Matters of National Environmental Significance Report

Redlands Coast Regional Sport and Recreation Precinct

Prepared for Bligh Tanner C\- Redland City Council

18 January 2023

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1	17/11/2022	Draft for comment	M. Timms	D. Francis
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1 Introduction

Raptor Environmental was commissioned by Bligh Tanner on behalf of Redland City Council (Council) to prepare documentation to inform the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) referral for the Redlands Coast Regional Sport and Recreation Precinct (the Project). This report summarizes and builds on the ecological studies completed to date, quantifies the impact of the Project and details avoidance, minimisation and impact mitigation measures. The format of this report has been adapted from the EPBC Act referral Form Preparation Guide (DCCEEW, 2022). The purpose of this report is to:

- provide a contemporary ecological assessment to ensure Matters of National Environmental Significance (MNES) including uplifted and recently listed threatened species and threatened ecological communities are considered as part of the EPBC Act referral.
- assess potential impacts on MNES to determine if the Project is likely to result in a significant impact on MNES.

1.1 Proposed Action

Council intends to develop the Redlands Coast Regional Sport and Recreation Precinct in South East Queensland. The Project is intended to meet the current and growing sport and recreation needs of Redlands Coast while also protecting the natural values of the Project Area. The 159-hectare (ha) property is located at 277-293 Heinemann Road, Mount Cotton and is described as Lot 420 on S312160 and Lot 2 on RP227426 (the Project Area). The Project Area is located on undeveloped greenfield land owned by Council intended for delivering sport, recreation and conservation outcomes for the community. The proposed Action includes the following components:

- Site establishment including clearing of 33 ha of vegetation (i.e. 550 scattered paddock trees)
- Bulk earthworks
- BMX facility, pump track and intermediate and advanced pump track learn-to-ride facility
- Criterium track
- Regionally-significant play precinct, including wet and dry play areas and a play pavilion
- Rugby league fields
- Touch football fields
- Three clubhouses for rugby league, touch football and cycling clubs
- Management and recreation trails
- A central naturally vegetated waterway corridor
- Associated infrastructure, including internal roads, maintenance facilities, services

1.2 Definitions

The EPBC Act referral form guidance notes provide definitions for terminology used to describe the proposed Action including:

- ***Project*** – all aspects and stages of the Redlands Coast Regional Sport and Recreation Precinct

- ***Project Area*** – the total area comprising Lot 420 on S312160 and Lot 2 on RP227426 (i.e. direct and indirect disturbance footprint, avoidance and retention area).
- ***Disturbance Footprint*** – the project footprint is broadly shown in **Figure 1** with **Appendix A** illustrating the proposed project elements that are described in **Section 1.3.1**.
- ***Avoidance Area*** – the area of habitat which will be retained as part of the proposed action.
- ***Retention Area*** – the area will be retained and partially rezoned as Conservation under Redland City Council's Planning Scheme.

1.3 Overview of Project

1.3.1 Project Scope

Redland City Council proposes to construct the essential community infrastructure in response to identified need as a result of the outcomes of the Redland Sport Land Demand Study (Redland City Council, 2016) The scope of work includes five key components:

- Sporting facilities
- BMX facility
- Play-precinct
- Ancillary infrastructure
- Conservation and recreation

The key Project components are summarised in **Table 1** below.

Table 1 Summary of project components.

Key component	Detail
Sporting facilities	3 x Rugby league fields covering 3.5ha each
	13 x Touch football fields covering 7.6 ha
	Rugby league and touch football club house incorporating a footprint of 1,783 m^2 and 1,461 m^2 respectively.
Cycling facility	450 m BMX facility
	1,768 m Criterium track
	Cycle clubhouse incorporating a footprint of 901 m^2
Regional play-precinct	Wet and dry areas including 1.85 ha of infrastructure and open space
	Play pavilion and amenities comprising a footprint of 491 m^2
	700m Intermediate and advanced pump tracks, learn to ride facility
Ancillary infrastructure	1.9 km of internal roads
	2 ha allocated to provide sufficient car parking to accommodate the facility and events (i.e. 800 plus car parks)
	Maintenance facilities including a shed with a footprint of 213 m^2
	Services including water, sewer and electricity

Key component	Detail
Conservation and recreation	Management and recreation trails extending ~2 km including the perimeter trail and internal trails within the Retention Area.
	Rehabilitation of 7.6 ha of the central waterway corridor including weed management and infill planting of 1,791 trees.

The proposed management framework for the operational phase of the Project includes specific roles and responsibilities for Redland City Council and sporting groups as outlined in the Management Frameworks and Financial Analysis Report (**Appendix C**).

1.3.2 Project Location

The Project is located at 277-293 Heinemann Road, Mount Cotton within Redland City Council Local Government Area (LGA). The Project Area is Freehold Land owned by Redland City Council. **Table 2** below details the associated area as shown in **Figure 1**.

Table 2 Project Area

Project Location	Area (ha)
Disturbance Footprint	32.7
Avoidance Area	3.3
Retention Area	123.2
Project Area	159.3

The Master Plan indicates that the Disturbance Footprint is limited to 32.7 ha of historically grazed and selectively cleared land and protects and conserves approximately 123.2 ha of vegetation in the Retention Area including a waterway corridor which is centrally located through the Disturbance Footprint. The ecologically responsive design retains 3.3 ha of vegetation as Avoidance Areas within the Disturbance Footprint (**Figure 1**).

1.3.3 Proposed Staging

The Project will provide sporting facilities for touch football, rugby league, BMX and cycling. Additionally, the Project will include an all-abilities playground, kickabout space, pump track, rehabilitated wetlands, boardwalks, picnic areas, trails through conservation areas and more than 800 plus car parks as shown in the illustrated Master Plan. The project will be delivered in two main stages as summarised in **Table 3** and shown spatially in the attached Project Staging Plan (**Appendix A**).

The cycle precinct is the subject of a Material Change of Use application, and a substage (Stage 1B) has been defined to separate that component of the project for approval purposes, but Stage 1A and Stage 1B as shown on the Project Staging Plan will be undertaken concurrently as a single construction project. The Project includes 6-9 m high, retractable ball net fencing along Heinemann Road and across a portion of the northern boundary of the Project Area (**Appendix B**).

Table 3 Proposed staging of construction works

Stage	Timing	Proposed works
Stage 1	Construction early 2023 (duration ~18 months)	• Vegetation clearing of the whole Project Area • Bulk earthworks for playing fields

Stage	Timing	Proposed works

		• Maintenance shed
		• Northern roundabout and internal driveway
		• Enabling infrastructure (water, electricity, comms).
		• Rehabilitation (revegetation) works to the central corridor
		• Play Precinct
		  ○ Playground
		  ○ Pump track
		  ○ Event space
		  ○ Play pavilion
		  ○ Play precinct carpark
		• Cycle Precinct:
		  ○ Criterium track
		  ○ BMX Track
		  ○ Cycle clubhouse
		  ○ Cycle precinct carpark

Stage 2	Construction circa 2025 (duration ~18 months)	• Playing surface for rugby league fields • Rugby league Clubhouse • Playing surface for touch fields • Touch clubhouse • Bus drop-off bay • Balance of site car parking • Southern roundabout and entrance • Heinemann Rd works • Sewage pump station • Recycled water supply

1.4 Project Rationale

1.4.1 Project Need

The Redlands Coast Regional Sport and Recreation Precinct is intended to meet the current and growing sport and recreation needs of Redlands Coast while also protecting natural values. Over 160,000 people live in Redlands, and by 2041 that is expected to increase to 188,000. Redland City Council investigations revealed that to meet the health and wellbeing needs of the existing and growing population, the city has a shortfall in sporting land of 75 ha (Redland City Council, 2012). The Precinct will significantly reduce this deficit. Council purchased this strategic Project Area to secure land for this purpose.

The Precinct's primary tenants will be sporting clubs and are classified as regional, attracting players and teams from outside of Redland City and delivering a regional benefit to surrounding LGAs. Facility specifications are designed to a regional standard to accommodate state competitions and major sporting events. Given the levels of service and design standards, the venue is expected to facilitate training venues for the 2032 Olympics.

The development provides essential community infrastructure in response to identified need. The essential need has been identified for both local and regional communities. Specifically, Redland City Council identified a shortfall of land for formal sporting opportunities, competing demand for existing sporting spaces across the city and projected population growth.

This intergenerational community infrastructure development is strategically located at the southern end of Redlands Coast in the city's high-growth area. New urban communities in the south of the city include the South West Victoria Point Structure Plan, Weinam Creek Priority

Development Area, Shoreline Master Plan, South East Thornlands Structure Plan and the Kinross Road Structure Plan.

In what has historically been a quieter and less developed part of the city, it is recognised that existing services in this area, which encompasses the established villages of Mount Cotton, Victoria Point and Redland Bay, will not meet the needs of the growing population. A range of infrastructure projects are being planned to support the exponential population growth of which this project is one. The Project Area was acquired based on its location and physical characteristics (slope, cleared areas, size and shape) required to support regional sporting facilities.

1.4.2 Alternative Sites

The Redland City Council's Open Space Strategy 2012- 2026 (Redland City Council, 201) highlighted the significant shortfall in sporting land of 75 ha in the LGA. The report included recommendations for land acquisition to accommodate current demand and future growth. Redland City Council advised, that three potential alternative sites were identified as suitable locations for sporting land. However, the land acquisition process ruled out the three alternatives and the current Project Area was strategically acquired to partially meet the shortfall in sporting land and has the dual purpose of expanding Redland City Council's conservation network.

During the Master Planning process specific sports (oval field sports) and layouts (sports fields on eastern side) were reviewed and rejected to avoid and minimise the area of vegetation clearing and disturbance.

1.5 Public Consultation

The Redland Open Space Strategy 2012 - 2026 (Redland City Council, 2012) and Redland Sport Land Demand Study (Redland City Council, 2016) recommend undertaking initiatives to acquire and develop suitable land in Redland City to accommodate current demand and future growth for sport and recreation. The project is identified in the Local Government Infrastructure Plan and as a catalyst project in Council's Corporate Plan.

The project is managed in a consultative manner and through a consultative approach by bringing stakeholders on the 'journey'. The Precinct has been designed to deliver a multi-generational community asset while preserving the ecological values of the site. Only 33 ha of the 159 ha site will be used for sport and recreation purposes, with 123.2 ha seeing minimal improvements such as management and recreation trails. This will mean only a minimal number of trees, including koala habitat trees, are being considered for removal following necessary statutory approvals. As the 33 ha sport and recreation portion of the site was previously used for grazing, most of the trees to be cleared are isolated and within already-disturbed areas.

In 2019, Council commenced the development of the Precinct master plan, which was formally adopted on 13 May 2020. As part of the master planning process, consultations were conducted with:

- Councillors and Council Officers
- State sporting organisations (through face-to-face meetings and electronically)
- Local sporting organisations
- Neighbouring residences – through face-to-face meetings and letter box deliveries

- General community, through 'town hall' meetings, shopping centre information sessions, libraries, notice board posters, printed media, social media, and Your Say webpage.

The master plan consultation was wide-ranging with strong buy-in from the community. On going meetings with local environmental groups were held at key milestones. Ongoing liaison and consultation with primary tenant clubs (Redlands Cycling and Multi-Sport Club, Redlands BMX Club, Redlands Touch Association and Redlands Rugby League Club). The concept design was delivered in June 2021 with updated plans and a flythrough video published on the project's Your Say webpage. Preliminary and Detailed design for stage 1 of the Precinct completed by June 2022. Promotional flythrough video published on the Your Say webpage. Preliminary and detailed design for stage 2 to be completed by the end of 2022.

Redland City Council endorsed the delivery and funding for stage 1 of a two-staged program for the Precinct, over multiple financial years to enable Council to enter into funding deeds and contracts for Program delivery.

1.6 Legislative and planning frameworks

A summary of relevant legislative and planning frameworks relevant to the Action are described in **Table 4** below.

Table 4 Summary of relevant legislative and planning frameworks

Approval	Detail and supporting documentation
Queensland Government	
Significant community project designation	A Significant Community Project Designation was granted on 22 February 2022. The designation exempts clearing of Category C Regulated Vegetation under Section 10 (5) of the *Vegetation Management Act 1999* (VMA).
Relevant purpose determination (DoR, dated 15 July 2022	A Relevant Purpose determination was approved by the Department of Resources under section 22A of the *Vegetation Management Act 1999* for the clearing of native vegetation on Lot 420 on S312160. This determination means impacts to Category B Regulated Vegetation under the VMA are not classified as prohibited development and an application to clear native vegetation may proceed under State Code 16: Native Vegetation Clearing (refer below).
High-risk Species Management Program (SMP)	The works are to be completed in accordance with a High-Risk SMP and associated Impact Management Plan that considers all colonial breeding species and species least concern species known to occur within the Project Area. At the date of this report, the High-risk SMP is being developed for submission to the Department of Environment and Science.
Operational works application for clearing vegetation	An Operational works application for clearing vegetation was lodged on 25 August 2022 and supported by the Vegetation Management Plan (Bligh Tanner, dated 27 September 2022). At the date of this report, the application is in progress.
Local Government	
Material change of use application MCU22/0105 (Bligh Tanner, in progress)	A material change of use application for an outdoor sport and recreation facility was lodged on 5 August 2022. At the date of this report, the application is in progress.
Environmental Significance Overlay Code (Bligh Tanner, September 2022)	The response to the Environmental Significance Overlay Code indicates the Project complies with the acceptable outcomes of the code.

1.7 Existing Reports and Datasets

A summary of existing reports and datasets relevant to MNES is presented in **Table 5** below.

Table 5 Existing Reports and Datasets

Existing Report	Details
MNES Report (Raptor Environmental, 2022)	This report builds on the previous Ecological Assessment Reports and provides a contemporary assessment of MNES that may apply to the Project including uplifted and recently listed threatened species and threatened ecological communities. This report details direct and indirect impacts on MNES and provides avoidance minimisation and mitigation measures. This report includes an updated Significant Impact Assessment against the *Significant Impact Guidelines 1.1 Matters of National Environmental Significance* (DoE, 2013) (**Appendix G**).
Ecological Assessment Report (Cardno, 2021)	The Ecological Assessment Report identified potential impacts on Matters of National Environmental Significance (MNES). This assessment included additional field assessment in Spring 2020 to ensure surveys were completed across seasons as per the Commonwealth survey guidelines (refer to **Section 2.2**). The report resulted in the finding that the Project will require the removal of Koala habitat and the development is unlikely to have a significant impact on vulnerable Koalas. Nonetheless, referral to the Commonwealth is recommended for adverse impacts on habitat critical to the survival of the Koala. The report detailed high-level impact mitigation measures for ecological values including Koalas and Koala habitat, fauna and fauna habitat, Regulated vegetation, aquatic habitat and waterways.
Ecological Assessment Report (Cardno, 2019)	The Ecological Assessment included desktop and field assessments to identify environmental characteristics present within the Project Area to inform project design and ensure compliance with regulatory requirements. Especially this study included a vegetation community assessment, flora assessment, waterway assessment, opportunistic and targeting fauna assessments, habitat features, pests and review of threatened and near threatened species. The field assessment was completed in the Winter of 2019.
Rehabilitation Plan (Bligh Tanner, 26 September 2022)	The Rehabilitation Plan details the restoration strategies including: • Zone A Assisted Natural Regeneration; and • Zone B Active Revegetation. The strategies include weed control methods, revegetation specifics, maintenance schedules, performance indicators and corrective actions. The Rehabilitation Plan proposes 76,018m^2 of on-site restoration enabling the planting of 1,791 trees.
Vegetation Management Plan (2021.0554-CI-3-3061) (Bligh Tanner, dated 27 September 2022)	The Vegetation Management Plan indicates trees to retain, remove and trees to be confirmed within the Disturbance Footprint. The Plan includes 1260 trees within the northern portion of the Project Area. The plan indicates: • 661 trees will be retained • 49 trees will be kept if possible (arborist to confirm) • 550 trees will be removed. Of the 550 trees to be removed 62 were assessed by an arborist as “dead” (i.e. stag) and several were assessed as poor or declining health.
Redlands Coast Regional Sport and Recreation Precinct Master Plan 2020-2030 (Ross Planning, 2020)	The superseded Master Plan included initial ecological advice which informed the Master Plan design including flora and fauna, vegetation communities, habitat connectivity, matters of environmental significance and potential impacts, constraints and opportunities (prepared by Biodiversity Assessment and Management Consultants in 2019).

1.8 Redland Coast Environmental Framework

Redland City Council has a strong track record in environmental protection with conservation land making up 17.7% of the Council owned/managed land on the Redlands Coast. Furthermore, the Council’s environmental framework promotes ongoing protection and enhancement of values in the region. **Table 6** below details Council’s key environmental strategy, policy, and planning frameworks which demonstrate the Council’s commitment to environmental protection and conservation.

Table 6 Summary of Redland City Council's Environmental Policy, Strategy and Plans

Environmental Policy	Summary
Conservation Land Management Strategy (Redland City Council, 2010)	Conservation land makes up 17.7% of the Council owned/managed land in the Redlands Coast. Council's Conservation Land Management Strategy provides strategic direction for managing conservation land on the Redlands Coast. It provides: • a clear set of guidelines for identifying and categorising conservation land • a coordinated approach to conservation land management • set of principles to help Council improve biodiversity services, environmental planning and operational management.
Koala Conservation Strategy Action 2016-2021 (Redland City Council, 2016)	Council's Koala Conservation Strategy Action 2016-2021 (Redland City Council, 2016) programs are completed and the Council has adopted the Koala Conservation Plan 2022–2027 (Redland City Council, 2021) The four key objectives of the Plan are: • Decisions based on science • Protect and Improve Koala Habitat • Reduce Koala Deaths • Community making a difference
Redland Coast Koala Conservation Plan and Action Plan 2022-2027 (Redland City Council, 2022)	Redland Coast Koala Conservation Plan and Action Plan extends the work already undertaken by Council, research partners, conservation groups and the community to continue protecting koalas. The plan details short-term, mid-term and long-term performance measures for koala conservation.
Wildlife Connection Plan 2018-2028 (Redland City Council, 2018)	Council's Wildlife Connection Plan 2018-2028 (Redland City Council, 2018) identifies priority actions for the management, protection and enhancement of wildlife habitat and corridors at a local government area scale. The priority objectives and outcomes for each corridor include: improve corridor habitat prevent wildlife deaths reduce impacts on corridors and protect corridor habitat.
Redland City Plan (Redland City Council, 2018)	The Redland City Plan (Redland City Council, 2018) supports the aims and objectives of the Wildlife Connection Plan and ensures appropriate development occurs in the planning scheme area. The Environmental Significance Overlay Code provides performance outcomes and acceptable solutions for development within the Environmental Significance Overlay.
Redlands Coast Biosecurity Plan 2018-2023	The Redlands Coast Biosecurity Plan (Redland City Council, 2018) guides how Redland City Council meet biosecurity obligations under the *Biosecurity Act 2014* and informs the community on the management of invasive, plants and pest animals in Redlands Coast. Specifically, the plan includes effective management of strategic and targeted control of invasive plants and animals on Council owed land.
Environment levy	Council's Environmental levy for the Environment and Coastal Management Separate Charge is $161.52 per annum. The levy funds land maintenance, rehabilitation and purchase. Council purchases bushland and urban property where there are beneficial environmental values that align with relevant policies,

Environmental Policy	Summary
	plans and strategies i.e. Koala Conservation Plan and Wildlife Connection Plan (Redland City Council, 2018).
Environmental education and community engagement	Council continues to enhance and encourage environmental understanding through education opportunities offered to the community. The IndigiScapes Centre offers numerous programs and attracts a significant number of visitors annually.
Natural Environment Policy	Council's Natural Environment Policy (ENV-001-P) objective state: "*Our corporate decisions protect, enhance and restore the health and viability of the City's natural terrestrial and aquatic values both on public and private lands and aquatic environments, for their inherent value and the benefit, use and lifestyle of current and future generations of our community*".
Green Living Policy	Council's Green Living Policy (ENV-002-P) – Policy Objective: Our corporate decisions enable Council to 'lead by example' in making informed choices in addressing the risks and threats of climate change, applying ecologically sustainable development principles, practising energy, fuel and resource-efficient operations across our built environment and business activities, and through supporting green living opportunities in the community.

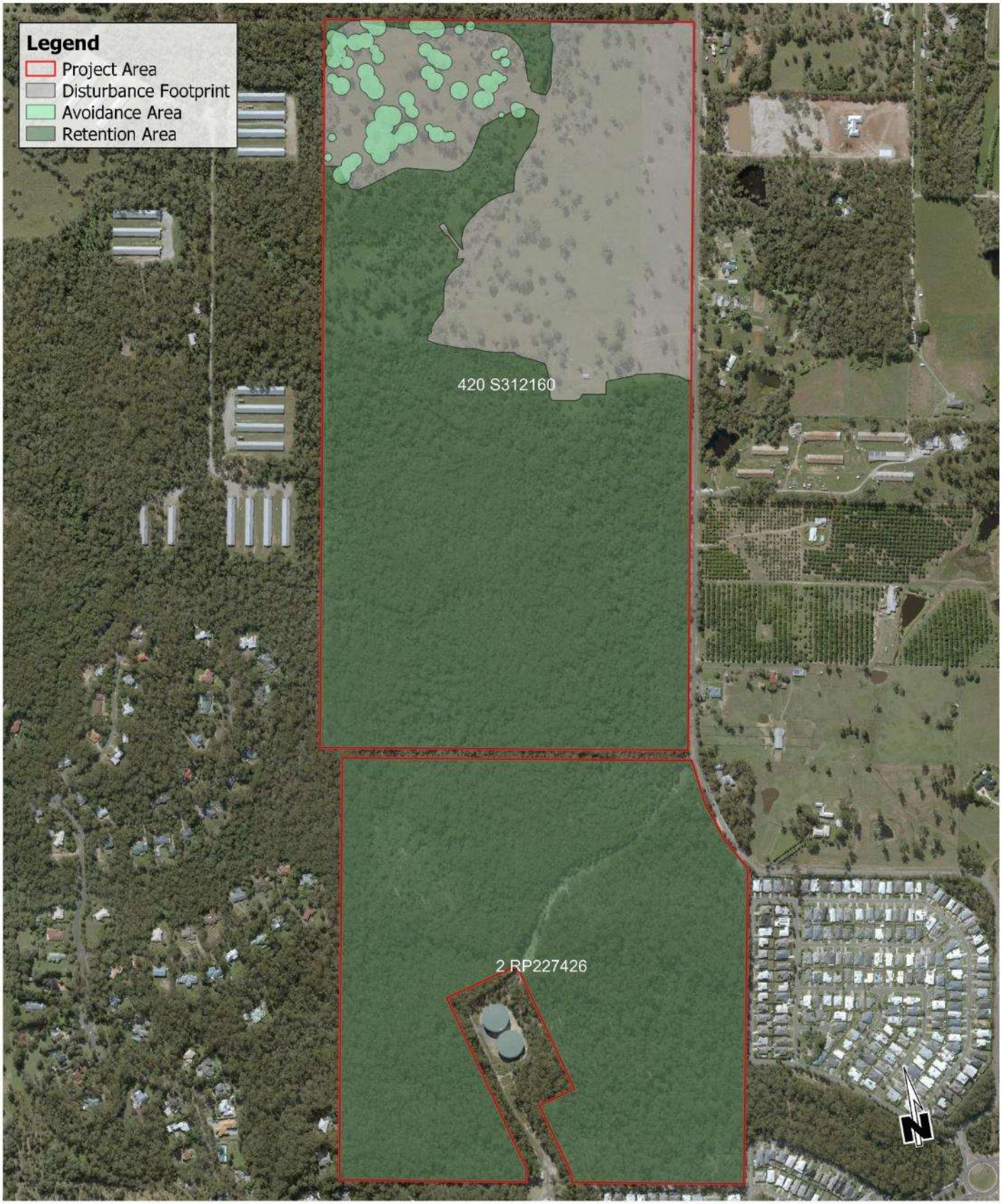

Figure 1 Project Location

Proposed Redlands Coast Sport and Recreation Precinct
Bligh Tanner C\- Redland City Council

Job Number: 2022_025;
Author: Mary Timms

Dated 13/11/2022
CRS: MGA94 Z56

This plan may only be relied upon in relation to the project and purpose for which it was commissioned. It should be noted, that this plan is not inclusive of all Environmental Features/layers.

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ENVIRONMENTAL

Scale: approx 1:7,000 @A3

100 0 100 200 300 400 m

2 Methodology

2.1 Desktop Assessment

Prior to undertaking the field assessment, a review of contemporary background information was completed by a suitably qualified ecologist. The desktop assessment involved the collation and review of relevant information concerning MNES likely to occur in the Project Area. The outcomes sought by the desktop assessment are to:

- provide a contemporary desktop review of available database resources and mapping products;
- review of background information including Environmental approvals;
- collate the findings of previous ecological assessments relating to MNES;
- highlight threatened species and threatened ecological communities which have been recently listed or uplifted under the EPBC Act; and
- assess specific habitat requirements of threatened species including koala habitat characterisation.

A range of database resources and mapping products were utilised as a part of the desktop review. Presented below is a list of the key desktop databases and mapping resources used. Where applicable the outputs from these searches have been presented in **Appendix D**.

- Commonwealth Department of the Climate Change, Energy, the Environment and Water *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool;
- Regulated Vegetation Management Map prepared by the Department of Resources and pursuant to the *Vegetation Management Act 1999*;
- Wildlife online database prepared by the Department of Environment and Science;
- Atlas of Living Australia;
- Development Assessment Mapping System to review Koala habitat in South East Queensland);
- Current aerial imagery sourced from Nearmap;
- Redland City Council 1 m Contours 2014; and
- Redland City Council Planning and Development Online (Development.i).

All mapping searches were centred on Latitude: -27.6176, Longitude: 153.2545 with a 10 km buffer, or using Lot 420 on S312160.

The process of refining the list of MNES-threatened and migratory species involved reviewing the known and specific habitat requirements for each species and comparing them against the known or expected availability of such resources within the Project Area and immediate

surrounds. For each of the identified species, an assessment of the likelihood of occurrence was undertaken with each species being assigned to one of the below-listed categories.

- **Known**: The species has been positively recorded in the Project Area by a qualified ecologist during the past 30 years.
- **Likely**: Suitable habitat for the species occurs in the Project Area and proximate[1] records exist.
- **Possible**: Suitable habitat for the species occurs in the Project Area but no recent records from the Project Area or proximate areas exist OR suitable habitat for the species may not occur in the Project Area but recent records from proximate areas exist.
- **Unlikely**: Suitable habitat for the species does not occur in the Project Area, and no recent records from the Project Area or proximate areas exist.

The assessment of the likelihood of occurrence is presented in **Appendix E**. It should be noted that species that did not have suitable habitat present within the Project Area including marine mammals, marine reptiles and seabirds have been excluded from the likelihood of occurrence assessment.

2.1.1 Characterisation of koala habitat

In the absence of specific guidance from the Commonwealth on the assessment of Koala habitat, Raptor Environmental adopted the methodology described in the recent publication by the Australian National University (Youngentob et al., 2021) including:

- Summary of Koala presence and abundance within the Project and South-east Queensland population.
- An overview of habitat extent and connectivity.
- Koala habitat characterisation in accordance with **Table 7**, which indicates that the following attributes are valuable when identifying koala habitat:
    - Locally Important Koala Tree (LIKT);
    - Ancillary habitat trees; and
    - Open ground.

Using combinations of these attributes, Koala habitat within the Project was assigned to three separate Koala habitat categories as per **Table 8**. While the delineation of areas was predominately a desktop exercise utilising the existing Vegetation Management Plan and Regional Ecosystem (RE) mapping, it was supported by field data as described in **Section 2.2**.

Table 7. Summary of Koala habitat assessment criteria (Youngentob et al., 2021).

Section of report	Habitat assessment criteria	Applicable attributes
3.2	Locally Important Koala Tree (LIKT) The document states "*The combination of koala occurrence and LIKT provides a strong indication that an area is koala habitat. However, it is important to*	Applicable in assessing koala habitat

[1] Proximate records are highly reliable records (i.e. identified through GPS precision or an accurate location description) that fall within the search area that are <50years in age.

Section of report	Habitat assessment criteria	Applicable attributes
	recognise that the absence of koalas does not mean that an area with LIKT is not potential koala habitat."	
3.2	Ancillary habitat The document states "*In some areas, the availability of certain tree species and other vegetation types not commonly recognised as important food may still be essential for koala survival due to the shelter or other resources they provide*"	Applicable in assessing koala habitat
7.1	Soil fertility The document states "…as a general rule, soil fertility should not be used as an indicator of koala habitat or koala habitat quality"	Not applicable
7.2	Tree size and age class The document states "*The published literature does not include data that can be used to identify specific tree size thresholds that would be consistent across the range of the koala*"	Not applicable
7.3	Primary and secondary food tree species The document states "*Methods of habitat assessment that rank the importance of particular eucalypt tree species as 'primary' or 'secondary' should be used with caution and awareness of limitations*"	Not applicable
7.4	Proportion of preferred food trees in a landscape (primary and secondary habitat) The document states "*If secondary habitat can support a koala population, even at a lower density, it should not automatically receive lower priority for conservation than an area of primary habitat*"	Not applicable
7.5	Tree species diversity The document states "*Tree species diversity should not be considered a requirement for koala habitat unless it has been robustly demonstrated that it is important for koala populations in a specific area*"	Not applicable
7.6	Remnant vegetation and non-remnant vegetation The document states "*Non-remnant vegetation should be given the same consideration as remnant vegetation when determining whether it is koala habitat and its potential utility to koalas should not be downgraded simply on the basis of whether the vegetation has regrown or has never been disturbed*."	Not applicable
4	Open ground The document states "…*the ground itself forms an essential component of koala habitat*"	Applicable in assessing koala habitat

Table 8 Koala habitat categorisation

Habitat Category	Based on ANU Report (Youngentob et al., 2021)	
	Locally important koala tree (LIKT)	**Ancillary koala habitat tree**
A	LIKT trees dominate the vegetation community	Ancillary koala habitat trees scattered in the vegetation community
B	LIKT scattered	Ancillary koala habitat trees dominate the vegetation community
C	Areas cleared, do not support LIKT or ancillary trees OR support isolated LIKT or ancillary trees	

2.2 Field Assessment

The previous Ecological Assessment Reports (Cardno, 2019 and 2021) included detailed flora and fauna surveys completed in 2019 and 2021 and were supplemented by additional surveys in 2022. The flora assessment included:

- Presence/absence and extent of the Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland Threatened Ecological Community (TEC) (Raptor Environmental, 2022):
    - the assessment targeted vegetation communities subject to inundation i.e. (predominantly landzone 3) with vegetation communities dominated by *Melaleuca quinquenervia* (Broad-leaved paperbark).
    - as per the survey requirements of the Conservation Advice (DAWE, 2021), plots of 0.04 ha were surveyed. Specifically, a single point was used to define the centre of the circular assessment area with a radius of 11m. Data was collected at these points generally in accordance with quaternary assessments as described in the Methodology for surveying and mapping regional ecosystems and vegetation (Neldner et al. 2022). Critical information pertaining to the key diagnostics and condition classes, categories, and thresholds of the *Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland* were collected in these areas.
    - plots were distributed sufficiently to represent variation across the patches as shown in **Figure 2**.
- Identification of flora species (Cardno, 2019 and 2021);
- Identified species of significance (Cardno, 2019 and 2021); and
- Identification and mapping of weed hot spots (Cardno, 2019 and 2021).

The general fauna survey techniques outlined in **Table 9** employed during the Cardno (2019) Ecological Assessment were augmented by the additional survey effort in 2021 and 2022 as specified. Considering the significant previous flora and fauna assessments completed to date, Raptor Environmental provided a supplementary survey to build on the existing assessments to specifically assess MNES which may apply to the Project. Fauna surveys completed include:

- Two diurnal days during Spring (30 September and 14 October 2022) (Raptor Environmental, 2022)
- One day and one night during a one-day survey period in winter (10th June 2020) (Cardno, 2021).
- Three days and two nights during a 28-day survey period in spring (16th – 17th September and 15th October 2020) (Cardno, 2021)
- Five days and four nights during a 14-day survey period in winter (4th – 7th and 17th June 2019) (Cardno, 2019)

Specific survey methods were also utilised to target the detection of the following species or groups of species:

- Microbats,

- *Pteropus poliocephalus* (Grey-headed flying-fox),
- Gliders (including *Petauroides volans* (Greater glider), *Petaurus breviceps* (Sugar glider), *Petaurus norfolcensis* (Squirrel glider), and *Petaurus australis* (Yellow-bellied glider)),
- *Ninox strenua* (Powerful owl),
- *Calyptorhynchus lathami lathami* (Southern-glossy black-cockatoo), and
- *Phascolarctos cinereus* (Koala).

The location of monitoring devices and other survey methodologies completed within the Project Area during the three studies are detailed in **Table 9** and shown in **Figure 2**.

Table 9 Fauna survey details

Survey	Cardno (2019)	Cardno (2021)	Raptor Environmental (2022)	Relationship to relevant survey guidelines for MNES
Active diurnal searches	For herpetofauna completed over four days	Active diurnal searches for herpetofauna were conducted over three days.	NA	As per the Survey Guidelines for Australia's threatened reptile species (DSEWPC, 2011)
Bird Survey	○ Active diurnal searches (eight 10min ○ Searches within the Project Area completed over four days (suitable for detection of bird species including Powerful owl and Southern glossy black cockatoo (via ort searches) ○ Dawn chorus surveys were completed over two mornings	○ Active diurnal bird searches completed over three days including ort searches. ○ Dawn chorus surveys were completed over two mornings at sunrise (effective for the detection of birds). ○ Call play-back conducted over three nights (suitable for detection of Powerful owl).	NA	As per the Survey Guidelines for Australia's Threatened Birds (DEWHA, 2010)
Spotlighting and stag watching	Over four nights, including stag-watching. Targeting Koala, Greater glider and other gliders (i.e. Sugar glider, Squirrel glider, and Yellow-bellied glider). One night of stag watching (suitable for detection of Greater glider, Sugar glider, Squirrel glider, and Yellow-bellied glider)	Spotlighting and stag-watching were conducted over three nights.	NA	As per the Survey Guidelines for Australia's Threatened Mammals (DSEWPC, 2011a)
Call playback	Over three nights, in key habitat locations. Species targeted: ○ Koala; and	Call playback at key habitat locations over three nights (effective for the detection of frogs, birds and some mammals).	NA	As per the Survey Guidelines for Australia's Threatened Mammals (DSEWPC, 2011a) and the Survey Guidelines for

Survey	Cardno (2019)	Cardno (2021)	Raptor Environmental (2022)	Relationship to relevant survey guidelines for MNES
	○ gliders (Squirrel glider, Sugar glider).			Australia's threatened birds (DEWHA, 2010)
Camera traps	20 traps were deployed for a two-week period, baited with universal bait or meat (sardines).	20 traps were deployed for a four-week period, baited with universal bait or meat (sardines).	NA	As per the Survey Guidelines for Australia's Threatened Mammals (DSEWPC, 2011a)
Opportunistic searches	Searches for signs of wildlife including tracks and scats (collectively effective for mammals, birds and reptiles) over four days.	Searches for signs of wildlife including tracks and scats (collectively effective for mammals, birds and reptiles) over three days.	Searches for signs of wildlife including tracks and scats (collectively effective for mammals, birds and reptiles) over two days.	As per the Survey Guidelines for Australia's Threatened Mammals (DSEWPC, 2011a), the Survey Guidelines for Australia's threatened reptile species (DSEWPC, 2011) and the Survey Guidelines for Australia's Threatened Birds (DEWHA, 2010).
Microbat Surveys	Song Meter deployed for 14 nights in an area of suitable habitat. A specialist sub-consultant was engaged to analyse calls. One harp trap was deployed over a suitable flyaway for two nights.	Active searches for bat activity in suitable habitat areas. Calls were recorded using an Echo meter over two nights. Passive deployment of a Song Meter detector for four weeks.	NA	As per the Survey Guidelines for Australia's Threatened Bat (DEWHA, 2010)
Koala Surveys	Searches for signs of Koalas including scratches and scats over four days. Four nights of call playback for Koala.	Searches for signs of Koalas including scratches and scats over three days. Three nights of call playback for Koala. Six Koala Rapid Assessment Methodology (KRAM) surveys were completed.	Searches for signs of Koalas including scratches and scats over two days.	As per the Review of Koala habitat assessment criteria and methods (Youngentob et al., 2021)
Habitat Assessments	Habitat condition assessments were completed at each Quaternary site. Individual features (e.g. hollow-bearing trees, stags, nests) were also recorded as potential habitats for species of significance (e.g. gliders).	All habitat features that may be impacted as part of the project will be recorded using handheld GPS as part of the Vegetation Management Plan.	Confirmation of habitat and potential breeding habitat for MNES species including *Calyptorhynchus lathami lathami* (South-eastern Glossy black-cockatoo) (and *Petauroides volans (Greater Glider)* as per the criteria detailed in the Conservation Advices. Koala habitat characterisation was completed partially through broad	As per the Review of Koala habitat assessment criteria and methods (Youngentob et al., 2021), and Conservation Advices for South-eastern Glossy black-cockatoo (DCCEEW, 2022) and Greater Glider (DCCEEW, 2022a).

Survey	Cardno (2019)	Cardno (2021)	Raptor Environmental (2022)	Relationship to relevant survey guidelines for MNES
			vegetation mapping within the Disturbance Footprint.	
Aquatic surveys	NA	Traversal of mapped watercourses and drainage features to map and assess sites for aquatic habitat features (i.e. riffles, ponds, snags, undercut banks), instream vegetation and shading, channel width, bank height, and substrate material. Deployment of collapsible box traps (deployed for a period of six to eight hours), and scoop/dip netting in suitable aquatic fauna habitat (e.g. undercut banks, instream and under riparian vegetation) to assess native and exotic aquatic species presence and abundance of watercourses, drainage features, and dams over three days. Scoop/dip nets were used three times in each waterbody encountered; however, the length of use and distance travelled varied depending on the size of each waterbody. Visual assessment of freshwater turtle basking sites (e.g. exposed logs, rocks, sandbanks) to identify species present. Observation and mapping of aquatic weed species.	NA	None applicable

2.2.1 Survey Limitations

Surveys were undertaken as follows:

- Two days during spring (2022);
- One day and one-night survey during winter (2020);
- Three days and two nights during a 28-day survey period in spring (2020); and
- Five days and four nights during a 14-day survey period in winter (2019).

The survey conditions may limit the number of fauna species detected, such as detecting Grey-headed flying foxes foraging in drought years which can influence eucalypt flowering times. As such, the absence of detection of a fauna species does not necessarily equate with the absence of the species within the Project Area. Given this, fauna survey techniques have been supplemented with habitat assessments to give a broader view of the full range of species likely to use the Project Area.

The southern lot within the Project Area (i.e. Lot 2 on RP227426) was not included in the field assessments as this area will be protected for the Project and is located approximately 740 m south of the Disturbance Footprint. Notwithstanding, Lot 2 on RP227426 has been assessed as part of the desktop assessment.

Notwithstanding the limitations identified above, the survey methods and effort used are generally in accordance with relevant published guidelines and are considered adequate for the detection of those species identified by the desktop assessment as ‘known’ or ‘likely’ to occur within the locality, with surveys on foot across the Project Area ensuring adequate coverage and mapping of ecological constraints.

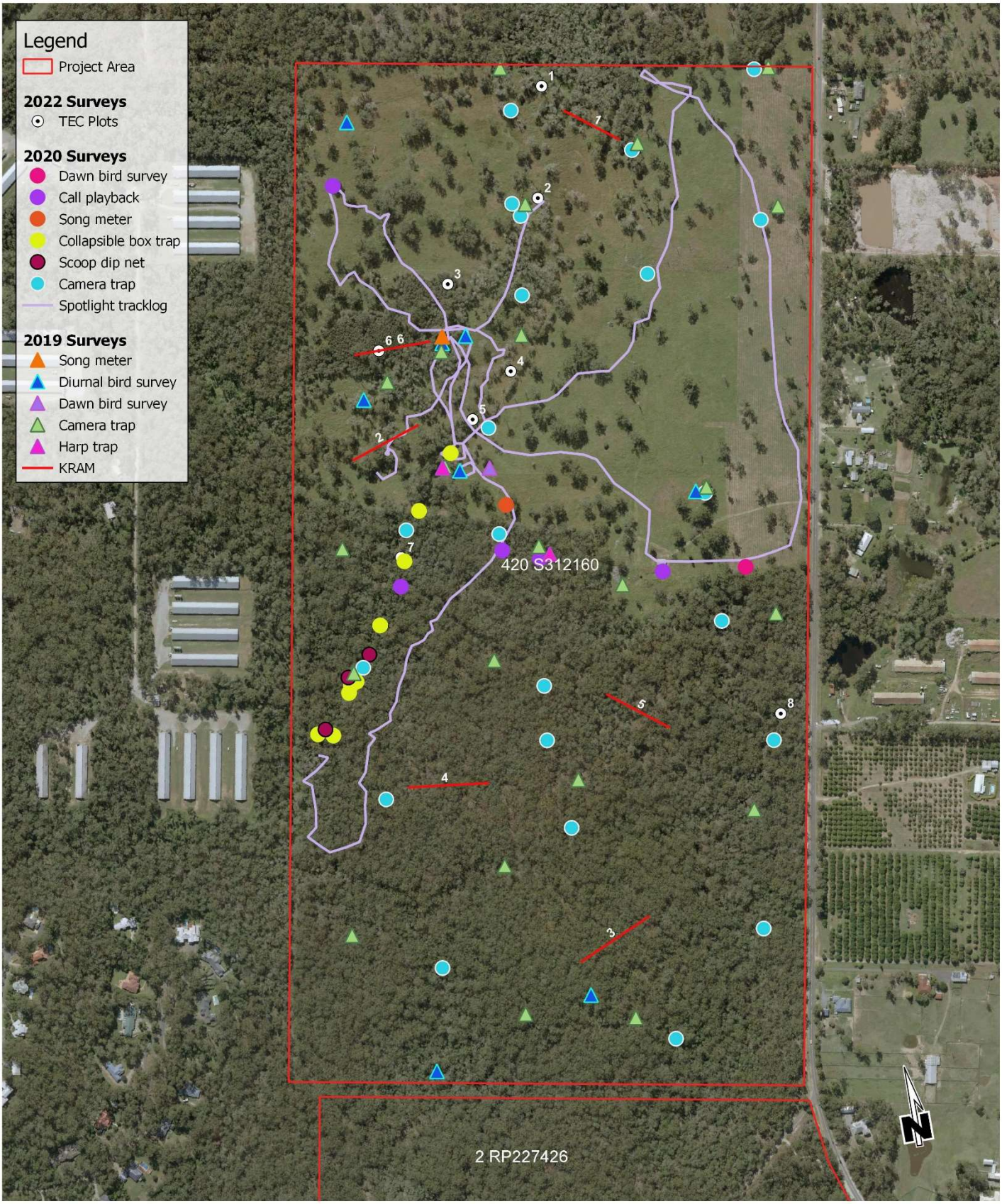

Figure 2 Survey Locations and Methods

Proposed Redlands Coast Sport and Recreation Precinct
Bligh Tanner C\- Redland City Council

Job Number: 2022_025;
Author: Mary Timms

Dated 22/11/2022
CRS: MGA94 Z56

Note: 2019 and 2020 Survey location data is sourced from Ecological Assessment Reports (Cardno, 2019) and (Cardno, 2021).

This plan may only be relied upon in relation to the project and purpose for which it was commissioned. It should be noted, that this plan is not inclusive of all Environmental Features/layers.

Raptor
ENVIRONMENTAL

Scale: approx 1:5,000 @A3

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3 Results

3.1 Vegetation

3.1.1 Overview

Regarding Queensland's vegetation mapping framework, the Project Area supports Regulated Vegetation including Category X (non-remnant) areas, Category B (remnant vegetation) and Category C (High-value regrowth). The Vegetation Management Property Report identifies six Regional Ecosystems (REs) occurring within the Project Area. A short description of each RE, taken from the Regional Ecosystem Description Database (REDD), 2022, is provided in **Table 10** below.

Table 10 Regional ecosystems that are mapped in the Project Area as described in REDD

RE Code	Category	Status	Description
12.11.23	B, C	Endangered	*Eucalyptus pilularis* open forest on coastal metamorphics and interbedded volcanics
12.11.27	B, C	Endangered	*Eucalyptus racemosa* subsp. *racemosa* and/or *E. seeana* and *Corymbia intermedia* woodland on metamorphics +/- interbedded volcanics
12.3.11	B, C	Of Concern	*Eucalyptus tereticornis* +/- *Eucalyptus siderophloia*, *Corymbia intermedia* open forest on alluvial plains usually near the coast
12.11.24	C	Least Concern	*Eucalyptus carnea*, *E. tindaliae*, *Corymbia intermedia* +/- *E. siderophloia* or *E. crebra* woodland on metamorphics +/- interbedded volcanics
12.11.25	C	Of Concern	*Corymbia henryi* and/or *Eucalyptus fibrosa* subsp. *fibrosa* +/- *E. crebra*, *E. carnea*, *E. tindaliae* woodland on metamorphics +/- interbedded volcanics
12.9-10.4	C	Least Concern	*Eucalyptus racemosa* subsp. *racemosa* woodland on sedimentary rocks

Areas mapped as Category B (remnant vegetation) appear to support vegetation that meets the requisite height, cover and species compositions to accord with remnant; and Category C areas have not been cleared in the past 15 years. Ground-truthing field assessments found that the boundaries of mapped polygons are accurate to the scale at which they are mapped and, while most attributions are generally correct, areas mapped as RE 12.11.24/12.11.25 shared greater affiliation with RE 12.11.23 (Cardno, 2021). **Figure 3** shows that some areas along a waterway that traverses the centre of the Disturbance Footprint are considered RE 12.3.11 by the Queensland Government. Ground truthing found that some areas do not support the full suite of species diagnostic of this RE and would more appropriately be described as RE 12.3.6 (**Plate 1**).

Of the vegetation associations present those areas according to RE 12.3.6 are the only ones that equate directly with a TEC. Specifically, these areas accord with the *Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland*. The listing advice for the *Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland* indicates that additional areas that would not accord with the definition of remnant under Queensland's vegetation framework would also accord with the TEC provided the Key Diagnostics and Condition classes, categories, and thresholds are met.

The Disturbance Footprint and Avoidance Area is characterised by historically grazed and selectively cleared land and the Retention Area is predominately remnant vegetation and a waterway corridor that is centrally located through the Disturbance Footprint (**Figure 3**).

Disturbance Footprint and Avoidance Areas

Areas of non-remnant vegetation in the Project Area are characterised by pastoral land that has been subject to historic selective clearing and grazing and contains scattered large eucalyptus trees (**Plate 2 and 3**). These large trees include *Eucalyptus tereticornis*, *E. racemosa and E. pilularis* specimens that support numerous hollows. The ground layer is dominated by exotic *Sporobolus pyramidalis* (Giant rat's tail grass) in some locations, however, the native species *Imperata cylindrica* (Blady grass) dominates in others. The ground layer also is characterised by an abundance of exotic herbs and forbs, including *Senecio madagascariensis* (Fireweed).

The Disturbance Footprint is predominately mapped as Category X (area) with an area of Category B (remnant vegetation) of 1,196 m^2 will be impacted. An estimate 18% of Category C (High-value regrowth) across the Project Area will be impacted (i.e. 19,615m^2). Areas mapped as regrowth of heterogeneous patches of REs 12.11.24/12.11.25 support vegetation that has greater affiliations with RE 12.11.23.

The Avoidance Area located within the western extent of the Disturbance Footprint is characterised by a scattered mature canopy with slashed grass understorey. The canopy in the Avoidance Area is dominated by *E. pilularis, E. racemosa* and *Corymbia intermedia*. Trees within the Avoidance Area contain several hollow-bearing limbs. The Avoidance Area is proximately mapped under the Regulated Vegetation Map as containing Category X (areas) however 3760m^2 are mapped as Category B (High-value regrowth) containing RE 12.11.24/12.33.25 at a ratio of 70/30%.

Retention Area

The presence of heterogeneous areas of remnant and regrowth REs 12.11.23/12.11.27 dominate the Retention Area. Both REs are listed as Endangered under the VMA (**Plate 4**). The canopy is dominated by *E. racemosa* and *C. intermedia* in some areas and shifts to dominance by *E. pilularis* in others. The sub-canopy supports *Lophostemon suaveolens* in some areas and in lower slopes consists of *Melaleuca quinquenervia*. The shrub layer is generally absent. The ground layer includes several native species and is generally dominated by *Entolasia stricta* on drier ridges. Despite evidence of some historic logging, these areas were generally in good condition with little disturbance and weed infestation observed.

Melaleuca quinquenervia dominated swamp areas are associated with watercourses and associated alluvial plains (i.e. located on land zone 3). *Melaleuca quinquenervia* dominates the canopy in these areas, which also supported a sub-canopy largely containing *Melaleuca quinquenervia*. The shrub layer, where present, was observed to support a number of Solanum species including *Solanum stelligerum* (Devil's needles) and the non-native *Solanum torvum* (Devils fig). The ground layer generally included *Juncus* spp. (Rushes) and *Axonopus compressus* (Broad-leaved carpet grass). Melaleuca dominated swamp areas are associated with the watercourse and associated alluvial plains in the Retention Area within the central waterway corridor within the northern portion of the Project Area. *Melaleuca quinquenervia* dominate the canopy in these areas, which also supports an emergent canopy of scattered *E. tereticornis*. The shrub layer, where present, was observed to support several Solanum species including *S. stelligerum* and the exotic *S. torvum*. The ground layer generally included Juncus species and *Axonopus compressus*. This vegetation community aligns with RE 12.3.6 which

allows for the presence of *Melaleuca quinquenervia* on lower slopes (refer to **Section 3.1.2** for assessment of Threatened Ecological Communities.

Plate 1: Vegetation Community corresponding with RE12.3.6 in the waterway corridor.

Plate 2: Selectively cleared and historically grazed paddocks in the Disturbance Footprint.

Plate 3: Scattered retained canopy within the Disturbance Footprint.

Plate 4: Vegetation Community within the Retention Area

3.1.2 Threatened Ecological Communities

A summary of the relevant DCCEEW documents for the Endangered *Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland TEC* listed under the Species Profile and Threats Database and consideration within Project documentation is detailed in **Table 11** below.

Table 11 Commonwealth documents for the Endangered Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland TEC

Topic	Detail/document	Addressed in the report
Approved Conservation Advice	*Conservation Advice for the Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland* (DAWE, 2021)	**Section 3.1.2, Section 5** and **Appendix G**
Listing Advice	Listing advice may be available in the Approved Conservation Advice	**Section 3.1.2** and **Appendix G**
Adopted Recovery Plans	Recovery Plan not required, including the coastal swamp sclerophyll forests in the List, as well as implementing the priority actions set out in the Conservation Advice, are sufficient to prevent extinction and guide restoration (22/11/2021).	NA
Threat Abatement Plan	No Threat Abatement Plan has been identified as being relevant for this ecological community	NA

The Protected Matters Search Tool indicates that Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland TEC is likely to occur within the Project area. The desktop assessment included a review of mapped REs and pre-clear REs within the Project Area. No mapped RE or pre-clear REs within the Project Area correspond with the mapped TEC.

The field assessment included an assessment of the presence/absence and extent of the Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland. As per the survey requirements detailed in the Conservation Advice (DAWE, 2021), plots were completed within vegetation communities that appeared to meet the key diagnostic characteristics of the TEC (**Appendix F**) to test the relevant condition classes, categories, and thresholds. The patches of RE12.3.6 which supported a canopy dominated by Broad-leaved paperbark (*Melaleuca quinquenervia*) (as per the key diagnostic criteria) are included in **Table 11** below and shown in **Figure 4**. The remaining patches of Broad-leaved paperbark (*Melaleuca quinquenervia*) within the Project area occur as a low tree layer under canopy species which correspond with the RE 12.3.11 and as such are not considered the TEC or occur on substrates inconsistent with "hydric soils with inundation patterns ranging from intermittent to episodic" (i.e. they occurred on land zones 9-10 or 11). The identification of the patches considered the guidance in the Conservation Advice for identifying a patch including:

- "*A patch is a discrete and mostly continuous area of the ecological community and can include small scale (>30 m) variations, gaps and disturbances.*
- *The smallest patch size that can be identified is 0.25 ha.*
- *Where a larger forest or woodland area has been classified as a different vegetation type (e.g. by state vegetation mapping), localised areas of the ecological community greater than 0.25ha may be present within this larger area*."

As per the Conservation Advice, the structure of the TEC has been considered and varies from open woodland to closed forest with a crown cover of at least 10% and usually no more than 70%. Four patches of potential patches were identified within the Project Area, the condition of the vegetation communities is shown in **Plate 5 – 8**.

Plate 5: The vegetation community within Patch 1 with a ground layer dominated (i.e. >80% cover) by the non-native *Setaria sphacelata* (South African pigeon grass).

Plate 6: The vegetation community in Patch 2 indicates a predominately native understorey (i.e. 50-80%) comprising *Juncus usitatus* (Common rush) and *Juncus continuus*.

Plate 7: Dense patch of Broad-leaved paperbark (*Melaleuca quinquenervia*) in Patch 3.

Plate 8: Woodland community of Patch 4 is dominated by Broad-leaved paperbark (*Melaleuca quinquenervia*) over a predominately exotic understorey (i.e. >80% cover %).

The process to determine if the patches are considered the TEC include assessment against the key diagnostic characteristics and condition thresholds as outlined in **Table 12** below.

A single patch of 1.59 ha within the Project Area meets the key diagnostic criteria and condition threshold and is considered to be in Good Condition (Class 2) TEC. This patch meets the key diagnostic criteria and has 20 – 50% non-native native ground layer (refer to Patch 2 shown in **Figure 4**). The remaining three patches do not meet both the key diagnostic criteria and/or condition thresholds to be considered the TEC. Patch 1 and 4 meet the key diagnostic criteria, however, does not meet the condition class to be considered the TEC (i.e. >80% non-native ground layer). Patch 3 does not meet the key diagnostic criteria as the patch does not indicate hydric soils and is not located in landzone 3 and is not subject to inundation (intermittent to episodic).

Table 12 Small patch assessment

Patch	Key diagnostic characteristics								Small patch thresholds		Status
	Occurs on the mainland near the coast.	Occurs in coastal catchments typically below 20m ASL	Occurs in coastal catchments typically below 20m ASL	Vegetation structure varies.	The canopy is dominated or co-dominated by *Melaleuca quinquenervia* and/or *Eucalyptus robusta*.	Other tree species may occur in the canopy, but they are not dominant	The understorey includes a variable ground layer.	The ecological community is not present if halophytic species, dominate.	Class 1 >80% native ground layer	Class 2 50-80% native ground layer	
Patch 1	Complies	Complies	Complies	Complies	Complies	Complies	Complies	Complies	Does not comply	Does not comply	Not Protected
Patch 2	Complies	Complies	Complies	Complies	Complies	Complies	Complies	Complies	Does not comply	Complies	Protected – Good Condition (Class C2)
Patch 3	Complies	Complies	Does not comply	-	-	-	-	-	-	-	Not Protected
Patch 4	Complies	Complies	Complies	Complies	Complies	Complies	Complies	Complies	Does not comply	Does not comply	Not Protected
Note: 'Protected' means protected under the EPBC Act											

As per the Conservation Advice, areas of 'high value' TEC consider the surrounding environment and landscape context. Indicators of high value include those details in **Table 13**. Whilst the TEC does not meet the Class requirement to be considered high value, the location within the waterway/ecological corridor indicates that the patch is high value.

Table 13 Indicators of high value TEC

Indicator	Comment
Patches that meet or are closest to high quality (Classes A, B and C1) for this ecological community or are otherwise critical to the survival of the ecological community. These may be based on recent on-site observations or known past management history.	The Patch of TEC within the Project area is Class C2 and is not considered high quality.
Patches that include mature trees with important habitat values, for example, hollows and crevices, and/or are part of important wetland areas.	The patch contains mature trees, however no hollows were observed in the mature canopy.
Patches with a larger area to boundary ratio – such patches are more resilient to edge effect disturbances such as weed invasion and human impacts.	The Patch has an area to boundary ratio of 0.03 ha and is more resilient to edge effect disturbances including weeds.
Patches within or near to a larger native vegetation remnant and that contribute to a mosaic of vegetation types present at a site. Areas of mosaic native vegetation provide a wider range of habitats that benefit flora and fauna diversity. Other patches are important as linkages among remnants, acting as 'stepping stones' of native remnants in the landscape or for fauna to travel to and from water sources. Connectivity may include actual or potential connectivity to restoration works (e.g. native plantings).	The patch is part of a corridor linkage along a waterway corridor. Connectivity includes actual and potential enhanced connectivity following restoration works.
Patches that occur in areas where the ecological community has been most heavily cleared and degraded, or that are at the natural edge of its range, particularly where there is genetic distinction, or absence of some threats. These may include unique variants of the ecological community, e.g. with a unique flora and/or fauna composition, or a patch that contains flora or fauna that have largely declined across the broader ecological community or region.	Patches that resemble the TEC are located downstream from the Project area.
Patches that show evidence of recruitment of key native plant species or the presence of a range of age cohorts (including through successful assisted regeneration or management of sites). For example, tree canopy species are present on a range of ages and sizes, from saplings to large, potentially hollow-bearing trees.	The patch did not indicate trees of age to support hollows, however, sapling recruitment was noted.
Patches with good faunal habitat as indicated by diversity of topography and other landscape features, plant species, vegetation structure, and age class, presence of movement corridors, mature trees (particularly those with hollows), logs, watercourses, and wetlands, etc.	The patch is part of a movement corridor associated with the waterway that is known to support habitat for Koala.
Patches containing nationally or state-listed threatened species.	Refer above
Patches with high species richness, as shown by the variety of native understorey plant species, or high number of native fauna species (vertebrates and/or invertebrates).	The patch did not indicate high species richness in the native understory. The patch supports habitat for birds, reptiles and mammals as recorded in the high species richness recorded in the Ecological Assessment Report (Cardno 2021).
Patches with low levels of weeds and feral animals.	The patch indicates a low percentage of weeds.

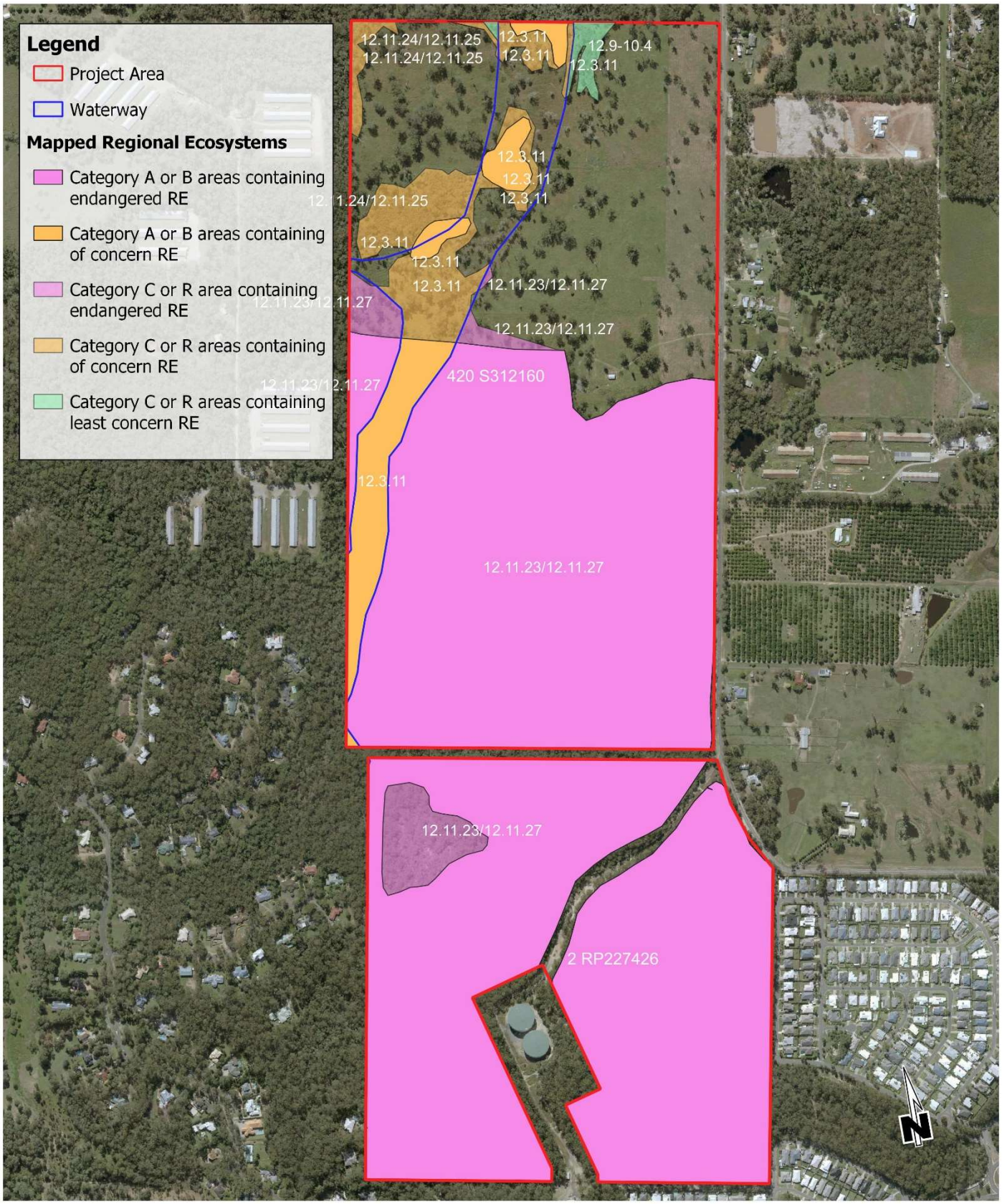

Figure 3 Vegetation

Proposed Redlands Coast Sport and Recreation Precinct
Bligh Tanner C\- Redland City Council

Job Number: 2022_025;
Author: Mary Timms

Dated 22/11/2022
CRS: MGA94 Z56

Note: The waterway location is based on the Pre-clear RE landzone 3 mapping (c) State of Qld

This plan may only be relied upon in relation to the project and purpose for which it was commissioned. It should be noted, that this plan is not inclusive of all Environmental Features/layers.

Raptor
ENVIRONMENTAL

Scale: approx 1:7,000 @A3

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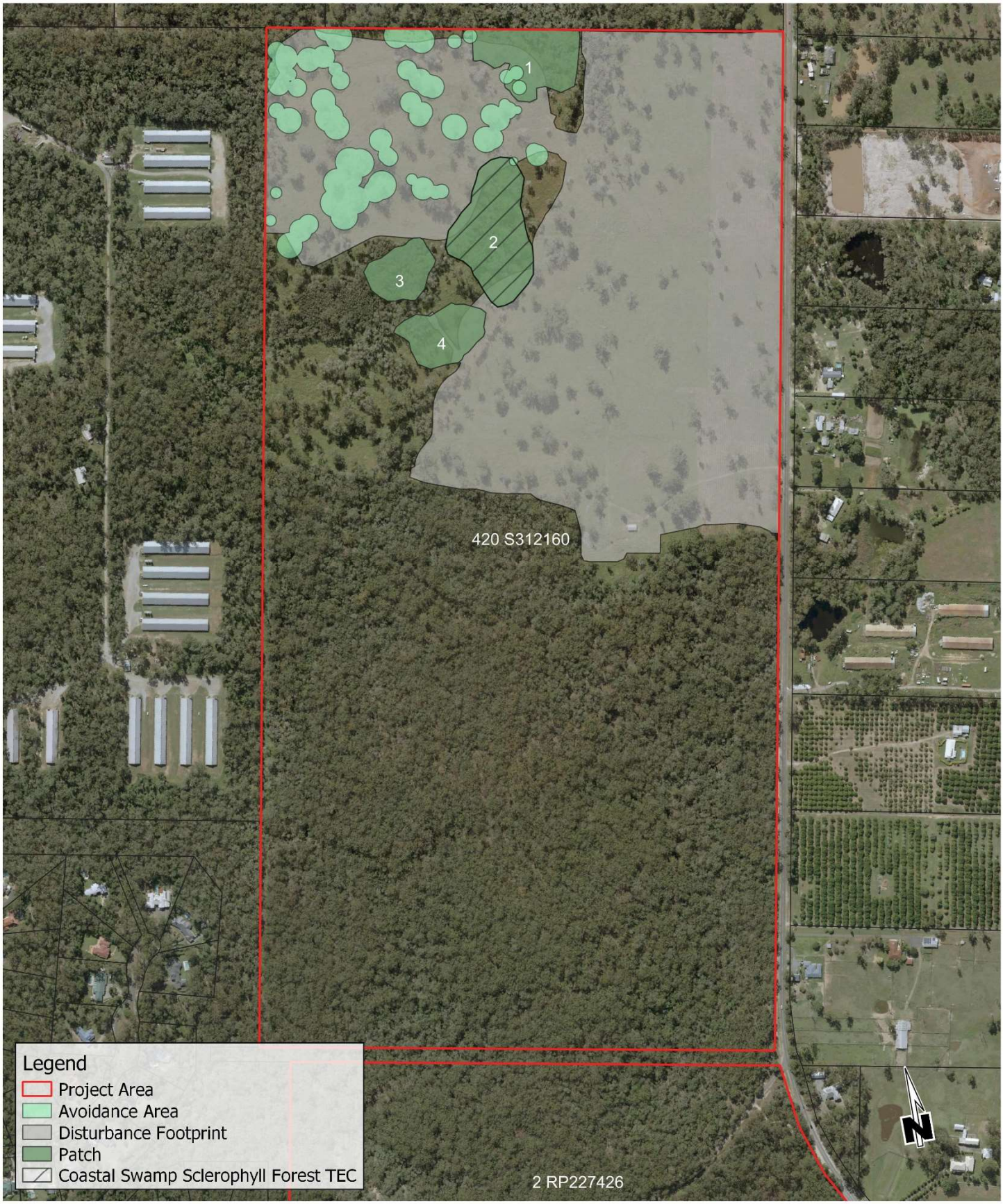

Figure 4 Threatened Ecological Community

Proposed Redlands Coast Sport and Recreation Precinct
Bligh Tanner C\- Redland City Council

Job Number: 2022_025;
Author: Mary Timms

Dated 22/11/2022
CRS: MGA94 Z56

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Raptor
ENVIRONMENTAL

Scale: approx 1:5,000 @A3

100 0 100 200 m

3.2 Flora and Fauna

3.2.1 Threatened Flora

During the field assessment (Cardno, 2021), 198 flora species, including 70 exotic species (non-native and non-local), from 81 families were recorded. All native species detected are listed as Least Concern as defined under the provisions of the *Nature Conservation (Wildlife) Regulation 2020* (i.e. no Critically Endangered, Endangered, Vulnerable or Near Threatened species were recorded). No flora species listed under the EPBC Act were recorded and, no species listed as significant under *Planning Scheme Policy 1 - Environmental Significance* were recorded.

3.2.2 Fauna summary

In Cardno's 2019 report, a total of 61 fauna species were recorded. This included 47 bird species, 10 mammal species, one reptile species and three amphibians. In Cardno's 2021 report, a total of 70 fauna species were recorded, including 37 bird species, 22 mammal species, five reptile species, three amphibians, two fish and one crustacean. Incorporating the results of both studies, 95 fauna species were found within the Project Area.

The likelihood of occurrence assessment completed for threatened fauna in accordance with the methodology outlined in **Section 2.1** is provided in **Appendix E**. The results of the likelihood of occurrence assessment for threatened species and field assessment results indicate that five MNES fauna species are 'known' or 'likely' to occur within the Project Area. Species that have previously been recorded within the Project Area include the Endangered *Phascolarctos cinereus* (Koala) and the Marine *Bubulcus ibis* (Cattle egret). Additionally, *Calyptorhynchus lathami lathami* (South-eastern glossy black cockatoo), *Petauroides volans* (Central greater glider) and *Pteropus poliocephalus* (Grey-headed flying-fox) are considered 'likely' to occur within the Project Area.

Table 14, below, provides the summarised results of the likelihood of occurrence assessment and **Figure 5** shows species records within a 10 km radius of the Project Area (ALA, 2022).

Table 14 Summarised results of the contemporary likelihood of occurrence desktop assessment for EPBC Act listed species.

Scientific Name	Common Name	Status*		Likelihood of Occurrence
		NC Act	EPBC Act	
Aves				
Calyptorhynchus lathami lathami	South-eastern glossy black-cockatoo	V	V	Likely
Bubulcus ibis (syn. Ardea ibis)	Cattle egret	C	Ma	**Known**
Mammals				
Phascolarctos cinereus	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)	E	E	**Known**

Scientific Name	Common Name	Status*		Likelihood of Occurrence
		NC Act	EPBC Act	
Pteropus poliocephalus	Grey-headed flying-fox	C	V	Likely
Petauroides volans	Greater glider	E	E	Likely
Note: V = Vulnerable, E = Endangered & C = Least Concern under the NC Act. V = Vulnerable, Ma = Marine & E = Endangered under the EPBC Act				

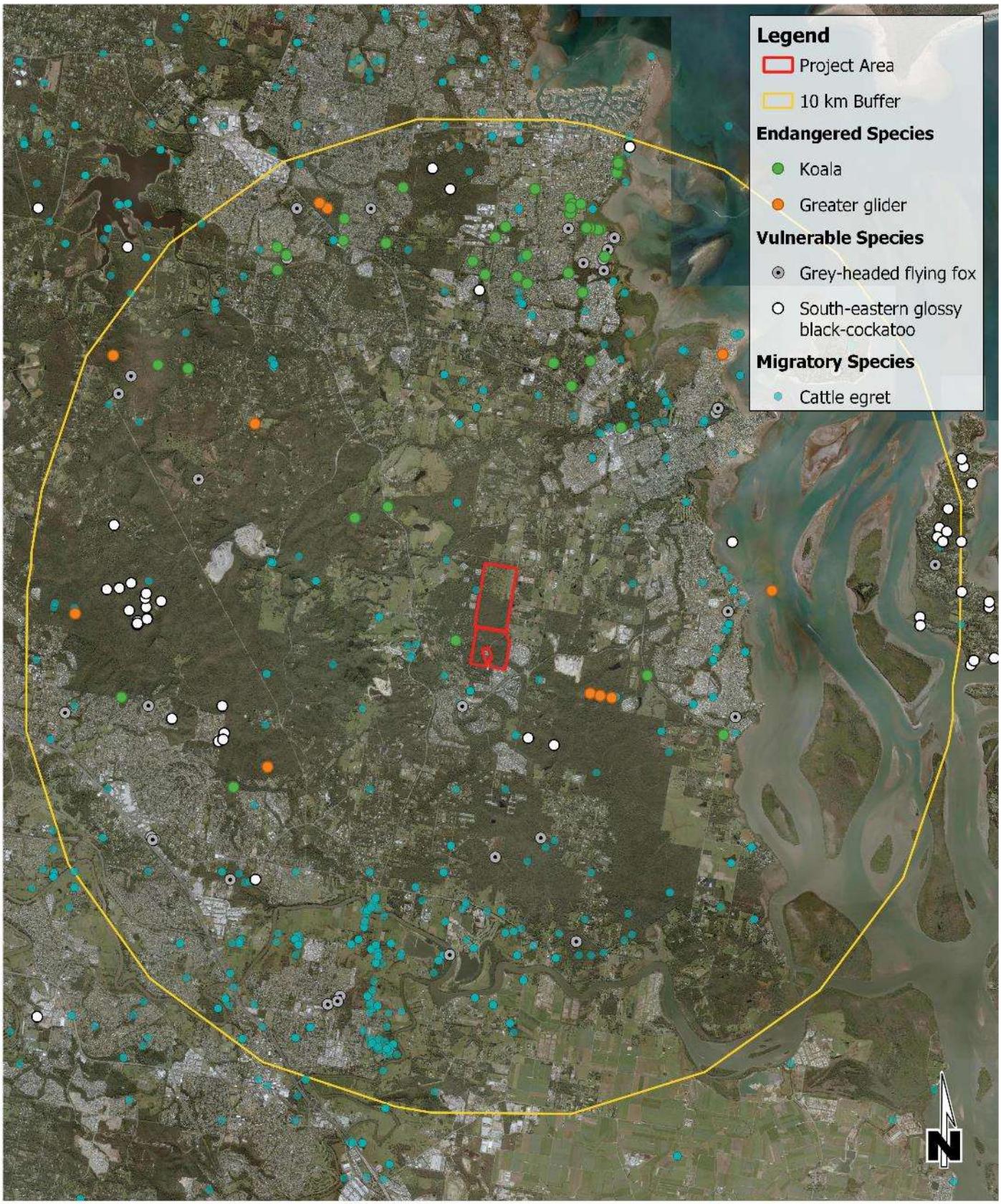

Figure 5 Threatened Fauna Species

Proposed Redlands Coast Sport and Recreation Precinct
Bligh Tanner C\- Redland City Council

Job Number: 2022_025;
Author: Mary Timms

Dated 15/11/2022
CRS: MGA94 Z56

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Raptor
ENVIRONMENTAL

Scale: approx 1:80,000 @A3

1,000 0 1,000 2,000 3,000 4,000 m

3.2.3 Threatened Fauna Species

3.2.3.1 Koala

A summary of the relevant DCCEEW documents for the Endangered *Phascolarctos cinereus* (Koala) (combined populations of Queensland, New South Wales and the Australian Capital Territory) listed under the Species Profile and Threats Database and consideration within Project documentation is detailed in **Table 15** below.

Table 15 Commonwealth documents for the Endangered Koala

Topic	Detail/document	Addressed in the report
Approved Conservation Advice	*Conservation Advice for Phascolarctos cinereus (Koala) combined populations of Queensland, New South Wales and the Australian Capital Territory* (DAWE, 2022)	**Section 3.2.3.1, Section 5** and **Appendix G**
Listing Advice	Listing advice may be available in the Approved Conservation Advice	**Section 3.2.3.1** and **Appendix G**
Adopted Recovery Plans	*National Recovery Plan for the Koala Phascolarctos cinereus (combined populations of Queensland, New South Wales and the Australian Capital Territory)* (DAWE, 2022)	**Section 3.2.3.1, Section 5** and **Appendix G**
Threat Abatement Plan	No Threat Abatement Plan has been identified as being relevant for this species	NA
Other Commonwealth Documents		
Information Sheets	*Revegetating Koala Habitat* (Beale, P., et al., 2022)	Refer to Rehabilitation Plan (Bligh Tanner, 2022) and **Section 5**
	*Effects of fire on koalas and their habita*t (Beale, P., et al. 2022a)	Refer to Bushfire Assessment (LEC, 2022) and Parks and Conservation Planned Burn Program (Redland City Council 2022b)
	A review of koala habitat assessment criteria and methods (Youngentob,K.M,et al. 2021)	**Section 3.2.3.1** and **Appendix G**
Online Resource	*Referral guidance for the endangered koala* (DCCEEW, 2022)	**Section 3.2.3.1** and **Appendix G**

Population and records

Within the southeast Queensland bioregion, there are several genetically distinct local populations (Kjeldsen et al. 2019, Lee et al. 2009). The Project Area falls within the Koala Coast local population of the southeast Queensland bioregional population. The Conservation Advice for Koala (*Phascolarctos cinereus*) combined populations of Queensland, New South Wales and the Australian Capital Territory states there are an estimated 15,821 individuals in southeast Queensland (DAWE, 2022). The Redlands Coast Koala Population and Habitat Assessment

(Biolink, 2019) field assessment and analysis of preferred koala trees estimated a population of 754 Koalas for the Redlands Coast.

The Ecological Assessment Report (Cardno, 2021) identified two Koalas on camera traps within the southern portion of the Project Area located within the Retention Area. Koala scats were recorded during the 2019 and 2021 surveys at three locations, one within the northern extent of the Project Area (within the Disturbance Footprint) and two records within the Retention Area (**Table 16** and **Figure 6**). The Wildnet database indicates 552 records of Koala within a 3km radius and the Atlas of Living Australia shows seven records of Koala within a 1km radius of the Project Area.

Table 16 Summary of Koala records from Project Area surveys

Koala record	2019	2021	2022
Camera trap	N	Y	NA – presence known
Scats	Y	Y	NA – presence known

Two recent studies have been undertaken on koalas within the Redland City Council LGA to provide information on the koala population characteristics to inform efficient and effective management including:

- Final Report to Redland City Council (Biolink, 2019); and
- Koala Population Genetic Assessment Project (University of the Sunshine Coast, 2021).

The Biolink (2019) report shows that koala records have no significant change in the extent of occupancy in the Redlands Coast LGA when comparing historical and recent records. However, there has been an ongoing decline in the frequency of reporting koalas from the mainland Redland Coast since 2000. Analysis indicates that disease, vehicle strike and dog attack are the key contributors to koala mortality in the region. Preferred Eucalypt species for the Redlands Coast koalas formed the basis for habitat classification based on the presence/ absence/ abundance of Preferred Koala Food Tree (PKFT) species. This study enabled an estimate of the remaining areas of PKFTs to be 8,346 ha on the mainland of the Redland Coast. Field surveys were completed at 59 sites and a low population density estimate of 0.04 Koalas per ha was extrapolated with an estimated population of 754 Koalas within the Redland Coast. The density estimate was modified to reflect only actively utilised areas and a density of 0.063 Koalas per ha was developed.

The USC (2021) assessment aimed to repeat the koala scat surveys and population and genetic assessment completed across the mainland Redland Coast in 2018. The assessment resulted in a lower-than-expected genetic diversity which is attributed to an increasing urban footprint restricting dispersal opportunities, inbreeding and population size. Chlamydia was widely present in the population and was detected in 38% of Koalas. The results indicate that over the last three years the broad-scale population genetic characteristics of the mainland population were preserved.

Koala habitat

Koala habitat characterisation of the Project Area has been undertaken as per the methodology outlined in **Section 2.1.1.** As per the Australian National University Assessment (Youngentob et al., 2021). LIKT and ancillary habitat trees within the Disturbance Footprint include the species

listed in **Table 17** below. As per the latest referral information released, Koala habitat includes open ground (i.e. cleared areas between habitats), riparian corridors, isolated LIKT and ancillary habitat trees are considered Koala Habitat (Youngentob et al., 2021 and DCCEEW, 2022). The Department of Climate Change, Energy and the Environment and Water (DCCEEW, 2022) released a suite of new guidance material relating to the referral of the endangered Koala on 27 October 2022. This material includes a landing page with links to online resources and documents including the resource, *Identifying habitat for the endangered koala* (DCCEEW, 2022). The guidance material refers to the publication by the Australian National University (Youngentob et al., 2021) and indicates that LIKT should be considered when determining if an area contains koala habitat. Further, the resource defines Koala habitat as, ". *the total set of attributes required by koala to meet the needs of the individual survival and reproduction and how these resources are arranged in the landscape to maintain viable metapopulation processes".* Attributes include feed trees and connectivity to other habitats, located near areas with koala populations. The guidance material states that the ground itself forms an essential component of koala habitat (Youngentob et al., 2021). Based on the above, the Project Area as a whole is considered koala habitat.

Table 17 LIKT and ancillary habitat trees within the Disturbance Footprint

Common name	Botanical name
LIKT	
Grey gum	*Eucalyptus propinqua*
Scribbly gum	*Eucalyptus racemosa*
Red mahogany	*Eucalyptus resinifera*
Narrow-leaved red gum	*Eucalyptus seeana*
Narrow-leaved ironbark	*Eucalyptus siderophloia*
Forest red gum	*Eucalyptus tereticornis*
Ancillary habitat trees	
Rusty gum	*Angophora leiocarpa*
Smudgee	*Angophora woodsiana*
Pink bloodwoood	*Corymbia intermedia*
Blackbutt	*Eucalyptus pilularis*
Swamp box	*Lophostemon suaveolens*
Broad-leaved paperbark	*Melaleuca quinquenervia*

Based on the Koala habitat characterisation completed, the Project Area contains:

- 112.5 ha of Category A (**Plate 9**)
- 15.3 ha of Category B (**Plate 10**)
- 31.5 ha of Category C (**Plate 11 and 12**)

Plate 9 Koala habitat category A with LIKT dominating the vegetation community with scattered ancillary habitat trees.

Plate 10 Koala habitat category B with ancillary trees dominating the vegetation community

Plate 11 Koala habitat Category C characterised by bare ground between habitat patches with isolated LIKT.

Plate 12 Koala habitat Category C characterised by bare ground with stags and scattered ancillary habitat trees and isolated LIKT.

The Project retains the Koala habitat categories as identified in **Table 18** and shown in **Figure 6.**

Table 18 Koala habitat categories pre and post construction

Habitat Category	Pre-construction (ha)	Post-construction (ha)	Impacted area (ha)
A	112.5	112.3	0.17
B	15.3	9.4	5.9
C	31.5	4.6	26.9

Based on the Koala presence/absence surveys completed by Cardno (2019 and 2021) the Project Area is known to support Koalas. The 2019 and 2021 surveys indicate Koala presence is predominately within the Category A habitat within the Retention Area (**Figure 6**). The Biolink study (2019) estimates a density of 0.063 Koalas per ha within the remaining PKHT. If the density of 0.063 is applied to the extent of impacted Category A and B habitat combined (i.e. 6.1

ha) and the area of Category C based on the total woody vegetation cover extracted from the Vegetation Management Plan (i.e. 7 ha), then the density of koalas within the Disturbance Footprint is ((6.1 ha + 7 ha) x 0.063) ~ 0.82 of a koala.

Key threats

The Redlands Coast Koala Conservation Plan 2022-2027 (Redland City Council, 2022) details key threats to the koala including vehicle strike, dog attack, disease and habitat loss and fragmentation. The threats outlined in the plan generally correspond with the threats and impacts highlighted in the National Recovery Plan for the koala (DAWE, 2022). In addition, the recovery plan details climate change, land use change, and natural systems modification including prescribed burns as direct threats. Further, habitat loss and fragmentation, degradation, genetic effects and disease are considered ecologically threatened processes (DAWE, 2022).

Ecological processes

Under Shaping SEQ - *ShapingSEQ - South East Queensland Regional Plan 2017* (DILGP, 2017) the Project Area falls within the eastern extent of the SEQ regional biodiversity corridor. Under the Biodiversity Planning Assessment, the south-western portion of the Project Area is mapped within the Biodiversity Planning Assessment terrestrial corridor buffer area (EHP, 2016). Council's Wildlife Corridors Connections Plan 2018 – 2028 (Redland City Council, 2018) shows the southern portion of the Project Area within an established corridor extending north to south through the Project Area, linking Sandy Creek Conservation Area to Days Road Conservation Area and Bayview Conservation Park (**Figure 7**). The established corridor traverses Heinemann Road Reservoir access road and crosses German Church Road near Native Dog Creek. This established corridor will be retained as part of the Project. The Wildlife Corridors Connections Plan includes a stepping stone corridor that adjoins the northern boundary of the Project area and crosses Heinemann Road then links back into the core habitat mapped within the Project Area. Additionally, two stepping-stone corridors extend south from the southern extent of the Project Area. One of the priority outcomes identified by Council for this corridor is safe fauna passage across Valley Way and German Church Road. Enhancement and stepping-stone corridors provide connectivity and dispersal from the south of the Project Area to the north and wider Moreton Bay catchment via the State terrestrial corridor mapped in the Biodiversity Planning Assessment. While stepping stone corridors are not physically connected, they are functionally connected as they facilitate connectivity among larger patches.

One of Council's initiatives as part of the Koala Conservation Plan 2022-2027 (Redland City Council, 2022) is the establishment of koala safe neighbourhoods. Koala safe neighbourhoods are defined based on the following criteria:

- an identified resident koala population;
- evidence of koala strike on local roads; and
- habitat that can support a koala population (including interconnected parks, reserves or wildlife corridors, and where land acquisition and habitat rehabilitation can be prioritised).

The Mount Cotton koala safe neighbourhood is located approximately 300 m northwest of the Project Area and connects with the Project Area via the established corridor (**Figure 7**). Each koala safe neighbourhood has two – six 'ambassador' koalas that are tagged, tracked and

monitored by research partners from the University of the Sunshine Coast. The ambassador koalas provide data to improve knowledge of koalas within the Redlands Coast.

At a local scale, the adjacent property to the north located at 117-131 Heinemann Road, Mount Cotton (described as Lot 4 on RP131274) has a development application lodged over the property for a material change of use and operation work combined for a Nature Based Facility (MCU22/0091). The design plans indicate a function centre located in the eastern portion of the property and accommodation within the western extent of the lot. This proposed development appears to be limited to the existing cleared areas and predominately retains the vegetation within the property that is connected to the Project Area. The Ecological Assessment Report (28 South, 2022) associated with this application indicates mitigation measures include ecological restoration works. As such, the stepping stone corridor adjoining the Project Area will be maintained and potentially enhanced as part of the development application.

The Project retains and enhances the central waterway corridor within the northern portion of the Project Area allowing for movement and dispersal opportunities to the north and south of the Disturbance Footprint and the ecologically sensitive design retains a scattered mature native canopy within the proposed cycle precinct as such dispersal opportunities are maintained within the Avoidance Area (**Figure 7**).

Dispersal area

The National Recovery Plan for the Koala Phascolarctos cinereus (combined populations of Queensland, New South Wales and the Australian Capital Territory) (DAWE, 2022) details the metapopulation processes that influence the spatial structure of populations. Processes that can cause extinction, recolonisation and affect population structure include:

- Disturbance to dispersal patterns and changes in gene flow between populations; and
- Changes in the size of a population, population viability, changes sex ratios and mortality rates as a result of changes to the carrying capacity of available habitat.

As detailed above, the Project retains and enhances the central waterway corridor that provides dispersal opportunities to the north linking with the local steppingstone corridor and to the south linking with the state corridor. The ecologically sensitive design retains a scattered mature native canopy within the proposed cycle precinct as such dispersal opportunities are maintained within the Avoidance Area. Koala exclusion is not considered appropriate for this Project and movement opportunities through the proposed sports fields and cycle precinct will be maintained. The carry capacity/density of koalas within the Disturbance Footprint is calculated as supporting ~0.82 of a koala (refer to the Koala Habitat section above) and the Retention Area supports 123 ha of koala habitat (i.e. 126.6 ha x 0.063) or ~7.7 Koalas. Due to the retention of the dispersal corridor and minimal impact on the carrying capacity of available habitat, it is unlikely that the Project will impact metapopulation processes.

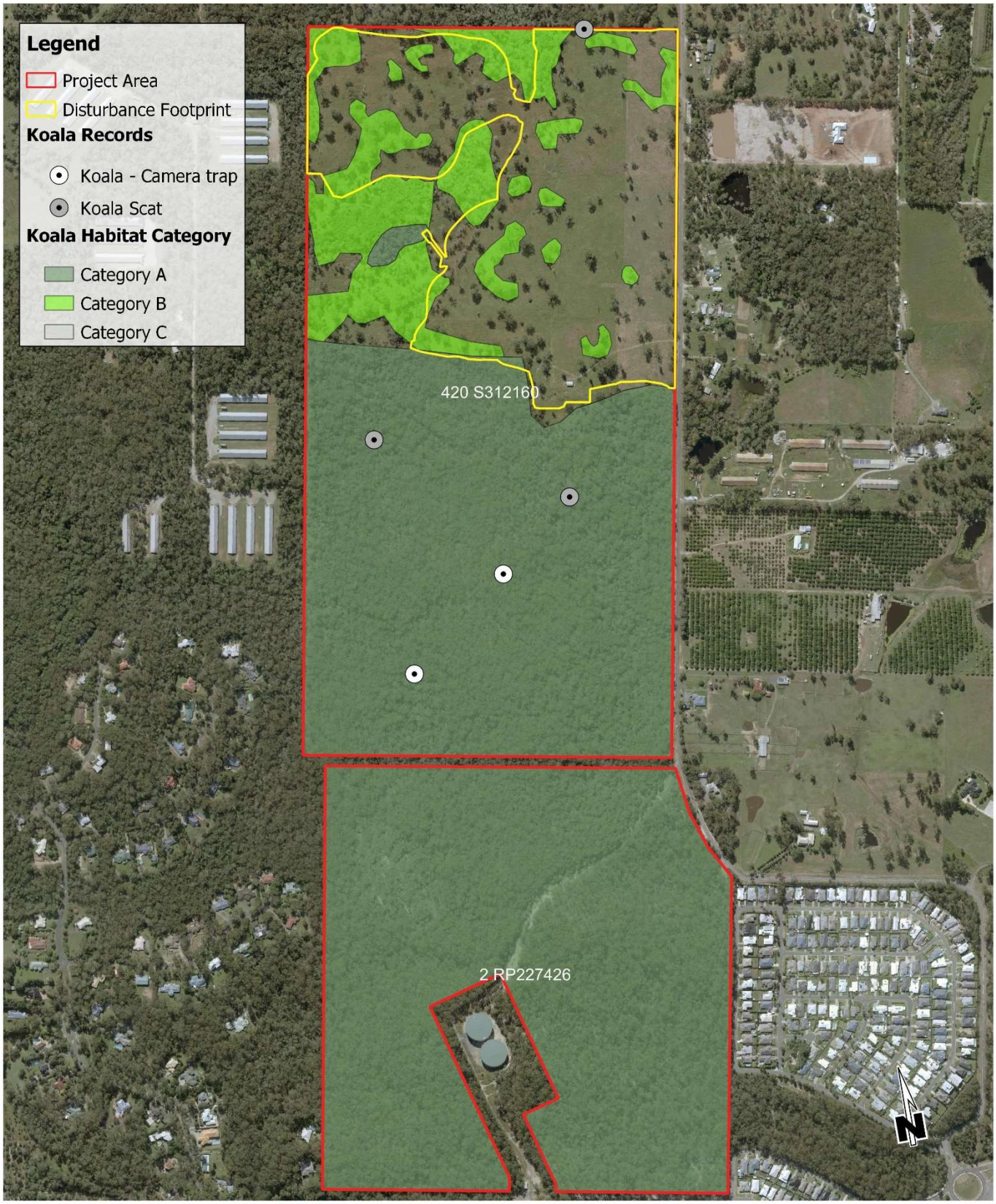

Figure 6 Koala Habitat Characterisation

Proposed Redlands Coast Sport and Recreation Precinct
Bligh Tanner C\- Redland City Council

Job Number: 2022_025;
Author: Mary Timms

Dated 22/11/2022
CRS: MGA94 Z56

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ENVIRONMENTAL

Scale: approx 1:7,000 @A3

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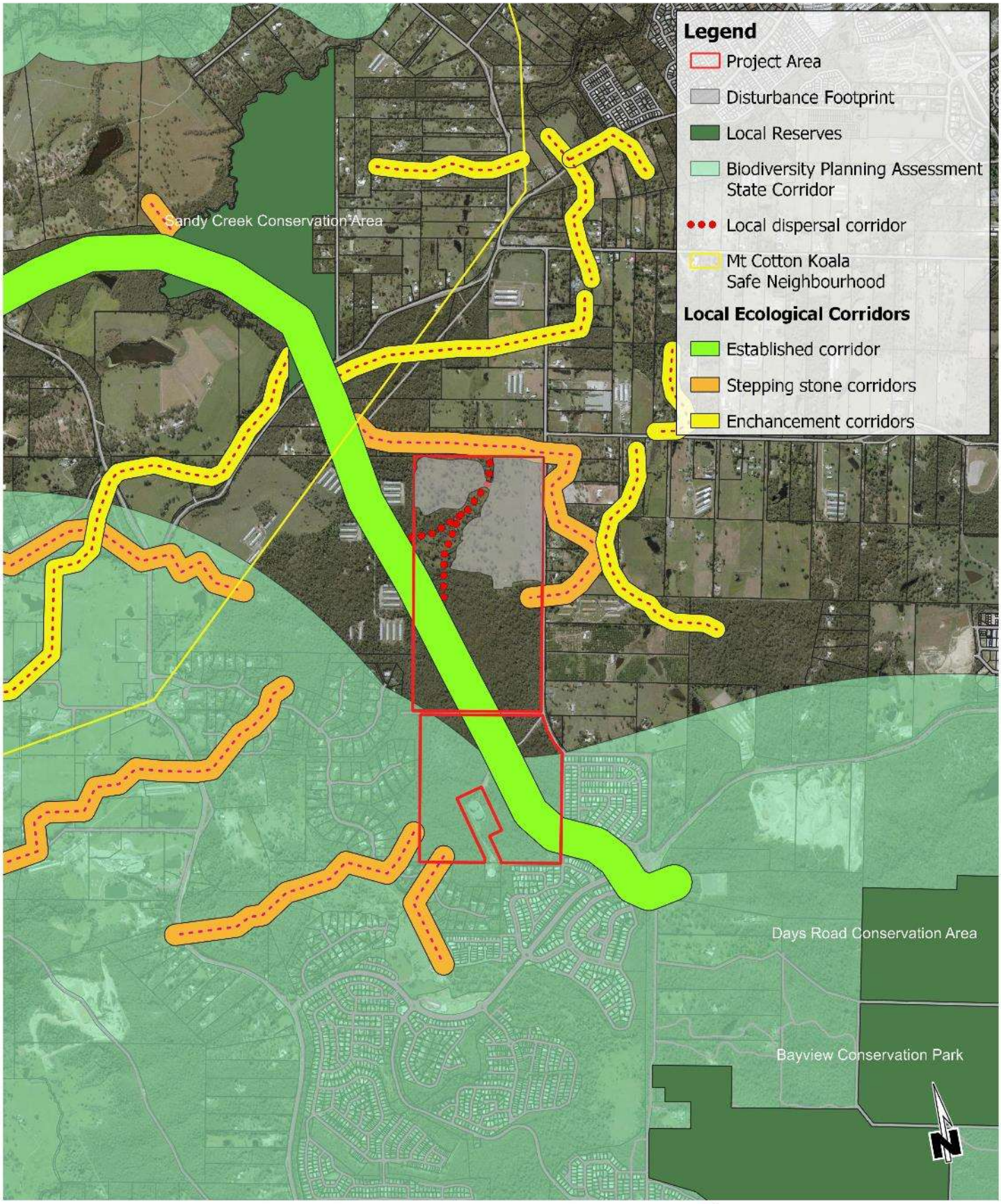

Figure 7 Ecological Corridors

Proposed Redlands Coast Sport and Recreation Precinct
Bligh Tanner C\- Redland City Council

Job Number: 2022_025;
Author: Mary Timms

Dated 24/10/2022
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Scale: approx 1:20,000 @A3

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3.2.3.2 Greater glider

A summary of the relevant DCCEEW documents for the Endangered *Petauroides volans* (Greater glider) (southern and central) listed under the Species Profile and Threats Database and consideration within Project documentation is detailed in **Table 19** below.

Table 19 Commonwealth documents for the Endangered Greater glider

Topic	Document	Addressed in the report
Approved Conservation Advice	*Conservation Advice for Petauroides volans (greater glider (southern and central)* (DCCEEW, 2022)	**Section 3.2.3.2, Section 5** and **Appendix G**
Listing Advice	Listing assessment information may be available in the approved Conservation Advice	NA
Adopted Recovery Plans	There is no adopted or made Recovery Plan for this species	NA
Threat Abatement Plan	No Threat Abatement Plan has been identified as being relevant for this species	NA
Other Commonwealth Documents		
Information Sheets	*Guide to greater glider habitat in Queensland* (DES, 2022)	**Section 3.2.3.2** and **Appendix G**

The targeted field surveys did not record Greater glider within the Project Area. However, the broad contiguous areas of habitat in the southern portion of the Retention Area support potential habitat for Greater gliders. Greater gliders have been recorded in Bayview Conservation Area and the Project Area is connected to this local reserve via an established corridor (**Figure 7**).

In accordance with the Conservation Advice, the Greater glider's diet consists primarily of restricted species of eucalyptus leaves supplemented by buds and flowers. The Greater glider shelters in tree hollows during the day and prefer large hollows (diameter >10cm) in large old trees. The Conservation Advice states, "*The probability of occurrence of the species is positively correlated with the availability of tree hollows, which is a key limiting resource*." In southern Queensland, Greater gliders require a minimum of 2-4 live den trees within each 2 ha of suitable habitat.

The field assessment included a review of suitable den trees. The Disturbance Footprint contains numerous large old trees with hollow-bearing limbs of greater than 10cm diameter (DCCEEW, 2022). The Disturbance Footprint supports 133 old large trees containing potential denning habitat. The Conservation Advice defines 'habitat critical to the survival' of the Greater glider as containing the characteristics described in **Table 20** (noting that habitat critical is defined by forest type on a regional basis. Further, the *Guide to greater glider habitat in Queensland* (Eyre, T.J, et al., 2022) was considered concerning habitat for Greater glider within the Project Area. This guide provides an update on quantitative and qualitative information about Greater glider habitat. **Table 20** below details the definition of habitat in the Conservation Advice and *Guide to greater glider habitat in Queensland* and its applicability to the Project Area.

Table 20 Habitat for the Greater glider

Habitat	Applicability to the Project Area
Habitat critical to the survival of the Greater glider (Conservation Advice)	
Large contiguous areas of eucalypt forest, which contain mature hollow-bearing trees[2] and a diverse range of the species' preferred food species in a particular region; and	The Retention Area forms part of a habitat patch charactersied by a eucalypt forest which contains mature hollow-bearing trees.
Smaller or fragmented habitat patches connected to larger patches of habitat, that can facilitate dispersal of the species and/or that enable recolonization; and	The Retention Area is part of a habitat patch connected to larger patches of habitat associated with Bayview Conservation Area, Days Road Conservation Area and Sandy Creek Conservation Area. The habitat within the Retention Area may facilitate the dispersal of Greater gliders.
Cool microclimate forest/woodland areas (e.g. protected gullies, sheltered high elevation areas, coastal lowland areas, southern slopes); and	The Retention Area contains a riparian corridor that supports a protected aquatic habitat characterised by ponded areas along an ephemeral waterway.
Areas identified as refuges under future climate changes scenarios; and	The Retention Area is considered a refuge under future climate change scenarios.
Short-term or long-term post-fire refuges (i.e. unburnt habitat within or adjacent to recently burnt landscapes) that allow the species to persist, recover and recolonise burnt areas.	Redland City Council's Parks and Conservation Planned Burn Program includes hazard reduction burns (Redland City Council, 2022b). The planned burns will include the Retention Area. Hazard reduction burns are carefully planned and will ensure that post-fire refuges will be produced through the planned burn program.
Habitat (Guide to greater glider habitat in Queensland)	
Habitat • Regional ecosystems with confirmed greater glider records • Contains habitat attributes (but not necessarily all attributes), such as live and dead hollow-bearing trees for denning, feed trees, large trees, habitat connectivity across the landscape.	The Retention Area is mapped to contain REs that correspond with confirmed Greater glider records. Historical records of Greater gliders are located in Bayview Conservation Area within heterogenous RE 12.11.23/12.11.27 at a ratio of 90/10%. This RE corresponds with the RE mapped within the majority of the southern portion of the Retention Area. The Retention Area supports hollow-bearing trees and has connectivity across the landscape.
Potential habitat • Regional ecosystems that do not have confirmed greater glider records but are identified by experts as potential greater glider habitat • Contains habitat attributes (but not necessarily all attributes), such as live and dead hollow-bearing trees for denning, feed trees, large trees, habitat connectivity across the landscape	NA
Not habitat • Regional ecosystems with no confirmed records of greater gliders, and identified by experts as non-habitat.	The Disturbance Footprint contains scattered retained canopy trees within the selectively cleared paddock, as such the vegetation community within the balance of the Disturbance Footprint does not reflect the structure or composition of a Regional

[2] Tree hollows can be difficult to detect in ground-based surveys. The presence of trees with basal diameter > 30 cm can be used as a proxy measure for tree hollows used by greater gliders in Queensland (Eyre et al. 2021).

Habitat	Applicability to the Project Area
• Does not contain habitat attributes such as live and dead hollow-bearing trees for denning, feed trees, large trees, habitat connectivity across the landscape.	Ecosystem. The Disturbance Footprint contains habitat attributes including hollow-bearing trees, however, has limited connectivity to surrounding bushland areas due to the historical clearing and modified agricultural use.

Habitat meeting any of the above criteria is considered habitat critical to the survival of the Greater glider. As such habitat critical to the survival of the Greater glider is present in the Retention Area, however, the Disturbance Footprint does not meet any of the above criteria and is not considered habitat critical to the survival of the Greater glider. Under the Guide to greater glider habitat in Queensland, the Disturbance Footprint is considered 'Potential habitat' as it contains hollow-bearing trees for denning, however, the Disturbance Footprint is unlikely to support Greater glider habitat due to the lack of contiguous canopy cover that would limit the capability of the Greater glider to move through the area.

3.2.3.3 Grey-headed flying fox

A summary of the relevant DCCEEW documents for the Vulnerable *Pteropus poliocephalus* (Grey-headed flying-fox) listed under the Species Profile and Threats Database and consideration within Project documentation is detailed in **Table 21**.

Table 21 Commonwealth documents for the Vulnerable Grey-headed flying-fox

Topic	Document	Addressed in the report
Approved Conservation Advice	There is no approved Conservation Advice for this species	NA
Listing Advice	*Commonwealth Listing Advice on Pteropus poliocephalus (Grey-headed Flying-fox)* (TSSC, 2001)	**Section 3.2.3.3** and **Appendix G**
Adopted Recovery Plans	*National Recovery Plan for the Grey-headed Flying-fox Pteropus poliocephalus* (DAWE, 2021)	**Section 3.2.3.3, Section 5** and **Appendix G**
Threat Abatement Plan	No Threat Abatement Plan has been identified as being relevant for this species	NA
Other Commonwealth Documents		
Policy Statements and Guidelines	*Referral guideline for management actions in Grey-headed and Spectacled flying-fox camps (DoE, 2015*	NA - no camp within or adjacent to the Project Area
	Survey Guidelines for Australia's Threatened Bats. EPBC Act survey guidelines 6.1 (DEWHA, 2010)	**Section 2.2**
Information Sheets	*Flying-foxes and national environmental law* (DSEWPaC, 2012)	**Section 3.2.3.2** and **Appendix G**

Topic	Document	Addressed in the report
	A review of noise, light and dust impacts on grey-headed flying-fox camps (Ecosure, 2021)	NA - no camp within or adjacent to the Project Area

The Project Area does not support a known Grey-headed flying fox roost; however, the National Flying-fox viewer (**Appendix D**) illustrates that a roost containing Grey-headed flying fox is located approximately 5km from the Project Area at Weinnam Creek wetlands (camp number 431). As the species is known to travel considerable distances to feed, it is considered 'likely' to occur for foraging purposes only. The Grey-headed flying fox forage primarily on blossoms and fruit in canopy vegetation including rainforest species (especially *Ficus* spp.) and blossoms of myrtaceous species such as *Eucalyptus, Corymbia, Angophora, Melaleuca* and *Banksia* (DAWE, 2021). The Disturbance Footprint is dominated by myrtaceous species including *Eucalyptus* with *Corymbia*, *Angophora* and *Melaleuca* also present. The National Recovery Plan for the Grey-headed flying fox notes important winter and spring flowering vegetation communities. The list includes vegetation communities within the Project Area which contain *E. tereticornis, E. crebra, E. pilularis, E. seeana, E. siderophloia* and Melaleuca quinquenervia (DAWE, 2021). The Project has the potential to reduce foraging resources for the species including 438 live potential foraging habitat trees. (**Figure 8**).

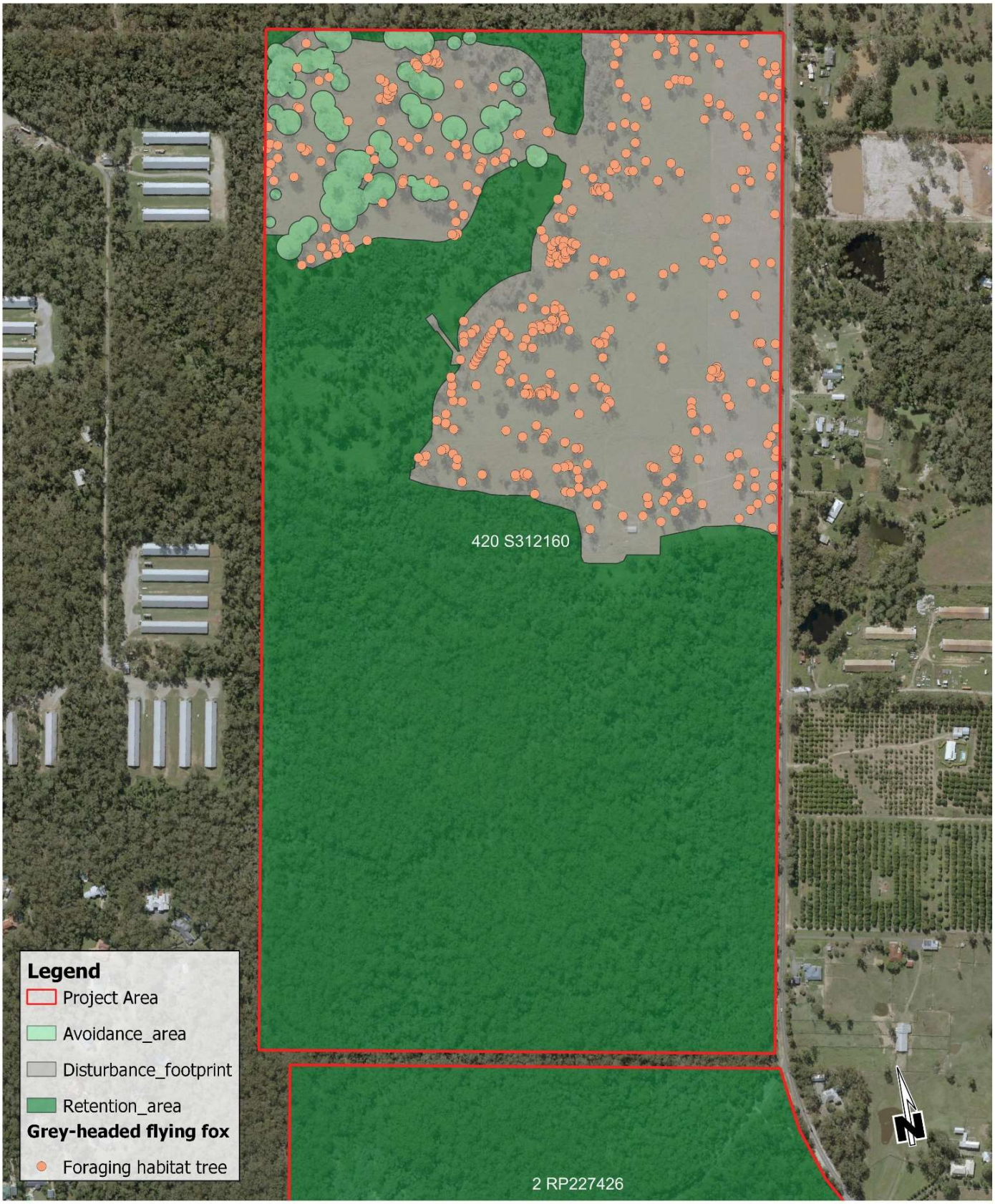

Figure 8 Grey-headed Flying Fox Foraging Habitat

Proposed Redlands Coast Sport and Recreation Precinct
Bligh Tanner C\- Redland City Council

Job Number: 2022_025;
Author: Mary Timms

Dated 22/11/2022
CRS: MGA94 Z56

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Scale: approx 1:5,000 @A3

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3.2.3.4 South-eastern glossy black-cockatoo

A summary of the relevant DCCEEW documents for the Vulnerable *Calyptorhynchus lathami lathami* (South-eastern Glossy Black-Cockatoo) listed under the Species Profile and Threats Database and consideration within Project documentation is detailed in **Table 22**.

Table 22 Commonwealth documents for the Endangered Koala

Topic	Detail/document	Addressed in the report
Approved Conservation Advice	*Conservation Advice for Calyptorhynchus lathami lathami (South-eastern Glossy Black Cockatoo)* (DCCEEW, 2022)	**Section 3.2.3.4, Section 5** and **Appendix G**
Listing Advice	Listing assessment information may be available in the approved Conservation Advice	**Section 3.2.3.4** and **Appendix G**
Adopted Recovery Plans	There is no adopted or made Recovery Plan for this species	NA
Threat Abatement Plan	No Threat Abatement Plan has been identified as being relevant for this species	NA

The South-eastern glossy black-cockatoo was listed as vulnerable on 10 August 2022. The Conservation Advice states the factors that make the species eligible for listing is the declining population, extent of occurrence and area of occupancy reducing as a result of the 2019/2020 bushfires and historical and ongoing habitat loss (DCCEEW, 2022). The Atlas of Living Australia indicates 1519 records of South-eastern glossy black-cockatoo within the South east Queensland bioregion (ALA, 2022). The 60 records within the LGA are predominately located on North Stradbroke, MacLeay and Russell Islands. Seven records are located on the mainland associated with Conservation areas including Bayview Conservation Park Mount Cotton and Scribbly Gum Conservation Area, Alexandra Hills. The Wildnet database indicates 29 records for Southern-glossy black-cockatoo within a 10 km radius of the Project Area. No records or evidence of South-eastern glossy black-cockatoo was recorded during the field assessments.

South-eastern glossy black-cockatoo feeds almost entirely on seeds of *Allocasuarina* spp. and *Casuarina* spp which may account for the sporadic distribution in the area of occupancy (DCCEEW, 2022). The foraging habitat for the South-eastern glossy black-cockatoo includes nine species of sheoaks for feeding depending on the region. The Conservation Advice (DCCEEW, 2022) states, "*In south-east Queensland and north-east New South Wales, they show preference for black sheoak (Allocasuarina littoralis) and forest sheoak (Allocasuarina torulosa).*" The Disturbance Footprint does not contain Black sheoak or Forest sheoak or other species which to a lesser extent are a preference including River sheoak (*Casuarina cunninghamiana*) and Swamp sheoak (*Casuarina glauca*). The Retention Area contains patches of Black she-oak within the sub-canopy layer and as such the southern portion of the Project Area supports foraging resources for the South-eastern glossy black-cockatoo.

Hollows with characteristics consistent with those preferred by South-eastern glossy black-cockatoo were recorded within the Disturbance Footprint. As per the Conservation Advice (DCCEEW, 2022) South-eastern glossy black-cockatoo have a preference for hollows with the following characteristics:

1. >8 m above ground;
2. Located in branches >30 cm in diameter;
3. Branch or stem no more than 45^{o} from vertical; and
4. Minimum entrance diameter of >15 cm.

The assessment identified that the Retention Area provides patches of suitable foraging habitat and the Disturbance Footprint contains 10 hollows that meet the above characteristics to be considered potential nesting habitat for the South-eastern glossy black-cockatoo (**Figure 9**).

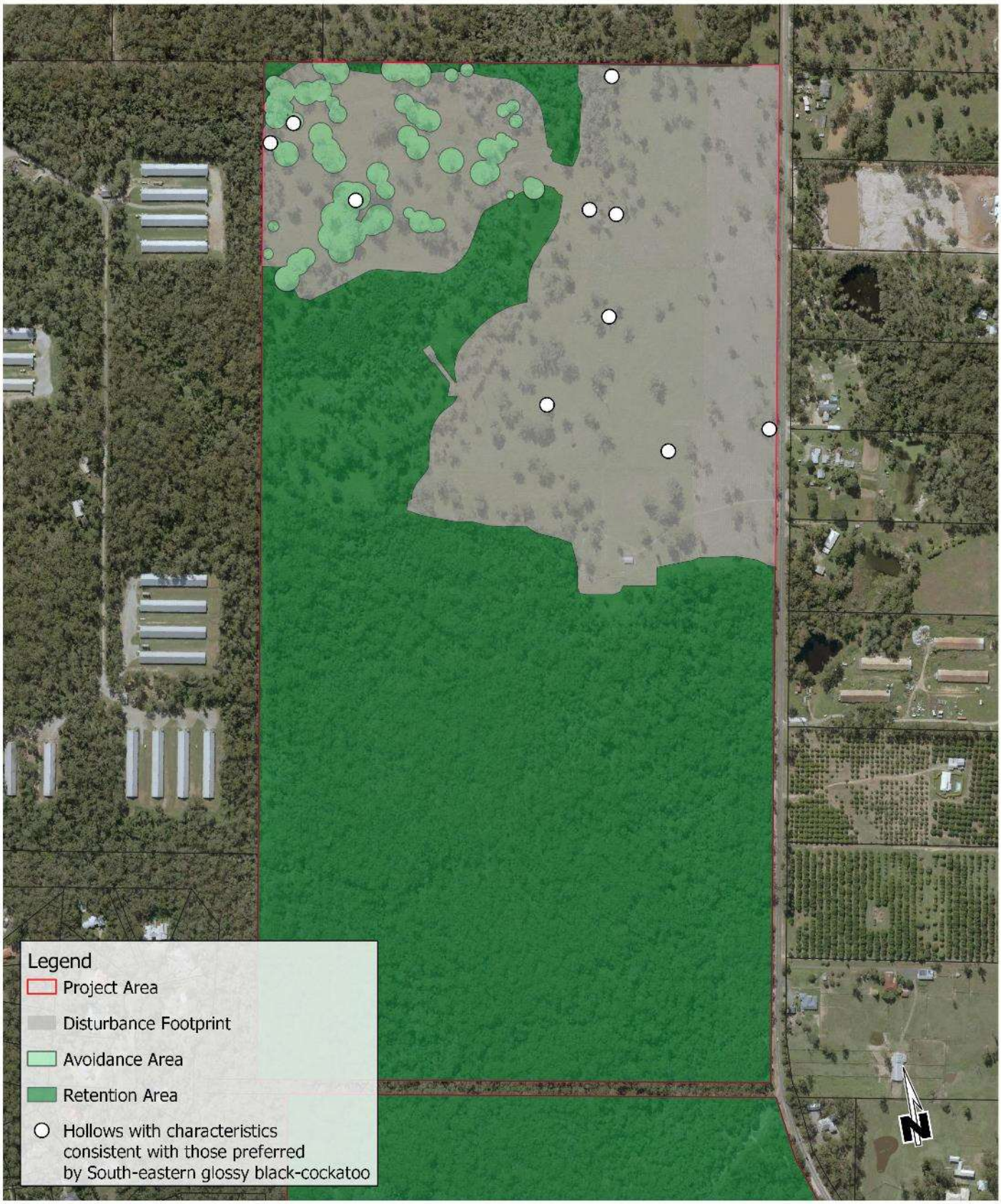

Figure 9 Significant Hollows

Proposed Redlands Coast Sport and Recreation Precinct
Bligh Tanner C\- Redland City Council

Job Number: 2022_025;
Author: Mary Timms

Dated 15/11/2022
CRS: MGA94 Z56

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Scale: approx 1:5,000 @A3

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4 Impacts of the Project

The Project will result in direct impacts on the ecological values of the Project Area, as well as a range of indirect impacts. Measures have been incorporated into the design of the Project to avoid, minimise, and mitigate impacts on the ecological values of the Project Area, as well as the broader indirect impacts on the surrounding landscape. These measures are described in **Section 5**.

4.1 Direct Impacts

Direct impacts to the Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland include the removal of 0.38 ha. The Vegetation Management Plan (Bligh Tanner, 2022) includes site establishment protocols that minimise the risk of clearing activities extending beyond the clearing footprint.

Impacts on Koala associated with the Project include the direct impact to the following koala habitat categories:

- 0.17 ha of Category A koala habitat;
- 5.9 ha of Category B koala habitat; and
- 26.9 ha of Category C koala habitat.

In the absence of suitable controls, possible risks associated with this impact include injury or mortality of Koalas during the removal of Koala habitat. However, this risk is unlikely to occur as the clearing of Koala habitat will comply with clearing areas and sequential clearing requirements as per the *Nature Conservation (Koala) Plan 2017* and specified in the Wildlife Habitat Management Plan (Cardno, 2021).

The Project is anticipated to result in the loss of 438 live potential foraging trees for the Grey-headed flying fox including scattered winter and spring flowering species. The vegetation community in the Disturbance Footprint is limited to scattered retained individual trees and is unlikely to represent critical habitat for the Grey-headed flying fox. The Vegetation Management Plan (Bligh Tanner, 2022) includes site establishment protocols that minimise the risk of clearing activities extending beyond the clearing footprint.

4.2 Indirect Impacts

Potential indirect impacts on threatened species and the threatened ecological community are detailed in Table 24 below.

Table 24 Potential indirect impacts to MNES

MNES	Indirect Impacts
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	• Potential for the Project to result in a modified hydrological regime in the areas surrounding the Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland TEC to impact the viability of this community; • Potential for increased weed invasion and/or spread as a result of construction impacts and edge effects;

MNES	Indirect Impacts
	• An altered fire regime such as an increase in intensity and frequency can disrupt the life cycle processes in many flora and fauna species within the TEC.
Koala	• Potential reduction in the suitability of surrounding koala habitat due to the introduction of a less-compatible land-use (i.e. Sport and Recreation). • The koala habitat within the Project Area forms part of a local corridor which connects the site to the north with a stepping stone corridor and to the south with a state corridor. Koala were recorded during the 2019 and 2021 field surveys which indicate that the Project Area supports suitable habitat for koalas. The Disturbance Footprint contains scattered retained trees within a cleared paddock and provides movement opportunities for Koalas between habitats. The Project Area is within a fragmented landscape and the eastern boundary of the Project Area is bound by Heinemann Road. The habitat within the Disturbance Footprint supports connectivity to the koala habitat to the north and south of the Project Area. The Project has the potential to limit movement opportunities for Koala during construction. • Koalas have an increased risk of injury and mortality as a result of increased vehicle movement during construction. Further, Koalas have an increased risk of injury and mortality as a result of traffic movement on internal roads and dog attack during the operational phase. The design mitigation includes measures to reduce the risk of vehicle strike. These risks can be effectively mitigated by implementing strict controls during construction and operation. • Construction activities have the potential to introduce and/or spread invasive species. This can result in alterations to the natural ecosystem processes and increase competition and predation. Inappropriate waste disposal can attract invasive fauna species. The Ecological Assessment Report (Cardno, 2021) identified weed species present within the Project Area including weeds listed as restricted under the *Biosecurity Act 2014*. *Lantana camara* (Lantana) was recorded in scattered to moderate density within the Project Area and has the potential to reduce habitat quality (DAWE, 2022). Risks from invasive species can be mitigated through routine controls, the implementation of the Rehabilitation Plan (Bligh Tanner, 2022) and Council's invasive species management program. • Vegetation clearing can cause degradation to adjoining habitats as a result of increased exposure to noise and light. Construction will result in an increase in vehicle movement and noise in the short term. The design incorporates ecologically sensitive lighting and the operational phase incorporates a management plan which places restrictions on the use of lighting and site access. • Increased intensity or frequency of bushfires has the potential to impact biodiversity, alter ecological mechanisms and change biotic interactions. The risk of increased intensity of bushfires will be managed through Redland City Council Planned Burn Program (Redland City Council, 2022).
Greater glider	• Inappropriate fire regimes have the potential to decrease available habitat including hollow-bearing trees and modify the floristic composition of Greater glider habitat. The fire regime will be managed through Redland City Council Planned Burn Program (Redland City Council, 2022). • Greater glider habitat within the Project Area is present within the Retention Area. The design has managed the risk of impacting Greater glider habitat by avoiding impacting the ecological values within the southern two-thirds of the Project Area. The Project Area has connectivity to stepping stone and

MNES	Indirect Impacts
	state corridor and the Disturbance Footprint is largely fragmented from surrounding habitat due to the lack of a contiguous canopy within the existing paddocks. • Construction activities have the potential to introduce and/or spread invasive fauna species which may increase the risk of predation. The European fox has previously been recorded within the Project Area (Cardno, 2021). Risks from invasive species can be mitigated through routine controls. • Construction activities have the potential to introduce and/or spread weeds. This can result in alterations to the natural ecosystem processes (i.e. edge effects). The Ecological Assessment Report (Cardno, 2021) identified weed species present within the Project Area including weeds listed as restricted under the Biosecurity Act 2014. Risks from invasive flora species will be mitigated through routine controls, and the implementation of the Rehabilitation Plan (Bligh Tanner, 2022) and Council's invasive species management program.
Grey-headed flying fox	• The Project has the potential to increase injury and mortality as a result of entanglement in the ball net fencing. Risks associated with entanglement have been mitigated in the design and operational phases. • Vegetation clearing has the potential to cause injury and mortality to individuals foraging in trees. Increased traffic during the construction phase may increase the risk of fauna injury and mortality. The risk of injury and mortality is unlikely given the species does not roost within the Project Area and clearing will be limited to daylight hours. • Clearing vegetation has the potential to increase exposure to noise and light. This has the potential to adversely impact foraging behaviour. The operational phase of the Project will result in an increase in noise and light as a result of lighting of the sports fields, vehicle movement and car park lighting. Disturbance to Grey-headed flying fox is unlikely, given no camps are known to occur within or adjacent to the Project Area. Further, construction will be limited to daylight hours and it is unlikely that that impacts from construction will impact the species.
South-eastern glossy black-cockatoo	• Inappropriate fire regimes have the potential to impact feeding and breeding habitats. Burning of fire-sensitive tree species (e.g. *Allocasuarina littoralis*) may render foraging habitat unsuitable for a long-period of time. The fire regime will be managed through Redland City Council Planned Burn Program (Redland City Council, 2022). • The loss of foraging habitat and large hollow-bearing trees as a result of native vegetation clearing in the Disturbance Area has the potential to reduce habitat, fragment and degrade existing habitats. The design avoids clearing foraging habitat and vegetation clearing will result in no net loss in hollows as a result of hollow salvage and installation within the Retention Area. • Increased spread and proliferation of invasive weeds have the potential to modify the floristic and structural characteristics of the habitat. Risks from invasive species can be mitigated through routine controls and the implementation of the Rehabilitation Plan (Bligh Tanner, 2022). • Construction activities have the potential to introduce and/or spread invasive fauna species. This can result in alterations to the natural ecosystem processes and increase predation. The risk of nest predation

MNES	Indirect Impacts
	by Common ringtail possums has the potential to increase as a result of inadequate waste management during construction. Risks from invasive species can be mitigation through routine controls.

4.3 Significant Impact Assessment

A Significant Impact Assessment was undertaken in accordance with the Significant Impact Assessment 1.1 (DoE, 2013) for MNES that are known or are likely to occur within the Project Area (**Appendix G**). The Significant Impact Assessment concluded that the Project is unlikely to have a significant impact on MNES, a summary of the results of the significant impact assessments are provided in **Table 25**.

Table 25 Summary of the results of the significant impact assessments

MNES	Summary	Significant Impact
Endangered Species and Ecological Communities		
Koala (*Phascolarctos cinereus*)	The Disturbance Footprint impacts 0.005% of the southeast Queensland bioregion population (i.e. 0.82 of a koala). The Project avoids impacting 126.3 ha of koala habitat and maintains dispersal opportunities in the Disturbance Footprint. The Project is unlikely to result in a significant impact, however, Referral of the Project to the Commonwealth Department of Climate Change, Energy, the Environment and Water is recommended.	Unlikely
Greater glider - southern and central (*Petauroides volans*)	The Disturbance Footprint is unlikely to support Greater glider habitat due to the lack of a contiguous canopy and indirect impacts are adequately addressed in avoidance and mitigation measures.	Unlikely
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	The Disturbance Footprint directly impacts 0.38 ha of the periphery of the TEC and the Project has the potential to have an indirect impact on the TEC as a result of changes to the hydrological regime, weeds and fire regime. Indirect impacts have been addressed in the Stormwater Management Plan, Rehabilitation Plan and Council's Planned Burn Program.	Unlikely
Vulnerable Species		
South-eastern glossy black cockatoo (*Calyptorphynchus lathami lathmi*)	The Disturbance Footprint does not support foraging resources for the South-eastern glossy black cockatoo and contains several hollows with characteristics consistent with those preferred by the South-eastern glossy black-cockatoo. Suitable hollows will be salvaged and reinstalled within the Retention Area.	Unlikely
Grey-headed flying-fox (*Pteropus poliocephalus*)	The Disturbance Footprint supports habitat for foraging individuals and directly impacts 438 live foraging trees including scattered winter and spring flowering species. The vegetation community in the Disturbance Footprint is limited to scattered retained	Unlikely

MNES	Summary	Significant Impact
	individual trees and is unlikely to represent critical habitat for the Grey-headed flying fox.	

5 Measures to Avoid, Minimise and Mitigate Impacts

Avoidance, minimisation and mitigation measures to be adopted by Redland City Council during the design, construction and operational phases to mitigate potential impacts are detailed in the following:

- **Section 5.1** Design avoidance, minimisation and mitigation measures
- **Section 5.2** Construction minimisation and mitigation measures
- **Section 5.3** Operational minimisation and mitigation measures

5.1 Design Phase Avoidance and Mitigation Measures

Design phase avoidance, minimisation and mitigation measures to be adopted are summarised in Table 26.

Table 26 Summary of the project design phase avoidance and mitigation measures

MNES	Design Phase Avoidance and Mitigation Measures	Relationship to relevant Commonwealth documents
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	1. The design avoids directly impacting 1.2 ha of TEC within the Project Area. 2. The direct impact of 0.38 ha of TEC will not intersect the area of TEC into two or more patches but instead occurs on the periphery of the TEC polygon. 3. The design avoids directly impacting the central waterway corridor which contains areas that can be restored to support future TEC. 4. The proposed Project modifies the land use from agriculture (historically grazed land) to recreation and open space and removes the pressures of grazing from the extent of TEC. 5. The Rehabilitation Plan details the restoration of the two patches of vegetation that do not currently meet the condition threshold to be the TEC due to the predominately weedy understorey (Patches 1 and 4). These patches and other areas to be restored have the potential to meet the requirements to be the TEC in the future and generate an additional 2.18 ha of potential Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland. The restoration of the TEC will result in a 140% increase in TEC within the Project Area. Weed management measures are detailed in the Rehabilitation Plan including control techniques, maintenance, inspections and reporting requirements. 6. Potential indirect impacts on the TEC have been addressed in the Stormwater Management Plan (Bligh Tanner, 2022). The Stormwater Management Plan includes a 10-year simulation that demonstrates there is a negligible impact on the frequency and	The avoidance and mitigation measures proposed directly correspond with the priority conservation actions listed in the Conservation Advice (DAWE 2021) including: • Protect the TEC to prevent further losses; and • Restore the TEC by the active abatement of threats, appropriate management, restation and other conservation initiatives. Key threats addressed in the design include those listed in the Conservation Advice including: • Changed hydrological regime • Native vegetation clearing; • Fragmentation; • Weeds • Grazing pressures

MNES	Design Phase Avoidance and Mitigation Measures	Relationship to relevant Commonwealth documents
	duration of inundation. The development will result in 13% site imperviousness. Modelling was conducted to determine the change in daily flow through the ephemeral waterway on site from this increase in the hardstand area, coupled with increased permeability of the sports fields. The result show negligible changes to post-development flows confirming that the development will not cause an appreciable difference to site hydrology. 7. Potential indirect impacts on the TEC as a result of uncontrolled bushfires are adequately addressed in the Bushfire Management Plan (LEC,2022) and Redland City Council's Parks and Conservation Planned Burn Program (Redland City Council, 2022b).	
Koala	1. The Master Plan (Bligh Tanner, 2022) avoids clearing an additional 181 trees since the Preliminary Master Plan (Ross Planning, 2019) includes locally important koala habitat trees. 2. The Master Plan (Bligh Tanner, 2022) avoids clearing the scattered native canopy within the cycle precinct which maintains movement and foraging opportunities within the western portion of the Project Area. 3. The Preliminary Master Plan (Ross Planning, 2019) identified significant ecological values including Koala Habitat within the southern portion of the Project Area and the design avoids impacting this area. The resultant Master Plan design avoids clearing 126.3 ha of koala habitat within the Project Area including: o 112.3 ha of Category A koala habitat; o 9.4 ha of Category B koala habitat; and o 4.6 ha of Category C koala habitat. 4. The Rehabilitation Plan proposes 76,018m^2 of the on-ground restoration including 1,791 trees including LIKT and ancillary habitat tree species. The planting palette will reflect the pre-clear RE and include supplementary planting to reflect the canopy of RE12.11.3, 12.3.6, 12.9-10.4 and 12.11.24, and 12.11.25. The Rehabilitation Plan mitigates the loss of 7.6 ha of koala habitat through on-ground restoration. 5. Weed management measures are detailed in the Rehabilitation Plan including control techniques, maintenance, inspections and reporting requirements. 6. The planting for the Rehabilitation Plan will be sourced from seeds collected from multiple parent trees within the koala habitat in the Retention Area to ensure local scale preferences and nutritional diversity (Beale, P., et al. 2022). 7. The design includes vehicle strike mitigation measures including signage, pavement stencilling, reduced speed limit to 30km/hr across the Project and closure of the Precinct nightly at 10 pm to minimise night traffic. 8. Heinemann Road speed limit to be reduced from 80km/hr to 60km/hr to minimise the risk of vehicle strike. 9. The ecologically sensitive design retains a scattered mature native canopy within the proposed cycle precinct as such dispersal opportunities are maintained within the	The avoidance and mitigation measures proposed directly correspond with the conservation and recovery actions listed in the Conservation Advice (DAWE 2022) and Recovery Plan (DAWE, 2022) including: • Strategy 3: Increase habitat protection • Strategy 5: Strategic habitat restoration. Key threats addressed in the design include those listed in the Conservation Advice including: • Increased intensity/frequency of bushfire • Declining nutritional value of foliage • Clearing and degradation of koala habitat • Mortality with vehicles and dogs The Rehabilitation Plan includes the guidance provided in the Revegetation of Koala Habitat document (Beale, P., et al. 2022) concerning local food preferences and appropriate diversity in species.

MNES	Design Phase Avoidance and Mitigation Measures	Relationship to relevant Commonwealth documents
	Avoidance Area. The design maintains permeability through the Precinct and incorporates fauna-friendly fencing. 10. The central waterway corridor within the northern portion of the Project Area will be retained and enhanced and provide a climate refuge that contributes to the Project Area's resilience to drying conditions and will provide a cooler refuge during periods of bushfire and heatwaves (DCCEEW, 2022).	
Greater glider	1. The Preliminary Master Plan (Ross Planning, 2019) identified significant ecological values within the southern portion of the Project Area. The numerous design reiterations resulted in the Master Plan (Bligh Tanner, 2022) avoiding impacting Greater glider habitat within the Retention Area. Greater glider habitat is unlikely to occur within the Disturbance Footprint due to the lack of a contiguous canopy, as such the design avoids clearing Greater glider habitat. 2. The design includes the removal of the existing barbed wire fencing within the paddocks and perimeter of the Project Area which removes the risk of entanglement, mortality and injury. 3. The design includes the salvage of hollow-bearing limbs of greater than 10cm diameter (DCCEEW, 2022) and installation within the retained vegetation in the Retention Area to ensure no net loss in hollows as a result of the Project. 4. The design includes chain-saw hollows created from several cleared trees and installed vertically within the Retention Area.	The avoidance and mitigation measures proposed directly correspond with the conservation and management priorities listed in the Conservation Advice (DCCEEW, 2022) including: • Habitat loss, disturbance and modification • Invasive species Key threats addressed in the design include those listed in the Conservation Advice including: • Habitat clearing and fragmentation • Barbed wire fencing
Grey-headed flying fox	1. The Preliminary Master Plan (Ross Planning, 2019) identified significant ecological values within the southern portion of the Project Area. The numerous design reiterations resulted in the Master Plan (Bligh Tanner, 2022) avoiding impacting Grey-headed flying fox habitat within the Retention Area. 2. The Master Plan (Bligh Tanner, 2022) avoids clearing an additional 181 trees since the Preliminary Master Plan (Ross Planning, 2019) including foraging trees for the Grey-headed flying fox. 3. The Master Plan (Bligh Tanner, 2022) avoids the removal of the scattered native canopy within the cycle precinct which maintains movement and foraging opportunities within the western portion of the Project Area. 4. The Rehabilitation Plan proposes 76,018m^2 of the on-ground restoration including 1,791 trees including trees suitable as a foraging resource for Grey-headed flying fox (i.e. myrtaceous species including *Eucalyptus, Corymbia, Angophora* and *Melaleuca*). The planting palette will reflect the canopy layer of the pre-clear RE and will include winter and spring flowering species. 5. The ball net fencing design proposed is based on minimising the impacts to Grey-headed flying fox and birds. The proposed netting is white in colour making it visible for nocturnal	The avoidance and mitigation measures proposed directly correspond with the recovery objectives listed in the National Recovery Plan for the Grey-headed flying fox (DAWE, 2021) including: • Recovery Objective 1: Identify, protect and increase native foraging habitat that is critical to the survival of the Grey-headed Flying-fox. • Recovery Objective 2: Reduce the impact on Grey-headed Flying-foxes of electrocution on power lines, and entanglement in netting and on barbed wire. The design mitigation measures reflect priority action 1.4 of the National Recovery Plan for the Grey-headed flying fox, "*Increase the extent and viability of foraging habitat for the Grey-headed Flying-fox that is productive during winter and spring*".

MNES	Design Phase Avoidance and Mitigation Measures	Relationship to relevant Commonwealth documents
	flying mammals and birds. Netting will be installed taut and maintained to minimise the risk of entanglement in netting (DPE, 2022). The ball net fencing will have an aperture size of <5mm (DoEE, 2021). Further, the design includes retractable netting to minimise the period of installation. 6. The design includes the removal of the existing barbed wire fencing within the paddocks and perimeter of the Project Area which removes the risk of entanglement, mortality and injury. 7. The design incorporates ecologically sensitive lighting to minimise impacts on Grey-headed flying fox and other fauna species.	
South-eastern glossy black cockatoo	1. The Preliminary Master Plan (Ross Planning, 2019) identified significant ecological values within the southern portion of the Project Area. The numerous design reiterations resulted in the Master Plan (Bligh Tanner, 2022) avoiding impacting three hollows characteristic of those preferred by South-eastern glossy black cockatoo and the southern two-thirds of the Project Areas which provides suitable foraging and breeding habitat. 2. The proposed Project modifies the land use from agriculture (historically grazed land) to recreation and open space and removes the pressures of grazing. 3. The Master Plan (Bligh Tanner, 2022) avoids clearing an additional 181 trees since the Preliminary Master Plan (Ross Planning, 2019) including three large hollow-bearing trees that are characteristic of those preferred by South-eastern glossy black-cockatoo. 4. The Rehabilitation Plan proposes 76,018m^2 of the on-ground restoration including 1,791 supplementary trees including trees suitable as a foraging resource for the South-eastern glossy black cockatoo (i.e. *Allocasuarina littoralis* which is a typical shrub species within RE 12.11.23 as per the pre-clear RE) (DES, 2019). 5. The design includes the salvage of seven significant hollows to be installed within the Retention Area. 6. The Rehabilitation Plan strengthens the connectivity of the Project Area to adjoining ecological corridors. Weed management measures are detailed in the Rehabilitation Plan including control techniques, maintenance, inspections and reporting requirements.	The avoidance and mitigation measures proposed directly correspond with the conservation and recovery actions listed in the Conservation Advice (DEECCW, 2022) including: • Protect, restore and enhance the quality of known suitable habitat and increase the extent of habitat (both breeding and foraging) for the South-eastern glossy black cockatoo to maintain viability in response to threats, including climate change. • Protect large old trees and smaller trees that contain large hollows, including those affected by fires. Ensure the recruitment of large old trees by retaining medium-sized trees, facilitating regeneration, and undertaking replanting. • Maintain connectivity within and between regions. Key threats addressed in the construction phase include those listed in the Conservation Advice including: • Clearing of native vegetation • Habitat fragmentation • Invasive weeds • Grazing

5.2 Construction Phase Mitigation Measures

Construction Phase mitigation measures are summarised in **Table 27** below.

Table 27 Construction phase mitigation measures

MNES	Construction Phase Mitigation Measures	Relationship to relevant Commonwealth documents
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	1. An erosion and sediment control plan is to be developed as part of the Construction Environmental Management Plan (CEMP). 2. Routine dust suppression and monitoring will be undertaken as per the protocols included in the CEMP. 3. Weather will be monitored during construction and temporary controls will be established during weather events in accordance with the CEMP. 4. The extent of vegetation clearing will be demarcated as identified in the Vegetation Management Plan (Bligh Tanner, 2022). Exclusion fencing and signage are to be installed prior to clearing and the extent of clearing is to be communicated to construction supervisors. 5. Water quality monitoring and inspections as detailed in the erosion and sediment control plan will be undertaken. 6. Weed control as detailed in the Rehabilitation Plan is to be implemented and maintained as per the maintenance schedule. 7. A Weed Management Plan is to be developed as part of the CEMP.	The mitigation measures proposed directly correspond with the priority conservation actions listed in the Conservation Advice (DAWE 2021) including: • Protect the TEC to prevent further losses; and • Restore the TEC by the active abatement of threats, appropriate management, restation and other conservation initiatives. Key threats addressed in the design include those listed in the Conservation Advice including: • Changed hydrological regime • Native vegetation clearing; • Fragmentation; • Weeds
Koala	1. The extent of vegetation clearing will be clearly demarcated as identified in the Vegetation Management Plan (Bligh Tanner, 2022). Exclusion fencing and signage are to be installed prior to clearing and the extent of clearing is to be communicated to construction supervisors. 2. Pre-clearance surveys will be conducted prior to clearing to identify any individuals that may be impacted. Koalas must be allowed to move out of the construction area of their own accord as detailed in the Wildlife Habitat Management Plan (Cardno, 2021). 3. The Wildlife Habitat Management Plan (Cardno, 2021) includes construction mitigation measures including sequential clearing, koala spotter supervision, clearing limits/day, and clearing will occur outside of the Koala breeding season.	The mitigation measures proposed directly correspond with the conservation and recovery actions listed in the Conservation Advice (DAWE 2022) and Recovery Plan (DAWE, 2022) including Strategy 5: Strategic habitat restoration. Key threats addressed in the design include those listed in the Conservation Advice including:

MNES	Construction Phase Mitigation Measures	Relationship to relevant Commonwealth documents
	4. Permeability through the Disturbance Footprint will be maintained through the protection and enhancement of the central waterway corridor within the Retention Area through the implementation of the Rehabilitation Plan. 5. A Waste Management Plan will be developed as part of the CEMP and will specify the disposal and removal of waste during construction to minimise the risk of attracting invasive fauna species. 6. Weed control as detailed in the Rehabilitation Plan is to be implemented and maintained as per the maintenance schedule. 7. A Weed Management Plan is to be developed as part of the CEMP. 8. A wildlife incident procedure is to be included in the CEMP including contact details of wildlife carers and local veterinary practice and risk management with open excavations and trenching. 9. The CEMP is to specify no dogs within the construction site. 10. A Traffic Management Plan is to be included in the CEMP which details designated access routes, speed limits and identified ecologically sensitive areas. 11. Ensure all employees, contractors and sub-contractors undertake an environmental awareness induction to inform of the presence of MNES within the Project Area.	• Clearing and degradation of koala habitat • Mortality with vehicles and dogs
Greater glider	1. The extent of vegetation clearing will be demarcated as identified in the Vegetation Management Plan (Bligh Tanner, 2022). Exclusion fencing and signage are to be installed prior to clearing and the extent of clearing is to be communicated to construction supervisors. 2. A fauna spotter catcher is to complete pre-clearance surveys and supervise all clearing. 3. Installation of salvaged hollows will consider the lighting design and face hollows away from flood-lit fields. 4. Permeability through the Disturbance Footprint will be maintained through the protection and enhancement of the central waterway corridor within the Retention Area through the implementation of the Rehabilitation Plan. 5. A Waste Management Plan will be developed as part of the CEMP and will specify the disposal and removal of waste during construction to minimise the risk of attracting invasive fauna species. 6. A Weed Management Plan is to be developed as part of the CEMP. 7. A wildlife incident procedure is to be included in the CEMP including contact details of wildlife carers and local veterinary practice and risk management with open excavations and trenching. 8. A Traffic Management Plan is to be included in the CEMP which details designated access routes, speed limits and identified ecologically sensitive areas.	The mitigation measures proposed directly correspond with the conservation and management priorities listed in the Conservation Advice (DCCEEW 2022) including: • Habitat loss, disturbance and modification • Invasive species Key threats addressed in the design include those listed in the Conservation Advice including: • Habitat clearing and Fragmentation

MNES	Construction Phase Mitigation Measures	Relationship to relevant Commonwealth documents
	9. Ensure all employees, contractors and sub-contractors undertake an environmental awareness induction to inform of the presence of MNES within the Project Area.	
Grey-headed flying fox	1. The extent of vegetation clearing will be demarcated as identified in the Vegetation Management Plan (Bligh Tanner, 2022). Exclusion fencing and signage are to be erected prior to clearing and the extent of clearing is to be communicated to construction supervisors. 2. A fauna spotter catcher is to complete pre-clearance surveys and supervise all clearing. 3. Clearing and construction works are limited to daylight hours to avoid foraging individuals. 4. A wildlife incident procedure is to be included in the CEMP including contact details of wildlife carers and a local veterinary practice and risk management with open excavations and trenching. 5. A Traffic Management Plan is to be included in the CEMP which details designated access routes, speed limits and identified ecologically sensitive areas. 6. Ensure all employees, contractors and sub-contractors undertake an environmental awareness induction to inform of the presence of MNES within the Project Area.	The mitigation measures proposed directly correspond with the recovery objectives listed in the National Recovery Plan for the Grey-headed flying fox (DAWE, 2021) including: • Recovery Objective 1: Identify, protect and increase native foraging habitat that is critical to the survival of the Grey-headed Flying-fox.
South-eastern glossy black cockatoo	1. The extent of vegetation clearing will be demarcated as identified in the Vegetation Management Plan (Bligh Tanner, 2022). Exclusion fencing and signage are to be installed prior to clearing and the extent of clearing is to be communicated to construction supervisors. 2. A fauna spotter catcher is to complete pre-clearance surveys and supervise all clearing. 3. Installation of salvaged hollows will consider the lighting design and face hollows away from flood-lit fields. 4. A Waste Management Plan will be developed as part of the CEMP and will specify the disposal and removal of waste during construction to minimise the risk of attracting invasive fauna species. 5. Weed control as detailed in the Rehabilitation Plan is to be implemented and maintained as per the maintenance schedule. 6. A Weed Management Plan is to be developed as part of the CEMP. 7. A wildlife incident procedure is to be included in the CEMP including contact details of wildlife carers and a local veterinary practice and risk management with open excavations and trenching. 8. A Traffic Management Plan is to be included in the CEMP which details designated access routes, speed limits and identified ecologically sensitive areas. 9. Ensure all employees, contractors and sub-contractors undertake an environmental awareness induction to inform of the presence of MNES within the Project Area.	The mitigation measures proposed directly correspond with the conservation and recovery actions listed in the Conservation Advice (DEECCW, 2022) including: • Protect, restore and enhance the quality of known suitable habitat and increase the extent of habitat (both breeding and foraging) for South-eastern glossy black cockatoo to maintain viability in response to threats, including climate change. • Protect large old trees and smaller trees that contain large hollows, including those affected by fires. Ensure the recruitment of large old trees by retaining medium-sized

MNES	Construction Phase Mitigation Measures	Relationship to relevant Commonwealth documents
	10. Installation of salvaged hollows will consider the lighting design and face hollows away from flood-lit fields.	trees, facilitating regeneration, and undertaking replanting. Key threats addressed in the construction phase include those listed in the Conservation Advice including: • Clearing of native vegetation • Predation • Invasive weeds

5.3 Operational Phase Mitigation Measures

Operational Phase mitigation measures are summarised in **Table 28** below.

Table 28 Operational phase mitigation measures

MNES	Operational Phase Mitigation Measures	Relationship to relevant Commonwealth documents
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	1. The Rehabilitation Plan area is monitored for the first two years post-construction and at six-monthly intervals thereafter until the performance targets have been achieved. As per the Rehabilitation Plan, weed management is to be implemented for five years as part of the maintenance schedule. 2. Weed management outside of the Rehabilitation Plan area will be managed as per the requirements of the *Redlands Coast Biosecurity Plan 2018-2023*. Specifically, Council will control invasive plants and animals within the Retention Area and this will include targeted control of invasive species identified within the Ecological Assessment Report (Cardno, 2021) including one category 3, 4, 5 and 6 restricted invasive animal under the *Biosecurity Act 2014,* 11 Category 3 restricted weeds under the Biosecurity Act 2014 and five Weeds of National Environmental Significance. 3. Redland City Council's Parks and Conservation Planned Burn Program includes hazard reduction burns within the Project Area and will consider the requirements of the TEC (i.e. low intensity) (Redland City Council, 2022b). 4. An amendment to the Redland City Council planning scheme is being considered to change the zone of ~106 ha of the southern portion of the Retention Area from a rural zone to a conservation zone.	The operational phase mitigation measures proposed directly correspond with the priority conservation actions listed in the Conservation Advice (DAWE 2021) including: • Protect the TEC to prevent further losses; and • Restore the TEC by the active abatement of threats, appropriate management, restation and other conservation initiatives. Key threats addressed in the design include those listed in the Conservation Advice including: • Weeds • Altered fire regimes

MNES	Operational Phase Mitigation Measures	Relationship to relevant Commonwealth documents
Koala	Council's Redland Coast Koala Conservation Plan 2022-2027 details initiatives across the local government area (Redland City Council, 2022). The Redland Coast Koala Conservation Plan 2022-2027 is a catalyst for the Project to extend initiatives to include the Project Area and surrounds. Region scale initiatives detailed in the Redland Coast Koala Conservation Plan 2022-2027 and the application to the Project Area and surrounding Mount Cotton are detailed below: <u>Koala population Monitoring:</u> • The Mount Cotton Koala Safe Neighbourhood will be expanded to include the Project Area and local established corridor. • Annual koala population and health monitoring will be implemented within the expanded Mount Cotton Koala Safe Neighbourhood. • The number of tagged koalas will include individuals recorded within the population monitoring for the expanded Mount Cotton Koala Safe Neighbourhood area. Tagging will include a minimum period of three years to monitor population and health data over a medium-term period. • The koala watch program will be included in community engagement activities and events to promote program uptake. • The Project Area will be included in the list of identified sentinel sites to be included in DNA collection and health checks. • The disease management program will include the expanded Mount Cotton Koala Safe Neighbourhood. <u>Smart Signs and driver awareness:</u> • The internal roads within the Disturbance Footprint, Heinemann Road and surrounding roads will be included in the smart driver response signage project. Signs will include both passive and vehicle-activated messaging signage. • The future upgrade of Heinemann Road will include a reduced speed limit of 60m/hr to minimise vehicle strike. <u>Community engagement:</u> • The Precinct will be showcased as a koala watch focus area for community support and engagement. • The Project will be included in the community engagement communications plan. • Program priorities will focus on engagement activities in the Koala Safe Neighbourhoods including the expanded Mount Cotton Koala Safe Neighbourhood.	The operational phase mitigation measures proposed directly correspond with the conservation and recovery actions listed in the Conservation Advice (DAWE 2022) including: • Strategy 3: Increase habitat protection • Strategy 5: Strategic habitat restoration. Key threats addressed in the design include those listed in the Conservation Advice including: • Increased intensity/frequency of bushfire • Mortality with vehicles and dogs

MNES	Operational Phase Mitigation Measures	Relationship to relevant Commonwealth documents
	<u>Project development:</u> • A Koala Management Plan will be prepared for the expanded Mount Cotton Koala Safe Neighbourhood area. Operational phase mitigation measures include: 1. The Operational Management Plan will detail limitations to the operation of floodlights and site lighting and will include maintenance to ensure fauna-sensitive measures are effective and functioning. 2. Signage indicating traffic movement and speed restrictions internally and on Heinemann Road including passive and vehicle active fauna signage and fauna stencilling will be installed during the operational phase. 3. The Rehabilitation Plan area is monitored for the first two years post-construction and at six-monthly intervals thereafter until the performance targets have been achieved. As per the Rehabilitation Plan, weed management is to be implemented for five years as part of the maintenance schedule. 4. Weed management outside of the Rehabilitation Plan area will be managed as per the requirements of the *Redlands Coast Biosecurity Plan 2018-2023*. Council will control invasive plants and animals within the Retention Area and this will include targeted control of invasive species identified within the Ecological Assessment Report (Cardno, 2019 and 2021). 5. Redland City Council's Parks and Conservation Planned Burn Program includes hazard reduction burns within the Project Area (i.e. low intensity) (Redland City Council, 2022b). 6. An amendment to the Redland City Council planning scheme is being considered to change the zone of ~106 ha of the southern portion of the Retention Area from a rural zone to a conservation zone. 7. Signage will be installed indicating dogs on a lead at all times.	
Greater glider	1. The Rehabilitation Plan area is monitored for the first two years post-construction and at six-monthly intervals thereafter until the performance targets have been achieved. As per the Rehabilitation Plan, weed management is to be implemented for five years as part of the maintenance schedule. 2. Weed management outside of the Rehabilitation Plan area will be managed as per the requirements of the *Redlands Coast Biosecurity Plan 2018-2023*.	The mitigation measures proposed directly correspond with the conservation and management priorities listed in the Conservation Advice (DCCEEW 2022) including:

MNES	Operational Phase Mitigation Measures	Relationship to relevant Commonwealth documents
	Council will control invasive plants and animals within the Retention Area and this will include targeted control of invasive species identified within the Ecological Assessment Report (Cardno, 2019 and 2021). 3. Monitoring of salvaged hollows will occur as a part of the monitoring program. 4. Redland City Council's Parks and Conservation Planned Burn Program includes hazard reduction burns within the Project Area (i.e. low intensity) (Redland City Council, 2022b). 5. An amendment to the Redland City Council planning scheme is being considered to change the zone of ~106 ha of the southern portion of the Retention Area from a rural zone to a conservation zone.	• Habitat loss, disturbance and modification • Invasive species Key threats addressed in the design include those listed in the Conservation Advice including: • Habitat clearing and Fragmentation • Inappropriate fire regimes
Grey-headed flying fox	1. The Operational Management Plan includes regular checks of netting and maintenance to minimise impacts on Grey-headed Flying fox and birds. The plan is to specify the installation schedule for the retractable ball net fencing (i.e. retracted at the end of football season). 2. The Rehabilitation Plan area is monitored for the first two years post-construction and at six-monthly intervals thereafter until the performance targets have been achieved. 3. An amendment to the Redland City Council planning scheme is being considered to change the zone of ~106 ha of the southern portion of the Retention Area from a rural zone to a conservation zone.	The National Recovery Plan lists entanglement in netting as a key threat to Grey-headed flying fox. The Operational Management Plan supports recovery objective 9, "*Reduce the impact on Grey-headed Flying-foxes of electrocution on power lines, and entanglement in netting and on barbed-wire*." (DoEE, 2021).
South-eastern glossy black cockatoo	• The Rehabilitation Plan area is monitored for the first two years post-construction and at six-monthly intervals thereafter until the performance targets have been achieved. As per the Rehabilitation Plan, weed management is to be implemented for five years as part of the maintenance schedule. • Weed management outside of the Rehabilitation Plan area will be managed as per the requirements of the *Redlands Coast Biosecurity Plan 2018-2023*. Council will control invasive plants and animals within the Retention Area and this will include targeted control of invasive species identified within the Ecological Assessment Report (Cardno, 2019 and 2021). • Redland City Council's Parks and Conservation Planned Burn Program includes hazard reduction burns (Redland City Council, 2022b). The Retention Area will be included in Council's conservation estate and will be included in the Planned Burn Program. The program ensures appropriate hazard reduction burns are included in the Project Area. • Monitoring of salvaged hollows will occur as a part of the monitoring program.	The Conservation Advice lists the main threats to the South-eastern glossy black cockatoo including: • Invasive weeds • Predation South-eastern glossy black cockatoo • Inappropriate fire regimes.

MNES	Operational Phase Mitigation Measures	Relationship to relevant Commonwealth documents
	• An amendment to the Redland City Council planning scheme is being considered to change the zone of ~106 ha of the southern portion of the Retention Area from a rural zone to a conservation zone.	

6 Conclusion

This report aims to provide a contemporary ecological assessment to ensure MNES including uplifted and recently listed threatened species and threatened ecological communities are considered as part of the EPBC Act referral. This report assesses potential impacts on MNES to determine if the Project is likely to result in a significant impact on MNES.

The results of the contemporary ecological assessment indicate that the Project will result in the removal of 0.38 ha of Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland TEC from the waterway corridor. The project will also result in the removal of koala habitat including 0.17 ha of Category A koala habitat, 5.9 ha of Category B koala habitat and 26.9 ha of Category C koala habitat. The Project will result in the loss of 438 live potential foraging trees for the Grey-headed flying fox.

A significance of impact assessment was undertaken for the Project's potential impacts on MNES that are considered likely or known to occur within the Project Area. The assessment was made against the EPBC Act Significant Impact Guidelines 1.1 (DoE 2013) and determined that the proposed development is unlikely to result in a significant impact on a MNES. Notwithstanding, Redland City Council is referring the Project to DEECCW for assessment under the EPBC Act.

Extensive ecological assessments were completed for the Project Area and confirmed Koala presence within the Project Area in the 2019 and 2021 surveys. The design avoids clearing 126.3 ha of Koala habitat within the Retention Area including a dispersal corridor associated with the central waterway in the northern portion of the Project Area. Dispersal opportunities will be maintained within the Disturbance Footprint throughout the operational phase of the project.

The clearing will not intersect the area of TEC into two or more patches but instead occurs on the periphery of the TEC polygon. The Disturbance Footprint protects and enhances the central waterway corridor supporting the TEC and as such does not fragment the TEC. The Stormwater Management Plan shows negligible changes to post-development flows confirming that the development will not cause an appreciable difference to site hydrology.

The Disturbance Footprint does not support habitat for the Greater glider. Habitat for the Greater glider is located in the Retention Area which will be retained for the Project.

The Disturbance Footprint supports habitat for foraging individuals and directly impacts 438 live foraging trees including scattered winter and spring flowering species. The vegetation community in the Disturbance Footprint is limited to scattered retained individual trees and is unlikely to represent critical habitat for the Grey-headed flying fox.

The Retention Area contains patches of foraging resources and hollows that provide potential breeding habitat. The Disturbance Footprint is unlikely to support habitat for the South-eastern glossy black cockatoo. A total of ten hollows with characteristics consistent with those preferred by the South-eastern glossy black-cockatoo were recorded within the Disturbance Footprint and seven will be impacted by the Project. The hollows identified

within the seven trees which will be directly impacted will be salvaged and installed within the Retention Area.

Mitigation measures have been developed for the design, construction and operational phases. The key mitigation measures include:

- Design phase avoidance and mitigation measures:
  - The Project has integrated the findings of the preliminary ecological opportunities and constraints analysis into the Master Plan to ensure the design avoids and minimise impacts on ecological values.
  - As the Project progressed the Master Plan considered detailed Ecological Assessments and retained additional vegetation within the Avoidance Area.
  - The design retains the central waterway corridor which provides movement opportunities for fauna and dispersal opportunities will be retained within the Distrubance Footprint within the operational phase of the project.
  - The Rehabilitation Plan details the restoration of the central waterway corridor including patches of vegetation that do not currently meet the condition threshold to be the TEC. These patches and other areas to be restored have the potential to meet the requirements to be the TEC in the future and generate an additional 2.18 ha of potential Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland.
  - The Stormwater Management Plan show negligible changes to post-development flows confirming that the development will not cause an appreciable difference to site hydrology.
  - The Rehabilitation Plan proposes 76,018m^2 of on-ground restoration including 1,791 trees including:
    - locally important koala habitat trees and ancillary habitat tree species;
    - foraging species for South-eastern flossy black cockatoo
    - foraging species for Grey-headed flying fox.
  - The planting for the Rehabilitation Plan will be sourced from seeds collected from multiple parent trees within the koala habitat in the Retention Area to ensure local scale preferences and nutritional diversity.
  - The design includes vehicle strike mitigation measures including signage, pavement stencilling, reduced speed limit to 30km/hr across the Project and closure of the Precinct nightly at 10 pm to minimise night traffic.
  - The design incorporates ecologically sensitive lighting.
- Construction Phase Mitigation Measures:
  - An erosion and sediment control plan is to be developed as part of the CEMP.
  - The extent of vegetation clearing will be demarcated as identified in the Vegetation Management Plan. Exclusion fencing and signage are to be installed prior to clearing and the extent of clearing is to be communicated to construction supervisors.
  - Water quality monitoring and inspections as detailed in the erosion and sediment control plan will be undertaken.
  - Weed control as detailed in the Rehabilitation Plan is to be implemented and maintained as per the maintenance schedule.
  - A Weed Management Plan is to be developed as part of the CEMP.

  - A Waste Management Plan will be developed as part of the CEMP and will specify the disposal and removal of waste during construction to minimise the risk of attracting invasive fauna species.
  - A wildlife incident procedure is to be included in the CEMP including contact details of wildlife carers and local veterinary practice and risk management with open excavations and trenching.
  - A Traffic Management Plan is to be included in the CEMP which details designated access routes, speed limits and identified ecologically sensitive areas.
  - Ensure all employees, contractors and sub-contractors undertake an environmental awareness induction to inform of the presence of MNES within the Project Area.
  - Permeability through the Disturbance Footprint will be maintained through the protection and enhancement of the central waterway corridor within the Retention Area through the implementation of the Rehabilitation Plan.
  - A fauna spotter catcher and koala spotter are to complete pre-clearance surveys and supervise all clearing.
  - Within Koala habitat clearing must occur sequentially, with koala spotter supervision, clearing limits/day, and clearing will occur outside of the Koala breeding season.
  - Hollows within the Disturbance Footprint will be salvaged and reinstalled within the Retention Area.
- Operational Phase Mitigation Measures:
  - The Rehabilitation Plan area is monitored for the first two years post-construction and at six-monthly intervals thereafter until the performance targets have been achieved.
  - An amendment to the Redland City Council planning scheme is being considered to change the zone of ~106 ha of the southern portion of the Retention Area from a rural zone to a conservation zone.
  - The Operational Management Plan will detail limitations to the operation of floodlights and site lighting and will include maintenance to ensure fauna-sensitive measures are effective and functioning.
  - Invasive species management outside of the Rehabilitation Plan area will be managed as per Redlands Invasive Species Management Program.
  - The Mount Cotton Koala Safe Neighbourhood will be expanded to include the Project Area and local established corridor. Council initiatives relating to Koala Safe Neighbourhoods will be applied to the Project Area and surrounds including population and health monitoring.

The Redland Open Space Strategy 2012 - 2026 and Redland Sport Land Demand Study recommend undertaking initiatives to acquire and develop suitable land in Redland City to accommodate current demand and future growth for sport and recreation. The project is identified in the Local Government Infrastructure Plan and as a catalyst project in Council's Corporate Plan.

Redland City Council has identified there is a need for additional sport and recreation land in the LGA to accommodate a growing population. Investigations revealed that to meet the health and wellbeing needs of the existing and growing population, the city has a shortfall in

sporting land of 75 ha. The Project will significantly reduce this deficit. Council purchased this strategic Project Area to secure land for this purpose.

The development provides essential community infrastructure in response to identified need. The essential need has been identified for both local and regional communities. Specifically, Redland City Council identified a shortfall of land for formal sporting opportunities, competing demand for existing sporting spaces across the city and projected population growth. This intergenerational community infrastructure development is strategically located at the southern end of Redlands Coast in the city's high-growth area.

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Appendix A Master Plan and Staging Plan

Redlands Coast Sport and Recreation Precinct - Staging

Stage 1A

Stage 1B

Stage 1 a Inclusions:

HV electrical supply and substation
Water mains
Sewer pump-out

N

BLIGH TANNER

277-293 Heinemann Road, Mount Cotton.
Lot 420 on S312160

Redlands Coast Sport and Recreation Precinct - Staging

Heinemann Rd
Upgrade to Double
Jump Road.
Sewer rising main.
Recycled water main

Heinemann Rd
Upgrade

Stage 2

N

BLIGH
TANNER

277-293 Heinemann Road, Mount Cotton.
Lot 420 on S312160

Appendix B Ball Net Fencing Design

NRL FIELD 2

NRL FIELD 1

NRL FIELD 3

TOUCH FIELD 12

TOUCH FIELD 1

NRL netting scope
1:750 @A3 paper size

Appendix C Management Frameworks and Financial Analysis Report

REDLANDS REGIONAL SPORT AND RECREATION PRECINCT MANAGEMENT FRAMEWORK & FINANCIAL ANALYSIS

SEPTEMBER 2022

Redland CITY COUNCIL

BLIGH TANNER

OTIUM Planning group

SPORT + LEISURE

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Otium Planning Group acknowledges the Australian Aboriginal, Torres Strait and South Sea Islander peoples of this nation. We acknowledge the traditional custodians of the lands on which our company is located and where we conduct our business. We pay our respects to ancestors and to Elders, past, present and emerging. Otium is committed to national reconciliation and respect for indigenous peoples' unique cultural and spiritual relationships to the land, waters and seas, and their rich contribution to society.

Contents

1. Management Arrangements

The Redlands Regional Sport and Recreation Precinct (the Precinct) will have four distinct zones:

- Recreation/ Public Spaces
- Rugby League
- Touch Football
- Cycling.

Whilst exclusive use will not be afforded to any one sporting or community group, the sports summarised above will be primary users of the facilities within their zone. Council will be responsible for the overall management of the Precinct, community use and events and site maintenance.

1.1 Management Analysis

There is no one management model that is the most suitable for all multi-use sport and recreation precincts. The most appropriate model should be determined in consideration of

- The mix, scale and standard of facilities;
- The intended usage of the site;
- Council's management approach to other sport and recreation facilities; and
- The management capability, experience and resourcing of Council and the potential alternate management parties.

Whilst there are many different management models applicable to sport and recreation facilities, this study has identified four potential management options specific to the Redlands Regional Sport and Recreation Precinct as follows:

- Council Management;
- Leases/ Licenses to Sporting Groups;
- Commercial Operator; and
- Council Owned Corporation.

A description of each potential management option, together with their advantages, disadvantages and potential application for the Precinct is described in the tables below:

COUNCIL MANAGEMENT	
Description	Council retains full management and operating responsibilities, including: • Bookings and administration; • Asset management and maintenance; • Event management; • Marketing; • Finance; and • Day-to-day management. Council management could take the form of internal staffing under existing Council arrangements, or expanding the roles and responsibilities of City Venues.
Advantages	Council has 'hands on' control in 'real time' of the operations and asset maintenance. Flexible and responsive management systems linked directly to broader Council policies and its vision for the Precinct. Operational costs can be defrayed or minimised by using Council's existing operations (payroll, insurances, accounting procedures, asset and building services etc). Council can work closely with user groups regarding future operational and development initiatives.

	Expanded City Venues role: • Removes duplication of management services and encourages economies of scale savings by reducing operating costs and consolidating operational systems. • Supports service delivery by specialist officers with dedicated areas of responsibilities. • Supports leveraging events across multiple facilities. • Specialised responsibilities would likely result in increased management performance and event attraction, thus generating higher revenues and operational cost savings.
Disadvantages	Council may not consider facility management to be its 'Core Business'. May require new investment in non-maintenance related roles given the facility mix and scale (e.g., event attraction and coordination). Council not seen as being 'arm's length' from operational issues and community demands. May act as a disincentive for user groups to invest in future site capital improvements. Does not benefit from volunteer support and there is greater expenditure (e.g., higher staffing under LG award rates). Council's processes and procedures may not be conducive to the timing associated with 'commercially driven decision' making. All the operational risk, costs and unforeseen deficits rests with Council. Cyclical increases in operating costs (e.g., energy costs) to be absorbed by Council.
Applications	Council management options include: • Expanding existing roles to incorporate responsibility for the Precinct; or • Potential for staged transition to City Venues for higher level Council owned facilities (e.g., Cleveland Aquatic Centre, Redlands Performing Arts Centre, potential other current and/ or new sport, recreation and community facilities – i.e., Redlands Coast Adventure Sports Precinct). Field maintenance and other asset management responsibilities undertaken by Council's Parks and Gardens team. User group tenure and access arrangements (including fees) granted consistent with Council's Property Tenure Policy and Guidelines. User Advisory Group incorporating representatives from site user groups could be established to ensure effective communication between users and Council/ City Venues.

LEASE/ LICENCE	
Description	Council leases exclusive use facilities (e.g., buildings) to club/ association. Licence only granted for playing fields. Lease arrangements and fees consistent with Council's Schedule of Fees and Charges and property tenure policies and guidelines. Council retains responsibility for non-leased facilities.
Advantages	Operating savings for Council as day-to-day management shifted to clubs/ associations.

	Clubs/ associations access to volunteer base reduces cost of facility management and event delivery. Transfers the responsibility for managing and maintaining the leased facility away from Council. User groups generally have a greater ability to attract third-party sponsorship and government funding in a leasing environment as it provides greater security of tenure.
Disadvantages	Clubs/ associations are governed by elected representatives where a change in committee representation may have an immediate impact on the organisation's experience, expertise and capability to manage the leased facility. Clubs/ associations may have less capacity and can let the condition of assets run down and they risk becoming unfit for purpose or look unpresentable. Council financial assistance to Clubs/ associations may be required in order to undertake priority improvements identified in any Council condition audit. The requirement for staff to setup and oversee lease contract conditions can also be a 'hidden cost' to Council.
Applications	Exclusive use facilities leased to clubs/ associations – shared use facilities responsibilities retained by Council. Council's role for leased assets reverts to lessee performance monitoring and management. Shared use facilities granted tenure via Right of Use (ROU) agreement/ licence with Council retaining management responsibility. User Advisory Group incorporating representatives from site users could be established to ensure effective communication between Council, the Clubs/ associations and other user groups.

COMMERCIAL OPERATOR	
Description	Council leases commercial facilities to a commercial operator and transfers full management and operating responsibilities of those assets, including: • Bookings and administration; • Asset management and maintenance; • Event management; • Marketing; • Finance; and • Day-to-day management. A lease fee may involve payment by the commercial operator to Council or by Council to the commercial operator, depending on the potential viability of the assets. Council's expectations regarding community access, fees and charges to be agreed between the parties and outlined within the lease agreement.
Advantages	Council can divest itself from day-to-day management of the leased assets. In most cases a commercial operator is experienced in managing major sport and recreation facilities. Any fluctuations in the financial performance of the leased assets are transferred to the commercial operator.

	Annual net operating costs are defined and stabilised as a pre-determined Council budget amount. Potential to introduce more independent, business-like expertise to commercial facilities. Reduces the number of entities Council must communicate with. More strategic approach to decision making and priorities for commercial facilities. Access to more flexible award arrangements, potentially resulting in reduced labour costs. A commercial operator with more than one venue could result in improved operational performance as a result of economies of scale savings. Safeguards commercial facilities from Council corporate overhead costs not directly related to Precinct operations.
Disadvantages	Shared resourcing across other Council managed higher level facilities is less likely to be achieved. Council may be required to pay a premium to secure a commercial operator due to the unknown factor associated with the new facility. The market may dictate that Council may be required to provide an annual operating subsidy to the commercial operator. User groups may perceive the commercial operator as fully responsible for all Precinct related development and funding and be less likely to seek sponsorship and/ grants themselves. The requirement for staff to set-up and oversee lease contract conditions can also be a significant 'hidden cost' to Council.
Applications	Council leases commercial facilities to the commercial operator. Commercial operator charged with management responsibilities for leased assets. Council's retains management responsibility for non-leased assets and monitors performance of the commercial operator. User group tenure and access arrangements (including fees) granted consistent with Council's property tenure policies and guidelines. User Advisory Group incorporating representatives from site users could be established to ensure effective communication between the commercial operator, Council and user groups.

COUNCIL OWNED CORPORATION	
Description	Company limited by guarantee established. Council forms a public company for purposes beneficial to the community and which prohibits payment of dividends to its members. Company responsible for management and maintenance of entire Precinct or a portion only.

	Council may be required to provide an operating subsidy to the Company.
Advantages	Representatives on the Board possess a cross section of commercial and management expertise. Council retains strong involvement in the Precinct. Business focussed decision making. Board not constrained by Council policies, awards and approval processes. Council removed from day-to-day Precinct demands. Company responsibilities could be expanded to include other high level Council owned major facilities.
Disadvantages	Onerous approval process from Queensland Treasury. Company must comply with corporate regulations. Individual user groups may feel disenfranchised by not having direct control over facilities or being unable to seek direct Council support. Need a base number of facilities of appropriate scale to be sustainable option.
Applications	Council must obtain Queensland Treasury approval to establish the Company. Company responsible for entire Precinct. Council may direct appoint Directors it considers having the appropriate experience and commercial and management expertise. User Advisory Group incorporating representatives from site users could be established to ensure effective communication between the Company and user groups.

Recreation and Conservation Areas

In consideration of the potential management model options for the recreation and conservation areas of the Precinct, a Council Management approach is considered the most sustainable. The primary factor for a Council Management approach to these areas and facilities is there is no one regular user group that will be based within these areas of the site. A Council Management approach is consistent with the current parks management arrangements implemented throughout the City.

Sporting Areas

The Leases/ Licenses to Sporting Groups management model is considered the most appropriate for the management of the sporting areas within the Precinct. The non-commercial nature of these facilities does not support the need for commercial expertise or the investment in establishing a professional business unit. Commercial opportunities would typically include:

- Event/ function facilities
- Licensed club, including gaming
- Allied health
- Health and fitness
- Community centre.

These areas within the site will predominantly service local/ regional sport, with occasional major sporting and community events.

Should the Precinct be embellished in future to introduce commercial elements, Council should revaluate the most appropriate management model at that time.

1.2 Future Management Framework

The image below summarises the proposed management framework, roles and responsibilities of each sporting group and Council:

Management Framework

MANAGEMENT TERM	RUGBY LEAGUE PRECINCT	TOUCH FOOTBALL PRECINCT	CYCLING PRECINCT	RECREATION/ OPEN SPACE
Tenure/ Term	**Buildings:** « Lease 10 yrs **Playing Fields:** « Licence 3 yrs	**Buildings:** « Lease 10 yrs **Playing Fields:** « Licence 3 yrs	**Buildings:** « Lease 10 yrs **Playing Fields:** « Licence 3 yrs	Council Responsibility No Tenure
Maintenance	Council Responsible for All Asset Maintenance & Managment Arrangements	Council Responsibile for All Asset Maintenance & Management Arrangements	Council Responsible for All Asset Maintenance & Management Arrangements	Council Responsible for All Asset Maintenance & Management Arrangements
Events	**Rugby League Events:** « Rugby League **Community & Major Events:** « Council, incl. Community Booking System	**Touch Football Events:** « Touch Football **Community & Major Events:** « Council, incl. Community Booking System	**Cycling Events:** « Cycling **Community & Major Events:** « Council, incl. Community Booking System	Council, incl. Community Booking System
Lighting	Council	Council	Council	Council
Energy	Rugby League	Touch Football	Cycling	Council
Waste Management	Rugby League	Touch Football	Cycling	Council
Cleaning	Rugby League	Touch Football	Cycling	Council
School Use	Via Council	Via Council	Via Council	Via Council
Specialist Maintenance/ Line Marking	Rugby League	Touch Football	Cycling	Council

1.3 Fees and Charges

In keeping with Council's obligation to communtiy health and wellbing, it is assumed Council's current model for charging sporting groups for access to facilities will be implemented for the Precinct. On this basis, the following charges will apply to the primary sporting groups:

- Licences/ leases – peppercorn fee
- Building leases - service charges
    - Rates
    - Environmental levy
    - Water
    - Waste
    - Sewer.

Primary user groups are responsbible for the costs associated from their zone assocaited with:

- Cleaning
- Waste
- Energy.

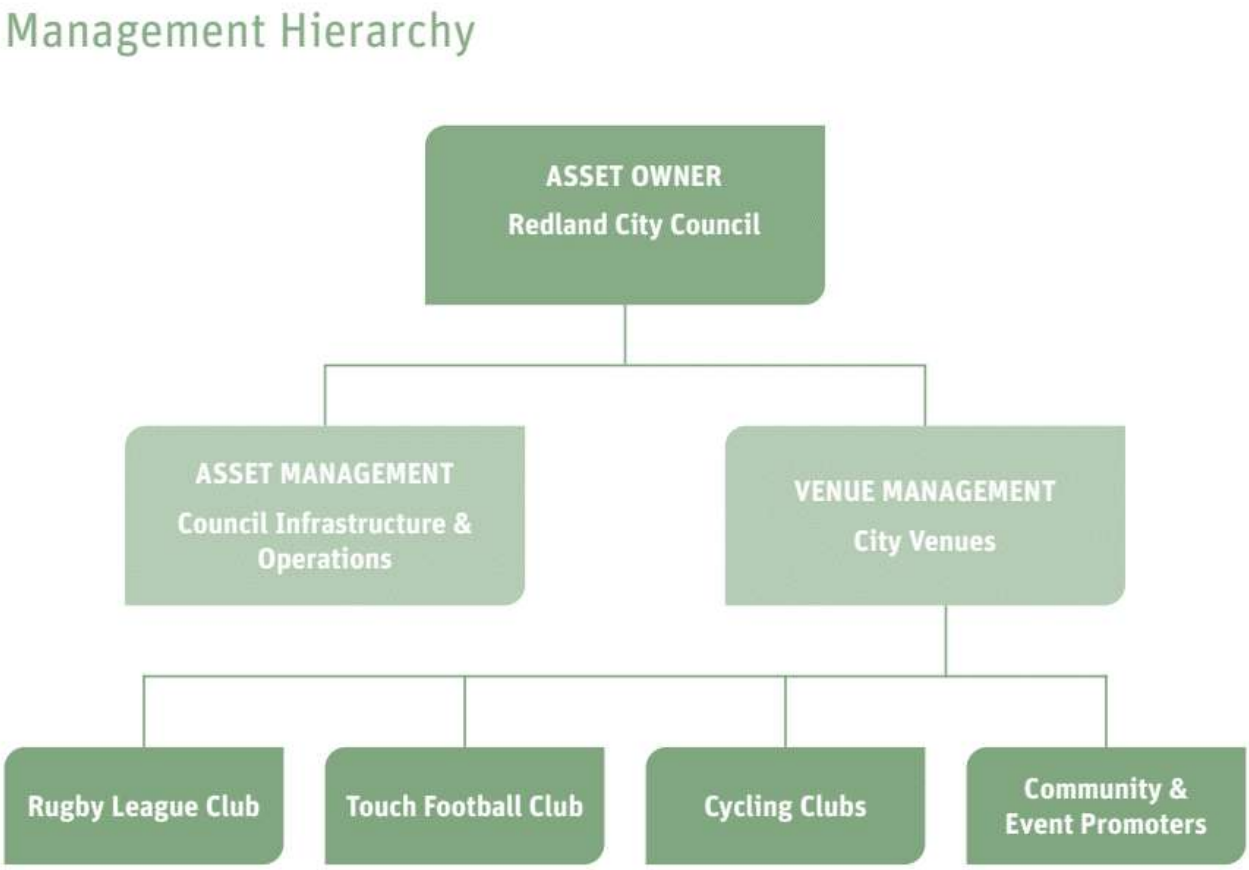
Council is responsible for all other costs related to the managmeent and maintenance of the Precinct.

1.3.1 Regional Facility Loading Option

Council's current Schedule of Fees and Charges dictates peppercorn rates for the leasing and licenscing of sport and recreation facilities to community sporting clubs/ associations. In consideration of the regional status, scale and standard of the Precinct, Council may consider charing higher leasing and licenscing rates to user groups at the Precint in order to recoup a greater proportion of the sites annual operating costs.

1.4 Management Hierachy

The proposed management hierachy within and externally to Council for the Precinct is summarised below:



2. Financial Analysis

2.1 Financial Summary – Base Case

A financial operational model for the Redlands Regional Sport and Recreation Precinct has been developed based on inputs provided from key stakeholders, industry knowledge, past project experience and a range of assumptions. Modelling has been separated by the following construction timeframes:

- Stage 1 – Commissioning 2024/25
- Stage 2 – Commissioning 2026/27.

Detailed explanation of the financial operating model assumptions are outlined in *Appendix A*.

The outcomes from the financial operational model is summarised in the tables below:

2.1.1 Construction Stage 1

Stage 1 Construction	FY22/23 ($m)	FY23/24 ($m)	FY24/25 ($m)	FY25/26 ($m)	FY26/27 ($m)	FY27/28 ($m)	FY28/29 ($m)	FY29/30 ($m)	FY30/31 ($m)	FY31/32 ($m)	Stage 1 TOTAL ($m)
INCOME											
Recreation											
Café Lease			$62,500	$64,063	$65,664	$67,306	$68,988	$70,713	$72,481	$74,293	$76,150
Total	**$-**	**$-**	**$62,500**	**$64,063**	**$65,664**	**$67,306**	**$68,988**	**$70,713**	**$72,481**	**$74,293**	**$76,150**
EXPENDITURE											
Recreation											
Building Maintenance			$25,000	$25,625	$26,266	$26,922	$27,595	$28,285	$28,992	$29,717	$30,460
Developed Open Space			$200,000	$205,000	$210,125	$215,378	$220,763	$226,282	$231,939	$237,737	$243,681
Undeveloped Open Space		$43,000	$16,000	$16,400	$16,810	$17,230	$17,661	$18,103	$18,555	$19,019	$19,494
Water Play Park			$131,000	$134,275	$137,632	$141,073	$144,599	$148,214	$151,920	$155,718	$159,611
Conservation Area		$48,000	$49,200	$50,430	$51,691	$52,983	$54,308	$55,665	$57,057	$58,483	$59,945
Variable Costs											
Tree Management			$50,000	$51,250	$52,531	$53,845	$55,191	$56,570	$57,985	$59,434	$60,920
Sewer Treatment Pump Out			$60,000	$61,500	$63,038	$64,613	$66,229	$67,884	$69,582	$71,321	$73,104
Roads and Stormwater			$50,000	$51,250	$52,531	$53,845	$55,191	$56,570	$57,985	$59,434	$60,920
Utilities			$37,000	$37,925	$38,873	$39,845	$40,841	$41,862	$42,909	$43,981	$45,081
CONTINGENCY	*$-*	*$36,400*	*$247,280*	*$253,462*	*$259,799*	*$266,294*	*$272,951*	*$279,775*	*$286,769*	*$293,938*	*$301,287*
Total	**$-**	**$127,400**	**$865,480**	**$887,117**	**$909,295**	**$932,027**	**$955,328**	**$979,211**	**$1,003,691**	**$1,028,784**	**$1,054,503**
OPERATING RESULT	$ -	-$127,400	-$802,980	-$823,055	-$843,631	-$864,722	-$886,340	-$908,498	-$931,211	-$ 954,491	-$ 978,353

The table above suggests that from the time of the commissioning of Stage 1, the Precinct will generate an operating deficit of between $0.8 and $1.0 million annual through to 2031/32.

2.1.2 Construction Stage 2

Stage 2 Construction	FY22/23 ($m)	FY23/24 ($m)	FY24/25 ($m)	FY25/26 ($m)	FY26/27 ($m)	FY27/28 ($m)	FY28/29 ($m)	FY29/30 ($m)	FY30/31 ($m)	FY31/32 ($m)	Stage 2 TOTAL ($m)
INCOME											
Rugby League											
Clubhouse					$1	$1	$1	$1	$1	$1	$1
Playing Fields					$1	$1	$1	$1	$1	$1	$1
Rates/ Services					$5,000	$5,125	$5,253	$5,384	$5,519	$5,657	$5,798
Touch Football											
Clubhouse					$1	$1	$1	$1	$1	$1	$1
Playing Fields					$1	$1	$1	$1	$1	$1	$1
Rates/ Services					$5,000	$5,125	$5,253	$5,384	$5,519	$5,657	$5,798
Cycling											
Clubhouse					$1	$1	$1	$1	$1	$1	$1
Tracks					$1	$1	$1	$1	$1	$1	$1
Rates/ Services					$5,000	$5,125	$5,253	$5,384	$5,519	$5,657	$5,798
Total	**$-**	**$-**	**$-**	**$-**	**$15,006**	**$15,381**	**$15,765**	**$16,159**	**$16,563**	**$16,977**	**$17,401**
EXPENDITURE											
Rugby League											
Building Maintenance					$59,800	$61,295	$62,827	$64,398	$66,008	$67,658	$69,350
Developed Open Space					$91,350	$93,634	$95,975	$98,374	$100,833	$103,354	$105,938
Touch Football											
Building Maintenance					$41,400	$42,435	$43,496	$44,583	$45,698	$46,840	$48,011
Developed Open Space					$185,850	$190,496	$195,259	$200,140	$205,144	$210,272	$215,529
Cycling											
Building Maintenance					$13,800	$14,145	$14,499	$14,861	$15,233	$15,613	$16,004
Track Maintenance					$37,800	$38,745	$39,714	$40,706	$41,724	$42,767	$43,836
Variable Costs											
Sewer Treatment Pump Out					$60,000	$61,500	$63,038	$64,613	$66,229	$67,884	$69,582
Roads and Stormwater					$50,000	$51,250	$52,531	$53,845	$55,191	$56,570	$57,985
Utilities					$37,000	$37,925	$38,873	$39,845	$40,841	$41,862	$42,909
CONTINGENCY	*$-*	*$-*	*$-*	*$-*	*$230,800*	*$236,570*	*$242,484*	*$248,546*	*$254,760*	*$261,129*	*$267,657*

Total	$-	$-	$-	$-	$807,800	$827,995	$848,695	$869,912	$891,660	$913,952	$936,800
OPERATING RESULT	$-	$-	$-	$-	-$792,794	-$812,614	-$832,930	-$853,753	-$875,097	-$896,974	-$919,399

The table above suggests that from the time of the commissioning of Stage 2, the Precinct will generate an operating deficit of between $0.8 and $0.9 million annual through to 2031/32.

2.1.3 Whole-of-Site Result

Combined Operating Result	FY22/23 ($m)	FY23/24 ($m)	FY24/25 ($m)	FY25/26 ($m)	FY26/27 ($m)	FY27/28 ($m)	FY28/29 ($m)	FY29/30 ($m)	FY30/31 ($m)	FY31/32 ($m)	Combined TOTAL ($m)
	$-	-$127,400	-$802,980	-$823,055	-$1,636,425	-$1,677,336	-$1,719,269	-$1,762,251	-$1,806,307	-$1,851,465	-$1,897,752

The table above suggests that from the time of the commissioning of Stage 1, the combined whole-of-Precinct operations will generate an operating deficit of between $0.8 and $1.9 million annual through to 2031/32.

3. Warranties and Disclaimers

The information contained in this report is provided in good faith. While Otium Planning Group has applied their own experience to the task, they have relied upon information supplied to them by other persons and organisations.

We have not conducted an audit of the information provided by others but have accepted it in good faith. Some of the information may have been provided 'commercial in confidence' and as such these venues or sources of information are not specifically identified. Readers should be aware that the preparation of this report may have necessitated projections of the future that are inherently uncertain and that our opinion is based on the underlying representations, assumptions and projections detailed in this report.

There will be differences between projected and actual results, because events and circumstances frequently do not occur as expected and those differences may be material. We do not express an opinion as to whether actual results will approximate projected results, nor can we confirm, underwrite or guarantee the achievability of the projections as it is not possible to substantiate assumptions which are based on future events.

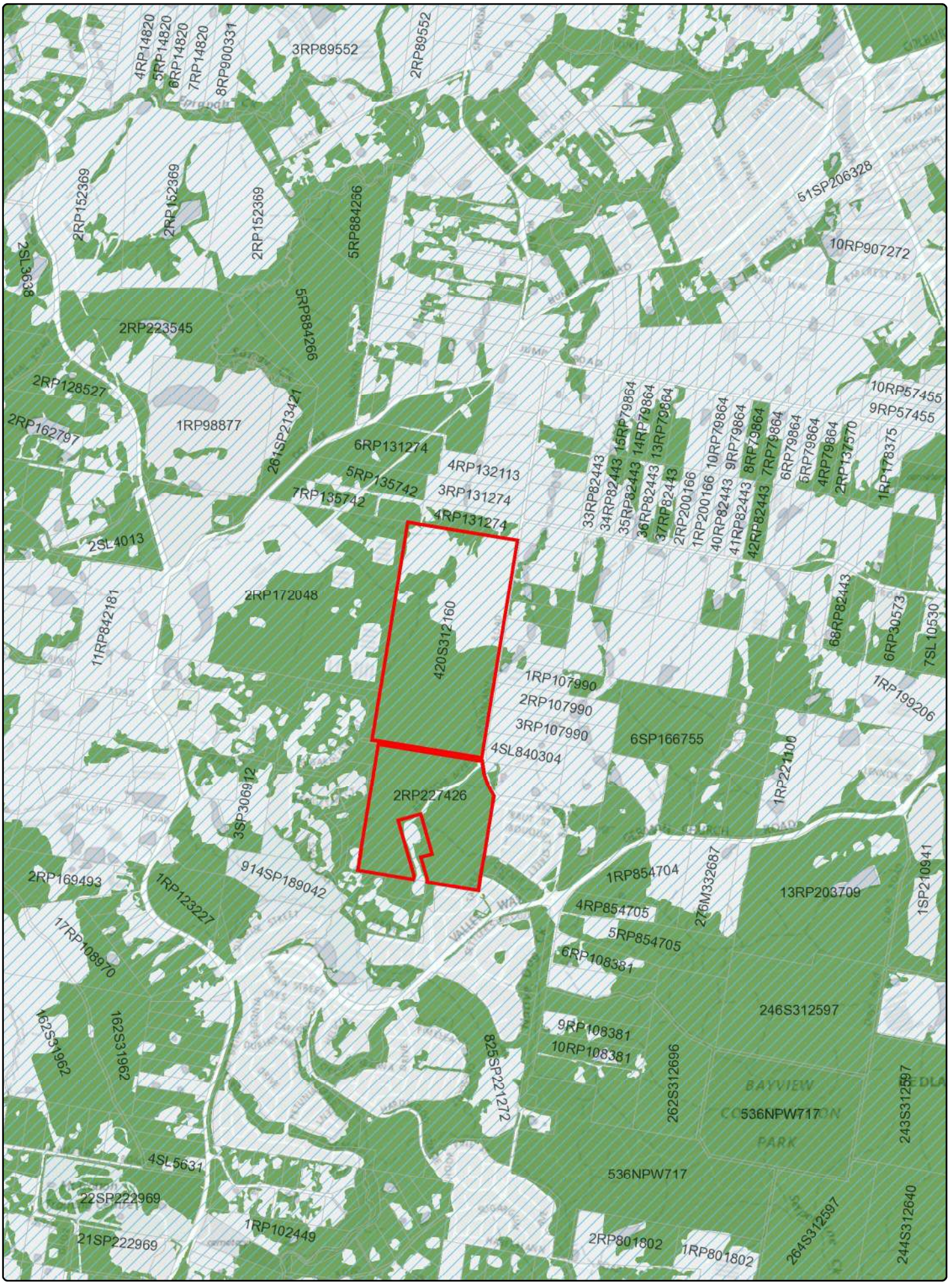
Accordingly, neither Otium Planning Group, nor any member or employee of Otium Planning Group, undertakes responsibility arising in any way whatsoever to any persons other than client in respect of this report, for any errors or omissions herein, arising through negligence or otherwise however caused.

Appendix A – Financial Operating Model Assumptions

FINANCIAL OPERATING MODEL	ASSUMPTION
Income	
Recreation	
Café Lease	▪ Assumed external commercial rental arrangement ▪ Comparative analysis of Redlands City from commercialrealestate.com.au ▪ Median researched rate of $250 sqm ▪ GFA 250m2
Rugby League	
Clubhouse	▪ Redland City Council – Schedule of Fees and Charges 2021/22
Playing Fields	▪ Redland City Council – Schedule of Fees and Charges 2021/22
Rates/ Services	▪ Nominal assumption based amount
Touch Football	
Clubhouse	▪ Redland City Council – Schedule of Fees and Charges 2021/22
Playing Fields	▪ Redland City Council – Schedule of Fees and Charges 2021/22
Rates/ Services	▪ Nominal assumption based amount
Cycling	
Clubhouse	▪ Redland City Council – Schedule of Fees and Charges 2021/22
Tracks	▪ Redland City Council – Schedule of Fees and Charges 2021/22
Rates/ Services	▪ Nominal assumption based amount
Expenditure	
Recreation	
Building Maintenance	▪ Cost advice from Redland City Council (September 2022) ▪ Average CPI loading of 2.5% per annum
Developed Open Space	▪ Cost advice from Redland City Council (September 2022) ▪ Average CPI loading of 2.5% per annum
Undeveloped Open Space	▪ Cost advice from Redland City Council (September 2022) ▪ Average CPI loading of 2.5% per annum
Water Play Park	▪ Benchmarked operating costs from City of Gold Coast, City of Darebin (Vic), and Tamworth Regional Council (NSW) ▪ 655m2 development ▪ $40,000 Electricity ▪ $12,000 Water ▪ $38,000 Maintenance ▪ $41,000 Chemicals ▪ Average CPI loading of 2.5% per annum
Conservation Area	▪ Cost advice from Redland City Council (September 2022) ▪ Average CPI loading of 2.5% per annum
Variable Costs	
Tree Management	▪ Cost advice from Redland City Council (September 2022) ▪ Average CPI loading of 2.5% per annum
Sewer Treatment Pump Out	▪ Cost advice from Redland City Council (September 2022) ▪ Average CPI loading of 2.5% per annum
Roads and Stormwater	▪ Cost advice from Redland City Council (September 2022) ▪ Average CPI loading of 2.5% per annum
Utilities	▪ Cost advice from Redland City Council (September 2022) ▪ Assumed exclusion of field and track lighting electricity to be the responsibility of the user groups ▪ Average CPI loading of 2.5% per annum

Rugby League	
Building Maintenance	▪ 52% of Cost advice from Redland City Council (September 2022) based on GFA ▪ Average CPI loading of 2.5% per annum
Developed Open Space	▪ 29% of Cost advice from Redland City Council (September 2022) based on GFA ▪ Average CPI loading of 2.5% per annum
Touch Football	
Building Maintenance	▪ 36% of Cost advice from Redland City Council (September 2022) based on GFA ▪ Average CPI loading of 2.5% per annum
Developed Open Space	▪ 59% of Cost advice from Redland City Council (September 2022) based on GFA ▪ Average CPI loading of 2.5% per annum
Cycling	
Building Maintenance	▪ 12% of Cost advice from Redland City Council (September 2022) based on GFA ▪ Average CPI loading of 2.5% per annum
Track Maintenance	▪ 12% of Cost advice from Redland City Council (September 2022) based on GFA ▪ Average CPI loading of 2.5% per annum
CONTINGENCY	▪ 40% contingency applied to total projected expected based on advice from Redland City Council (September 2022)

Appendix D Desktop Searches



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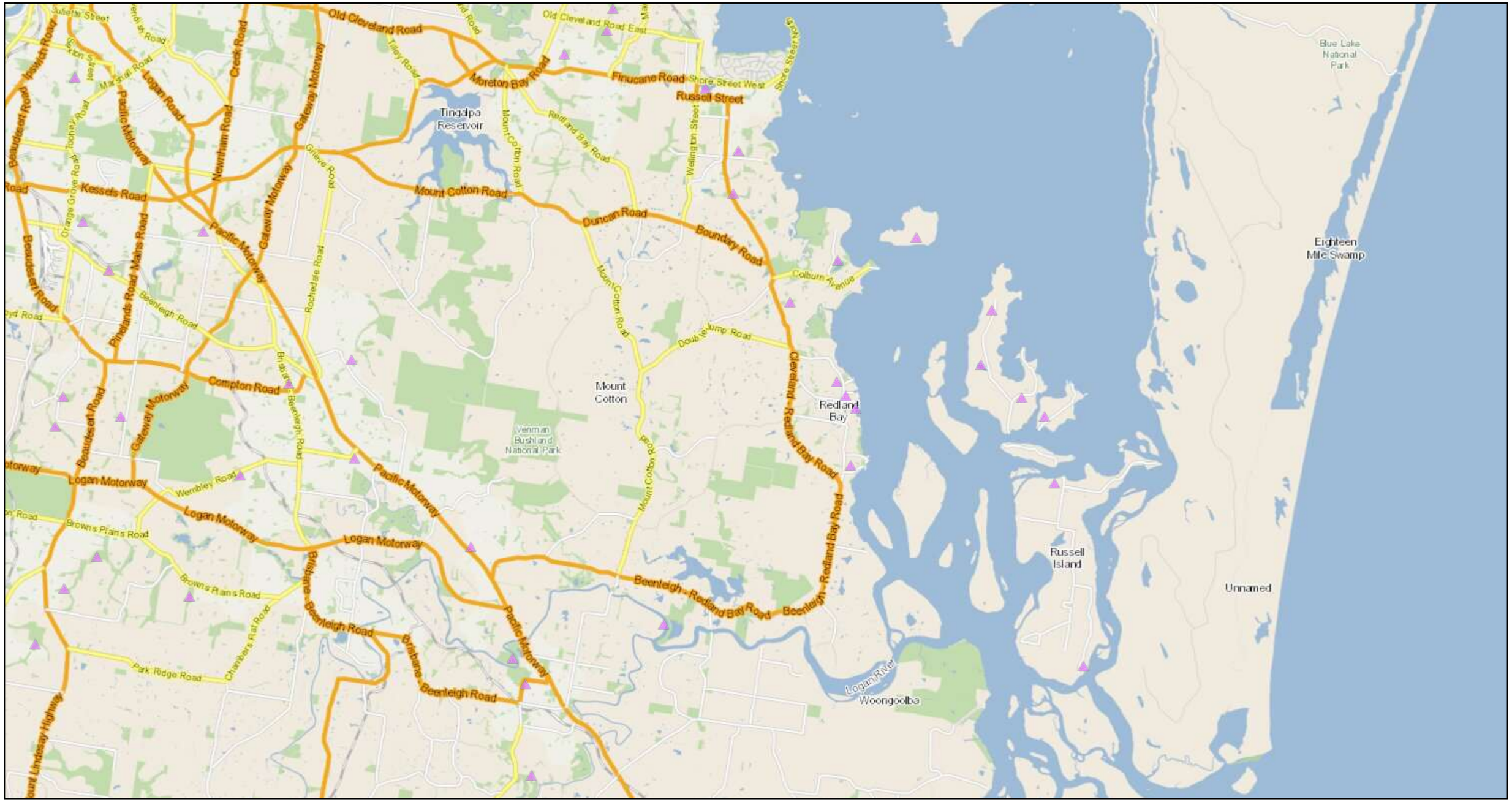
Redland Coast Sport and Rec Precinct



November 16, 2022

Flying-fox Camps

- Nationally Important Flying-fox Camp
- Other Flying-fox Camp

1:144,448

0 1.5 3 6 mi

0 2.5 5 10 km

Map produced by the Department of Climate Change, Energy, the

EPBC Act Protected Matters Report

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

Report created: 15-Nov-2022

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	7
Listed Threatened Species:	93
Listed Migratory Species:	79

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	110
Whales and Other Cetaceans:	13
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:	18
Regional Forest Agreements:	None
Nationally Important Wetlands:	2
EPBC Act Referrals:	52
Key Ecological Features (Marine):	None
Biologically Important Areas:	6
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Moreton bay	Within Ramsar site	In feature area

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
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Grey box-grey gum wet forest of subtropical eastern Australia	Endangered	Community likely to occur within area	In buffer area only
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area	In buffer area only

Listed Threatened Species [Resource Information]

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

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Anthochaera phrygia](#) Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area
[Botaurus poiciloptilus](#) Australasian Bittern [1001]	Endangered	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	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
[Calidris tenuirostris](#) Great Knot [862]	Critically Endangered	Roosting known to occur within area	In buffer area only
[Calyptorhynchus lathami lathami](#) South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	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
[Charadrius mongolus](#) Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
[Cyclopsitta diophthalma coxeni](#) Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area	In feature area
[Diomedea antipodensis](#) Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Diomedea antipodensis gibsoni](#) Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Diomedea exulans](#) Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to 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 buffer area only
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may 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
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area	In feature area
FISH			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Epinephelus daemelii			
Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Hippocampus whitei			
White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Maccullochella mariensis			
Mary River Cod [83806]	Endangered	Translocated population known to occur within area	In buffer area only
Seriolella brama			
Blue Warehou [69374]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
Thunnus maccoyii			
Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
FROG			
Litoria olongburensis			
Wallum Sedge Frog [1821]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Mixophyes fleayi			
Fleay's Frog [25960]	Endangered	Species or species habitat may occur within area	In buffer area only
INSECT			
Argynnis hyperbius inconstans			
Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area	In feature area
Phyllodes imperialis smithersi			
Pink Underwing Moth [86084]	Endangered	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Balaenoptera musculus			
Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Chalinolobus dwyeri			
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat may occur within area	In buffer area only
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	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 known to occur within area	In feature area
Potorous tridactylus tridactylus Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
PLANT			

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Acronychia littoralis](#) Scented Acronychia [8582]	Endangered	Species or species habitat may occur within area	In feature area
[Arthraxon hispidus](#) Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Baloghia marmorata](#) Marbled Balogia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat may occur within area	In feature area
[Bosistoa transversa](#) Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Bulbophyllum globuliforme](#) Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Corchorus cunninghamii](#) Native Jute [14659]	Endangered	Species or species habitat known to occur within area	In feature area
[Cryptocarya foetida](#) Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Cryptostylis hunteriana](#) Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In feature area
[Cupaniopsis shirleyana](#) Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat may occur within area	In feature area
[Diploglottis campbellii](#) Small-leaved Tamarind [21484]	Endangered	Species or species habitat may occur within area	In buffer area only
[Endiandra floydii](#) Floyd's Walnut, Crystal Creek Walnut [52955]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Fontainea venosa [24040]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Gossia gonoclada Angle-stemmed Myrtle [78866]	Endangered	Species or species habitat known to occur within area	In buffer area only
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat known to occur within area	In feature area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat known to occur within area	In feature area
Planchonella eerwah Shiny-leaved Condoo, Black Plum, Wild Apple [17340]	Endangered	Species or species habitat likely to occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Vincetoxicum woollsii listed as Tylophora woollsii [40080]	Endangered	Species or species habitat may occur within area	In buffer area only
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat likely to occur within area	In feature area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
SHARK			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Carcharias taurus (east coast population)			
Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only
Carcharodon carcharias			
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Pristis zijsron			
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may 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 buffer area only
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna carneipes			
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea			
Sooty Shearwater [82651]		Species or species habitat may occur within area	In buffer area only
Calonectris leucomelas			
Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Thalassarche melanophris](#) Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Thalassarche salvini](#) Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Thalassarche steadi](#) White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
[Balaenoptera edeni](#) Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
[Carcharhinus longimanus](#) Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In buffer area only
[Carcharodon carcharias](#) White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area	In buffer area only
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
[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	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
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	Species or species habitat known to occur within area	In buffer area only
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 may occur within area	In buffer area only
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sousa sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]		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
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known 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
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area	In buffer area only
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area	In feature area
Calidris alba Sanderling [875]		Roosting known to occur within area	In buffer area only

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 likely to occur within area	In feature area
[Calidris ruficollis](#) Red-necked Stint [860]		Roosting known to occur within area	In buffer area only
[Calidris tenuirostris](#) Great Knot [862]	Critically Endangered	Roosting known to occur within area	In buffer area only
[Charadrius bicinctus](#) Double-banded Plover [895]		Roosting known to occur within area	In buffer area only
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Charadrius mongolus](#) Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
[Charadrius veredus](#) Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area	In buffer area only
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat known 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
[Limicola falcinellus](#) Broad-billed Sandpiper [842]		Roosting known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat may occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In buffer area only
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting known 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]		Breeding known to occur within area	In buffer area only
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area	In buffer area only
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area	In buffer area only
Tringa incana Wandering Tattler [831]		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	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area	In buffer area only
Xenus cinereus Terek Sandpiper [59300]		Roosting 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 buffer area only
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Arenaria interpres](#) Ruddy Turnstone [872]		Roosting known to occur within area	In buffer area only
[Bubulcus ibis as Ardea ibis](#) Cattle Egret [66521]		Breeding likely to occur within area overfly marine area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]		Roosting known to occur within area	In feature area
[Calidris alba](#) Sanderling [875]		Roosting known to occur within area	In buffer area only
[Calidris canutus](#) Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
[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 likely to occur within area overfly marine area	In feature area
[Calidris ruficollis](#) Red-necked Stint [860]		Roosting known to occur within area overfly marine area	In buffer area only
[Calidris tenuirostris](#) Great Knot [862]	Critically Endangered	Roosting known to occur within area overfly marine area	In buffer area only
[Calonectris leucomelas](#) Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
[Charadrius bicinctus](#) Double-banded Plover [895]		Roosting known to occur within area overfly marine area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Charadrius mongolus](#) Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
[Charadrius ruficapillus](#) Red-capped Plover [881]		Roosting known to occur within area overfly marine area	In buffer area only
[Charadrius veredus](#) Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area overfly marine area	In buffer area only
[Diomedea antipodensis](#) Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Diomedea antipodensis gibsoni as Diomedea gibsoni](#) Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Diomedea exulans](#) Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Fregata ariel](#) Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area	In buffer area only
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat known 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

Scientific Name	Threatened Category	Presence Text	Buffer Status
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
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area overfly marine area	In buffer area only
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat may occur within area overfly marine area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In buffer area only
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area overfly marine area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
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
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 known 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
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		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
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area overfly marine area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area overfly marine area	In buffer area only
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area overfly marine 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 known to occur within area overfly marine area	In feature area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may 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
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area overfly marine area	In buffer area only
Tringa incana as Heteroscelus incanus Wandering Tattler [831]		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 overfly marine area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area	In buffer area only
Xenus cinereus Terek Sandpiper [59300]		Roosting 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
Campichthys tryoni Tryon's Pipefish [66193]		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 ocellatus Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area	In buffer area only
Filicampus tigris Tiger Pipefish [66217]		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
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
Hippocampus kelloggi Kellogg's Seahorse, Great Seahorse [66723]		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 trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area	In buffer area only
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only
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 manadensis Manado Pipefish, Manado River Pipefish [66258]		Species or species habitat may occur within area	In buffer area only
Solegnathus dunckeri Duncker's Pipehorse [66271]		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
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		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
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
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
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In buffer area only
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		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			
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area	In buffer area only
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area	In buffer area only
Laticauda laticaudata a sea krait [1093]		Species or species habitat may occur within area	In buffer area only
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area	In buffer area only

Whales and Other Cetaceans			[Resource Information]
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only
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 may occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Sousa sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]		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 buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Bayview	Conservation Park	QLD	In buffer area only
Boom-ber-pee	Nature Refuge	QLD	In buffer area only
Carbrook Wetlands 1	Conservation Park	QLD	In buffer area only
Carbrook Wetlands 2	Conservation Park	QLD	In buffer area only
Coolnwynpin	Nature Refuge	QLD	In buffer area only
Coolnwynpin Creek Corridor Koala (A)	Nature Refuge	QLD	In buffer area only

Protected Area Name	Reserve Type	State	Buffer Status
Coolnwynpin Creek Corridor Koala (B)	Nature Refuge	QLD	In buffer area only
Cornubia Forest	Nature Refuge	QLD	In buffer area only
Daisy Hill	Conservation Park	QLD	In buffer area only
Dawson Road	Nature Refuge	QLD	In buffer area only
Jumpinpin-Broadwater	Fish Habitat Area (A)	QLD	In buffer area only
Koala Bushland	Coordinated Conservation Area	QLD	In buffer area only
Koallaby	Nature Refuge	QLD	In buffer area only
Leslie Harrison Dam	Nature Refuge	QLD	In buffer area only
Leslie Parade	Nature Refuge	QLD	In buffer area only
Moreton Bay	Marine Park	QLD	In buffer area only
Murray's Environmental	Nature Refuge	QLD	In buffer area only
Venman Bushland	National Park	QLD	In buffer area only

Nationally Important Wetlands		[Resource Information]
Wetland Name	State	Buffer Status
Carbrook Wetlands Aggregation	QLD	In buffer area only
Moreton Bay	QLD	In buffer area only

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Bayhill Estate	2020/8863		Approval	In buffer area only
Toondah Harbour Development, Moreton Bay, Qld	2018/8225		Assessment	In buffer area only
Visy Glass Recycling and Manufacturing Facility	2022/09243		Assessment	In buffer area only
Controlled action				
Jacobs Well Airport	2004/1361	Controlled Action	Completed	In buffer area only
Jacobs Well Airport Project	2003/947	Controlled Action	Completed	In buffer area only
Over 50s Lifestyle Community Development, Serpentine Creek Road	2021/9052	Controlled Action	Further Information Request	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Shoreline urban village development, Redland Bay, Qld	2016/7776	Controlled Action	Post-Approval	In buffer area only
Southern Redland Bay Wastewater Treatment Plant	2020/8849	Controlled Action	Post-Approval	In buffer area only
The Trails Residential Development	2021/9047	Controlled Action	Further Information Request	In buffer area only
Toondah Harbour Development	2017/7939	Controlled Action	Referral Decision	In buffer area only
West Mt Cotton Quarry Expansion, Redland City, Qld	2018/8340	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
180 Lot Residential Subdivision, Daisy Hill Road	2004/1806	Not Controlled Action	Completed	In buffer area only
Addition of growout ponds and settlement ponds	2002/661	Not Controlled Action	Completed	In buffer area only
Boat Ramp and Slipway Construction	2001/507	Not Controlled Action	Completed	In buffer area only
Clay Gully Road residential development, Victoria Point, QLD	2017/7984	Not Controlled Action	Completed	In buffer area only
Clearance of approx 152ha of open forest vegetation for residential development at Mt Cotton Villag	2004/1592	Not Controlled Action	Completed	In feature area
development of a single storey house for residential purposes	2012/6302	Not Controlled Action	Completed	In buffer area only
Development of Leisure Life Retirement Community	2004/1746	Not Controlled Action	Completed	In feature area
Development of Mt Cotton Village Estate	2006/2988	Not Controlled Action	Completed	In feature area
Eddie Santagiuliana Bike and Boardwalk Trail Construction	2008/4183	Not Controlled Action	Completed	In buffer area only
Eddie Santagiuliana Way Boardwalk	2005/2049	Not Controlled Action	Completed	In buffer area only
Eprapah Heights Bushland Residential Subdivision	2001/286	Not Controlled Action	Completed	In feature area
establishment of a car wash and service station facility on Lot 12 RP 57455	2005/2077	Not Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Extension of existing hard rock quarry	2004/1713	Not Controlled Action	Completed	In feature area
Extension of existing quarry for extraction of 42 million tonnes of Meta-greywac	2006/2757	Not Controlled Action	Completed	In buffer area only
Extension to the existing Chung Tian Buddhist Temple complex	2001/364	Not Controlled Action	Completed	In buffer area only
Gateway Motorway Upgrade	2003/1297	Not Controlled Action	Completed	In buffer area only
GCCC Northern Wastewater Strategy and associated Reclaimed Water Scheme - Stage	2001/282	Not Controlled Action	Completed	In feature area
Gordon Road Residential Development	2002/854	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Integrated Employment and Residential Community	2007/3449	Not Controlled Action	Completed	In buffer area only
Logan River Marina	2003/1176	Not Controlled Action	Completed	In buffer area only
Mount Cotton Quarry Expansion	2011/6225	Not Controlled Action	Completed	In buffer area only
Orchard Beach residential subdivision	2002/603	Not Controlled Action	Completed	In buffer area only
Prawn Aquaculture Enterprise Expansion	2001/294	Not Controlled Action	Completed	In feature area
Prawn Aquaculture Expansion	2001/322	Not Controlled Action	Completed	In buffer area only
Prawn Aquaculture Facility	2001/443	Not Controlled Action	Completed	In buffer area only
Queen Street Residential Development	2001/132	Not Controlled Action	Completed	In buffer area only
Reconfiguration of a Lot (subdivide on into two)	2010/5667	Not Controlled Action	Completed	In buffer area only
Residential Development and Associated Infrastructure	2009/5166	Not Controlled Action	Completed	In buffer area only
Residential estate Bunker Rd	2005/2130	Not Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
residential subdivision	2002/851	Not Controlled Action	Completed	In buffer area only
Residential subdivision, Redland Bay Road	2002/739	Not Controlled Action	Completed	In buffer area only
Resort Style Residential Development	2008/4232	Not Controlled Action	Completed	In buffer area only
Thornlands Road Residential Units	2002/850	Not Controlled Action	Completed	In buffer area only
TradeCoast to Belmont Transmission Line	2003/1164	Not Controlled Action	Completed	In buffer area only
Urban Subdivision	2001/493	Not Controlled Action	Completed	In buffer area only
works within the Black Swamp	2005/2334	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
Kerkins Levee Rehabilitation Project, Phases 2-8	2004/1435	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In buffer area only
Residential Subdivision (4 lots) in Redland Bay QLD	2007/3878	Referral Decision	Completed	In buffer area only
Toondah Harbour Project, Moreton Bay, Qld	2015/7612	Referral Decision	Completed	In buffer area only

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
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Known to occur	In buffer area only
Marine Turtles			
Caretta caretta Loggerhead Turtle [1763]	Nesting	Known to occur	In buffer area only

Scientific Name	Behaviour	Presence	Buffer Status
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur	In buffer area only
Sharks			
Carcharias taurus Grey Nurse Shark [64469]	Foraging	Known to occur	In buffer area only
Whales			
Megaptera novaeangliae Humpback Whale [38]	Resting on migration (southbound)	Known to occur	In buffer area only

Bioregional Assessments

SubRegion	BioRegion	Website	Buffer Status
Clarence-Moreton	Clarence-Moreton	BA website	In feature area

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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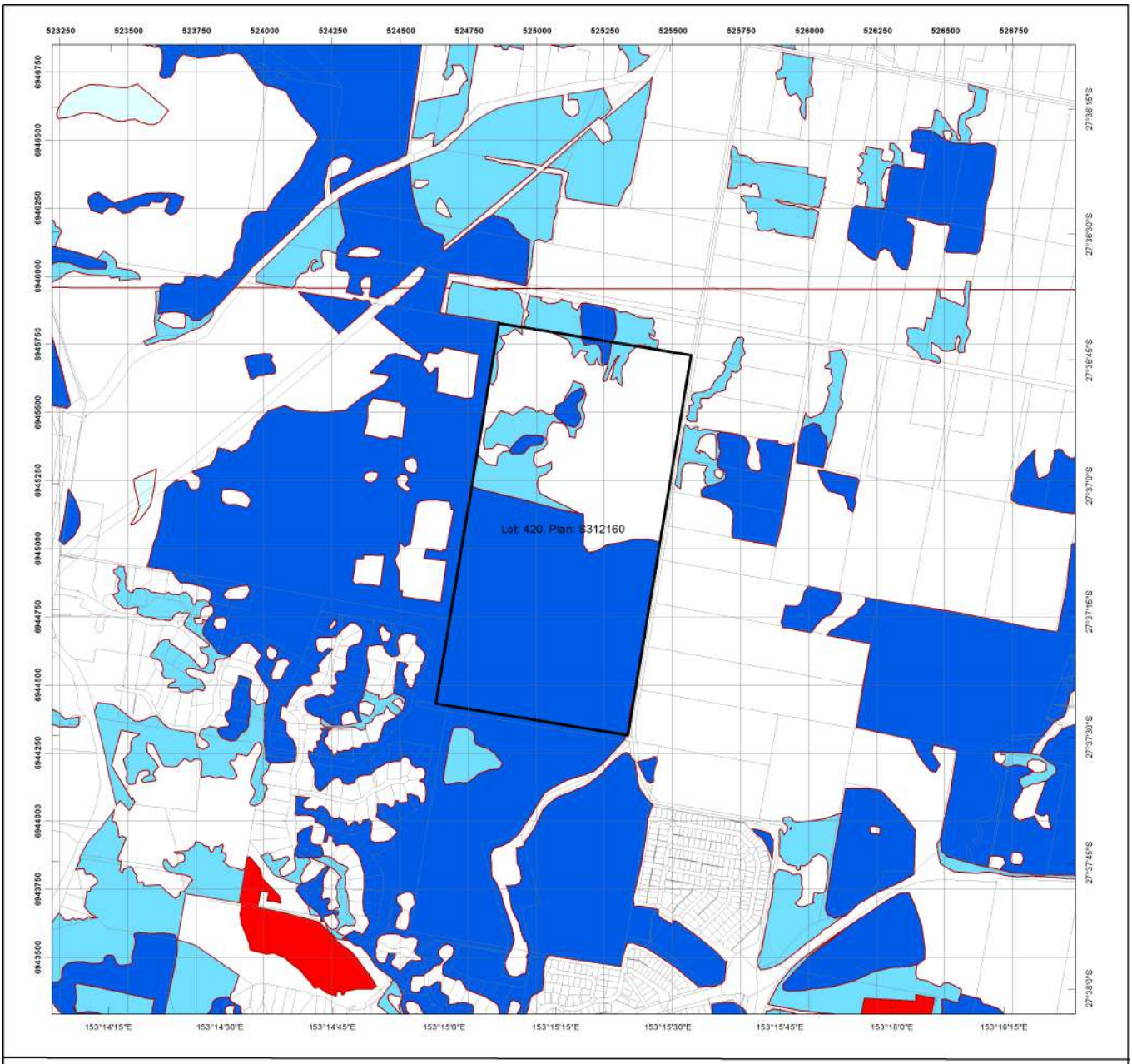
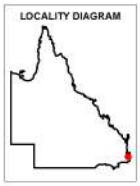


Regulated Vegetation Management Map

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:
GDA 1994 MGA Zone 56

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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.

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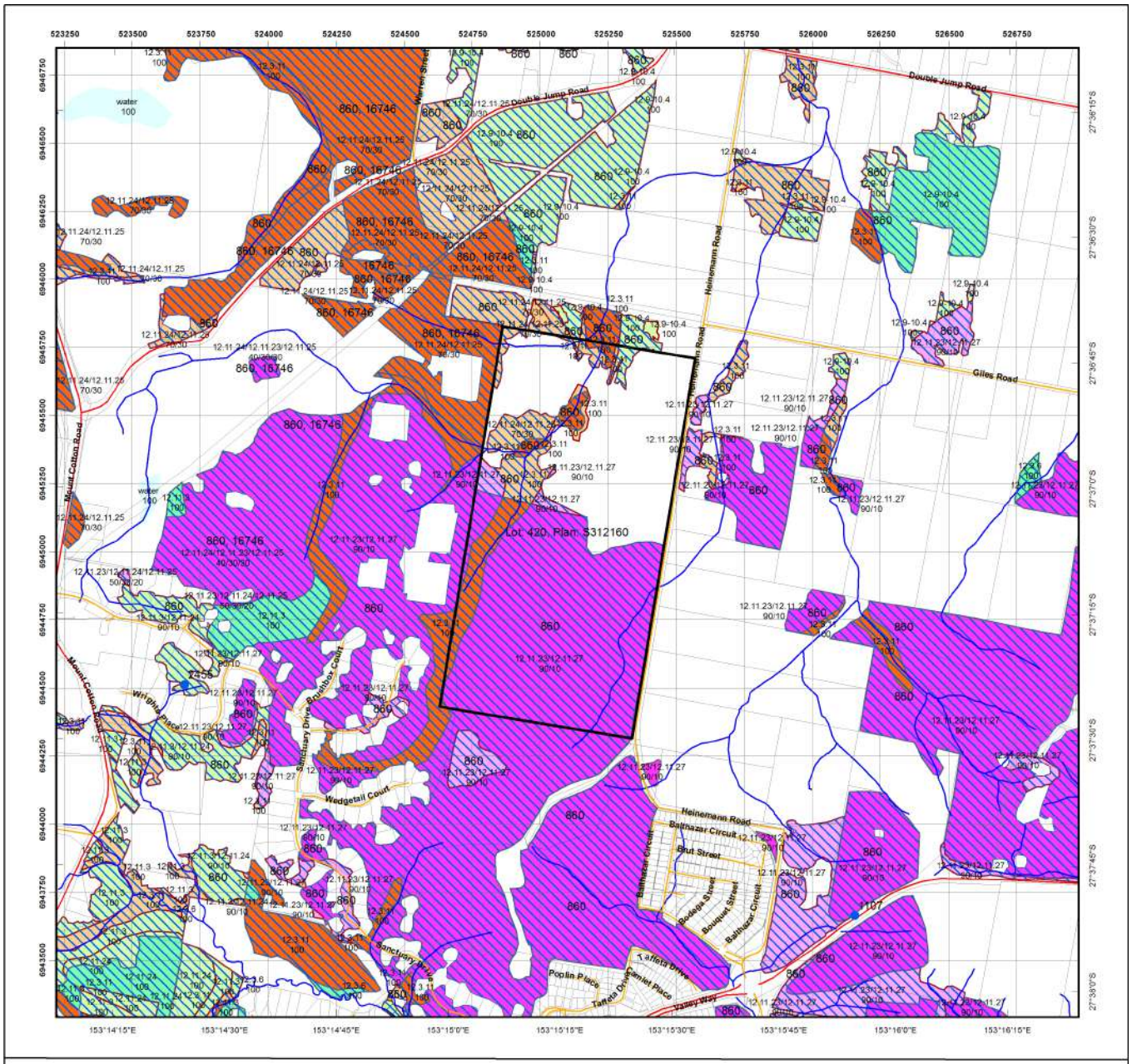

Vegetation Management Supporting Map

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

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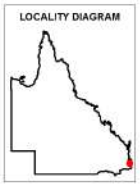
LOCALITY DIAGRAM



N

0 140 280 420 560 700 m

This product is projected into: GDA 1994 MGA Zone 56

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.

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

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.

Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - State Code 16: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the *Planning Act 2016*; and
- Accepted development vegetation clearing codes made under the *Vegetation Management Act 1999*

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s on the accompanying essential habitat map.

This report identifies essential habitat in Category A, B and Category C areas.

The numeric labels on the essential habitat map can be cross referenced with the database below to determine which essential habitat factors might exist for a particular species.

Essential habitat is compiled from a combination of species habitat models and buffered species records.

The Department of Resources website (http://www.resources.qld.gov.au) has more information on how the layer is applied under the State Development Assessment Provisions - State Code 16: Native vegetation clearing and the *Vegetation Management Act 1999*.

Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated.

Essential habitat, for protected wildlife, means a category A area, a category B area or category C area 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; or

2) in which the protected wildlife, at any stage of its life cycle, is located.

Protected wildlife includes critically endangered, endangered, vulnerable or near-threatened native wildlife prescribed under the *Nature Conservation Act 1992*.

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
860	Phascolarctos cinereus	koala	E	Open forests and woodlands containing Eucalyptus, Corymbia, Lophostemon or Melaleuca trees having a trunk of a diameter of more than 10cm at 1.3m above the ground. Tree species used for food and habitat varies across the state and can include: Corymbia citriodora, Corymbia henryi, Corymbia intermedia, Eucalyptus acmenoides, Eucalyptus bancroftii, Eucalyptus biturbinata, Eucalyptus blakelyi, Eucalyptus brownii, Eucalyptus camaldulensis, Eucalyptus carnea, Eucalyptus chloroclada, Eucalyptus coolabah, Eucalyptus crebra, Eucalyptus dealbata, Eucalyptus drepanophylla, Eucalyptus dunnii, Eucalyptus eugenioides, Eucalyptus exserta, Eucalyptus fibrosa, Eucalyptus grandis, Eucalyptus helidonica, Eucalyptus latisinensis, Eucalyptus longirostrata, Eucalyptus major, Eucalyptus melanophloia, Eucalyptus melliodora, Eucalyptus microcarpa, Eucalyptus microcorys, Eucalyptus microtheca, Eucalyptus moluccana, Eucalyptus montivaga, Eucalyptus orgadophila, Eucalyptus papuana, Eucalyptus pilularis, Eucalyptus platyphylla, Eucalyptus populnea, Eucalyptus portuensis, Eucalyptus propinqua, Eucalyptus racemosa, Eucalyptus resinifera, Eucalyptus robusta, Eucalyptus saligna, Eucalyptus seeana, Eucalyptus siderophloia, Eucalyptus sideroxylon, Eucalyptus tereticornis, Eucalyptus thozetiana, Eucalyptus tindaliae, Eucalyptus umbra, Lophostemon confertus, Melaleuca leucadendra, Melaleuca quinquenervia.	Sea level to 1000m.	None	Riparian areas, plains and hill/escarpment slopes.
2455	Petauroides armillatus	central greater glider	E	Tall mature open wet and dry eucalypt forest (Eucalyptus &/or Corymbia spp.) to low open eucalypt woodland; presence of hollow-bearing trees.	Sea level to 1300m.	Usually on soils of relatively high fertility.	None

Label	Regional Ecosystem (mandatory unless otherwise specified)
860	4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.8, 4.3.10, 4.3.11, 4.5.3, 4.5.5, 4.5.6, 4.5.8, 4.5.9, 4.7.1, 4.7.7, 4.7.8, 4.9.6, 4.9.10, 4.9.12, 4.9.17, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.7, 6.3.8, 6.3.9, 6.3.11, 6.3.12, 6.3.17, 6.3.18, 6.3.22, 6.3.24, 6.3.25, 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.5.1, 6.5.2, 6.5.3, 6.5.5, 6.5.6, 6.5.7, 6.5.8, 6.5.9, 6.5.10, 6.5.11, 6.5.13, 6.5.14, 6.5.15, 6.5.16, 6.5.17, 6.5.18, 6.5.19, 6.6.2, 6.7.1, 6.7.2, 6.7.5, 6.7.6, 6.7.7, 6.7.9, 6.7.11, 6.7.12, 6.7.13, 6.7.14, 6.7.17, 6.9.3, 7.2.3, 7.2.4, 7.2.7, 7.2.11, 7.3.7, 7.3.8, 7.3.9, 7.3.12, 7.3.13, 7.3.14, 7.3.16, 7.3.19, 7.3.20, 7.3.21, 7.3.25, 7.3.26, 7.3.39, 7.3.40, 7.3.42, 7.3.43, 7.3.44, 7.3.45, 7.3.47, 7.3.48, 7.3.50, 7.5.1, 7.5.2, 7.5.3, 7.5.4, 7.8.7, 7.8.8, 7.8.10, 7.8.15, 7.8.16, 7.8.17, 7.8.18, 7.8.19, 7.11.5, 7.11.6, 7.11.13, 7.11.14, 7.11.16, 7.11.18, 7.11.19, 7.11.20, 7.11.21, 7.11.31, 7.11.32, 7.11.33, 7.11.34, 7.11.35, 7.11.37, 7.11.41, 7.11.42, 7.11.43, 7.11.44, 7.11.45, 7.11.46, 7.11.47, 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Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Queensland status: All
Records: All
Date: All
Latitude: -27.6176
Longitude: 153.2545
Distance: 10
Email: mary@raptorenvironmental.com.au
Date submitted: Tuesday 15 Nov 2022 13:24:58
Date extracted: Tuesday 15 Nov 2022 13:30:02

The number of records retrieved = 1665

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	*Rhinella marina*	cane toad	Y			117
animals	amphibians	Hylidae	*Litoria balatus*	slender bleating tree frog		C		3
animals	amphibians	Hylidae	*Litoria caerulea*	common green treefrog		C		81
animals	amphibians	Hylidae	*Litoria fallax*	eastern sedgefrog		C		123/1
animals	amphibians	Hylidae	*Litoria gracilenta*	graceful treefrog		C		32
animals	amphibians	Hylidae	*Litoria latopalmata*	broad palmed rocketfrog		C		13
animals	amphibians	Hylidae	*Litoria nasuta*	striped rocketfrog		C		37
animals	amphibians	Hylidae	*Litoria peronii*	emerald spotted treefrog		C		8
animals	amphibians	Hylidae	*Litoria rubella*	ruddy treefrog		C		27
animals	amphibians	Hylidae	*Litoria tyleri*	southern laughing treefrog		C		7
animals	amphibians	Limnodynastidae	*Adelotus brevis*	tusked frog		V		22
animals	amphibians	Limnodynastidae	*Limnodynastes peronii*	striped marshfrog		C		71
animals	amphibians	Limnodynastidae	*Limnodynastes tasmaniensis*	spotted grassfrog		C		3
animals	amphibians	Limnodynastidae	*Limnodynastes terraereginae*	scarlet sided pobblebonk		C		11
animals	amphibians	Limnodynastidae	*Platyplectrum ornatum*	ornate burrowing frog		C		19
animals	amphibians	Myobatrachidae	*Crinia parinsignifera*	beeping froglet		C		38/2
animals	amphibians	Myobatrachidae	*Crinia signifera*	clicking froglet		C		22
animals	amphibians	Myobatrachidae	*Crinia tinnula*	wallum froglet		V		3
animals	amphibians	Myobatrachidae	*Mixophyes fasciolatus*	great barred frog		C		12
animals	amphibians	Myobatrachidae	*Pseudophryne coriacea*	red backed broodfrog		C		14
animals	amphibians	Myobatrachidae	*Pseudophryne major*	great brown broodfrog		C		6
animals	amphibians	Myobatrachidae	*Pseudophryne raveni*	copper backed broodfrog		C		30
animals	amphibians	Myobatrachidae	*Uperoleia fusca*	dusky gungan		C		2
animals	birds	Acanthizidae	*Acanthiza apicalis*	inland thornbill		C		1
animals	birds	Acanthizidae	*Acanthiza chrysorrhoa*	yellow-rumped thornbill		C		45
animals	birds	Acanthizidae	*Acanthiza lineata*	striated thornbill		C		25
animals	birds	Acanthizidae	*Acanthiza nana*	yellow thornbill		C		23
animals	birds	Acanthizidae	*Acanthiza pusilla*	brown thornbill		C		163
animals	birds	Acanthizidae	*Acanthiza reguloides*	buff-rumped thornbill		C		21
animals	birds	Acanthizidae	*Gerygone levigaster*	mangrove gerygone		C		104
animals	birds	Acanthizidae	*Gerygone mouki*	brown gerygone		C		21
animals	birds	Acanthizidae	*Gerygone olivacea*	white-throated gerygone		C		259
animals	birds	Acanthizidae	*Pyrrholaemus sagittatus*	speckled warbler		C		17
animals	birds	Acanthizidae	*Sericornis citreogularis*	yellow-throated scrubwren		C		7
animals	birds	Acanthizidae	*Sericornis frontalis*	white-browed scrubwren		C		218
animals	birds	Acanthizidae	*Sericornis magnirostra*	large-billed scrubwren		C		4
animals	birds	Acanthizidae	*Smicrornis brevirostris*	weebill		C		40
animals	birds	Accipitridae	*Accipiter cirrocephalus*	collared sparrowhawk		C		15
animals	birds	Accipitridae	*Accipiter fasciatus*	brown goshawk		C		46
animals	birds	Accipitridae	*Accipiter novaehollandiae*	grey goshawk		C		11
animals	birds	Accipitridae	*Aquila audax*	wedge-tailed eagle		C		42
animals	birds	Accipitridae	*Aviceda subcristata*	Pacific baza		C		53
animals	birds	Accipitridae	*Circus approximans*	swamp harrier		C		25
animals	birds	Accipitridae	*Circus assimilis*	spotted harrier		C		1
animals	birds	Accipitridae	*Elanus axillaris*	black-shouldered kite		C		124
animals	birds	Accipitridae	*Haliaeetus leucogaster*	white-bellied sea-eagle		C		194

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animals	birds	Accipitridae	*Haliastur indus*	brahminy kite		C		372
animals	birds	Accipitridae	*Haliastur sphenurus*	whistling kite		C		483
animals	birds	Accipitridae	*Hieraaetus morphnoides*	little eagle		C		19
animals	birds	Accipitridae	*Lophoictinia isura*	square-tailed kite		C		11
animals	birds	Accipitridae	*Milvus migrans*	black kite		C		5
animals	birds	Accipitridae	*Pandion cristatus*	eastern osprey		SL		131
animals	birds	Acrocephalidae	*Acrocephalus australis*	Australian reed-warbler		C		57
animals	birds	Aegothelidae	*Aegotheles cristatus*	Australian owlet-nightjar		C		38
animals	birds	Alcedinidae	*Ceyx azureus*	azure kingfisher		C		51
animals	birds	Anatidae	*Anas castanea*	chestnut teal		C		192
animals	birds	Anatidae	*Anas gracilis*	grey teal		C		170
animals	birds	Anatidae	*Anas platyrhynchos*	northern mallard	Y			20
animals	birds	Anatidae	*Anas superciliosa*	Pacific black duck		C		421
animals	birds	Anatidae	*Aythya australis*	hardhead		C		121
animals	birds	Anatidae	*Biziura lobata*	musk duck		C		2
animals	birds	Anatidae	*Chenonetta jubata*	Australian wood duck		C		407
animals	birds	Anatidae	*Cygnus atratus*	black swan		C		225
animals	birds	Anatidae	*Dendrocygna arcuata*	wandering whistling-duck		C		57
animals	birds	Anatidae	*Dendrocygna eytoni*	plumed whistling-duck		C		23
animals	birds	Anatidae	*Malacorhynchus membranaceus*	pink-eared duck		C		11
animals	birds	Anatidae	*Nettapus coromandelianus*	cotton pygmy-goose		C		2
animals	birds	Anatidae	*Nettapus pulchellus*	green pygmy-goose		C		1
animals	birds	Anatidae	*Radjah radjah*	radjah shelduck		C		1
animals	birds	Anatidae	*Spatula rhynchotis*	Australasian shoveler		C		25
animals	birds	Anatidae	*Stictonetta naevosa*	freckled duck		C		3
animals	birds	Anhingidae	*Anhinga novaehollandiae*	Australasian darter		C		237
animals	birds	Anseranatidae	*Anseranas semipalmata*	magpie goose		C		131
animals	birds	Apodidae	*Apus pacificus*	fork-tailed swift		SL		8
animals	birds	Apodidae	*Hirundapus caudacutus*	white-throated needletail		V	V	41
animals	birds	Ardeidae	*Ardea alba modesta*	eastern great egret		C		593
animals	birds	Ardeidae	*Ardea intermedia*	intermediate egret		C		314
animals	birds	Ardeidae	*Ardea pacifica*	white-necked heron		C		58
animals	birds	Ardeidae	*Botaurus poiciloptilus*	Australasian bittern		E	E	3
animals	birds	Ardeidae	*Bubulcus ibis*	cattle egret		C		331
animals	birds	Ardeidae	*Butorides striata*	striated heron		C		109
animals	birds	Ardeidae	*Egretta garzetta*	little egret		C		462
animals	birds	Ardeidae	*Egretta novaehollandiae*	white-faced heron		C		1080
animals	birds	Ardeidae	*Egretta sacra*	eastern reef egret		C		11
animals	birds	Ardeidae	*Egretta sp.*			C		2
animals	birds	Ardeidae	*Ixobrychus dubius*	Australian little bittern		C		1
animals	birds	Ardeidae	*Ixobrychus flavicollis*	black bittern		C		5
animals	birds	Ardeidae	*Nycticorax caledonicus*	nankeen night-heron		C		28
animals	birds	Artamidae	*Artamus cyanopterus*	dusky woodswallow		C		6
animals	birds	Artamidae	*Artamus leucorynchus*	white-breasted woodswallow		C		129
animals	birds	Artamidae	*Artamus minor*	little woodswallow		C		3
animals	birds	Artamidae	*Artamus personatus*	masked woodswallow		C		1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Artamidae	*Artamus superciliosus*	white-browed woodswallow		C		2
animals	birds	Artamidae	*Cracticus nigrogularis*	pied butcherbird		C		470
animals	birds	Artamidae	*Cracticus sp.*			C		7
animals	birds	Artamidae	*Cracticus torquatus*	grey butcherbird		C		352
animals	birds	Artamidae	*Gymnorhina tibicen*	Australian magpie		C		740
animals	birds	Artamidae	*Strepera graculina*	pied currawong		C		73
animals	birds	Artamidae	*Strepera graculina graculina*	pied currawong (eastern Australia)		C		1
animals	birds	Burhinidae	*Burhinus grallarius*	bush stone-curlew		C		94
animals	birds	Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo		C		289
animals	birds	Cacatuidae	*Cacatua sanguinea*	little corella		C		74
animals	birds	Cacatuidae	*Cacatua tenuirostris*	long-billed corella	Y	C		9
animals	birds	Cacatuidae	*Calyptorhynchus banksii*	red-tailed black-cockatoo		C		2
animals	birds	Cacatuidae	*Calyptorhynchus funereus*	yellow-tailed black-cockatoo		C		4
animals	birds	Cacatuidae	*Calyptorhynchus lathami*	glossy black-cockatoo		V		1
animals	birds	Cacatuidae	*Calyptorhynchus lathami lathami*	glossy black-cockatoo (eastern)		V	V	29
animals	birds	Cacatuidae	*Calyptorhynchus sp.*			C		1
animals	birds	Cacatuidae	*Eolophus roseicapilla*	galah		C		307
animals	birds	Campephagidae	*Coracina lineata*	barred cuckoo-shrike		C		2
animals	birds	Campephagidae	*Coracina maxima*	ground cuckoo-shrike		C		1
animals	birds	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike		C		604
animals	birds	Campephagidae	*Coracina papuensis*	white-bellied cuckoo-shrike		C		9
animals	birds	Campephagidae	*Edolisoma tenuirostre*	common cicadabird		C		75
animals	birds	Campephagidae	*Lalage leucomela*	varied triller		C		66
animals	birds	Campephagidae	*Lalage tricolor*	white-winged triller		C		4
animals	birds	Charadriidae	*Charadrius bicinctus*	double-banded plover		SL		84
animals	birds	Charadriidae	*Charadrius leschenaultii*	greater sand plover		V	V	16
animals	birds	Charadriidae	*Charadrius mongolus*	lesser sand plover		E	E	70
animals	birds	Charadriidae	*Charadrius ruficapillus*	red-capped plover		C		324
animals	birds	Charadriidae	*Elseyornis melanops*	black-fronted dotterel		C		205
animals	birds	Charadriidae	*Erythrogonys cinctus*	red-kneed dotterel		C		45
animals	birds	Charadriidae	*Pluvialis fulva*	Pacific golden plover		SL		211
animals	birds	Charadriidae	*Pluvialis squatarola*	grey plover		SL		2
animals	birds	Charadriidae	*Vanellus miles*	masked lapwing		C		707
animals	birds	Charadriidae	*Vanellus miles miles*	masked lapwing (northern subspecies)		C		5
animals	birds	Charadriidae	*Vanellus miles novaehollandiae*	masked lapwing (southern subspecies)		C		407
animals	birds	Charadriidae	*Vanellus tricolor*	banded lapwing		C		1
animals	birds	Ciconiidae	*Ephippiorhynchus asiaticus*	black-necked stork		C		50
animals	birds	Cisticolidae	*Cisticola exilis*	golden-headed cisticola		C		215
animals	birds	Climacteridae	*Climacteris affinis*	white-browed treecreeper		C		4
animals	birds	Climacteridae	*Climacteris erythrops*	red-browed treecreeper		C		2
animals	birds	Climacteridae	*Climacteris picumnus*	brown treecreeper		C		10
animals	birds	Climacteridae	*Climacteris sp.*			C		1
animals	birds	Climacteridae	*Cormobates leucophaea*	white-throated treecreeper		C		50
animals	birds	Climacteridae	*Cormobates leucophaea metastasis*	white-throated treecreeper (southern)		C		166
animals	birds	Columbidae	*Chalcophaps longirostris*	Pacific emerald dove		C		6
animals	birds	Columbidae	*Columba leucomela*	white-headed pigeon		C		9

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Columbidae	*Columba livia*	rock dove	Y			38
animals	birds	Columbidae	*Geopelia cuneata*	diamond dove		C		1
animals	birds	Columbidae	*Geopelia humeralis*	bar-shouldered dove		C		356
animals	birds	Columbidae	*Geopelia placida*	peaceful dove		C		180
animals	birds	Columbidae	*Leucosarcia melanoleuca*	wonga pigeon		C		43
animals	birds	Columbidae	*Lopholaimus antarcticus*	topknot pigeon		C		3
animals	birds	Columbidae	*Macropygia amboinensis*	brown cuckoo-dove		C		56
animals	birds	Columbidae	*Ocyphaps lophotes*	crested pigeon		C		511
animals	birds	Columbidae	*Phaps chalcoptera*	common bronzewing		C		49
animals	birds	Columbidae	*Ptilinopus magnificus*	wompoo fruit-dove		C		4
animals	birds	Columbidae	*Streptopelia chinensis*	spotted dove	Y			501
animals	birds	Coraciidae	*Eurystomus orientalis*	dollarbird		C		161/1
animals	birds	Corvidae	*Corvus coronoides*	Australian raven		C		1
animals	birds	Corvidae	*Corvus orru*	Torresian crow		C		725
animals	birds	Cuculidae	*Cacomantis flabelliformis*	fan-tailed cuckoo		C		163
animals	birds	Cuculidae	*Cacomantis pallidus*	pallid cuckoo		C		21
animals	birds	Cuculidae	*Cacomantis variolosus*	brush cuckoo		C		65
animals	birds	Cuculidae	*Centropus phasianinus*	pheasant coucal		C		170
animals	birds	Cuculidae	*Chalcites basalis*	Horsfield's bronze-cuckoo		C		20
animals	birds	Cuculidae	*Chalcites lucidus*	shining bronze-cuckoo		C		111
animals	birds	Cuculidae	*Chalcites minutillus barnardi*	Eastern little bronze-cuckoo		C		16
animals	birds	Cuculidae	*Cuculus optatus*	oriental cuckoo		SL		5
animals	birds	Cuculidae	*Eudynamys orientalis*	eastern koel		C		173
animals	birds	Cuculidae	*Scythrops novaehollandiae*	channel-billed cuckoo		C		60
animals	birds	Dicruridae	*Dicrurus bracteatus*	spangled drongo		C		290
animals	birds	Dicruridae	*Dicrurus bracteatus bracteatus*	spangled drongo (eastern Australia)		C		6
animals	birds	Diomedeidae	*Diomedea exulans*	wandering albatross		V	V	1
animals	birds	Estrildidae	*Lonchura castaneothorax*	chestnut-breasted mannikin		C		140
animals	birds	Estrildidae	*Lonchura punctulata*	nutmeg mannikin	Y			13
animals	birds	Estrildidae	*Neochmia modesta*	plum-headed finch		C		2
animals	birds	Estrildidae	*Neochmia temporalis*	red-browed finch		C		523
animals	birds	Estrildidae	*Taeniopygia bichenovii*	double-barred finch		C		335
animals	birds	Estrildidae	*Taeniopygia guttata*	zebra finch		C		2
animals	birds	Eurostopodidae	*Eurostopodus mystacalis*	white-throated nightjar		C		25
animals	birds	Falconidae	*Falco berigora*	brown falcon		C		32
animals	birds	Falconidae	*Falco cenchroides*	nankeen kestrel		C		49
animals	birds	Falconidae	*Falco hypoleucos*	grey falcon		V	V	1
animals	birds	Falconidae	*Falco longipennis*	Australian hobby		C		30
animals	birds	Falconidae	*Falco peregrinus*	peregrine falcon		C		13
animals	birds	Falconidae	*Falco subniger*	black falcon		C		1
animals	birds	Fringillidae	*Carduelis carduelis*	European goldfinch	Y			1
animals	birds	Haematopodidae	*Haematopus fuliginosus*	sooty oystercatcher		C		5
animals	birds	Haematopodidae	*Haematopus longirostris*	Australian pied oystercatcher		C		403
animals	birds	Haematopodidae	*Haematopus sp.*			C		1
animals	birds	Halcyonidae	*Dacelo novaeguineae*	laughing kookaburra		C		726
animals	birds	Halcyonidae	*Todiramphus macleayii*	forest kingfisher		C		253

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Halcyonidae	*Todiramphus sanctus*	sacred kingfisher		C		498
animals	birds	Halcyonidae	*Todiramphus sordidus*	Torresian kingfisher		C		99
animals	birds	Hirundinidae	*Hirundo neoxena*	welcome swallow		C		383
animals	birds	Hirundinidae	*Hirundo rustica*	barn swallow		SL		1
animals	birds	Hirundinidae	*Petrochelidon ariel*	fairy martin		C		91
animals	birds	Hirundinidae	*Petrochelidon nigricans*	tree martin		C		79
animals	birds	Jacanidae	*Irediparra gallinacea*	comb-crested jacana		C		138
animals	birds	Laridae	*Chlidonias hybrida*	whiskered tern		C		2
animals	birds	Laridae	*Chlidonias leucopterus*	white-winged black tern		SL		4
animals	birds	Laridae	*Chroicocephalus novaehollandiae*	silver gull		C		224
animals	birds	Laridae	*Gelochelidon nilotica*	gull-billed tern		SL		502
animals	birds	Laridae	*Gygis alba*	white tern		C		1/1
animals	birds	Laridae	*Hydroprogne caspia*	Caspian tern		SL		536
animals	birds	Laridae	*Larus dominicanus*	kelp gull		C		1
animals	birds	Laridae	*Sterna hirundo*	common tern		SL		14
animals	birds	Laridae	*Sternula albifrons*	little tern		SL		31
animals	birds	Laridae	*Thalasseus bengalensis*	lesser crested tern		C		5
animals	birds	Laridae	*Thalasseus bergii*	crested tern		SL		88
animals	birds	Maluridae	*Malurus cyaneus*	superb fairy-wren		C		293
animals	birds	Maluridae	*Malurus lamberti*	variegated fairy-wren		C		396
animals	birds	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren		C		480
animals	birds	Maluridae	*Malurus sp.*			C		2
animals	birds	Megaluridae	*Cincloramphus mathewsi*	rufous songlark		C		2
animals	birds	Megaluridae	*Cincloramphus timoriensis*	tawny grassbird		C		207
animals	birds	Megaluridae	*Poodytes gramineus*	little grassbird		C		13
animals	birds	Megapodiidae	*Alectura lathami*	Australian brush-turkey		C		105
animals	birds	Meliphagidae	*Acanthorhynchus tenuirostris*	eastern spinebill		C		241
animals	birds	Meliphagidae	*Anthochaera carunculata*	red wattlebird		C		1
animals	birds	Meliphagidae	*Anthochaera chrysoptera*	little wattlebird		C		19
animals	birds	Meliphagidae	*Anthochaera phrygia*	regent honeyeater		CR	CE	2
animals	birds	Meliphagidae	*Caligavis chrysops*	yellow-faced honeyeater		C		949
animals	birds	Meliphagidae	*Entomyzon cyanotis*	blue-faced honeyeater		C		188
animals	birds	Meliphagidae	*Gavicalis fasciogularis*	mangrove honeyeater		C		136
animals	birds	Meliphagidae	*Lichmera indistincta*	brown honeyeater		C		673
animals	birds	Meliphagidae	*Manorina flavigula*	yellow-throated miner		C		1
animals	birds	Meliphagidae	*Manorina melanocephala*	noisy miner		C		1115
animals	birds	Meliphagidae	*Manorina melanophrys*	bell miner		C		1
animals	birds	Meliphagidae	*Meliphaga lewinii*	Lewin's honeyeater		C		318
animals	birds	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater		C		554
animals	birds	Meliphagidae	*Melithreptus gularis*	black-chinned honeyeater		C		1
animals	birds	Meliphagidae	*Melithreptus lunatus*	white-naped honeyeater		C		35
animals	birds	Meliphagidae	*Myzomela obscura*	dusky honeyeater		C		7
animals	birds	Meliphagidae	*Myzomela sanguinolenta*	scarlet honeyeater		C		1108
animals	birds	Meliphagidae	*Philemon citreogularis*	little friarbird		C		118
animals	birds	Meliphagidae	*Philemon corniculatus*	noisy friarbird		C		385
animals	birds	Meliphagidae	*Philemon sp.*			C		1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Meliphagidae	*Phylidonyris niger*	white-cheeked honeyeater		C		6
animals	birds	Meliphagidae	*Plectorhyncha lanceolata*	striped honeyeater		C		59
animals	birds	Meliphagidae	*Ptilotula fusca*	fuscous honeyeater		C		1
animals	birds	Meliphagidae	*Ptilotula plumula*	grey-fronted honeyeater		C		1
animals	birds	Menuridae	*Menura alberti*	Albert's lyrebird		NT		1
animals	birds	Meropidae	*Merops ornatus*	rainbow bee-eater		C		217
animals	birds	Monarchidae	*Carterornis leucotis*	white-eared monarch		C		7
animals	birds	Monarchidae	*Grallina cyanoleuca*	magpie-lark		C		622
animals	birds	Monarchidae	*Monarcha melanopsis*	black-faced monarch		SL		51
animals	birds	Monarchidae	*Myiagra alecto*	shining flycatcher		C		4
animals	birds	Monarchidae	*Myiagra cyanoleuca*	satin flycatcher		SL		13
animals	birds	Monarchidae	*Myiagra inquieta*	restless flycatcher		C		43
animals	birds	Monarchidae	*Myiagra rubecula*	leaden flycatcher		C		134
animals	birds	Monarchidae	*Symposiachrus trivirgatus*	spectacled monarch		SL		18
animals	birds	Motacillidae	*Anthus novaeseelandiae*	Australasian pipit		C		88
animals	birds	Nectariniidae	*Dicaeum hirundinaceum*	mistletoebird		C		190
animals	birds	Neosittidae	*Daphoenositta chrysoptera*	varied sittella		C		56
animals	birds	Oriolidae	*Oriolus sagittatus*	olive-backed oriole		C		254
animals	birds	Oriolidae	*Sphecotheres vieilloti*	Australasian figbird		C		314
animals	birds	Pachycephalidae	*Colluricincla harmonica*	grey shrike-thrush		C		492
animals	birds	Pachycephalidae	*Colluricincla megarhyncha*	little shrike-thrush		C		96
animals	birds	Pachycephalidae	*Falcunculus frontatus*	crested shrike-tit		C		3
animals	birds	Pachycephalidae	*Pachycephala pectoralis*	golden whistler		C		268
animals	birds	Pachycephalidae	*Pachycephala pectoralis youngi*	golden whistler (south-eastern Australia)		C		3
animals	birds	Pachycephalidae	*Pachycephala rufiventris*	rufous whistler		C		675
animals	birds	Pardalotidae	*Pardalotus punctatus*	spotted pardalote		C		124
animals	birds	Pardalotidae	*Pardalotus sp.*			C		1
animals	birds	Pardalotidae	*Pardalotus striatus*	striated pardalote		C		389
animals	birds	Passeridae	*Passer domesticus*	house sparrow	Y			79
animals	birds	Pelecanidae	*Pelecanus conspicillatus*	Australian pelican		C		522
animals	birds	Petroicidae	*Eopsaltria australis*	eastern yellow robin		C		391
animals	birds	Petroicidae	*Microeca fascinans*	jacky winter		C		13
animals	birds	Petroicidae	*Petroica rosea*	rose robin		C		74
animals	birds	Petroicidae	*Tregellasia capito*	pale-yellow robin		C		2
animals	birds	Phalacrocoracidae	*Microcarbo melanoleucos*	little pied cormorant		C		413
animals	birds	Phalacrocoracidae	*Phalacrocorax carbo*	great cormorant		C		34
animals	birds	Phalacrocoracidae	*Phalacrocorax sp.*			C		1
animals	birds	Phalacrocoracidae	*Phalacrocorax sulcirostris*	little black cormorant		C		270
animals	birds	Phalacrocoracidae	*Phalacrocorax varius*	pied cormorant		C		173
animals	birds	Phasianidae	*Gallus gallus*	red junglefowl	Y			1
animals	birds	Phasianidae	*Pavo cristatus*	Indian peafowl	Y			8
animals	birds	Phasianidae	*Synoicus ypsilophorus*	brown quail		C		74
animals	birds	Pittidae	*Pitta versicolor*	noisy pitta		C		11
animals	birds	Podargidae	*Podargus strigoides*	tawny frogmouth		C		133
animals	birds	Podicipedidae	*Podiceps cristatus*	great crested grebe		C		4

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Podicipedidae	*Poliocephalus poliocephalus*	hoary-headed grebe		C		5
animals	birds	Podicipedidae	*Tachybaptus novaehollandiae*	Australasian grebe		C		242
animals	birds	Pomatostomidae	*Pomatostomus temporalis*	grey-crowned babbler		C		29
animals	birds	Procellariidae	*Ardenna tenuirostris*	short-tailed shearwater		SL		2/1
animals	birds	Procellariidae	*Pterodroma leucoptera*	Gould's petrel		C		1
animals	birds	Psittacidae	*Alisterus scapularis*	Australian king-parrot		C		74
animals	birds	Psittacidae	*Barnardius zonarius*	Australian ringneck		C		1
animals	birds	Psittacidae	*Glossopsitta concinna*	musk lorikeet		C		1
animals	birds	Psittacidae	*Melopsittacus undulatus*	budgerigar		C		1
animals	birds	Psittacidae	*Parvipsitta pusilla*	little lorikeet		C		63
animals	birds	Psittacidae	*Platycercus adscitus*	pale-headed rosella		C		566
animals	birds	Psittacidae	*Platycercus adscitus palliceps*	pale-headed rosella (southern form)		C		19
animals	birds	Psittacidae	*Platycercus elegans*	crimson rosella		C		10
animals	birds	Psittacidae	*Platycercus eximius*	eastern rosella		C		15
animals	birds	Psittacidae	*Psephotus haematonotus*	red-rumped parrot		C		1
animals	birds	Psittacidae	*Trichoglossus chlorolepidotus*	scaly-breasted lorikeet		C		242
animals	birds	Psittacidae	*Trichoglossus moluccanus*	rainbow lorikeet		C		1235
animals	birds	Psophodidae	*Cinclosoma punctatum*	spotted quail-thrush		C		4
animals	birds	Psophodidae	*Psophodes olivaceus*	eastern whipbird		C		185
animals	birds	Ptilonorhynchidae	*Ptilonorhynchus violaceus*	satin bowerbird		C		1
animals	birds	Ptilonorhynchidae	*Sericulus chrysocephalus*	regent bowerbird		C		3
animals	birds	Rallidae	*Amaurornis moluccana*	pale-vented bush-hen		C		3
animals	birds	Rallidae	*Fulica atra*	Eurasian coot		C		118
animals	birds	Rallidae	*Gallinula tenebrosa*	dusky moorhen		C		290
animals	birds	Rallidae	*Gallirallus philippensis*	buff-banded rail		C		32
animals	birds	Rallidae	*Lewinia pectoralis*	Lewin's rail		C		4
animals	birds	Rallidae	*Porphyrio melanotus*	purple swamphen		C		333
animals	birds	Rallidae	*Porzana fluminea*	Australian spotted crake		C		1
animals	birds	Rallidae	*Zapornia pusilla*	Baillon's crake		C		7
animals	birds	Rallidae	*Zapornia tabuensis*	spotless crake		C		4
animals	birds	Recurvirostridae	*Himantopus himantopus*	black-winged stilt		C		604
animals	birds	Recurvirostridae	*Recurvirostra novaehollandiae*	red-necked avocet		C		10
animals	birds	Rhipiduridae	*Rhipidura albiscapa*	grey fantail		C		563
animals	birds	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail		C		519
animals	birds	Rhipiduridae	*Rhipidura leucophrys leucophrys*	willie wagtail (southern)		C		3
animals	birds	Rhipiduridae	*Rhipidura rufifrons*	rufous fantail		SL		120
animals	birds	Rostratulidae	*Rostratula australis*	Australian painted-snipe		E	E	9
animals	birds	Scolopacidae	*Actitis hypoleucos*	common sandpiper		SL		9
animals	birds	Scolopacidae	*Arenaria interpres*	ruddy turnstone		SL		73
animals	birds	Scolopacidae	*Calidris acuminata*	sharp-tailed sandpiper		SL		192
animals	birds	Scolopacidae	*Calidris alba*	sanderling		SL		2
animals	birds	Scolopacidae	*Calidris canutus*	red knot		E	E	29
animals	birds	Scolopacidae	*Calidris ferruginea*	curlew sandpiper		CR	CE	60
animals	birds	Scolopacidae	*Calidris ruficollis*	red-necked stint		SL		174
animals	birds	Scolopacidae	*Calidris tenuirostris*	great knot		CR	CE	127
animals	birds	Scolopacidae	*Gallinago hardwickii*	Latham's snipe		SL		63

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Scolopacidae	*Limnodromus semipalmatus*	Asian dowitcher		SL		1
animals	birds	Scolopacidae	*Limosa lapponica baueri*	Western Alaskan bar-tailed godwit		V	V	811
animals	birds	Scolopacidae	*Limosa limosa*	black-tailed godwit		SL		21
animals	birds	Scolopacidae	*Numenius madagascariensis*	eastern curlew		E	CE	930
animals	birds	Scolopacidae	*Numenius minutus*	little curlew		SL		4
animals	birds	Scolopacidae	*Numenius phaeopus*	whimbrel		SL		646
animals	birds	Scolopacidae	*Tringa brevipes*	grey-tailed tattler		SL		179
animals	birds	Scolopacidae	*Tringa nebularia*	common greenshank		SL		124
animals	birds	Scolopacidae	*Tringa stagnatilis*	marsh sandpiper		SL		53
animals	birds	Scolopacidae	*Xenus cinereus*	terek sandpiper		SL		82
animals	birds	Strigidae	*Ninox boobook*	southern boobook		C		81
animals	birds	Strigidae	*Ninox connivens*	barking owl		C		3
animals	birds	Strigidae	*Ninox strenua*	powerful owl		V		120
animals	birds	Sturnidae	*Acridotheres tristis*	common myna	Y			164
animals	birds	Sturnidae	*Sturnus vulgaris*	common starling	Y			90
animals	birds	Sulidae	*Morus serrator*	Australasian gannet		C		2
animals	birds	Sulidae	*Sula dactylatra*	masked booby		SL		1
animals	birds	Threskiornithidae	*Platalea flavipes*	yellow-billed spoonbill		C		54
animals	birds	Threskiornithidae	*Platalea regia*	royal spoonbill		C		335
animals	birds	Threskiornithidae	*Plegadis falcinellus*	glossy ibis		SL		111
animals	birds	Threskiornithidae	*Threskiornis molucca*	Australian white ibis		C		1373
animals	birds	Threskiornithidae	*Threskiornis spinicollis*	straw-necked ibis		C		350
animals	birds	Timaliidae	*Zosterops lateralis*	silvereye		C		1951
animals	birds	Timaliidae	*Zosterops lateralis cornwalli*	silvereye (eastern)		C		6
animals	birds	Turdidae	*Zoothera heinei*	russet-tailed thrush		C		2
animals	birds	Turnicidae	*Turnix maculosus*	red-backed button-quail		C		1
animals	birds	Turnicidae	*Turnix pyrrhothorax*	red-chested button-quail		C		1
animals	birds	Turnicidae	*Turnix varius*	painted button-quail		C		8
animals	birds	Tytonidae	*Tyto javanica*	eastern barn owl		C		4
animals	cartilaginous fishes	Carcharhinidae	*Carcharhinus melanopterus*	blacktip reef shark				1
animals	insects	Hesperiidae	*Cephrenes augiades sperthias*	orange palm-dart				1
animals	insects	Hesperiidae	*Cephrenes trichopepla*	yellow palm-dart				2
animals	insects	Hesperiidae	*Hesperilla picta*	painted sedge-skipper				1
animals	insects	Hesperiidae	*Ocybadistes walkeri sothis*	green grass-dart				3
animals	insects	Hesperiidae	*Suniana sunias rectivitta*	wide-brand grass-dart				1
animals	insects	Hesperiidae	*Taractrocera dolon dolon*	river-sand grass-dart				1
animals	insects	Hesperiidae	*Taractrocera ina*	no-brand grass-dart				2
animals	insects	Hesperiidae	*Telicota ancilla ancilla*	greenish darter				1
animals	insects	Libellulidae	*Diplacodes melanopsis*	black-faced percher				1
animals	insects	Libellulidae	*Orthetrum caledonicum*	blue skimmer				1
animals	insects	Libellulidae	*Rhodothemis lieftincki*	red arrow				1
animals	insects	Lycaenidae	*Acrodipsas illidgei*	Illidge's ant-blue		V		66
animals	insects	Lycaenidae	*Candalides absimilis*	common pencilled-blue				2
animals	insects	Lycaenidae	*Hypochrysops apelles apelles*	copper jewel				1
animals	insects	Lycaenidae	*Hypochrysops epicurus*	mangrove jewel				1
animals	insects	Lycaenidae	*Lampides boeticus*	long-tailed pea-blue				2

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animals	insects	Lycaenidae	*Nacaduba berenice berenice*	large purple line-blue				1
animals	insects	Lycaenidae	*Nacaduba biocellata biocellata*	two-spotted line-blue				1
animals	insects	Lycaenidae	*Neolucia agricola agricola*	fringed heath-blue				1
animals	insects	Lycaenidae	*Ogyris amaryllis amaryllis*	satin azure (Bassian subspecies)				1
animals	insects	Lycaenidae	*Prosotas dubiosa dubiosa*	purple line-blue				1
animals	insects	Lycaenidae	*Theclinesthes sulpitius*	samphire blue				1
animals	insects	Lycaenidae	*Zizina otis labradus*	common grass-blue (Australian subspecies)				3
animals	insects	Nymphalidae	*Acraea andromacha andromacha*	glasswing				5
animals	insects	Nymphalidae	*Charaxes sempronius sempronius*	tailed emperor				2
animals	insects	Nymphalidae	*Danaus affinis affinis*	swamp tiger				1
animals	insects	Nymphalidae	*Danaus petilia*	lesser wanderer				5
animals	insects	Nymphalidae	*Danaus plexippus*	monarch	Y			8
animals	insects	Nymphalidae	*Doleschallia bisaltide australis*	leafwing				1
animals	insects	Nymphalidae	*Euploea corinna*	common crow				12
animals	insects	Nymphalidae	*Geitoneura klugii*	marbled xenica				1
animals	insects	Nymphalidae	*Heteronympha merope merope*	common brown				1
animals	insects	Nymphalidae	*Hypocysta adiante adiante*	orange ringlet				1
animals	insects	Nymphalidae	*Hypocysta metirius*	brown ringlet				2
animals	insects	Nymphalidae	*Hypocysta sp.*					1
animals	insects	Nymphalidae	*Hypolimnas bolina nerina*	varied eggfly				4
animals	insects	Nymphalidae	*Junonia villida villida*	meadow argus				2
animals	insects	Nymphalidae	*Melanitis leda bankia*	evening brown				7
animals	insects	Nymphalidae	*Phaedyma shepherdi shepherdi*	white-banded plane (southern subspecies)				1
animals	insects	Nymphalidae	*Tirumala hamata hamata*	blue tiger				2
animals	insects	Nymphalidae	*Vanessa kershawi*	Australian painted lady				3
animals	insects	Papilionidae	*Cressida cressida cressida*	clearwing swallowtail				1
animals	insects	Papilionidae	*Graphium choredon*	blue triangle				3
animals	insects	Papilionidae	*Graphium eurypylus lycaon*	pale triangle				2
animals	insects	Papilionidae	*Ornithoptera richmondia*	Richmond birdwing		V		2
animals	insects	Papilionidae	*Papilio aegeus aegeus*	orchard swallowtail (Australian subspecies)				3
animals	insects	Papilionidae	*Papilio anactus*	dainty swallowtail				1
animals	insects	Papilionidae	*Papilio demoleus sthenelus*	chequered swallowtail				1
animals	insects	Pieridae	*Belenois java teutonia*	caper white				3
animals	insects	Pieridae	*Catopsilia pomona*	lemon migrant				5
animals	insects	Pieridae	*Catopsilia pyranthe crokera*	white migrant				1
animals	insects	Pieridae	*Cepora perimale scyllara*	caper gull (Australian subspecies)				1
animals	insects	Pieridae	*Delias aganippe*	spotted jezebel				1
animals	insects	Pieridae	*Delias argenthona argenthona*	scarlet jezebel				3
animals	insects	Pieridae	*Delias nigrina*	black jezebel				2
animals	insects	Pieridae	*Delias nysa nysa*	yellow-spotted jezebel (Australian subspecies)				1
animals	insects	Pieridae	*Elodina parthia*	striated pearl-white				1
animals	insects	Pieridae	*Eurema hecabe*	large grass-yellow				3

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	insects	Pieridae	*Pieris rapae*	cabbage white	Y			3
animals	malacostracans	Parastacidae	*Cherax depressus*					2
animals	mammals	Acrobatidae	*Acrobates pygmaeus*	feathertail glider		C		10
animals	mammals	Balaenidae	*Eubalaena australis*	southern right whale		C	E	2
animals	mammals	Balaenopteridae	*Megaptera novaeangliae*	humpback whale		C		1
animals	mammals	Bovidae	*Bos taurus*	European cattle	Y			1
animals	mammals	Canidae	*Canis familiaris*	dog	Y			9
animals	mammals	Canidae	*Vulpes vulpes*	red fox	Y			22
animals	mammals	Dasyuridae	*Antechinus flavipes flavipes*	yellow-footed antechinus (south-east Queensland)		C		20
animals	mammals	Dasyuridae	*Antechinus sp.*			C		3
animals	mammals	Dasyuridae	*Phascogale tapoatafa tapoatafa*	brush-tailed phascogale		C		3
animals	mammals	Dasyuridae	*Planigale maculata*	common planigale		C		10
animals	mammals	Dasyuridae	*Sminthopsis murina*	common dunnart		C		13
animals	mammals	Dasyuridae	*Sminthopsis murina murina*	common dunnart (SE mainland)		C		2
animals	mammals	Delphinidae	*Tursiops aduncus*	Indo-Pacific bottlenose dolphin		C		2
animals	mammals	Dugongidae	*Dugong dugon*	dugong		V		6
animals	mammals	Equidae	*Equus caballus*	horse	Y			1
animals	mammals	Felidae	*Felis catus*	cat	Y			10
animals	mammals	Leporidae	*Lepus europaeus*	European brown hare	Y			32
animals	mammals	Leporidae	*Oryctolagus cuniculus*	rabbit	Y			1
animals	mammals	Macropodidae	*Macropus giganteus*	eastern grey kangaroo		C		10
animals	mammals	Macropodidae	*Macropus sp.*			C		6
animals	mammals	Macropodidae	*Notamacropus parryi*	whiptail wallaby		C		5
animals	mammals	Macropodidae	*Notamacropus rufogriseus*	red-necked wallaby		C		68
animals	mammals	Macropodidae	*Thylogale sp.*			C		1
animals	mammals	Macropodidae	*Wallabia bicolor*	swamp wallaby		C		52
animals	mammals	Miniopteridae	*Miniopterus australis*	little bent-wing bat		C		11
animals	mammals	Miniopteridae	*Miniopterus schreibersii oceanensis*	eastern bent-wing bat		C		1
animals	mammals	Molossidae	*Austronomus australis*	white-striped freetail bat		C		27
animals	mammals	Molossidae	*Mormopterus lumsdenae*	northern free-tailed bat		C		3
animals	mammals	Molossidae	*Mormopterus norfolkensis*	east coast freetail bat		C		3
animals	mammals	Molossidae	*Mormopterus ridei*	eastern free-tailed bat		C		4
animals	mammals	Molossidae	*Mormopterus sp.*			C		1
animals	mammals	Muridae	*Hydromys chrysogaster*	water rat		C		16/1
animals	mammals	Muridae	*Melomys cervinipes*	fawn-footed melomys		C		1
animals	mammals	Muridae	*Mus musculus*	house mouse	Y			24
animals	mammals	Muridae	*Rattus fuscipes*	bush rat		C		3
animals	mammals	Muridae	*Rattus lutreolus*	swamp rat		C		8
animals	mammals	Muridae	*Rattus norvegicus*	brown rat	Y			1
animals	mammals	Muridae	*Rattus rattus*	black rat	Y			19
animals	mammals	Ornithorhynchidae	*Ornithorhynchus anatinus*	platypus		SL		6
animals	mammals	Peramelidae	*Isoodon macrourus*	northern brown bandicoot		C		49
animals	mammals	Peramelidae	*Perameles nasuta*	long-nosed bandicoot		C		12
animals	mammals	Petauridae	*Petaurus australis australis*	yellow-bellied glider (southern subspecies)		V	V	2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	mammals	Petauridae	*Petaurus breviceps*	sugar glider		C		3
animals	mammals	Petauridae	*Petaurus breviceps sensu lato*	sugar glider		C		18
animals	mammals	Petauridae	*Petaurus norfolcensis*	squirrel glider		C		25
animals	mammals	Petauridae	*Petaurus sp.*			C		5
animals	mammals	Phalangeridae	*Trichosurus caninus*	short-eared possum		C		10
animals	mammals	Phalangeridae	*Trichosurus vulpecula*	common brushtail possum		C		86
animals	mammals	Phascolarctidae	*Phascolarctos cinereus*	koala		E	E	13080/2
animals	mammals	Pseudocheiridae	*Petauroides armillatus*	central greater glider		E	E	46
animals	mammals	Pseudocheiridae	*Pseudocheirus peregrinus*	common ringtail possum		C		51
animals	mammals	Pteropodidae	*Pteropus alecto*	black flying-fox		C		175
animals	mammals	Pteropodidae	*Pteropus poliocephalus*	grey-headed flying-fox		C	V	123
animals	mammals	Pteropodidae	*Pteropus scapulatus*	little red flying-fox		C		19
animals	mammals	Pteropodidae	*Pteropus sp.*			C		12
animals	mammals	Pteropodidae	*Syconycteris australis*	eastern blossom bat		C		1
animals	mammals	Suidae	*Sus scrofa*	pig	Y			9
animals	mammals	Tachyglossidae	*Tachyglossus aculeatus*	short-beaked echidna		SL		25
animals	mammals	Vespertilionidae	*Chalinolobus gouldii*	Gould's wattled bat		C		8
animals	mammals	Vespertilionidae	*Chalinolobus morio*	chocolate wattled bat		C		6
animals	mammals	Vespertilionidae	*Chalinolobus nigrogriseus*	hoary wattled bat		C		10
animals	mammals	Vespertilionidae	*Myotis macropus*	large-footed myotis		C		3
animals	mammals	Vespertilionidae	*Nyctophilus bifax*	northern long-eared bat		C		2
animals	mammals	Vespertilionidae	*Nyctophilus gouldi*	Gould's long-eared bat		C		2
animals	mammals	Vespertilionidae	*Nyctophilus sp.*			C		4
animals	mammals	Vespertilionidae	*Scoteanax rueppellii*	greater broad-nosed bat		C		1
animals	mammals	Vespertilionidae	*Scotorepens greyii*	little broad-nosed bat		C		10
animals	mammals	Vespertilionidae	*Scotorepens orion*	south-eastern broad-nosed bat		C		3
animals	mammals	Vespertilionidae	*Scotorepens sp.*			C		2
animals	mammals	Vespertilionidae	*Vespadelus darlingtoni*	large forest bat		C		2
animals	mammals	Vespertilionidae	*Vespadelus pumilus*	eastern forest bat		C		1
animals	mammals	Vespertilionidae	*Vespadelus regulus*	southern forest bat		C		1
animals	ray-finned fishes	Ambassidae	*Ambassis agassizii*	Agassiz's glassfish				7
animals	ray-finned fishes	Anguillidae	*Anguilla australis*	southern shortfin eel				85
animals	ray-finned fishes	Anguillidae	*Anguilla reinhardtii*	longfin eel				143
animals	ray-finned fishes	Ariidae	*Neoarius graeffei*	blue catfish				4
animals	ray-finned fishes	Atherinidae	*Craterocephalus stercusmuscarum*	flyspecked hardyhead				18
animals	ray-finned fishes	Cichlidae	*Oreochromis mossambica*	Mozambique mouthbrooder	Y			27
animals	ray-finned fishes	Cobitidae	*Misgurnus anguillicaudatus*	oriental weatherloach	Y			3
animals	ray-finned fishes	Cyprinidae	*Cyprinus carpio*	European carp	Y			14
animals	ray-finned fishes	Eleotridae	*Gobiomorphus australis*	striped gudgeon				91
animals	ray-finned fishes	Eleotridae	*Hypseleotris compressa*	empire gudgeon				133
animals	ray-finned fishes	Eleotridae	*Hypseleotris galii*	firetail gudgeon				176
animals	ray-finned fishes	Eleotridae	*Hypseleotris klunzingeri*	western carp gudgeon				14
animals	ray-finned fishes	Eleotridae	*Mogurnda adspersa*	southern purplespotted gudgeon				11
animals	ray-finned fishes	Hemiramphidae	*Arrhamphus sclerolepis*	snubnose garfish				1
animals	ray-finned fishes	Kuhliidae	*Kuhlia rupestris*	jungle perch				1
animals	ray-finned fishes	Megalopidae	*Megalops cyprinoides*	oxeye herring				1

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animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia duboulayi*	crimsonspotted rainbowfish				54
animals	ray-finned fishes	Melanotaeniidae	*Rhadinocentrus ornatus*	ornate rainbowfish				79
animals	ray-finned fishes	Mugilidae	*Mugil cephalus*	sea mullet				18
animals	ray-finned fishes	Percichthyidae	*Macquaria novemaculeata*	Australian bass				3
animals	ray-finned fishes	Plotosidae	*Tandanus tandanus*	freshwater catfish				31
animals	ray-finned fishes	Poeciliidae	*Gambusia holbrooki*	mosquitofish	Y			180
animals	ray-finned fishes	Poeciliidae	*Xiphophorus hellerii*	swordtail	Y			116
animals	ray-finned fishes	Poeciliidae	*Xiphophorus maculatus*	platy	Y			15
animals	ray-finned fishes	Synbranchidae	*Ophisternon gutturale*	swamp eel				2
animals	ray-finned fishes	Terapontidae	*Leiopotherapon unicolor*	spangled perch				6
animals	reptiles	Agamidae	*Diporiphora australis*	tommy roundhead		C		11
animals	reptiles	Agamidae	*Intellagama lesueurii*	eastern water dragon		C		43
animals	reptiles	Agamidae	*Pogona barbata*	bearded dragon		C		55
animals	reptiles	Boidae	*Morelia spilota*	carpet python		C		86
animals	reptiles	Chelidae	*Chelodina expansa*	broad-shelled river turtle		C		2
animals	reptiles	Chelidae	*Chelodina longicollis*	eastern snake-necked turtle		C		9
animals	reptiles	Chelidae	*Emydura macquarii macquarii*	Murray turtle		C		6
animals	reptiles	Chelidae	*Wollumbinia latisternum*	saw-shelled turtle		C		4
animals	reptiles	Cheloniidae	*Caretta caretta*	loggerhead turtle		E	E	1
animals	reptiles	Cheloniidae	*Chelonia mydas*	green turtle		V	V	5
animals	reptiles	Colubridae	*Boiga irregularis*	brown tree snake		C		18
animals	reptiles	Colubridae	*Dendrelaphis punctulatus*	green tree snake		C		44
animals	reptiles	Colubridae	*Tropidonophis mairii*	freshwater snake		C		11
animals	reptiles	Diplodactylidae	*Diplodactylus vittatus*	wood gecko		C		4
animals	reptiles	Diplodactylidae	*Nebulifera robusta*	robust velvet gecko		C		2
animals	reptiles	Elapidae	*Cacophis harriettae*	white-crowned snake		C		7/1
animals	reptiles	Elapidae	*Cacophis krefftii*	dwarf crowned snake		C		2
animals	reptiles	Elapidae	*Cryptophis nigrescens*	eastern small-eyed snake		C		25/1
animals	reptiles	Elapidae	*Demansia psammophis*	yellow-faced whipsnake		C		27/1
animals	reptiles	Elapidae	*Furina diadema*	red-naped snake		C		2
animals	reptiles	Elapidae	*Hemiaspis signata*	black-bellied swamp snake		C		3
animals	reptiles	Elapidae	*Pseudechis porphyriacus*	red-bellied black snake		C		12/1
animals	reptiles	Elapidae	*Pseudonaja textilis*	eastern brown snake		C		2
animals	reptiles	Elapidae	*Tropidechis carinatus*	rough-scaled snake		C		2
animals	reptiles	Gekkonidae	*Gehyra dubia*	dubious dtella		C		3
animals	reptiles	Gekkonidae	*Hemidactylus frenatus*	house gecko	Y			7
animals	reptiles	Gekkonidae	*Heteronotia binoei*	Bynoe's gecko		C		1
animals	reptiles	Pygopodidae	*Lialis burtonis*	Burton's legless lizard		C		16
animals	reptiles	Scincidae	*Anomalopus verreauxii*	three-clawed worm-skink		C		16/2
animals	reptiles	Scincidae	*Bellatorias frerei*	major skink		C		2
animals	reptiles	Scincidae	*Bellatorias major*	land mullet		C		1
animals	reptiles	Scincidae	*Calyptotis scutirostrum*	scute-snouted calyptotis		C		42
animals	reptiles	Scincidae	*Carlia pectoralis sensu lato*			C		1
animals	reptiles	Scincidae	*Carlia sp.*			C		2/2
animals	reptiles	Scincidae	*Carlia vivax*	tussock rainbow-skink		C		16
animals	reptiles	Scincidae	*Concinnia brachysoma*	northern bar-sided skink		C		2

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animals	reptiles	Scincidae	*Concinnia martini*	dark bar-sided skink		C		7
animals	reptiles	Scincidae	*Concinnia tenuis*	bar-sided skink		C		2
animals	reptiles	Scincidae	*Cryptoblepharus pulcher pulcher*	elegant snake-eyed skink		C		71
animals	reptiles	Scincidae	*Ctenotus arcanus*	arcane ctenotus		C		1
animals	reptiles	Scincidae	*Ctenotus sp.*			C		1
animals	reptiles	Scincidae	*Ctenotus spaldingi*	straight-browed ctenotus		C		15/1
animals	reptiles	Scincidae	*Ctenotus taeniolatus*	copper-tailed skink		C		9
animals	reptiles	Scincidae	*Cyclodomorphus gerrardii*	pink-tongued lizard		C		3
animals	reptiles	Scincidae	*Eulamprus quoyii*	eastern water skink		C		13
animals	reptiles	Scincidae	*Lampropholis amicula*	friendly sunskink		C		17/2
animals	reptiles	Scincidae	*Lampropholis delicata*	dark-flecked garden sunskink		C		62/5
animals	reptiles	Scincidae	*Lygisaurus foliorum*	tree-base litter-skink		C		6/1
animals	reptiles	Scincidae	*Saproscincus challengeri*	orange-tailed shadeskink		C		1
animals	reptiles	Scincidae	*Tiliqua scincoides*	eastern blue-tongued lizard		C		23
animals	reptiles	Typhlopidae	*Anilios nigrescens*	blackish blind snake		C		1
animals	reptiles	Typhlopidae	*Anilios proximus*	proximus blind snake		C		2/2
animals	reptiles	Typhlopidae	*Anilios sp.*			C		1
animals	reptiles	Typhlopidae	*Anilios wiedii*	brown-snouted blind snake		C		1
animals	reptiles	Varanidae	*Varanus varius*	lace monitor		C		37
animals	uncertain	Indeterminate	*Indeterminate*	Unknown or Code Pending				70
chromists	brown algae	Dictyotaceae	*Dictyopteris australis*			C		1/1
chromists	brown algae	Dictyotaceae	*Dictyota acutiloba*			C		1/1
chromists	brown algae	Dictyotaceae	*Dictyota bartayresiana*			C		1/1
chromists	brown algae	Dictyotaceae	*Dictyota dichotoma var. intricata*			C		1/1
chromists	brown algae	Dictyotaceae	*Lobophora variegata*			C		1/1
chromists	brown algae	Dictyotaceae	*Padina gymnospora*			C		1/1
chromists	brown algae	Dictyotaceae	*Zonaria diesingiana*			C		1/1
chromists	brown algae	Sargassaceae	*Cystoseira trinodis*			C		1/1
chromists	brown algae	Scytosiphonaceae	*Hydroclathrus clathratus*			C		1/1
chromists	brown algae	Scytosiphonaceae	*Scytosiphon lomentaria*			C		1/1
chromists	brown algae	Sporochnaceae	*Sporochnus bolleanus*			C		1/1
chromists	brown algae	Sporochnaceae	*Sporochnus comosus*			C		2/2
fungi	Agaricomycetes	Agaricaceae	*Cyathus olla*			C		1/1
fungi	Agaricomycetes	Agaricaceae	*Lepiota*					1/1
fungi	Agaricomycetes	Agaricaceae	*Leucocoprinus*					2/2
fungi	Agaricomycetes	Agaricaceae	*Macrolepiota dolichaula*			C		2/2
fungi	Agaricomycetes	Amanitaceae	*Amanita*			C		7/7
fungi	Agaricomycetes	Amanitaceae	*Amanita albidoides*			C		1/1
fungi	Agaricomycetes	Amanitaceae	*Amanita ochrophylla*			C		1/1
fungi	Agaricomycetes	Amanitaceae	*Amanita pyramidifera*			C		1/1
fungi	Agaricomycetes	Boletaceae	*Austroboletus lacunosus*			C		1/1
fungi	Agaricomycetes	Boletaceae	*Boletellus*					2/2
fungi	Agaricomycetes	Boletaceae	*Boletellus ananiceps*			C		1/1
fungi	Agaricomycetes	Boletaceae	*Boletellus dissiliens*			C		1/1
fungi	Agaricomycetes	Boletaceae	*Boletellus emodensis*			C		1/1
fungi	Agaricomycetes	Boletaceae	*Boletus*					5/5

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fungi	Agaricomycetes	Boletaceae	*Phylloporus*					3/3
fungi	Agaricomycetes	Boletaceae	*Pulveroboletus*					1/1
fungi	Agaricomycetes	Boletaceae	*Strobilomyces*					1/1
fungi	Agaricomycetes	Boletaceae	*Strobilomyces velutipes*			C		2/2
fungi	Agaricomycetes	Boletaceae	*Tylopilus*					13/13
fungi	Agaricomycetes	Boletaceae	*Tylopilus balloui*			C		1/1
fungi	Agaricomycetes	Cortinariaceae	*Cortinarius*					3/3
fungi	Agaricomycetes	Ganodermataceae	*Ganoderma*					1/1
fungi	Agaricomycetes	Gomphaceae	*Ramaria*			C		5/5
fungi	Agaricomycetes	Hydnangiaceae	*Laccaria*					1/1
fungi	Agaricomycetes	Hymenochaetaceae	*Phellinus badius*			C		1/1
fungi	Agaricomycetes	Marasmiaceae	*Armillaria fumosa*			C		5/5
fungi	Agaricomycetes	Panaeolaceae	*Panaeolus antillarum*			C		1/1
fungi	Agaricomycetes	Panaeolaceae	*Panaeolus sphinctrinus*			C		1/1
fungi	Agaricomycetes	Phallaceae	*Aseroe rubra*			C		2/2
fungi	Agaricomycetes	Phallaceae	*Phallus indusiatus*			C		2/2
fungi	Agaricomycetes	Polyporaceae	*Panus*					1/1
fungi	Agaricomycetes	Polyporaceae	*Panus lecomtei*			C		1/1
fungi	Agaricomycetes	Polyporaceae	*Polyporus arcularius*			C		1/1
fungi	Agaricomycetes	Polyporaceae	*Pycnoporus coccineus*			C		1/1
fungi	Agaricomycetes	Polyporaceae	*Pycnoporus sanguineus*			C		1/1
fungi	Agaricomycetes	Russulaceae	*Lactarius*			C		1/1
fungi	Agaricomycetes	Russulaceae	*Russula*			C		4/4
fungi	Agaricomycetes	Sclerodermataceae	*Scleroderma cepa*			C		1/1
fungi	Agaricomycetes	Sclerodermataceae	*Scleroderma verrucosum*			C		1/1
fungi	Agaricomycetes	Strophariaceae	*Alnicola*					1/1
fungi	Agaricomycetes	Strophariaceae	*Psilocybe cubensis*			C		3/3
fungi	Agaricomycetes	Suillaceae	*Suillus cothurnatus*			C		1/1
fungi	Agaricomycetes	Thelephoraceae	*Thelephora congesta*			C		1/1
fungi	Pezizomycetes	Sarcosomataceae	*Plectania campylospora*			C		1/1
fungi	arthoniomycetes	Arthoniaceae	*Arthonia*					3/3
fungi	arthoniomycetes	Arthoniaceae	*Arthothelium*					1/1
fungi	arthoniomycetes	Opegraphaceae	*Dictyographa*					2/2
fungi	arthoniomycetes	Opegraphaceae	*Opegrapha*					2/2
fungi	dothideomycetes	Monoblastiaceae	*Anisomeridium anisolobum*			C		1/1
fungi	eurotiomycetes	Sphinctrinaceae	*Stenocybe*					1/1
fungi	eurotiomycetes	Verrucariaceae	*Polyblastia*					1/1
fungi	lecanoromycetes	Biatorellaceae	*Biatorella*					1/1
fungi	lecanoromycetes	Brigantiaeaceae	*Brigantiaea tricolor*			C		1/1
fungi	lecanoromycetes	Caliciaceae	*Amandinea punctata*			C		1/1
fungi	lecanoromycetes	Caliciaceae	*Baculifera micromera*			C		2/2
fungi	lecanoromycetes	Caliciaceae	*Buellia*					2/2
fungi	lecanoromycetes	Caliciaceae	*Buellia bahiana*			C		1/1
fungi	lecanoromycetes	Caliciaceae	*Buellia curatellae*			C		2/2
fungi	lecanoromycetes	Caliciaceae	*Buellia disciformis*			C		1/1
fungi	lecanoromycetes	Caliciaceae	*Buellia dissa*			C		4/4

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fungi	lecanoromycetes	Caliciaceae	*Buellia gerontoides*			C		2/2
fungi	lecanoromycetes	Caliciaceae	*Buellia parastata*			C		1/1
fungi	lecanoromycetes	Caliciaceae	*Buellia subcallispora*			C		1/1
fungi	lecanoromycetes	Caliciaceae	*Calicium robustellum*			C		2/2
fungi	lecanoromycetes	Caliciaceae	*Dirinaria aegialita*			C		1/1
fungi	lecanoromycetes	Caliciaceae	*Dirinaria applanata*			C		12/12
fungi	lecanoromycetes	Caliciaceae	*Dirinaria confluens*			C		1/1
fungi	lecanoromycetes	Caliciaceae	*Dirinaria picta*			C		1/1
fungi	lecanoromycetes	Caliciaceae	*Dirinaria sekikaica*			C		2/2
fungi	lecanoromycetes	Caliciaceae	*Monerolechia badia*			C		1/1
fungi	lecanoromycetes	Caliciaceae	*Pyxine*					2/2
fungi	lecanoromycetes	Caliciaceae	*Pyxine berteriana*			C		1/1
fungi	lecanoromycetes	Caliciaceae	*Pyxine subcinerea*			C		6/6
fungi	lecanoromycetes	Candelariaceae	*Candelaria concolor*			C		2/2
fungi	lecanoromycetes	Cladoniaceae	*Cladia muelleri*			C		1/1
fungi	lecanoromycetes	Cladoniaceae	*Cladonia*					1/1
fungi	lecanoromycetes	Cladoniaceae	*Cladonia floerkeana*			C		3/3
fungi	lecanoromycetes	Cladoniaceae	*Cladonia macilenta*			C		1/1
fungi	lecanoromycetes	Cladoniaceae	*Cladonia rigida var. rigida*			C		2/2
fungi	lecanoromycetes	Coccocarpiaceae	*Coccocarpia erythroxyli*			C		10/10
fungi	lecanoromycetes	Collemataceae	*Collema*					1/1
fungi	lecanoromycetes	Collemataceae	*Collema glaucophthalmum*			C		3/3
fungi	lecanoromycetes	Collemataceae	*Collema laeve*			C		2/2
fungi	lecanoromycetes	Collemataceae	*Collema rugosum*			C		3/3
fungi	lecanoromycetes	Collemataceae	*Leptogium austroamericanum*			C		1/1
fungi	lecanoromycetes	Collemataceae	*Leptogium coralloideum*			C		1/1
fungi	lecanoromycetes	Collemataceae	*Leptogium cyanescens*			C		1/1
fungi	lecanoromycetes	Graphidaceae	*Graphis librata*			C		1/1
fungi	lecanoromycetes	Graphidaceae	*Halegrapha mucronata*			C		1/1
fungi	lecanoromycetes	Graphidaceae	*Thelotrema*					1/1
fungi	lecanoromycetes	Haematommataceae	*Haematomma persoonii*			C		5/5
fungi	lecanoromycetes	Lecanoraceae	*Lecanora*					1/1
fungi	lecanoromycetes	Lecanoraceae	*Lecanora achroa*			C		1/1
fungi	lecanoromycetes	Lecanoraceae	*Lecanora arthothelinella*			C		1/1
fungi	lecanoromycetes	Lecanoraceae	*Lecanora austrotropica*			C		3/3
fungi	lecanoromycetes	Lecanoraceae	*Lecanora caesiorubella*			C		3/3
fungi	lecanoromycetes	Lecanoraceae	*Lecanora helva*			C		8/8
fungi	lecanoromycetes	Lecanoraceae	*Lecanora subumbrina*			C		1/1
fungi	lecanoromycetes	Lecanoraceae	*Lecanora tropica*			C		1/1
fungi	lecanoromycetes	Lecanoraceae	*Maronina australiensis*			C		2/2
fungi	lecanoromycetes	Letrouitiaceae	*Letrouitia flavocrocea*			C		1/1
fungi	lecanoromycetes	Ochrolechiaceae	*Ochrolechia*					5/5
fungi	lecanoromycetes	Ochrolechiaceae	*Ochrolechia subpallescens*			C		5/5
fungi	lecanoromycetes	Pannariaceae	*Pannaria lurida*			C		2/2
fungi	lecanoromycetes	Pannariaceae	*Pannaria reflectens*			C		1/1
fungi	lecanoromycetes	Pannariaceae	*Parmeliella mariana*			C		1/1

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fungi	lecanoromycetes	Pannariaceae	*Physma*					6/6
fungi	lecanoromycetes	Pannariaceae	*Physma byrsaeum*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Austroparmelina conlabrosa*			C		5/5
fungi	lecanoromycetes	Parmeliaceae	*Bulbothrix goebelii*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Bulbothrix queenslandica*			C		6/6
fungi	lecanoromycetes	Parmeliaceae	*Bulbothrix tabacina*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Canoparmelia texana*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Flavoparmelia euplecta*			C		3/3
fungi	lecanoromycetes	Parmeliaceae	*Hypotrachyna immaculata*			C		4/4
fungi	lecanoromycetes	Parmeliaceae	*Myelochroa aurulenta*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Notoparmelia erumpens*			C		4/4
fungi	lecanoromycetes	Parmeliaceae	*Notoparmelia tenuirima*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Parmelia*					1/1
fungi	lecanoromycetes	Parmeliaceae	*Parmotrema austrosinense*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Parmotrema crinitum*			C		6/6
fungi	lecanoromycetes	Parmeliaceae	*Parmotrema cristiferum*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Parmotrema judithae*			C		3/3
fungi	lecanoromycetes	Parmeliaceae	*Parmotrema norsticticatum*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Parmotrema parahypotropum*			C		5/5
fungi	lecanoromycetes	Parmeliaceae	*Parmotrema reticulatum*			C		6/6
fungi	lecanoromycetes	Parmeliaceae	*Parmotrema robustum*			C		9/9
fungi	lecanoromycetes	Parmeliaceae	*Parmotrema saccatilobum*			C		2/2
fungi	lecanoromycetes	Parmeliaceae	*Parmotrema subtinctorium*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Parmotrema tinctorum*			C		8/8
fungi	lecanoromycetes	Parmeliaceae	*Punctelia pseudocoralloidea*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Relicina*					1/1
fungi	lecanoromycetes	Parmeliaceae	*Relicina sydneyensis*			C		12/12
fungi	lecanoromycetes	Parmeliaceae	*Usnea baileyi*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Usnea dasaea*			C		4/4
fungi	lecanoromycetes	Parmeliaceae	*Usnea nidifica*			C		1/1
fungi	lecanoromycetes	Parmeliaceae	*Usnea ramulosissima*			C		2/2
fungi	lecanoromycetes	Pertusariaceae	*Pertusaria*					4/4
fungi	lecanoromycetes	Pertusariaceae	*Pertusaria thiospoda*			C		4/4
fungi	lecanoromycetes	Pertusariaceae	*Pertusaria undulata*			C		1/1
fungi	lecanoromycetes	Physciaceae	*Heterodermia*					1/1
fungi	lecanoromycetes	Physciaceae	*Heterodermia pseudospeciosa*			C		1/1
fungi	lecanoromycetes	Physciaceae	*Heterodermia speciosa*			C		4/4
fungi	lecanoromycetes	Physciaceae	*Hyperphyscia adglutinata*			C		1/1
fungi	lecanoromycetes	Physciaceae	*Phaeophyscia hispidula*			C		1/1
fungi	lecanoromycetes	Physciaceae	*Physcia poncinsii*			C		1/1
fungi	lecanoromycetes	Porinaceae	*Porina*					1/1
fungi	lecanoromycetes	Ramalinaceae	*Bacidia multiseptata*			C		1/1
fungi	lecanoromycetes	Ramalinaceae	*Phyllopsora*					1/1
fungi	lecanoromycetes	Ramalinaceae	*Ramalina*					4/4
fungi	lecanoromycetes	Ramalinaceae	*Ramalina confirmata*			C		5/5
fungi	lecanoromycetes	Ramalinaceae	*Ramalina exiguella*			C		3/3

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fungi	lecanoromycetes	Ramalinaceae	*Ramalina inflata subsp. perpusilla*			C		8/8
fungi	lecanoromycetes	Ramalinaceae	*Ramalina leiodea*			C		1/1
fungi	lecanoromycetes	Ramalinaceae	*Ramalina pacifica*			C		2/2
fungi	lecanoromycetes	Ramalinaceae	*Ramalina peruviana*			C		2/2
fungi	lecanoromycetes	Ramboldiaceae	*Ramboldia haematites*			C		1/1
fungi	lecanoromycetes	Teloschistaceae	*Caloplaca bassiae*			C		3/3
fungi	lecanoromycetes	Teloschistaceae	*Teloschistes flavicans*			C		2/2
fungi	lecanoromycetes	Teloschistaceae	*Teloschistes spinosus*			C		1/1
fungi	lecanoromycetes	Tephromelataceae	*Tephromela atra*			C		2/2
fungi	uncertain	Incertae sedis Fungi	*Malcolmiella*					2/2
plants	Charophyceae	Characeae	*Nitella flexilis*			C		1/1
plants	Florideophyceae	Acrochaetiaceae	*Audouinella microscopica*			C		1/1
plants	Florideophyceae	Cystocloniaceae	*Hypnea spinella*			C		1/1
plants	Florideophyceae	Dasyaceae	*Heterosiphonia crispella*			C		1/1
plants	Florideophyceae	Gracilariaceae	*Gracilaria textorii*			C		1/1
plants	Florideophyceae	Rhodomelaceae	*Acanthophora*					1/1
plants	Florideophyceae	Rhodomelaceae	*Bostrychia moritziana*			C		1/1
plants	Florideophyceae	Rhodomelaceae	*Chondria*					1/1
plants	Florideophyceae	Rhodomelaceae	*Laurencia*					1/1
plants	Ulvophyceae	Boodleaceae	*Cladophoropsis vaucheriiformis*			C		1/1
plants	Ulvophyceae	Caulerpaceae	*Caulerpa racemosa*			C		1/1
plants	Ulvophyceae	Caulerpaceae	*Caulerpa racemosa var. laetevirens*			C		2/2
plants	Ulvophyceae	Caulerpaceae	*Caulerpa taxifolia*			C		4/4
plants	Ulvophyceae	Codiaceae	*Codium*					1/1
plants	Ulvophyceae	Codiaceae	*Codium duthiae*			C		1/1
plants	Ulvophyceae	Codiaceae	*Codium platyclados*			C		1/1
plants	Ulvophyceae	Udoteaceae	*Udotea argentea*			C		2/2
plants	land plants	Acanthaceae	*Avicennia marina subsp. australasica*			C		1/1
plants	land plants	Acanthaceae	*Brunoniella australis*	blue trumpet		C		1/1
plants	land plants	Acanthaceae	*Dyschoriste depressa*		Y			1
plants	land plants	Acanthaceae	*Hygrophila angustifolia*			C		1/1
plants	land plants	Acanthaceae	*Justicia betonica*		Y			1/1
plants	land plants	Acanthaceae	*Pseuderanthemum variabile*	pastel flower		C		7/3
plants	land plants	Acanthaceae	*Rostellularia obtusa*			C		2/2
plants	land plants	Acanthaceae	*Ruellia squarrosa*		Y			1/1
plants	land plants	Acanthaceae	*Thunbergia fragrans*		Y			1/1
plants	land plants	Aizoaceae	*Tetragonia tetragonoides*	New Zealand spinach		C		1/1
plants	land plants	Amaranthaceae	*Alternanthera denticulata*	lesser joyweed		C		3/2
plants	land plants	Amaranthaceae	*Alternanthera nana*	hairy joyweed		C		1/1
plants	land plants	Amaranthaceae	*Amaranthus viridis*	green amaranth	Y			1/1
plants	land plants	Amaranthaceae	*Gomphrena celosioides*	gomphrena weed	Y			2/2
plants	land plants	Amaryllidaceae	*Crinum pedunculatum*	river lily		SL		2
plants	land plants	Anacardiaceae	*Euroschinus falcatus var. falcatus*			C		1/1
plants	land plants	Anacardiaceae	*Mangifera indica*	mango	Y			1/1
plants	land plants	Anacardiaceae	*Schinus terebinthifolius*		Y			2/1
plants	land plants	Anthericaceae	*Chlorophytum comosum*		Y			1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Aphanopetalaceae	*Aphanopetalum resinosum*	gumvine		C		1/1
plants	land plants	Apiaceae	*Centella asiatica*			C		4/3
plants	land plants	Apiaceae	*Cyclospermum leptophyllum*		Y			1/1
plants	land plants	Apiaceae	*Platysace ericoides*	heath platysace		C		5/5
plants	land plants	Apocynaceae	*Alyxia ruscifolia*			C		3/1
plants	land plants	Apocynaceae	*Asclepias curassavica*	red-head cottonbush	Y			1/1
plants	land plants	Apocynaceae	*Carissa ovata*	currantbush		C		1/1
plants	land plants	Apocynaceae	*Cascabela thevetia*	yellow oleander	Y			1/1
plants	land plants	Apocynaceae	*Catharanthus roseus*	pink periwinkle	Y			2/2
plants	land plants	Apocynaceae	*Gomphocarpus physocarpus*	balloon cottonbush	Y			3/2
plants	land plants	Apocynaceae	*Leichhardtia coronata*			V		20/1
plants	land plants	Apocynaceae	*Leichhardtia longiloba*			V	V	7/1
plants	land plants	Apocynaceae	*Parsonsia brisbanensis*	broad-leaved monkey vine		C		2/2
plants	land plants	Apocynaceae	*Parsonsia straminea*	monkey rope		C		7/3
plants	land plants	Apocynaceae	*Vincetoxicum carnosum*			C		2/2
plants	land plants	Apocynaceae	*Vincetoxicum paniculatum*			C		1/1
plants	land plants	Araceae	*Gymnostachys anceps*	settler's flax		C		2/1
plants	land plants	Araceae	*Monstera deliciosa*		Y			1/1
plants	land plants	Araceae	*Syngonium podophyllum*		Y			1/1
plants	land plants	Araliaceae	*Astrotricha latifolia*			C		3/3
plants	land plants	Araliaceae	*Astrotricha umbrosa*			C		1/1
plants	land plants	Araliaceae	*Heptapleurum actinophyllum*			C		4/2
plants	land plants	Araliaceae	*Hydrocotyle acutiloba*			C		1/1
plants	land plants	Araliaceae	*Hydrocotyle laxiflora*	stinking pennywort		C		1/1
plants	land plants	Araliaceae	*Hydrocotyle paludosa*			C		1/1
plants	land plants	Araliaceae	*Hydrocotyle verticillata*	shield pennywort		C		2/2
plants	land plants	Araliaceae	*Polyscias elegans*	celery wood		C		3/1
plants	land plants	Araliaceae	*Trachymene incisa subsp. incisa*			C		3/3
plants	land plants	Arecaceae	*Syagrus romanzoffiana*	Queen palm	Y			1
plants	land plants	Aristolochiaceae	*Aristolochia meridionalis subsp. meridionalis*			C		1/1
plants	land plants	Asparagaceae	*Asparagus aethiopicus*	ground asparagus	Y			3/2
plants	land plants	Asparagaceae	*Asparagus macowanii*		Y			1/1
plants	land plants	Asparagaceae	*Asparagus officinalis*	asparagus	Y			1/1
plants	land plants	Asparagaceae	*Asparagus plumosus*	feathered asparagus fern	Y			3/2
plants	land plants	Asteraceae	*Acmella grandiflora var. brachyglossa*			C		2/2
plants	land plants	Asteraceae	*Ageratina adenophora*	crofton weed	Y			3/3
plants	land plants	Asteraceae	*Ageratum conyzoides*	billygoat weed	Y			1/1
plants	land plants	Asteraceae	*Ageratum houstonianum*	blue billygoat weed	Y			5/3
plants	land plants	Asteraceae	*Ambrosia artemisiifolia*	annual ragweed	Y			1/1
plants	land plants	Asteraceae	*Apowollastonia spilanthoides*			C		1/1
plants	land plants	Asteraceae	*Baccharis halimifolia*	groundsel bush	Y			30/2
plants	land plants	Asteraceae	*Calyptocarpus vialis*	creeping cinderella weed	Y			2/2
plants	land plants	Asteraceae	*Cassinia laevis subsp. rosmarinifolia*			C		1/1
plants	land plants	Asteraceae	*Centipeda minima subsp. minima*			C		1/1
plants	land plants	Asteraceae	*Centratherum punctatum*		Y			2/2
plants	land plants	Asteraceae	*Centratherum riparium*			C		1/1

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plants	land plants	Asteraceae	*Chrysanthemoides monilifera subsp. rotundata*	bitou bush	Y			1/1
plants	land plants	Asteraceae	*Chrysocephalum apiculatum*	yellow buttons		C		2/2
plants	land plants	Asteraceae	*Cirsium vulgare*	spear thistle	Y			3/2
plants	land plants	Asteraceae	*Coreopsis lanceolata*		Y			1/1
plants	land plants	Asteraceae	*Cotula australis*	common cotula		C		1
plants	land plants	Asteraceae	*Crassocephalum crepidioides*	thickhead	Y			2/2
plants	land plants	Asteraceae	*Cyanthillium cinereum*			C		3/3
plants	land plants	Asteraceae	*Eclipta prostrata*	white eclipta	Y			1/1
plants	land plants	Asteraceae	*Emilia sonchifolia*		Y			1
plants	land plants	Asteraceae	*Emilia sonchifolia var. javanica*		Y			2/2
plants	land plants	Asteraceae	*Enydra woollsii*			C		3/3
plants	land plants	Asteraceae	*Erechtites valerianifolius*		Y			1/1
plants	land plants	Asteraceae	*Erigeron bonariensis*		Y			2/2
plants	land plants	Asteraceae	*Erigeron canadensis*		Y			1/1
plants	land plants	Asteraceae	*Erigeron sumatrensis*		Y			3/3
plants	land plants	Asteraceae	*Euchiton involucratus*			C		1/1
plants	land plants	Asteraceae	*Galinsoga parviflora*	yellow weed	Y			2/2
plants	land plants	Asteraceae	*Gamochaeta americana*		Y			1/1
plants	land plants	Asteraceae	*Gamochaeta pensylvanica*		Y			1/1
plants	land plants	Asteraceae	*Gazania rigens*		Y			1/1
plants	land plants	Asteraceae	*Glossocardia bidens*	native cobbler's pegs		C		1/1
plants	land plants	Asteraceae	*Gymnocoronis spilanthoides*		Y			3/3
plants	land plants	Asteraceae	*Hypochaeris albiflora*		Y			2/2
plants	land plants	Asteraceae	*Hypochaeris radicata*	catsear	Y			3/3
plants	land plants	Asteraceae	*Lagenophora sublyrata*			C		1/1
plants	land plants	Asteraceae	*Olearia nernstii*	Ipswich daisy		C		3/3
plants	land plants	Asteraceae	*Ozothamnus diosmifolius*	white dogwood		C		2/2
plants	land plants	Asteraceae	*Parthenium hysterophorus*	parthenium weed	Y			1/1
plants	land plants	Asteraceae	*Picris angustifolia subsp. carolorum-henricorum*			C		3/3
plants	land plants	Asteraceae	*Pseudognaphalium luteoalbum*	Jersey cudweed		C		1/1
plants	land plants	Asteraceae	*Senecio madagascariensis*	fireweed	Y			13/1
plants	land plants	Asteraceae	*Senecio pinnatifolius var. pinnatifolius*			C		1/1
plants	land plants	Asteraceae	*Senecio vulgaris*	common groundsel	Y			1
plants	land plants	Asteraceae	*Sigesbeckia orientalis*	Indian weed		C		1/1
plants	land plants	Asteraceae	*Soliva anthemifolia*	dwarf jo jo weed	Y			1/1
plants	land plants	Asteraceae	*Soliva sessilis*		Y			1/1
plants	land plants	Asteraceae	*Sonchus asper*	rough sowthistle	Y			1/1
plants	land plants	Asteraceae	*Sonchus oleraceus*	common sowthistle	Y			4/4
plants	land plants	Asteraceae	*Sphaeromorphaea australis*			C		4/4
plants	land plants	Asteraceae	*Sphagneticola trilobata*		Y			3/1
plants	land plants	Asteraceae	*Symphyotrichum subulatum*		Y			2/2
plants	land plants	Asteraceae	*Tagetes minuta*	stinking roger	Y			1/1
plants	land plants	Asteraceae	*Thymophylla tenuiloba*		Y			1/1
plants	land plants	Asteraceae	*Vittadinia sulcata*	native daisy		C		1/1
plants	land plants	Asteraceae	*Wollastonia uniflora*			C		1/1
plants	land plants	Aulacomniaceae	*Mesochaete undulata*			C		1/1

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plants	land plants	Balsaminaceae	*Impatiens walleriana*	balsam	Y			1/1
plants	land plants	Bignoniaceae	*Dolichandra unguis-cati*	cat's claw creeper	Y			2/1
plants	land plants	Bignoniaceae	*Jacaranda mimosifolia*	jacaranda	Y			1/1
plants	land plants	Bignoniaceae	*Pandorea floribunda*			C		1/1
plants	land plants	Bignoniaceae	*Pandorea pandorana*	wonga vine		C		2
plants	land plants	Bignoniaceae	*Saritaea magnifica*		Y			1/1
plants	land plants	Blechnaceae	*Blechnum cartilagineum*	gristle fern		C		1/1
plants	land plants	Blechnaceae	*Blechnum neohollandicum*			C		2/1
plants	land plants	Blechnaceae	*Telmatoblechnum indicum*			SL		1
plants	land plants	Boraginaceae	*Heliotropium amplexicaule*	blue heliotrope	Y			1/1
plants	land plants	Brassicaceae	*Capsella bursa-pastoris*	shepherd's purse	Y			1/1
plants	land plants	Brassicaceae	*Cardamine flexuosa*	wood bittercress	Y			2/2
plants	land plants	Brassicaceae	*Lepidium bonariense*	Argentine peppercress	Y			1/1
plants	land plants	Brassicaceae	*Lepidium didymum*		Y			3/3
plants	land plants	Brassicaceae	*Lepidium virginicum*	Virginian peppercress	Y			2/2
plants	land plants	Brassicaceae	*Sisymbrium orientale*	Indian hedge mustard	Y			1/1
plants	land plants	Byttneriaceae	*Commersonia bartramia*	brown kurrajong		C		1/1
plants	land plants	Byttneriaceae	*Commersonia dasyphylla*			C		2/2
plants	land plants	Byttneriaceae	*Seringia arborescens*			C		2/2
plants	land plants	Cabombaceae	*Cabomba caroliniana var. caroliniana*	cabomba	Y			1/1
plants	land plants	Cactaceae	*Opuntia monacantha*		Y			1/1
plants	land plants	Calceolariaceae	*Calceolaria tripartita*	lady's slipper	Y			1/1
plants	land plants	Campanulaceae	*Lobelia anceps*			SL		1/1
plants	land plants	Campanulaceae	*Lobelia browniana*			SL		1/1
plants	land plants	Campanulaceae	*Lobelia gibbosa*	native lobelia		SL		3/3
plants	land plants	Campanulaceae	*Lobelia purpurascens*	white root		SL		2/1
plants	land plants	Campanulaceae	*Lobelia stenophylla*			SL		2/2
plants	land plants	Campanulaceae	*Wahlenbergia capillaris*			SL		1/1
plants	land plants	Campanulaceae	*Wahlenbergia gracilis*	sprawling bluebell		SL		2/2
plants	land plants	Cannabaceae	*Celtis sinensis*	Chinese elm	Y			1/1
plants	land plants	Cannabaceae	*Trema tomentosa*			C		1/1
plants	land plants	Cannaceae	*Canna indica*	Indian shot	Y			1/1
plants	land plants	Capparaceae	*Capparis arborea*	brush caper berry		C		1/1
plants	land plants	Capparaceae	*Capparis sarmentosa*	scrambling caper		C		2/1
plants	land plants	Carpodetaceae	*Abrophyllum ornans*			C		1/1
plants	land plants	Caryophyllaceae	*Cerastium glomeratum*	mouse ear chickweed	Y			2/2
plants	land plants	Caryophyllaceae	*Sagina procumbens*	spreading pearlwort	Y			1/1
plants	land plants	Caryophyllaceae	*Spergularia marina*			C		2/2
plants	land plants	Caryophyllaceae	*Stellaria media*	chickweed	Y			2/2
plants	land plants	Casuarinaceae	*Allocasuarina littoralis*			C		5/4
plants	land plants	Casuarinaceae	*Allocasuarina torulosa*			C		3/1
plants	land plants	Casuarinaceae	*Casuarina cunninghamiana*			C		1
plants	land plants	Casuarinaceae	*Casuarina glauca*	swamp she-oak		C		2/2
plants	land plants	Celastraceae	*Celastrus subspicata*	large-leaved staffvine		C		1/1
plants	land plants	Celastraceae	*Denhamia celastroides*	broad-leaved boxwood		C		2/2
plants	land plants	Celastraceae	*Elaeodendron australe var. australe*			C		1/1

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plants	land plants	Celastraceae	*Elaeodendron melanocarpum*			C		1/1
plants	land plants	Celastraceae	*Hippocratea barbata*	knotvine		C		1
plants	land plants	Chenopodiaceae	*Chenopodium album*	fat-hen	Y			1/1
plants	land plants	Chenopodiaceae	*Dysphania carinata*			C		1/1
plants	land plants	Chenopodiaceae	*Einadia hastata*			C		3/3
plants	land plants	Chenopodiaceae	*Einadia nutans*			C		1
plants	land plants	Chenopodiaceae	*Suaeda australis*			C		2/2
plants	land plants	Chenopodiaceae	*Tecticornia pergranulata subsp. queenslandica*			C		2/2
plants	land plants	Colchicaceae	*Tripladenia cunninghamii*			C		2/2
plants	land plants	Commelinaceae	*Aneilema acuminatum*			C		1/1
plants	land plants	Commelinaceae	*Callisia repens*		Y			2/2
plants	land plants	Commelinaceae	*Commelina diffusa*	wandering jew		C		5/5
plants	land plants	Commelinaceae	*Murdannia graminea*	murdannia		C		1/1
plants	land plants	Commelinaceae	*Tradescantia fluminensis*		Y			1/1
plants	land plants	Commelinaceae	*Tradescantia zebrina*		Y			2/2
plants	land plants	Convolvulaceae	*Ipomoea batatas*	sweet potato	Y			1/1
plants	land plants	Convolvulaceae	*Ipomoea cairica*		Y			6/1
plants	land plants	Convolvulaceae	*Ipomoea indica*	blue morning-glory	Y			2/2
plants	land plants	Convolvulaceae	*Polymeria calycina*	pink bindweed		C		2/2
plants	land plants	Crassulaceae	*Bryophyllum delagoense*		Y			1
plants	land plants	Crassulaceae	*Bryophyllum fedtschenkoi*		Y			1/1
plants	land plants	Crassulaceae	*Bryophyllum proliferum*		Y			1/1
plants	land plants	Crassulaceae	*Bryophyllum x houghtonii*		Y			1
plants	land plants	Cucurbitaceae	*Trichosanthes subvelutina*	silky cucumber		C		1/1
plants	land plants	Cunoniaceae	*Schizomeria ovata*	white cherry		C		1/1
plants	land plants	Cupressaceae	*Callitris columellaris*			C		1/1
plants	land plants	Cupressaceae	*Callitris rhomboidea*	dune cypress pine		C		1/1
plants	land plants	Cyperaceae	*Abildgaardia ovata*			C		1/1
plants	land plants	Cyperaceae	*Bolboschoenus caldwellii*			C		1/1
plants	land plants	Cyperaceae	*Carex gaudichaudiana*			C		1
plants	land plants	Cyperaceae	*Carex maculata*			C		1/1
plants	land plants	Cyperaceae	*Chorizandra cymbaria*			C		3/3
plants	land plants	Cyperaceae	*Cladium procerum*	leafy twigrush		C		2/1
plants	land plants	Cyperaceae	*Cyperus*					1
plants	land plants	Cyperaceae	*Cyperus albostriatus*		Y			1/1
plants	land plants	Cyperaceae	*Cyperus aquatilis*			C		3/2
plants	land plants	Cyperaceae	*Cyperus bowmanni*			C		1/1
plants	land plants	Cyperaceae	*Cyperus brevifolius*	Mullumbimby couch	Y			2/2
plants	land plants	Cyperaceae	*Cyperus difformis*	rice sedge		C		1/1
plants	land plants	Cyperaceae	*Cyperus enervis*			C		2/2
plants	land plants	Cyperaceae	*Cyperus eragrostis*		Y			1/1
plants	land plants	Cyperaceae	*Cyperus exaltatus*	tall flatsedge		C		2/2
plants	land plants	Cyperaceae	*Cyperus haspan subsp. haspan*			C		1/1
plants	land plants	Cyperaceae	*Cyperus haspan subsp. juncoides*			C		1/1
plants	land plants	Cyperaceae	*Cyperus iria*			C		1/1
plants	land plants	Cyperaceae	*Cyperus laevis*			C		2/2

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plants	land plants	Cyperaceae	*Cyperus lucidus*			C		1/1
plants	land plants	Cyperaceae	*Cyperus pilosus*			C		3/3
plants	land plants	Cyperaceae	*Cyperus platystylis*			C		1/1
plants	land plants	Cyperaceae	*Cyperus polystachyos var. polystachyos*			C		3/3
plants	land plants	Cyperaceae	*Cyperus scaber*			C		1/1
plants	land plants	Cyperaceae	*Cyperus tetraphyllus*			C		2/2
plants	land plants	Cyperaceae	*Cyperus trinervis*			C		2/2
plants	land plants	Cyperaceae	*Eleocharis atricha*	tuber spikerush		C		1/1
plants	land plants	Cyperaceae	*Eleocharis cylindrostachys*			C		1/1
plants	land plants	Cyperaceae	*Eleocharis equisetina*			C		3/3
plants	land plants	Cyperaceae	*Eleocharis minuta*		Y			1/1
plants	land plants	Cyperaceae	*Fimbristylis cinnamometorum*			C		1/1
plants	land plants	Cyperaceae	*Fimbristylis dichotoma*	common fringe-rush		C		4/3
plants	land plants	Cyperaceae	*Fimbristylis ferruginea*			C		4/4
plants	land plants	Cyperaceae	*Fimbristylis polytrichoides*			C		2/2
plants	land plants	Cyperaceae	*Fimbristylis tristachya*			C		1/1
plants	land plants	Cyperaceae	*Fimbristylis velata*			C		1/1
plants	land plants	Cyperaceae	*Fuirena ciliaris*			C		3/3
plants	land plants	Cyperaceae	*Gahnia aspera*			C		4/1
plants	land plants	Cyperaceae	*Gahnia clarkei*	tall sawsedge		C		2/2
plants	land plants	Cyperaceae	*Isolepis cernua*	nodding club rush		C		1/1
plants	land plants	Cyperaceae	*Isolepis inundata*	swamp club rush		C		2/2
plants	land plants	Cyperaceae	*Lepidosperma laterale*			C		7/5
plants	land plants	Cyperaceae	*Lepironia articulata*			C		4/4
plants	land plants	Cyperaceae	*Machaerina articulata*			C		4/4
plants	land plants	Cyperaceae	*Machaerina juncea*			C		1/1
plants	land plants	Cyperaceae	*Machaerina rubiginosa*			C		1/1
plants	land plants	Cyperaceae	*Machaerina teretifolia*			C		1/1
plants	land plants	Cyperaceae	*Ptilothrix deusta*			C		1/1
plants	land plants	Cyperaceae	*Rhynchospora brownii*	beak rush		C		2/2
plants	land plants	Cyperaceae	*Schoenoplectiella erecta*		Y			1/1
plants	land plants	Cyperaceae	*Schoenus apogon var. apogon*			C		2/2
plants	land plants	Cyperaceae	*Schoenus yarrabensis*			C		1/1
plants	land plants	Cyperaceae	*Scleria levis*			C		2/2
plants	land plants	Cyperaceae	*Scleria mackaviensis*			C		3/2
plants	land plants	Cyperaceae	*Scleria rugosa*			C		1/1
plants	land plants	Cyperaceae	*Scleria tricuspidata*			C		1/1
plants	land plants	Davalliaceae	*Davallia pyxidata*			C		1/1
plants	land plants	Dennstaedtiaceae	*Histiopteris incisa*	bats-wing fern		C		1/1
plants	land plants	Dennstaedtiaceae	*Hypolepis muelleri*	swamp bracken		C		1/1
plants	land plants	Dennstaedtiaceae	*Pteridium esculentum*	common bracken		C		2
plants	land plants	Dicksoniaceae	*Calochlaena dubia*			C		3/2
plants	land plants	Dicranaceae	*Dicranoloma dicarpum*			C		1/1
plants	land plants	Dicranaceae	*Sclerodontium clavinerve*			C		1/1
plants	land plants	Dilleniaceae	*Hibbertia aspera subsp. aspera*			C		1/1
plants	land plants	Dilleniaceae	*Hibbertia linearis var. obtusifolia*			C		1/1

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plants	land plants	Dilleniaceae	*Hibbertia stricta*			C		2/2
plants	land plants	Dilleniaceae	*Hibbertia stricta var. stricta*			C		1/1
plants	land plants	Dilleniaceae	*Hibbertia vestita*			C		4/3
plants	land plants	Dioscoreaceae	*Dioscorea transversa*	native yam		C		1/1
plants	land plants	Dracaenaceae	*Dracaena fragrans*		Y			1/1
plants	land plants	Droseraceae	*Drosera lunata*			SL		2/2
plants	land plants	Droseraceae	*Drosera spatulata var. spatulata*			SL		3/3
plants	land plants	Dryopteridaceae	*Arachniodes aristata*	prickly shield fern		SL		1/1
plants	land plants	Dryopteridaceae	*Lastreopsis*					1/1
plants	land plants	Dryopteridaceae	*Lastreopsis decomposita*	trim shield fern		SL		1/1
plants	land plants	Elaeocarpaceae	*Elaeocarpus obovatus*	blueberry ash		C		1
plants	land plants	Elaeocarpaceae	*Elaeocarpus obovatus subsp. obovatus*			C		2/2
plants	land plants	Elaeocarpaceae	*Tetratheca thymifolia*			C		1/1
plants	land plants	Ericaceae	*Acrotriche aggregata*	red cluster heath		C		4/4
plants	land plants	Ericaceae	*Agiortia pedicellata*			C		1/1
plants	land plants	Ericaceae	*Melichrus procumbens*	jam tarts		C		1/1
plants	land plants	Ericaceae	*Monotoca scoparia*	prickly broom heath		C		2/2
plants	land plants	Ericaceae	*Styphelia biflora*			C		1/1
plants	land plants	Ericaceae	*Styphelia sieberi*			C		2/1
plants	land plants	Ericaceae	*Trochocarpa laurina*	tree heath		C		1/1
plants	land plants	Eriocaulaceae	*Eriocaulon scariosum*			C		1/1
plants	land plants	Euphorbiaceae	*Acalypha nemorum*	hairy acalypha		C		1/1
plants	land plants	Euphorbiaceae	*Alchornea ilicifolia*	native holly		C		3/1
plants	land plants	Euphorbiaceae	*Claoxylon australe*	brittlewood		C		1/1
plants	land plants	Euphorbiaceae	*Croton acronychioides*	thick-leaved croton		C		1/1
plants	land plants	Euphorbiaceae	*Euphorbia cyathophora*	dwarf poinsettia	Y			3/3
plants	land plants	Euphorbiaceae	*Euphorbia hyssopifolia*		Y			2/2
plants	land plants	Euphorbiaceae	*Euphorbia maculata*		Y			1/1
plants	land plants	Euphorbiaceae	*Euphorbia umbellata*		Y			1/1
plants	land plants	Euphorbiaceae	*Excoecaria agallocha*	milky mangrove		C		2/2
plants	land plants	Euphorbiaceae	*Homalanthus stillingiifolius*			C		1/1
plants	land plants	Euphorbiaceae	*Macaranga tanarius*	macaranga		C		1
plants	land plants	Euphorbiaceae	*Mallotus philippensis*	red kamala		C		2/1
plants	land plants	Euphorbiaceae	*Ricinus communis*	castor oil bush	Y			3/2
plants	land plants	Euphorbiaceae	*Tragia novae-hollandiae*	stinging-vine		C		1/1
plants	land plants	Eupomatiaceae	*Eupomatia laurina*	bolwarra		C		1/1
plants	land plants	Flagellariaceae	*Flagellaria indica*	whip vine		C		5/1
plants	land plants	Frullaniaceae	*Frullania*					1/1
plants	land plants	Gentianaceae	*Centaurium erythraea*	common centaury	Y			1/1
plants	land plants	Gentianaceae	*Centaurium tenuiflorum*		Y			1/1
plants	land plants	Gentianaceae	*Schenkia australis*			C		1/1
plants	land plants	Geraniaceae	*Geranium solanderi var. solanderi*	native geranium		C		1/1
plants	land plants	Gleicheniaceae	*Dicranopteris linearis var. linearis*			C		1/1
plants	land plants	Gleicheniaceae	*Gleichenia dicarpa*	pouched coral fern		C		4/4
plants	land plants	Gleicheniaceae	*Sticherus flabellatus var. flabellatus*			C		2/2
plants	land plants	Goodeniaceae	*Goodenia bellidifolia subsp. argentea*			C		6/6

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plants	land plants	Goodeniaceae	*Goodenia glabra*			C		1/1
plants	land plants	Goodeniaceae	*Goodenia mystrophylla*			C		5/5
plants	land plants	Goodeniaceae	*Goodenia paniculata*			C		2/2
plants	land plants	Goodeniaceae	*Goodenia rotundifolia*			C		5/3
plants	land plants	Haemodoraceae	*Haemodorum austroqueenslandicum*			C		2/2
plants	land plants	Haemodoraceae	*Haemodorum coccineum*			C		1
plants	land plants	Haloragaceae	*Gonocarpus chinensis subsp. verrucosus*			C		3/3
plants	land plants	Haloragaceae	*Haloragis heterophylla*	rough raspweed		C		1/1
plants	land plants	Haloragaceae	*Myriophyllum gracile*			C		1/1
plants	land plants	Haloragaceae	*Myriophyllum gracile var. gracile*			C		1/1
plants	land plants	Hemerocallidaceae	*Dianella*					1/1
plants	land plants	Hemerocallidaceae	*Dianella brevipedunculata*			C		3/3
plants	land plants	Hemerocallidaceae	*Dianella caerulea*			C		1
plants	land plants	Hemerocallidaceae	*Dianella caerulea var. assera*			C		1/1
plants	land plants	Hemerocallidaceae	*Dianella caerulea var. producta*			C		1/1
plants	land plants	Hemerocallidaceae	*Dianella caerulea x Dianella congesta*			C		2/2
plants	land plants	Hemerocallidaceae	*Dianella congesta*			C		1/1
plants	land plants	Hemerocallidaceae	*Dianella longifolia*			C		1
plants	land plants	Hemerocallidaceae	*Dianella longifolia var. stenophylla*			C		1/1
plants	land plants	Hemerocallidaceae	*Dianella revoluta var. revoluta*			C		2/2
plants	land plants	Hemerocallidaceae	*Geitonoplesium cymosum*	scrambling lily		C		5/2
plants	land plants	Hydrocharitaceae	*Halophila ovalis*			SL		1/1
plants	land plants	Hydrocharitaceae	*Halophila spinulosa*			SL		3/3
plants	land plants	Hypericaceae	*Hypericum gramineum*			C		2/2
plants	land plants	Hypnodendraceae	*Hypnodendron vitiense subsp. australe*			C		1/1
plants	land plants	Hypopterygiaceae	*Hypopterygium discolor*			C		1/1
plants	land plants	Hypopterygiaceae	*Hypopterygium tamarisci*			C		1/1
plants	land plants	Hypoxidaceae	*Curculigo ensifolia var. ensifolia*			C		1/1
plants	land plants	Hypoxidaceae	*Hypoxis*					1
plants	land plants	Hypoxidaceae	*Hypoxis hygrometrica var. villosisepala*			C		1/1
plants	land plants	Hypoxidaceae	*Hypoxis pratensis var. pratensis*			C		1/1
plants	land plants	Iridaceae	*Aristea ecklonii*	blue stars	Y			2/2
plants	land plants	Iridaceae	*Freesia laxa*		Y			3/3
plants	land plants	Iridaceae	*Freesia leichtlinii*		Y			2/2
plants	land plants	Iridaceae	*Patersonia fragilis*			C		1/1
plants	land plants	Iridaceae	*Patersonia glabrata*			C		2/2
plants	land plants	Iridaceae	*Patersonia sericea*			C		1
plants	land plants	Iridaceae	*Patersonia sericea var. sericea*			C		4/4
plants	land plants	Iridaceae	*Sisyrinchium rosulatum*		Y			1/1
plants	land plants	Johnsoniaceae	*Caesia parviflora*			C		2/2
plants	land plants	Johnsoniaceae	*Caesia parviflora var. parviflora*			C		1/1
plants	land plants	Johnsoniaceae	*Tricoryne anceps subsp. pterocaulon*			C		3/3
plants	land plants	Johnsoniaceae	*Tricoryne elatior*	yellow autumn lily		C		2/2
plants	land plants	Juncaceae	*Juncus continuus*			C		1/1
plants	land plants	Juncaceae	*Juncus polyanthemus*			C		3/2
plants	land plants	Juncaceae	*Juncus prismatocarpus*	branching rush		C		1/1

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plants	land plants	Juncaceae	*Juncus usitatus*			C		2/2
plants	land plants	Juncaginaceae	*Cycnogeton multifructus*			SL		2/2
plants	land plants	Juncaginaceae	*Cycnogeton procerus*			SL		2/2
plants	land plants	Juncaginaceae	*Triglochin striata*	streaked arrowgrass		SL		2/2
plants	land plants	Lamiaceae	*Callicarpa pedunculata*	velvet leaf		C		1/1
plants	land plants	Lamiaceae	*Clerodendrum floribundum*			C		1
plants	land plants	Lamiaceae	*Coleus amboinicus*		Y			2/2
plants	land plants	Lamiaceae	*Coleus caninus subsp. caninus*		Y			1/1
plants	land plants	Lamiaceae	*Gmelina leichhardtii*	white beech		C		1/1
plants	land plants	Lamiaceae	*Leonotis nepetifolia*		Y			1/1
plants	land plants	Lamiaceae	*Plectranthus verticillatus*		Y			2/2
plants	land plants	Lamiaceae	*Salvia coccinea*	red salvia	Y			2/2
plants	land plants	Lamiaceae	*Stachys arvensis*	stagger weed	Y			1/1
plants	land plants	Lamiaceae	*Teucrium argutum*			C		2/2
plants	land plants	Lamiaceae	*Vitex lignum-vitae*			C		1
plants	land plants	Lamiaceae	*Westringia eremicola*	slender westringia		C		3/3
plants	land plants	Lauraceae	*Beilschmiedia obtusifolia*	hard bolly gum		C		1/1
plants	land plants	Lauraceae	*Cassytha glabella forma glabella*			C		1/1
plants	land plants	Lauraceae	*Cassytha muelleri*			C		2/2
plants	land plants	Lauraceae	*Cinnamomum camphora*	camphor laurel	Y			6/3
plants	land plants	Lauraceae	*Cryptocarya*					1/1
plants	land plants	Lauraceae	*Cryptocarya macdonaldii*	McDonald's laurel		C		4/4
plants	land plants	Lauraceae	*Cryptocarya microneura*	murrogun		C		3/2
plants	land plants	Lauraceae	*Cryptocarya sclerophylla*	totempole		C		1
plants	land plants	Lauraceae	*Cryptocarya triplinervis*			C		3
plants	land plants	Lauraceae	*Endiandra discolor*	domatia tree		C		1
plants	land plants	Lauraceae	*Neolitsea dealbata*	white bolly gum		C		1/1
plants	land plants	Laxmanniaceae	*Cordyline petiolaris*	large-leaved palm lily		C		1/1
plants	land plants	Laxmanniaceae	*Cordyline rubra*	red-fruited palm lily		C		2/1
plants	land plants	Laxmanniaceae	*Eustrephus latifolius*	wombat berry		C		2/1
plants	land plants	Laxmanniaceae	*Laxmannia gracilis*	slender wire lily		C		1/1
plants	land plants	Laxmanniaceae	*Lomandra confertifolia subsp. pallida*			C		2/1
plants	land plants	Laxmanniaceae	*Lomandra filiformis subsp. coriacea*			C		4/4
plants	land plants	Laxmanniaceae	*Lomandra filiformis subsp. filiformis*			C		1/1
plants	land plants	Laxmanniaceae	*Lomandra hystrix*			C		2
plants	land plants	Laxmanniaceae	*Lomandra laxa*	broad-leaved matrush		C		7/7
plants	land plants	Laxmanniaceae	*Lomandra longifolia*			C		3
plants	land plants	Laxmanniaceae	*Lomandra multiflora*			C		2
plants	land plants	Laxmanniaceae	*Lomandra multiflora subsp. multiflora*			C		2/2
plants	land plants	Laxmanniaceae	*Thysanotus tuberosus subsp. parviflorus*			C		4/4
plants	land plants	Leguminosae	*Acacia aulacocarpa*			C		5
plants	land plants	Leguminosae	*Acacia concurrens*			C		10/7
plants	land plants	Leguminosae	*Acacia disparrima*			C		1
plants	land plants	Leguminosae	*Acacia falcata*	sickle wattle		C		1/1
plants	land plants	Leguminosae	*Acacia fimbriata*	Brisbane golden wattle		C		9/8
plants	land plants	Leguminosae	*Acacia hispidula*			C		2/2

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plants	land plants	Leguminosae	*Acacia juncifolia*			C		2/2
plants	land plants	Leguminosae	*Acacia leiocalyx subsp. leiocalyx*			C		5/5
plants	land plants	Leguminosae	*Acacia macradenia*	zig-zag wattle		C		1/1
plants	land plants	Leguminosae	*Acacia maidenii*	Maiden's wattle		C		1
plants	land plants	Leguminosae	*Acacia melanoxylon*	blackwood		C		1/1
plants	land plants	Leguminosae	*Acacia podalyriifolia*	Queensland silver wattle		C		2/1
plants	land plants	Leguminosae	*Acacia suaveolens*	sweet wattle		C		1/1
plants	land plants	Leguminosae	*Acacia ulicifolia*			C		2/2
plants	land plants	Leguminosae	*Aeschynomene indica*	budda pea		C		1/1
plants	land plants	Leguminosae	*Austrosteenisia blackii*	bloodvine		C		5
plants	land plants	Leguminosae	*Cajanus cajan*	pigeon pea	Y			1/1
plants	land plants	Leguminosae	*Calliandra surinamensis*		Y			1/1
plants	land plants	Leguminosae	*Cassia fistula*	Indian laburnum	Y			1/1
plants	land plants	Leguminosae	*Chamaecrista nomame var. nomame*			C		1/1
plants	land plants	Leguminosae	*Chamaecrista rotundifolia var. rotundifolia*		Y			1/1
plants	land plants	Leguminosae	*Crotalaria brevis*			C		1/1
plants	land plants	Leguminosae	*Crotalaria lanceolata subsp. lanceolata*		Y			3/3
plants	land plants	Leguminosae	*Crotalaria medicaginea var. medicaginea*			C		1/1
plants	land plants	Leguminosae	*Crotalaria pallida var. obovata*		Y			2/2
plants	land plants	Leguminosae	*Daviesia ulicifolia subsp. stenophylla*			C		3/3
plants	land plants	Leguminosae	*Daviesia umbellulata*			C		1/1
plants	land plants	Leguminosae	*Daviesia villifera*	prickly daviesia		C		3/2
plants	land plants	Leguminosae	*Daviesia wyattiana*	long-leaved bitter pea		C		2/2
plants	land plants	Leguminosae	*Desmodium brachypodum*	large ticktrefoil		C		1/1
plants	land plants	Leguminosae	*Desmodium gunnii*			C		3/1
plants	land plants	Leguminosae	*Desmodium nemorosum*			C		1/1
plants	land plants	Leguminosae	*Desmodium rhytidophyllum*			C		1/1
plants	land plants	Leguminosae	*Desmodium triflorum*		Y			2/1
plants	land plants	Leguminosae	*Desmodium uncinatum*		Y			2/2
plants	land plants	Leguminosae	*Desmodium varians*	slender tick trefoil		C		1/1
plants	land plants	Leguminosae	*Dillwynia retorta*			C		1/1
plants	land plants	Leguminosae	*Galactia tenuiflora*			C		1/1
plants	land plants	Leguminosae	*Galactia tenuiflora var. lucida*			C		1/1
plants	land plants	Leguminosae	*Genista monspessulana*	Montpellier broom	Y			1/1
plants	land plants	Leguminosae	*Glycine clandestina var. sericea*			C		1/1
plants	land plants	Leguminosae	*Glycine microphylla*			C		1/1
plants	land plants	Leguminosae	*Gompholobium latifolium*	broad wedge pea		C		3/3
plants	land plants	Leguminosae	*Gompholobium pinnatum*	poor mans gold		C		2/2
plants	land plants	Leguminosae	*Hardenbergia violacea*			C		1
plants	land plants	Leguminosae	*Hovea acutifolia*			C		1/1
plants	land plants	Leguminosae	*Hovea heterophylla*			C		4/4
plants	land plants	Leguminosae	*Indigofera australis subsp. australis*			C		1/1
plants	land plants	Leguminosae	*Indigofera circinella*		Y			1/1
plants	land plants	Leguminosae	*Indigofera hirsuta*	hairy indigo		C		1/1
plants	land plants	Leguminosae	*Indigofera spicata*	creeping indigo	Y			1/1
plants	land plants	Leguminosae	*Jacksonia scoparia*			C		3/3

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plants	land plants	Leguminosae	*Lablab purpureus*	lablab	Y			1/1
plants	land plants	Leguminosae	*Leucaena leucocephala subsp. leucocephala*		Y			1/1
plants	land plants	Leguminosae	*Macroptilium atropurpureum*	siratro	Y			2/2
plants	land plants	Leguminosae	*Macrotyloma uniflorum var. uniflorum*		Y			1/1
plants	land plants	Leguminosae	*Medicago polymorpha*	burr medic	Y			1/1
plants	land plants	Leguminosae	*Medicago sativa subsp. sativa*		Y			1/1
plants	land plants	Leguminosae	*Melilotus albus*	sweet clover	Y			1/1
plants	land plants	Leguminosae	*Mimosa pudica var. unijuga*		Y			1/1
plants	land plants	Leguminosae	*Neonotonia wightii var. wightii*		Y			2/2
plants	land plants	Leguminosae	*Pararchidendron pruinosum*			C		1/1
plants	land plants	Leguminosae	*Phyllota phylicoides*	yellow peabush		C		6/6
plants	land plants	Leguminosae	*Platylobium formosum*	flat pea		C		1/1
plants	land plants	Leguminosae	*Podolobium ilicifolium*			C		3/3
plants	land plants	Leguminosae	*Pultenaea euchila*	orange pultenaea		C		7/7
plants	land plants	Leguminosae	*Pultenaea microphylla*			C		1
plants	land plants	Leguminosae	*Pultenaea myrtoides*			C		3/2
plants	land plants	Leguminosae	*Pultenaea paleacea*			C		5/5
plants	land plants	Leguminosae	*Pultenaea petiolaris*			C		2/2
plants	land plants	Leguminosae	*Pultenaea retusa*			C		2/2
plants	land plants	Leguminosae	*Pultenaea villosa*	hairy bush pea		C		3/3
plants	land plants	Leguminosae	*Senna alata*		Y			1/1
plants	land plants	Leguminosae	*Senna pendula*		Y			1
plants	land plants	Leguminosae	*Senna pendula var. glabrata*	Easter cassia	Y			4/2
plants	land plants	Leguminosae	*Senna septemtrionalis*		Y			1/1
plants	land plants	Leguminosae	*Sesbania cannabina var. cannabina*			C		1/1
plants	land plants	Leguminosae	*Solori involuta*			C		1/1
plants	land plants	Leguminosae	*Sophora tomentosa subsp. australis*			C		1/1
plants	land plants	Leguminosae	*Swainsona brachycarpa*			C		1/1
plants	land plants	Leguminosae	*Tephrosia*					1/1
plants	land plants	Leguminosae	*Tephrosia glomeruliflora*	pink tephrosia	Y			1/1
plants	land plants	Leguminosae	*Trifolium repens var. repens*	white clover	Y			2/2
plants	land plants	Leguminosae	*Zornia dyctiocarpa var. dyctiocarpa*			C		1/1
plants	land plants	Lentibulariaceae	*Utricularia aurea*	golden bladderwort		SL		1/1
plants	land plants	Lentibulariaceae	*Utricularia caerulea*	blue bladderwort		SL		1/1
plants	land plants	Lepidoziaceae	*Bazzania corbieri*			C		1/1
plants	land plants	Leucobryaceae	*Campylopus torquatus*			C		1/1
plants	land plants	Leucobryaceae	*Leucobryum candidum*			C		1/1
plants	land plants	Limnocharitaceae	*Hydrocleys nymphoides*		Y			1/1
plants	land plants	Linderniaceae	*Artanema fimbriatum*			C		2/2
plants	land plants	Linderniaceae	*Lindernia rotundifolia*		Y			1/1
plants	land plants	Lindsaeaceae	*Lindsaea ensifolia subsp. ensifolia*			C		1/1
plants	land plants	Lindsaeaceae	*Lindsaea incisa*			C		1/1
plants	land plants	Lindsaeaceae	*Lindsaea linearis*	screw fern		C		1/1
plants	land plants	Lindsaeaceae	*Lindsaea microphylla*	lacy wedge fern		C		1/1
plants	land plants	Loganiaceae	*Mitrasacme alsinoides*			C		1/1
plants	land plants	Loganiaceae	*Mitrasacme paludosa*			C		1/1

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plants	land plants	Loganiaceae	*Orianthera pusilla*			C		3/3
plants	land plants	Lophocoleaceae	*Chiloscyphus semiteres*			C		1/1
plants	land plants	Lophocoleaceae	*Heteroscyphus argutus*			C		1/1
plants	land plants	Loranthaceae	*Amyema bifurcata*			C		1/1
plants	land plants	Loranthaceae	*Amyema congener subsp. congener*			C		2/2
plants	land plants	Loranthaceae	*Dendrophthoe vitellina*	long-flowered mistletoe		C		1/1
plants	land plants	Loranthaceae	*Lysiana subfalcata*			C		1/1
plants	land plants	Lycopodiaceae	*Palhinhaea cernua*			C		1/1
plants	land plants	Lythraceae	*Ammannia multiflora*	jerry-jerry		C		1/1
plants	land plants	Lythraceae	*Rotala rotundifolia*		Y			1/1
plants	land plants	Malvaceae	*Abutilon oxycarpum var. oxycarpum*			C		1/1
plants	land plants	Malvaceae	*Hibiscus diversifolius subsp. diversifolius*			C		1/1
plants	land plants	Malvaceae	*Hibiscus heterophyllus*			C		1/1
plants	land plants	Malvaceae	*Hibiscus rosasinensis*		Y			1/1
plants	land plants	Malvaceae	*Hibiscus sabdariffa*	rosella	Y			1/1
plants	land plants	Malvaceae	*Hibiscus splendens*	pink hibiscus		C		2
plants	land plants	Malvaceae	*Malva parviflora*	small-flowered mallow	Y			1/1
plants	land plants	Malvaceae	*Malvastrum coromandelianum subsp. coromandelianum*		Y			1/1
plants	land plants	Malvaceae	*Malvaviscus arboreus*		Y			4/4
plants	land plants	Malvaceae	*Pavonia hastata*	pink pavonia	Y			1/1
plants	land plants	Malvaceae	*Sida cordifolia*		Y			4/2
plants	land plants	Malvaceae	*Sida rhombifolia*		Y			2/2
plants	land plants	Malvaceae	*Thespesia populnea*			C		1/1
plants	land plants	Malvaceae	*Urena lobata*	urena weed	Y			2/1
plants	land plants	Marantaceae	*Thalia geniculata*		Y			1/1
plants	land plants	Martyniaceae	*Ibicella lutea*		Y			1/1
plants	land plants	Maundiaceae	*Maundia triglochinoides*			V		1/1
plants	land plants	Melastomataceae	*Melastoma malabathricum subsp. malabathricum*			C		3/2
plants	land plants	Meliaceae	*Melia azedarach*	white cedar		C		2/1
plants	land plants	Meliaceae	*Synoum glandulosum subsp. glandulosum*			C		2/2
plants	land plants	Menispermaceae	*Echinostephia aculeata*	prickly snake vine		C		2/1
plants	land plants	Menispermaceae	*Pleogyne australis*	wiry grape		C		1/1
plants	land plants	Menispermaceae	*Stephania japonica*			C		2
plants	land plants	Menispermaceae	*Stephania japonica var. discolor*			C		1/1
plants	land plants	Molluginaceae	*Glinus oppositifolius*			C		1/1
plants	land plants	Molluginaceae	*Mollugo verticillata*		Y			1/1
plants	land plants	Monimiaceae	*Wilkiea huegeliana*	veiny wilkiea		C		4/2
plants	land plants	Monimiaceae	*Wilkiea macrophylla*	large-leaved wilkiea		C		1/1
plants	land plants	Moraceae	*Artocarpus heterophyllus*		Y			1/1
plants	land plants	Moraceae	*Ficus benjamina*			C		2/2
plants	land plants	Moraceae	*Ficus coronata*	creek sandpaper fig		C		4/1
plants	land plants	Moraceae	*Ficus obliqua*			C		1
plants	land plants	Moraceae	*Maclura cochinchinensis*	cockspur thorn		C		2
plants	land plants	Moraceae	*Morus alba*	white mulberry	Y			1
plants	land plants	Moraceae	*Streblus brunonianus*	whalebone tree		C		2
plants	land plants	Moraceae	*Trophis scandens subsp. scandens*			C		5

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plants	land plants	Myrsinaceae	*Aegiceras corniculatum*	river mangrove		C		4/4
plants	land plants	Myrsinaceae	*Ardisia elliptica*		Y			1/1
plants	land plants	Myrsinaceae	*Embelia australiana*	embelia		C		1/1
plants	land plants	Myrsinaceae	*Lysimachia arvensis*		Y			3/3
plants	land plants	Myrsinaceae	*Myrsine howittiana*			C		4/4
plants	land plants	Myrtaceae	*Acmena smithii*	lillypilly satinash		C		3/2
plants	land plants	Myrtaceae	*Angophora leiocarpa*	rusty gum		C		2/2
plants	land plants	Myrtaceae	*Angophora woodsiana*	smudgee		C		3/2
plants	land plants	Myrtaceae	*Backhousia myrtifolia*	carrol		C		5/4
plants	land plants	Myrtaceae	*Backhousia subargentea*			C		1/1
plants	land plants	Myrtaceae	*Corymbia citriodora*	spotted gum		C		3
plants	land plants	Myrtaceae	*Corymbia citriodora subsp. variegata*			C		2
plants	land plants	Myrtaceae	*Corymbia gummifera*	red bloodwood		C		1
plants	land plants	Myrtaceae	*Corymbia henryi*	large-leaved spotted gum		C		1/1
plants	land plants	Myrtaceae	*Corymbia intermedia*	pink bloodwood		C		3
plants	land plants	Myrtaceae	*Corymbia torelliana*	cadaghi		C		1/1
plants	land plants	Myrtaceae	*Corymbia trachyphloia*			C		1
plants	land plants	Myrtaceae	*Corymbia trachyphloia subsp. trachyphloia*			C		4/2
plants	land plants	Myrtaceae	*Eucalyptus acmenoides*			C		2
plants	land plants	Myrtaceae	*Eucalyptus baileyana*	Bailey's stringybark		C		1/1
plants	land plants	Myrtaceae	*Eucalyptus biturbinata*			C		1
plants	land plants	Myrtaceae	*Eucalyptus carnea*			C		4/2
plants	land plants	Myrtaceae	*Eucalyptus crebra*	narrow-leaved red ironbark		C		4
plants	land plants	Myrtaceae	*Eucalyptus curtisii*	Plunkett mallee		NT		1/1
plants	land plants	Myrtaceae	*Eucalyptus drepanophylla*			C		1
plants	land plants	Myrtaceae	*Eucalyptus eugenioides*			C		2
plants	land plants	Myrtaceae	*Eucalyptus fibrosa subsp. fibrosa*			C		6/1
plants	land plants	Myrtaceae	*Eucalyptus major*	mountain grey gum		C		3
plants	land plants	Myrtaceae	*Eucalyptus microcorys*			C		6/1
plants	land plants	Myrtaceae	*Eucalyptus pilularis*	blackbutt		C		3/2
plants	land plants	Myrtaceae	*Eucalyptus planchoniana*			C		4/3
plants	land plants	Myrtaceae	*Eucalyptus propinqua*	small-fruited grey gum		C		8/4
plants	land plants	Myrtaceae	*Eucalyptus racemosa subsp. racemosa*	scribbly gum		C		6/3
plants	land plants	Myrtaceae	*Eucalyptus resinifera*	red mahogany		C		6/3
plants	land plants	Myrtaceae	*Eucalyptus robusta*	swamp mahogany		C		2/1
plants	land plants	Myrtaceae	*Eucalyptus seeana*	narrow-leaved red gum		C		2/1
plants	land plants	Myrtaceae	*Eucalyptus siderophloia*			C		4/2
plants	land plants	Myrtaceae	*Eucalyptus tereticornis*			C		2
plants	land plants	Myrtaceae	*Eucalyptus tereticornis subsp. basaltica*			C		1/1
plants	land plants	Myrtaceae	*Eucalyptus tindaliae*	Queensland white stringybark		C		3/3
plants	land plants	Myrtaceae	*Eugenia uniflora*	Brazilian cherry tree	Y			2/2
plants	land plants	Myrtaceae	*Gossia bidwillii*			C		1
plants	land plants	Myrtaceae	*Gossia gonoclada*			CR	E	24/21
plants	land plants	Myrtaceae	*Gossia hillii*			C		5/4
plants	land plants	Myrtaceae	*Leptospermum juniperinum*	prickly tea-tree		C		1/1
plants	land plants	Myrtaceae	*Leptospermum petersonii*			C		1/1

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plants	land plants	Myrtaceae	*Leptospermum polygalifolium*	tantoon		C		3/3
plants	land plants	Myrtaceae	*Leptospermum trinervium*	woolly tea-tree		C		4/4
plants	land plants	Myrtaceae	*Lophostemon confertus*	brush box		C		6/1
plants	land plants	Myrtaceae	*Lophostemon confertus x Lophostemon suaveolens*			C		1/1
plants	land plants	Myrtaceae	*Lophostemon suaveolens*	swamp box		C		3/1
plants	land plants	Myrtaceae	*Melaleuca bracteata*			C		3/2
plants	land plants	Myrtaceae	*Melaleuca decora*			C		1/1
plants	land plants	Myrtaceae	*Melaleuca irbyana*			E		1/1
plants	land plants	Myrtaceae	*Melaleuca nodosa*			C		1/1
plants	land plants	Myrtaceae	*Melaleuca pachyphylla*			C		2/2
plants	land plants	Myrtaceae	*Melaleuca quinquenervia*	swamp paperbark		C		3/2
plants	land plants	Myrtaceae	*Psidium guajava*	guava	Y			2/2
plants	land plants	Myrtaceae	*Rhodamnia rubescens*	scrub turpentine		CR	CE	2/2
plants	land plants	Myrtaceae	*Rhodomyrtus psidioides*	native guava		CR	CE	4/4
plants	land plants	Myrtaceae	*Syzygium australe*	scrub cherry		C		2/1
plants	land plants	Myrtaceae	*Syzygium francisii*	giant watergum		C		3
plants	land plants	Myrtaceae	*Syzygium oleosum*	blue cherry		C		2/2
plants	land plants	Nephrolepidaceae	*Nephrolepis cordifolia*	fishbone fern		C		4/3
plants	land plants	Nymphaeaceae	*Nymphaea mexicana x Nymphaea*			C		1/1
plants	land plants	Ochnaceae	*Ochna serrulata*	ochna	Y			7/3
plants	land plants	Oleaceae	*Chionanthus ramiflorus*	northern olive		C		1/1
plants	land plants	Oleaceae	*Jasminum mesnyi*		Y			1/1
plants	land plants	Oleaceae	*Ligustrum sinense*	small-leaved privet	Y			3
plants	land plants	Oleaceae	*Notelaea longifolia*			C		2
plants	land plants	Oleaceae	*Notelaea ovata*	forest olive		C		2/2
plants	land plants	Oleaceae	*Notelaea punctata*			C		5/5
plants	land plants	Onagraceae	*Ludwigia octovalvis*	willow primrose		C		1/1
plants	land plants	Onagraceae	*Oenothera stricta subsp. stricta*		Y			1/1
plants	land plants	Ophioglossaceae	*Sceptridium australe*			C		1/1
plants	land plants	Orchidaceae	*Acianthus fornicatus*	pixie caps		SL		1/1
plants	land plants	Orchidaceae	*Arthrochilus irritabilis*	leafy elbow orchid		SL		2/2
plants	land plants	Orchidaceae	*Bulbophyllum minutissimum*	grain-of-wheat orchid		SL		1/1
plants	land plants	Orchidaceae	*Caladenia catenata*			SL		1/1
plants	land plants	Orchidaceae	*Chiloglottis diphylla*			SL		1/1
plants	land plants	Orchidaceae	*Corunastylis acuminata*			SL		1/1
plants	land plants	Orchidaceae	*Corybas barbarae*	helmet orchid		SL		1/1
plants	land plants	Orchidaceae	*Cryptostylis erecta*	bonnet orchid		SL		1/1
plants	land plants	Orchidaceae	*Dipodium variegatum*			SL		4/3
plants	land plants	Orchidaceae	*Diuris unica*			SL		2/2
plants	land plants	Orchidaceae	*Epidendrum x obrienianum*		Y			1/1
plants	land plants	Orchidaceae	*Geodorum densiflorum*	pink nodding orchid		SL		2/2
plants	land plants	Orchidaceae	*Lyperanthus suaveolens*	brown beaks		SL		1/1
plants	land plants	Orchidaceae	*Microtis parviflora*	slender onion orchid		SL		3/3
plants	land plants	Orchidaceae	*Oberonia palmicola*			SL		1/1
plants	land plants	Orchidaceae	*Phaius australis*			E	E	1/1
plants	land plants	Orchidaceae	*Prasophyllum brevilabre*			SL		2/2

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plants	land plants	Orchidaceae	*Spiranthes australis*			SL		3/3
plants	land plants	Orchidaceae	*Thelymitra purpurata*	wallum sun orchid		SL		1/1
plants	land plants	Orthotrichaceae	*Macromitrium*					1/1
plants	land plants	Oxalidaceae	*Oxalis chnoodes*			C		1/1
plants	land plants	Oxalidaceae	*Oxalis corniculata*		Y			1
plants	land plants	Papaveraceae	*Fumaria bastardii*	bastard fumitory	Y			2/1
plants	land plants	Passifloraceae	*Passiflora aurantia var. aurantia*			C		1/1
plants	land plants	Passifloraceae	*Passiflora edulis*		Y			2/1
plants	land plants	Passifloraceae	*Passiflora suberosa*	corky passion flower	Y			6
plants	land plants	Passifloraceae	*Passiflora suberosa subsp. litoralis*		Y			1/1
plants	land plants	Passifloraceae	*Passiflora subpeltata*	white passion flower	Y			1/1
plants	land plants	Petiveriaceae	*Rivina humilis*		Y			1
plants	land plants	Philydraceae	*Philydrum lanuginosum*	frogsmouth		C		2/2
plants	land plants	Phyllanthaceae	*Breynia*					1
plants	land plants	Phyllanthaceae	*Breynia oblongifolia*			C		2/1
plants	land plants	Phyllanthaceae	*Cleistanthus cunninghamii*	omega		C		2
plants	land plants	Phyllanthaceae	*Glochidion ferdinandi*			C		2
plants	land plants	Phyllanthaceae	*Glochidion sumatranum*	umbrella cheese tree		C		2/2
plants	land plants	Phyllanthaceae	*Phyllanthus gunnii*			C		1/1
plants	land plants	Phyllanthaceae	*Phyllanthus hirtellus*			C		2/2
plants	land plants	Phyllanthaceae	*Phyllanthus mitchellii*			C		1/1
plants	land plants	Phyllanthaceae	*Phyllanthus similis*			C		1/1
plants	land plants	Phyllanthaceae	*Phyllanthus tenellus*		Y			2/2
plants	land plants	Phyllanthaceae	*Phyllanthus virgatus*			C		1/1
plants	land plants	Phyllanthaceae	*Poranthera microphylla*	small poranthera		C		4/4
plants	land plants	Picrodendraceae	*Petalostigma triloculare*	forest quinine		C		2/2
plants	land plants	Piperaceae	*Peperomia leptostachya*			C		2/2
plants	land plants	Pittosporaceae	*Billardiera scandens*			C		1/1
plants	land plants	Pittosporaceae	*Bursaria spinosa subsp. spinosa*			C		1/1
plants	land plants	Pittosporaceae	*Pittosporum multiflorum*			C		1/1
plants	land plants	Pittosporaceae	*Pittosporum revolutum*	yellow pittosporum		C		4/1
plants	land plants	Pittosporaceae	*Pittosporum spinescens*			C		1
plants	land plants	Pittosporaceae	*Pittosporum tinifolium*			C		1/1
plants	land plants	Plantaginaceae	*Bacopa lanigera*		Y			1/1
plants	land plants	Plantaginaceae	*Bacopa monnieri*			C		1/1
plants	land plants	Plantaginaceae	*Gratiola pedunculata*			C		1/1
plants	land plants	Plantaginaceae	*Plantago debilis*	shade plantain		C		2/2
plants	land plants	Plantaginaceae	*Plantago lanceolata*		Y			1/1
plants	land plants	Plantaginaceae	*Scoparia dulcis*	scoparia	Y			3/3
plants	land plants	Plantaginaceae	*Veronica plebeia*	trailing speedwell		C		1/1
plants	land plants	Poaceae	*Alloteropsis semialata*	cockatoo grass		C		4/4
plants	land plants	Poaceae	*Andropogon virginicus*	whiskey grass	Y			3/3
plants	land plants	Poaceae	*Aristida benthamii var. benthamii*			C		2/2
plants	land plants	Poaceae	*Aristida queenslandica var. queenslandica*			C		3/3
plants	land plants	Poaceae	*Aristida ramosa*	purple wiregrass		C		1/1
plants	land plants	Poaceae	*Aristida vagans*			C		1/1

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plants	land plants	Poaceae	*Aristida warburgii*			C		1/1
plants	land plants	Poaceae	*Arundinella nepalensis*	reedgrass		C		1/1
plants	land plants	Poaceae	*Austrostipa pubescens*	tall speargrass		C		1/1
plants	land plants	Poaceae	*Axonopus fissifolius*		Y			4/3
plants	land plants	Poaceae	*Bothriochloa decipiens var. decipiens*			C		1/1
plants	land plants	Poaceae	*Bothriochloa macra*	redleg grass		C		1/1
plants	land plants	Poaceae	*Bothriochloa pertusa*		Y			1/1
plants	land plants	Poaceae	*Briza minor*	shivery grass	Y			1/1
plants	land plants	Poaceae	*Bromus catharticus*	prairie grass	Y			3/3
plants	land plants	Poaceae	*Capillipedium spicigerum*	spicytop		C		1/1
plants	land plants	Poaceae	*Cenchrus purpureus*		Y			2/1
plants	land plants	Poaceae	*Cenchrus setaceus*		Y			1/1
plants	land plants	Poaceae	*Chloris gayana*	rhodes grass	Y			3/3
plants	land plants	Poaceae	*Chloris ventricosa*	tall chloris		C		1/1
plants	land plants	Poaceae	*Chloris virgata*	feathertop rhodes grass	Y			3/3
plants	land plants	Poaceae	*Chrysopogon sylvaticus*			C		1/1
plants	land plants	Poaceae	*Cymbopogon refractus*	barbed-wire grass		C		3/2
plants	land plants	Poaceae	*Cynodon dactylon*		Y			1
plants	land plants	Poaceae	*Cynodon dactylon var. dactylon*		Y			1/1
plants	land plants	Poaceae	*Dichanthium sericeum subsp. sericeum*			C		1/1
plants	land plants	Poaceae	*Dichelachne montana*			C		2/2
plants	land plants	Poaceae	*Digitaria didactyla*	Queensland blue couch	Y			4/3
plants	land plants	Poaceae	*Digitaria diminuta*			C		1/1
plants	land plants	Poaceae	*Digitaria eriantha*		Y			1/1
plants	land plants	Poaceae	*Digitaria fumida*			C		1/1
plants	land plants	Poaceae	*Digitaria longiflora*			C		1/1
plants	land plants	Poaceae	*Digitaria parviflora*			C		1/1
plants	land plants	Poaceae	*Digitaria ramularis*			C		1/1
plants	land plants	Poaceae	*Digitaria violascens*	bastard summergrass	Y			1/1
plants	land plants	Poaceae	*Diplachne fusca var. fusca*			C		1/1
plants	land plants	Poaceae	*Echinopogon nutans var. nutans*			C		1/1
plants	land plants	Poaceae	*Entolasia marginata*	bordered panic		C		5/5
plants	land plants	Poaceae	*Entolasia stricta*	wiry panic		C		16/14
plants	land plants	Poaceae	*Entolasia whiteana*			C		5/5
plants	land plants	Poaceae	*Eragrostis bahiensis*		Y			1/1
plants	land plants	Poaceae	*Eragrostis brownii*	Brown's lovegrass		C		3/3
plants	land plants	Poaceae	*Eragrostis elongata*			C		1/1
plants	land plants	Poaceae	*Eragrostis leptostachya*			C		1/1
plants	land plants	Poaceae	*Eragrostis mexicana*	Mexican lovegrass	Y			1/1
plants	land plants	Poaceae	*Eragrostis sororia*			C		1/1
plants	land plants	Poaceae	*Eragrostis spartinoides*			C		2/2
plants	land plants	Poaceae	*Eragrostis tenuifolia*	elastic grass	Y			2/2
plants	land plants	Poaceae	*Eremochloa bimaculata*	poverty grass		C		2/2
plants	land plants	Poaceae	*Eriachne glabrata*			C		2/2
plants	land plants	Poaceae	*Eriachne pallescens*			C		1/1
plants	land plants	Poaceae	*Eriachne pallescens var. pallescens*			C		2/2

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plants	land plants	Poaceae	*Eriochloa procera*	slender cupgrass		C		1/1
plants	land plants	Poaceae	*Hemarthria uncinata var. uncinata*			C		1/1
plants	land plants	Poaceae	*Hymenachne amplexicaulis*	hymenachne	Y			1/1
plants	land plants	Poaceae	*Imperata cylindrica*	blady grass		C		3/1
plants	land plants	Poaceae	*Ischaemum australe var. australe*			C		1/1
plants	land plants	Poaceae	*Lachnagrostis filiformis*			C		1/1
plants	land plants	Poaceae	*Leersia hexandra*	swamp rice grass		C		3/2
plants	land plants	Poaceae	*Lolium multiflorum*	italian ryegrass	Y			2/2
plants	land plants	Poaceae	*Lolium perenne*	perennial ryegrass	Y			3/3
plants	land plants	Poaceae	*Megathyrsus maximus var. coloratus*		Y			1/1
plants	land plants	Poaceae	*Megathyrsus maximus var. pubiglumis*		Y			2/1
plants	land plants	Poaceae	*Melinis repens*	red natal grass	Y			1/1
plants	land plants	Poaceae	*Microlaena stipoides*			C		1/1
plants	land plants	Poaceae	*Microlaena stipoides var. stipoides*			C		2/2
plants	land plants	Poaceae	*Oplismenus aemulus*	creeping shade grass		C		2/1
plants	land plants	Poaceae	*Oplismenus imbecillis*			C		2/2
plants	land plants	Poaceae	*Ottochloa gracillima*	pademelon grass		C		4/2
plants	land plants	Poaceae	*Panicum effusum*			C		1/1
plants	land plants	Poaceae	*Panicum simile*			C		4/4
plants	land plants	Poaceae	*Paspalidium albovillosum*			C		1/1
plants	land plants	Poaceae	*Paspalidium distans*	shotgrass		C		6/6
plants	land plants	Poaceae	*Paspalum conjugatum*	sourgrass	Y			1/1
plants	land plants	Poaceae	*Paspalum dilatatum*	paspalum	Y			1/1
plants	land plants	Poaceae	*Paspalum distichum*	water couch	Y			1/1
plants	land plants	Poaceae	*Paspalum scrobiculatum*	ditch millet		C		3/3
plants	land plants	Poaceae	*Paspalum urvillei*	vasey grass	Y			1/1
plants	land plants	Poaceae	*Phyllostachys*					1/1
plants	land plants	Poaceae	*Poa annua*	annual poa	Y			2/2
plants	land plants	Poaceae	*Poa labillardierei var. labillardierei*	tussock grass		C		2/2
plants	land plants	Poaceae	*Rytidosperma longifolium*			C		1/1
plants	land plants	Poaceae	*Sacciolepis indica*	Indian cupscale grass		C		2/2
plants	land plants	Poaceae	*Sarga leiocladum*			C		1/1
plants	land plants	Poaceae	*Schizachyrium fragile*	firegrass		C		1/1
plants	land plants	Poaceae	*Schizachyrium microstachyum*		Y			2/2
plants	land plants	Poaceae	*Setaria pumila subsp. pumila*		Y			1/1
plants	land plants	Poaceae	*Setaria pumila subsp. subtesselata*		Y			1/1
plants	land plants	Poaceae	*Setaria sphacelata*		Y			1
plants	land plants	Poaceae	*Sorghum arundinaceum*	Rhodesian Sudan grass	Y			1/1
plants	land plants	Poaceae	*Sorghum x almum*		Y			2/2
plants	land plants	Poaceae	*Sporobolus africanus*	Parramatta grass	Y			4/4
plants	land plants	Poaceae	*Sporobolus fertilis*	giant Parramatta grass	Y			1/1
plants	land plants	Poaceae	*Sporobolus laxus*			C		1/1
plants	land plants	Poaceae	*Sporobolus natalensis*		Y			2/2
plants	land plants	Poaceae	*Sporobolus pyramidalis*		Y			1/1
plants	land plants	Poaceae	*Sporobolus virginicus*	sand couch		C		1
plants	land plants	Poaceae	*Steinchisma hians*		Y			1/1

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plants	land plants	Poaceae	*Stenotaphrum secundatum*	buffalo grass	Y			1/1
plants	land plants	Poaceae	*Themeda triandra*	kangaroo grass		C		5/4
plants	land plants	Poaceae	*Urochloa decumbens*		Y			5/4
plants	land plants	Poaceae	*Urochloa mutica*		Y			1/1
plants	land plants	Polygalaceae	*Comesperma hispidulum*			C		5/5
plants	land plants	Polygalaceae	*Comesperma sphaerocarpum*			C		2/2
plants	land plants	Polygalaceae	*Polygala triflora*			C		1/1
plants	land plants	Polygonaceae	*Muehlenbeckia gracillima*			C		1/1
plants	land plants	Polygonaceae	*Persicaria attenuata*			C		2/2
plants	land plants	Polygonaceae	*Persicaria decipiens*	slender knotweed		C		1/1
plants	land plants	Polygonaceae	*Persicaria dichotoma*			C		1/1
plants	land plants	Polygonaceae	*Persicaria elatior*			V	V	4/4
plants	land plants	Polygonaceae	*Persicaria lapathifolia*	pale knotweed		C		1/1
plants	land plants	Polygonaceae	*Rumex crispus*	curled dock	Y			1/1
plants	land plants	Polypodiaceae	*Drynaria rigidula*			SL		1/1
plants	land plants	Polypodiaceae	*Platycerium bifurcatum*			SL		1/1
plants	land plants	Portulacaceae	*Portulaca pilosa*		Y			1/1
plants	land plants	Portulacaceae	*Talinum paniculatum*	talinum	Y			1
plants	land plants	Proteaceae	*Banksia integrifolia*			C		1
plants	land plants	Proteaceae	*Banksia integrifolia subsp. compar*			C		1/1
plants	land plants	Proteaceae	*Banksia spinulosa var. collina*			C		2/2
plants	land plants	Proteaceae	*Banksia spinulosa var. spinulosa*			C		2/2
plants	land plants	Proteaceae	*Grevillea banksii*			C		1/1
plants	land plants	Proteaceae	*Grevillea robusta*			C		1
plants	land plants	Proteaceae	*Hakea florulenta*	three-nerved willow hakea		C		4/4
plants	land plants	Proteaceae	*Lomatia silaifolia*	crinkle bush		C		2/2
plants	land plants	Proteaceae	*Macadamia integrifolia*	macadamia nut		V	V	11/3
plants	land plants	Proteaceae	*Macadamia tetraphylla*			V	V	1/1
plants	land plants	Proteaceae	*Persoonia adenantha - Persoonia stradbrokensis*			C		1/1
plants	land plants	Proteaceae	*Persoonia sericea*	silky geebung		C		1/1
plants	land plants	Proteaceae	*Persoonia stradbrokensis*			C		4/4
plants	land plants	Proteaceae	*Persoonia stradbrokensis x Persoonia virgata*			C		1/1
plants	land plants	Proteaceae	*Persoonia tenuifolia*			C		1/1
plants	land plants	Proteaceae	*Petrophile shirleyae*			C		1/1
plants	land plants	Pteridaceae	*Adiantum aethiopicum*			SL		1/1
plants	land plants	Pteridaceae	*Adiantum atroviride*			SL		1/1
plants	land plants	Pteridaceae	*Adiantum hispidulum*			SL		1
plants	land plants	Pteridaceae	*Adiantum hispidulum var. hispidulum*			SL		1/1
plants	land plants	Pteridaceae	*Cheilanthes distans*	bristly cloak fern		C		2/2
plants	land plants	Pteridaceae	*Cheilanthes sieberi subsp. sieberi*			C		2/2
plants	land plants	Pteridaceae	*Pellaea paradoxa*	heart fern		SL		1/1
plants	land plants	Pteridaceae	*Pellaea viridis var. viridis*		Y			1/1
plants	land plants	Pteridaceae	*Pityrogramma calomelanos var. austroamericana*		Y			1/1
plants	land plants	Pteridaceae	*Pteris tremula*			SL		1/1
plants	land plants	Ptychomitriaceae	*Ptychomitrium australe*			C		1/1
plants	land plants	Putranjivaceae	*Drypetes deplanchei*	grey boxwood		C		2/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Ranunculaceae	*Clematis glycinoides*			C		2/2
plants	land plants	Ranunculaceae	*Ranunculus sceleratus subsp. sceleratus*		Y			2/2
plants	land plants	Ranunculaceae	*Ranunculus sessiliflorus var. sessiliflorus*			C		1/1
plants	land plants	Restionaceae	*Lepyrodia imitans*			C		1/1
plants	land plants	Rhamnaceae	*Alphitonia excelsa*	soap tree		C		7/1
plants	land plants	Rhamnaceae	*Cryptandra longistaminea*			C		1/1
plants	land plants	Rhizophoraceae	*Bruguiera gymnorhiza*	large-fruited orange mangrove		C		2/2
plants	land plants	Rhizophoraceae	*Ceriops australis*			C		2/2
plants	land plants	Rhizophoraceae	*Rhizophora stylosa*	spotted mangrove		C		2/2
plants	land plants	Ripogonaceae	*Ripogonum brevifolium*	small-leaved supplejack		C		1/1
plants	land plants	Rosaceae	*Eriobotrya japonica*	loquat	Y			1/1
plants	land plants	Rosaceae	*Rhaphiolepis*					1/1
plants	land plants	Rosaceae	*Rhaphiolepis indica*	Indian hawthorn	Y			2/2
plants	land plants	Rosaceae	*Rosa laevigata*	cherokee rose	Y			1/1
plants	land plants	Rosaceae	*Rubus moluccanus var. trilobus*			C		3/3
plants	land plants	Rubiaceae	*Coelospermum paniculatum var. paniculatum*			C		1/1
plants	land plants	Rubiaceae	*Cyclophyllum coprosmoides*			C		3
plants	land plants	Rubiaceae	*Cyclophyllum coprosmoides var. coprosmoides*			C		2/2
plants	land plants	Rubiaceae	*Gynochthodes jasminoides*			C		6/2
plants	land plants	Rubiaceae	*Hodgkinsonia ovatiflora*	golden ash		C		1/1
plants	land plants	Rubiaceae	*Opercularia diphylla*			C		3/3
plants	land plants	Rubiaceae	*Pomax umbellata*			C		1/1
plants	land plants	Rubiaceae	*Psychotria daphnoides*			C		1/1
plants	land plants	Rubiaceae	*Psychotria loniceroides*	hairy psychotria		C		2/2
plants	land plants	Rubiaceae	*Richardia brasiliensis*	white eye	Y			3/2
plants	land plants	Rubiaceae	*Spermacoce brachystema*			C		1/1
plants	land plants	Rutaceae	*Acronychia laevis*	glossy acronychia		C		4/4
plants	land plants	Rutaceae	*Acronychia oblongifolia*	common acronychia		C		1/1
plants	land plants	Rutaceae	*Boronia rosmarinifolia*	forest boronia		C		3/3
plants	land plants	Rutaceae	*Citrus x limon*		Y			1/1
plants	land plants	Rutaceae	*Cyanothamnus polygalifolius*			C		2/2
plants	land plants	Rutaceae	*Flindersia australis*	crow's ash		C		3/1
plants	land plants	Rutaceae	*Flindersia bennettii*			C		1
plants	land plants	Rutaceae	*Medicosma cunninghamii*	pinkheart		C		1/1
plants	land plants	Rutaceae	*Melicope elleryana*			C		1
plants	land plants	Rutaceae	*Melicope micrococca*	white evodia		C		1/1
plants	land plants	Rutaceae	*Pentaceras australe*	bastard crow's ash		C		2
plants	land plants	Salicaceae	*Scolopia braunii*	flintwood		C		1
plants	land plants	Salviniaceae	*Salvinia molesta*	salvinia	Y			5/5
plants	land plants	Santalaceae	*Exocarpos cupressiformis*	native cherry		C		1/1
plants	land plants	Santalaceae	*Exocarpos latifolius*			C		2/1
plants	land plants	Sapindaceae	*Alectryon connatus*	grey birds-eye		C		1/1
plants	land plants	Sapindaceae	*Alectryon coriaceus*	beach alectryon		C		1/1
plants	land plants	Sapindaceae	*Arytera divaricata*	coogera		C		1/1
plants	land plants	Sapindaceae	*Cardiospermum grandiflorum*	heart seed vine	Y			1/1
plants	land plants	Sapindaceae	*Cupaniopsis anacardioides*	tuckeroo		C		3

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Sapindaceae	*Cupaniopsis parvifolia*	small-leaved tuckeroo		C		3/1
plants	land plants	Sapindaceae	*Dodonaea triquetra*	large-leaved hop bush		C		2/2
plants	land plants	Sapindaceae	*Guioa semiglauca*	guioa		C		2/1
plants	land plants	Sapindaceae	*Jagera pseudorhus*			C		4
plants	land plants	Sapindaceae	*Mischocarpus pyriformis*			C		1
plants	land plants	Sapindaceae	*Mischocarpus pyriformis subsp. pyriformis*			C		1/1
plants	land plants	Sapotaceae	*Planchonella eerwah*			E	E	1/1
plants	land plants	Schizaeaceae	*Schizaea bifida*	forked comb fern		SL		5/5
plants	land plants	Scrophulariaceae	*Buddleja madagascariensis*	buddleia	Y			1/1
plants	land plants	Scrophulariaceae	*Myoporum boninense subsp. australe*			C		1/1
plants	land plants	Sematophyllaceae	*Sematophyllum subhumile*			C		1/1
plants	land plants	Smilacaceae	*Smilax australis*	barbed-wire vine		C		8/1
plants	land plants	Solanaceae	*Physalis angulata*		Y			1/1
plants	land plants	Solanaceae	*Solanum americanum*		Y			4/4
plants	land plants	Solanaceae	*Solanum capsicoides*	devil's apple	Y			1/1
plants	land plants	Solanaceae	*Solanum linnaeanum*	apple of Sodom	Y			3/2
plants	land plants	Solanaceae	*Solanum mauritianum*	wild tobacco	Y			3/2
plants	land plants	Solanaceae	*Solanum nigrum*		Y			1/1
plants	land plants	Solanaceae	*Solanum pseudocapsicum*	Madeira winter cherry	Y			1/1
plants	land plants	Solanaceae	*Solanum seaforthianum*	Brazilian nightshade	Y			2
plants	land plants	Solanaceae	*Solanum stelligerum*	devil's needles		C		3/2
plants	land plants	Solanaceae	*Solanum torvum*	devil's fig	Y			1
plants	land plants	Sparrmanniaceae	*Corchorus cunninghamii*			E	E	9/4
plants	land plants	Sparrmanniaceae	*Grewia latifolia*	dysentery plant		C		1/1
plants	land plants	Sparrmanniaceae	*Triumfetta rhomboidea*	chinese burr	Y			1/1
plants	land plants	Stackhousiaceae	*Stackhousia viminea*	slender stackhousia		C		1/1
plants	land plants	Sterculiaceae	*Brachychiton acerifolius*	flame tree		SL		1
plants	land plants	Stylidiaceae	*Stylidium graminifolium*	grassy-leaved trigger-flower		C		2/2
plants	land plants	Symplocaceae	*Symplocos harroldii*	hairy hazelwood		NT		1/1
plants	land plants	Thelypteridaceae	*Christella dentata*	creek fern		SL		1
plants	land plants	Thelypteridaceae	*Cyclosorus interruptus*			SL		3/3
plants	land plants	Thymelaeaceae	*Pimelea linifolia*			C		3/3
plants	land plants	Thymelaeaceae	*Pimelea linifolia subsp. linifolia*			C		2/2
plants	land plants	Thymelaeaceae	*Pimelea neoanglica*	poison pimelea		C		1
plants	land plants	Typhaceae	*Typha orientalis*	broad-leaved cumbungi		C		1
plants	land plants	Urticaceae	*Urtica urens*	small nettle	Y			1/1
plants	land plants	Verbenaceae	*Lantana*		Y			1
plants	land plants	Verbenaceae	*Lantana camara*	lantana	Y			8/1
plants	land plants	Verbenaceae	*Lantana montevidensis*	creeping lantana	Y			2/1
plants	land plants	Verbenaceae	*Stachytarpheta cayennensis*		Y			1/1
plants	land plants	Verbenaceae	*Stachytarpheta mutabilis*	pink snakeweed	Y			1/1
plants	land plants	Verbenaceae	*Verbena incompta*		Y			2/2
plants	land plants	Verbenaceae	*Verbena litoralis var. litoralis*		Y			1/1
plants	land plants	Viburnaceae	*Sambucus nigra*		Y			1/1
plants	land plants	Violaceae	*Pigea monopetala*			C		5/5
plants	land plants	Violaceae	*Pigea stellarioides*			C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Violaceae	*Viola banksii*			C		1/1
plants	land plants	Violaceae	*Viola hederacea*			C		3/3
plants	land plants	Viscaceae	*Notothixos subaureus*	golden mistletoe		C		2/2
plants	land plants	Viscaceae	*Viscum articulatum*	flat mistletoe		C		1/1
plants	land plants	Vitaceae	*Causonis clematidea*			C		2/2
plants	land plants	Vitaceae	*Cissus antarctica*			C		3/1
plants	land plants	Vitaceae	*Cissus hypoglauca*			C		1/1
plants	land plants	Vitaceae	*Clematicissus opaca*			C		1/1
plants	land plants	Vitaceae	*Parthenocissus quinquefolia*		Y			1/1
plants	land plants	Xanthorrhoeaceae	*Xanthorrhoea johnsonii*			SL		1
plants	land plants	Xanthorrhoeaceae	*Xanthorrhoea latifolia subsp. latifolia*			SL		1/1
plants	land plants	Xanthorrhoeaceae	*Xanthorrhoea macronema*			SL		2/2
plants	land plants	Zingiberaceae	*Alpinia caerulea*	wild ginger		C		1/1
plants	land plants	Zingiberaceae	*Alpinia zerumbet*		Y			2/2
plants	land plants	Zosteraceae	*Zostera capricorni*	eelgrass		SL		1/1
plants	uncertain	Indet.	*Indet.*			C		1

CODES

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

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.*
The codes are Extinct (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 E Likelihood of Occurrence

Scientific Name	Common Name	Status NC Act	Status EPBC Act	Source^	General habitat requirements	Known: The species has been recorded in the Site by a qualified ecologist during past 30 years.	Likely: Suitable habitat for the species occurs in the Site and proximate records exist.	Possible: Suitable habitat for the species occurs on Site but no recent records from the Site or proximate areas exist OR suitable habitat for the species may not	Unlikely: Suitable habitat for the species absent, and no recent records from the Site or proximate areas	Likelihood of Occurrence of Suitable Habitat
Flora										
Arthraxon hispidus var. hispidus	Hairy-joint grass	C	V	PMST	Fringes of rainforest and wet Eucalypt forests.	No	No	No	Yes	Unlikely
Bosistoa transversa	Three-leaved bosistoa	C	V	PMST	Wet sclerophyll forest, dry sclerophyll forest and rainforest up to 300 m in altitude. Associated vegetation includes Argyrodendron trifoliolatum, Syzygium hodgkinsoniae, Endiandra pubens, Dendrocnide photiNophylla, Acmena ingens, Diploglottis australis and Diospyros mabacea.	No	No	No	Yes	Unlikely
Corchorus cunninghamii	Native jute	E	E	PMST, WO	Ecotone of wet sclerophyll forest and dry to dry-subtropical rainforest (e.g. araucarian microphyll vine forest), and in Hoop Pine (Araucaria cunninghamii) plantations. It often occurs on hill crests, exposed slopes, ridges or upper slopes of hilly terrain on south or south-east aspect.	No	No	No	Yes	Possible
Cryptocarya foetida	Stinking laurel	V	V	PMST	Restricted to coastal sands, or if not, then close to the coast, occurring in littoral rainforest on old sand dunes and subtropical rainforests over slate and occasionally on basalt to an altitude of 150 m	No	No	No	Yes	Unlikely
Endiandra floydii	Floyd's walnut	E	E	PMST	Found in warm-temperate and subtropical rainforest, from sea level to 430 m altitude.	No	No	No	Yes	Unlikely
Gossia gonoclada	Angle-stemmed myrtle	CE	E	PMST	Found on sloping metamorphic or flat alluvial terraces of (largely) permanent waterways, which experience some degree of tidal influence at an elevation of 5 to 70 m.	No	No	No	Yes	Unlikely
Leichhardtia longiloba		V	V	WO	Grows in open eucalypt forest, or margins of subtropical and warm temperate rainforest, and in areas of rocky outcrops.	No	No	No	Yes	Unlikely
Macadamia integrifolia	Macadamia nut	V	V	PMST	Remnant rainforest, preferring partially open areas such as rainforest edges. High nutrient alluvial and volcanic soils predominate often with considerable exposure of rock fragments or substrate, mostly basalt and diorite. The surface soils are uniformly dark, slightly acid (pH 5.5–6.5) and varying in texture from clayey-sand through various loams to silty-clay. All sites are well-drained, some excessively so.	No	No	No	Yes	Unlikely
Macadamia tetraphylla	Rough-shelled bush nut	V	V	PMST, WO	subtropical rainforest and complex Notophyll vineforest, at the margins of these forests and in mixed sclerophyll forest. It occurs in restricted habitat, growing on moderate to steep hillslopes on alluvial soils at well-drained sites.	No	No	Yes	No	Possible
Marsdenia longiloba	Slender marsdenia	V	V	PMST, WO	Subtropical and warm temperate rainforest, lowland moist or open eucalypt forest adjoining rainforest and, sometimes, in areas with rock outcrops. Associated species include Eucalyptus crebra, E. microcorys, E. acmeNoides, E. saligna, E. propinqua, Corymbia intermedia and Lophostemon confertus.Flowering occurs in summer.	No	No	Yes	No	Possible
Persicaria elatior	Knotweed	V	V	PMST	Grows in damp places, including coastal swampy area, along watercourses, streams and lakes, and swamp forest. May occurin disturbed areas.	No	No	No	Yes	Unlikely
Phaius australis	Lesser swamp-orchid	E	E	PMST	This species is associated with coastal wet heath/sedgeland wetlands, swampy grassland or swampy forest and often where Broad-leaved Paperbark (*Melaleuca leucadendra*) or Swamp Mahogany (*Eucalyptus robusta*) are found. Less commonly, the species has been found in drier forest near the coast	No	No	Yes	No	Possible
Planchonella eerwah	Shiny-leaved condoo	E	E	PMST	Sub-tropical rainforest, dry rainforest, and hoop pine vine scrub. Populations known from Ipswich-Beaudesert, Beenleigh-Ormeau-Pimpama, and Nambour-Maleny.	No	No	No	Yes	Unlikely
Rhodamnia rubescens	Scrub turpentine	CE	CE	PMST	Subtropical Rainforests, Northern Warm Temperate Rainforests, Littoral Rainforest. It may also occur as a pioneer in adjacent areas of dry sclerophyll and grassy woodland associations.	No	No	No	Yes	Unlikely
Rhodomyrtus psidioides	Native guava	CE	CE	PMST	Subtropical Rainforests, Warm Temperate Rainforests, Littoral Rainforest, and Wet Sclerophyll Forests. The species may be found in the adjoining margins of sclerophyll vegetation associated with any of these rainforest formations.	No	No	No	Yes	Unlikely
Samadera bidwillii	Quassia	V	V	PMST	Occurs in lowland rainforest often with Araucaria cunninghamii or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland, it is commonly found in areas adjacent to both temporary and permanent watercourses up to 510 m altitude	No	No	No	Yes	Unlikely
Mammals										
Dasyurus maculatus maculatus	Spotted-tail quoll	V	E	PMST	Intact eucalypt forests and woodlands, coastal heathlands and rainforests.	No	No	No	Yes	Unlikely
Petaurus australis australis	Yellow-bellied glider	V	V	WO	Occurs in eucalypt-dominated woodlands and forests, including both wet and dry sclerophyll forests.	No	No	Yes	No	Possible
Petauroides volans volans	Greater glider	V	V	PMST, WO	Largely restricted to eucalypt forests and woodlands. It is primarily folivorous, with a diet mostly comprising eucalypt leaves, and occasionally flowers. During the day it shelters in tree hollows, with a particular selection for large hollows in large, old trees	No	No	Yes	No	Possible
Phascolarctos cinereus	Koala	V	V	PMST, WO	Eucalypt woodland, forest with an abundance of Food and shelter trees of the genus's Eucalyptus, Corymbia and Lophostemon.	No	Yes	No	No	Likely
Potorous tridactylus tridactylus	Long-nosed Potoroo	V	V	PMST	A few populations of the northern long-nosed potoroo exist in lowland heath and coastal habitats. Occurs in a range of vegetation types from coastal scrub and heathy woodland to wet sclerophyll forest and rainforest	No	No	No	Yes	Unlikely
Pteropus poliocephalus	Grey-headed flying fox	C	V	PMST, WO	Suitable foraging resources and roosting sites are provided by a variety of forest types including rainforests, open forests, closed and open woodlands, Melaleuca swamps and Banksia woodlands. The primary food source is blossom from Eucalyptus and related genera.	No	Yes	No	No	Likely
Tachyglossus aculeatus	Short-beaked echidna	SL	-	WO	May be found in most habitats.	No	No	Yes	No	Possible
Xeromys myoides	Water mouse	V	V	PMST	Mangroves and the associated saltmarsh, sedgelands, clay pans, heathlands and freshwater wetlands.	No	No	No	Yes	Unlikely
Amphibians										
Adelotus brevis	Tusked frog	V	-	WO	Rainforests, wet sclerophyll forests and open grasslands. Usually is found under logs, stones or leaf litter near puddles, creeks and ponds.	No	Yes	No	No	Likely
Litoria olongburensis	Wallum sedge frog	V	V	PMST	Found in ephemeral, seasonal and permanent wetlands with emergent reeds, ferns and/or sedges, in undisturbed coastal wallum swamps. Where wallum is described as sandmass heathland and shrubland, and various forest, woodland, sedgeland and grassland communities.	No	No	Yes	No	Possible

Birds										
Actitis hypoleucos	Common sandpiper	SL	Ma/Mi	PMST, WO	Coastal and sometimes inland wetlands, around muddy margins or rocky shores. Found in estuaries, stream deltas, around lakes, pools, dams etc. Sometimes found in mangrove areas, in rocky and snag littered mud.	No	No	No	Yes	Unlikely
Anseranas semipalmata	Magpie goose	C	Ma/Mi	PMST	Found in open wetland areas such as floodplains and swamps.	No	No	Yes	Possible	Possible
Anthochaera phrygia	Regent Honeyeater	E	CE	PMST, WO	The most fertile sites within dry box-ironbark eucalypt woodland and dry sclerophyll forest associations.	No	No	No	Yes	Unlikely
Apus pacificus	Fork-tailed swift	SL	Ma/Mi	PMST, WO	This species is an almost exclusively aerial species, flying from <1 m to >300 m above ground overflying a range of habitat types over inland plains but sometimes above foothills or in coastal areas. Likely roost aerially, but have been observed landing.	No	No	Yes	No	Possible
Ardea alba	Great egret	C	Ma/Mi	PMST	Found in a variety of wetland habitats, including inland to coastal, saline to freshwater, open to vegetated, and a range of sizes. Usually inhabits shallow waters.	No	No	Yes	No	Possible
Ardea ibis	Cattle egret	C	Ma/Mi	PMST	Found in grasslands, woodlands and wetlands, and is not common in arid areas. It also uses pastures and croplands, especially where drainage is poor.	No	No	Yes	No	Possible
Arenaria interpres	Ruddy Turnstone	SL	Ma/Mi	PMST	Found on coastal regions with exposed rock coast lines or coral reefs. It also lives near platforms and shelves, often with shallow tidal pools and rocky, shingle or gravel beaches.	No	No	No	Yes	Unlikely
Botaurus poiciloptilus	Australasian Bittern	C	E	PMST, WO	Freshwater wetlands with tall dense vegetation	No	No	No	Yes	Unlikely
Calidris acuminata	Sharp-tailed sandpiper	SL	Ma/Mi	PMST, WO	Found on muddy edges of shallow wetlands, fresh or brackish, with sedges, grass, and saltmarsh vegetation present. For example, lakes, swamps, dams, saltpans, flooded paddocks, sheltered intertidal mudflats.	No	No	No	Yes	Unlikely
Calidris alba	Sanderling	SL	Ma/Mi	PMST, WO	Almost always found on the coast, mostly on open sandy beaches exposed to open sea-swell, and also on exposed sandbars and spits, and shingle banks, where they forage in the wave-wash zone and amongst rotting seaweed.	No	No	No	Yes	Unlikely
Calidris canutus	Red knot	E	E	PMST, WO	Intertidal mudflats and sandflats, in estuaries, bays, inlets, and lagoon areas. Sometimes occur on terrestrial saline wetlands near the coast.	No	No	No	Yes	Unlikely
Calidris ferruginea	Curlew sandpiper	CE	CE	PMST, WO	Intertidal mudflats in sheltered coastal areas, including bays, inlets, estuaries and lagoons. Sometimes occur around non-tidal swamps, lakes or ponds near the coast, in fresh or brackish waters.	No	No	No	Yes	Unlikely
Calidris melanotos	Pectoral sandpiper	SL	Ma/Mi	PMST	Mostly found around shallow wetlands, fresh or saline, usually coastal. Prefers wetlands with open fringing mudflats and low vegetation. Forages in shallow water and soft mud.	No	No	No	Yes	Unlikely
Calidris tenuirostis	Great knot	CE	CE	PMST, WO	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, saltlakes and non-tidal lagoons. The Great Knot rarely occurs on inland lakes and swamps.	No	No	No	Yes	Unlikely
Calyptorhynchus lathami lathami	Southern glossy black-cockatoo	C	V	PMST, WO	South-eastern glossy black cockatoos rely on nine species of sheoaks (Allocasuarina spp. and Casuarina spp.) for feeding. In south-east Queensland and north-east New South Wales, they show preference for black sheoak (A. littoralis) and forest sheoak (A. torulosa),	No	No	Yes	No	Possible
Charadrius leschenaultii	Greater sand plover		V, Ma/Mi	PMST, WO	In the non-breeding grounds in Australasia, the species is almost entirely coastal, inhabiting littoral and estuarine habitats. They mainly occur on sheltered sandy, shelly or muddy beaches, large intertidal mudflats, sandbanks, salt-marshes, estuaries, coral reefs, rocky islands rock platforms, tidal lagoons and dunes near the coast.	No	No	No	Yes	Unlikely
Charadrius mongolus	Lesser sand plover	V	E, Ma/Mi	PMST, WO	In the non-breeding grounds in Australasia, the species is almost entirely coastal, inhabiting littoral and estuarine habitats. They mainly occur on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks, as well as sandy estuarine lagoons.	No	No	No	Yes	Unlikely
Charadrius veredus	Oriental plover		Ma/Mi	PMST	In coastal habitats such as estuarine mudflats and sandbanks, on sandy or rocky ocean beaches or nearby reefs, or in near-coastal grasslands, before dispersing further inland.	No	No	No	Yes	Unlikely
Cuculus optatus	Oriental cuckoo	SL	Ma/Mi	PMST	Usually inhabits forest canopy, open wooded areas, hill country, coniferous forest, and sometimes above the tree line.	No	No	No	Yes	Unlikely
Erythrotriorchis radiatus	Red goshawk	E	V	PMST	Forest and woodland with a mosaic of vegetation types, large prey populations (birds), and permanent water. The vegetation types include eucalypt woodland, open forest, tall open forest, gallery rainforest, swamp sclerophyll forest, and rainforest margins.	No	No	No	Yes	Unlikely
Falco hypoleucos	Grey falcon	V	-	PMST	Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast.	No	No	No	Yes	Unlikely
Gallinago hardwickii	Latham's snipe	SL	Ma/Mi	PMST, WO	Found in wetlands up to 2000 m elevation, usually open freshwater with low dense vegetation, but also brackish and saline wetlands.	No	No	No	Yes	Unlikely
Gallinago megala	Swinhoe's snipe		Ma/Mi	PMST	Occurs at the edges of wetlands, such as wet paddy fields, swamps and freshwater streams. The species is also known to occur in grasslands, drier cultivated areas.	No	No	Yes	No	Possible
Gallinago stenura	Pin-tailed Snipe		Ma/Mi	PMST	Occurs most often in or at the edges of shallow freshwater swamps, ponds and lakes with emergent, sparse to dense cover of grass/sedge or other vegetation.	No	No	Yes	No	Possible
Haliaeetus leucogaster	White-bellied sea-eagle	C	Ma/Mi	PMST	Inhabits coastal areas, around terrestrial wetlands or near large open water bodies of water. Can occur inland or in proximity to the sea.	No	No	Yes	No	Possible
Hirundapus caudacutus	White-throated needle tail	SL	V	PMST, WO	Almost exclusively aerial, up to heights of 1000 m. Mostly occur over open forest, rainforest, clearings, and sometimes below the canopy. Sometimes occur over sandy beaches and mudflats.	No	No	Yes	No	Possible
Lathamus discolor	Swift parrot	E	CE	PMST	A variety of woodlands with mature eucalypts, where nectar production is plentiful and reliable.	No	No	No	Yes	Unlikely
Limosa lapponica	Bar-tailed godwit	V	V	PMST, WO	Occurs mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It has also been recorded in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats.	No	No	No	Yes	Unlikely
Limosa limosa	Black-tailed Godwit		Ma/Mi	PMST	Primarily coastal habitat environment. The species is commonly found in sheltered bays, estuaries and lagoons with large intertidal mudflats or sandflats, or spits and banks of mud, sand or shell-grit; occasionally recorded on rocky coasts or coral islets.	No	No	No	Yes	Unlikely
Merops ornatus	Rainbow beeater	C	Ma/Mi	PMST	Found in open forests, woodlands and shrublands, and cleared areas, usually near water. It will be found on farmland with remnant vegetation and in orchards and vineyards. It will use disturbed sites such as quarries, cuttings and mines to build its nesting tunnels.	No	Yes	No	No	Likely
Monarcha melanopsis	Black-faced monarch	SL	Ma/Mi	PMST	Found mostly in rainforest environments, sometimes in open eucalypt forests, mountain gullies, coastal foothills and scrub, and occasionally among mangroves.	No	No	Yes	No	Possible

Myiagra cyanoleuca	Satin flycatcher	SL	Ma/Mi	PMST	Mostly found in eucalypt forest, particularly wet sclerophyll forest.	No	No	Yes	No	Possible
Ninox stenua	Powerful owl	V	-	WO	Found in open forests and woodlands, as well as along sheltered gullies in wet forests with dense understoreys, especially along watercourses.	No	No	Yes	No	Possible
Numenius madagascariensis	Eastern curlew	E	CE	PMST, WO	Forages on soft sheltered intertidal sandflats or mudflats, open and without vegetation or covered with seagrass, often near mangroves, on saltflats and in saltmarsh, rockpools and among rubble on coral reefs, and on ocean beaches near the tideline.	No	No	No	Yes	Unlikely
Numenius minutus	Little curlew		Ma/Mi	PMST	Found feeding in short, dry grassland and sedgeland, including dry floodplains and blacksoil plains, which have scattered, shallow freshwater pools or areas seasonally inundated.	No	No	Yes	No	Possible
Numenius phaeopus	Whimrel		Ma/Mi	PMST	Found on the intertidal mudflats of sheltered coasts. It is also found in harbours, lagoons, estuaries and river deltas, often those with mangroves, but also open, unvegetated mudflats.	No	No	No	Yes	Unlikely
Pandion haliaetus	Osprey	SL	Ma/Mi	PMST	Coastal and littoral habitats, mainly tropical and temperate terrestrial wetlands such as mangrove swamps, estuaries, rivers, lakes. Preference for coastal cliffs and elevated offshore islands. Forage in large areas of water (fresh, saline, or brackish).	No	No	Yes	No	Possible
Pluvialis fulva	Pacific golden plover	SL	Ma/Mi	PMST	Usually inhabits coastal habitats, though it occasionally occurs around inland wetlands. Pacific Golden Plovers usually occur on beaches, mudflats and sandflats (sometimes in vegetation such as mangroves, low saltmarsh such as Sarcocornia, or beds of seagrass) in sheltered areas including harbours, estuaries and lagoons, and also in evaporation ponds in saltworks	No	No	Yes	No	Possible
Pluvialis squatarola	Grey plover	SL	Ma/Mi	PMST	Occur almost entirely in coastal areas, where they usually inhabit sheltered embayments, estuaries and lagoons with mudflats and sandflats, and occasionally on rocky coasts with wave-cut platforms or reef-flats, or on reefs within muddy lagoons.	No	No	No	Yes	Unlikely
Philomachus pugnax	Ruff		Ma/Mi	PMST	Found on generally fresh, brackish of saline wetlands with exposed mudflats at the edges. It is found in terrestrial wetlands including lakes, swamps, pools, lagoons, tidal rivers, swampy fields and floodlands.	No	No	Yes	No	Possible
Rhipidura rufifrons	Rufous fantail	SL	Ma/Mi	PMST, WO	Found mainly in wet sclerophyll forests, often in gullies, sometimes found in subtropical and temperate rainforest.	No	No	Yes	No	Possible
Rostratula australis	Australian painted snipe	V	E	PMST, WO	Shallow inland wetlands, either freshwater or brackish, that are either permanently or temporarily filled.	No	No	No	Yes	Unlikely
Symposiachrus trivirgatus	Spectacled monarch	SL	Ma/Mi	PMST	Occurs mainly in rainforests within thick understorey, waterside vegetation, wet gullies, and mangroves.	No	No	No	Yes	Unlikely
Thinornis rubicollis rubicollis	Hooded plover	C	V	PMST	Sandy ocean beaches, especially those that are broad and flat, with a wide wave-wash zone for feeding, much beachcast seaweed, and backed by sparsely vegetated sand- dunes for shelter and nesting. Occasionally found in tidal bays and estuaries.	No	No	No	Yes	Unlikely
Tringa brevipes	Grey-tailed tattler		Ma/Mi	PMST	Found on sheltered coasts with reefs and rock platforms or with intertidal mudflats. It can also be found at intertidal rocky, coral or stony reefs as well as platforms and islets that are exposed at low tide. It has been found around shores of rock, shingle, gravel or shells and also on intertidal mudflats in embayments, estuaries and coastal lagoons, especially fringed with mangroves.	No	No	No	Yes	Unlikely
Tringa glareola	Wood Sandpiper		Ma/Mi	PMST	Occur on well-vegetated, shallow, freshwater wetlands, such as swamps, billabongs, lakes, pools and waterholes. They are typically associated with emergent, aquatic plants or grass, and dominated by taller fringing vegetation, such as dense stands of rushes or reeds, shrubs, or dead or live trees, especially Melaleuca and River Red Gums Eucalyptus camaldulensis and often with fallen timber.	No	No	Yes	No	Possible
Tringa incana	Wandering tattler		Ma/Mi	PMST	Found on rocky coasts with reefs and platforms, points, spits, piers, offshore islands and shingle beaches or beds. It is occasionally seen on coral reefs or beaches, and tends to avoid mudflats.	No	No	No	Yes	Unlikely
Tringa nebularia	Common greenshank	SL	Ma/Mi	PMST	Found in sheltered coastal habitats and inland wetlands, with large mudflats, saltmarsh, mangroves, or seagrass. Can inhabit artificial wetlands such as flooded cropland and sewage farms, but mostly occur around rivers, estuaries, creeks, lakes.	No	No	No	Yes	Unlikely
Tringa stagnatilis	Marsh sandpiper		Ma/Mi	PMST	Lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, saltpans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also regularly at sewage farms and saltworks.	No	No	Yes	No	Possible
Turnix melanogaster	Black breasted button- quail	V	V	PMST	Drier low closed forests, particularly semi-evergreen vine thicket, low microphyll vine forest, Araucarian microphyll vine forest and Araucarian Notophyll vine forest mostly in areas with 770-1200 mm rainfall per annum.	No	No	No	Yes	Unlikely
Xenus cinereus	Terek Sandpiper		Ma/Mi	PMST	Mostly forages in the open, on soft wet intertidal mudflats or in sheltered estuaries, embayments, harbours or lagoons.	No	No	No	Yes	Unlikely
Reptiles										
Coeranoscincus reticulatus	Three-toed Snake-tooth Skink		V	PMST	Found in loose, well mulched friable soil, in and under rotting logs, in forest litter, under fallen hoop pine bark and under decomposing cane mulch.	No	No	Yes	No	Possible
Hemiaspis damelii	Grey snake	E	E	PMST	In Queensland, grey snake habitat is Brigalow Acacia harpophylla and Belah Casuarina cristata woodlands on heavy, dark brown to black cracking clay soils, particularly in association with water bodies. Habitat in Queensland also includes Queensland bluegrass Dichanthium sericeum and/or Mitchell grass Astrebla spp. grassland on alluvial plains with cracking clay soils	No	No	No	Yes	Unlikely

E = Endangered, V = Vulnerable under both NC Act and EPBC Act. CE = Critically Endangered under the EPBC Act. NT = Near Threatened; LC = Least Concern under the NC Act.
^WO = Wildlife Online; PMST= EPBC Protected Matters Report

Appendix F TEC Plots

Site	Canopy species	Estimated canopy cover	Estimated height	Regional ecosystem	Native ground layer >80%	Native ground layer 50-80%	Native ground 50-20%	Native <20%	Native ground layer species	Exotic ground layer species	Plates
	Melaleuca quinquenervia									Setaria sphacelata	
Q1	Eucalyptus tereticornis	60	18	12.3.6				Y	Juncus usitatus	Ageratum conyzoides	1-1 to 1-4
	Melaleuca quinquenervia									Setaria sphacelata	
	Eucalyptus tereticornis								Juncus usitatus	Ageratum conyzoides	
Q2	Lophostemon suaveolens	60	16	12.3.6		Y			Juncus continuus	Cuphea hyssopifolia	2-1 to 2-4
	Eucalyptus racemosa										
Q3	Melaleuca quinquenervia	80	12	12.3.6	Y				Ottochloa gracillima	Ageratum conyzoides	3-1 to 3-4
	Melaleuca quinquenervia,Eucalyptus									Sporobolus pyramidalis	
										Setaria spaceolata	
Q4	tereticornis	15	18	12.3.6				Y	Juncus usitatus	Ageratum conyzoides	4-1 to 4-4
	Melaleuca quinquenervia										
	Eucalyptus tereticornis										
	Eucalyptus siderophloia									Sporobolus pyramidalis	
	Corymbia intermedia									Seteria spaceolata	
Q5	Lophostemon suaveolens	50	22	12.3.11		Y			Imperata cylindrica	Ageratum conyzoides	5-1 to 5-4
	Corymbia intermedia								Ottochloa gracillima		
	Eucalyptus pilularis								Dianella caerulea		
	Eucalyptus tereticornis								Lomandra longifolia		
Q6	Melaleuca quinquenervia	70	22	12.3.11		Y			Imperata cylindrica	Solanum chrysotrichum	6-1 to 6-4
	Melaleuca quinquenervia										
	Eucalyptus tereticornis										
	Eucalyptus siderophloia										
	Corymbia intermedia								Ottochloa gracilima		
Q7	Lophostemon suaveolens	80	18	12.3.11	Y				Imperata cylindrica		7-1 to 7-4
	Melaleuca quinquenervia										
	Eucalyptus tereticornis								Ottochloa gracillima		
	Eucalyptus siderophloia								Entolasia stricta		
	Corymbia intermedia								Lomandra longifolia		
Q8	Lophostemon suaveolens	80	25	12.3.11	Y				Imperata cylindrica		8-1 to 8-4

Q	North	East	South	West
1				
2				

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Q	North	East	South	West
3				
4				
5				

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Q	North	East	South	West
6				
7				
8				

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ENVIRONMENTAL

Appendix G Significant Impact Assessment

Matters of National Environmental Significance Significant Impact Assessment

Redlands Coast Regional Sport and Recreation Precinct

Raptor ENVIRONMENTAL

18 January 2023

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1	17/11/2022	Draft for comment	M. Timms	D. Francis
2	25/11/2022	Amended with comments	M. Timms	D. Francis
3	18/01/2023	Amended with minor comments	M. Timms	D. Francis

Table of Contents

1 Endangered Species and Ecological Communities

1.1 Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)

***Environment Protection and Biodiversity Conservation Act 1999* Listing Status:** Endangered

***Nature Conservation Act 1992* Listing Status:** Endangered

Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)	
Significant Impact Criteria	**Impact Assessment**
Lead to a long-term decrease in the size of a population	**Unlikely.** The Significant Impact Guidelines specify that: "*a 'population of a species' is defined under the EPBC Act as an occurrence of the species in a particular area. In relation to critically endangered, endangered or vulnerable threatened species, occurrences include but are not limited to:* • *a geographically distinct regional population, or collection of local populations, or* • *a population, or collection of local populations, that occurs within a particular bioregion*." For the koala, the aspect of the definition that relates to "geographically distinct" populations does not apply because of the relative continuity of the species across the range in which it is listed. Given this, determining what is a population must rely on the bioregion. Within the southeast Queensland bioregion, there are several genetically distinct local populations (Kjeldsen et al. 2019, Lee et al. 2009). The Project Area falls within the Koala Coast local population of the southeast Queensland bioregional population. Two recent studies have been undertaken on koalas within the Redland City Council Local Government Area (LGA) to provide information on the koala population characteristics to inform efficient and effective management including: • Final Report to Redland City Council (Biolink, 2019); and • Koala Population Genetic Assessment Project (University of the Sunshine Coast, 2021)

Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)	
Significant Impact Criteria	**Impact Assessment**
	The Biolink (2019) report shows that koala records have no significant change in the extent of occupancy in the Redlands Coast LGA when comparing historical and recent records. However, there has been an ongoing decline in the frequency of reporting koalas from the mainland Redland Coast since 2000. Analysis indicates that disease, vehicle strike and dog attack are the key contributors to koala mortality in the region. Preferred Eucalypt species for the Redlands Coast koalas formed the basis for habitat classification based on the presence/absence/abundance of Preferred Koala Food Tree (PKFT) species. This study enabled an estimate of the remaining areas of PKFTs to be 8,346 ha on the mainland of the Redland Coast. Field surveys were completed at 59 sites and a low population density estimate of 0.04 Koalas per ha was extrapolated with an estimated population of 754 Koalas within the Redland Coast. The density estimate was modified to reflect only actively utilised areas and a density of 0.063 Koalas per ha was developed. The USC (2021) assessment aimed to repeat the koala scat surveys and population and genetic assessment completed across the mainland Redland Coast in 2018. The assessment resulted in a lower-than-expected genetic diversity which is attributed to an increasing urban footprint restricting dispersal opportunities, inbreeding and population size. Chlamydia was widely present in the population and was detected in 38% of Koalas. The results indicate that over the last three years the broad-scale population genetic characteristics of the mainland population were preserved. The Department of Climate Change, Energy and the Environment and Water (DCCEEW, 2022) released a suite of guidance material relating to the referral of the endangered Koala on 27 October 2022. This material includes a landing page with links to online resources and documents including the resource, *Identifying habitat for the endangered koala* (DCCEEW, 2022). The guidance material refers to the publication by the Australian National University (Youngentob et al., 2021) and indicates that Locally important Koala Trees (LIKT) should be considered when determining if an area contains koala habitat. The guidance material states that the ground itself forms an essential component of koala habitat, as such the Project Area as a whole is considered Koala habitat. Below is a summary of the characterisation of koala habitat types within the Project Area based on the Australian National University Report (Youngentob et al., 2021) and as per the methodology described in the Matters of National Environmental Significance Report (Raptor Environmental, 2022). Koala habitat categories are shown in **Figure 1**.

Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)	
Significant Impact Criteria	**Impact Assessment**

Habitat Category	Based on ANU Report (Youngentob et al., 2021)	
	Locally important koala tree (LIKT)	**Ancillary koala habitat tree**
A	LIKT trees dominate the vegetation community	Ancillary koala habitat trees in scattered in the vegetation community
B	LIKT scattered	Ancillary koala habitat trees dominate the vegetation community
C	Areas cleared, do not support LIKT or ancillary trees OR support isolated LIKT or ancillary trees	

The table below includes a comparison of Koala habitat types estimated based on pre-construction and post-construction areas.

Habitat Category	Pre-construction (ha)	Post-construction (ha)	Reduction of habitat type (ha)
A	112.5	112.3	0.17
B	15.3	9.4	5.9
C	31.5	4.6	26.9

Based on the Koala presence/absence surveys completed by Cardno (2019 and 2021) the Project Area is known to support Koalas. The 2019 and 2021 surveys indicate Koala presence is predominately within the Category A habitat within the Retention Area (**Figure 1**). The Biolink study (2019) estimates a density of 0.063 Koalas per ha within the remaining PKHT. If the density of 0.063 is applied to the extent of impacted Category A and B habitat combined (i.e. 6.1 ha) and the area of Category C based on the total woody vegetation cover extracted from the Vegetation Management Plan (i.e. 7 ha), then the density of koalas within the Disturbance Footprint is ((6.1 ha + 7 ha) x 0.063) ~ 0.82 of a koala.

The *Conservation Advice for Phascolarctos cinereus (Koala) combined populations of Queensland, New South Wales and the Australian Capital Territory* (Department of Agriculture, Water and the Environment,

Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)	
Significant Impact Criteria	**Impact Assessment**
	2022) states there are an estimated 15,821 individuals in southeast Queensland. Taking into account the direct impacts of the project, at most, 0.005% of the population will be impacted. Potential indirect impacts as a result of the Project include a reduction in the suitability of the surrounding koala habitat due to an increase in lighting and noise potential to limit movement opportunities during the construction phase, increased risk of injury and mortality, increase in weed invasion and/or spread and potential and increased intensity. Indirect impacts are unlikely to lead to a long-term decrease in the size of a population. Based on a direct impact on 0.005% of the population (i.e. 0.82 of a koala) the Project is unlikely to lead to a long-term decrease in the size of the population of Koalas in the bioregion.
Reduce the area of occupancy of the species	**Unlikely.** The area of occupancy for koala is estimated at 19,428 km^2 (DAWE, 2022) and is calculated using a 2x2 km grid cell method based on the IUCSN Red List Guidelines 2014 (IUCN, 2019). The Disturbance Footprint is located within 1 grid square, with direct impacts limited to the existing selectively cleared paddocks (i.e. direct impact to koala habitat, 0.17 ha of Category A, 5.9 ha of Category B and 26.9 ha of Category C koala habitat types). The design retains Koala habitat patches within the Avoidance Area and the central waterway corridor which will be enhanced through rehabilitation which strengthens the ecological corridor extending north to a local stepping stone corridor and the south to the state corridor. Considering movement within the local and state-wide ecological corridors will be maintained and enhanced as part of the Project and dispersal will be maintained within the Disturbance Footprint during the operational phase an overall reduction in the area of occupancy of the Koala is not anticipated.
Fragment an existing population into two or more populations	**Unlikely.** Within the context of the southeast Queensland bioregion population, or even the Koala Coast local population, the Project will not fragment an existing population.

Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)	
Significant Impact Criteria	**Impact Assessment**
	Within the context of the Project Area, the Disturbance Footprint incorporates strategic measures to retain Koala habitat patches within the Avoidance Area. The Rehabilitation Plan retains and enhances the central waterway corridor within the northern portion of the Project Area allowing for movement and dispersal opportunities to the north and south of the Disturbance Footprint. Dispersal opportunities through the proposed sports fields and cycle precinct will be maintained. Further, traffic management measures including reduced speed zones, signage, and pavement stencilling is incorporated into the design. The Project is unlikely to fragment the existing southeast Queensland bioregion population.
Adversely affect habitat critical to the survival of a species	**Unlikely.** Habitat critical to the survival of a species is the area that the species relies on to halt decline and promote the recovery of the species. The Significant Impact Guidelines define critical habitat as: *"Habitat critical to the survival of a species or ecological community' refers to areas that are necessary:* • *for activities such as foraging, breeding, roosting, or dispersal* • *for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)* • *to maintain genetic diversity and long term evolutionary development, or* • *for the reintroduction of populations or recovery of the species or ecological community.* *Such habitat may be, but is not limited to: habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the minister under the EPBC Act."* The Recovery Plan for the Koala poses seven key questions to consider in the evaluation of Koala habitat (Department of Agriculture, Water and the Environment, 2022). These are: **a) whether the habitat is used during periods of stress (examples flood, drought or fire)**

Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)	
Significant Impact Criteria	**Impact Assessment**
	○ A total of 38% of the Koala population are infected with chlamydia (USC, 2021). It is well known that stress increases susceptibility to infection by pathogens and reduces tolerance to infection; and the high rate of chlamydia infection within the population may indicate the prevalence of some external stressors. Increased monitoring of the Koalas within the Project Area and broader Mount Cotton Safe Koala Neighbourhood will assist in improving the health of the Mount Cotton population by facilitating veterinary care of individuals reported with chlamydia as part of disease management programs (Redland City Council 2022)). ○ The central waterway corridor within the northern portion of the Project Area will be retained and enhanced and provides a climate refuge that contributes to the Project Area's resilience to drying conditions and will provide a cooler refuge during periods of bushfire and heatwaves (DCCEEW, 2022). The Disturbance Footprint is adjacent to a flood hazard area associated with the central waterway corridor (Stormwater Management Plan, Bligh Tanner, 2022) and is predominately mapped as a Potential bushfire hazard buffer adjoining medium and high bushfire intensity area (LEC, 2022). The Disturbance Footprint is likely to be uitilsed as a refuge during periods of stress as a result of flood and bushfire events. Dispersal opportunities through the Disturbance Footprint will be maintained in the operational phase. **b) whether the habitat is used to meet essential life cycle requirements (e.g. foraging, breeding, social behaviour, dispersal)** ○ Based on the presence/absence survey completed by Cardno in 2019 and 2021, koalas are known to occur within the Project Area and as such habitat within the Project Area meets essential life cycle requirements for Koalas. Based on the above review of Koala habitat within the Disturbance Footprint, impacts on Koala habitat estimate 0.82 of a koala (i.e. 0.005% of the koala population) will be impacted by the Project. **c) the extent to which the habitat is used by important populations** ○ Important populations of Koala have not yet been defined (DAWE, 2022). Despite this, the southeast Queensland population will likely be considered an important population as it is one of the three largest in Queensland. The Disturbance Footprint supports an estimated 0.005% of the southeast Queensland population.

Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)	
Significant Impact Criteria	**Impact Assessment**
	d) whether the habitat is necessary to maintain genetic diversity and long-term evolutionary development o Ecological corridors within the Project Area will be retained and enhanced by the Project as such genetic diversity and long-term evolutionary development will be maintained. Direct impacts as a result of the Project account for a loss of an estimated 0.82 of a Koala and improvement through restoration, monitoring and health management will support the long-term evolutionary development of the species. Further, dispersal opportunities through the Disturbance Footprint will be maintained in the operational phase. No significant loss of genetic diversity is anticipated based on the expected loss of less than one individual koala. **e) whether the habitat is necessary for use as corridors to allow the species to move freely between sites used to meet essential life cycle requirements** o The Disturbance Footprint contains predominately Category C and some Category B koala habitat and is likely to support foraging and dispersal opportunities. The Avoidance Area retains a scattered native canopy within the cycle precinct which allows for continued foraging and dispersal between habitats and dispersal opportunities will be maintained within the Disturbance Footprint. The Retention Area incorporates the central waterway corridor which will be maintained and enhanced for the Project and provides dispersal opportunities north to south between habitats. The Disturbance Footprint is likely to support foraging and dispersal opportunities. **f) whether the habitat is necessary to ensure the long-term future of the species or ecological community through reintroduction or re-colonisation** o The distribution of Koala populations is broad and the koala habitat within the Disturbance Footprint is not considered necessary to ensure the long-term future of Koala populations including the Koala Coast population. The Redland Coast Koala Conservation Plan 2022-2027 is a catalyst for the Project to extend initiatives to include the Project Area and surrounds. With the implementation initiatives undertaken at a Project Area and local corridor level (as detailed in the Matters of National Environmental Significance Report (Raptor Environmental, 2022)) it is anticipated that the habitat within the Project Area will have an increase in colonisation in the long-term.

Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)	
Significant Impact Criteria	**Impact Assessment**
	g) any other way in which habitat may be critical to the survival of a listed threatened species or a listed threatened ecological community (EPBC Act). The Project avoids clearing Koala habitat including Category A and patches of Category B and will restore patches of Category C and B. Whilst the Disturbance Footprint directly impacts koala habitat, it is unlikely to adversely impact habitat critical to the survival of an important population (i.e. the southeast Queensland bioregion population).
Disrupt the breeding cycle of a population	**Unlikely.** Koalas may not breed every year if conditions are not suitable and breeding may be unsuccessful due to poor health (e.g. Chlamydia) (DAWE, 2022). Additionally, Koala movement is known to increase during the breeding season (usually September to February). The construction phase of the Project will be staged and undertaken over several years. As such, construction activities cannot reasonably be undertaken outside of the Koala breeding season or all events that would provide stress to Koala (i.e. droughts, flooding) in full. Site establishment (i.e. clearing) will not occur within Koala breeding season and will occur as per the requirements detailed in the Wildlife Habitat Management Plan (Cardno, 2021). Noise associated with construction and operational activities could obscure Koala vocalisations (i.e. bellows) which are closely associated with their breeding behaviour (Jiang *et al.,* 2022). With improved koala health monitoring and management and construction and operational phase management plans incorporating light and noise management protocols the Project is unlikely to disrupt the breeding cycle of Koalas.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	**Unlikely.** The Project will reduce the availability of Koala habitat to the extent that the Project will result in a direct impact of 0.82 of a Koala as detailed above. The Koala habitat within the broader Retention Area and specifically the central waterway corridor will be protected and enhanced through restoration and the design includes reduced speed zones, signage, pavement stencilling and limitations to night access. As such, Koala movement will be maintained within the Avoidance Area and Retention Area. Improved Koala health

Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)	
Significant Impact Criteria	**Impact Assessment**
	monitoring and management programs will assist and support the long-term growth of the Koala Coast population. Therefore, impacts on koala habitat as a result of the Project are unlikely to result in the decline of the species.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	**Unlikely.** The Ecological Assessment Report (Cardno, 2021) identified weed species present within the Project Area including weeds listed as restricted under the *Biosecurity Act 2014*. *Lantana camara* (Lantana) was recorded in scattered to moderate density within the Project Area and has the potential to reduce habitat quality (Department of Agriculture, Water and the Environment, 2022). The introduction of domestic dogs associated with the Project poses a potential threat to Koala. The *Redlands Coast Biosecurity Plan 2018-2023* (Redland City Council, 2018) guides how Redland City Council meet biosecurity obligations under the *Biosecurity Act 2014.* The plan includes effective management of strategic and targeted control of invasive plants and animals on Council owned land. The Rehabilitation Plan (Bligh Tanner, 2022) includes weed management as part of restoration efforts and the broader Retention Area will be subject to an Invasive Species Management Plan as part of the Construction Environmental Plan. On-going invasive species management actions will be included in the Operational management plan for the Project. The Project is unlikely to result in invasive species becoming established in Koala habitat.
Introduce disease that may cause the species to decline	**Unlikely.** Koalas may be impacted by two known diseases and pathogens: Chlamydia and myrtle rust (which impacts their favoured genus of habitat and fodder tree). Chlamydia is a bacterial infection that affects a proportion of the Redlands Koala population (USC, 2021). Infertility from Chlamydia is a contributing factor to the current decline in Koala numbers. The Project is unlikely to introduce additional chlamydia to the local population (given that it is already known to occur within 38% of the Redlands Coast population [USC,

Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)	
Significant Impact Criteria	**Impact Assessment**
	2021]). A key action highlighted in the Redlands Coast Koala Conservation Action Plan is Koala health including proactively managing disease (e.g. Chlamydia) in locations where koala populations have identified a high rate of incidents (through a capture and treatment program) (Redland City Council, 2022). The Project will improve koala health monitoring and management and the health of the Koalas within the Project Area is likely to improve long-term as a result of the Project. Myrtle rust is present in South east Queensland and has the potential to decrease Koala habitat quality through the infection of Myrtaceae trees. The Construction and Operational Management Plans are to include protocols for the minimisation and management of diseases and pathogens. The Project is unlikely to introduce disease that may cause Koalas to decline and will support Koala health and population growth through improved monitoring and management of Chlamydia.

Interfere with the recovery of the species.	**Unlikely.**
	
	The National Recovery Plan for the Koala contains several strategies and priority actions to facilitate the recovery of the species. The action relates to the following supporting and on-ground strategies:
	
	• **<u>Supporting strategies:</u>**
	  ○ **Strategy 1: Build and share knowledge.**
	  The Project supports building and sharing knowledge through improved Koala health monitoring as part of the Mount Cotton Koala Safe Neighbourhood Program. Monitoring reporting will build on the existing knowledge of Koala populations, health and responses to health management.
	  ○ **Strategy 2: Engage and partner with the community in listed Koala conservation.**
	  Council has engaged and partnered with the community in Koala conservation by completing an extensive community consultation process for the Project with a focus on conservation outcomes for the Project Area.

Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)	
Significant Impact Criteria	**Impact Assessment**
	○ **Strategy 3: Increase the area of protected habitat for the listed Koala.** The Project includes the protection and enhancement of the Retention Area (containing Category A and some Category B habitat). The Project proposes the restoration of Category B and C habitat and retains the southern portion of the Project Area. An amendment to the Redland City Council planning scheme is being considered to change the zone of ~106 ha of the southern portion of the Retention Area from a rural zone to a conservation zone. ○ **Strategy 4: Integrate listed Koala conservation into policy, statutory and land use plans.** Redland City Council has adopted the Redlands Coast Koala Conservation Plan 2022-2027 and Redlands Coast Koala Conservation Action Plan 2022-2027 which outlines statutory obligations, future-proofing, performance measures in the short, medium and long-term and Action plan objectives (Redland City Council, 2022) (Redland City Council, 2022b). The Project is a catalyst for the update of the Redlands Coast Koala Conservation Plan (2022-2027) to extend the Mount Cotton Koala Safe Neighbourhood to include the Project Area and surrounds. • **<u>On-ground strategies:</u>** ○ **Strategy 5: Strategically restore listed Koala habitat.** Redland City Council details the management action of protecting and improving koala habitat. The actions include habitat evaluation, land acquisitions, healthy Council bushland, more koala habitat on Council land, improving koala movement and safeguarding koala habitat (Redland City Council, 2022). Additionally, Council details long-term desired outcomes including "*consistent and demonstrable evidence of net gain of high-quality habitat to support increased koala density and abundance across the city* (Redland City Council, 2022)." The Project will include the restoration of areas of Category B and C habitat.

Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)	
Significant Impact Criteria	**Impact Assessment**
	○ **Strategy 6: Actively manage listed Koala metapopulations**[1] Redland City Council's current actions include advancing management practices for koala conservation outcomes including: ▪ "*Provide policy advice to ensure koala habitat is prioritised in land conservation and management initiatives.* ▪ *Provide policy advice to guide the consideration of koala habitat with regard to statutory planning strategies and applications.* ▪ *Continue to develop a better understanding of koala population requirements to advance management responses.* ▪ *Facilitate increased health and disease management outcomes for koalas.* ▪ *Recognise, motivate and commemorate koala conservation efforts.* ▪ *Develop and maintain productive, integrated partnerships to influence and achieve greater funding for koala conservation outcomes.* ▪ *Maintain information network with community, universities, wildlife carers, environmental groups and other stakeholder to guide and assist with koala conservation outcomes*" (Redland City Council, 2022). Redland City Council is actively managing the Koala Coast population, through the implementation of the Redlands Coast Conservation Plan and Action Plan 2022-2027. The Project will incorporate improved health monitoring and management and as a result, will support the recovery of the species.

[1] Metapopulation is defined as "*The set of biological populations within a larger area, where movement or gene flow from one biological population to at least some other patches is possible and is important for maintaining abundance and distribution at regional scale, even if such movement is infrequent*." (Department of Agriculture, Water and the Environment, 2022).

Koala - combined populations of Queensland, New South Wales and the Australian Capital Territory (*Phascolarctos cinereus*)	
Significant Impact Criteria	**Impact Assessment**
Conclusion: The assessment against the significant impact criteria indicated that the Project is unlikely to have a significant impact on Koala, however referral of the Project to the Commonwealth Department of Climate Change, Energy, the Environment and Water is recommended.	

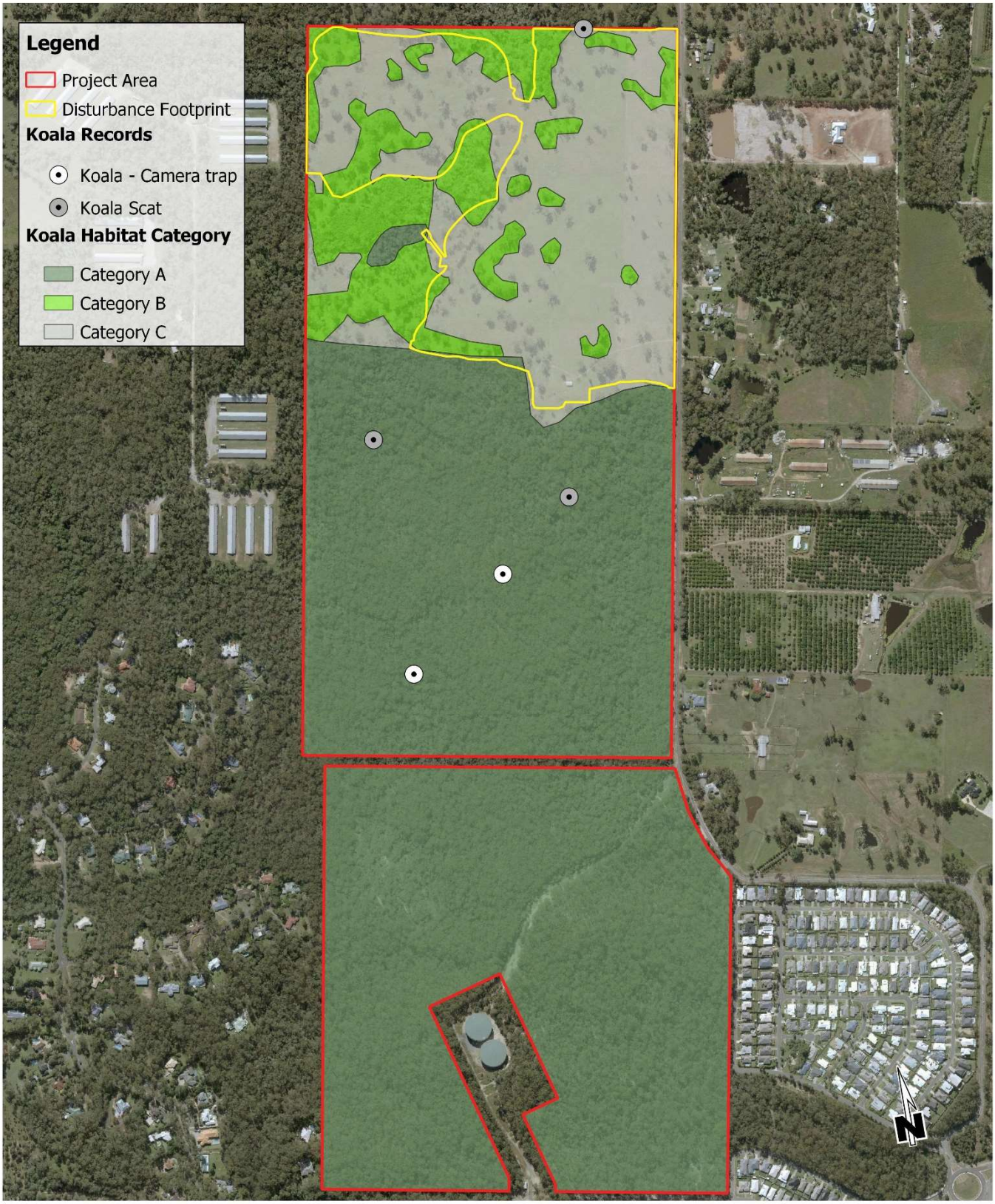

Figure 1 Koala Habitat Characterisation

Proposed Redlands Coast Sport and Recreation Precinct
Bligh Tanner C\- Redland City Council

Job Number: 2022_025;
Author: Mary Timms

Dated 15/11/2022
CRS: MGA94 Z56

This plan may only be relied upon in relation to the project and purpose for which it was commissioned. It should be noted, that this plan is not inclusive of all Environmental Features/layers.

Raptor
ENVIRONMENTAL

Scale: approx 1:7,000 @A3

100 0 100 200 300 400 m

1.2 Greater glider - southern and central (*Petauroides volans*)

***Environment Protection and Biodiversity Conservation Act 1999 Listing* Status:** Endangered

***Nature Conservation Act 1992* Listing Status:** Endangered

Greater glider - southern and central (*Petauroides volans*)	
Significant Impact Criteria	**Impact Assessment**
Lead to a long-term decrease in the size of a population	**Unlikely.** Known populations (Redland City Council, n.d.) of Greater glider in the Redland City Council Local Government Area include: • Greater Glider Reserve • Scribbly Gums Conservation Area • Days Road Reserve • Squirrel Glider Conservation Reserve, • Redland Bay Road, • Winston, Henderson and Avalon Road, • Leslie Harrison Dam Corridor, • Jones Chook Farm, • Coolwynpin Conservation Reserve, • Ferntree Park, • Valley Way German Church Road, • Weippen Street, • Eprapah Scout Reserve, and • Ford Road Reserve and Don and Christine Burnett Reserve The targeted field surveys did not record Greater glider within the Project Area. However, the broad contiguous areas of habitat in the southern portion of the Retention Area support potential habitat for

Greater glider - southern and central (*Petauroides volans*)	
Significant Impact Criteria	**Impact Assessment**
	Greater gliders. Greater gliders have been recorded in Bayview Conservation Area (ALA, 2022)and the Project Area is connected to this local reserve via an established local corridor. The Matters of National Environmental Significance Report (Raptor Environmental, 2022) includes a review of habitat within the Project Area and found the Disturbance Footprint is unlikely to support Greater glider habitat due to the lack of contiguous canopy cover that limits the capability of the Greater glider to move through the area. Potential indirect impacts include inappropriate fire regimes and construction activities that have the potential to introduce and/or spread invasive species as a result of edge effects and waste disposal. The indirect impacts as a result of the Project are unlikely to lead to a long-term decrease in the size of a Greater glider population.
Reduce the area of occupancy of the species	**Unlikely.** The area of occupancy of the Greater glider is calculated using a 2x2 km grid cell method based on the IUCN Red List Guidelines 2019 (IUCN, 2019). Using these guidelines, the Project Area resides within 1 grid square, with potential minor indirect impacts to retained vegetation anticipated. The Disturbance Footprint lacks areas of contiguous canopy cover. This absence limits the capability of the Greater glider to den, move through or forage in the area. While vegetation within the Retention Area provides habitat that the species may occupy, the Project avoids all areas of potential Greater glider habitat within the Retention Area to the south. As such, the Project is considered unlikely to cause a reduction in the area of occupancy for the species.
Fragment an existing population into two or more populations	**Unlikely.** The Disturbance Footprint has been subject to a high degree of modification (such that the Disturbance Footprint would already be considered ‘fragmented’ in terms of its usability by Greater glider). A local dispersal corridor will be retained and enhanced within the central waterway corridor which provides movement opportunities between habitats for wildlife generally.

Greater glider - southern and central (*Petauroides volans*)	
Significant Impact Criteria	**Impact Assessment**
	Given the existing lack of contiguous canopy cover within the Disturbance Footprint and retention of the central waterway corridor, the Project is not considered likely to further fragment an existing population into two or more populations.
Adversely affect habitat critical to the survival of a species	**Unlikely.** The Conservation Advice (DAWE, 2022) defines 'habitat critical to the survival of the Greater glider' as containing the characteristics described below including: **a. Large contiguous areas of eucalypt forest, which contain mature hollow-bearing trees and a diverse range of the species' preferred food species in a particular region; and** o The Retention Area forms part of a habitat patch characterised by a eucalypt forest that contains mature hollow-bearing trees. The Disturbance Footprint lacks a contiguous canopy and is unlikely to support Greater glider habitat. **b. smaller or fragmented habitat patches connected to larger patches of habitat, that can facilitate dispersal of the species and/or that enable recolonization; and** o The Retention Area is connected to larger patches of habitat associated with Bayview Conservation Area, Days Road Conservation Area and Sandy Creek Conservation Area. The southwestern portion of the Project Area is mapped within the Biodiversity Planning Assessment terrestrial corridor buffer area (EHP, 2016). The habitat within the Retention Area supports the dispersal of Greater gliders. The Disturbance Footprint lacks a contiguous canopy and is unlikely to support Greater glider habitat and fragments habitat patches within the Retention Area from the habitat to the north of the Project Area. **c. cool microclimate forest/woodland areas (e.g. protected gullies, sheltered high elevation areas, coastal lowland areas, southern slopes); and** o The Retention Area contains a riparian corridor that supports a protected aquatic habitat characterised by ponded areas along an ephemeral waterway. **d. areas identified as refuges under future climate changes scenarios; and**

Greater glider - southern and central (*Petauroides volans*)	
Significant Impact Criteria	**Impact Assessment**
	○ The central waterway corridor within the northern portion of the Project Area will be retained and enhanced and provides a climate refuge that contributes to the Project Area's resilience to drying conditions and will provide a cooler refuge during periods of bushfire and heatwaves (DCCEEW, 2022). **e. short-term or long-term post-fire refuges (i.e. unburnt habitat within or adjacent to recently burnt landscapes) that allow the species to persist, recover and recolonise burnt areas.** ○ Redland City Council's Parks and Conservation Planned Burn Program includes hazard reduction burns within the Project Area (i.e. low intensity) (Redland City Council, 2022b). As such habitat critical to the survival of the Greater glider is present in the Retention Area, however, the Disturbance Footprint does not meet any of the above criteria and is not considered habitat critical to the survival of the Greater glider.
Disrupt the breeding cycle of a population	**Unlikely.** The Retention Area contains potential Greater glider habitat including suitable breeding hollows that will be retained and enhanced for the Project. The Disturbance Footprint does not support suitable Greater glider habitat due to the lack of a contiguous canopy. Potential indirect impacts include the potential for construction activities to result in the introduction or spread of invasive. A Waste Management Plan will be developed as part of the Construction Environmental Management Plan (CEMP) and will specify the disposal and removal of waste during construction to minimise the risk of attracting invasive fauna species. A Weed Management Plan will be developed as part of the CEMP and weed management within Greater glider habitat will be managed as per Council's Invasive Species Management Plan. Specifically, Council will control invasive plants and animals within the Retention Area and this will include targeted control of invasive species identified within the Ecological Assessment Report (Cardno, 2019 and 2021) The Project is unlikely to disrupt the breeding cycle of Greater gliders.

Greater glider - southern and central (*Petauroides volans*)	
Significant Impact Criteria	**Impact Assessment**
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	**Unlikely.** The targeted field surveys did not record Greater gliders within the Project Area. However, the broad contiguous areas of habitat in the Retention Area support potential habitat for Greater gliders. Greater gliders have been recorded in Bayview Conservation Area (ALA, 2022) and the Project Area is connected to this local reserve via an established local corridor (Raptor Environmental, 2022). The Retention Area will be protected and enhanced as part of the Project and the Disturbance Footprint does not contain suitable habitat due to the lack of contiguous canopy cover. The Project is unlikely to cause further decline of the species.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	**Unlikely.** The Conservation Advice for the Greater glider states that two invasive species may pose threat to the species: the *Felis catus* (Feral cat) and *Vulpes vulpes* (European fox). Greater glider remains have been found in the stomach contents of both species. The European fox has previously been recorded within the Project Area (Cardno, 2021); as such, the Project could not cause the establishment of the European red fox within the Project Area. Invasive species management will be included in the CEMP and Operational Management Plan and incorporated in the Retention Area as per Council's Invasive Species Management Program.
Introduce disease that may cause the species to decline	**Unlikely.** Greater gliders are not directly impacted by any known diseases. Therefore, the Project is unlikely to introduce a disease that could cause the species to decline.
Interfere with the recovery of the species.	**Unlikely.**

Greater glider - southern and central (*Petauroides volans*)	
Significant Impact Criteria	**Impact Assessment**
	There is not currently a published recovery plan for the species. The species' approved Conservation Advice includes a large number of priority recovery and management actions for the species (Threatened Species Scientific Committee, 2022). The recovery action categories relate to: 1. Conservation and management priorities – habitat loss, disturbance and modification; climate change; invasive species and ex-situ recovery actions. 2. Stakeholder and community engagement. 3. Survey and monitoring. 4. Various information and research priorities. The Project would not interfere with stakeholder or community engagement across the species' range, nor would it interfere with high-level monitoring and research priorities. However, the Project is of relevance to management priority 1 (Conservation and management priorities – habitat modification). Direct impacts to Greater glider are avoided through consolidation of the design within the modified paddocks in the Project Area and avoiding clearing of Greater glider habitat. Potential indirect impacts as a result of the Project on surrounding habitat are avoided and mitigated through routine controls and the Redland City Council Prescribed Burn Project. The Project is considered unlikely to interfere with the recovery of the species.
Conclusion: The Project is unlikely to have a significant impact on the Greater Glider.	

1.3 Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland ecological community

***Environment Protection and Biodiversity Conservation Act 1999* Listing Status:** Endangered

***Nature Conservation Act 1992* Listing Status:** Not applicable

Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	
Significant Impact Criteria	**Impact Assessment**
Reduce the extent of an ecological community	**Possible.** The Project Area contains 1.59 ha of Coastal Swamp Oak Threatened Ecological Community (TEC). The Disturbance Footprint directly impacts 0.38 ha of TEC and the Project has the potential to have an indirect impact on the TEC as a result of changes to the hydrological regime. Further indirect impacts include the potential for weed invasion and altered fire regimes. The Conservation Advice details that hydrology governs the vegetation in wetland systems and is critical to the survival of the TEC (Department of Agriculture, Water and the Environment, 2021). Potential indirect impacts to the TEC include modifications to the existing surface and groundwater conditions. The catchment to the ephemeral waterway within the site is approximately 305 hectares and has an existing impervious fraction of about 1% of catchment area (Bligh Tanner, 2022). Apart from three small ponds, the waterway is highly ephemeral as evidenced by the lack of any defined waterway channel. A Stormwater Management Plan including a flood study (Bligh Tanner, 2022) documents the preexisting hydrology of the site and describes the impacts of development on low flow hydrology. The majority of impervious surfaces associated with the Project sheet flow onto adjacent landscaped areas. The sports fields make up a large portion of the development and have higher infiltration rate compared to the existing pervious areas and further assist to buffer the impacts of impervious surfaces within the fields precinct. The Stormwater Management Plan includes a 10-year simulation that demonstrates there is a negligible impact on the frequency and duration of inundation of the central waterway corridor. The development will result in 13% site imperviousness. Modelling was conducted to determine the change in daily flow through the ephemeral waterway on site from this increase in hardstand area, coupled with increased permeability of the sports fields. The result show negligible changes to post-development flows confirming that the development will not cause an appreciable difference to site hydrology. Impacts associated with weed invasion are managed through the Rehabilitation Plan, routine controls and Council's invasive species management program. Fire will be managed via Council's Parks and

Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	
Significant Impact Criteria	**Impact Assessment**
	Conservation Planned Burn Program. Thus ensuring the long-term maintenance of the ecological community. The Project has the potential to reduce the extent of the TEC in the short-term.
Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines	**Unlikely.** The clearing will not intersect the area of TEC into two or more patches but instead occurs on the periphery of the TEC polygon. The Disturbance Footprint protects and enhances the central waterway corridor supporting the TEC and as such does not fragment the TEC.
Adversely affect habitat critical to the survival of an ecological community	**Unlikely.** The Significant Impact Guidelines 1.1 (DoE, 2013) provides a definition of '*Habitat critical to the survival of an ecological community*' including areas that are necessary: **a. for activities such as foraging, breeding, roosting, or dispersal** o The TEC provides foraging, breeding, roosting, and dispersal habitat. The direct impact to 0.38 ha on the periphery of the TEC polygon will occur. Foraging, breeding, roosting, and dispersal habitat is maintained within the retained 1.2 ha of the TEC. **b. for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)** o Potential indirect impacts to the TEC include a modified hydrological regime, weed invasion and/or spread and altered fire regimes. The Stormwater Management Plan and flood study show negligible changes to post-development flows confirming that the development will not cause an appreciable difference to site hydrology (Bligh Tanner, 2022). Impacts associated with weed invasion are managed through the Rehabilitation Plan, routine controls and Council's invasive

Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	
Significant Impact Criteria	**Impact Assessment**
	species management program. Fire will be managed via Council's Parks and Conservation Planned Burn Program. Thus ensuring the long-term maintenance of the ecological community. **c. to maintain genetic diversity and long term evolutionary development, or** ○ The TEC within the Project Area does not occur at the edge of its range. Clearing of 0.38 ha of the periphery of the TEC will maintain genetic diversity and long term evolutionary development. **d. for the reintroduction of populations or recovery of the species or ecological community.** ○ The Disturbance Footprint avoids areas within the waterway that have the potential to become the TEC in the future following restoration works. The Project is unlikely to adversely affect habitat critical to the survival of the TEC.
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	**Unlikely.** The TEC is found on hydric soils, which are either waterlogged or intermittently or episodically inundated (Department of Agriculture, Water and the Environment, 2021). As detailed above, the Stormwater Management Plan includes a 10-year simulation that demonstrates there is a negligible impact on the frequency and duration of inundation of the central waterway corridor (Bligh Tanner, 2022). The results show negligible changes to post-development flows confirming that the development will not cause an appreciable difference to site hydrology.
Cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally	**Unlikely.** Invasive species are a key threat to the TEC and have the potential to disrupt soils nutrient cycling, and change species composition, structure, habitat value and fire regimes (Department of Agriculture, Water and the Environment, 2021). The Project does not propose practices such as frequent burning practices within the location of the TEC or flora or fauna harvesting that could cause a substantial change in the

Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	
Significant Impact Criteria	**Impact Assessment**
important species, for example through regular burning or flora or fauna harvesting	species composition of the TEC. Redland City Council's Parks and Conservation Planned Burn Program includes hazard reduction burns within the Project Area and will consider the requirements of the TEC (i.e. low intensity) (Redland City Council, 2022b). The Project proposes restoration including weed management of the additional patches of TEC that do not currently meet the condition thresholds to be considered the TEC. Restoration of the patch's understorey with native species would enable the patch to constitute the TEC in the future. With mitigation measures including measures outlined in the Stormwater Management Plan, Invasive Species Management Plans in the Construction Environmental Management Plan and Operational Management Plan, the Project is unlikely to cause a substantial change in the species composition of the TEC.
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**	**Unlikely.** As described above, the Project may facilitate the introduction of invasive species during the construction and operational phases of the Project. In the absence of suitable controls, the Project may also cause regular mobilization of fertilisers, herbicides or other pollutants that may kill or reduce the integrity of the TEC. This would potentially occur during weed control efforts in other areas, or during rehabilitation or landscaping works following the Project's construction phase. A total of 70 exotic flora species were recorded within the Project Area, of these species 11 are listed as Category 3 – Restricted invasive pest plants under the *Biosecurity Act 2014* and five are also listed as Weeds of National Significance (WONS) (Cardno, 2021) An Invasive Species Management Plan will be included in the CEMP and ongoing invasive species management actions will be included in the Operational management plan for the Project, as such, it is unlikely that the Project will reduce the quality or integrity of the TEC. Further, Redland Council has already

Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	
Significant Impact Criteria	**Impact Assessment**
growth of species in the ecological community, or	demonstrated its intent to appropriately manage the weeds of the site by commencing weed control activities.
Interfere with the recovery of an ecological community.	**Unlikely.** The TEC does not currently have a published recovery plan. The Conservation Advice for the TEC states priority conservation and research actions designed to guide: • planning, management and restoration of the ecological community by landholders, NRM and community groups and other land managers. • conditions of approval for relevant controlled actions under national environment law; and, • prioritising activities in applications for Australian Government funding programs (Department of Agriculture, Water and the Environment, 2021). The priority conservation actions focus on protecting and restoring the ecological community, communication and research. These include measures to: • Protect the ecological community to prevent further losses; • Restore the ecological community by the active abatement of threats, appropriate management, restoration and other conservation initiatives; • Communicate, engage with and support people to increase understanding of the value and function of the ecological community and encourage their efforts in its protection and recovery; and • Research and monitoring to improve our understanding of the ecological community and the best methods to aid its management and recovery. The Project will retain 1.2 ha of TEC in the Retention Area and the central waterway corridor will be rehabilitated to extend the TEC by 140% in the future. Potential indirect impacts are addressed in the measures outlined in the Stormwater Management Plan (Bligh Tanner, 2022) that show negligible changes

Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	
Significant Impact Criteria	**Impact Assessment**
	to post-development flows confirming that the development will not cause an appreciable difference to site hydrology. Further, the Construction and Operational Management Plans for the project will include ongoing invasive species management. The Project is unlikely to interfere with the recovery of the TEC.
Conclusion: The Project will directly impact 0.38 ha of the Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland and potential indirect impacts are addressed in the Stormwater Management Plan and Flood survey which show negligible changes to post-development flows. The Project is unlikely to have a significant impact on the Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland.	

2 Vulnerable Species

2.1 South-eastern glossy black cockatoo (*Calyptorphynchus lathami lathmi*)

***Environment Protection and Biodiversity Conservation Act* 1999 Listing Status:** Vulnerable

***Nature Conservation Act 1992* Listing Status:** Vulnerable

South-eastern glossy black cockatoo (*Calyptorphynchus lathami lathmi*)	
Significant Impact Criteria	**Impact Assessment**
Lead to a long-term decrease in the size of an important population of the species	**Unlikely.** A population of South-eastern glossy black cockatoo has not been recorded or identified within the Project Area. The species has previously been recorded in Bayview Conservation Park, Daisy Hill Conservation Park, and Scribbly Gum Conservation Park. Records are predominately located within the Southern Moreton Bay Islands and North Stradbroke Island (ALA, 2022). South-eastern glossy black cockatoos rely on nine species of she-oaks (*Allocasuarina* spp. and *Casuarina* spp.) for feeding, with species used varying depending on the region. Birds often only feed on one or two species in one region (Department of Climate Change, Energy, the Environment and Water, 2022a). In south-east Queensland and north-east New South Wales, they show a preference for: • Black sheoak (*A. littoralis*), and • Forest sheoak (*A. torulosa*). There are also records of them feeding on: • Stringybark sheoak (*A. inophloia)* • Coastal sheoak (*C. equisetifolia*), • River sheoak (*C. cunninghamiana)* and • Swamp she oak (*C. glauca*).

South-eastern glossy black cockatoo (*Calyptorphynchus lathami lathmi*)	
Significant Impact Criteria	**Impact Assessment**
	The Disturbance Footprint does not support Black sheoak or Forest sheoak or other species which to a lesser extent are a preference and supports ten hollows with characteristics consistent with those preferred by South-eastern glossy black-cockatoo. The Retention Area contains patches of Black she-oak within the sub-canopy layer and as such the southern portion of the Project Area supports foraging resources for the South-eastern glossy black-cockatoo. Additionally, the Retention Area supports hollows that provide potential breeding habitat. The Disturbance Footprint is unlikely to support habitat for the South-eastern glossy black cockatoo. The Disturbance Footprint does not impact foraging resources for the species. A total of ten hollows with characteristics consistent with those preferred by the South-eastern glossy black-cockatoo were recorded within the Disturbance Footprint and seven will be impacted by the Project. The hollows identified within the seven trees which will be directly impacted will be salvaged and installed within the Retention Area. Installation of salvaged hollows will consider the lighting design and face hollows away from flood-lit fields. Given the Disturbance Footprint does not contain foraging habitat, the removal of seven potential hollows is unlikely to lead to a long-term decrease in the size of the population of the South-eastern glossy black-cockatoo. The Project is unlikely to lead to a long-term decrease in the size of an important population of South-eastern glossy black-cockatoo.
Reduce the area of occupancy of an important population	**Unlikely.** The Conservation Advice describes the area of occupancy 44,00km^2 and estimates 34% was impacted by fires (DEECW, 2022). Important populations for the species have not yet been defined. The Retention Area contains patches of suitable foraging and breeding habitat and will be retained. The Disturbance Footprint is considered unlikely to provide suitable habitat for the South-eastern glossy black-cockatoo.

South-eastern glossy black cockatoo (*Calyptorphynchus lathami lathmi*)	
Significant Impact Criteria	**Impact Assessment**
	The Project is unlikely to reduce the area of occupancy of an important population.
Fragment an existing important population into two or more populations	**Unlikely.** The Retention Area (i.e. 123.2 ha) is considered suitable habitat and the Disturbance Footprint (32.7 ha) is unlikely to support habitat for the South-eastern glossy black cockatoo. The Project is unlikely to fragment an existing population.
Adversely affect habitat critical to the survival of a species	**Unlikely.** In the Redland City Council Local Government Area South-eastern glossy black-cockatoo are recorded predominantly on North Stradbroke Island and the Southern Moreton Bay Islands and records are also scattered on the mainland (Atlas of Living Australia, 2022). Habitat critical to the survival of the species refers to necessary areas: **a. for activities such as foraging, breeding, roosting, or dispersal;** The Retention Area (i.e. 123.2 ha) is considered suitable habitat and the Disturbance Footprint is unlikely to support habitat for the South-eastern glossy black cockatoo. The Disturbance Footprint lacks foraging habitat for the species and supports ten hollows with characteristics consistent with those preferred by South-eastern glossy black-cockatoo. Seven hollows will be directly impacted and will be salvaged and reinstalled within the Retention Area. **b. for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators);** The Project avoids a direct impact on habitat for South-eastern glossy black-cockatoo. Potential indirect impacts include inappropriate fire regimes, invasive species establishment and /or spread. Indirect impacts are managed through appropriate controls including Council's Parks and

South-eastern glossy black cockatoo (*Calyptorphynchus lathami lathmi*)	
Significant Impact Criteria	**Impact Assessment**
	Conservation Planned Burn Program, Council's invasive species program, the implementation of the Rehabilitation Plan and routine controls detailed in the CEMP. **c. to maintain genetic diversity and long-term evolutionary development; or** As described above, the Project does not result in the fragmentation of an existing population, as such genetic diversity and long-term evolutionary development are maintained. **d. for the reintroduction of populations or recovery of the species or ecological community (Department of Climate Change, Energy, the Environment and Water (2022).** The Disturbance Footprint is not considered an area necessary for the recovery of the species. The Project is unlikely to adversely affect habitat critical to the survival of a species.
Disrupt the breeding cycle of an important population	**Unlikely.** A population of South-eastern glossy black cockatoo has not been recorded or identified within the Project Area. The Retention Aera supports potential breeding habitat for South-eastern glossy black-cockatoo. Several hollow-bearing trees within the Disturbance Footprint indicate characteristics of the traits for potential nesting hollows detailed in the Conservation Advice (DCCEEW, 2022) including: 1) >8 m above ground; 2) Located in branches >30 cm in diameter; 3) Branch or stem no more than 45o from vertical; and 4) Minimum entrance diameter of >15 cm. A total of seven such trees will be impacted within the Disturbance Footprint. Hollows will be salvaged and installed within the Retention Area. No net loss in hollows will occur as a result of the Project. The Project is unlikely to disrupt the breeding cycle of an important population.

South-eastern glossy black cockatoo (*Calyptorphynchus lathami lathmi*)	
Significant Impact Criteria	**Impact Assessment**
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	**Unlikely.** Whilst the Disturbance Footprint does not support foraging habitat, this area supports ten hollows with characteristics consistent with those preferred by South-eastern glossy black-cockatoo. The Retention Area supports foraging resources and breeding habitat for the South-eastern glossy black-cockatoo The Retention Area (i.e. 123.2 ha) is considered suitable habitat and the Disturbance Footprint is unlikely to support habitat for the South-eastern glossy black cockatoo. A total of seven potential hollows within such trees will be impacted within the Disturbance Footprint. Hollows will be salvaged and installed within the Retention Area. No net loss in hollows will occur as a result of the Project. Potential indirect impacts include inappropriate fire regimes, invasive species establishment and /or spread. Indirect impacts are managed through appropriate controls including Council's Parks and Conservation Planned Burn Program, Council's invasive species program, the implementation of the Rehabilitation Plan and routine controls detailed in the CEMP. The Project is unlikely to result in the modification, destruction, removal or isolation of quality habitat to the extent that the species would likely decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	**Unlikely.** The Glossy black cockatoo is susceptible to impacts from both invasive flora and fauna. As it relates to weeds, the Conservation Advice for the South-eastern glossy black cockatoo states that: "*Invasive weeds have the ability to change the floristic and structural characteristics of habitat, thereby changing resource availability. Furthermore, some weeds may increase the flammability of the habitat, amplifying wildfire risks*" (Department of Climate Change, Energy, the Environment and Water, 2022a).

South-eastern glossy black cockatoo (*Calyptorphynchus lathami lathmi*)	
Significant Impact Criteria	**Impact Assessment**
	Invasive Species Management Plans will be included in the CEMP and continued invasive species management actions will be included in the Operational Management Plan for the Project. The Project is unlikely to result in invasive species becoming established in South-eastern glossy black cockatoo habitat. As it relates to invasive fauna, the Conservation Advice states, "*Based on studies of the Kangaroo Island subspecies C. l. halmaturinus (Garnett et al. 1999; Mooney & Pedler 2005), nest predation by common brushtail possums may be a threat. Predation by introduced predators such as feral cats (Felis catus) and European red fox (Vulpes vulpes) does not appear to be a major threat. Further research is required to fully understand the extent of the threat of predation on south-eastern glossy black cockatoos, including both native and introduced predators"* (DCCEEW, 2022). As such, the Project is not considered likely to result in the introduction of any invasive species which are known to harm the Glossy back cockatoo; although it may result in a localised increase in predatory native species, such as the Common brushtail possum (which are known to thrive in modified environments and habitat edges).
Introduce disease that may cause the species to decline	**Unlikely.** Psittacine beak and feather disease (PBFD) is the only known disease that impacts parrots such as the South-eastern glossy black cockatoo. The Conservation Advice for the South-eastern glossy black cockatoo states that: "*PBFD is a potentially fatal disease caused by psittacine circovirus, typically transferring between adults, nestlings and contaminated nest hollows. Although south-eastern glossy black cockatoos are susceptible to PBFD, the threat level is relatively low compared to other threats. With decreasing nesting hollows and intensified competition (see Competition for nest hollows), it is possible that the*

South-eastern glossy black cockatoo (*Calyptorphynchus lathami lathmi*)	
Significant Impact Criteria	**Impact Assessment**
	likelihood of disease transmission could be greater in the future" (Department of the Environment, 2015). Presently, the distribution of PBFD is thought to be Australia-wide, including Tasmania. Consequently, the Project would not introduce the disease to the Project Area or its surroundings (Department of the Environment, 2015).
Interfere with the recovery of the species.	**Unlikely.** The species' approved Conservation Advice (Department of Climate Change, Energy, the Environment and Water, 2022a) includes a large number of priority recovery and management actions for the species. The recovery action categories relate to: 1. Clearing of native vegetation/timber harvesting and habitat fragmentation (i.e. inappropriate fire regimes and competition for nest hollows). 2. Stakeholder and community engagement. 3. Monitoring and surveying known populations, breeding sites, feeding sites and habitat. 4. Various further research topics. Vegetation clearing has been minimised and the Project avoids clearing 126.5 ha of native vegetation. The Disturbance Footprint does not fragment the species' habitat. Fire management for the Project Area will be managed under Council's Planned Burn Program. The Project will not interfere with stakeholder or community engagement across the species range, nor would it interfere with high-level monitoring and research priorities. The Project retains foraging opportunities and breeding habitat for the South-eastern glossy black cockatoo within the Retention Area. The Project is unlikely to interfere with the recovery of the species.

South-eastern glossy black cockatoo (*Calyptorphynchus lathami lathmi*)	
Significant Impact Criteria	**Impact Assessment**
Conclusion: The Project is unlikely to have a significant impact on the South-eastern glossy black cockatoo.	

2.2 Grey-headed flying-fox (*Pteropus poliocephalus*)

***Environment Protection and Biodiversity Conservation Act 1999* Listing Status:** Vulnerable

***Nature Conservation Act 1992* Listing Status:** Least Concern

Grey-headed flying-fox (*Pteropus poliocephalus*)	
Significant Impact Criteria	**Impact Assessment**
Lead to a long-term decrease in the size of an important population of the species	**Unlikely.** The Project Area does not contain a known roost site for the Grey-headed flying-fox. The closest recorded roost site that hosts Grey-headed flying-foxes is located 5km from the Project Area at Weinnam Creek wetlands. The Listing Advice does not define an 'important population' and the advice estimates a population size of 320,000-400,000 individuals (TSSC, 2001). The Project Area contains suitable foraging habitat including *Eucalyptus, Corymbia, Angophora, Melaleuca.* The Retention Area supports foraging resources that will be retained for the Project. The Disturbance Footprint will directly impact foraging resources for the species including 438 live potential foraging trees. The design includes ball net fencing which has the potential to impact foraging individuals. Proposed mitigation measures include white fencing for visibility, taut installation to minimise entrapment and frequent

Grey-headed flying-fox (*Pteropus poliocephalus*)	
Significant Impact Criteria	**Impact Assessment**
	operational fencing checks to monitor impacts on Grey-headed flying-fox (DPE, 2022). Further, the design will include retractable netting to minimise the period of installation when fields are not in use. Given the distance to the nearest roost is approximately 5km from the Project Area and Grey-headed flying fox have been known to fly as far as 40 km to feed (DoE, 2021) the Disturbance Footprint is likely to support habitat for foraging individuals. Therefore the removal of 438 live foraging trees and proposed ball-net fencing is unlikely to lead to a long-term decrease in the size of the local population of Grey-headed Flying-fox.
Reduce the area of occupancy of an important population	**Unlikely.** While the Project Area contains suitable foraging habitat for the species; the Project Area does not support a roost site and is located approval 5km from the nearest roost. The Project is unlikely to reduce the area of occupancy of an important population.
Fragment an existing important population into two or more populations	**Unlikely.** The Project Area does not support an important population that could be fragmented.
Adversely affect habitat critical to the survival of a species	**Unlikely.** The Disturbance Footprint supports vegetation that provides foraging opportunities for the Grey-headed flying fox including scattered winter and spring flowering foraging species. Winter and spring flowering vegetation communities are noted as critical habitat for the survival of the species (DoE, 2021). The Disturbance Area is characterised by scattered retained individual paddock trees and cleared areas. Therefore, the foraging habitat within the Disturbance Footprint is unlikely to represent critical habitat for the Grey-headed flying fox.

Grey-headed flying-fox (*Pteropus poliocephalus*)	
Significant Impact Criteria	**Impact Assessment**
Disrupt the breeding cycle of an important population	**Unlikely.** Given the separation distance between the Project Area and the closest known breeding colony, no indirect impacts as a result of the Project are expected on the breeding colony. The Project Area does not support an important population that utilises the area for breeding purposes.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	**Unlikely.** The Project will result in the removal of potential foraging habitat for the species and on-ground restoration including 1,791 trees suitable as a foraging resource for Grey-headed flying fox will compensate for the loss of foraging habitat. Given the wide availability of foraging habitat in the surrounds and the fact that the species is known to travel wide distances for foraging (i.e. up to 40 km) (DoE, 2021), the Project is considered unlikely to adversely impact the species' habitat to the extent that it is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	**Unlikely.** Neither the Grey-headed Flying-fox Recovery Plan nor the species' Listing Advice contains any invasive species that are harmful to the species or its habitat (Commonwealth of Australia, 2021; Threatened Species Scientific Committee, 2001). Potential indirect impacts associated with the establishment and/or spread of invasive species will be managed in the Rehabilitation Plan area and Council's Invasive Species Management Program.
Introduce disease that may cause the species to decline	**Unlikely.** There is very little information available on the impact of disease on Australian flying-fox populations, including Grey-headed flying-foxes. The main area of impact of the disease is associated with the public perception of bats as a source of zoonotic diseases (i.e. Lyssavirus) (DoE, 2021). The incidence of Lyssavirus in Grey-headed flying-fox populations is low (<1 %).

Grey-headed flying-fox (*Pteropus poliocephalus*)	
Significant Impact Criteria	**Impact Assessment**
	There are no known diseases that negatively impact the health of the Grey-headed flying fox (that are not already present throughout the population) that could be introduced by the Project.
Interfere with the recovery of the species.	**Unlikely.** The overall objectives of this Grey-headed flying fox recovery plan are: 1. to improve the Grey-headed Flying-foxes national population trend by reducing the impact of the threats outlined in this plan on Grey-headed Flying-foxes through habitat identification, protection, restoration and monitoring, and 2. to assist communities and Grey-headed Flying-foxes to coexist through better education, stakeholder engagement, research, policy and continued support to fruit growers (Commonwealth of Australia, 2021). The Project will not interfere with recovery objective 1, which relates to habitat identification, protection restoration and monitoring. Further, the Project will not interfere with recovery objective 2, which relates to community education and stakeholder engagement, research and policy development.
Conclusion: The Project is unlikely to have a significant impact on the Grey-headed Flying-fox.	

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