p> <p>This project site does not intersect or contain an environmental area within the Wet Tropics Great Barrier Reef Marine Park World heritage area.</p> <p>No significant impact</p>

Matters of National Environmental Significance	Triggers
<ul style="list-style-type: none"> ▶ fragment, isolate or substantially damage habitat for rare, endemic or unique animal populations or species in a World Heritage property. 	
National Heritage Places	
<p>An action is likely to have a significant impact on the National Heritage values of a National Heritage place if there is a real chance or possibility that it will cause:</p> <ul style="list-style-type: none"> ▶ one or more of the National Heritage values to be lost ▶ one or more of the National Heritage values to be degraded or damaged, or ▶ one or more of the National Heritage values to be notably altered, modified, obscured or diminished. 	<p>Wet Tropics of Queensland</p> <p>Wet Tropics World Heritage Area (Indigenous Values) are not present on the property.</p> <p>Great Barrier Reef</p> <p>Great Barrier Reef World Heritage Area (Indigenous Values) are not present on the property.</p> <p>National heritage places are not present on the property.</p> <p>No significant impact</p>

6.2 Significant Impact Assessment for MNES

Individual significant impacts assessments (SIA) have been conducted on those species identified as potentially at risk of impact from the development (see **Table 9**).

6.2.1 Threatened Species

The Department of Climate Change, Energy, Environmental and Water (DCCEEW) notes an action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:

- ▶ lead to a long-term decrease in the size of a population,
- ▶ reduce the area of occupancy of the species,
- ▶ fragment an existing population into two or more populations,
- ▶ adversely affect habitat critical to the survival of a species,
- ▶ disrupt the breeding cycle of a population,
- ▶ modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline,
- ▶ result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat,
- ▶ introduce disease that may cause the species to decline, or
- ▶ interfere with the recovery of the species.

Individual impact assessments were conducted on EPBC listed species considered to have a moderate likelihood or confirmed presence on site. These potentially occurring species are:

- ▶ Southern Cassowary - Endangered
- ▶ Spectacled Flying Fox - Endangered
- ▶ White-throated Needletail - Vulnerable

A significant Impact Assessment for each of the three (3) above species is provided in **Table 10** below.

Table 10. Significant Impact Assessment for EPBC Listed Threatened Species Present or Potentially Occurring within the Project Site

An action is likely to have a significant impact on an Endangered species if there is a real chance or possibility that it will:									
Lead to a long term decrease in the size of a population;	Reduce the area of occupancy of the species;	Fragment an existing population into two or more populations;	Adversely affect habitat critical to the survival of a species;	Disrupt the breeding cycle of a population;	Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	Introduce disease that may cause the species to decline, or	interfere with the recovery of the species.	
Fauna									
<p>Southern Cassowary (<i>Casuarius casuarius johnsonii</i>) (Endangered)</p>	<p>The project site is known to contain Southern Cassowary habitat. Much of the project site is cleared pasture suitable only for dispersal. No access to the proposed aviation facility is present due to exclusion fencing. The most suitable habitat is located along Wongaling Creek tributary and to the east. An additional ~0.70ha of suitable Southern Cassowary habitat will be planted as a result of the proposal. There is limited evidence as to whether noise impacts associated with helicopter movements would impact usage of suitable habitats on the property. Reduction in usage of suitable habitat could potentially lead to a decrease in the size of a population.</p>	<p>The avoidance of all remnant vegetation and revegetation works proposed along Wongaling Creek tributary would increase available habitat and increase effectiveness of the east-west corridor for the species. The impact of noise as a result of helicopter movements is unknown. There is a possibility that noise impact could reduce the usage of suitable habitat. However this is poorly understood. If this occurred, it would reduce the area of occupancy of the species.</p>	<p>The Southern Cassowary is highly mobile within partly fragmented landscapes. It is unlikely that helicopter movements could sever connectivity between areas of suitable habitat.</p>	<p>The proposal will see an increase suitable habitat for the Southern Cassowary through revegetation. However, it is unknown as to what impacts helicopter movements will have on the ability of the Southern Cassowary to utilise these and surrounding suitable habitats.</p>	<p>The potential for disrupting Southern Cassowary breeding cannot be excluded based on current knowledge of this species. There is a concern that the characteristic low frequency calls of this species needed for communication in finding mates may be interrupted by noise resultant from helicopter movements.</p>	<p>The avoidance of all remnant vegetation and revegetation works proposed along Wongaling Creek tributary would increase available habitat and increase effectiveness of the east-west corridor for the species. The impact of noise as a result of helicopter movements is unknown. There is a possibility that noise impact could reduce the usage of suitable habitat. If this occurred, it would reduce the area of occupancy of the species.</p>	<p>Proposed works will not likely result in the introduction of invasive species to potential habitat. No clearing is proposed and revegetation will see an increase in buffer to the remnant vegetation on the project site which will see increase resilience to weed incursion as a result.</p>	<p>There are no infectious diseases of Southern Cassowary that are currently known to result in high levels of mortality that could be inflicted during these works. It is thus unlikely that the proposed works will facilitate the spread of any diseases to the detriment of this species.</p>	<p>It is not clear as to what impacts would arise as a result of noise impacts associated within the proposal.</p>

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

	Lead to a long term decrease in the size of a population;	Reduce the area of occupancy of the species;	Fragment an existing population into two or more populations;	Adversely affect habitat critical to the survival of a species;	Disrupt the breeding cycle of a population;	Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	Introduce disease that may cause the species to decline, or	interfere with the recovery of the species.
Spectacled Flying-fox (Endangered)	Generic foraging habitat for this species is found on the project site. As such, it is unlikely that proposed works will significantly cause a decrease in this species population. Helicopter movements will be during the day when this species is not likely to be utilising the project site for foraging.	No colonies are present within the project site. Marginal feeding habitat is present and at most would represent a minor portion of a much larger foraging area.	Unlikely. This species is highly mobile in fragmented landscapes and the removal of this habitat will not restrict dispersal across the landscape.	Habitat modification for proposed works will not be of a large enough extent to isolate populations. This species would still freely move between remaining suitable habitat	It is not expected that the edge affected vegetation present within the direct clearing alignment will be utilised currently as breeding habitat. Therefore, it is not expected that the proposal would result in a disruption to the breeding cycle of the Spectacled Flying Fox.	The lack of breeding habitat on site coupled no vegetation clearance and revegetation proposed it is unlikely to impact habitat to a level that results in the species decline.	Proposed works will not likely result in the introduction of invasive species to potential habitat.	There are no infectious diseases of Spectacled Flying-fox that are currently known to result in high levels of mortality that could be inflicted during these works. It is thus unlikely that the proposed works will facilitate the spread of any diseases to the detriment of this species.	The proposed works are unlikely to interfere with the recovery of the species as the Spectacled Flying Fox will be able to continue local movements throughout the region. No breeding habitat is expected to be impacted as a result of the proposal.
White-throated Needletail (Vulnerable)	A minimal amount of habitat for this species is found on site. As such, it is unlikely that proposed works will significantly cause a decrease in this species population.	Breeding habitat is not present within the project site. Marginal feeding habitat is present and at most would represent or minor portion of a much larger foraging area.	Unlikely. This species is highly mobile in fragmented landscapes and the removal of this habitat will not restrict dispersal across the landscape.	Habitat modification for proposed works will not be of a large enough extent to isolate populations. This species would still freely move between remaining suitable habitat.	This species is not known to breed within the mainland of Australia and therefore the proposal is not likely to disrupt the breeding cycle of an important population.	The lack of breeding habitat on site coupled with the vegetation clearance having a very minor impact on foraging potential throughout the region is unlikely to impact habitat to a level that results in the species decline	Proposed works will not likely result in the introduction of invasive species to potential habitat.	There are no infectious diseases of White-throated Needletail that are currently known to result in high levels of mortality that could be inflicted during these works. It is thus unlikely that the proposed works will facilitate the spread of any diseases to the detriment of this species.	Given that the removal of a minute portion of potential feeding habitat will be removed, it is considered unlikely to interfere with the recovery of the species.

Marginal generic suitable habitat is present on the project site for the Spectacled Flying Fox (Endangered) and the White Throated Needletail (Vulnerable). Both of these fauna species may use the site as infrequent visitors for foraging; however, the proposed footprint of the site represents a very minor portion of a larger foraging range for these species. A significant impact under the *EPBC Act (1999)* is unlikely for these species.

The Southern Cassowary was recorded within the project site during the site survey via scats near the Wongaling Creek tributary and the project site is known to be utilised by the Southern Cassowary. All remnant vegetation within the project site and all surrounding remnant vegetation conforms to the categorisation of Southern Cassowary habitat. The *EPBC Act (1999)* Significant Impact Guidelines for the Southern Cassowary do not indicate that noise impacts constitute a significant impact under the *EPBC Act (1999)*. Given that Southern Cassowaries vocalise at very low frequencies, their ability to communicate is vulnerable to external noise impacts. A general lack of research on noise impacts to the Southern Cassowary does not permit a conclusive decision on potential for impacts.

As a result of what is currently known regarding noise impacts to the Southern Cassowary, a referral of the project to the Department of Climate Change, Energy, Environment and Water is a requirement for this matter.

6.2.2 Threatened Ecological Communities

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

- ▶ reduce the extent of an ecological community
- ▶ fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines
- ▶ adversely affect habitat critical to the survival of an ecological community
- ▶ modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns
- ▶ cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting
- ▶ cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:
 - assisting invasive species, that are harmful to the listed ecological community, to become established,

or

-
- causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community, or
 - ▶ interfere with the recovery of an ecological community.

6.2.2.1 *Tropical Lowland Rainforest of the Wet Tropics Impact Assessment*

This section addresses each of the previous points listed related to the potential to impact the TEC Tropical Lowland Rainforest of the Wet Tropics.

- ▶ **Reduce the extent of an ecological community.**

The proposal does not require the removal of any Tropical Lowland Rainforest TEC. The proposal seeks to include a provision of planting an additional 0.7ha of native vegetation to increase the TEC cover within the property.

- ▶ **Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines.**

The proposed subdivision will not fragment the Lowland Rainforest TEC on site.

- ▶ **Adversely affect habitat critical to the survival of an ecological community.**

The proposal does not affect any habitat critical to the survival of the TEC. A VMP will see management of proposed planting areas to inform weed control and proper establishment of this vegetation as a result of the proposal.

- ▶ **Modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns.**

The proposal has limited ability to impact ground water and surface runoff. Mitigation measures required to manage runoff and pollutants would significantly reduce the risk of any adverse impacts.

- ▶ **Cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting.**

The Southern Cassowary is a keystone species that provides seed dispersal to this TEC which facilitates structure and diversity of the community. The Southern Cassowary was recorded within the project site and is known to occur within the project site and adjacent suitable habitats. Due to limited research on potential noise impacts to the Southern Cassowary it is not clear to what level the proposal could reduce Southern Cassowary usage of the project site and surrounding suitable habitats by providing a barrier to their activity. If it can be determined that the Southern Cassowary would continue to utilise the project site whilst helicopter movements are present, then it is unlikely that a significant impact to this TEC could be justified.

-
- ▶ **Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:**

- a) **assisting invasive species, that are harmful to the listed ecological community, to become established,**
- b) **causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community.**

The proposal is unlikely to introduce any new harmful species, nor does it involve chemicals which may harm the EEC directly or indirectly. Mitigation measures under a VMP are proposed to discourage residents from dumping garden clippings into the future reserve.

- ▶ **interfere with the recovery of an ecological community.**

The proposal has minimal potential to impact the recovery of the TEC given that it will not be directly impacted, and potential indirect impacts can be managed under a VMP, and the area of TEC on site will be protected through revegetation planting.

As it is not clear what impacts to the Southern Cassowary would occur as a result of the proposal and this species is critical to the dispersal of seeds within this TEC, a referral of the project to the Department of Climate Change, Energy, Environment and Water is a requirement for this matter.

6.2.3 Migratory Species

The Department of Climate Change, Energy, Environment and Water (DCCEEW) notes an action is likely to have a significant impact on a migratory species if there is a possibility it will:

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

The species considered moderate and highly likely to occur on site are:

- ▶ Oriental Cuckoo
- ▶ Rainbow bee-eater
- ▶ Rufous fantail
- ▶ Barn Swallow
- ▶ White throated needletail

It is considered highly unlikely that a total vegetation clearance for the proposed shared pathway will impact on ecologically significant habitat to these species such that it interferes with the breeding, foraging or roosting of migratory species. External to the site, there are large tracts of available vegetation for these species to utilise.

The results of this assessment determined there will be no significant impact on threatened or migratory species and this project will not be referred to the Department of Environment and Energy under the EPBC Act.

6.3 Matters of State Environmental Significance (MSES)

The following table (**Table 11**) details the guidelines to which a certain application may have a significant impact on a sensitive environmental matter pursuant under the *Nature Conservation Act 1992*.

Table 11. Matters of State Environmental Significance

Matters of State Environmental Significance	Triggers
Regulated Vegetation (VMA)	
<p>The prescribed regional ecosystems that are endangered regional ecosystems comprise a matter of State Environmental Significance.</p> <p>The prescribed regional ecosystems that are of concern regional ecosystems comprise a matter of State environmental significance.</p> <p>A prescribed regional ecosystem is a matter of State environmental significance if it is—</p> <p>(a) a regional ecosystem that intersects with an area shown as a wetland on the vegetation management wetlands map (to the extent of the intersection); or</p> <p>(b) an area of essential habitat on the essential habitat map for an animal that is endangered wildlife or vulnerable wildlife or a plant that is endangered wildlife or vulnerable wildlife.</p> <p>A prescribed regional ecosystem is a matter of State environmental significance to the extent the ecosystem is located within a defined distance from the defining banks of a relevant watercourse.</p>	<p>▶ Category B vegetation is not present within the proposed aviation facility. No remnant vegetation is required to be cleared as a result of the proposal. A further 0.7 ha of RE 7.3.10 Of Concern will be planted along Wongaling Creek tributary to increase the vegetation buffer around this second order stream.</p> <p>a) No vegetation within a known wetland will be impacted because of the proposal.</p> <p>b) The remnant vegetation present within the proposed alignment intersects areas of essential habitat for the Southern Cassowary (<i>Casuaris casuaris johnsonii</i>). Field assessment determined that the Southern Cassowary was confirmed present within the proposed alignment. No habitat will be cleared as a result of the proposal.</p> <p style="text-align: center;">No significant Impact</p>
Connectivity Areas	
<p>(1) This section applies to a prescribed regional ecosystem—</p> <p>(a) to the extent the ecosystem contains remnant vegetation; and</p> <p>(b) if the ecosystem contains an area of land that is required for ecosystem functioning (a connectivity area).</p>	<p>▶ The remnant vegetation on the project site will maintain connectivity to large continuous areas of remnant vegetation to the west with an increase in buffer width planting around Wongaling Creek tributary as a result of the proposal. The use of exclusion fencing will direct fauna (including the Southern Cassowary) to cross at a single location to move west to Djiru NP. No loss in connectivity</p>

Matters of State Environmental Significance	Triggers
<p>The prescribed regional ecosystem is a matter of State environmental significance if the administering agency is satisfied, having had regard to criteria in the environmental offsets policy about connectivity areas, that—</p> <p>(c) the connectivity area is of sufficient size or configured in a way that maintains ecosystem functioning; and</p> <p>(d) the prescribed regional ecosystem will remain despite a threatening process within the meaning of <i>the Nature Conservation Act 1992</i>.</p>	<p>to other sites will occur as a result of this proposal.</p> <p style="text-align: center;">No significant Impact</p>
Wetlands and Watercourses	
<p>(2) Each of the following matters is a matter of State environmental significance—</p> <p>(a) a wetland;</p> <p style="padding-left: 20px;">i. in a wetland protection area; or</p> <p style="padding-left: 20px;">ii. of high ecological significance shown on the Map of referable wetlands;</p> <p>(b) a wetland or watercourse in high ecological value waters.</p>	<ul style="list-style-type: none"> ▶ No wetland or watercourse will be impacted as a result of the proposal
Designated Precinct in a Strategic Environmental Area	
<p>(1) A designated precinct in a strategic environmental area is a matter of State environmental significance.</p>	<p>The project area does not intersect or contain a strategic environmental area.</p>
Protected Wildlife Habitat	
<p>(1) An area that is shown as a high-risk area on the flora survey trigger map and that contains plants that are endangered wildlife or vulnerable wildlife is a matter of State environmental significance.</p> <p>An area that is not shown as a high-risk area on the flora survey trigger map, to the extent the area contains plants that are endangered wildlife or vulnerable wildlife, is a matter of State environmental significance.</p> <p>A non-juvenile koala habitat tree located in an area shown as bushland habitat, high value rehabilitation habitat or medium value rehabilitation habitat on the map called 'Map of Assessable Development Area Koala Habitat Values' that applies under the South East Queensland Koala Conservation State Planning Regulatory Provisions is a matter of State environmental significance.</p> <p>A habitat for an animal that is endangered wildlife or vulnerable wildlife, or a special least concern animal is a matter of State environmental significance.</p>	<ul style="list-style-type: none"> ▶ <i>Rhodamnia sessiliflora</i> was recorded within the Wongaling Creek tributary. No individual plants are to be impacted as a result of the proposal. Buffer planting with species representative of RE 7.3.10 will see an improvement in habitat for this population- resilience to storm impacts/ weed incursion etc. ▶ No Koala Habitat Values were mapped on the site. No potential food trees are present within any portion of the project site. ▶ Habitat for the Southern Cassowary was confirmed by the sighting of a single scat during the field assessment. The lowland rainforest RE 7.3.10a provides high quality habitat and reasonable connectivity exists to other high-quality areas adjacent to the site. The project site also contains generic foraging habitat for the

Matters of State Environmental Significance	Triggers
	<p>MacLeay's Fig Parrot, White-throated Needle-tail and the Spectacled Flying Fox.</p> <p>No clearing of habitat is required as a result of the proposal. There is a potential that noise impacts could reduce the quality of the habitat present within the project site for the Southern Cassowary although this is poorly understood.</p>
Protected Areas	
A protected area is a matter of State environmental significance.	There are no protected areas under the <i>Nature Conservation Act</i> present on the site.
Highly Protected Zones of State Marine Parks	
A highly protected area of a relevant Queensland marine park is a matter of State environmental significance.	There are no marine parks or land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone present on the project site.
Fish Habitat Areas	
An area declared under the <i>Fisheries Act 1994</i> to be a fish habitat area is a matter of State environmental significance.	There are no fish habitat areas under the <i>Fisheries Act 1994</i> present on the project site.
Waterway Providing for Fish Passage	
1) Any part of a waterway providing for passage of fish is a matter of State environmental significance only if the construction, installation or modification of waterway barrier works carried out under an authority will limit the passage of fish along the waterway.	<ul style="list-style-type: none"> ▶ A single orange – medium risk waterway is located within the Wongaling Creek tributary and another orange medium risk waterway is located to the south of the proposal. No part of the proposal spans an area deemed to be a waterway for water barrier works.
Marine Plants	
A marine plant within the meaning of the <i>Fisheries Act 1994</i> is a matter of State environmental significance.	There are no marine plants under the <i>Fisheries Act 1994</i> recorded on the site.
Legally Secured Offset Areas	
A legally secured offset area is a matter of State environmental significance.	There are no legally secured offset areas intersecting the site.

6.4 Significant Residual Impact Assessment

An environmental offset condition may be imposed under various State assessment frameworks (such as the *Nature Conservation Act 1992*, *Sustainable Planning Act 2009* (SPA) and *Environmental Protection Act 1994* for an activity prescribed under the *Environmental Offsets Act 2014* (EO Act), if the activity will, or is likely to have

a significant residual impact (SRI) on a prescribed environmental matter that is a matter of state environmental significance (MSES). **Table 12** below address Significant Residual Impacts.

Table 12. Significant Residual Impact for Moderate Likelihood Threatened Species

An action is LIKELY to have a SRI on habitat for an animal that is 'endangered' or 'vulnerable' wildlife if the action will:									
lead to a long-term decrease in the size of a local population?	reduce the extent of occurrence of the species?	fragment an existing population?	result in genetically distinct populations forming as a result of habitat isolation?	result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat?	introduce disease that may cause the population to decline?	interfere with the recovery of the species;	cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species		
Fauna									
Southern Cassowary (<i>Casuarius casuarius johnsonii</i>) (Endangered)	The project site is known Southern Cassowary habitat. Much of the project site is cleared exotic pasture suitable only for marginal value dispersal. No access to the proposed aviation facility is present due to exclusion fencing. The most suitable habitat is located along Wongaling Creek tributary and to the east. An additional ~0.70ha of suitable Southern Cassowary habitat will be planted as a result of the proposal. There is limited evidence as to whether noise impacts associated with helicopter movements would impact usage of suitable habitats on the property. If noise impacts would exclude the Southern Cassowary a potential reduction in usage of suitable habitat could potentially lead to a decrease in the size of a population.	The avoidance of all remnant vegetation and revegetation works proposed along Wongaling Creek tributary would increase available habitat and increase effectiveness of the east-west corridor for the species. The impact of noise as a result of helicopter movements is unknown. There is a possibility that noise impact could reduce the usage of suitable habitat. However, this is poorly understood. If this occurred, it would reduce the extent of occurrence of the Southern Cassowary locally.	The Southern Cassowary is highly mobile within partly fragmented landscapes. No habitat clearing is proposed and further planting of ~0.7ha. This area is designed to improve the corridor across Tully-Mission Beach Road. It is unlikely that helicopter movements could sever connectivity between areas of suitable habitat.	The Southern Cassowary is highly mobile within partly fragmented landscapes. No habitat clearing is proposed and further planting of ~0.7ha. This area is designed to improve the corridor across Tully-Mission Beach Road. It is unlikely that helicopter movements could sever connectivity to the point that genetically distinct populations could form.	Proposed works will not likely result in the introduction of invasive species to potential habitat. No clearing is proposed, and revegetation will see an increase in buffer to the remnant vegetation on the project site which will see increase resilience to weed incursion as a result.	There are no infectious diseases of Southern Cassowary that are currently known to result in high levels of mortality that could be inflicted during these works. It is thus unlikely that the proposed works will facilitate the spread of any diseases to the detriment of this species.	It is not clearly understood what specific impacts would arise as a result of noise impacts associated within the proposal. There is potential that the Southern Cassowary would be temporarily impacted by avoiding a noisy environment or more long-term avoidance could result from the proposed helicopter movements. Long term avoidance or reduced suitability of the project site would interfere with the recovery of the Southern Cassowary.	The suitable habitat along Wongaling Creek tributary and the other habitat to the east is important habitat for the ecology of the Southern Cassowary. These areas are suitable for dispersal, breeding and foraging. If noise reduces or results in partial or complete avoidance of these areas, then the proposal could potentially impact ecologically significant habitat for the Southern Cassowary.	

An action is LIKELY to have a SRI on habitat for an animal that is 'endangered' or 'vulnerable' wildlife if the action will:								
	lead to a long-term decrease in the size of a local population?	reduce the extent of occurrence of the species?	fragment an existing population?	result in genetically distinct populations forming as a result of habitat isolation?	result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat?	introduce disease that may cause the population to decline?	interfere with the recovery of the species;	cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species
Macleay's Fig-parrot (Vulnerable)	The entirety of the project site occurs within known MacLeay's Fig Parrot habitat. This species readily forages and nests within urban areas and is highly dispersive in fragmented landscapes. No habitat clearing is proposed and the planting proposed will increase potential forage and nesting in the long term. It is not considered that the proposal will lead to a long-term decrease of a population.	The lack of <i>Alstonia scholaris</i> , a preferred nest tree for this species. None are located within the project site. However, some large diameter canopy trees are located to the southeast in the unnamed reserve. Given the presence of this species in highly urbanised environments (Cairns CBD) the proposal is unlikely to reduce usage of this species to suitable habitat.	The Fig Parrot is highly mobile within partly fragmented landscapes. No habitat clearing is proposed and further planting of ~0.7ha. This area is designed to improve the corridor across Tully-Mission Beach Road. It is unlikely that helicopter movements could sever connectivity between areas of suitable habitat.	The Macleay's Fig Parrot is highly mobile within partly fragmented landscapes. No habitat clearing is proposed and further planting of ~0.7ha. This area is designed to improve the corridor across Tully-Mission Beach Road. It is unlikely that helicopter movements could sever connectivity to the point that genetically distinct populations could form.	Proposed works will not likely result in the introduction of invasive species to potential habitat. No clearing is proposed, and revegetation will see an increase in buffer to the remnant vegetation on the project site which will see increase resilience to weed incursion as a result.	There are no infectious diseases of Macleay's Fig Parrot that are currently known to result in high levels of mortality that could be inflicted during these works. It is thus unlikely that the proposed works will facilitate the spread of any diseases to the detriment of this species.	Given that habitat will be removed, and local endemic flora will be used in rehabilitation around Wongaling Creek tributary, it is considered unlikely to interfere with the recovery of the species.	The proposed works are unlikely to disrupt ecologically significant locations for this species on-site.
Spectacled Flying-fox (Endangered)	A minimal amount of habitat for this species is found on site. As such, it is unlikely that proposed works will significantly cause a decrease in this species population.	No colonies are present within the project site. Marginal feeding habitat is present and at most would represent a minor portion of a much larger foraging area.	Unlikely. This species is highly mobile in fragmented landscapes and the removal of this habitat will not restrict dispersal across the landscape.	Habitat modification for proposed works will not be of a large enough extent to isolate populations. This species would still freely move between remaining suitable habitat	Proposed works will not likely result in the introduction of invasive species to potential habitat.	There are no infectious diseases of Spectacled Flying-fox that are currently known to result in high levels of mortality that could be inflicted during these works. It is thus unlikely that the proposed works will facilitate the spread of any diseases to the detriment of this species.	Given that the removal of a minute portion of potential feeding habitat will be removed, it is considered unlikely to interfere with the recovery of the species.	The proposed works are unlikely to disrupt ecologically significant locations for this species on-site.

An action is LIKELY to have a SRI on habitat for an animal that is 'endangered' or 'vulnerable' wildlife if the action will:								
	lead to a long-term decrease in the size of a local population?	reduce the extent of occurrence of the species?	fragment an existing population?	result in genetically distinct populations forming as a result of habitat isolation?	result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat?	introduce disease that may cause the population to decline?	interfere with the recovery of the species;	cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species
White-throated Needletail (Vulnerable)	A minimal amount of habitat for this species is found on the project site. As such, it is unlikely that proposed works will significantly cause a decrease in this species population.	Breeding habitat is not present within the project site. Marginal feeding habitat is present and at most would represent or minor portion of a much larger foraging area.	Unlikely. This species is highly mobile in fragmented landscapes and the removal of this habitat will not restrict dispersal across the landscape.	Habitat modification for proposed works will not be of a large enough extent to isolate populations. This species would still freely move between remaining suitable habitat.	Proposed works will not likely result in the introduction of invasive species to potential habitat. No clearing is proposed, and revegetation will see an increase in buffer to the remnant vegetation on the project site which will see increase resilience to weed incursion as a result.	There are no infectious diseases of White-throated Needletail that are currently known to result in high levels of mortality that could be inflicted during these works. It is thus unlikely that the proposed works will facilitate the spread of any diseases to the detriment of this species.	Given the lack of habitat removal, it is considered unlikely to interfere with the recovery of the species.	The proposed works are unlikely to disrupt ecologically significant locations for this species on-site.
<i>Litoria serrata</i> (Vulnerable)	This species is considered a moderate potential to occur within the Wongaling Creek tributary within RE 7.3.10. This habitat will not be impacted as a result of the proposal and will be buffered by vegetation representing RE 7.3.10. This will see an improvement to habitat of this species on the project site. No long-term decrease to the population is expected as a result of this proposal	The avoidance of all remnant vegetation and revegetation works proposed along Wongaling Creek tributary would increase available habitat and increase effectiveness of the east-west corridor for the species. Noise impacts resultant of helicopters are not likely to interfere with nocturnal calling of males during the breeding season.	The species is largely restricted to the edges and creek lines of well-developed rainforest communities. The riparian vegetation along Wongaling Creek tributary will continue to function as a naturally seasonally disturbed waterway. Dispersal will continue at current levels as a result of the proposal.	The species is largely restricted to the edges and creek lines of well-developed rainforest communities. The riparian vegetation along Wongaling Creek tributary will continue to function as a naturally seasonally disturbed waterway. Dispersal will continue at current levels as a result of the proposal. No impact to dispersal is expected to occur as a result of the proposal that would result in a genetically distinct population.	Proposed works will not likely result in the introduction of invasive species to potential habitat. No clearing is proposed, and revegetation will see an increase in buffer to the remnant vegetation on the project site which will see increase resilience to weed incursion as a result.	The population of this species has suffered widespread infection of Chytrid fungus throughout its range. This potentially occurring lowland population would not be further impacted by Chytrid fungus as a result of the proposal.	Given the lack of habitat removal and increase in suitable habitat through planting RE 7.3.10 it is considered unlikely to interfere with the recovery of the species.	The proposed works are unlikely to disrupt ecologically significant locations for this species on-site.

An action is LIKELY to have a SRI on habitat for an animal that is 'endangered' or 'vulnerable' wildlife if the action will:

	lead to a long-term decrease in the size of a local population?	reduce the extent of occurrence of the species?	fragment an existing population?	result in genetically distinct populations forming as a result of habitat isolation?	result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat?	introduce disease that may cause the population to decline?	interfere with the recovery of the species;	cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species
<i>Litoria rheocola</i> (Endangered)	This species is considered a moderate potential to occur within the Wongaling Creek tributary within RE 7.3.10. This habitat will not be impacted as a result of the proposal and will be buffered by vegetation representing RE 7.3.10. This will see an improvement to habitat of this species on the project site. No long-term decrease to the population is expected as a result of this proposal	The avoidance of all remnant vegetation and revegetation works proposed along Wongaling Creek tributary would increase available habitat and increase effectiveness of the east-west corridor for the species. Noise impacts resultant of helicopters are not likely to interfere with nocturnal calling of males during the breeding season. The proposal is unlikely to reduce the extent of occurrence.	The species is largely restricted to the edges and creek lines of well-developed rainforest communities. The riparian vegetation along Wongaling Creek tributary will continue to function as a naturally seasonally disturbed waterway. Dispersal will continue at current levels as a result of the proposal.	The species is largely restricted to the edges and creek lines of well-developed rainforest communities. The riparian vegetation along Wongaling Creek tributary will continue to function as a naturally seasonally disturbed waterway. Dispersal will continue at current levels as a result of the proposal. No impact to dispersal is expected to occur as a result of the proposal that would result in a genetically distinct population.	Proposed works will not likely result in the introduction of invasive species to potential habitat. No clearing is proposed, and revegetation will see an increase in buffer to the remnant vegetation on the project site which will see increase resilience to weed incursion as a result.	The population of this species has suffered widespread infection of Chytrid fungus throughout its range. The impacts are most pronounced above 400m elevation where populations are severely reduced. This potentially occurring lowland population would not be further impacted by Chytrid fungus as a result of the proposal.	Given the lack of habitat removal and increase in suitable habitat through planting RE 7.3.10 it is considered unlikely to interfere with the recovery of the species.	The proposed works are unlikely to disrupt ecologically significant locations for this species on-site.

An action is LIKELY to have a SRI on habitat for an animal that is 'endangered' or 'vulnerable' wildlife if the action will:

	lead to a long-term decrease in the size of a local population?	reduce the extent of occurrence of the species?	fragment an existing population?	result in genetically distinct populations forming as a result of habitat isolation?	result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat?	introduce disease that may cause the population to decline?	interfere with the recovery of the species;	cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species
<p><i>Rhodamnia sessiliflora</i> (Endangered)</p>	<p><i>R. sessiliflora</i> is located along the Wongaling Creek tributary. This habitat will be expanded as a result of the proposal through the replanting/ buffering of ~0.7ha to the north of the known population. No part of the proposal has the potential to lead to a long-term decrease in the size of a local population.</p>	<p><i>R. sessiliflora</i> is located along the Wongaling Creek tributary. This habitat will be expanded as a result of the proposal through the replanting/ buffering of ~0.7ha to the north of the known population. No part of the proposal has the potential to lead to a reduction in the extent of occurrence. The proposal is unlikely to reduce the extent of occurrence.</p>	<p>The species is largely restricted to the edges and creek lines of well-developed rainforest communities. The riparian vegetation along Wongaling Creek tributary will continue to function as a naturally seasonally disturbed waterway. If fruit is produced it will continue to disperse along suitable habitat from small mammal and bird dispersal. No impact to dispersal is expected to occur as a result of the proposal.</p>	<p>The species is largely restricted to the edges and creek lines of well-developed rainforest communities. The riparian vegetation along Wongaling Creek tributary will continue to function as a naturally seasonally disturbed waterway. If fruit is produced, it will continue to disperse along suitable habitat from small mammal and bird dispersal. No impact to dispersal is expected to occur as a result of the proposal that would result in a genetically distinct population.</p>	<p>Proposed works will not likely result in the introduction of invasive species to potential habitat. No clearing is proposed, and revegetation will see an increase in buffer to the remnant vegetation on the project site which will see increase resilience to weed incursion as a result.</p>	<p>The population present within the project site was recorded to be infected with Myrtle Rust. With an absence of proposed clearing, it is not expected that the buffering of planting along Wongaling Creek tributary would increase infection rates of this disease.</p>	<p>The population present within the project site was recorded to be infected with Myrtle Rust. With an absence of proposed clearing, it is not expected that the buffering of planting along Wongaling Creek tributary would increase risks to this population or species.</p>	<p>The proposed works are unlikely to disrupt ecologically significant locations for this species on-site.</p>

7.0 Recommendations

7.1 Noise

The noise testing plan (Marshall Day Acoustics, 2021) found that the acceptable number of movements for two (2) helicopter models on sensitive receivers was as listed below;

- ▶ Bell 206L LongRanger with a takeoff weight of 1800kg up to 40 movements per day.
- ▶ Robinson R44 with a take-off weight of 1200kg up to 80 movements per day.

The number of movements for each helicopter was not designed to assess the impact of these movements on the Southern Cassowary, as no standard benchmarks exist for comparison. Queensland does not have noise standards for helicopters and the noise test standards applied are Victorian standards approved by the Environmental Planning Court. Mission Helicopters have identified that helicopter activity in the region is common with low level aerial application spraying over banana plantations, military helicopter training exercises associated with the Jarra Creek training facility (Tully) and unprepared helicopter landing sites in urban Mission Beach and South Mission beach supporting tourism to Bedarra Island. The impacts of noise on the Southern Cassowary are poorly understood and little information related to impacts is present in the literature. The proposed helipad location was chosen to provide minimum impact to all surrounding receptors. Proximity to the coast means there is a very short transit time, of less than 20 seconds, both on arrival and on departure.

7.2 Night Lighting

There are not night operations approved for the development application therefore there will be no nocturnal lighting at the site.

7.3 Vegetation Management Plan

Clearing of native vegetation including any native vegetation established as part of rehabilitation works should be avoided. The vegetation planting within species representative of RE 7.3.10 will increase the buffer vegetation along this corridor to the same width on the western side of the corridor. This will require the inclusion of Southern Cassowary food plants and species that will establish a vegetation community that matches that of the adjacent remnant RE 7.3.10a present along Wongaling Creek tributary.

Measures should be taken to inhibit the establishment of weeds following construction work. All disturbed soils should be covered with composted mulch. Any heavy machinery required for works should arrive clean to site to prevent introduction of new species to the project site which may lead to impacts to surrounding remnant vegetation.

7.4 Wildlife Exclusion Fencing

Wildlife exclusion fencing should be maintained regularly and repaired as required after tree fall, livestock damage etc. This will remove the ability for the Southern Cassowary to disperse into the direct impact area (Helipad Facility). Establishment of wildlife fencing to the north of the proposed rehabilitation area will direct all western dispersal of the Southern Cassowary along the known corridor over Tully-Mission Beach Road.

8.0 Conclusion

A single threatened fauna species was confirmed to be present during the project site survey with a single male South Cassowary, endangered under the *EPBC Act (1999) and NC Act (1992)*, evident by fresh scats near Wongaling Creek Tributary. The proposed helipad facility will not require any clearing of suitable habitat for the Southern Cassowary. However, with up to 80 helicopter movements each day permissible under the current approvals there is a potential although minimal to disrupt use of the project site vegetation and adjacent suitable habitat areas. The low frequency vocalisation of the Southern Cassowary has a potential to be masked by noise emitted from helicopter movements. Up to 10 movements per hour would provide external noise to the surrounding suitable habitat for much of that time. This may interfere with communication critical to the proper function of this population. Although this is poorly understood, Mission Helicopter have identified that planning for the location took into account the potential for impact, and flight paths proposed were designed to minimise impacts and formalise a helicopter landing site for community use in lieu of the current random unapproved landing sites without movement limitations that present the same potential issue to the Southern Cassowary. **The proposed action is considered to have a potential to trigger a significant impact under the federal EPBC act 1999 and would therefore trigger a requirement for a referral to the department.**

The Southern Cassowary is a keystone species for the EPBC listed **Endangered** Threatened Ecological Community (TEC) Tropical Lowland Rainforest of the Wet Tropics. If the Southern Cassowary was to be excluded because of the proposal, then this would potentially impact the TEC due to reduced seed dispersal facilitated by the Cassowary. **The proposed action is considered to have a potential to trigger a significant impact under the federal EPBC Act 1999 and would trigger a requirement for a referral to the department.** If it can be determined that the Southern Cassowary continues to utilise all suitable habitat within the project site and that under the proposed fly way, then a significant impact would be unlikely to this TEC.

A further total of five (5) threatened fauna species were considered as moderately to highly likely to occur on the project site after the initial desktop assessment was conducted (see **Appendix C**). Results from the field assessment component of this study, however, identified the site contained only marginal generic foraging habitat for each of these species. The Spectacled flying-fox (*Pteropus conspiculatus*), White Throated Needletail (*Hirundapus caudacutus*), Macleay's Fig Parrot (*Cyclopsitta diophthalma macleayana*), Green-eyed Frog (*Litoria serrata*) and Common Mist Frog (*Litoria rheocola*) may utilise the project site. However, as there is no vegetation removal proposed and revegetation of ~0.7 ha of RE 7.3.10 is proposed as part of the proposal. There is a potential that each of these species may benefit from the proposed vegetation buffering within this area that will improve storm and wind resilience of this area. No significant impact is proposed to any of these species.

Five (5) migratory bird species were considered as having a moderate likelihood of occurrence on the project site. Typical generic foraging and nesting habitat is present for this species throughout the project site. Overall, the remaining migratory bird species are only expected to occur on site either as flyovers or for generic foraging

habitat i.e., gleaning insects from foliage while passing through on a migrant route. It is unlikely, however, that these species will utilize the site for breeding in large enough numbers that would result in a population decline, given the sites marginal habitat and small size. For migratory species the current proposal would not trigger a significant impact under the *EPBC Act (1999)*.

A single threatened plant, *Rhodamnia sessiliflora*, was recorded during the field assessment. However, as there is no vegetation removal proposed and revegetation of ~0.7 ha of RE 7.3.10 will be delivered for the development, no significant impact is considered to occur to this species. The proposal will result in an increase to the potential habitat for this species within the project site and no significant impact has the potential to occur.

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Appendix A Potential Occurrence

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
Threatened Fauna					
Invertebrates					
Apollo Jewel (Wet Tropics Subspecies)	<i>Hypochrysops apollo apollo</i>	-	V	Resident of coastal paperbark swamps and is reliant on the Ant Plant (<i>Myrmecodia beccarii</i>) which it lays its eggs within.	Low A targeted protected plant survey did not record any breeding habitat (<i>Myrmecodia beccarii</i>).
Reptiles					
Estuarine Crocodile	<i>Crocodylus porosus</i>	-	V	Occurs within estuarine and freshwater wetlands throughout the tropical coastline of northern Australia.	Low Lack of suitable habitat present on site.
Birds					
Red Knot	<i>Calidris canutus</i>	E	E	This is a highly migratory species, breeding in the high Arctic, then migrating south. Red Knots gather in large flocks with other waders. They walk fast, probing rapidly in soft sand and mud for worms and bivalves. They feed by both day and night, regulated by the tide. Coastal sandy estuaries with muddy tidal flats are their preferred habitat.	Low Suitable habitat does not occur on the project site.
Curlew Sandpiper	<i>Calidris ferruginea</i>	CE	E	Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as	Low

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters (Higgins and Davies 1996).	Suitable habitat does not occur on the project site.
Great Knot	<i>Calidris tenuirostris</i>	CE	E	In Australasia, the species typically prefers sheltered coastal habitats, with large intertidal mudflats or sandflats. This includes inlets, bays, harbours, estuaries and lagoons. They are occasionally found on exposed reefs or rock platforms, shorelines with mangrove vegetation, ponds in saltworks, at swamps near the coast, salt lakes and non-tidal lagoons. The Great Knot rarely occurs on inland lakes and swamps (Higgins and Davies 1996).	Low Suitable habitat does not occur on the project site.
Southern Cassowary	<i>Casuarius casuarius johnsonii</i> (southern)	E	E	This large and conspicuous bird generally requires dense tropical rainforest (such as complex/non-complex notophyll/ mesophyll vine forest) and associated habitat (such as mangrove Melaleuca, eucalypt woodland, swamp and	Confirmed Suitable habitat does not occur on the project site.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				swamp forest), that provides a year-round supply of fleshy fruit (DAWE 2020).	
Southern Cassowary	<i>Casuarius casuarius johnsonii</i> (northern)	V	E	This large and conspicuous bird generally requires dense tropical rainforest (such as complex/non-complex notophyll/ mesophyll vine forest) and associated habitat (such as mangrove Melaleuca, eucalypt woodland, swamp and swamp forest), that provides a year-round supply of fleshy fruit (DAWE 2020).	Low This population is present only in Cape York Peninsular. Does not occur within the Wet tropics bioregion.
Greater Sand Plover	<i>Charadrius leschenaultia</i>	V	V	In non-breeding grounds in Australia, this species usually occurs in coastal littoral and estuarine environments. It inhabits large intertidal sandflats or mudflats in sheltered bays, harbours and estuaries, and occasionally sandy ocean beaches, coral reefs, wave-cut rock platforms and rocky outcrops. It also sometime occurs in short saltmarsh or among mangroves. The species also inhabits saltworks and near-coastal saltpans, brackish swamps and sandy or silt islands in river beds (Marchant and Higgins 1993).	Low Suitable habitat does not occur on the project site.
Macleay's fig-parrot	<i>Cyclopsitta diophthalma macleayana</i>	-	V	This species can be observed in the rainforest environments within the Cairns region, where it feeds on fruiting fig trees within remnant and urban areas. Commonly utilises hollows of <i>Alstonia scholaris</i>	Likely Generic feeding habitat (<i>Ficus spp.</i>) is present on site.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
Beach stone-curlew	<i>Esacus magnirostris</i>	-	V	This shy curlew can be observed utilizing the sandy shorelines near and within estuaries, beaches and sand spits. It can also be encountered on floodplains, near permanent water bodies along the coastline and mudflats.	Low Suitable habitat does not occur on the project site.
Red Goshawk	<i>Erythrotriorchis radiatus</i>	V	E	The Red Goshawk occurs in coastal and sub-coastal areas in wooded and forested lands of tropical and warm-temperate Australia (Marchant and Higgins 1993). Riverine forests are also used frequently (Debus 1991; Debus 1993).	Low Suitable habitat does not occur on the project site.
Grey Falcon	<i>Falco hypoleucos</i>	-	V	Inhabits arid and semi-arid zones of Australia where rainfall is less than 500mm annuals (DAWE 2020).	Low Suitable habitat does not occur on the project site.
White-throated Needletail	<i>Hirundapus caudacutus</i>	V, Ma, Mi	LC	In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground (Coventry 1989; Tarburton 1993). Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable (Cramp 1985), but there are, nevertheless, certain preferences exhibited by the species. 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	Likely Suitable roosting habitat for this species does not occur within the project site. May occur infrequently as a flying high above the project site and surrounding areas.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				clearings, below the canopy, but they are less commonly recorded flying above woodland (Higgins 1999).	
West Alaskan Bar-tailed Godwit	<i>Limosa lapponica baueri</i>	V	V	Bar-tailed Godwits inhabit estuarine mudflats, beaches and mangroves. They are common in coastal areas around Australia. They are social birds and are often seen in large flocks and in the company of other waders.	Low No suitable habitat is present on site.
Eastern Curlew	<i>Numenius madagascariensis</i>	CE	E	The eastern curlew is Australia's largest shorebird and a long-haul flyer. It is easily recognisable, with its long, down-curved bill. The eastern curlew takes an annual migratory flight to Russia and north-eastern China to breed, arriving back home to Australia in August to feed on crabs and molluscs in intertidal mudflats. It is extremely shy and will take flight at the first sign of danger (Garnet <i>et al</i> 2011).	Low No suitable habitat is present within the project site.
Red-tailed tropicbird	<i>Phaethon rubricauda</i>	-	V	A widely dispersed species within the tropical Indian and Pacific oceans. In Queensland, this species nests on islands offshore within the Great Barrier Reef.	Low Suitable habitat does not occur on the project site.
Australian Painted Snipe	<i>Rostratula australis</i>	E	V	The Australian Painted Snipe generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands. Typical sites include those with rank emergent tussocks of grass, sedges,	Low Suitable foraging habitat does not occur on site.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				rushes or reeds, or samphire; often with scattered clumps of lignum <i>Muehlenbeckia</i> or <i>canegrass</i> or sometimes tea-tree (<i>Melaleuca</i>) (Marchant and Higgins 1993).	
Masked Owl (northern)	<i>Tyto novaehollandiae kimberli</i>	V	V	In northern Australia, the Masked Owl has been recorded from riparian forest, rainforest, open forest, <i>Melaleuca</i> swamps and the edges of mangroves, as well as along the margins of sugar cane fields (Higgins 1999).	Low Suitable habitat does not occur on the project site.
Freshwater Fish					
Opal Cling Goby	<i>Stiphodon semoni</i>	CE	-	In Australia, this species is found in pristine rainforest streams that have significant flow and direct access to marine habitats (DAWE 2020).	Low Suitable habitat does not occur on the project site. Ephemeral drainage lines are not suitable habitat.
Amphibians					
Australian lace-lid	<i>Litoria dayi</i>	V	E	This frog is a rainforest species, endemic to the Wet Tropics Bioregion (Williams and Hero 1998; Williams and Hero 2001). It is associated with rainforests and rainforest margins. In montane areas the species prefers fast-flowing rocky streams although they also frequent slower watercourses where ample vegetation exists along the margins. At low elevations, the Lace-eyed Tree Frog favours rock soaks, narrow	Low Suitable habitat does not occur on the project site.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				ephemeral streams and rock outcrops in larger watercourses (DAWE, 2020)	
Common Mistfrog	<i>Litoria rheocola</i>	E	E	The Common Mist Frog occurs from Broadwater Creek National Park (north of Ingham) to Amos Bay (south of Cooktown) in northern Queensland, at altitudes between 0 and 1,180m above sea level. The species is restricted to fast flowing rocky creeks and streams in rainforest or wet sclerophyll forest (DAWE, 2020).	Moderate Marginal habitat is present within the riparian vegetation along the Wongaling Creek tributary. This species may benefit from the proposed vegetation buffering within this area that will improve storm and wind resilience of this area.
Tapping green eyed frog	<i>Litoria serrata</i>	-	V	The Tapping Green-Eyed Frog is found in a variety of rainforest habitats and adjacent wet sclerophyll forests at a broad altitudinal range of 0m-1300m ((Hoskin, Grigg et al. 2015).	Moderate Marginal habitat is present within the riparian vegetation along the Wongaling Creek tributary. This species may benefit from the proposed vegetation buffering within this area that will improve storm and wind resilience of this area.
Mammals					
Northern Quoll	<i>Dasyurus hallucatus</i>	E	LC	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 (Threatened Species Scientific Committee 2005). Northern Quoll are also known to occupy non rocky lowland habitats	Low No suitable habitat, this species is unlikely to be present on site.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				such as beach scrub communities in central Queensland.	
Spotted-tail quoll (Northern)	<i>Dasyurus maculatus gracilis</i>	E	E	The Spotted-tail quoll northern sub-species is predominately recorded in upland closed forests of the Wet Tropics Bioregion. Historical records as far south as the Paluma Range and north to Cooktown have contracted.	Low No suitable habitat, this species is unlikely to be present on site.
Semon's Leaf-nosed Bat	<i>Hipposideros semoni</i>	V	E	The distribution for this species is poorly known having been recorded from Iron Range National Park to Cooktown (DAWE, 2020). Foraging habitat is expected to include rainforest and savannah woodland (DAWE, 2020).	Low The project site does not represent the expected foraging habitat for this species. No suitable denning opportunities are present on site. Lack of proximate records.
Black-footed Tree-rat	<i>Mesembriomys gouldii rattoides</i>	V	LC	The distribution of this species in Queensland is poorly known, however they are mostly recorded in eucalypt forests and woodlands around Mareeba (Burnett 2001; Starr, Diete <i>et al.</i> 2017) 2001, Weipa (Starr and Waller 2014) and sparsely across Cape York (Dixon and Huxley 1985). Hollow availability is likely to be an important factor in their abundance.	Low The project site does not contain the known preferred foraging or denning habitat for this species.
Koala (combined populations of Qld, NSW & ACT).	<i>Phascolarctos cinereus</i>	V	V	The Koala is widely distributed in eucalypt forest and woodland along the east and south coast of Australia from Kangaroo Island to Far North Queensland (Curtis and Dennis 2012). Due to complex interactions between Eucalypt trees with	Low No primary or secondary browse trees were present on the project site. There is a lack of proximate records for this species.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				soil composition and water availability, palatability of food trees can vary at the local scale with soil fertility and water regimes likely influencing factors (Curtis and Dennis 2012).	
Mahogany Glider	<i>Petaurus gracilis</i>	E	E	The largest of the <i>Petaurus spp.</i> This species is restricted in distribution between the Hull River and the Township of Bambaroo at an elevation range up to 200 m asl (Jackson et al. 2019). Habitat includes a broad variety of sclerophyll open forests.	Low This species has never been recorded north of the Hull River which is approximately 5 km to the south of the project site. The project site has been mapped based on data from (Jackson et al. 2019) however no evidence of this species occurring north of the Hull River has been recorded. No hollow bearing trees were recorded within the proposed clearance area. The 10 m width maximum clearance will not act as a barrier to dispersal for this species if it were to advance its distribution further to the north.
Greater Glider (northern)	<i>Petauroides volans minor</i>	V	V	This species occurs at high elevation within the Wet Tropics and Einasleigh Upland Bioregion. It is restricted to Dry Sclerophyll and Wet Sclerophyll woodland where it is an obligate denning species of large old growth Eucalypts. Preferred den trees often include large	Low The project site does not contain the known preferred foraging or denning habitat for this species.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				<i>Eucalyptus tereticornis</i> and <i>E. grandis</i> . Feeding is often observed on the foliage of <i>Corymbia citriodora</i> .	
Spectacled Flying-fox	<i>Pteropus conspicillatus</i>	E	V	The Spectacled flying-fox occurs in the vicinity of tropical forest in the Iron Range and Wet Tropics within Australia (Churchill 2008). This species utilises resources in a diversity of landscapes-farms, eucalypt forests, melaleuca swamps, littoral and coastal forests, mangroves and urban areas (DAWE, 2020). This species generally camps within or near rainforest. They are however capable of covering 50-100 km in a single night. Young are born from October to December, and weaned at 5 months however cared for in creches for many more months (Parsons, Cairns <i>et al.</i> 2006).	Likely No roosting camps have been recorded on the project site. There is however a potential for this species to occur as a frequent fly-over. The project site contains a small amount of generic habitat features that could possibly provide a minute portion of a much larger foraging area.
Large-eared horseshoe Nat	<i>Rhinolophus robertsi</i>	V	V	This species occurs only in northern Queensland, from the Iron Range southwards to Townsville and west to Chillagoe (Churchill 2008). The species is found in lowland rainforest, along gallery forest-lined creeks within open eucalypt forest, Melaleuca forest with rainforest understorey, open savanna woodland and tall riparian woodland of Melaleuca, <i>E. tereticornis</i> and <i>C. tessularis</i> (Curtis and Dennis 2012). It	Low Whilst the site represents low quality roosting habitat for this bat, the project site is approx. 85km outside of the known range for this species.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				mainly roosts in caves and underground mines located in rainforest, and open eucalypt forest and woodland, however roosts have also been observed in road culverts, and it is suspected that the species also uses basal hollows of large trees, dense vegetation, rockpiles and areas beneath creek banks (DAWE, 2020).	
Bare-rumped sheath-tail Bat	<i>Saccolaimus saccolaimus nudicluniatus</i>	V	E	Occasional individuals have been collected from a narrow coastal region (less than 40 km inland) between Ayr and Cooktown, North Queensland, with one isolated specimen from north of Coen on Cape York Peninsula (DAWE, 2020). The species inhabits tropical woodland and tall open forests where it roosts in long, wide hollows in the trunks of various Eucalypts, especially <i>E. tetradonta</i> and <i>E. platyphylla</i> (DAWE, 2020).	Low No hollow bearing trees were recorded within the proposed clearance area. There is a lack of proximate records for this species.
Coastal Sheath-tail Bat	<i>Taphozous australis</i>	NT	-	Forages within 1 km of the ocean within melaleuca swamps, sand dune scrub, open eucalypt forest and coastal heathlands. Roosting is known within coastal cliffs (DES, 2021).	Low No hollow bearing trees were recorded within the proposed clearance area. There is a lack of recent proximate records for this species. Two records from 1989 are present on Dunk Island located ~5 km to the east.
Water Mouse	<i>Xeromys myoides</i>	V	V	Foraging and denning habitat including mangroves and the associated saltmarsh, sedge	Low

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				lands, clay pans, heathlands and freshwater wetlands. This species has recently been recorded in estuarine habitats near to the Cairns Airport.	The disturbed remnant vegetation on the project site does not provide the preferred habitat of this species.
Plants					
Yellow Pauper Orchid	<i>Aphyllorchis queenslandica</i>	-	NT	A small terrestrial saprophytic leafless orchid that occurs in sheltered microhabitats often proximate to streams in sandy soils (Jones et al. 2021).	Low Suitable habitat does not occur on the project site.
-	<i>Arenga australasica</i>	-	V	A large clump forming palm with up to three dominant trunks. The Australian Arenga Palm grows in littoral and near-coastal rainforests. Its preferred habitat appears to be depressions in sandy soil, possibly underlain by clays which maintain a reasonably high watertable, and it is probably tolerant of periodic anaerobic conditions (DAWE, 2021b).	Low Suitable habitat occurs on site and proximate records are known to the area. Despite this, no individuals were recorded during the survey and this species is readily detectable when present.
-	<i>Buchanania mangoides</i>	-	V	A small tree growing to a DBH no greater than 30cm. Endemic to NEQ, known only from collections made on Snapper, High Bedarra and North Brook Islands. Altitudinal range near sea level. Grows on calcium rich substrates in beach forest (Zich et al. 2021).	Low: Suitable habitat does not occur on site. Numerous proximate records are present on low lying islands to the east.
-	<i>Canarium acutifolium</i>	V	V	In Australia, <i>C. acutifolium</i> var. <i>acutifolium</i> grows naturally below ca. 100 m (330 ft) altitude in the	Low:

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				scarce remaining lowland rainforests of the Wet Tropics region of north-eastern Queensland.	Suitable habitat occurs on site however all proximate records are west of the Bruce Highway.
-	<i>Carex breviscapa</i>	-	V	A low growing sedge that within Australia is restricted to the wet tropics where it grows within complex vine forest communities (AVH, 2021).	Moderate: Suitable habitat occurs on site and proximate records are known to the area.
-	<i>Carronia pedicellata</i>	E	E	A thin climbing vine of the Menispermaceae family restricted to well-developed lowland rainforest on Basalt or Metamorphic soils (DCCEEW 2022)	Moderate: Suitable habitat occurs on site and proximate records are known to the area.
-	<i>Chingia australis</i>	E	E	This species is known from Wooroonooran National Park, and an area near the Daintree National Park. It is a fern found in mesophyll and upland notophyll vine forest on clay soil derived from a range of geologies. It is a specialist of small to medium sized gaps in the rainforest arising from disturbance. It is particularly dependant on the maintenance of a humid local microclimate (DES 2021).	Moderate: Suitable habitat occurs on site and proximate records are known within Djiru NP.
-	<i>Corybas cerasinus</i>	-	NT	A terrestrial orchid that occurs in moist to wet forests on exposed ridges and in drier forests. It grows in well-drained sand and gravelly loam (Jones et al. 2021).	Low: Suitable habitat does not occur on site. Nearest proximate record occurs on Dunk Island.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
Crystal bells	<i>Didymoplexis pallens</i>	-	NT	Terrestrial leafless orchid. Occurs in rainforests, bamboo groves and grassy forests, sometimes growing within grass tussocks (Jones et al. 2021)	Moderate: Suitable habitat occurs on site and proximate records are known to the area.
-	<i>Dioclea hexandra</i>	-	V	Altitudinal range quite small, from near sea level to 50 m. Grows in lowland rain forest or swamp forest. Leaves covered entirely in erect brown hairs.	Moderate: Suitable habitat occurs on site and proximate records are known to the area.
-	<i>Diplazium cordifolium</i>	V	V	This fern species grows within the riparian zone in rainforest environments. Populations of this fern are mostly known from private land (DCCEEW, 2022).	Low: Suitable habitat does not occur on site.
-	<i>Habenaria rumphii</i>	-	NT	A terrestrial orchid with leaves 14 cm x 20 mm. The flower stem grows to 50 cm tall, is thin and wiry and bears up to thirty or more white flowers about 10 mm across. Flowering and Fruiting: Feb (Kerrigan & Cowie, 2006). Occurs in open forest on the edges of soaks and creeks.	Low: Suitable habitat does not occur on site.
-	<i>Hedyotis novoguineensis</i>	-	E	A small (~50cm) weakly erect herb with an altitudinal range from near sea level to 660 m. Grows in rainforest, sclerophyll forest, <i>Allocasuarina-Meleleuca</i> woodland, <i>Melaleuca</i> swamp and in grassland. Distinct from other Rubiaceae herbs that occur within the area by distinctly squared stems and relatively rounded and fleshy leaves (Zich et al. 2021).	Moderate: Suitable habitat occurs along Wongaling Creek tributary.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
Ant Plant	<i>Myrmecodia beccarii</i>	V	V	The Ant Plant occurs in coastal woodland and mangrove between Cooktown and Ingham in Queensland. It is a unique epiphyte (a plant that lives harmlessly on another plant) that has a special association with the Golden Ant which lives in the chambers of the tuber, and the Apollo Jewel Butterfly which lays its eggs on the plant. The Golden Ants carry the butterfly eggs into the chambers where they develop into butterflies.	Low Suitable habitat does not occur within the project site.
-	<i>Peristylus banfieldii</i>	-	E	<i>Peristylus banfieldii</i> is a terrestrial orchid that occurs in open forest and on swamp margins in seasonally wet (monsoon season) soils. Flowers between January and May (Jones <i>et al</i> 2021).	Low: Suitable marginal habitat may occur within the project site. The nearest proximate record occurs on Dunk Island. Four (4) records occur between Lockhart River and Lumholtz.
Forest Swamp Orchid	<i>Phaius pictus</i>	V	V	<i>Phaius pictus</i> occurs in north-east Queensland, sporadically from the Mcllwraith Range, Bloomfield River to Kirrama Range. It is highly localised, restricted to rainforests from 0–600 m altitude, and usually occurs in sheltered humid sites close to streams and seepage among forest litter on boulders (Jones 2006).	Low May possibly occur within swampy sections further to the east in the unnamed reserve. No <i>Phaius spp.</i> were recorded during the site survey. The timing of the survey coincided with the annual flowering event for these large ground orchids. No proximate records.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
Iron Malletwood	<i>Rhodamnia sessiliflora</i>			Large shrub or small tree in the Myrtaceae family. It has large opposite leaves with a distinctive three veined appearance. Whitish hairs on new terminal shoots are distinctive for this species. A widespread species in the Wet Tropics growing 0-1000 m asl on a variety of sites. A characteristic component of rainforest regrowth (Zich et al. 2022).	Confirmed: Approximately 50 individuals were located along the Wongaling Creek tributary remnant vegetation. This species is likely to benefit as a result of the proposal through rehabilitation planting of suitable habitat to buffer the current population and potentially expand habitat for this species on the property.
-	<i>Torenia polygonoides</i>	-	V	This species occurs from south of Lockhart River in disjunct populations within the coastal wet tropics (AVH). It occurs on alluvial soils within dense vine forest communities.	Moderate: Nearest record ~4 km to the northwest. This is the southernmost record for this species occurring within Mesophyll vine forest with <i>Licuala ramsayi</i> on poorly drained alluvial plains and alluvial areas of uplands (AVH, 2021). This RE was not present within the project site.
Velvet Jewel Orchid	<i>Zeuxine polygonoides</i>	V	V	This orchid is endemic to north-eastern Queensland on the coastal ranges between Daintree and Cairns at altitudes of 300-800 m.	Low: Suitable habitat does not occur on site. No proximate records. Project site occurs outside the known elevational range for this species.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
Migratory and Marine Fauna					
Common Noddy	<i>Anous stolidus</i>	Ma	SLC	The Common Noddy is a migratory species to Australia and is found in coastal or inland wetland environments (DAWE, 2020).	Low Lack of suitable habitat on site.
Common Sandpiper	<i>Actitis hypoleucos</i>	Mi, Ma	SL	The Common Sandpiper is a migratory species to Australia and is found in coastal or inland wetland environments (DAWE, 2020).	Low Suitable habitat does not occur within the project site.
Fork-tailed Swift	<i>Apus pacificus</i>	Mi, Ma	SL	The Fork-tailed swift is a non-breeding visitor to all states and territories of Australia (Higgins 1999). In north-east Queensland there are many records east of the Great Divide from near Cooktown and south to Townsville. The species is almost exclusively aerial, and mostly occur over inland plains, over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh. They also occur over settled areas, including towns, urban areas and cities (DAWE, 2020).	Low May occur as an infrequent fly-over. Unlikely to use the site for foraging and nesting.
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	Mi, Ma	SL	The Sharp-tailed Sandpiper is a non-breeding migrant to Australia. Habitat preferences consist of wetland environments, both near the coast and inland, where it can be observed on the edge of salt lakes (DAWE, 2020).	Low Suitable habitat does not occur within the project site.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
Red Knot	<i>Calidris canutus</i>	Mi, E	E	This is a highly migratory species, breeding in the high Arctic, then migrating south. Red Knots gather in large flocks with other waders. They walk fast, probing rapidly in soft sand and mud for worms and bivalves. They feed by both day and night, regulated by the tide. Coastal sandy estuaries with muddy tidal flats are their preferred habitat.	Low Suitable habitat does not occur on the project site.
Curlew Sandpiper	<i>Calidris ferruginea</i>	Mi, CE	E	Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters (Higgins and Davies 1996).	Low Suitable habitat does not occur on the project site.
Pectoral Sandpiper	<i>Calidris melanotos</i>	Mi, Ma	SL	The Pectoral Sandpiper migrates from the northern hemisphere to Australia, where it spends winter within wetlands in northeast Australia (DAWE, 2020).	Low Suitable habitat does not occur on the project site.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
Oriental Cuckoo	<i>Cuculus optatus</i>	Mi	SLC	Inhabits rainforest margins and dense wet eucalypt forests.	Moderate Potential to occur in the more developed forested environments on site.
Estuarine Crocodile	<i>Crocodylus porosus</i>	Mi, Ma	V	This species is found in Australian estuaries, coastal waters, lakes, marshes and inland swamps (DCCEEW 2022). The species can be located from Rockhampton in Queensland to Northern Territory and King Sound in Western Australia.	Low Suitable habitat does not occur within the project site. May occur within Wongaling Creek Tributary during very wet weather. Most likely restricted further to the coast in more Estuarine waters.
Lesser Frigatebird	<i>Fregata ariel</i>	Mi, Ma	SL	The lesser Frigatebird inhabits tropical to subtropical seas in Australia. They can be found flying near the coastlines where they forage.	Low Suitable habitat does not occur within the project site.
Great Frigatebird	<i>Fregata minor</i>	Mi, Ma	SL	The Great Frigatebird has a wide distribution in tropical seas. In the Pacific Ocean, their range extends to Hawaii and in Australia, a few pairs have been observed nesting on islands in the coral sea (Atlas of Living Australia, 2020).	Low May occur as an infrequent fly-over. Unlikely to use the site for foraging and nesting.
Latham's Snipe	<i>Gallinago hardwickii</i>	Mi	SLC	This bird generally inhabits shallow terrestrial wetland types, such as permanent and temporary lakes, swamps and claypans (DAWE, 2020).	Low Lack of suitable habitat on the project site.
Pin-tailed Snipe	<i>Gallinago sternura</i>	Mi, Ma	SLC	One of the smaller Snipe species 25-27 cm total length. The distribution of this species in Australia is poorly understood. Breeding occurs	Low Lack of suitable habitat on the project site.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				in Russia and Mongolia during the northern hemisphere summer.	
White-throated Needletail	<i>Hirundapus caudacutus</i>	V, Ma, Mi	LC	In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground (Coventry 1989; Tarburton 1993). Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable (Cramp 1985), but there are, nevertheless, certain preferences exhibited by the species. 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 (Higgins 1999).	Moderate Suitable roosting habitat for this species does not occur within the project site. May occur infrequently as a flying high above the project site.
Bar-tailed Godwit	<i>Limosa lapponica</i>	Mi, V	V	Bar-tailed Godwits inhabit estuarine mudflats, beaches and mangroves. They are common in coastal areas around Australia. They are social birds and are often seen in large flocks and in the company of other waders.	Low No suitable habitat is present within the project site.
Barn Swallow	<i>Hirundo rustica</i>	Mi	SL	The Barn swallow is a non-breeding migrant to Australia and usually occurs patchily along the north coast from the Pilbara region, Western	Moderate: Generic habitat occurs within the project site. There is the potential for this species

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				Australia, to Fraser Island in Queensland (DAWE, 2020). It is recorded in open country in coastal lowlands, often near water, towns and cities. Birds are often sighted perched on overhead lines (Blakers, Davies <i>et al.</i> 1984), and also in or over freshwater wetlands, paperbark Melaleuca woodland, mesophyll shrub thickets and tussock grassland (Schodde and Mason 1999).	to occur as an infrequent fly-over on the project site.
Black-faced Monarch	<i>Monarcha melanopsis</i>	Mi	SL	Habitat of Black-faced Monarchs are generally rainforest environments (DAWE, 2020).	Low Suitable habitat does not occur within the project site.
Spectacled Monarch	<i>Monarcha trivirgatus</i>	Mi	SL	The Spectacled Monarch occurs mostly in rainforest environments (DAWE, 2020).	Low Suitable habitat does not occur within the project site.
Yellow Wagtail	<i>Motacilla flava</i>	Mi	SL	In Queensland the Yellow wagtail is a regular visitor from Mossman south to Townsville (DAWE, 2020). Habitat requirements for the Yellow Wagtail are highly variable, but typically include open grassy flats near water. Habitats include open areas with low vegetation such as grasslands, airstrips, pastures, sports fields; damp open areas such as muddy or grassy edges of wetlands, rivers, irrigated farmland, dams, waterholes; sewage farms, sometimes utilise tidal mudflats and edges of mangroves.	Low Suitable habitat does not occur within the project site.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
Eastern Curlew	<i>Numenius madagascariensis</i>	Mi, CE	E	The eastern curlew is Australia's largest shorebird and a long-haul flyer. It is easily recognisable, with its long, down-curved bill. The eastern curlew takes an annual migratory flight to Russia and north-eastern China to breed, arriving back home to Australia in August to feed on crabs and molluscs in intertidal mudflats. It is extremely shy and will take flight at the first sign of danger.	Low No suitable habitat is present within the project site.
Little Curlew	<i>Numenius minutus</i>	Mi, Ma	SLC	This species is widespread in coastal regions of Queensland, preferring habitat types that include riverbeds and water-filled tidal channels, and shallow water at edges of billabongs (DCCEEW 2022)	Low Lack of suitable habitat on site.
Whimbrel	<i>Numenius phaeopus</i>	Mi, Ma	SLC	This wader is a regular migrant to Australia and is found along the entire coast of Queensland and New South Wales. Habitat for this wader includes harbours, lagoons, estuaries and river deltas, often those with mangroves. It is occasionally beaches (DCCEEW 2022).	Low Lack of suitable habitat on site.
Bridled Tern	<i>Onychoprion anaethetus</i>	Ma	SLC	Forms dense colonies on sandy shores of coastal islands. Feeds on fish from open water marine environments.	Low Lack of suitable habitat on site.
Rufous Fantail	<i>Rhipidura rufifrons</i>	Mi, Ma	SL	Rufous fantails typically occur in wet sclerophyll and rainforest environments. Populations of this	Moderate

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				species migrate as far north as southern Papua New Guinea (DAWE, 2020).	Suitable habitat occurs on site. May use site as a small part of a greater foraging range.
Osprey	<i>Pandion haliaetus</i>	Mi, Ma	SLC	The Osprey forages and nests in most coastal environments Australia wide. This marine raptor can also travel inland, wherever there are large stands of water or river environments in which to hunt (DCCEEW 2022).	Low Potential to occur occasionally as a flyover. No nest sites present within the project site. No preferred foraging habitat present.
White-tailed Tropic Bird	<i>Phaethon lepturus</i>	Mi, Ma	SLC	A small slender bird with highly elongated tail feathers. This species is largely pelagic and is rarely seen within inshore water (Higgins 1999). Known only to breed at Ashmore Reef west of the Kimberly.	Low Lack of suitable habitat on site.
Common Greenshank	<i>Tringa nebularia</i>	Mi, Ma	SLC	The common Greenshank migrates to Australia as a non-breeding migrant during the boreal winters in the northern hemisphere. Away from the coast, this species inhabits several terrestrial wetlands types, such as rivers, dams, billabongs etc. Along the coast it seeks sheltered environment near mudflats, lagoons and mangroves (DAWE, 2020).	Low No suitable habitat is present within the project site.
Satin Flycatcher	<i>Myiagra cyanoleuca</i>	Mi	SL	Satin Flycatchers are a migratory species. These birds travel northwards to Northern Australia and Papua New Guinea in Winter and return south in summer. This species is distributed across eastern	Low Suitable habitat may be present. Site would represent a small part of a larger foraging range.

Common Name	Scientific Name	EPBC Act	NC Act	Preferred Habitat	Likelihood of Occurrence on Project site
				Australia to as far south as Tasmania. Habitat for this species can vary, but they typically prefer Wet Sclerophyll forests with a dense understory and are absent in rainforests (DAWE, 2020).	
Roseate Tern	<i>Sterna dougallii</i>	Ma	SLC	Forms dense colonies on sandy shores of coastal islands. Feeds on fish from open water marine environments.	Low Lack of suitable habitat on site.
Black-naped Tern	<i>Sterna sumatrana</i>	Mi, Ma	SLC	A small and slender marine tern. This species is rarely recorded within inshore waters. Breeding is mostly restricted to offshore islands off of northern Australia (DCCEEW 2022).	Low Lack of suitable habitat on site.
Little Tern	<i>Sternula albifrons</i>	Mi, Ma	SLC	Forms dense colonies on sandy shores of coastal islands. Feeds on fish from open water marine environments.	Low Lack of suitable habitat on site.



Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Queensland status: Rare and threatened species
Records: All
Date: All
Latitude: -17.8816
Longitude: 146.0919
Distance: 10
Email: ryan@4ec.com.au
Date submitted: Monday 17 Oct 2022 12:19:57
Date extracted: Monday 17 Oct 2022 12:20:03

The number of records retrieved = 30

Disclaimer

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Information about your Species lists request is logged for quality assurance, user support and product enhancement purposes only.

The information provided should be appropriately acknowledged as being derived from WildNet database when it is used. As the WildNet Program is still in a process of collating and vetting data, it is possible the information given is not complete. Go to the WildNet database webpage (<https://www.qld.gov.au/environment/plants-animals/species-information/wildnet>) to find out more about WildNet and where to access other WildNet information products approved for publication. Feedback about WildNet species lists should be emailed to wildlife.online@des.qld.gov.au.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Hylidae	<i>Litoria dayi</i>	Australian lacelid		V	V	6
animals	amphibians	Hylidae	<i>Litoria rheocola</i>	common mistfrog		E		17/6
animals	amphibians	Hylidae	<i>Litoria serrata</i>	tapping green eyed frog		V		11/1
animals	birds	Accipitridae	<i>Erythrotriorchis radiatus</i>	red goshawk		E	V	1
animals	birds	Apodidae	<i>Hirundapus caudacutus</i>	white-throated needletail		V	V	1
animals	birds	Burhinidae	<i>Esacus magnirostris</i>	beach stone-curlew		V		31
animals	birds	Casuariidae	<i>Casuarus casuarius johnsonii (northern population)</i>	southern cassowary (northern population)		V	E	2
animals	birds	Casuariidae	<i>Casuarus casuarius johnsonii (southern population)</i>	southern cassowary (southern population)		E	E	263/5
animals	birds	Falconidae	<i>Falco hypoleucos</i>	grey falcon		V	V	1
animals	birds	Phaethontidae	<i>Phaethon rubricauda</i>	red-tailed tropicbird		V		1
animals	birds	Psittacidae	<i>Cyclopsitta diophthalma macleayana</i>	Macleay's fig-parrot		V		15/1
animals	birds	Scolopacidae	<i>Calidris tenuirostris</i>	great knot		CR	CE	1
animals	insects	Lycaenidae	<i>Hypochrysops apollo apollo</i>	Apollo jewel (Wet Tropics subspecies)		V		1
animals	mammals	Dasyuridae	<i>Dasyurus maculatus gracilis</i>	spotted-tailed quoll (northern subspecies)		E	E	2
animals	mammals	Emballonuridae	<i>Taphozous australis</i>	coastal sheath-tail bat		NT		2
animals	mammals	Pteropodidae	<i>Pteropus conspicillatus</i>	spectacled flying-fox		E	E	4
plants	land plants	Anacardiaceae	<i>Buchanania mangoides</i>			V		1/1
plants	land plants	Arecaceae	<i>Arenga australasica</i>			V		7/6
plants	land plants	Cyperaceae	<i>Carex breviscapa</i>			V		1/1
plants	land plants	Leguminosae	<i>Dioclea hexandra</i>			V		2/1
plants	land plants	Linderniaceae	<i>Torenia polygonoides</i>			V		1/1
plants	land plants	Menispermaceae	<i>Carronia pedicellata</i>			E	E	2/2
plants	land plants	Myrtaceae	<i>Rhodamnia sessiliflora</i>			E		1/1
plants	land plants	Orchidaceae	<i>Aphyllorchis queenslandica</i>			NT		1/1
plants	land plants	Orchidaceae	<i>Corybas cerasinus</i>			NT		1/1
plants	land plants	Orchidaceae	<i>Didymoplexis pallens</i>	crystal bells		NT		2/2
plants	land plants	Orchidaceae	<i>Habenaria rumphii</i>			NT		1/1
plants	land plants	Orchidaceae	<i>Peristylus banfieldii</i>			E		1/1
plants	land plants	Rubiaceae	<i>Hedyotis novoguineensis</i>			E		8/8
plants	land plants	Rubiaceae	<i>Myrmecodia beccarii</i>			V	V	3/1

CODES

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

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

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

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

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

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

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

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

Appendix C Protected Matters Search Tool (EPBC Act 1999)



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: 17-Oct-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

World Heritage Properties:	2
National Heritage Places:	3
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	6
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	44
Listed Migratory Species:	56

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:	106
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	26
Regional Forest Agreements:	None
Nationally Important Wetlands:	3
EPBC Act Referrals:	36
Key Ecological Features (Marine):	None
Biologically Important Areas:	6
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [\[Resource Information \]](#)

Name	State	Legal Status	Buffer Status
Great Barrier Reef	QLD	Declared property	In feature area
Wet Tropics of Queensland	QLD	Declared property	In buffer area only

National Heritage Places [\[Resource Information \]](#)

Name	State	Legal Status	Buffer Status
Indigenous			
Wet Tropics World Heritage Area (Indigenous Values)	QLD	Within listed place	In buffer area only

Natural

Great Barrier Reef	QLD	Listed place	In feature area
Wet Tropics of Queensland	QLD	Listed place	In buffer area only

Great Barrier Reef Marine Park [\[Resource Information \]](#)

Zone Type	Zone ID	IUCN	Buffer Status
Conservation Park	CP-17-4045	IV	In feature area
General Use	GU-16-6004	VI	In buffer area only
Habitat Protection	HP-17-5140	VI	In buffer area only
Marine National Park	MNP-17-1070	II	In buffer area only
Marine National Park	MNP-17-1073	II	In buffer area only
Marine National Park	MNP-17-1074	II	In buffer area only

Listed Threatened Ecological Communities [\[Resource Information \]](#)

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

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Broad leaf tea-tree (Melaleuca viridiflora) woodlands in high rainfall coastal north Queensland	Endangered	Community likely to occur within area	In feature area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area	In buffer area only

Community Name	Threatened Category	Presence Text	Buffer Status
Lowland tropical rainforest of the Wet Tropics	Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [[Resource Information](#)]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Calidris canutus			
Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Casuarius casuarius johnsonii			
Southern Cassowary, Australian Cassowary, Double-wattled Cassowary [25986]	Endangered	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii			
Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Erythrotriorchis radiatus			
Red Goshawk [942]	Vulnerable	Species or species habitat known to occur within area	In feature area
Falco hypoleucos			
Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Fregetta grallaria grallaria			
White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat known 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 known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Tyto novaehollandiae kimberli Masked Owl (northern) [26048]	Vulnerable	Species or species habitat likely to occur within area	In feature area
FISH			
Stiphodon semoni Opal Cling Goby [83909]	Critically Endangered	Species or species habitat known to occur within area	In feature area
FROG			
Litoria dayi Australian Lace-lid, Lace-eyed Tree Frog, Day's Big-eyed Treefrog [86707]	Vulnerable	Species or species habitat known to occur within area	In feature area
MAMMAL			
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
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
Dasyurus maculatus gracilis Spotted-tailed Quoll (North Queensland), Yarri [64475]	Endangered	Species or species habitat known 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
Mesembriomys gouldii rattoides Black-footed Tree-rat (north Queensland), Shaggy Rabbit-rat [87620]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Petauroides minor Greater Glider (northern), Greater Glider (north-eastern Queensland) [92008]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Petaurus gracilis Mahogany Glider [26775]	Endangered	Species or species habitat likely to occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area	In feature area
Pteropus conspicillatus Spectacled Flying-fox [185]	Endangered	Species or species habitat known to 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 Sheath-tail Bat [66889]	Vulnerable	Species or species habitat likely to 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			
Canarium acutifolium [23956]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Carronia pedicellata [24178]	Endangered	Species or species habitat known to occur within area	In feature area
Chingia australis [24603]	Endangered	Species or species habitat may occur within area	In feature area
Diplazium cordifolium [15585]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Myrmecodia beccarii Ant Plant [11852]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phaius pictus [22564]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Zeuxine polygonoides Velvet Jewel Orchid [46794]	Vulnerable	Species or species habitat may occur within area	In buffer area only

REPTILE

Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In feature area

SHARK

Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known 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]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area	In feature area
Onychoprion anaethetus Bridled Tern [82845]		Breeding 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
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area	In buffer area only
Sterna sumatrana Black-naped Tern [800]		Breeding known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area	In feature area
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 feature area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In feature area
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	Foraging, feeding or related behaviour known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to 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 feature area
Dugong dugon Dugong [28]		Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In buffer area only
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat 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 likely to occur within area	In buffer area only
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat likely to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In feature area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat likely to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area
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	Species or species habitat known 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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Breeding known to occur within area	In buffer area only
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known 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 known to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known 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 known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known 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
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
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 known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
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 known to occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area	In buffer area only
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
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 likely to occur within area overfly marine area	In feature area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area	In buffer area only
Sterna sumatrana Black-naped Tern [800]		Breeding known to occur within area	In buffer area only
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
Thalasseus bengalensis as Sterna bengalensis Lesser Crested Tern [66546]		Breeding known to occur within area	In buffer area only
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Fish			
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In buffer area only
Bulbonaricus davaoensis Davao Pughead Pipefish [66190]		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 sculptus Sculptured Pipefish [66197]		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
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 paxtoni Paxton's Pipefish [66204]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
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
Festucalex gibbsi Gibbs' Pipefish [66215]		Species or species habitat may occur within area	In buffer area only
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area	In buffer area only
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area	In buffer area only
Halicampus macrorhynchus Whiskered Pipefish, Ornate Pipefish [66222]		Species or species habitat may occur within area	In buffer area only
Halicampus mataafae Samoan Pipefish [66223]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area	In buffer area only
Halicampus spirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area	In buffer area only
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area	In buffer area only
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area	In buffer area only
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In buffer area only
Hippichthys spicifer Belly-barred Pipefish, Banded Freshwater Pipefish [66232]		Species or species habitat may occur within area	In buffer area only
Hippocampus bargibanti Pygmy Seahorse [66721]		Species or species habitat may occur within area	In buffer area only
Hippocampus 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 zebra Zebra Seahorse [66241]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Micrognathus andersonii Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area	In buffer area only
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area	In buffer area only
Microphis brachyurus Short-tail Pipefish, Short-tailed River Pipefish [66257]		Species or species habitat may occur within area	In buffer area only
Nannocampus pictus Painted Pipefish, Reef Pipefish [66263]		Species or species habitat may occur within area	In buffer area only
Phoxocampus diacanthus Pale-blotched Pipefish, Spined Pipefish [66266]		Species or species habitat may occur within area	In buffer area only
Siokunichthys breviceps Softcoral Pipefish, Soft-coral Pipefish [66270]		Species or species habitat may occur within area	In buffer area only
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area	In buffer area only
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In buffer area only
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In buffer area only
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In buffer area only
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
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 feature area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area	In feature area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area	In feature area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area	In feature area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area	In feature area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In feature area
Chitulia ornata as Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [87377]		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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area	In feature area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area	In feature area
Enhydrina schistosa Beaked Seasnake [1126]		Species or species habitat may occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area	In feature area
Hydrophis macdowelli as Hydrophis mcdowelli Small-headed Seasnake [75601]		Species or species habitat may occur within area	In feature area
Lapemis curtus as Lapemis hardwickii Spine-bellied Seasnake [83554]		Species or species habitat may occur within area	In feature area
Laticauda colubrina a sea krait [1092]		Species or species habitat may occur within area	In feature area
Laticauda laticaudata a sea krait [1093]		Species or species habitat may occur within area	In feature area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area	In feature area
Whales and Other Cetaceans			[Resource Information]
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In feature area
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 feature area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In feature area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Orcaella heinsohni as Orcaella brevirostris Australian Snubfin Dolphin [81322]		Species or species habitat likely to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Breeding known to occur within area	In buffer area only
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In feature area

Current Scientific Name	Status	Type of Presence	Buffer Status
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In feature area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Ant Plant East	Nature Refuge	QLD	In buffer area only
Ant Plant East	Nature Refuge	QLD	In buffer area only
Ant Plant West	Nature Refuge	QLD	In buffer area only
Ant Plant West	Nature Refuge	QLD	In buffer area only
Brooks Beach	Nature Refuge	QLD	In buffer area only
Cassowary Connection	Nature Refuge	QLD	In feature area
Cassowary Connection	Nature Refuge	QLD	In feature area
Chakoro	Nature Refuge	QLD	In buffer area only
Clump Mountain	National Park	QLD	In buffer area only
Djiru	National Park	QLD	In buffer area only
Family Islands	National Park	QLD	In buffer area only
Girringun	Indigenous Protected Area	QLD	In buffer area only
Girringun	Indigenous Protected Area	QLD	In feature area
Great Barrier Reef Coast	Marine Park	QLD	In feature area
Hull River	National Park	QLD	In buffer area only
Hull River	Fish Habitat Area (A)	QLD	In buffer area only
Japoon	National Park	QLD	In buffer area only
Kurrimine Beach	Conservation Park	QLD	In buffer area only

Protected Area Name	Reserve Type	State	Buffer Status
Maria Creek	Nature Refuge	QLD	In buffer area only
Maria Creek	National Park	QLD	In buffer area only
Maria Creek	Nature Refuge	QLD	In buffer area only
Mount Mackay	National Park	QLD	In buffer area only
Tam O'Shanter	Forest Reserve	QLD	In buffer area only
Walter Hill Range	Conservation Park	QLD	In buffer area only
Wompoo	Nature Refuge	QLD	In buffer area only
Wompoo	Nature Refuge	QLD	In buffer area only

Nationally Important Wetlands [\[Resource Information \]](#)

Wetland Name	State	Buffer Status
Great Barrier Reef Marine Park	QLD	In feature area
Kurrimine Area	QLD	In buffer area only
Licuala Palm Forest	QLD	In buffer area only

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Action clearly unacceptable				
Subdivide into 40 lots	2008/4257	Action Clearly Unacceptable	Completed	In feature area
Controlled action				
13 Lot residential subdivision	2008/4678	Controlled Action	Post-Approval	In buffer area only
24 Lot Residential Subdivision	2008/3943	Controlled Action	Post-Approval	In buffer area only
30 Lot Residential Subdivision	2008/3942	Controlled Action	Post-Approval	In buffer area only
48 Lot Residential Subdivision and Associated Infrastructure	2009/5228	Controlled Action	Completed	In buffer area only
Allan Sellars Farm Subdivision	2009/4779	Controlled Action	Completed	In buffer area only
Development of a resort complex	2005/2389	Controlled Action	Post-Approval	In feature area
High Voltage Electricity Transmission Line	2001/232	Controlled Action	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Horizon Resort residential development	2006/2941	Controlled Action	Completed	In buffer area only
Lilliponds Residential Resort Estate, Tully Mission Beach Road	2005/2335	Controlled Action	Post-Approval	In buffer area only
Nemourna Residential Subdivision, Lot 44, Esplanade, Mission Beach	2008/4616	Controlled Action	Post-Approval	In buffer area only
Prawn Farm Expansion Stage 2	2001/208	Controlled Action	Completed	In buffer area only
Residential development	2006/3066	Controlled Action	Post-Approval	In buffer area only
Residential Estate, Lot 97 Nonda Street, Mission Beach	2007/3371	Controlled Action	Post-Approval	In feature area
Residential Sub-Division	2010/5331	Controlled Action	Post-Approval	In buffer area only
Rockingham Close residential development, Lot 66 on SP164474, Wongaling Beach Q	2009/5051	Controlled Action	Completed	In feature area
Six allotment subdivision and associated infrastructure	2009/5109	Controlled Action	Post-Approval	In buffer area only
Taylor Family Health Retreat	2009/4785	Controlled Action	Completed	In feature area
Tourist - Residential Development, off Jackey Jackey Street	2005/1996	Controlled Action	Post-Approval	In buffer area only
Tully-Mission Beach Road 40 Lot Residential Subdivision	2008/3959	Controlled Action	Post-Approval	In feature area
Vegetation clearing	2005/2152	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
Castaways Mission Beach, Mission Beach, Qld	2018/8332	Not Controlled Action	Completed	In buffer area only
Changes to telecommunications facility at Dunk Island Resort	2008/4193	Not Controlled Action	Completed	In buffer area only
Commerical & Residential Development, Wongaling Beach, Qld	2014/7211	Not Controlled Action	Completed	In buffer area only
Department of State Development, Infrastructure and Planning/Transport - water/Boat Bay, 2km north o	2014/7189	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Development of additional accommodation for Dunk Island Resort	2004/1423	Not Controlled Action	Completed	In buffer area only
Mission Beach Clump Point Boating Infrastructure Project, Qld	2017/7924	Not Controlled Action	Completed	In buffer area only
Mission Beach Safe Boating Infrastructure Project, Mission Beach, QLD	2013/7100	Not Controlled Action	Completed	In buffer area only
Mission Beach sewerage scheme	2002/827	Not Controlled Action	Completed	In feature area
Prawn Farm Expansion Stage 1	2001/207	Not Controlled Action	Completed	In buffer area only
Telecommunications Facility	2002/840	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
'Liquid at Mission Beach' Residential Development	2007/3815	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
El Arish to Mission Beach Road Upgrade	2001/287	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Residential Subdivision & Associated Works Alexander Drive RP732173	2005/2022	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Residential Subdivision Lot 502 SP110366	2003/1286	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Shared Bikeway/Walkway - Stage 2	2010/5474	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Biologically Important Areas

Scientific Name	Behaviour	Presence	Buffer Status
Dolphins			
Sousa chinensis			
Indo-Pacific Humpback Dolphin [50]	Breeding	Known to occur	In buffer area only

Scientific Name	Behaviour	Presence	Buffer Status
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Foraging	Likely to occur	In feature area
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur	In feature area
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Known to occur	In buffer area only

Seabirds

Sterna sumatrana Black-naped Tern [800]	Breeding	Known to occur	In feature area
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Whales

Megaptera novaeangliae Humpback Whale [38]	Breeding and calving	Known to occur	In buffer area only
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Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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Department of Agriculture Water and the Environment

GPO Box 858

Canberra City ACT 2601 Australia

+61 2 6274 1111

Appendix D Regulated Vegetation Report (VM Act 1999)



Vegetation management report

For Lot: 3 Plan: RP732964

17/10/2022

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Recent changes

Updated mapping

Updated vegetation mapping was released on 8 September 2022 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, wetland, high-value regrowth and essential habitat mapping.

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

Overview

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

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

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

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

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

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

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

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

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

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

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

- the vegetation management framework, which may include:

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

- the protected plant framework, which may include:

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

- the koala protection framework, which may include:

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

Other laws

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

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1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 3 Plan: RP732964, are listed in Table 1.

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

Lot	Plan	Tenure	Property title area (sq metres)
3	RP732964	Freehold	111,600
A	SP285739	Easement	2,223

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

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 3 Plan: RP732964, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Cassowary Coast Regional

Bioregion(s)	Subregion(s)
Wet Tropics	Innisfail

Catchment(s)
Tully

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

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

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

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

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem prescribed under Schedule 5 of the Vegetation Management Regulation 2012; and
- a mangrove.

2.1 Exempt clearing work

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

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

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

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

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

2.2 Accepted development vegetation clearing codes

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

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

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

You can complete the online form at

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

2.3 Area management plans

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

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

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

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

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

2.4 Development approvals

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

Information on how to apply for a development approval is available at

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

2.5. Contact information for the Department of Resources

For further information on the vegetation management framework:

Phone 135VEG (135 834)

Email vegetation@resources.qld.gov.au

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

3. Vegetation management framework for Lot: 3 Plan: RP732964

3.1 Vegetation categories

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

Table 3: Vegetation categories for subject property. Total area: 11.06ha

Vegetation category	Area (ha)
Category B	1.4
Category R	0.8
Category X	8.9

Table 4: Description of vegetation categories

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

Property Map of Assessable Vegetation (PMAV)

There is no Property Map of Assessable Vegetation (PMAV) present on this property.

3.2 Regional ecosystems

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

A description of regional ecosystems can be accessed online at <https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/>

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
7.12.1	Least concern	B	0.04	Simple to complex mesophyll to notophyll vine forest of moderately to poorly-drained granites and rhyolites of moderate fertility of the moist and wet lowlands, foothills and uplands	Dense
7.3.10	Of concern	B	1.38	Simple-complex mesophyll to notophyll vine forest on moderate to poorly-drained alluvial plains of moderate fertility	Dense
7.3.10	Of concern	R	0.78	Simple-complex mesophyll to notophyll vine forest on moderate to poorly-drained alluvial plains of moderate fertility	Dense
non-rem	None	X	8.86	None	None

Please note:

1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.
2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

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

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

3.3 Watercourses

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

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

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

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

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

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

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

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

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

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

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

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
1087	Casuarius casuarius johnsonii (southern population)	southern cassowary (southern population)	E	Dense lowland and highland tropical rainforest, closed gallery forest, eucalypt forest with vine forest elements, swamp forest and adjacent melaleuca swamps, littoral scrub, eucalypt woodland and mangroves; often using a habitat mosaic; will cross open eucalypt, canefields and dry ridges between rainforest patches.	Sea level to 1500m.	None	None
584	Crocodylus porosus	estuarine crocodile	V	Estuaries and major rivers, billabongs and swamps in dry season; freshwater swamps in wet season, occasionally found in open sea; also in dune swale swamps and dams; mostly within 40-50km of coastline (some breeding populations up to 100km from sea). Nest sites vegetated areas (preference for Melaleuca swamp forest with Thoracostachyum or Scleria sedgeswamp &/or Stenoclaena fern) near permanent freshwater (<100-200m), often on north-west banks, prime areas associated with productive deepwater estuaries; will also use marginal sites, e.g. grassy areas (Imperata, Ischaemum, Themeda, Sorghum) near forest edge or with sparse eucalypt, riverbank/fringe forest (Melaleuca, Corypha, Acacia), mangrove fringe, salt meadow behind mangrove, and sparse short (<40cm) sedgeland/swamp.	Sea level to 100m.	None	Near and in waterbodies.

Label	Regional Ecosystem (mandatory unless otherwise specified)
1087	3.8.2, 7.1.1, 7.1.2, 7.1.3, 7.1.4, 7.1.5, 7.2.1, 7.2.2, 7.2.3, 7.2.4, 7.2.5, 7.2.6, 7.2.7, 7.2.8, 7.2.9, 7.2.10, 7.2.11, 7.3.1, 7.3.2, 7.3.3, 7.3.4, 7.3.5, 7.3.6, 7.3.7, 7.3.8, 7.3.9, 7.3.10, 7.3.12, 7.3.13, 7.3.17, 7.3.19, 7.3.20, 7.3.21, 7.3.23, 7.3.25, 7.3.26, 7.3.29, 7.3.30, 7.3.31, 7.3.34, 7.3.35, 7.3.36, 7.3.37, 7.3.38, 7.3.39, 7.3.40, 7.3.42, 7.3.45, 7.3.46, 7.3.47, 7.3.49, 7.8.1, 7.8.2, 7.8.3, 7.8.4, 7.8.11, 7.8.12, 7.8.13, 7.8.14, 7.8.15, 7.8.16, 7.8.18, 7.11.1, 7.11.2, 7.11.3, 7.11.5, 7.11.6, 7.11.7, 7.11.8, 7.11.10, 7.11.12, 7.11.13, 7.11.14, 7.11.16, 7.11.18, 7.11.19, 7.11.23, 7.11.24, 7.11.25, 7.11.26, 7.11.27, 7.11.28, 7.11.29, 7.11.30, 7.11.31, 7.11.32, 7.11.34, 7.11.36, 7.11.38, 7.11.39, 7.11.40, 7.11.42, 7.11.44, 7.11.46, 7.11.47, 7.11.49, 7.12.1, 7.12.2, 7.12.4, 7.12.5, 7.12.6, 7.12.7, 7.12.9, 7.12.10, 7.12.11, 7.12.12, 7.12.13, 7.12.16, 7.12.17, 7.12.19, 7.12.20, 7.12.21, 7.12.22, 7.12.23, 7.12.24, 7.12.25, 7.12.26, 7.12.29, 7.12.37, 7.12.38, 7.12.39, 7.12.40, 7.12.41, 7.12.43, 7.12.44, 7.12.45, 7.12.47, 7.12.48, 7.12.49, 7.12.50, 7.12.53, 7.12.59, 7.12.61, 7.12.66, 7.12.67, 7.12.68
584	All regional ecosystems within the stream/wetland buffer as determined by VMA code.

3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

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

Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

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

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

Class A (with urban areas masked as per SPP): 11.06ha

No Class B

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

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 3 Plan: RP732964.

4. Vegetation management framework maps

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

<https://www.resources.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form>

Regulated vegetation management map

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

Vegetation management supporting map

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

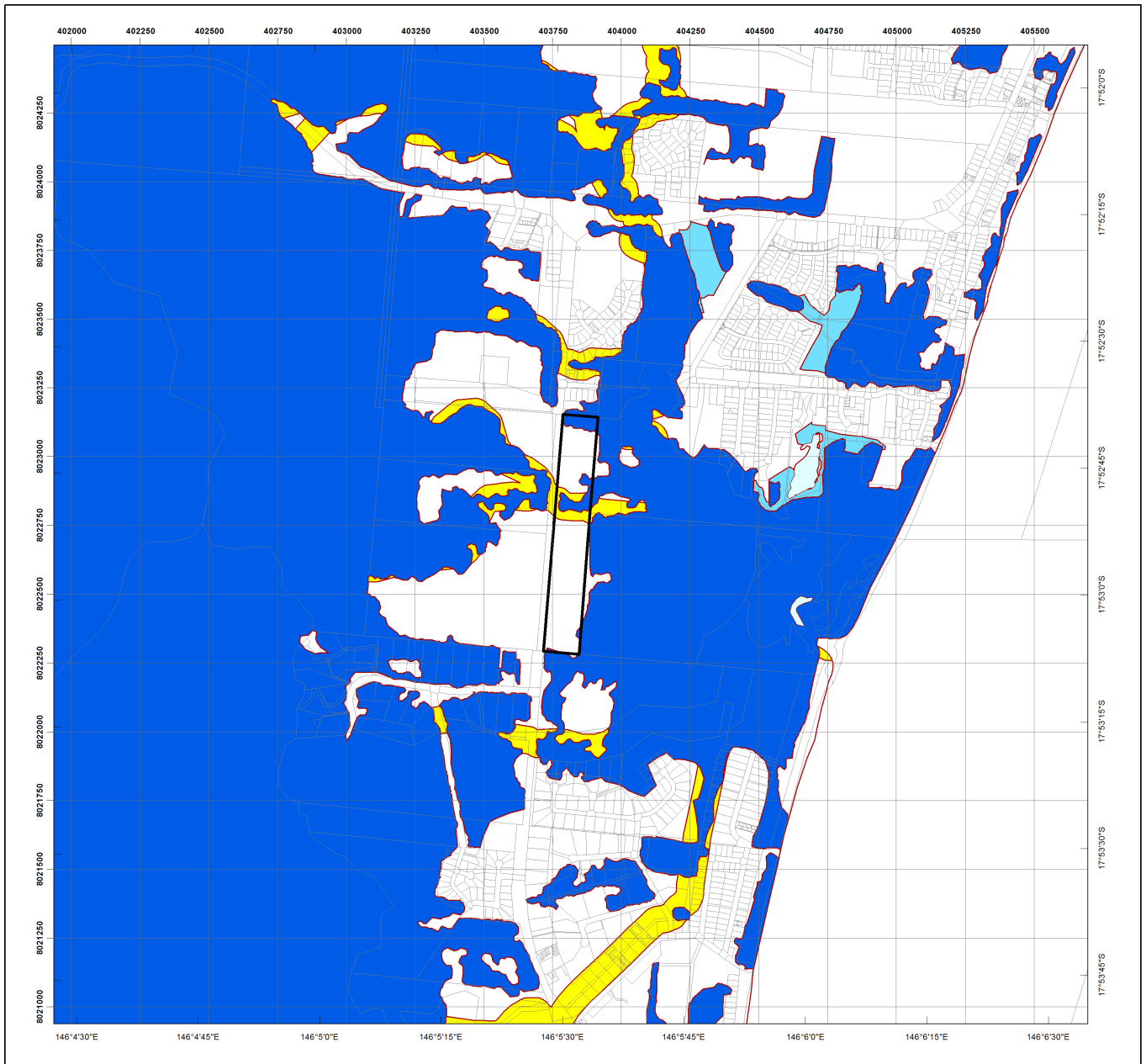
Coastal/non-coastal map

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

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

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

4.1 Regulated vegetation management map



Regulated Vegetation Management Map

Legend

- Selected Lot and Plan
- Category A area (Vegetation offsets/compliance notices/VDecs)
- Category B area (Remnant vegetation)
- Category C area (High-value regrowth vegetation)
- Category R area (Reef regrowth watercourse vegetation)
- Category X area (Exempt clearing work on Freehold, Indigenous and Leasehold land)
- Water
- Other land parcel boundaries



This product is projected into:
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Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

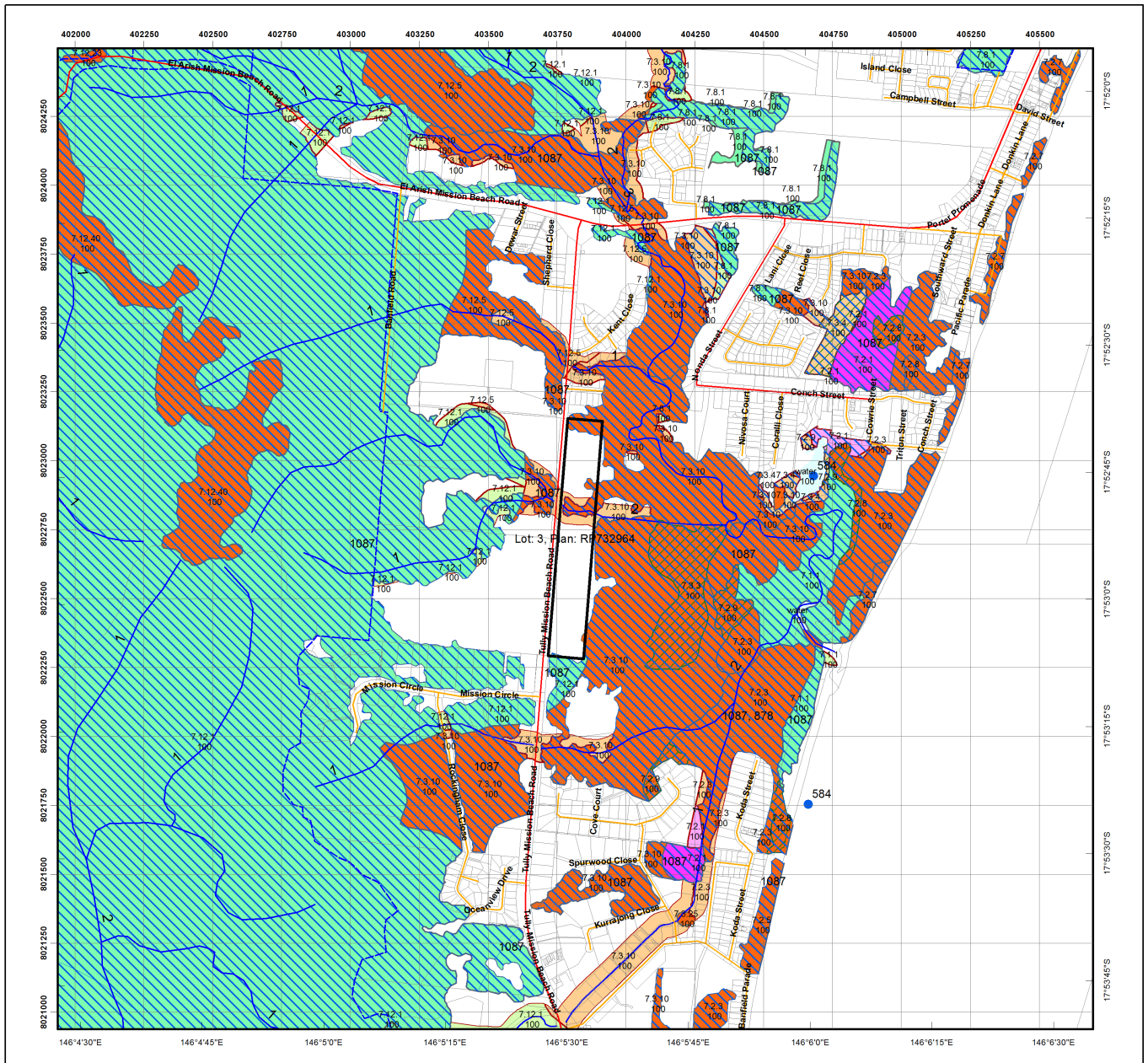
Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>

Land parcel boundaries are provided as locational aid only.

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.



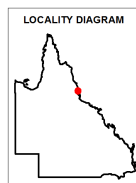
4.2 Vegetation management supporting map



Vegetation Management Supporting Map

Legend

- Selected Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category C or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R area that is a least concern regional ecosystem
- Category X area
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map (Stream order shown as black number against stream where available)
- Highway
- Connector
- Street/Local Road
- National Parks, State Forest and other reserves
- Other land parcel boundaries



0 140 280 420 560 700 m

This product is projected into:
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Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

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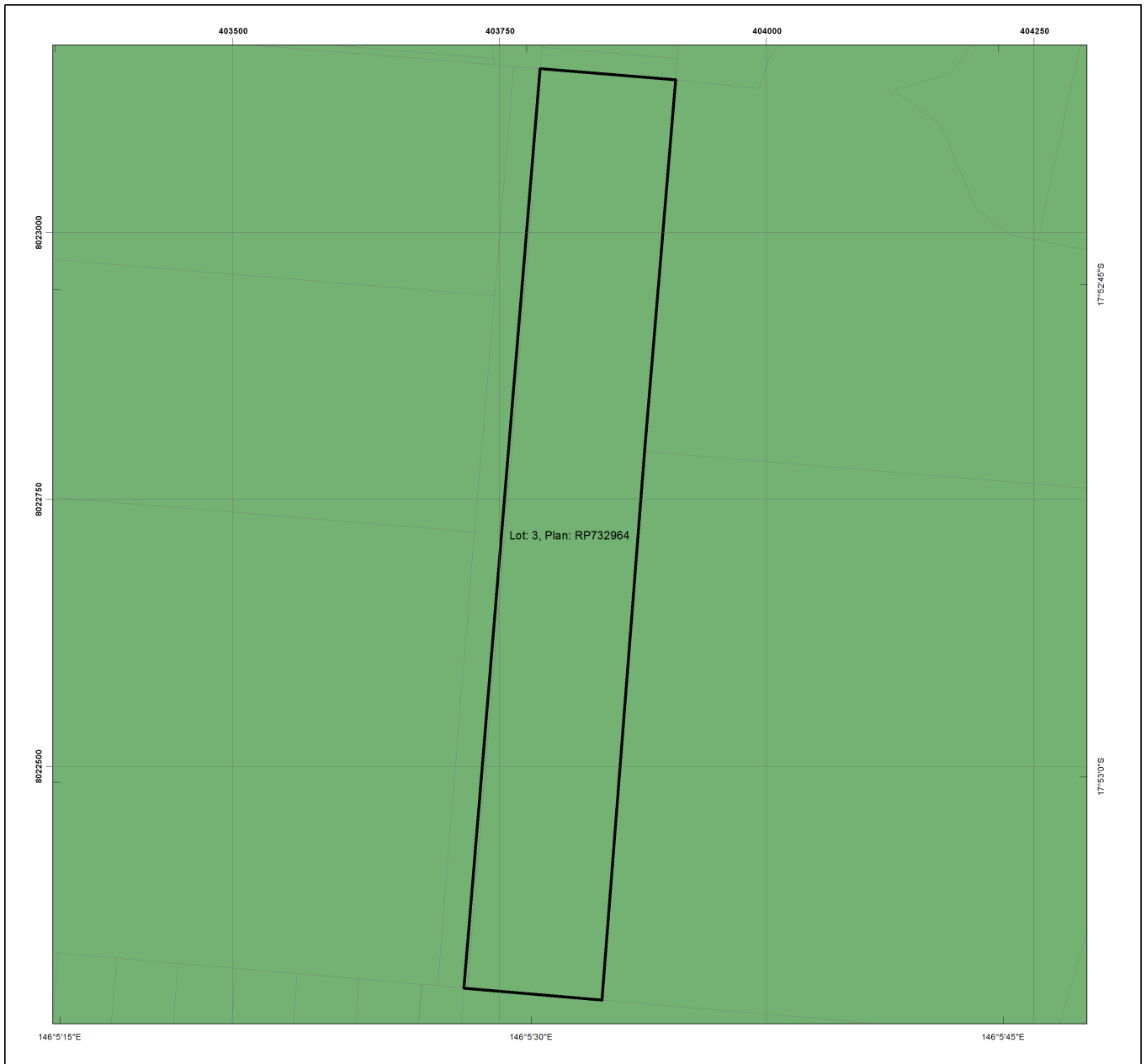
Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>

Land parcel boundaries are provided as locational aid only.







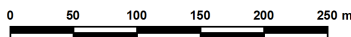
4.3 Coastal/non-coastal map



Coastal/Non Coastal Map

Legend

-  Selected Lot and Plan
-  Coastal
-  Non Coastal
-  Other land parcel boundaries



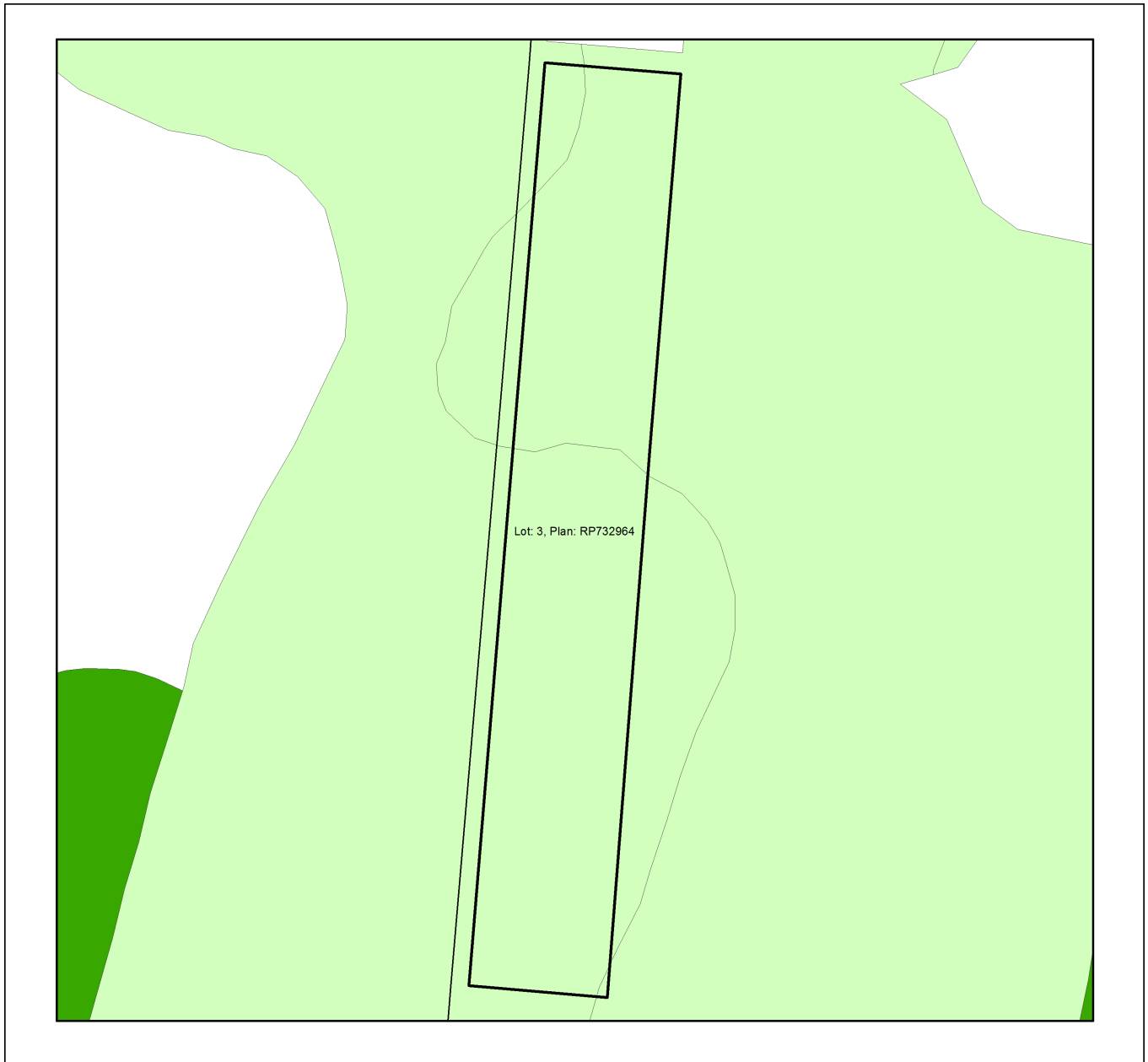
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





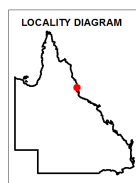
4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture



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

Legend

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



This product is projected into GDA 1994 MGA Zone 55

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5. Protected plants framework (administered by the Department of Environment and Science (DES))

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

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

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

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

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

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

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

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

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

5.3 Exemptions

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

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

5.4 Contact information for DES

For further information on the protected plants framework:

Phone 1300 130 372 (and select option four)

Email palm@des.qld.gov.au

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

5.5 Protected plants flora survey trigger map

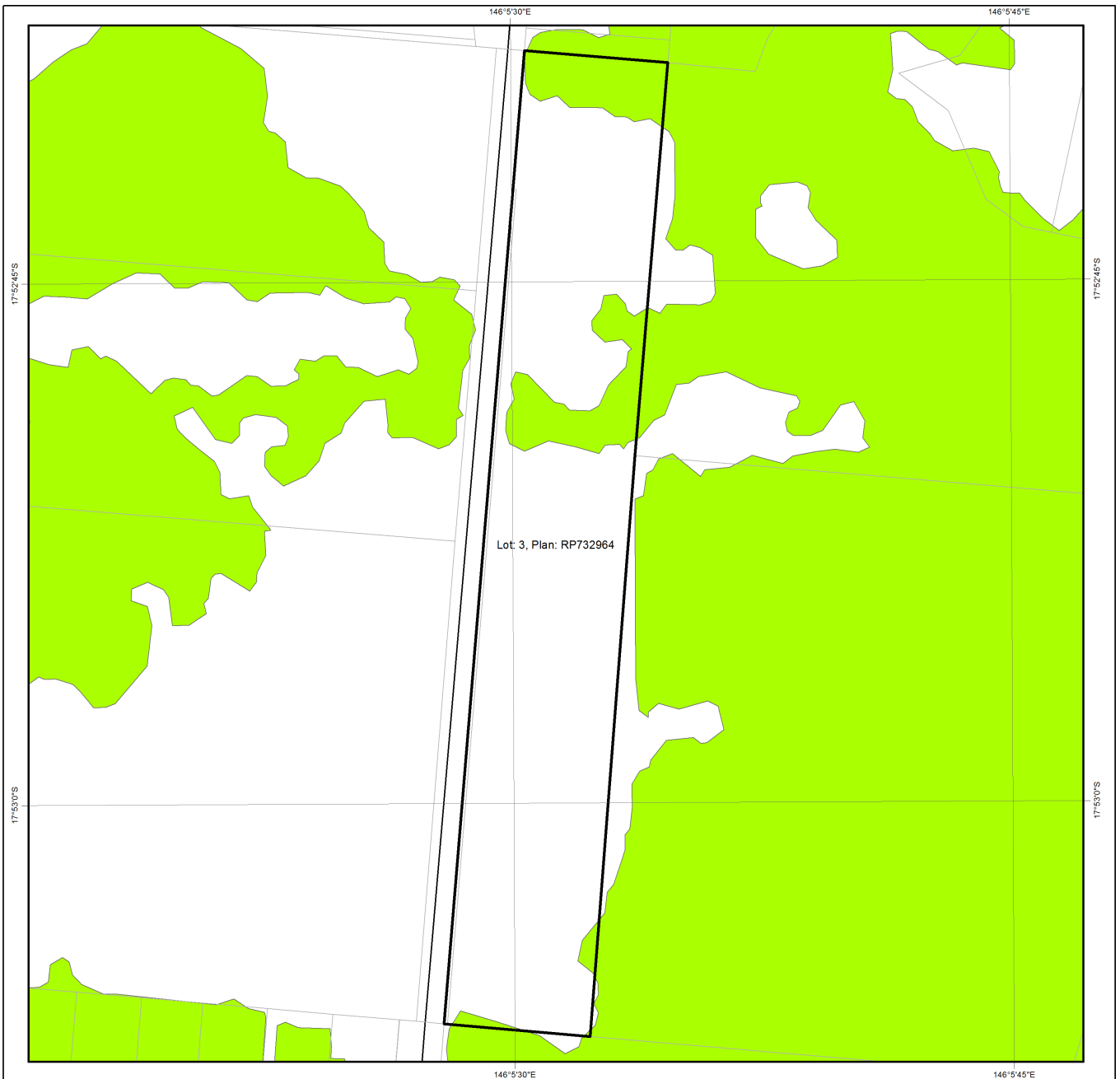
This map included may also be requested individually at: <https://apps.des.qld.gov.au/map-request/flora-survey-trigger/>.

Updates to the data informing the flora survey trigger map

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






Species information

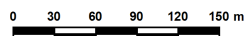
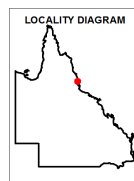
Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. 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.



Protected Plants Flora Survey Trigger Map

Legend

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



This product is projected into:
GDA 1994 MGA Zone 55

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:
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6. Koala protection framework (administered by the Department of Environment and Science (DES))

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

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

6.1 Koala mapping

6.1.1 Koala districts

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

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

6.1.2 Koala habitat areas

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

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

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

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

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

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

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

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: <https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps>. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

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

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

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley,

Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

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

6.1.4 Identified koala broad-hectare areas

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

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

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

6.2 Koala habitat planning controls

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

More information on these planning controls can be found here:

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

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

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

Interfering with koala habitat means:

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

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

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

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

- building works, operational works, material change of use or reconfiguration of a lot where:
 - the local government planning scheme makes the development assessable;
 - the premises includes an area that is both a koala priority area and a koala habitat area; and
 - the development does not involve interfering with koala habitat (defined above); and
- development in identified koala broad-hectare areas.

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

6.3 Koala Conservation Plan clearing requirements

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

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

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

6.4 Contact information for DES

For further information on the koala protection framework:

Phone 13 QGOV (13 74 68)

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

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

7. Koala protection framework details for Lot: 3 Plan: RP732964

7.1 Koala districts













Koala District C

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

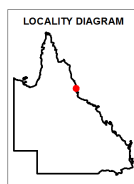


Koala priority area, koala habitat area and identified koala broad-hectare area map

Legend

-  Selected Lot and Plan
-  Koala habitat area (core)
-  Koala habitat area (locally refined)
-  Koala priority area
-  Identified koala broad-hectare area
-  Cadastral Boundaries
-  Towns
-  Highway
-  Connector
-  Street/Local Road
-  Major rivers/creeks
-  Queensland

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



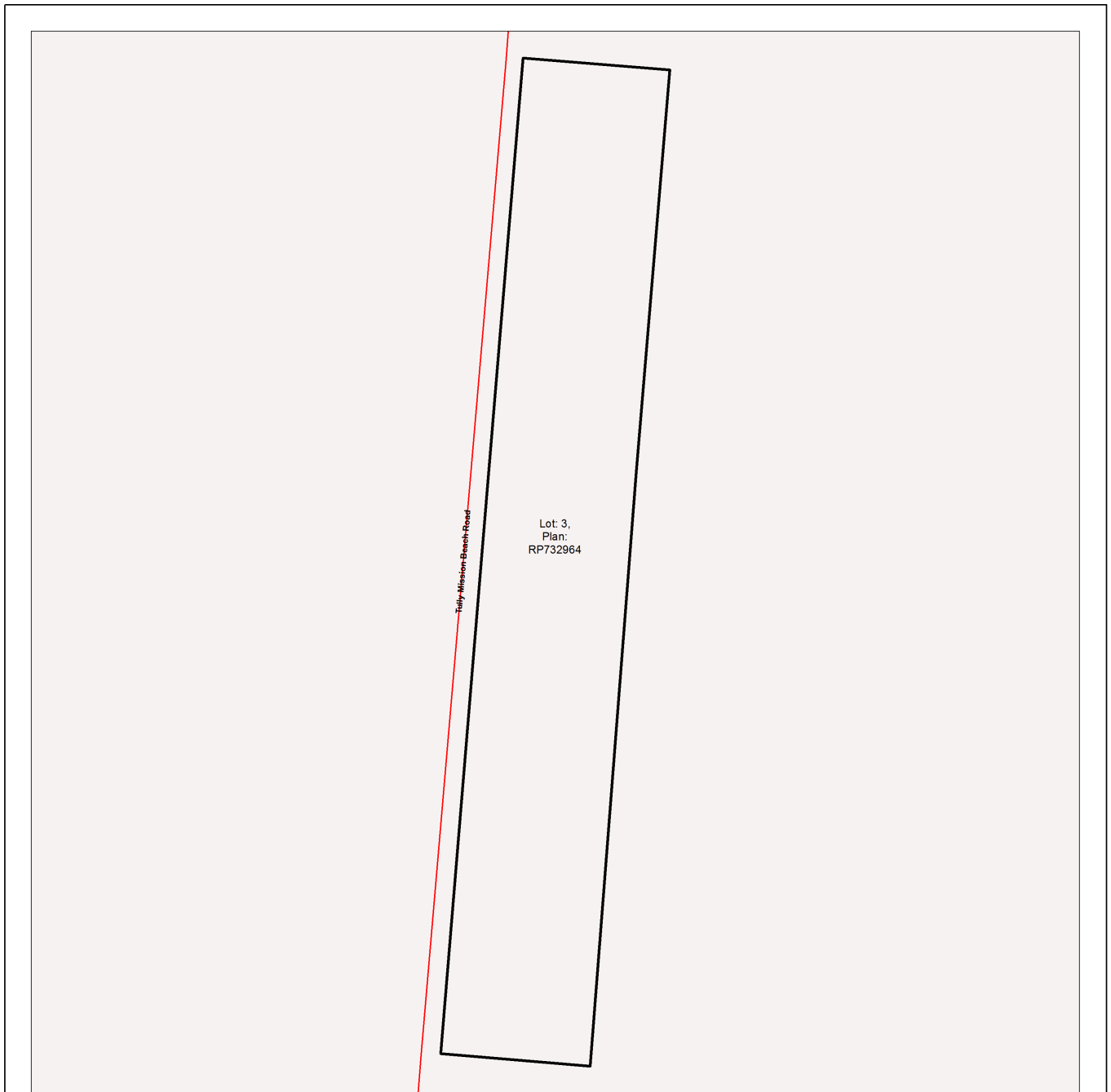
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The koala conservation plan maps will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.









In order to ensure that the most recent map for an area of interest can be accessed, prior to the annual update, a register of changes made to koala habitat areas as a result of the map amendment process will be available at:
<https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/>.
 The register will include lot on plan for the change, the date the decision was made and the map issued to the landholder which shows areas determined to be koala habitat areas.

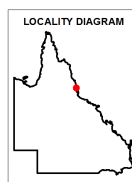
7.3 Koala habitat regional ecosystems for core koala habitat areas



Koala habitat regional ecosystems for core koala habitat areas

Legend

-  Selected Lot and Plan
-  Koala habitat area (core)
-  Towns
-  Highway
-  Connector
-  Street/Local Road
-  Major rivers/creeks
-  Queensland



N



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

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8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
<ul style="list-style-type: none"> • Interference with overland flow • Earthworks, significant disturbance 	<i>Water Act 2000</i> <i>Soil Conservation Act 1986</i>	Department of Regional Development, Manufacturing and Water (Queensland Government) Department of Resources (Queensland Government)	Ph: 13 QGOV (13 74 68) www.rdmw.qld.gov.au www.resources.qld.gov.au
<ul style="list-style-type: none"> • Indigenous Cultural Heritage 	<i>Aboriginal Cultural Heritage Act 2003</i> <i>Torres Strait Islander Cultural Heritage Act 2003</i>	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
<ul style="list-style-type: none"> • Mining and environmentally relevant activities • Infrastructure development (coastal) • Heritage issues 	<i>Environmental Protection Act 1994</i> <i>Coastal Protection and Management Act 1995</i> <i>Queensland Heritage Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
<ul style="list-style-type: none"> • Protected plants and protected areas 	<i>Nature Conservation Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 1300 130 372 (option 4) palm@des.qld.gov.au www.des.qld.gov.au
<ul style="list-style-type: none"> • Koala mapping and regulations 	<i>Nature Conservation Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) Koala.assessment@des.qld.gov.au
<ul style="list-style-type: none"> • Interference with fish passage in a watercourse, mangroves • Forestry activities on State land tenures 	<i>Fisheries Act 1994</i> <i>Forestry Act 1959</i>	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
<ul style="list-style-type: none"> • Matters of National Environmental Significance including listed threatened species and ecological communities 	<i>Environment Protection and Biodiversity Conservation Act 1999</i>	Department of Agriculture, Water and the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
<ul style="list-style-type: none"> • Development and planning processes 	<i>Planning Act 2016</i> <i>State Development and Public Works Organisation Act 1971</i>	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
<ul style="list-style-type: none"> • Local government requirements 	<i>Local Government Act 2009</i> <i>Planning Act 2016</i>	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office
<ul style="list-style-type: none"> • Harvesting timber in the Wet Tropics of Qld World Heritage area 	<i>Wet Tropics World Heritage Protection and Management Act 1993</i>	Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au

Appendix E Flora List

Species Name	Common Name	NC Act	EPBC Act
Trees			
Brown salwood	<i>Acacia celsa</i>	LC	-
-	<i>Acacia crassicarpa</i>	LC	-
-	<i>Acacia mangium</i>	LC	-
White Ash	<i>Alphitonia oblata</i>	LC	-
-	<i>Alphitonia petriei</i>	LC	-
Hard Milkwood	<i>Alstonia muelleriana</i>	LC	-
Milky Pine	<i>Alstonia scholaris</i>	LC	-
Candlenut	<i>Aleurites rockinghamensis</i>	LC	-
Alexander Palm	<i>Archontophoenix alexandrae</i>	LC	-
Native Mangosteen	<i>Atractocarpus fitzalanii</i>	LC	-
-	<i>Beilschmiedia obtusifolia</i>	LC	-
Alligator Bark	<i>Calophyllum sil</i>	LC	-
Corky Bark	<i>Carallia brachiate</i>	LC	-
Black Bean	<i>Castanospermum austral</i>	LC	-
Northern Olive	<i>Chionanthus ramiflorus</i>	LC	-
Northern Laurel	<i>Cryptocarya hypospodia</i>	LC	-
Glossy Laurel	<i>Cryptocarya laevigata</i>	LC	-
-	<i>Cryptocarya mackinnoniana</i>	LC	-
-	<i>Cryptocarya murrayi</i>	LC	-
Brown Kurrajong	<i>Commersonia bartramia</i>	LC	-
Red Beech	<i>Dillenia alata</i>	LC	-
Golden Bouquet	<i>Deplanchea tetraphylla</i>	LC	-
Buff Mahogany	<i>Dysoxylum klanderi</i>	LC	-
Native Tamarind	<i>Diploglottis diphyllostegia</i>	LC	-
-	<i>Dysoxylum arborescens</i>	LC	-
-	<i>Dysoxylum parasiticum</i>	LC	-
Red Bean	<i>Dysoxylum rufum</i>	LC	-
-	<i>Elaeocarpus culminicola</i>	LC	-
Blue Quandong	<i>Elaeocarpus grandis</i>	LC	-
-	<i>Ficus congesta</i>	LC	-
Opposite Leaf Fig	<i>Ficus opposita</i>	LC	-
Cluster Fig	<i>Ficus racemosa</i>	LC	-

Species Name	Common Name	NC Act	EPBC Act
-	<i>Ficus virens</i>	LC	-
-	<i>Ganophyllum falcatum</i>	LC	-
Native Mangosteen	<i>Garcinia warrenii</i>	LC	-
Cheesetree	<i>Glochidion harveyanum</i>	LC	-
Umbrella Cheese-tree	<i>Glochidion sumatranum</i>	LC	-
Cottonwood	<i>Hibiscus tiliaceus</i>	LC	-
Wendland's Palm	<i>Hydriastele wendlandiana</i>	LC	-
Fan Palm	<i>Licuala ramsayi</i> var. <i>ramsayi</i>	LC	-
-	<i>Litsea glutinosa</i>	LC	-
Brown Bollygum	<i>Litsea leefeana</i>	LC	-
-	<i>Macaranga polyadenia</i>	LC	-
Turn-in-the-wind	<i>Mallotus paniculatus</i>	LC	-
White-leaf Paperbark	<i>Melaleuca dealbata</i>	LC	-
White Cedar	<i>Melia azedarach</i>	LC	-
Pink Doughwood	<i>Melicope elleryana</i>	LC	-
-	<i>Melicope vitiflora</i>	LC	-
-	<i>Mischocarpus exangulatus</i>	LC	-
Native Nutmeg	<i>Myristica globosa</i>	LC	-
-	<i>Myristica insipida</i>	LC	-
Leichhardt Tree	<i>Nauclea orientalis</i>	LC	-
White Bollygum	<i>Neolitsea dealbata</i>	LC	-
-	<i>Pandanus solms-laubachii</i>	LC	-
-	<i>Pittosporum rubiginosum</i>	LC	-
Solitaire Palm	<i>Ptychosperma elegans</i>	LC	-
Iron Malletwood	<i>Rhodamnia sessiliflora</i>	E	-
-	<i>Sarcopteryx martyana</i>	LC	-
Flintwood	<i>Scolopia braunii</i>	LC	-
Umbrella Tree	<i>Schefflera actinophylla</i>	LC	-
Tar Tree	<i>Semecarpus australianum</i>	LC	-
-	<i>Syzygium johnsonii</i>	LC	-
-	<i>Syzygium wilsonii</i> subsp. <i>wilsonii</i>	LC	-
-	<i>Terminalia muelleri</i>	LC	-
Sweet Damson	<i>Terminalia sericocarpa</i>	LC	-
Shrub Layer			
-	<i>Acmena smithii</i>	LC	-

Species Name	Common Name	NC Act	EPBC Act
-	<i>Archirhodomyrtus beckleri</i>	LC	-
-	<i>Alectryon tomentosus</i>	LC	-
Zamia Fern	<i>Bowenia spectabilis</i>	LC	-
-	<i>Breynia stipitata</i>	LC	-
-	<i>Carnarvonia araliifolia</i>	LC	-
-	<i>Clerodendrum longiflorum</i>	LC	-
Giant Palm-lily	<i>Cordyline manners-suttoniae</i>	LC	-
Coast Canthium	<i>Cyclophyllum coprosmoides</i>	LC	-
-	<i>Guioa lasioneura</i>	LC	-
-	<i>Harpullia ramiflora</i>	LC	-
Bleeding Heart	<i>Homalanthus novo-guineensis</i>	LC	-
Native Cardomon	<i>Hornstedtia scottiana</i>	LC	-
-	<i>Leea novoguineensis</i>	LC	-
Cycad	<i>Lepidozamia hopei</i>	LC	-
Buff Macaranga	<i>Macaranga inamoena</i>	LC	-
-	<i>Macaranga involucrata</i>	LC	-
Blush Macaranga	<i>Macaranga tanarius</i>	LC	-
Turn in the wind	<i>Mallotus paniculatus</i>	LC	-
-	<i>Melastoma cyanoides</i>	LC	-
Pink Phyllanthus	<i>Phyllanthus cuscutiflorus</i>	LC	-
Native Dracaena	<i>Pleomele angustifolia</i>	LC	-
-	<i>Polyscias australiana</i>	LC	-
-	<i>Polyscias elegans</i>	LC	-
Bramble	<i>Rubus alceifolius</i>	LC	-
	<i>Rubus moluccanus var. moluccanus</i>	LC	-
-	<i>Salacia chinensis</i>	LC	-
Purple Snakeweed	<i>Stachytarpheta jamaicensis*</i>	-	-
Whalebone Tree	<i>Streblus brunonianus</i>	LC	-
Banana Bush	<i>Tabernaemontana pandacaqui</i>	LC	-
-	<i>Terminalia sericocarpa</i>	LC	-
Beech Tetra	<i>Wilkiea pubescens</i>	LC	-
Epiphytes			
Ribbon Fern	<i>Ophioglossum pendulum</i>	LC	-
Northern Elkhorn Fern	<i>Platyserium hillii</i>	LC	-
Vines and Lianas			

Species Name	Common Name	NC Act	EPBC Act
Blood Vine	<i>Austrosteenisia blackii</i>	LC	-
Wait a while	<i>Calamus caryotoides</i>	LC	-
Calopo	<i>Calopogonium mucunoides*</i>	-	-
-	<i>Cayratia trifolia</i>	LC	-
-	<i>Centrosema molle*</i>	-	-
-	<i>Connarus conchocarpus subsp. conchocarpus</i>	LC	-
-	<i>Cissus hypoglauca</i>	LC	-
-	<i>Decalobanthus peltatus</i>	LC	-
-	<i>Epipremnum pinnatum</i>	LC	-
Potato Vine	<i>Faradaya splendida</i>	LC	-
Whipstick	<i>Flagellaria indica</i>	LC	-
Waxflower	<i>Hoya australis</i>	LC	-
Claret Hoya	<i>Hoya pottsii</i>	LC	-
Laurel Leaf Hypserpa	<i>Hypserpa laurina</i>	LC	-
Blue Morning Glory	<i>Ipomoea indica*</i>	-	-
Climbing Maidenhair Fern	<i>Lygodium microphyllum</i>	LC	-
-	<i>Parapachygone longifolia</i>	LC	-
Native Pepper	<i>Piper caninum</i>	LC	-
-	<i>Piper hederaceum</i>	LC	-
Candle Vine	<i>Pothos longipes</i>	LC	-
Common Milk Vine	<i>Pycnarrhena novoguineensis</i>	LC	-
-	<i>Rhaphidophora australasica</i>	LC	-
Water Vine	<i>Rourea brachyandra</i>	LC	-
Lawyer Vine	<i>Smilax australis</i>	LC	-
-	<i>Smilax calophylla</i>	LC	-
Snake Vine	<i>Stephania japonica</i>	LC	-
Small-leave Fire Vine	<i>Tetracera nordtiana</i>	LC	-
-	<i>Tetrastigma crenatum</i>	LC	-
Shiny-leaved Grape	<i>Tetrastigma nitens</i>	LC	-
-	<i>Trophis scandens</i>	LC	-
-	<i>Zanthoxylum nitidum</i>	LC	-
Ground Herbs			
Billy Goat Weed	<i>Ageratum houstonianum*</i>	-	-
Purple Joy Weed	<i>Alternanthera brasiliensis*</i>	-	-

Species Name	Common Name	NC Act	EPBC Act
Birds nest fern	<i>Asplenium nidus</i>	LC	-
Cobblers Pegs	<i>Bidens alba</i> *	-	-
	<i>Christella dentata</i>	LC	-
Scurvy Weed	<i>Commelina ensifolia</i>	LC	-
Navua Sedge	<i>Cyperus aromaticus</i> *	-	-
-	<i>Dianella bambusifolia</i>	LC	-
Knobweed	<i>Hyptis capitata</i> *	-	-
Mat-rush	<i>Lomandra hystrix</i>	LC	-
-	<i>Ludwigia octovalvis</i>	LC	-
Sensitive Weed	<i>Mimosa pudica</i> *	-	-
-	<i>Mitracarpus hirtus</i> *	-	-
Praxelis	<i>Praxelis clematidea</i> *	-	-
-	<i>Scoparia dulcis</i> *	-	-
-	<i>Scleria polycarpa</i>	LC	-
-	<i>Scleria mackaviensis</i>	LC	-
-	<i>Scleria levis</i>	LC	-
Singapore Daisy	<i>Sphagneticola trilobata</i> *	LC	-
-	<i>Synedrella nodiflora</i> *	-	-
Grasses			
Broadleaf Carpet Grass	<i>Axonopus compressus</i> *	-	-
Guinea Grass	<i>Megathyrsus maximus var. maximus</i> *	-	-
-	<i>Oplismenus hirtellus</i>	LC	-
-	<i>Ottochloa gracillima</i>	LC	-
-	<i>Ottochloa nodosa</i>	LC	-
-	<i>Urochloa humidicola</i>	LC	-
+ Indicates species presences at a particular survey location NT: Near Threatened <i>NC Act 1992</i> LC: Least Concern <i>NC Act 1992</i> * Denotes invasive species			