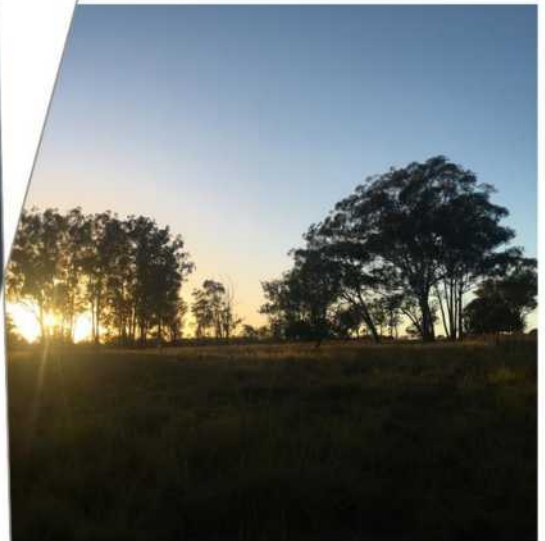


Ecological Assessment

Redland Coast Regional Sports and
Recreation Precinct

WE19044



Prepared for
Redland City Council

9 July 2019

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Executive Summary

Cardno was commissioned by Redland City Council to conduct an Ecological Assessment of the proposed Redland Coast Regional Sports and Recreation Precinct located at Lot 420 on S312161, located at 277-293 Heinemann Road, Mount Cotton (the Site).

Desktop and field assessments have been completed to identify environmental characteristics present within the Site to inform project design and ensure compliance with regulatory requirements. Specifically, Cardno completed a vegetation community assessment, flora assessment, waterway assessment, opportunistic and targeted fauna assessments. Habitat features, pests and the location of EVNT species were located and mapped.

The Site was surveyed by two suitably qualified Cardno ecologists over 5 days and four nights between the 4th and 17th of June 2019. The key findings of the field assessment are as follows:

- > The Site supported Category X (Non-remnant), Category B (Remnant) vegetation and Category C (High-value regrowth) vegetation. Patches of Least Concern, Of Concern and Endangered Regional Ecosystems are identified as occurring within the Site.
- > A total of 174 flora species, from 68 different families, were recorded within the Site. No Endangered, Vulnerable or Near Threatened (EVNT) flora pursuant to the Nature Conservation Act (NC Act) or *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were detected. Of the 174 flora species detected within the Site, 64 are exotic flora species, 11 of which are Category 3 restricted matter under the provisions of the *Biosecurity Act 2014*.
- > A total of 58 fauna species were observed within the Site during the field assessment. No direct observations of EVNT fauna species were made during the field assessment; however, *Phascolarctos cinereus* (Koala) scats and scratches were identified throughout the Site. The Koala is listed as Vulnerable under the provisions of the NC Act and EPBC Act.
- > Koala habitat was confirmed within the Site.
- > The Site is mapped entirely within Priority Koala Assessable Development Area.
- > No threatened ecological communities (TEC) listed under the EPBC Act occur within the Site.
- > A number of animal breeding places were detected within the Site in the form of hollow bearing trees, stags and logs. A SMP 'low risk of impacts' is required if animal breeding places are to be tampered with as part of the proposed works. Least concern colonial breeding species were detected within the Site. A SMP 'high risk of impacts' is required for tampering with animal breeding places of least concern colonial breeding species.
- > Mapped waterways were confirmed within the Site, including one orange 'moderate risk' waterway and two green 'low risk' waterways for waterway barrier works.

Ecological impact avoidance and mitigation advice is provided to inform design, construction and post construction phases of the project in order to minimise impacts to the surrounding area.

1 Introduction

1.1 Background

Cardno was commissioned by Redland City Council to conduct an Ecological Assessment of the proposed Redland Coast Regional Sports and Recreation Precinct (the Precinct) located at Lot 420 on S312160, 277-293 Heinemann Road, Mount Cotton (the Site). The Site is illustrated in **Figure 1**. The aim of this ecological assessment is to investigate potential ecological issues that may affect the proposed sport and recreation precinct's planning, design, development & management. The results of this ecological assessment are intended to help inform the master plan for the Site.

1.2 Site Description

The Site is within the Rural zone in accordance with the Redland *City Plan 2019*, and is adjoined by agricultural and residential uses. Presently, the northern extend of the Site is used for cattle grazing and as such has been historically cleared, and is degraded as a result of ongoing agricultural use. The southern portion of the Site, though subject to historic logging as evidenced by cut stumps throughout, is heavily vegetated, supporting Least Concern, Of Concern and Endangered Regional Ecosystems. Mapped watercourses traverse the Site from the north and extend along the western boundary. An additional watercourse is mapped in the south east of the Site. The context of the Site and its immediate surrounds is presented in **Figure 1**.

1.3 Development Description

The purpose of the development of the Precinct is to service the current and future sport and recreation needs of the city and to enhance environmental values. The lot on which the Precinct is proposed to be developed is approximately 101 ha in size. The northern portion of the site is proposed for use as the Precinct, with the southern approximate half proposed to be retained and enhanced as a conservation reserve. The aim of the Precinct development is to improve access to sporting and recreation facilities for Redland growing population, and is intended to balance conservation and recreational uses of the Site.

2 Methodology

2.1 Desktop Assessment Methodology

The desktop assessment included a review of publically available mapping and database records including:

- > Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool (PMST) (owing to the broad scale of this search tool only species and communities identified by the PMST as having habitat which is 'known' or 'likely' to occur in the area have been considered in the desktop assessment);
- > the Regulated Vegetation Management Map prepared by the Department of Natural Resources, Mines and Energy (DNRME) pursuant to the *Vegetation Management Act 1999*;
- > the Queensland Herbarium Biodiversity Status Mapping (Version 10);
- > Department of Environment and Science (DES) Regional Ecosystems Environmental Report;
- > the Protected Plants Flora Survey Trigger Map;
- > mapping associated with the Koala State Planning and Regulatory Provisions;
- > Atlas of Living Australia database and mapping (which includes Australian Virtual Herbarium records);
- > the National Flying Fox Monitoring Viewer;
- > the DES Wildlife online databases;
- > mapping associated with the State Development and Assessment Provisions;
- > mapping associated with the Queensland State Planning Policy;
- > mapping associated with Council's Planning Scheme including the Redland City Council Environmental Significance Overlay;
- > Historical and contemporary aerial imagery;
- > The Department of Science 'Wild net Koala Locations' and 'Koala Hospital Data'; and
- > The 'Due Diligence Report' prepared for the Site (Calibre, 2017).

All mapping searches were centred on Latitude: -27.6176, Longitude: 153.2545 with a 3 km buffer, or using Lot 420 on S312160. The mapping and database outputs resulting from the desktop assessments have been provided in **Appendix A**.

The process of refining the list of flora and fauna species to be targeted during field surveys involved reviewing the known and specific habitat requirements for each species against the known or expected availability of such resources within the Site. For each of the identified species, an assessment of the likelihood of occurrence was undertaken with each species being assigned to one of the following categories.

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

2.2 Field Assessment Methodology

A five-day field assessment was completed between 4th and 17th June 2019 by two Cardno ecologists. Field surveys were completed in accordance with Cardno's permits:

- > Scientific Purposes Permit WA0004213; and
- > Animal Ethics Approval SA 2018-09-656.

Specifically, the field ecological assessment involved the following:

- > native vegetation, and confirmation of mapped vegetation communities;
- > flora species assessment;
- > opportunistic and targeted fauna assessments, including the deployment of 20 camera traps, deployment of a song meter, harp trapping over two nights, spotlighting over four night and call playback for EVNT species over four nights.
- > mapping of natural and artificial drainage lines;
- > opportunistic assessment and mapping of weeds; and
- > opportunistic assessment and mapping of notable fauna habitat features.

Table 2-1 Field Schedule

Activity	4 th June	5 th June	6 th June	7 th June	17 th June
Deploy Camera Traps/Songmeter	✓			✓	✓
Spotlighting	✓		✓	✓	✓
Call Playback	✓		✓	✓	✓
Harp trapping	✓	✓			
Diurnal fauna searches	✓	✓	✓	✓	✓
Opportunistic flora	✓	✓	✓	✓	✓
Vegetation community/habitat assessments			✓	✓	
Mapping drainage lines		✓	✓	✓	✓
Opportunistic weed mapping	✓	✓	✓	✓	✓
Collect Camera Traps/Songmeter					✓

Details of each of the field assessment techniques undertaken are further detailed below.

2.2.2 Vegetation Communities

The DNRME Regional Ecosystem (RE) mapping was ground-truthed generally in accordance with the Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities (Nelder *et al.* 2017) using quaternary level site assessments. The location of quaternary plots is shown in **Figure 2**.

2.2.3 Flora Species

As the Site does not fall within a 'High Risk Area' on the Protected Plants Flora Trigger Map, flora assessments were restricted to within the Site boundary and included the recording of a flora species list when moving throughout the Site. The random meander techniques was used to record flora species when moving between vegetation communities and between fauna survey locations.

All flora species observed within the survey area, including restricted weed species listed under the *Biosecurity Act 2014* and Weeds of National Significance (WONS), were recorded.

2.2.4 General Fauna and Habitat Assessment

The following survey techniques outlined in **Table 2-2** were employed during the dedicated fauna assessments. The location of fauna traps and relevant survey activities completed within the Site are shown on **Figure 2**.

Table 2-2 Fauna Survey Details

Survey Technique	Phase 3 fauna assessments (Figure 2)
Active diurnal searches	For herpetofauna completed over four days.
Bird Survey	Active diurnal searches (eight ten minute searches within Site) completed over four days (suitable for detection of bird species including Powerful Owl)

Survey Technique	Phase 3 fauna assessments (Figure 2)
	Dawn chorus survey completed over two mornings
Spotlighting	Over four nights and included stag watching. Targeting Koala, Greater glider and other gliders (i.e. sugar glider, squirrel glider, and yellow-bellied glider).
Call playback	Over three nights, in key habitat locations. Species targeted: > koala; and > gliders (squirrel glider, sugar glider).
Camera traps	20 traps were deployed for a two-week period, baited with universal bait or meat (sardines).
Opportunistic searches	Searches for signs of wildlife including tracks and scats (collectively effective for mammals, birds and reptiles) over four days.
Song Meter for Bat Activity	Deployed for 14 nights in an area of suitable habitat. A specialist sub-consultant was engaged to analyse calls.
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 habitat for species of significance (e.g. gliders).

2.2.5 Targeted Species Assessments

In addition to the general fauna survey and habitat assessment methodology described above, targeted surveys were completed for species identified by desktop assessment as 'known' or 'likely' to occur within the Site. Species-specific survey methods are described below.

2.2.5.1 Greater Glider (*Petauroides volans*) and other gliders

The techniques outlined in **Table 2-3** were utilised for the detection of Greater glider, and other gliders within the Site.

Table 2-3 Survey Techniques for Gliders

Survey Technique	Method
Spotlighting	Four nights (suitable for detection of Greater glider, Sugar glider, Squirrel glider, and Yellow-bellied glider).
Stag watching	One nights (suitable for detection of Greater glider, Sugar glider, Squirrel glider, and Yellow-bellied glider).
Call playback	Four nights (effective for sugar and squirrel glider but not Greater Glider as this species is not known to vocalise).
Habitat assessment (searches for presence and abundance of suitable food and habitat trees)	Four days (suitable for detection of Greater glider, Sugar glider, Squirrel glider, and Yellow-bellied glider).
Camera traps positioned on potential den trees,	Two weeks (suitable for detection of Greater glider, Sugar glider, Squirrel glider, and Yellow-bellied glider).

2.2.5.2 Bats

Spotlighting was completed over four nights, targeting foraging habitat for Flying foxes (including Grey-headed flying foxes). Searches for camps were completed whilst moving throughout the Site.

A targeted assessment for microbats was completed using the following techniques:

- > One harp trap was deployed over a suitable flyway for two nights.
- > A Song Meter was deployed for a period of two weeks to collect bat calls.

2.2.5.3 Koala

Targeted koala surveys were conducted during Phase 2 and followed the Koala Rapid Assessment Methodology (KRAM) described by Woosnam-Merchez *et al.* (2012). The KRAM is flexible and relies on practitioners to develop their own methodology that is based on set parameters. Six 100 m KRAM transects were positioned in suitable vegetation with three 10x10 m plots established at randomised intervals along alternating sides of the transect as illustrated in **Plate 1** below. The locations of KRAM surveys are displayed in **Figure 2**. The following survey techniques completed are also suitable for detection of koala:

- > Incidental diurnal survey observations.
- > Call playback and spotlighting.
- > Potential detection via camera traps.
- > Opportunistic assessment for scats and scratches, the locations of scats were recorded by handheld GPS where detected.

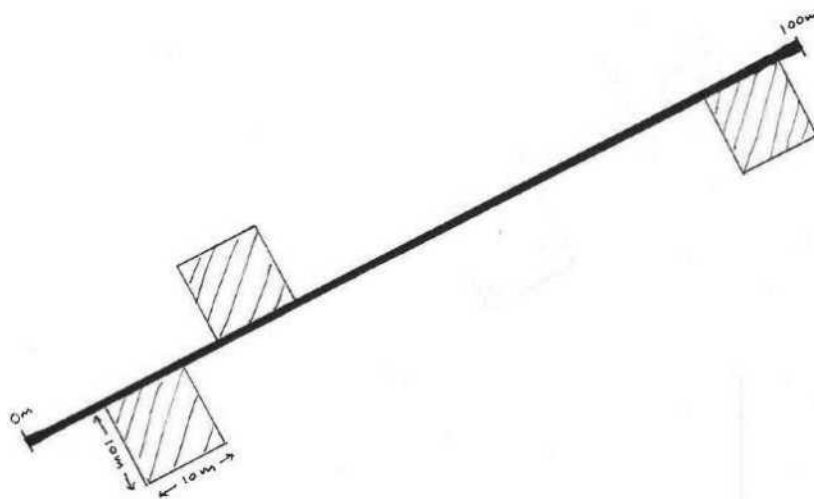


Plate 1: Typical configuration of a KRAM Site

Additionally, confirmation koala habitat was completed. Density estimates for koala habitat trees were completed using the point-centred quarter method (PCQM) and density estimates. This methodology is consistent with that described by Khan *et al* (2016). This methodology provides an estimate of density.

2.2.5.4 Diurnal Birds

As per the Department of Science, Information Technology and Innovation (DSITI) Terrestrial Vertebrate Fauna Survey Guidelines for Queensland the following techniques for detection of threatened diurnal birds were completed:

- > Active diurnal bird survey (eight rounds of 10 min area searches);
- > Dawn chorus survey (over two mornings); and
- > Incidental detection.

2.2.6 Survey Limitations

Surveys were undertaken over five days and four nights during a 14 day survey period in winter, this survey period is outside of the optimal timing for the detectability of several flowering species. This survey timing may also limit the number of fauna species detected, such as frogs outside of their calling period, and spring/summer breeding species that may be less vocal and / or active during the winter months. As such, the 'absence of detection of a fauna species does not necessarily equate with absence of the species. 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 Site.

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 Site ensuring adequate coverage and mapping of ecological constraints. A future warm-season survey should be considered.

3 Results

3.1 Summary of Mapped Ecological Features and Functions

3.1.1 Commonwealth

The following Commonwealth interests are mapped within or proximate to the Site by the Protected Matters Search Tool (PMST):

- > The Site is within 10km of the Moreton Bay Wetland of International Significance;
- > Two Threatened Ecological Communities (TEC) are listed as 'may occur' in the area; being, Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland and Lowland Rainforest of Subtropical Australia;
- > 16 listed threatened species are identified as 'known' or 'likely'; and
- > Eight listed migratory species are identified as 'known' or 'likely'.

The PMST report produced for the Site is provided in **Appendix A**.

3.1.2 State

The following State interests are mapped within the Site:

- > Category B (Remnant) vegetation and Category C (High-value regrowth) vegetation;
- > One orange 'moderate risk' waterway and two green 'low risk' waterways for waterway barrier works under the *Fisheries Act 1994*;
- > Priority Koala Assessable Development Areas;
- > 'High Value Bushland', 'Medium Value Bushland', 'High Value Rehabilitation' and 'Medium Value Rehabilitation' land for Koala conservation;
- > The Site is largely mapped within Regional biodiversity corridor within the SEQ Regional Plan 2017, a small area in the south west corner of the Site mapped within A State-wide biodiversity corridor; and
- > Essential habitat for the Koala.

Desktop mapping outputs downloaded for the Site are provided in **Appendix A**. Mapped vegetation is shown on **Figure 3**. Mapped waterways within the Site are illustrated on **Figure 4**. Biodiversity corridors are shown on **Figure 5**.

3.1.3 Redland City Council

Under the Redland City Plan, the Site is within Rural Zone as shown in **Plate 2**.

A review of the Redland City Plan Environmental Significance, Waterway Corridor and Wetland, Flood and Storm Tide Hazard, and Bushfire Hazard Overlay Mapping indicates that the Site is mapped as containing the following ecological constraints.

- > Areas in the north and west of the Site are mapped within the Waterway Corridors and Wetlands Overlay as shown in **Plate 3**.
- > Areas in the north of the Site are mapped as MLES and areas in the south of the Site are mapped as MSES within the Environmental Significance Overlay as shown in **Plate 4** and **Figure 5**.
- > Areas in the north, western boundary and south east of the Site are mapped as Flood Prone Areas within the Flood and Storm Hazard Overlay as shown in **Plate 5**.
- > Areas in the south of the Site are mapped as Very High Potential Bushfire Intensity and High Potential Bushfire Intensity, areas in the north and western boundary are mapped as Medium Potential Bushfire Intensity, the balance of the Site is largely mapped as Potential impact buffer within the Bushfire Hazard Overlay as shown in **Plate 6**.



Plate 2. Redland City Plan Rural Zone.



Plate 3. Redland City Plan Waterway Corridors and Wetlands Overlay.



Plate 4. Redland City Plan 8 Environmental Significance Overlay (MSES and MLES)



Plate 5. Redland City Plan Flood and Storm Tide Hazard Overlay (Flood Prone Area)



Plate 6. Redland Planning Scheme 2018 Bushfire Hazard Overlay (Very High Potential Bushfire Intensity, High Potential Bushfire Intensity, Medium Potential Bushfire Intensity and Potential Impact Buffer).

3.2 Summary of Field Assessment Findings

The field assessment confirmed the presence of a number of mapped features within the Site and identified a number of ecologically significant areas within the Site. Specifically, the field assessment confirmed the following ecological features and areas within the Site:

- > the Site supports vegetation consistent with Category X (Non-remnant), Category B (Remnant) and Category C (High-value regrowth);
- > the Site contains suitable koala habitat trees and is utilised by the Koala as evidenced by presence of scats and scratches;
- > the Site supports a number of habitat features including, but not limited to, hollow bearing trees, stags, nests, watercourses and ephemeral pools;
- > The Site supports relatively high fauna diversity with 58 fauna species recorded within the Site; and
- > The Site supports moderate floral diversity with 174 flora species, including 64 exotic species, recorded within the Site.

3.3 Vegetation & Flora

3.3.1 Threatened Flora Species

The desktop assessment, completed in accordance with the methodology outlined in **Section 2.1** identified three threatened flora species as 'possible', 'likely' or 'known' to occur within the Site.

Table 3-1 summarises the results of the desktop and field assessment and provides the status of each species under relevant legislation. The complete desktop assessment undertaken to determine which species are deemed 'possible' 'likely' or 'known' to occur within the Site is provided in **Appendix B**. All documents reviewed as part of the desktop assessment are provided as **Appendix A**.

Table 3-1 Threatened flora that are considered 'possible' 'likely' or 'known' to occur within the Site.

Scientific Name	Common Name	Status [#]		Likelihood of Occurrence	Detected on Site?
		NC Act	EPBC Act		
<i>Macadamia integrifolia</i>	Macadamia nut	V	V	Possible	No

Scientific Name	Common Name	Status [#]		Likelihood of Occurrence	Detected on Site?
		NC Act	EPBC Act		
<i>Marsdenia longiloba</i>	Slender Marsdenia	V	V	Possible	No
<i>Corchorus cunninghamii</i>	Native jute	E	E	Possible	No

NC Act – E = Endangered, NT = Near Threatened. EPBC Act E = Endangered.

During the field survey, 174 flora species, including 64 non-native species, from 68 families were recorded. All native species detected are listed as Least Concern as defined under the provisions of the *Nature Conservation (Wildlife) Regulation 2006* (i.e. no Endangered, Vulnerable or Near Threatened species were recorded). No flora species listed under the EPBC Act were recorded within the Site. A complete list of native and exotic flora species detected during the field assessment is provided as **Appendix C**.

3.3.2 Vegetation Communities

Review of the Regulated Vegetation Management Map and Vegetation Management Supporting Map, produced by DNRME, indicates that the Site supports Category X (Non-remnant) vegetation, Category B (Remnant) vegetation and Category C (High-value regrowth vegetation). The areas of mapped vegetation are shown on **Figure 3**. The DNRME Vegetation Management Property Report produced for the Site is provided in **Appendix A**.

A short description of each RE mapped within the Site, according to the Regional Ecosystem Description Database (REDD) (DES, 2018)¹, is provided in **Table 3-2** below.

Table 3-2 Regional ecosystems that currently occur in the Site as described in REDD.

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

The Site support Category X (Non-remnant) vegetation, Category B (Remnant) vegetation and Category C (High-value regrowth vegetation). The field survey confirmed that the vegetation within the Site is generally consistent with the DNRME Vegetation Management Report and Regulated Vegetation Map produced for the Site. Specifically, the regional ecosystem codes appear to be accurately applied; Category B areas appear to support vegetation that meet the requisite height, cover and species compositions; and Category C areas have not been cleared in the past 15 years.

Areas of non-remnant vegetation in the Site are characterised as pastoral land that has been subject to historic clearing with the exception of scattered large eucalyptus trees, as shown in **Plate 7**. These large trees include *Eucalyptus tereticornis* and *Eucalyptus pilularis* specimens that often support hollows. The ground layer was dominated by exotic *Sporobolus pyramidalis* (Giant rat's tail grass) and *Imperata cylindrica* (Blady grass), with an abundance of exotic herbs and forbs, including *Senecio madagascariensis* (Fire weed) which was extensive throughout.

Melaleuca dominated swamp areas were located within the Site associated with watercourses and associated alluvial plains. *Melaleuca quinquenervia* and *Eucalyptus tereticornis* dominated the canopy in these areas, which also supported a sub-canopy largely containing *M. quinquenervia*. The shrub layer, where present, was observed to support a number of *Solanum* species including *Solanum stelligerum* and *Solanum torvum*. The ground layer generally included *Juncus* species and *Axonopus compressus*. An image of this community is shown in **Plate 8**. This vegetation community aligns with RE 12.9-10.4 which allows for the presence of *M. quinquenervia* and *E. tereticornis* on lower slopes.

Endangered REs 12.11.23/12.11.27 were confirmed within the Site. The canopy in this area was dominated by *Eucalyptus racemosa* and *Corymbia intermedia*. The sub canopy consisted of *Melaleuca quinquenervia* and the shrub layer was generally absent. The ground layer includes *Imperata cylindrica* and *Lomandra longifolia*. This vegetation community was observed in the southern portion of the Site and is shown in **Plate 9**. Despite evidence of some historic logging, these areas were generally in good condition with little disturbance or weed infestation observed.

¹ Queensland Herbarium (2018) Regional Ecosystem Description Database (REDD). Version 11 (December 2018) (DES: Brisbane).

Remnant and regrowth vegetation described as RE 12.3.11 was confirmed within the Site. The canopy strata of this community was observed to support *E. tereticornis*, *E. siderophloia* and *E. pilularis* as shown in **Plate 10**. The sub canopy strata included *M. quinquenervia* and *Lophostemon suaveolens*. The shrub layer in these areas was generally absent and the ground layer includes *Entolasia stricta*.

No TECs were encountered within the Site. Quaternary data is provided in **Appendix D** and a complete list of all flora species encountered within the Site is provided in **Appendix C**.



Plate 7. Category X (non-remnant) vegetation supporting pastoral grasses and scattered remnant *Eucalyptus* individuals.



Plate 8. *M. quinquenervia* and *E. tereticornis* dominated swamp area.



Plate 9. *E. racemosa* and *C. intermedia* dominated canopy areas described as RE 12.11.23/12.11.27.



Plate 10. Regrowth vegetation within the Site supporting *E. Pilularis* and *L. suaveolens* individuals.

3.3.3 Declared Weed Species

A total of 64 exotic flora species were recorded within the Site, 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). The following are those listed exotic flora species listed as Category 3 Restricted

invasive pest plants under the *Biosecurity Act 2014*. The annotation “^” indicates that the species is also a WONS.

- > *Asparagus aethiopicus* (Asparagus fern)^;
- > *Cinnamomum camphora* (Camphor Laurel);
- > *Eichhornia crassipes* (Water hyacinth)^;
- > *Lantana camara* (Lantana)^;
- > *Lantana montevidensis* (Creeping lantana);
- > *Senecio madagascariensis* (Fireweed)^;
- > *Anredera cordifolia* (Madeira vine)^;
- > *Bryophyllum delagoense* (Mother-of-millions);
- > *Sporobolus pyramidalis* (Giant rat’s tail grass);
- > *Sphagneticola trilobata* (Singapore daisy); and
- > *Tecoma stans* (Yellow bells).

A list of all flora species encountered in the Site is presented in **Appendix C**.

Weeds declared under the *Biosecurity Act 2014* were encountered throughout the Site as shown on **Figure 6**. It was noted during the field assessment the currently used for cattle grazing in the north of the Site is largely infested with both Giant Rat’s weed and Fireweed. Owing to how extensive both of these weeds are throughout the entire northern portion of the site mapping of every individual occurrence was not completed. In accordance with the Queensland Department of Fisheries and Agricultural ‘Spatial Pest Attributes Standard Queensland’ (DAF, 2012) infestations of these species are estimated as ‘Moderate’ to ‘High’ within the northern portion of the Site.

The *Biosecurity Act 2014* notes that Category 3 – Restricted pest plants must not be distributed as a gift, sold, traded or released into the environment unless the distribution or disposal is authorised in a regulation or under a permit. The *Biosecurity Act 2014* imposes a general biosecurity obligation on persons dealing with biosecurity matter to prevent and/or minimise the impact of biosecurity risks on human health, social amenity, the economy and the environment. A general biosecurity obligation requires that all reasonable and practical measures are taken to prevent or minimise biosecurity risk, and that actions are taken to prevent exacerbation of the adverse effects of biosecurity matter. With respect to these points the *Biosecurity Act 2014* specifically notes that the requirement to manage the impact of invasive plants and animals on a person’s land.

3.4 Fauna & Habitat

3.4.1 Threatened Fauna Species

The desktop assessment, completed in accordance with the methodology outlined in **Section 2.1** identified six threatened fauna species as ‘possible’, ‘likely’ or ‘known’ to occur within the Site.

A summary of the field assessment and desktop assessment is provided as **Table 3-3**. The complete desktop assessment undertaken to determine which species are deemed ‘possible’ ‘likely’ or ‘known’ to occur within the Site is provided in **Appendix B**. The results of this desktop assessment determined that seven species of threatened fauna are considered ‘possible’, ‘likely’, or ‘known’ to occur within Site.

Table 3-3 Threatened fauna considered ‘possible’, ‘likely’ or ‘known’ to occur within the Site

Scientific Name	Common Name	Status#		Likelihood of Occurrence	Detected on Site?
		NC Act	EPBC Act		
<i>Petauroides volans volans</i>	Greater glider	V	V	Possible	No
<i>Phascolarctos cinereus</i>	Koala	V	V	Likely	Yes
<i>Pteropus poliocephalus</i>	Grey-headed flying fox	-	V	Likely (foraging)	No
<i>Hirundapus caudacutus</i>	White-throated needle tail	-	Migratory	Possible	No

Scientific Name	Common Name	Status#		Likelihood of Occurrence	Detected on Site?
		NC Act	EPBC Act		
<i>Monarcha melanopsis</i>	Black-faced monarch	-	Migratory	Possible	No
<i>Rhipidura rufifrons</i>	Rufous fantail	-	Migratory	Possible	No

NC Act – V = Vulnerable. EPBC Act E = Endangered, V = Vulnerable.

A total of 58 fauna species were recorded during the field assessment. This included 44 bird species, 10 mammal species, 1 reptile species and 3 amphibians.

Images of fauna species detected in the Site are provided as **Plate 11** to **Plate 16**. These images the following findings:

- > *Pseudophryne raveni* (Copper-backed brood frog) as shown in **Plate 11**. This species was heard calling proximate to drainage lines and waterbodies throughout the Site.
- > It was noted during the field assessment that the Site supports grazing land for *Macropus rufogriseus* (Red-necked wallaby). This species was frequently encountered within the northern region of the Site during the field assessment as shown in **Plate 12**. The camera trap analysis identified a number of species often difficult to detect including *Petaurus breviceps* (Sugar glider) shown in **Plate 13**. Sugar gliders are colonial breeding species and likely use hollow-bearing trees within the Site for shelter and breeding purposes.
- > *Tachyglossus aculeatus* (Short-beaked echidna) was captured using the Site at four separate camera trap locations, shown in **Plate 14**. Short-beaked echidna is Special Least Concern in accordance with the NC Act.
- > A number of bird species such as *Egretta novaehollandiae* (White-faced heron), as shown in **Plate 15**, were detected on the camera traps. The Site supports a number of pools suitable for foraging by transitory wetland and migratory birds. No Migratory species protected under the EPBC Act were observed within the Site.
- > One microbat was detected via camera trap using the Site. This species was identified as *Nyctophilus gouldi* (Gould's long-eared bat) and is shown in **Plate 16**. Gould's long-eared bat is a colonial breeding species and likely use hollow-bearing trees and peeling bark throughout the Site for shelter and breeding purposes.

Additionally to the above, a number of indirect observations of Koala were made during the field assessment. This included Koala scats and scratches encountered during targeted surveys and opportunistically. The Koala is listed as Vulnerable under the NC Act EPBC Act. If impacts to Koala habitat (e.g. removal of koala habitat trees) are anticipated as part of the proposed works then an EPBC Act Significant Impact Self-assessment for the Koala is recommended.

A full list of Fauna species detected during the field assessment is provided as **Appendix E**.



Plate 11. Copper-backed brood frog encountered during the field survey.



Plate 12. Red-necked wallaby population frequently encountered within the northern region of the Site.



Plate 13. Sugar glider captured on camera 5.



Plate 14. Short-beaked echidna captured on camera 17.



Plate 15. White-faced heron captured on camera 19



Plate 16. Gould' long-eared bat captured on Camera 12.

3.4.2 Fauna Habitat Value

The Site supports a large number of notable habitat features, including hollow bearing trees, stag trees and logs. The location of the habitat features opportunistically recorded during the field assessment within the Site is provided on **Figure 6**. Active breeding was observed at one location during field investigations, where two *Cacatua galerita* (Sulphur-crested cockatoo) individuals were observed emerging from within a hollow bearing tree when stag watching at dusk. The presence of *Trichosurus vulpecula* (Brush-tail possum) detected in the northwest of the Site also indicate that hollow-bearing trees in this area are also likely being used by these species for breeding and shelter. Hollow-bearing trees and stags within the Site are likely to be used by a range of hollow dependant birds such as parrots, as well as arboreal mammals (e.g. sugar gliders), and microbat species. Hollow logs within the Site similarly may provide shelter for a number of fauna groups including amphibians and reptiles, as well as Short-beaked echidna.

Numerous waterbodies were observed throughout the Site. Permanent watercourses and ephemeral ponds within the Site were observed to be largely shaded by fringing native vegetation that may provide habitat for a range of frog, reptiles, fish and other aquatic species, including the Copper-backed brood frog and *Uperoleia fusca* (Dusky toadlet) heard calling from within the Site. These sites may also be used for foraging from time-to-time by transitory wetland and migratory birds. The locations of watercourses and ephemeral ponds identified within the Site are shown on **Figure 4**.

The point-cantered quarter methods was used to estimate the density of Non-juvenile Koala Habitat Trees² (KHT) present on the Site. This analysis was undertaken in areas of remnant and regrowth vegetation. This analysis identified that remnant vegetation described as RE 12.11.23/12.11.27 supports a higher density of KHTs. Remnant patches of RE 12.3.11 support higher densities of KHTs than regrowth patches of RE 12.3.11. **Table 3-4** provides a summary of the relative density estimates.

The Site maintains ecological connectivity to vegetated areas along the southern and western boundary of the Site. Furthermore, watercourses within the Site provide fauna movement throughout the Site and into the surrounding environment. The Site is largely mapped within a State-mapped 'Regional biodiversity corridor' and it is likely that the vegetated areas of the Site aid in fauna movement opportunities for a number of species.

² Non-juvenile koala habitat tree is a koala habitat tree that has:
a. a height of more than four metres; or
b. a trunk with a circumference of more than 31.5 cm at 1.3 m above the ground.

Table 3-4 Point quarter method density estimates

RE Code	Category	KHT/m ²
12.11.23/12.11.27	B	0.14
12.3.11	B	0.025
12.3.11	C	0.022

3.5 Assessment of Impacts and Suggested Mitigation

In the absence of measures to avoid, minimise and mitigate impacts, the development of the Precinct has the potential to negatively impact flora and fauna within the Site. Whilst the Precinct is in the very early stages and master planning has not yet been completed, a preliminary assessment of potential impacts has been completed to assist in aiding the planning of future stages. **Table 3-5** identifies potential unmitigated impacts.

Table 3-5 Impact Assessment

Action/s	Potential unmitigated impact/s	Potential mitigation measures
Project Design		
Siting of sports fields, infrastructure & facilities	> Siting of infrastructure in ecologically sensitive areas	> Siting of fields and facilities in 'less constrained' areas
Stormwater design and management	> Stormwater transporting nutrients and pollutant runoff from turfed and newly sealed sports field > Local water extraction / modification to hydrology affecting aquatic habitat	> Stormwater management plan to be prepared for site and include consideration of water-quality > Gross pollutant trap included as part of stormwater management > Environmentally-friendly design solutions and construction materials to be used where possible
Selection of building materials	> Netting entrapping birds and bats	> Wildlife-friendly design solutions and construction materials to be used where possible, including consideration of use of nets which may be stored when not in use.
Construction		
Vegetation clearing	> Direct clearing of flora species and habitat > Direct death or injury of fauna during clearing > Loss of fauna habitat / habitat features (including 'chimney trees' that may be used as maternity sites by Gould's long-eared bat) > Disruption of fauna breeding > Noise and vibration disrupting fauna use of Site > Introduction and spread of weed from machinery	> Define limits of clearing and align with proposed infrastructure. > Preparation of detailed fauna management plan and / or NC Act High Risk Species Management Program including protocols for injured or displaced fauna to be followed during vegetation clearing. > Works to be completed outside of nesting / breeding season for hollow-dependent fauna where possible. > Pre-clearing surveys to be completed prior to vegetation clearing.

		> Fauna spotter catcher to supervise all vegetation clearing. > Construct temporary fauna barriers around construction areas. Limit development footprint to the minimum area and avoid ecologically constrained areas. Salvage of hollows where feasible, and redistribution on Site. > Installation of compensatory nest boxes and / or relocation of large tree hollows. Clearing works to be in accordance with a Fauna Management Plan, Vegetation Management Plan. Clearing works should also consider fauna spotter catcher and arboriculture advice. > Noisy works to occur during daylight hours to minimise impacts to nocturnal fauna. > Weed treatment to be completed as part of early works. > Vehicle hygiene and washdown procedures to be utilised.
Construction of physical infrastructure (e.g. toilets, canteen, club house)	> Erosion and sedimentation of nearby waterways > Barriers to fauna movement	> Construction of physical infrastructure is to occur in accordance with best practice for waterway barrier work.rosion and sediment control measure to be designed and implemented in accordance with the International Erosion Control Association (IECA) Best Practice Erosion and Sediment control (2008). (RK) > Construct physical infrastructure in in 'less constrained' areas as far as practical. E.g. avoid placement of sports fields in 'high' to 'moderate' constrained areas, 'Low impact' infrastructure (e.g. passive recreation, park benches, BBQ facilities) may be considered in more highly constrained areas.
Operations		
Arrival of guests by vehicle	> Increased traffic in area resulting in increased vehicle strike	> Wildlife movement solutions, road treatment, and vehicle-activated electronic signage to be considered in project design and construction. > Road design to consider 'slow down' traffic points. > If upgrades of Heinemann Road are proposed as part of works, consider fauna movement including

		crossing points (e.g. culverts, rope ladders) and fauna fencing.
Use of Precinct for recreation	> Introduction and spread of weeds > Off-leash dogs predating / disrupting native fauna > Human-wildlife conflict (in particular wallabies which are extensive in the Site) > Increased light and noise (which may affect nocturnal fauna in particular)	> Weed management to be applied early works / pre-construction. Ensure inspections are built into the management of operations. > Ensure the Site is a dog-on-leash area. Exclude dogs from areas maintained for conservation. > Consider reserving grazing land for foraging wallabies within rehabilitation area. > Install fauna fencing. > Low to moderate lighting to be used where possible. Limit night-time operational hours where possible (i.e. 6pm – 10 pm). Lighting fixtures to include shields that direct light downwards towards courts/fields.
Serving of food / drinks at Precinct	> Litter / pollution of habitat > Improperly disposed food waste providing food for feral animals	> Provide appropriate waste management solutions, educate and encourage guests to minimise personal waste. > Operational procedures for waste clean-up including proper waste storage and disposal. > Gross pollutant trap included as part of stormwater management.

4 Legislative Constraints

Depending on the final design of the Precinct, there are a number of permits that may be required. These are outlined below.

4.1 Commonwealth Legislation

4.1.1 *Environment Protection and Biodiversity Conservation Act 1999*

No flora or ecological communities listed under the EPBC Act were identified within the Site, one EPBC Act listed fauna species was detected using the Site. The Koala is listed as Vulnerable pursuant to the EPBC Act, and thus is considered a Matter of National Environmental Significance (MNES).

If the final design involves the removal of Koala habitat then a significant impact self-assessment will be required. A 'significant impact' is an impact which is important, notable, or of consequence, having regard to its context or intensity. The EPBC Act Policy Statement 1.1, the 'Significant Impact Guidelines' further lists a set of 'significant impact criteria' for vulnerable species. A significant impact assessment must be carried out against these criteria. The self-assessment must include the specific area of Koala habitat that to be impacted, thus this assessment cannot be completed until a preliminary design is available.

Notwithstanding, the 'EPBC Act referral guidelines for the vulnerable koala' provide some guidance about the types of impacts that be considered 'significant' an extract from these guidelines is provided below:

- > The loss of 20 hectares or more of high quality habitat critical to the survival (habitat score of ≥ 8) is highly likely to have a significant impact for the purposes of the EPBC Act.
- > The loss of two hectares or less of marginal quality habitat critical to the survival (habitat score of 5) is highly unlikely to have a significant impact on the koala for the purposes of the EPBC Act.
- > The loss of between 2 and 20 ha of habitat critical to the survival may have a significant impact on the koala for the purposes of the EPBC Act. Whether this is more likely or unlikely depends on the characteristics of your action.
- > Actions with indirect impacts on the koala may constitute a significant impact, particularly where they occur in habitat critical to the survival of the koala, are new impacts or exacerbate an existing impact. Mitigation measures are available to reduce the impact of such actions.

4.2 State Legislation

4.2.1 *Nature Conservation Act 1992*

A Species Management Program is required where an animal breeding place has been identified and activities are required to tamper with the breeding place in order to complete the scope of works. Two SMP templates are available; SMP 'low risk of impacts' and SMP 'high risk of impacts'. A SMP 'low risk of impacts' is required if any animal breeding places (i.e. hollow bearing trees) for Least Concern fauna species are to be tampered with as part of the proposed works. The SMP 'low risk of impacts' relates to protected animals classed as Least Concern where the impacts are unlikely to affect the broader population.

A SMP 'high risk of impacts' relates to EVNT species, Special Least Concern species, or Least Concern colonial breeders, where the broader the population is at greater risk from impacts. Whilst an SMP is not required for Koala, as koalas do not use a habitual breeding place, Gould's long-eared bat and Sugar gliders are least concern colonial breeders. As such, if tampering with an animal breeding place (i.e. hollow-bearing tree or stag) is required as part of the final design a SMP 'high risk of impacts' will be required for these species. As the SMP 'high risk of impacts' can also include measures for Least Concern fauna species, only SMP will be required to be prepared for the Site.

Both the SMP 'low risk of impacts' and SMP 'high risk of impacts' require information including the location of the activity, area of impact and species that that are the subject of the tampering of the breeding place. The SMP 'high risk of impacts' will require additional information tailored for the identified species.

4.2.2 *Vegetation Management Act 1999*

The Site is mapped as containing Category X (Non-remnant) vegetation, Category B (Remnant) vegetation and Category C (High-value regrowth) for the purposes of the *Vegetation Management Act 1999* (VM Act).

For the purposes of the VM Act, the clearing of Category X (Non-remnant) is 'exempt clearing work' for Freehold, Indigenous and Leasehold land.

Category B and Category C vegetation are regulated under the VM Act. Given the present zoning of the land as Rural, the following applies:

> **Category B**

Schedule 10 'Development assessment', Part 3 'Vegetation clearing' Division 4, Table 3, Item 1 of the *Planning Regulation 2017* provides guidance regarding whether a Material Change of Use application are referred to the State Assessment Regulatory Authority (SARA). The critical trigger for referral is a 5ha lot size.

Prior to lodging a development application it will be necessary to attain a 'Relevant Purpose Determination' under Section 22A of the VM Act.

Assessment by SARA will be undertaken in accordance with the Sustainable Development Assessment Provisions (SDAPs) and in particular Code 16 Vegetation clearing. While Code 16 does not prevent the clearing of regulated vegetation per se, direct impacts on mapped waterways, Essential Habitat and Of Concern and Endangered regional ecosystems would likely require the provision of an environmental offset under the *Environmental Offsets Act 2014*.

> **Category C**

Clearing vegetation in a Category C area does not require a development approval and may be undertaken under an accepted development vegetation clearing code. It is not possible to attain a 'Relevant Purpose Determination' under Section 22A of the VM Act the only way vegetation can be cleared is under an accepted development vegetation clearing code. The 'Accepted development vegetation clearing code - Clearing for infrastructure' (Effective 21 June 2019) would likely apply. This code places limits on the extent of Category C vegetation that can be cleared.

If the land were to be rezoned then the 'urban purpose / urban area', exemption would likely apply for Category C and B. This would still place limitations on clearing some vegetation, in particular remnant Endangered regional ecosystems.

A designation under Chapter 2, Part 5 of the *Planning Act 2016* would also afford exemptions.

It is recommended that further planning or legal advice be attained in relation to regulated vegetation and its planning implications.

4.2.3 Biosecurity Act 2014

A number of invasive plant species, of which 11 are Category 3 restricted invasive plants under the *Biosecurity Act 2014* were detected in the Site. Category 3 restricted matters must not be distributed or disposed of unless the distribution or disposal is performed in the way prescribed under a regulation. Prescribed disposal for Category 3 restricted matter - invasive plants includes:

- > burying the matter in the ground at a depth that ensures any seeds or vegetative material being disposed of cannot grow; or
- > transporting the matter directly to a waste facility if the matter is—
 - in a sealed container or a covered vehicle; or
 - covered in a way that prevents the restricted matter from being lost or released during transport; or
- > sealing the matter in plastic and leaving the matter in the sun until any vegetative material being disposed has decomposed.

4.2.4 Fisheries Act 1994

Three waterways for waterway barrier works are mapped within the Site, one orange 'moderate risk' waterway and two green 'low risk' waterways. Where waterway barrier works are proposed within the orange 'moderate risk' or green 'low risk' waterway that cannot comply with the *Accepted development requirements*

for operational work that is constructing or raising waterway barrier works³ then an operational works – waterway barrier works approval will be required.

4.2.5 Priority Koala Assessable Development Area

The entire Site is mapped as Priority Koala Assessable Development Area (PKADA) (**Appendix A**). Pursuant to Schedule 10 (16) of the Planning Regulation, the following is considered Prohibited development for material change of use in PKADA.

- (1) *A material change of use of premises for an urban activity is prohibited development to the extent the premises are in—*
 - (a) *a priority koala assessable development area; and*
 - (b) *a koala habitat area; and*
 - (c) *an area designated under a local categorising instrument for conservation, open space, rural or rural residential purposes.*
- (2) *However, subsection (1) does not apply to a material change of use—*
 - (a) *that is accepted development; or*
 - (b) *that is exempted development; or*
 - (c) *for a single dwelling on a lot larger than 2,000m²; or*
 - (d) *that, if a development application were made for the material change of use, must be assessed against the assessment benchmarks prescribed under schedule 11, part 2, section 2, 3, 4 or 5.*
- (3) *In this section— urban activity—*
 - (a) *means the use of premises for a residential, industrial, retail or commercial activity; but*
 - (b) *does not include-*
 - ...
 - (xv) *outdoor sport and recreation; or*
 - (xvi) *a clubhouse, grandstand or tourist accommodation relation to outdoor sport and recreation*
 - ...

Based on the excerpt provided above it is understood that the proposed development is not considered an 'urban activity' and thus is not prohibited development. However, it is recommended that legal or town planning advice is sought to confirm the interpretation of this legislation.

Pursuant to Schedule 11(6) of the *Planning Regulation 2017*, the following matters are assessment benchmarks for development in a PKADA.

- a) *the development does not involve clearing non-juvenile koala habitat trees in a bushland habitat area;*
- b) *the development avoids clearing non-juvenile koala habitat trees in an area that is—*
 - i. *a high value rehabilitation habitat area; or*
 - ii. *a medium value rehabilitation habitat area;*
- c) *if the clearing of non-juvenile koala habitat trees can not be avoided in an area stated in paragraph (b)—*
 - i. *the amount of clearing is minimised; and*
 - ii. *any significant residual impact of the clearing is offset;*
- d) *the matters stated in section 2(2)(a) to (e).*

³ https://www.daf.qld.gov.au/_data/assets/pdf_file/0007/1258396/daf-adr-waterway-barrier-works.pdf

4.3 Redland City Plan

4.3.1 Zoning

Under the Redland City Plan the Site is mapped within the Rural zone. In accordance with the Rural zone code –

- (1) *The purpose of the rural code is to provide for a wide range of primary production activities while protecting the natural resources and significant environmental and landscape values.*
- (2) *The purpose of the code will be achieved through the following outcomes:*
 - ...
 - (d) *educational, recreational and tourism under uses are accommodated where they do not significantly impact on the environmental and landscape values of the locality*
 - ...

Given the Precinct is for a recreational purpose and is not anticipated to significantly impact on the environmental and landscape values of the locality the Precinct is a relevant use in the Rural zone.

4.3.2 Overlays

4.3.2.1 Environmental significance overlay

The Site contains areas mapped under the Redland City Plan Environmental significance overlay.

In accordance with the Environmental significance overlay code –

- (1) *The purpose of the environmental significance overlay code is to manage development to avoid or minimise and mitigate significant impacts on matters of national, state and local environmental significance.*
- (2) *The purpose of the code will be achieved through the following overall outcomes:*
 - (a) *areas of high biodiversity or environmental significance are retained and protected;*
 - (b) *development maximises the retention of native vegetation and significant habitat features;*
 - (c) *development minimises the loss of koala habitat trees;*
 - (d) *impacts on matters of state or local environmental significance are minimised and mitigated;*
 - (e) *development does not cause substantial fragmentation of habitat areas;*
 - (f) *opportunities for safe and viable wildlife movement within and between habitat areas are facilitated;*
 - (g) *landscaping and planting is undertaken in a manner that contributes to the ecological values of the site; and*
 - (h) *where they occur, significant residual impacts on matters of local environmental significance or another prescribed environmental matter in accordance with section 15(4) of the Environmental Offsets Act 2014, may need to be offset.*

Section 8.2.4.3 Environmental significance overlay code – Specific benchmarks for assessment of the Redland City Plan includes Table 8.2.4.3.1 – Benchmarks for development that is accepted subject to requirements and assessable development that details 18 Performance Outcomes and Acceptable Outcomes.

Table 4-1 provides some of the relevant Performance Outcomes and Acceptable Outcomes, however each of the 18 Performance Outcomes should be considered.

Table 4-1 Some relevant excerpts from Table 8.2.4.3.1 of the Redland City Plan

Performance Outcomes	Acceptable Outcomes
PO2 Development does not result in a significant reduction in the level or condition of biodiversity and ecological functions and processes in the locality.	No acceptable outcome is nominated.
PO4 Connections between habitat areas are retained, so that movement of key species and normal gene flow	No acceptable outcome is nominated.

Performance Outcomes	Acceptable Outcomes
between populations is not inhibited or made less safe. Connections may include both continuous corridors and “stepping stone” patches and refuges.	
PO6 The design, scale and intensity of development minimizes impacts on retains habitat.	No acceptable outcome is nominated.
PO11 Development minimises potential for disturbance of wildlife as a result of noise, light, vibration or other source.	No acceptable outcome is nominated.
PO14 Corridors have sufficient width to maintain viable wildlife or habitat linkages.	Ecological corridors have a minimum width of 100m.

Given the overlay code includes the need to retain the current level or condition of biodiversity and ecological function within the locality, it is crucial that the significant ecological areas and functions identified within this EAR are considered in the design phase in order to comply with the Environmental significance overlay code. Specifically, the precinct design should consider the scale, intensity and location of infrastructure in relation to ecological features.

4.3.2.2 Waterway corridors and wetlands overlay code

The Site contains areas mapped under the Waterway corridors and wetlands overlay.

In accordance with the Waterway corridors and wetland overlay code –

- (1) *The purpose of the waterway corridors and wetlands overlay code is to manage development to avoid significant impacts on matters of national, state and local environmental significance, specific to the environmental values of waterways and wetlands.*
- (2) *The purpose of the code will be achieved through the following overall outcomes:*
 - (a) *development is compatible with the environmental values of a waterway or wetland;*
 - (b) *water quality in waterways and waterbodies is maintained or improved;*
 - (c) *riparian vegetation, in-stream aquatic ecology and biodiversity along waterway corridors and around wetlands are maintained or enhanced;*
 - (d) *natural hydrological and geomorphological processes (including bank stability) are maintained;*
 - (e) *impacts on waterways and wetland are minimised and mitigated; and*
 - (f) *development does not increase long term maintenance or management costs of natural or man-made water bodies to the community.*

Section 8.2.11.3 Waterway corridors and wetlands overlay code – Specific benchmarks for assessment of the Redland City Plan includes Table 8.2.11.3.1 – Benchmarks for assessable development that details 13 Performance Outcomes and Acceptable Outcomes.

Table 4-2 provides some relevant Performance Outcomes and Acceptable Outcomes, however each of the 13 Performance Outcomes should be considered.

Table 4-2 Some relevant excerpts from Table 8.2.11.3.1 of the Redland City Plan

Performance Outcomes	Acceptable Outcomes
PO1 Development does not adversely impact on the hydrological regime of recharge of a wetland or waterway.	No acceptable outcome is nominated.
PO2 A core riparian buffer is maintained along and around waterways and wetlands that is vegetated, development free, and is of a sufficient width to: protect water quality;	AO2.1 A development free, vegetated buffer area is provided in accordance with Table 8.2.11.3.2.
(1) protect the stability of stream bank and bed;	AO2.2 No clearing occurs within the buffer area provided in accordance with Table 8.2.11.3.2.
(2) allow for natural hydrological and geomorphological processes;	
(3) minimise erosion;	

Performance Outcomes	Acceptable Outcomes
(4) maintain or achieve healthy water temperatures and in-stream conditions; and (5) support viable wildlife habitat and movement.	
PO3 Riparian vegetation provides sufficient shade over the stream to protect in-stream habitat, biodiversity and ecological processes.	AO3.1 Vegetation achieves 70% canopy cover over streams 10m or less in width and 70% canopy cover over near-bank areas along other streams.
PO5 The development is designed to avoid any worsening of water quality in a waterway or wetland. Editor's note—Applicants must also have regard to the Healthy waters code.	No acceptable outcome is nominated.
PO8 Development incorporates opportunities for revegetation to enhance stream and habitat condition, biodiversity and wildlife movement wherever possible.	No acceptable outcome is nominated.
PO12 Development minimises potential for disturbance of wildlife as a result of noise, light, vibration or other source.	No acceptable outcome is nominated.
PO13 Public access to or along waterways and wetlands is located and designed to minimise disturbance of environmental values.	No acceptable outcome is nominated.

The Waterway corridor and wetlands overlay code includes the need incorporate a clearing buffer around waterways and wetlands. As such, it is important to consider waterway buffer requirements at the design phase to ensure compliance with the overlay code. In addition, riparian vegetation should be retained as far as practical to protect in-stream habitat, biodiversity and ecological processes.

5 Recommendations to Avoid, Minimise & Mitigate Impacts

5.1 During Project Design

It is recommended that the following impact avoidance, management and mitigation measures be implemented as part of the project design phase of the proposed works (Action):

1. The present survey was completed over the winter months, outside of the optimal detection period for some summer flowering species, and some fauna species that are more active in the warmer months. Given this limitation, a future warm season survey should be considered. Such future surveys should also employ techniques such as aquatic survey within watercourses, pitfall trapping, and Elliott trapping which were not utilised in the present landscape-scale survey.
2. Once a concept design for the project is prepared, targeted surveys within the proposed project footprint should be considered to comprehensively map microhabitat features and weeds.
3. Avoid areas of high ecological sensitivity. The following areas should be avoided if feasible:
 - Category B (Remnant) vegetation and Category C (High-value regrowth) vegetation, especially REs described as Endangered;
 - Areas of mapped essential habitat for the Koala;
 - Mapped waterways where works involve waterway barrier works, and a buffer from the defining bank in accordance with the Waterway and Wetland Overlay Code ; and
 - Habitat for least concern colonial breeding species.

Figure 7 provides a depiction of the level of environmental constraint within the Site. This figure has been prepared by overlaying all mapped environmental constraints within the Site, and is intended as a guide given the early stage of the Project. Different Site uses will have different levels of associated impacts and should be sited accordingly. For example, the development of sealed or turfed sports fields involving broad-scale clearing should be avoided in areas of 'high' to 'moderate' constraint. However, lower impact uses such as picnic facilities (e.g. unsealed natural walking trails, bird watching, BBQs, picnic tables and benches, landscaped public open space etc.) may be considered in areas of 'high' and 'moderate' constraint areas where these uses maintain the intended ecological functioning of the area, and do not conflict with any rehabilitation or conservation aims.

4. Minimise potential impacts by considering the following points:
 - Maintaining ecological connectivity within and surrounding the Site;
 - Consider fauna movement options within the Site including constructing fencing in accordance with DES Koala-sensitive Design Guidelines;
 - Conserve large patches of vegetation that are important for a range of species including wallabies, raptors, grasslands, and grassland avian species.
 - In order of priority retain, relocate, and compensate for loss of significant hollow-bearing trees within the Site; and
 - Target areas that are less ecologically constrained for development.

5.2 During Clearing and Construction

It is recommended that the following impact avoidance, management and mitigation measures be implemented during clearing and construction for the proposed Action:

5. Mitigate any residual impacts during clearing and construction through the following:
 - Clearly demarcate no-go zones on construction plans and in the field prior to the commencement of any vegetation clearing and / or construction works.
 - A fauna management plan should be developed.
 - A suitably qualified and experienced fauna spotter catcher should undertake a pre-clearing inspection prior to clearing and supervise all vegetation clearing.
 - Vegetation should be felled away from any vegetation that is to be retained.

- Works within the vicinity of trees to be retained should be undertaken in accordance with AS 4970 - 2009 Protection of Trees on Development Sites.
- Manage soil erosion and sediment loss during all works as per a specific Construction Environmental Management Plan (CEMP) and Erosion Sediment Control Plan (ESC).
- All vehicles and plant used during the proposed Action should be inspected for weed seed / soil that may result in the introduction of weeds / plant pathogens and if required should be washed-down prior to leaving the Site.
- The construction area (including stockpiles and vehicle parking areas) are to be fenced off to prevent fauna access and allow for unimpeded movement outside of these areas.
- Any fill / bedding / topsoil materials used as part of the proposed Action should be certified to be clean (i.e. free from weed seeds, fire ants, pathogens and other contaminants) prior to use.
- Rehabilitate areas of the Site in order to improve ecological functioning, connectivity, and habitat value. Rehabilitation should include assisted regeneration along waterways, treatment of weed infestations, and retention of some grassed areas within or adjacent to the rehabilitation area to provide grazing habitat for wallabies. A concept rehabilitation plan is provided as **Figure 8**. Whilst the intention of this plan is to highlight areas for rehabilitation actions, low impact site uses (e.g. walking tracks, picnic facilities, landscaped public open space) may be compatible within areas identified for rehabilitation provided they do not conflict with the intention of the rehabilitation (e.g. to provide habitat, maintain water quality, and connectivity etc.).

6 Conclusion

Overall, the Site assessment determined that the Site supports a diversity of flora species, fauna species and habitat types. The southern section of the Site, which is proposed for conservation, supports the greatest abundance of habitat features and highest quality habitat. This area can likely be enhanced through targeted weed treatment in key areas.

Whilst the northern portion of the Site has been historically cleared and has experienced some degradation from cattle grazing and weeds, it nonetheless supports patches of remnant vegetation, habitat features, and waterbodies and may provide habitat for a range of species. These ecological features should be maintained where feasible as part of the proposed development.

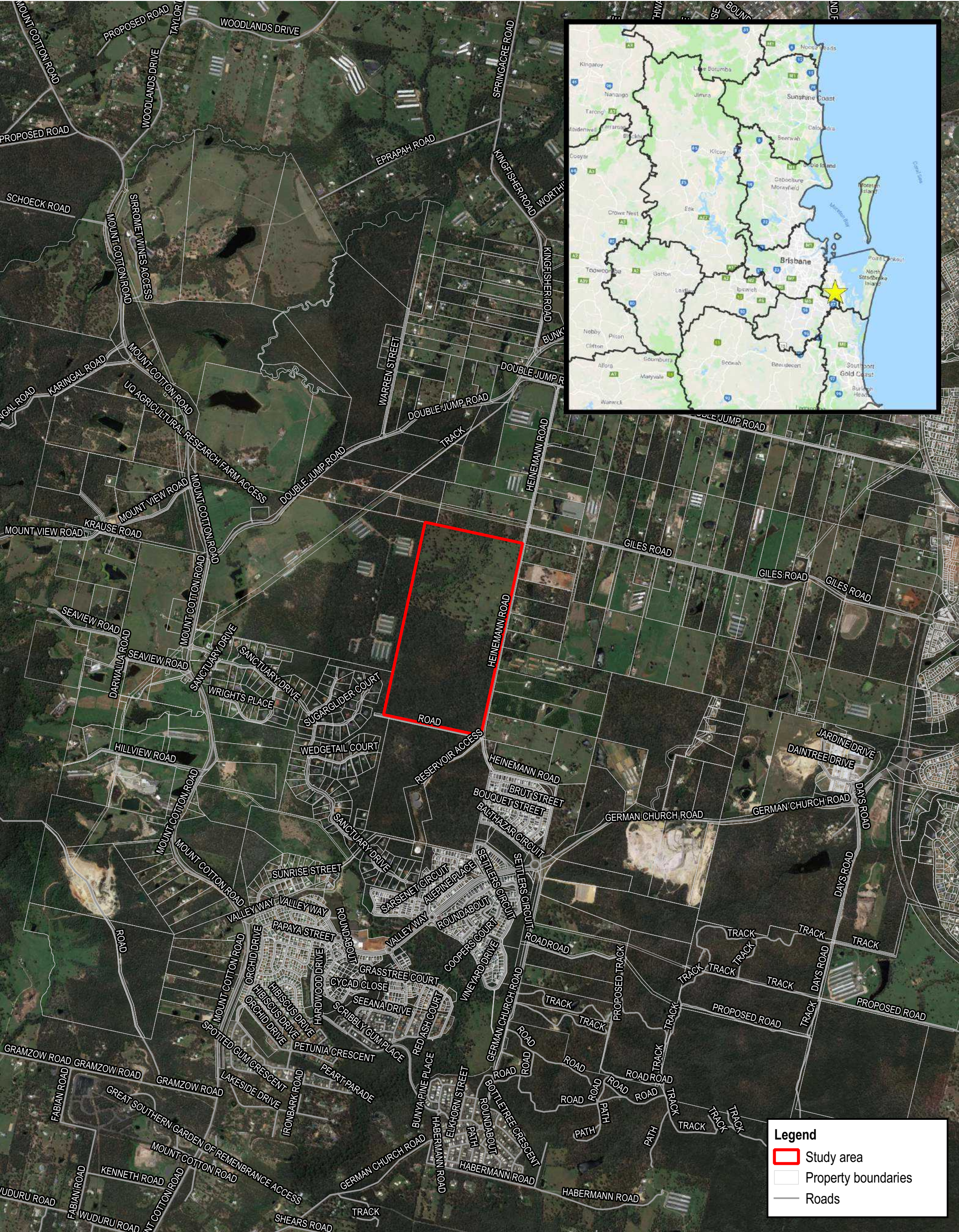
The design of the precinct should consider ecological features and constraints, associated legislation and acceptable outcomes identified for the Site. Additionally, this EAR has identified a number of potential impacts and mitigation measures for the Precinct. These should be considered, and mitigation measures incorporated where relevant during design, construction and operation of the Precinct.

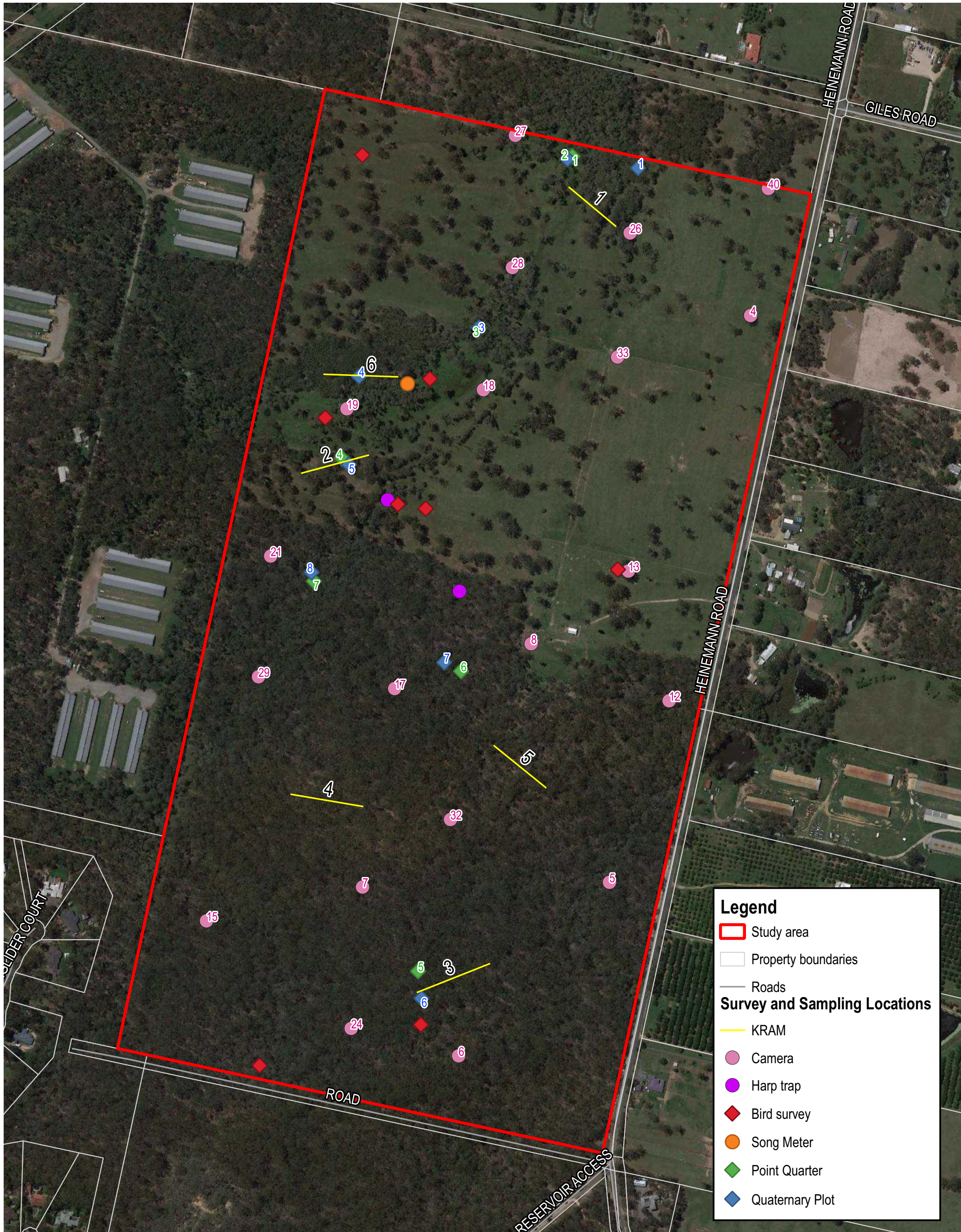
7 References

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- Queensland Herbarium (2019) Regional Ecosystem Description Database (REDD). Version 11.1 (April 2019) (DES: Brisbane).
- Olivia Woosnam-Merchez, Romane Cristescu, David Dique, Bill Ellis, Robert Beeton, Jeremy Simmonds, and Frank Carrick (2012) What faecal pellet surveys can and can't reveal about the ecology of koalas *Phascolarctos cinereus*. Australian Zoologist: 2012, Vol. 36, No. 2, pp. 192-200.

Figures

- Figure 1 – Project Locality
- Figure 2 – Survey and Sampling Locations
- Figure 3 – Regional Ecosystems
- Figure 4 – Water Features
- Figure 5 – Environmental Overlays
- Figure 6 – Habitat and Weeds
- Figure 7 – Environmental Constraints
- Figure 8 – Concept Rehabilitation Plan





0 50 100 150 200 250 m

Scale at A3
1:5000

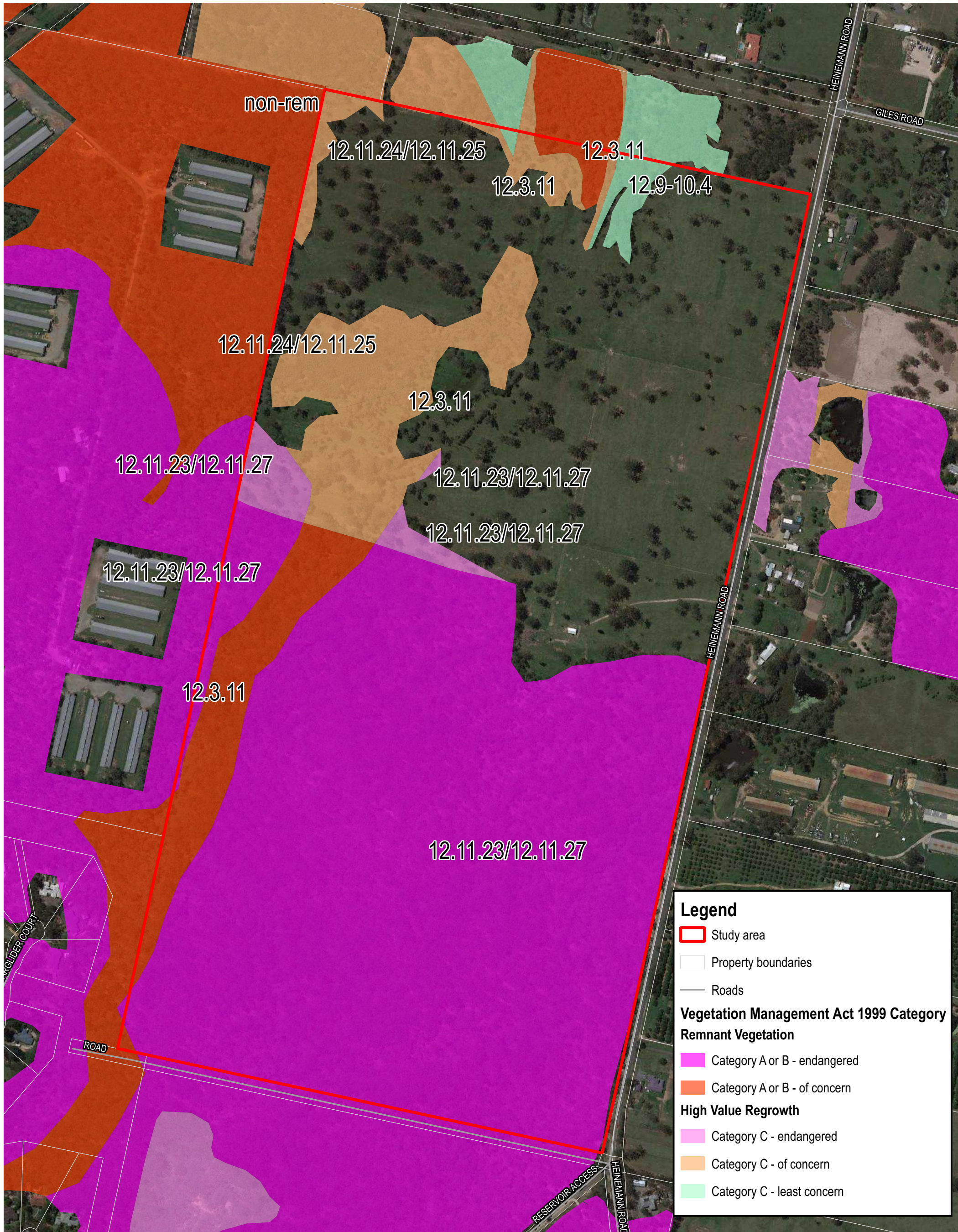


Survey and Sampling Locations

Sports and Recreation Precinct Ecological Investigation
Redlands City Council
FIGURE 2



Map Author: AD
Date: 20/6/2019
Coordinate System: EPSG 28356 - GDA 94 / MGA Zone 56
Project: WE19044
File Path: T:\004_JOBS\WE19044 - Redland City Council Ecological Investigation\3_Data\2_Analysis\GIS\Maps



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Scale at A3
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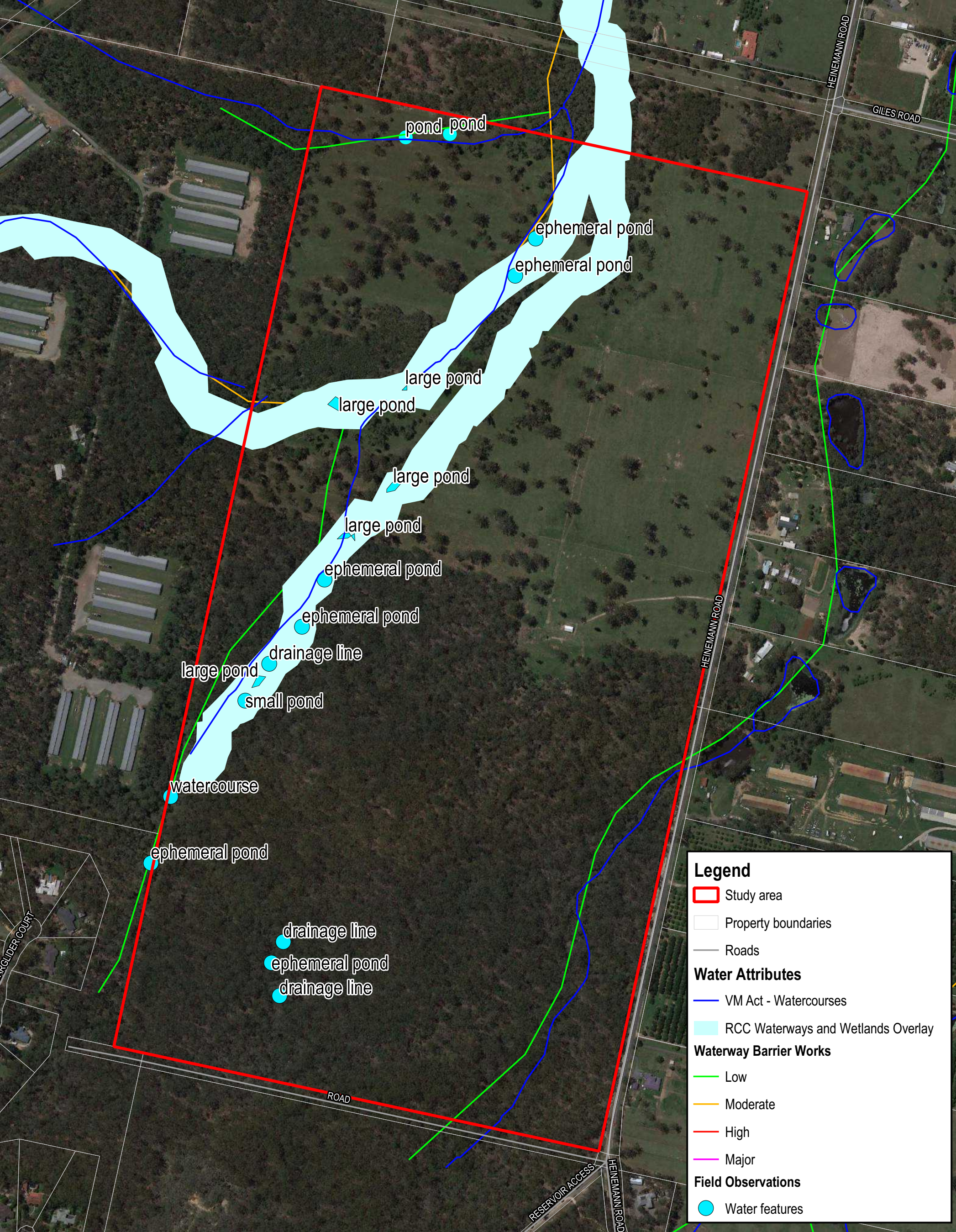


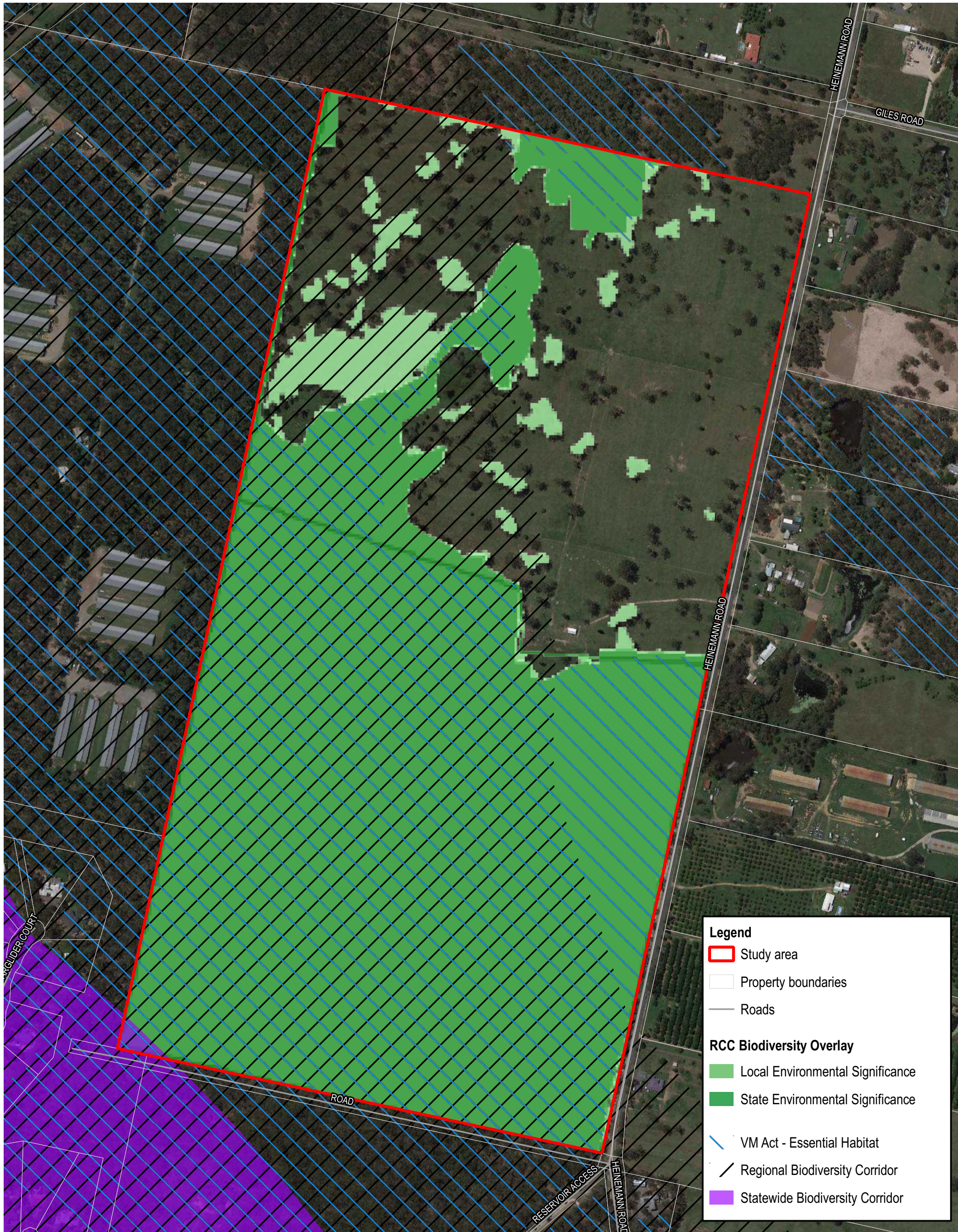
Regional Ecosystems

Sports and Recreation Precinct Ecological Investigation
Redlands City Council
FIGURE 3



Map Author: AD
Date: 20/6/2019
Coordinate System: EPSG 28356 - GDA 94 / MGA Zone 56
Project: WE19044
File Path: T:\004_JOBS\WE19044 - Redlands City Council Ecological Investigation\3_Data\2_Analysis\GISMaps





Legend

- Study area
- Property boundaries
- Roads

RCC Biodiversity Overlay

- Local Environmental Significance
- State Environmental Significance
- VM Act - Essential Habitat
- Regional Biodiversity Corridor
- Statewide Biodiversity Corridor

0 50 100 150 200 250 m

Scale at A3
1:5000

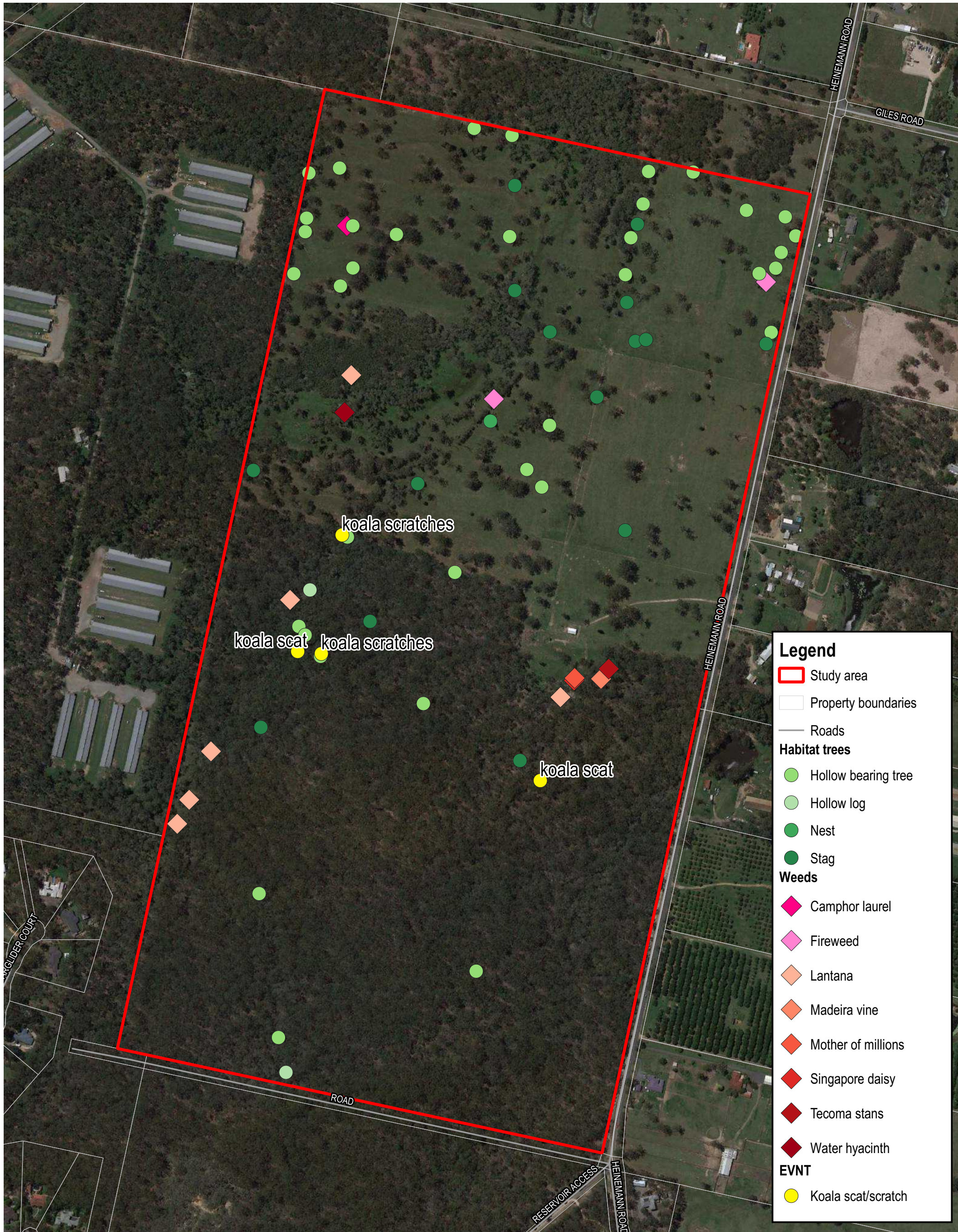


Environmental Overlays

Redlands City Council Ecological Investigation
FIGURE 5



Map Author: AD
Date: 20/6/2019
Coordinate System: EPSG 28356 - GDA 94 / MGA Zone 56
Project: WE19044
File Path: T:\004_JOBS\WE19044 - Redland City Council Ecological Investigation\3_Data\2_Analysis\GIS\Maps



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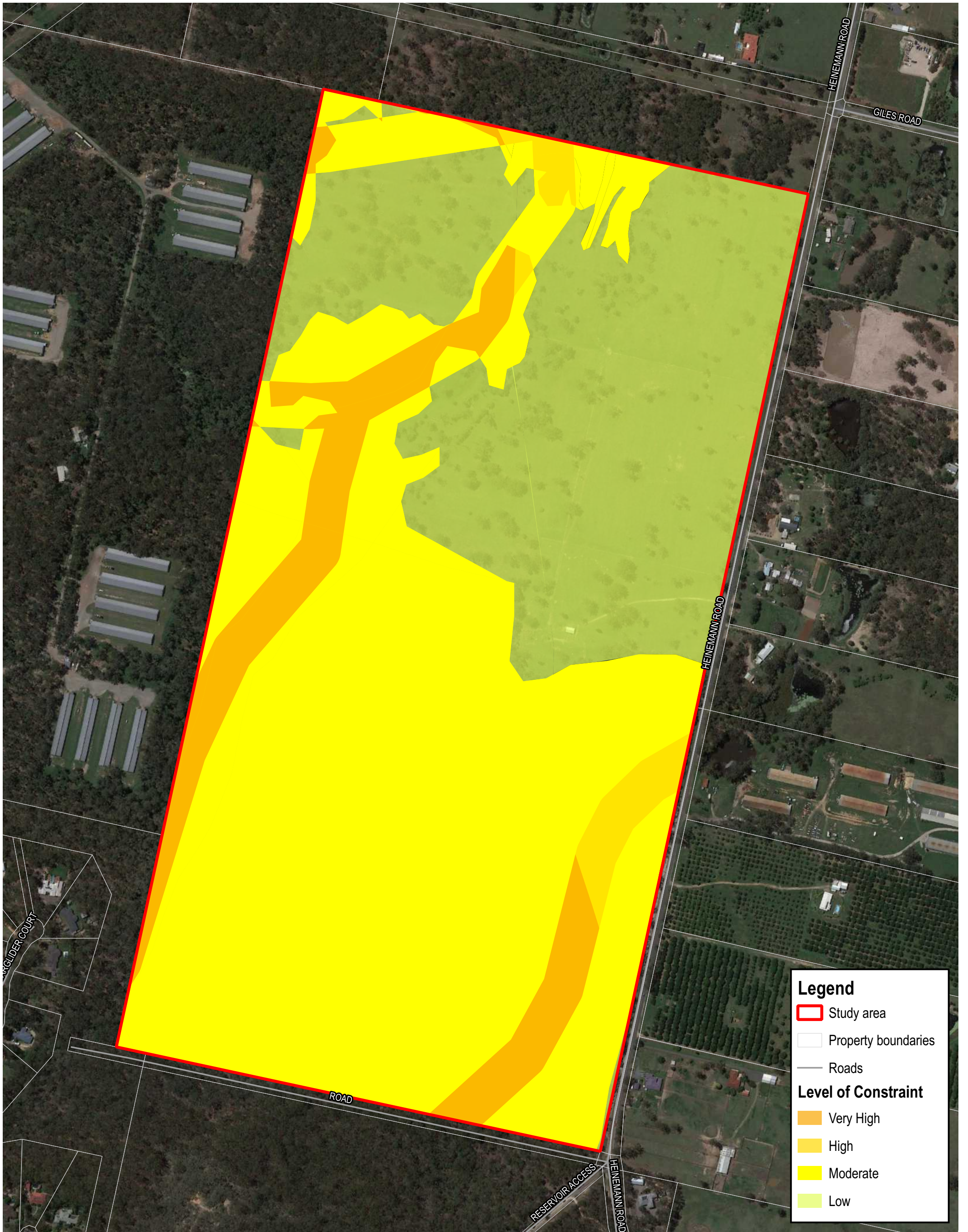


Habitat and Weeds

Sports and Recreation Precinct Ecological Investigation
Redlands City Council
FIGURE 6



Map Author: AD
Date: 20/6/2019
Coordinate System: EPSG 28356 - GDA 94 / MGA Zone 56
Project: WE19044
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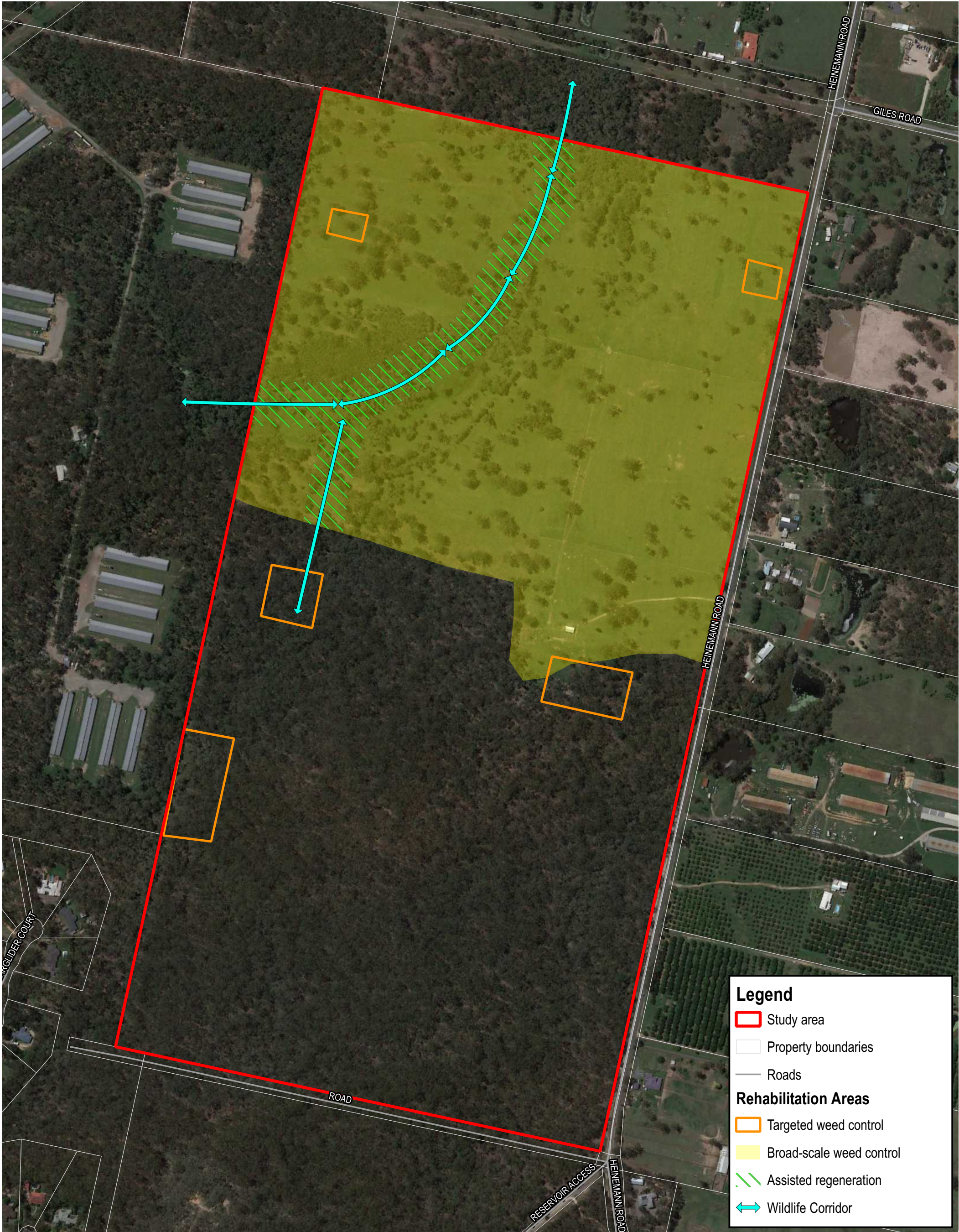
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Scale at A3
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Environmental Constraints

Sports and Recreation Precinct Ecological Investigation
Redlands City Council
FIGURE 7


Map Author: AD
Date: 27/6/2019
Coordinate System: EPSG 28356 - GDA 94 / MGA Zone 56
Project: WE19044
File Path: T:\004_JOBS\WE19044 - Redland City Council Ecological Investigation\3_Data\2_Analysis\GIS\Maps



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Scale at A3
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Concept Rehabilitation Plan

Sports and Recreation Precinct Ecological Investigation
Redlands City Council
FIGURE 8



Map Author: AD
Date: 27/6/2019
Coordinate System: EPSG 28356 - GDA 94 / MGA Zone 56
Project: WE19044
File Path: T:\004_JOBS\WE19044 - Redland City Council Ecological Investigation\3_Data\2_Analysis\GIS\Maps

APPENDIX

A

DESKTOP SEARCHES



EPBC Act Protected Matters Report

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

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

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 05/04/19 17:18:37

[Summary](#)

[Details](#)

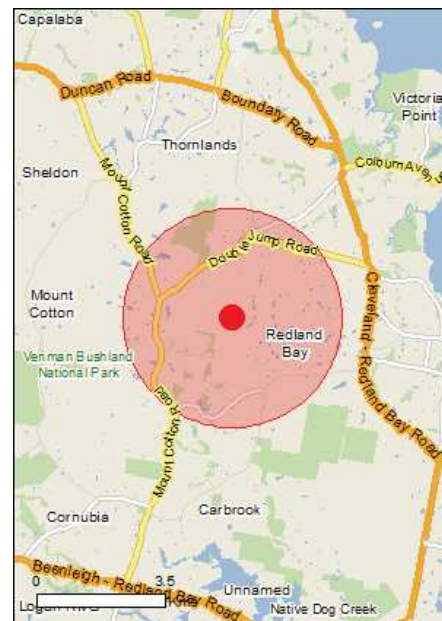
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



This map may contain data which are
©Commonwealth of Australia
(Geoscience Australia), ©PSMA 2010

[Coordinates](#)

Buffer: 3.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	24
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	35
Listed Migratory Species:	16

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	22
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	38
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)		[Resource Information]
Name		Proximity
Moreton bay		Within 10km of Ramsar
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Moreton bay		Within 10km of Ramsar
Moreton bay		Within 10km of Ramsar

Listed Threatened Ecological Communities		[Resource Information]
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.		
Name	Status	Type of Presence
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area
Erythroriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area
Insects		
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
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
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat likely to occur within area
Plants		
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species

Name	Status	Type of Presence
		habitat may occur within area
Baloghia marmorata Marbled Baloghia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat may occur within area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area
Corchorus cunninghamii Native Jute [14659]	Endangered	Species or species habitat known to occur within area
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat may occur within area
Endiandra floydii Floyd's Walnut [52955]	Endangered	Species or species habitat likely to occur within area
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
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat may occur within area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat likely to occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area
Planchonella eerwah Shiny-leaved Condoo, Black Plum, Wild Apple [17340]	Endangered	Species or species habitat likely to occur within area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Saiphos reticulatus Three-toed Snake-tooth Skink [88328]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Bayview	QLD

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

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus africanus Climbing Asparagus, Climbing Asparagus Fern [66907]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area

Name	Status	Type of Presence
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913] Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [31754]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892] Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat likely to occur within area

Caveat

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

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-27.6176 153.2545

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.



Vegetation management report

For Lot: 420 Plan: S312160

Current as at 24/05/2019

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Recent changes

New vegetation clearing laws

New vegetation management laws were passed by the Queensland Parliament on 3 May 2018 and may affect the clearing you can undertake on your property.

For more information, read about the new vegetation management laws

(<https://www.dnrme.qld.gov.au/land-water/initiatives/vegetation-management-laws/>) or call 135VEG (13 58 34) between 8.30am and 4.30pm Monday to Friday.

Updated mapping

The Regulated Vegetation Management Map and Supporting Map was updated in March 2018 to reflect the most up to date information available in relation to regional ecosystems, essential habitat and wetland mapping (Version 10).

Overview

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

- *Vegetation management framework* - an explanation of the application of the framework.
- *Property details* - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s), catchment(s), coastal or non coastal status, and any applicable area management plans associated with your property.
- *Vegetation management details for the specified Lot on Plan* - specific information about your property including vegetation categories, regional ecosystems, watercourses, wetlands, essential habitat, and protected plants.
- *Contact information*.
- *Maps* - a series of colour maps to assist in identifying regulated vegetation on your property.
- *Other legislation contact information*.

This information will assist you to determine your options for managing vegetation under the vegetation management framework, which may include:

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

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as Queensland's Protected Plants framework or the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 6 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

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1. Vegetation management framework

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

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

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

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

1.1 Exempt clearing work

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

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 5.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval approval under the vegetation management framework. For all other land tenures, contact DNRME before commencing clearing to ensure that the proposed activity is exempt clearing work.

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

<https://www.qld.gov.au/environment/land/vegetation/exemptions/>.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Contact DNRME prior to clearing in any of these areas.

1.2 Accepted development vegetation clearing codes

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

<https://www.qld.gov.au/environment/land/vegetation/codes/>

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

You can complete the online form at

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

1.3 Area management plans

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

As a result of the new laws, AMPs for fodder harvesting, managing thickened vegetation and managing encroachment will continue for 2 years. New notifications cannot be made for these AMPs.

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

If an area management plan applies to your property for which you can make a new notification, it will be listed in Section 2.2 of this report. Before clearing under one of these AMPs, you must first notify the DNRME and then follow the conditions and requirements listed in the AMP.

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

1.4 Development approvals

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

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

<https://www.qld.gov.au/environment/land/vegetation/applying/>

2. Property details

2.1 Tenure

All of the lot, plan and tenure information associated with property Lot: 420 Plan: S312160, including links to relevant Smart Maps, are listed in Table 1. The tenure of the property (whether it is freehold, leasehold, or other) may be viewed by clicking on the Smart Map link(s) provided.

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

Lot	Plan	Tenure	Link to property on SmartMap
420	S312160	Freehold	https://apps.information.qld.gov.au/data/cadastre/GenerateSmartMap?q=420\S312160

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

2.2 Property location

Table 2 provides a summary of the locations for property Lot: 420 Plan: S312160, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Redland City

Bioregion(s)	Subregion(s)
Southeast Queensland	Sunshine Coast - Gold Coast Lowlands
Southeast Queensland	Burringbar - Conondale Ranges

Catchment(s)
Logan-Albert

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

*See also Map 5.4

Area Management Plan(s): Nil

3. Vegetation management details for Lot: 420 Plan: S312160

3.1 Vegetation categories

Vegetation categories are shown on the regulated vegetation management map in section 5.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property. Total area: 101.46ha

Vegetation category	Area (ha)
Category B	54.0
Category C	10.64
Category X	36.82

Table 4

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

Property Map of Assessable Vegetation (PMAV)

This report does not confirm if a Property Map of Assessable Vegetation (PMAV) exists on a lot. To confirm whether or not a PMAV exists on a lot, please check the PMAV layer on the Queensland Globe2, or contact DNRME on 135VEG (135 834).

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 5.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at

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

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
12.11.23	Endangered	B	44.33	Eucalyptus pilularis open forest on coastal metamorphics and interbedded volcanics	Mid-dense
12.11.23	Endangered	C	1.35	Eucalyptus pilularis open forest on coastal metamorphics and interbedded volcanics	Mid-dense
12.11.24	Least concern	C	2.31	Eucalyptus carnea, E. tindaliae, Corymbia intermedia +/- E. siderophloia or E. crebra woodland on metamorphics +/- interbedded volcanics	Sparse
12.11.25	Of concern	C	0.99	Corymbia henryi and/or Eucalyptus fibrosa subsp. fibrosa +/- E. crebra, E. carnea, E. tindaliae woodland on metamorphics +/- interbedded volcanics	Sparse
12.11.27	Endangered	B	4.93	Eucalyptus racemosa subsp. racemosa and/or E. seeana and Corymbia intermedia woodland on metamorphics +/- interbedded volcanics	Sparse
12.11.27	Endangered	C	0.15	Eucalyptus racemosa subsp. racemosa and/or E. seeana and Corymbia intermedia woodland on metamorphics +/- interbedded volcanics	Sparse
12.3.11	Of concern	B	4.75	Eucalyptus tereticornis +/- Eucalyptus siderophloia, Corymbia intermedia open forest on alluvial plains usually near coast	Mid-dense
12.3.11	Of concern	C	5.08	Eucalyptus tereticornis +/- Eucalyptus siderophloia, Corymbia intermedia open forest on alluvial plains usually near coast	Mid-dense
12.9-10.4	Least concern	C	0.77	Eucalyptus racemosa subsp. racemosa woodland on sedimentary rocks	Sparse
non-rem	None	X	36.82	None	None

Please note:

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

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

- exempt clearing work
- accepted development vegetation clearing codes
- performance outcomes in State Development Assessment Provisions (SDAP).

3.3 Watercourses

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

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

Protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA), and includes endangered, vulnerable or near-threatened wildlife.

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

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

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

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

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

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

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

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

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
860	<i>Phascolarctos cinereus</i>	koala	V	SEQ: Open eucalypt forest and woodland that has: a) multiple strata layers containing Eucalyptus, Corymbia, Angophora, Lophostemon or Melaleuca trees that-at 1.3 metres above the ground-have a diameter both greater and less than 30 centimetres; and b) at least 1 of the following species: Eucalyptus tereticornis, E. fibrosa, E. propinqua, E. umbra, E. grandis, E. microcorys, E. tindaliae, E. resinifera, E. populnea, E. robusta, E. nigra, E. racemosa, E. crebra, E. exserta, E. seeana, Lophostemon confertus, L. suaveolens, Melaleuca quinquenervia. Outside SEQ: Open eucalypt forest and woodland that contains Eucalyptus &/or Corymbia spp. Tree species used for food varies across State and can include Eucalyptus tereticornis, E. camaldulensis, E. coolabah; E. drepanophylla, E. platyphylla, E. orgadophylla, E. thozetiana, E. melanophloia, E. populnea, E. melliodora, E. dealbata, E. microtheca, E. crebra, E. exserta, E. blakelyi, E. papuana, Corymbia tessellaris, C. citriodora, Melaleuca quinquenervia, M. leucadendra.	Sea level to 1000m.	None	Riparian areas, plains and hill/escarpment slopes.

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
848	Petauroides volans	greater glider	V	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)
660	SEQ: 11.3.2, 11.3.4, 11.3.25, 11.3.26, 11.8.2, 11.8.4, 11.8.5, 11.8.8, 11.9.9, 12.2.5, 12.2.6, 12.2.7, 12.2.8, 12.2.10, 12.3.2, 12.3.3, 12.3.4, 12.3.5, 12.3.6, 12.3.7, 12.3.9, 12.3.10, 12.3.11, 12.3.14, 12.3.18, 12.3.19, 12.3.20, 12.5.1, 12.5.2, 12.5.3, 12.5.4, 12.5.6, 12.5.7, 12.5.10, 12.5.12, 12.8.1, 12.8.8, 12.8.9, 12.8.11, 12.8.12, 12.8.14, 12.8.16, 12.8.17, 12.8.20, 12.8.24, 12.8.25, 12.9-10.1, 12.9-10.2, 12.9-10.3, 12.9-10.4, 12.9-10.5, 12.9-10.7, 12.9-10.8, 12.9-10.11, 12.9-10.12, 12.9-10.14, 12.9-10.17, 12.9-10.18, 12.9-10.19, 12.9-10.21, 12.9-10.25, 12.9-10.26, 12.9-10.27, 12.9-10.28, 12.9-10.29, 12.11.2, 12.11.3, 12.11.5, 12.11.6, 12.11.7, 12.11.8, 12.11.9, 12.11.14, 12.11.16, 12.11.17, 12.11.18, 12.11.22, 12.11.23, 12.11.24, 12.11.25, 12.11.26, 12.11.27, 12.11.28, 12.12.2, 12.12.3, 12.12.5, 12.12.6, 12.12.7, 12.12.8, 12.12.9, 12.12.11, 12.12.12, 12.12.14, 12.12.15, 12.12.23, 12.12.24, 12.12.25, 12.12.28. Outside SEQ: 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, 4.4.1, 4.5.3, 4.5.5, 4.5.6, 4.5.8, 4.5.9, 4.7.1, 4.7.7, 4.7.8, 4.8.6, 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, 7.11.48, 7.11.49, 7.11.50, 7.11.51, 7.12.4, 7.12.5, 7.12.17, 7.12.21, 7.12.22, 7.12.23, 7.12.24, 7.12.25, 7.12.26, 7.12.27, 7.12.28, 7.12.29, 7.12.30, 7.12.33, 7.12.34, 7.12.35, 7.12.51, 7.12.52, 7.12.53, 7.12.54, 7.12.55, 7.12.56, 7.12.57, 7.12.58, 7.12.59, 7.12.60, 7.12.61, 7.12.62, 7.12.63, 7.12.65, 7.12.66, 7.12.69, 8.1.5, 8.2.3, 8.2.6, 8.2.7, 8.2.8, 8.2.11, 8.2.12, 8.2.13, 8.2.14, 8.3.1, 8.3.2, 8.3.3, 8.3.5, 8.3.6, 8.3.8, 8.3.10, 8.3.11, 8.3.13, 8.5.1, 8.5.2, 8.5.3, 8.5.5, 8.5.6, 8.5.7, 8.9.1, 8.10.1, 8.11.1, 8.11.3, 8.11.4, 8.11.5, 8.11.6, 8.11.8, 8.11.10, 8.11.12, 8.12.4, 8.12.5, 8.12.6, 8.12.7, 8.12.8, 8.12.9, 8.12.12, 8.12.14, 8.12.20, 8.12.22, 8.12.23, 8.12.25, 8.12.26, 8.12.27, 8.12.29, 8.12.31, 8.12.32, 9.3.1, 9.3.2, 9.3.3, 9.3.4, 9.3.5, 9.3.6, 9.3.7, 9.3.8, 9.3.10, 9.3.11, 9.3.13, 9.3.14, 9.3.15, 9.3.16, 9.3.17, 9.3.19, 9.3.20, 9.3.21, 9.3.22, 9.3.27, 9.4.1, 9.4.2, 9.4.3, 9.5.1, 9.5.3, 9.5.4, 9.5.5, 9.5.6, 9.5.7, 9.5.8, 9.5.9, 9.5.10, 9.5.11, 9.5.12, 9.5.15, 9.5.16, 9.5.17, 9.7.1, 9.7.2, 9.7.3, 9.7.4, 9.7.5, 9.7.6, 9.8.1, 9.8.2, 9.8.3, 9.8.4, 9.8.5, 9.8.9, 9.8.10, 9.8.11, 9.8.13, 9.10.1, 9.10.3, 9.10.4, 9.10.5, 9.10.7, 9.10.8, 9.11.1, 9.11.2, 9.11.3, 9.11.4, 9.11.5, 9.11.7, 9.11.10, 9.11.12, 9.11.13, 9.11.14, 9.11.15, 9.11.16, 9.11.17, 9.11.18, 9.11.19, 9.11.21, 9.11.22, 9.11.23, 9.11.24, 9.11.25, 9.11.26, 9.11.28, 9.11.29, 9.11.30, 9.11.31, 9.11.32, 9.12.1, 9.12.2, 9.12.3, 9.12.4, 9.12.5, 9.12.6, 9.12.7, 9.12.10, 9.12.11, 9.12.12, 9.12.13, 9.12.14, 9.12.15, 9.12.16, 9.12.17, 9.12.18, 9.12.19, 9.12.20, 9.12.21, 9.12.22, 9.12.23, 9.12.24, 9.12.25, 9.12.26, 9.12.27, 9.12.28, 9.12.29, 9.12.30, 9.12.31, 9.12.32, 9.12.33, 9.12.35, 9.12.36, 9.12.37, 9.12.38, 9.12.39, 9.12.44, 10.3.2, 10.3.3, 10.3.5, 10.3.6, 10.3.9, 10.3.10, 10.3.11, 10.3.12, 10.3.13, 10.3.14, 10.3.15, 10.3.17, 10.3.20, 10.3.27, 10.3.28, 10.4.3, 10.4.9, 10.5.1, 10.5.2, 10.5.4, 10.5.5, 10.5.7, 10.5.8, 10.5.9, 10.5.10, 10.5.11, 10.5.12, 10.7.1, 10.7.2, 10.7.3, 10.7.4, 10.7.5, 10.7.9, 10.7.10, 10.7.11, 10.7.12, 10.9.2, 10.9.3, 10.9.5, 10.10.1, 10.10.3, 10.10.4, 10.10.5, 10.10.7, 11.2.1, 11.2.5, 11.3.1, 11.3.2, 11.3.3, 11.3.4, 11.3.5, 11.3.6, 11.3.7, 11.3.9, 11.3.10, 11.3.12, 11.3.13, 11.3.14, 11.3.15, 11.3.16, 11.3.17, 11.3.18, 11.3.19, 11.3.21, 11.3.23, 11.3.25, 11.3.26, 11.3.27, 11.3.28, 11.3.29, 11.3.30, 11.3.32, 11.3.33, 11.3.35, 11.3.36, 11.3.37, 11.3.38, 11.3.39, 11.4.2, 11.4.3, 11.4.7, 11.4.8, 11.4.9, 11.4.10, 11.4.12, 11.4.13, 11.5.1, 11.5.2, 11.5.3, 11.5.4, 11.5.5, 11.5.7, 11.5.8, 11.5.9, 11.5.12, 11.5.13, 11.5.14, 11.5.17, 11.5.18, 11.5.20, 11.5.21, 11.7.1, 11.7.2, 11.7.3, 11.7.4, 11.7.6, 11.7.7, 11.8.1, 11.8.2, 11.8.4, 11.8.5, 11.8.8, 11.8.11, 11.8.12, 11.8.14, 11.8.15, 11.9.1, 11.9.2, 11.9.3, 11.9.5, 11.9.6, 11.9.7, 11.9.9, 11.9.10, 11.9.11, 11.9.13, 11.9.14, 11.10.1, 11.10.2, 11.10.3, 11.10.4, 11.10.5, 11.10.6, 11.10.7, 11.10.9, 11.10.11, 11.10.12, 11.10.13, 11.11.1, 11.11.2, 11.11.3, 11.11.4, 11.11.6, 11.11.7, 11.11.8, 11.11.9, 11.11.10, 11.11.11, 11.11.12, 11.11.13, 11.11.14, 11.11.15, 11.11.16, 11.11.17, 11.11.19, 11.11.20, 11.12.1, 11.12.2, 11.12.3, 11.12.5, 11.12.6, 11.12.7, 11.12.8, 11.12.9, 11.12.10, 11.12.13, 11.12.14, 11.12.15, 11.12.16, 11.12.17, 11.12.19, 11.12.20, 13.3.1, 13.3.2, 13.3.3, 13.3.4, 13.3.5, 13.3.7, 13.9.2, 13.11.1, 13.11.2, 13.11.3, 13.11.4, 13.11.5, 13.11.6, 13.11.8, 13.11.9, 13.12.1, 13.12.2, 13.12.3, 13.12.4, 13.12.5, 13.12.6, 13.12.8, 13.12.9, 13.12.10.
848	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, 7.11.38, 7.11.41, 7.11.42, 7.11.43, 7.11.44, 7.11.45, 7.11.46, 7.11.47, 7.11.48, 7.11.49, 7.11.50, 7.11.51, 7.12.4, 7.12.5, 7.12.17, 7.12.21, 7.12.22, 7.12.23, 7.12.24, 7.12.25, 7.12.26, 7.12.27, 7.12.28, 7.12.29, 7.12.30, 7.12.33, 7.12.34, 7.12.35, 7.12.51, 7.12.52, 7.12.53, 7.12.54, 7.12.55, 7.12.56, 7.12.58, 7.12.59, 7.12.60, 7.12.61, 7.12.62, 7.12.63, 7.12.65, 7.12.66, 7.12.69, 9.3.1, 9.3.2, 9.3.3, 9.3.5, 9.3.6, 9.3.8, 9.3.10, 9.3.13, 9.3.14, 9.3.15, 9.3.16, 9.3.17, 9.3.19, 9.3.20, 9.3.21, 9.3.22, 9.3.24, 9.4.1, 9.4.2, 9.5.1, 9.5.3, 9.5.4, 9.5.5, 9.5.6, 9.5.7, 9.5.8, 9.5.9, 9.5.10, 9.5.11, 9.5.12, 9.5.13, 9.5.14, 9.5.15, 9.5.16, 9.5.17, 9.7.1, 9.7.2, 9.7.3, 9.7.4, 9.7.5, 9.7.6, 9.8.1, 9.8.2, 9.8.4, 9.8.5, 9.8.9, 9.8.10, 9.8.11, 9.10.1, 9.10.3, 9.10.4, 9.10.5, 9.10.7, 9.10.8, 9.11.1, 9.11.2, 9.11.3, 9.11.4, 9.11.5, 9.11.7, 9.11.10, 9.11.12, 9.11.13, 9.11.14, 9.11.15, 9.11.16, 9.11.17, 9.11.18, 9.11.19, 9.11.21, 9.11.22, 9.11.23, 9.11.24, 9.11.25, 9.11.26, 9.11.28, 9.11.29, 9.11.30, 9.11.31, 9.11.32, 9.12.1, 9.12.2, 9.12.3, 9.12.4, 9.12.5, 9.12.6, 9.12.7, 9.12.10, 9.12.11, 9.12.12, 9.12.13, 9.12.14, 9.12.15, 9.12.16, 9.12.17, 9.12.18, 9.12.19, 9.12.20, 9.12.21, 9.12.22, 9.12.31, 9.12.32, 9.12.33, 9.12.35, 9.12.36, 9.12.37, 9.12.38, 9.12.39, 9.12.40, 9.12.44, 10.3.2, 11.2.1, 11.2.5, 11.3.1, 11.3.2, 11.3.3, 11.3.4, 11.3.7, 11.3.9, 11.3.10, 11.3.12, 11.3.13, 11.3.14, 11.3.15, 11.3.16, 11.3.17, 11.3.18, 11.3.19, 11.3.23, 11.3.25, 11.3.26, 11.3.27, 11.3.28, 11.3.29, 11.3.30, 11.3.35, 11.3.36, 11.3.37, 11.3.38, 11.3.39, 11.4.2, 11.4.3, 11.4.7, 11.4.8, 11.4.10, 11.4.12, 11.4.13, 11.5.1, 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11.11.65, 11.11.66, 11.11.67, 11.11.68, 11.11.69, 11.11.70, 11.11.71, 11.11.72, 11.11.73, 11.11.74, 11.11.75, 11.11.76, 11.11.77, 11.11.78, 11.11.79, 11.11.80, 11.11.81, 11.11.82, 11.11.83, 11.11.84, 11.11.85, 11.11.86, 11.11.87, 11.11.88, 11.11.89, 11.11.90, 11.11.91, 11.11.92, 11.11.93, 11.11.94, 11.11.95, 11.11.96, 11.11.97, 11.11.98, 11.11.99, 11.12.1, 11.12.2, 11.12.3, 11.12.4, 11.12.5, 11.12.6, 11.12.7, 11.12.8, 11.12.9, 11.12.10, 11.12.11, 11.12.12, 11.12.13, 11.12.14, 11.12.15, 11.12.16, 11.12.17, 11.12.18, 11.12.19, 11.12.20, 11.12.21, 11.12.22, 11.12.23, 11.12.24, 11.12.25, 11.12.26, 11.12.27, 11.12.28, 11.12.29, 11.12.30, 11.12.31, 11.12.32, 11.12.33, 11.12.34, 11.12.35, 11.12.36, 11.12.37, 11.12.38, 11.12.39, 11.12.40, 11.12.41, 11.12.42, 11.12.43, 11.12.44, 11.12.45, 11.12.46, 11.12.47, 11.12.48, 11.12.49, 11.12.50, 11.12.51, 11.12.52, 11.12.53, 11.12.54, 11.12.55, 11.12.56, 11.12.57, 11.12.58, 11.12.59, 11.12.60, 11.12.61, 11.12.62, 11.12.63, 11.12.64, 11.12.65, 11.12.66, 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exemptions relate to:

- imminent risk of death or serious injury (refer s261A)
- imminent risk of serious damage to a building or other structure on land, or to personal property (refer s261B)
- *Fire and Emergency Service Act 1990* (refer 261C)
- previously cleared areas (refer s261ZB)
- maintenance activities (refer s261ZC)
- firebreak or fire management line (refer s261ZD)
- accepted development vegetation clearing code (refer s261ZE)
- conservation purposes (refer s261ZG)
- authorised in particular circumstances (refer s385).

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

If the proposed area to be cleared is shown as blue (i.e. high risk) on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken in accordance with the flora survey guidelines. The main objective of a flora survey is to locate any endangered, vulnerable or near threatened plants (EVNT plants) that may be present in the clearing impact area.

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

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

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

Further information on protected plants is available at

<http://www.ehp.qld.gov.au/licences-permits/plants-animals/protected-plants/>

For assistance on the protected plants flora survey trigger map for this property, please contact the Department of Environment and Science at palm@des.qld.gov.au.

3.7 Emissions Reduction Fund (ERF)

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

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

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

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

4. Contact information for DNRME

For further information on vegetation management:

Phone 135VEG (135 834)

Email vegetation@dnrme.qld.gov.au

Visit www.dnrme.qld.gov.au/our-department/contact-us/vegetation-contacts to submit an online enquiry.

For contact details for other State and Commonwealth agencies, please see Section 6.

5. Maps

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

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

and

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

Regulated vegetation management map

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

Vegetation management supporting map

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

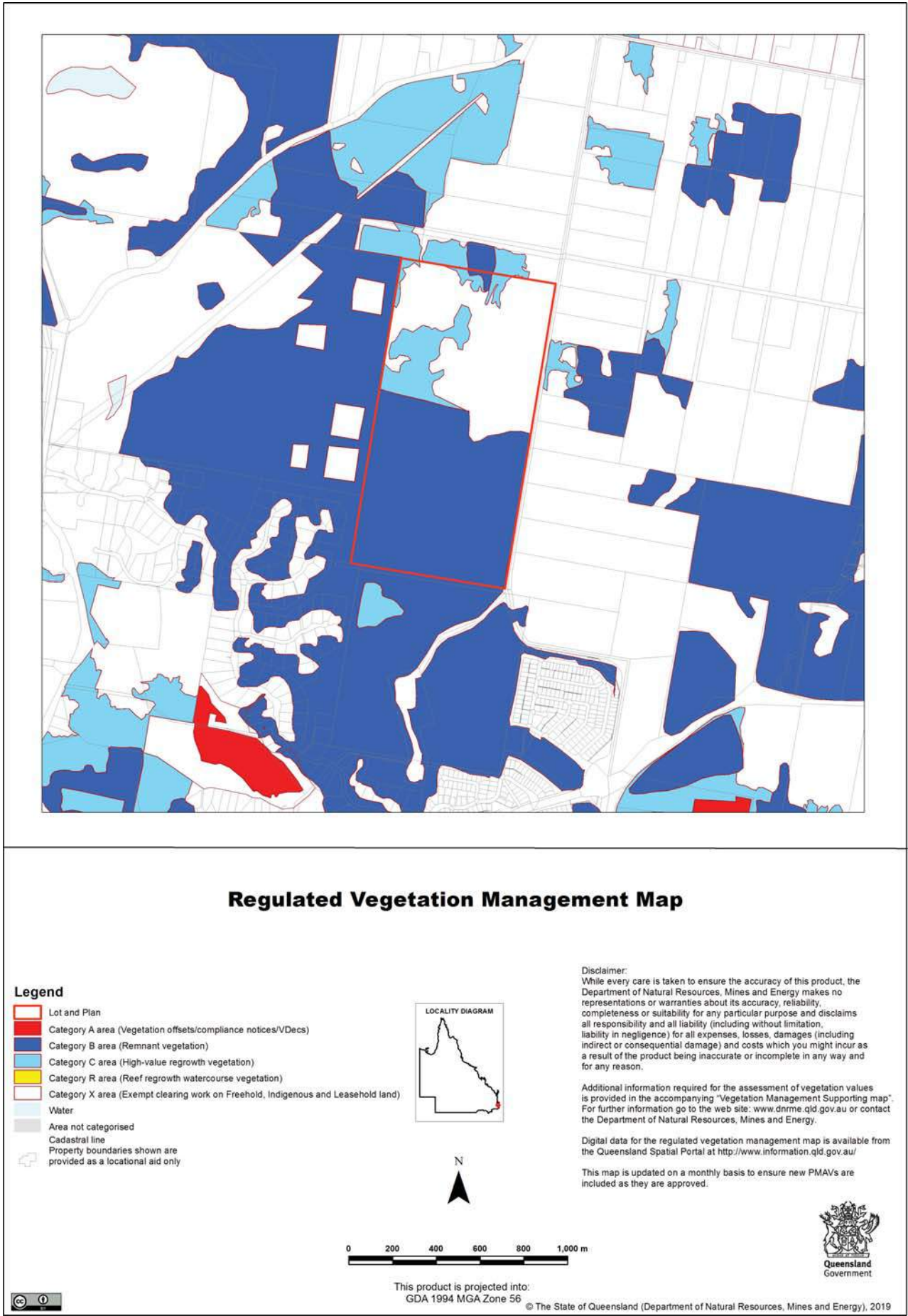
Coastal/non coastal map

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

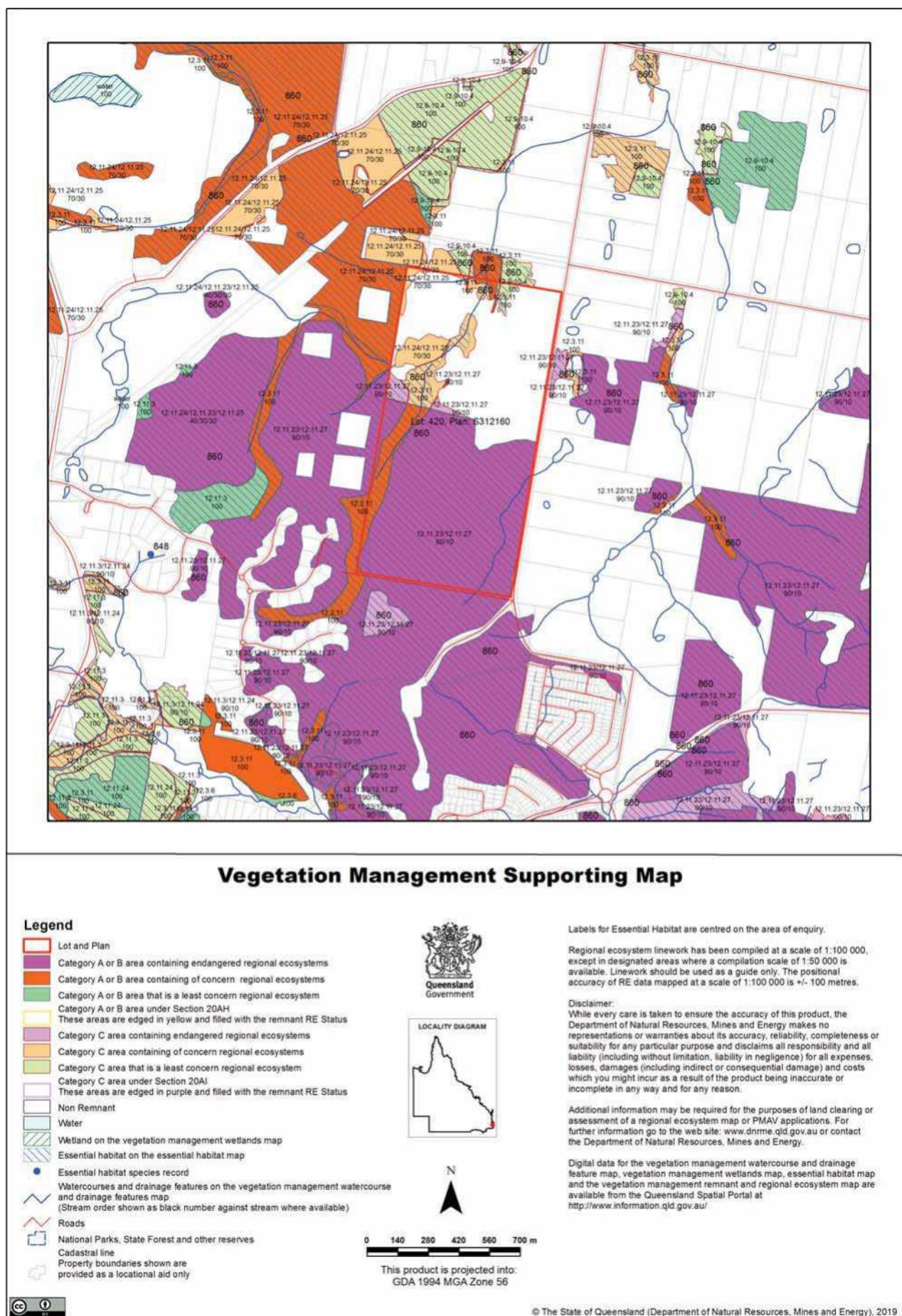
Protected plants map

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

5.1 Regulated vegetation management map



5.2 Vegetation management supporting map



5.3 Coastal/non coastal map



Coastal/Non Coastal Map

Legend

-  Lot and Plan
-  Coastal
-  Non Coastal
-  Cadastral line
-  Property boundaries shown are provided as a locational aid only



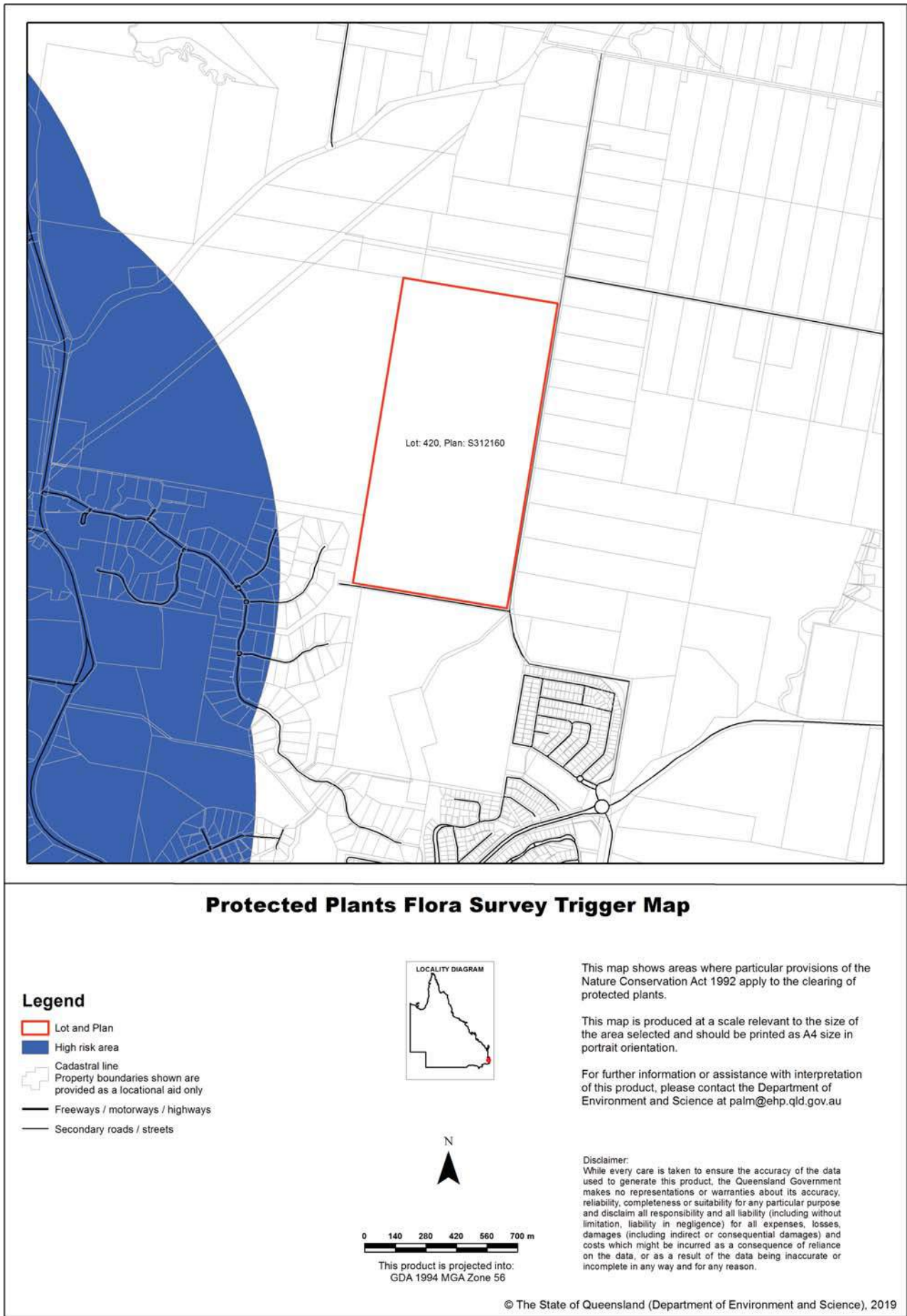
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This product is projected into:
GDA 1994 MGA Zone 56

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5.4 Protected plants flora survey trigger map



Protected plants flora survey trigger map

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

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

Updates to the data informing the flora survey trigger map

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

Species information

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

6. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
Interference with overland flow Earthworks, significant disturbance	<i>Water Act 2000</i> <i>Soil Conservation Act 1986</i>	Department of Natural Resources, Mines and Energy (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dnrme.qld.gov.au
Indigenous Cultural Heritage	<i>Aboriginal Cultural Heritage Act 2003</i> <i>Torres Strait Islander Cultural Heritage Act 2003</i>	Department of Aboriginal and Torres Strait Islander Partnerships (Queensland Government)	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
Mining and environmentally relevant activities Infrastructure development (coastal) Heritage issues Protected plants and protected areas ¹	<i>Environmental Protection Act 1994</i> <i>Coastal Protection and Management Act 1995</i> <i>Queensland Heritage Act 1992</i> <i>Nature Conservation Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
Interference with fish passage in a watercourse, mangroves Forestry activities ²	<i>Fisheries Act 1994</i> <i>Forestry Act 1959</i>	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
Matters of National Environmental Significance including listed threatened species and ecological communities	<i>Environment Protection and Biodiversity Conservation Act 1999</i>	Department of the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
Development and planning processes	<i>Planning Act 2016</i> <i>State Development and Public Works Organisation Act 1971</i>	Department of State Development, Manufacturing, Infrastructure and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
Local government requirements	<i>Local Government Act 2009</i> <i>Planning Act 2016</i>	Department of Local Government, Racing and Multicultural Affairs (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office

1. In Queensland, all plants that are native to Australia are protected plants under the [Nature Conservation Act 1992](http://www.des.qld.gov.au), which endeavours to ensure that protected plants (whether whole plants or protected plants parts) are not illegally removed from the wild, or illegally traded. Prior to clearing, you should check the flora survey trigger map to determine if the clearing is within a high-risk area by visiting www.des.qld.gov.au. For further information or assistance on the protected plants flora survey trigger map for your property, please contact the Department of Environment and Science on 13QGOV (13 74 68) or email palm@des.qld.gov.au.

2. Contact the Department of Agriculture and Fisheries before clearing:

- Any sandalwood on state-owned land (including leasehold land)
- On freehold land in a 'forest consent area'
- More than five hectares on state-owned land (including leasehold land) containing commercial timber species listed in parts 2 or 3 of Schedule 6 of the Vegetation Management Regulation 2012 and located within any of the following local government management areas-Banana, Bundaberg Regional, Fraser Coast Regional, Gladstone Regional, Isaac Regional, North Burnett Regional, Somerset Regional, South Burnett Regional, Southern Downs Regional, Tablelands Regional, Toowoomba Regional, Western Downs Regional.



Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point

Species: All

Type: All

Status: All

Records: All

Date: All

Latitude: -27.6176

Longitude: 153.2545

Distance: 3

Email: sophie.cowie@cardno.com.au

Date submitted: Friday 05 Apr 2019 16:17:28

Date extracted: Friday 05 Apr 2019 16:20:03

The number of records retrieved = 261

Disclaimer

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

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

No statements, representations or warranties are made about the accuracy or completeness of this information. The State of Queensland disclaims all responsibility for this information and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs you may incur as a result of the information being inaccurate or incomplete in any way for any reason.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	<i>Rhinella marina</i>	cane toad	Y			7
animals	amphibians	Hylidae	<i>Litoria rubella</i>	ruddy treefrog		C		1
animals	amphibians	Hylidae	<i>Litoria caerulea</i>	common green treefrog		C		1
animals	amphibians	Hylidae	<i>Litoria fallax</i>	eastern sedgefrog		C		6
animals	amphibians	Hylidae	<i>Litoria tyleri</i>	southern laughing treefrog		C		2
animals	amphibians	Limnodynastidae	<i>Limnodynastes peronii</i>	striped marshfrog		C		4
animals	amphibians	Limnodynastidae	<i>Adelotus brevis</i>	tusked frog		V		2
animals	amphibians	Limnodynastidae	<i>Platyplectrum ornatum</i>	ornate burrowing frog		C		1
animals	amphibians	Limnodynastidae	<i>Pseudophryne coriacea</i>	red backed broodfrog		C		1
animals	amphibians	Myobatrachidae	<i>Mixophyes fasciolatus</i>	great barred frog		C		2
animals	amphibians	Myobatrachidae	<i>Crinia parinsignifera</i>	beeping froglet		C		1
animals	amphibians	Myobatrachidae	<i>Pseudophryne raveni</i>	copper backed broodfrog		C		4
animals	birds	Myobatrachidae	<i>Sericornis frontalis</i>	white-browed scrubwren		C		9
animals	birds	Acanthizidae	<i>Gerygone olivacea</i>	white-throated gerygone		C		10
animals	birds	Acanthizidae	<i>Acanthiza pusilla</i>	brown Thornbill		C		8
animals	birds	Acanthizidae	<i>Acanthiza lineata</i>	striated Thornbill		C		2
animals	birds	Acanthizidae	<i>Smicromis brevirostris</i>	weebill		C		2
animals	birds	Acanthizidae	<i>Sericornis magnirostra</i>	large-billed scrubwren		C		1
animals	birds	Acanthizidae	<i>Acanthiza nana</i>	yellow Thornbill		C		1
animals	birds	Accipitridae	<i>Hieraaetus morphnoides</i>	little eagle		C		1
animals	birds	Accipitridae	<i>Accipiter novaehollandiae</i>	grey goshawk		C		1
animals	birds	Accipitridae	<i>Accipiter fasciatus</i>	Pacific baza		C		4
animals	birds	Accipitridae	<i>Aviceda subcristata</i>	white-bellied sea-eagle		C		2
animals	birds	Accipitridae	<i>Haliaeetus leucogaster</i>	whistling kite		C		6
animals	birds	Accipitridae	<i>Haliastur sphenurus</i>	brown goshawk		C		5
animals	birds	Accipitridae	<i>Accipiter fuscatus</i>	wedge-tailed eagle		C		4
animals	birds	Accipitridae	<i>Aquila audax</i>	spotted harrier		C		1
animals	birds	Accipitridae	<i>Circus assimilis</i>	black-shouldered kite		C		1
animals	birds	Accipitridae	<i>Elanus axillaris</i>	Australian owl-nightjar		C		2
animals	birds	Aegothelidae	<i>Aegothales cristatus</i>	azure kingfisher		C		1
animals	birds	Alcedinidae	<i>Ceyx azureus</i>	grey teal		C		1
animals	birds	Anatidae	<i>Anas gracilis</i>	Pacific black duck		C		11
animals	birds	Anatidae	<i>Anas superciliosa</i>	hardhead		C		2
animals	birds	Anatidae	<i>Aythya australis</i>	Australian wood duck		C		13
animals	birds	Anatidae	<i>Chenonetta jubata</i>	northern mallard	Y			2
animals	birds	Anatidae	<i>Anas platyrhynchos</i>	Australasian darter		C		2
animals	birds	Anhingidae	<i>Anhinga novaehollandiae</i>	magpie goose		C		3
animals	birds	Anseranatidae	<i>Anseranas semipalmata</i>	white-throated needletail		SL		3
animals	birds	Apodidae	<i>Hirundapus caudacutus</i>	cattle egret		C		8
animals	birds	Ardeidae	<i>Bubulcus ibis</i>	white-faced heron		C		8
animals	birds	Ardeidae	<i>Egretta novaehollandiae</i>	eastern great egret		C		1
animals	birds	Ardeidae	<i>Ardea alba modesta</i>	intermediate egret		C		1
animals	birds	Ardeidae	<i>Ardea intermedia</i>	nankeen night-heron		C		1
animals	birds	Ardeidae	<i>Nycticorax caledonicus</i>	little egret		C		4
animals	birds	Ardeidae	<i>Egretta garzetta</i>	grey butcherbird		C		11
animals	birds	Artamidae	<i>Cracticus torquatus</i>	white-breasted woodswallow		C		3
animals	birds	Artamidae	<i>Artamus leucorhynchus</i>					

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds						
animals	Artamidae	<i>Cracticus nigrogularis</i>	pied butcherbird		C		11
animals	Artamidae	<i>Cracticus tibicen</i>	Australian magpie		C		28
animals	Burhinidae	<i>Burhinus gallarius</i>	bush stone-curlew		C		1
animals	Cacatuidae	<i>Cacatua galerita</i>	sulphur-crested cockatoo		C		5
animals	Cacatuidae	<i>Calyptorhynchus funereus</i>	yellow-tailed black-cockatoo		C		1
animals	Cacatuidae	<i>Cacatua sanguinea</i>	little corella		C		2
animals	Cacatuidae	<i>Eolophus roseicapilla</i>	galah		C		5
animals	Cacatuidae	<i>Coracina tenuirostris</i>	cicadabird		C		4
animals	Campephagidae	<i>Coracina papuensis</i>	white-bellied cuckoo-shrike		C		1
animals	Campephagidae	<i>Lalage leucomela</i>	varied triller		C		5
animals	Campephagidae	<i>Coracina novaehollandiae</i>	black-faced cuckoo-shrike		C		17
animals	Campephagidae	<i>Vanellus miles novaehollandiae</i>	masked lapwing (southern subspecies)		C		4
animals	Charadriidae	<i>Elseyornis melanops</i>	black-fronted dotterel		C		1
animals	Charadriidae	<i>Vanellus miles</i>	masked lapwing		C		2
animals	Cisticolidae	<i>Cisticola exilis</i>	golden-headed cisticola		C		7
animals	Climacteridae	<i>Cormobates leucophaea</i>	white-throated treecreeper		C		2
animals	Climacteridae	<i>Climacteris picumnus</i>	brown treecreeper		C		1
animals	Climacteridae	<i>Climacteris affinis</i>	white-browed treecreeper		C		2
animals	Climacteridae	<i>Cormobates leucophaea metastasis</i>	white-throated treecreeper (southern)		C		3
animals	Columbidae	<i>Macropygia amboinensis</i>	brown cuckoo-dove		C		3
animals	Columbidae	<i>Streptopelia chinensis</i>	spotted dove	Y			5
animals	Columbidae	<i>Columba livia</i>	rock dove	Y			3
animals	Columbidae	<i>Geopelia striata</i>	peaceful dove		C		9
animals	Columbidae	<i>Ocyphaps lophotes</i>	crested pigeon		C		7
animals	Columbidae	<i>Phaps chalcoptera</i>	common bronzewing		C		3
animals	Columbidae	<i>Geopelia humeralis</i>	bar-shouldered dove		C		14
animals	Columbidae	<i>Eurystomus orientalis</i>	dollarbird		C		5
animals	Coraciidae	<i>Corvus orru</i>	Torresian crow		C		16
animals	Corvidae	<i>Centropus phasianinus</i>	pheasant coucal		C		7
animals	Cuculidae	<i>Cacomantis flabelliformis</i>	fan-tailed cuckoo		C		7
animals	Cuculidae	<i>Scythrops novaehollandiae</i>	channel-billed cuckoo		C		4
animals	Cuculidae	<i>Chalcites lucidus</i>	shining bronze-cuckoo		C		6
animals	Cuculidae	<i>Chalcites basalus</i>	Horsfield's bronze-cuckoo		C		1
animals	Cuculidae	<i>Eudynamys orientalis</i>	eastern koel		C		3
animals	Dicruridae	<i>Dicrurus bracteatus</i>	spangled drongo		C		10
animals	Estrildidae	<i>Neochmia temporalis</i>	red-browed finch		C		9
animals	Estrildidae	<i>Taeniopygia bichenovii</i>	double-barred finch		C		3
animals	Estrildidae	<i>Lonchura castaneothorax</i>	chestnut-breasted munnikin		C		4
animals	Eurostopodidae	<i>Eurostopodus mystacalis</i>	white-throated nightjar		C		3
animals	Falconidae	<i>Falco longipennis</i>	Australian hobby		C		1
animals	Falconidae	<i>Falco cenchroides</i>	nankeen kestrel		C		1
animals	Halcyonidae	<i>Todiramphus sanctus</i>	sacred kingfisher		C		9
animals	Halcyonidae	<i>Todiramphus macleayii</i>	forest kingfisher		C		5
animals	Halcyonidae	<i>Dacelo novaeguineae</i>	laughing kookaburra		C		16
animals	Hirundinidae	<i>Petrochelidon nigricans</i>	tree martin		C		1
animals	Hirundinidae	<i>Petrochelidon ariel</i>	fairy martin		C		5

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	Hirundinidae	<i>Hirundo neoxena</i>	welcome swallow		C		10
animals	Jacaniidae	<i>Irediparra gallinacea</i>	comb-crested jacana		C		2
animals	Maluridae	<i>Malurus melanocephalus</i>	red-backed fairy-wren		C		11
animals	Maluridae	<i>Malurus cyaneus</i>	superb fairy-wren		C		2
animals	Maluridae	<i>Malurus lamberti</i>	variegated fairy-wren		C		10
animals	Megaluridae	<i>Megalurus timoriensis</i>	tawny grassbird		C		1
animals	Meliphagidae	<i>Melithreptus lunatus</i>	white-naped honeyeater		C		1
animals	Meliphagidae	<i>Philemon corniculatus</i>	noisy friarbird		C		13
animals	Meliphagidae	<i>Lichmera indistincta</i>	brown honeyeater		C		9
animals	Meliphagidae	<i>Entomyzon cyanotis</i>	blue-faced honeyeater		C		4
animals	Meliphagidae	<i>Caligavis chrysops</i>	yellow-faced honeyeater		C		15
animals	Meliphagidae	<i>Meliphaga lewinii</i>	Lewin's honeyeater		C		11
animals	Meliphagidae	<i>Manorina melanocephala</i>	noisy miner		C		14
animals	Meliphagidae	<i>Acanthorhynchus tenuirostris</i>	eastern spinebill		C		1
animals	Meliphagidae	<i>Plectorhyncha lanceolata</i>	striped honeyeater		C		4
animals	Meliphagidae	<i>Melithreptus albogularis</i>	white-throated honeyeater		C		13
animals	Meliphagidae	<i>Anthochaera chrysoptera</i>	little wattlebird		C		1
animals	Meliphagidae	<i>Myzomela sanguinolenta</i>	scarlet honeyeater		C		10
animals	Meropidae	<i>Merops ornatus</i>	rainbow bee-eater		C		11
animals	Monarchidae	<i>Grallina cyanoleuca</i>	magpie-lark		C		12
animals	Monarchidae	<i>Monarcha melanopsis</i>	black-faced monarch		SL		4
animals	Monarchidae	<i>Myiagra rubecula</i>	leaden flycatcher		C		6
animals	Motacillidae	<i>Anthus novaeseelandiae</i>	Australasian pipit		C		2
animals	Nectariniidae	<i>Dicaeum hirundinaceum</i>	mistletoebird		C		8
animals	Neositidae	<i>Daphoenositta chrysoptera</i>	varied sittella		C		4
animals	Oriolidae	<i>Sphecotheres vieilloti</i>	Australasian figbird		C		10
animals	Oriolidae	<i>Oriolus sagittatus</i>	olive-backed oriole		C		8
animals	Pachycephalidae	<i>Colluricincla harmonica</i>	grey shrike-thrush		C		12
animals	Pachycephalidae	<i>Pachycephala pectoralis</i>	golden whistler		C		7
animals	Pachycephalidae	<i>Pachycephala rufiventris</i>	rufous whistler		C		13
animals	Pardalotidae	<i>Pardalotus striatus</i>	striated pardalote		C		12
animals	Pardalotidae	<i>Pardalotus punctatus</i>	spotted pardalote		C		5
animals	Passeridae	<i>Passer domesticus</i>	house sparrow	Y			2
animals	Pelecanidae	<i>Pelecanus conspicillatus</i>	Australian pelican		C		1
animals	Petroicidae	<i>Eopsaltria australis</i>	eastern yellow robin		C		12
animals	Petroicidae	<i>Petroica rosea</i>	rose robin		C		4
animals	Phalacrocoracidae	<i>Microcarbo melanoleucos</i>	little pied cormorant		C		2
animals	Phalacrocoracidae	<i>Phalacrocorax sulcirostris</i>	little black cormorant		C		1
animals	Phasianidae	<i>Coturnix ypsilophora</i>	brown quail		C		4
animals	Podargidae	<i>Podargus strigoides</i>	tawny frogmouth		C		6
animals	Podicipedidae	<i>Poliiocephalus poliocephalus</i>	hoary-headed grebe		C		1
animals	Podicipedidae	<i>Tachybaptus novaehollandiae</i>	Australasian grebe		C		4
animals	Psittacidae	<i>Platycercus adscitus palliceps</i>	pale-headed rosella (southern form)		C		3
animals	Psittacidae	<i>Trichoglossus chlorolepidotus</i>	scaly-breasted lorikeet		C		12
animals	Psittacidae	<i>Trichoglossus haematodus moluccanus</i>	rainbow lorikeet		C		15
animals	Psittacidae	<i>Glossopsitta concinna</i>	musk lorikeet		C		1

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	Psittacidae	<i>Platycercus adscitus</i>	pale-headed rosella		C		11
animals	Psittacidae	<i>Parvipsitta pusilla</i>	little lorikeet		C		6
animals	Psophodidae	<i>Psophodes olivaceus</i>	eastern whipbird		C		8
animals	Rallidae	<i>Porphyrio melanotus</i>	purple swamphen		C		5
animals	Rallidae	<i>Gallinulus philippensis</i>	buff-banded rail		C		1
animals	Rallidae	<i>Gallinula tenebrosa</i>	dusky moorhen		C		7
animals	Rallidae	<i>Porzana pusilla</i>	Baillon's crane		C		1
animals	Rallidae	<i>Fulica atra</i>	Eurasian coot		C		4
animals	Rhipiduridae	<i>Rhipidura albiscapa</i>	grey fantail		C		11
animals	Rhipiduridae	<i>Rhipidura rufifrons</i>	rufous fantail		SL		4
animals	Rhipiduridae	<i>Rhipidura leucophrys</i>	willie wagtail		C		9
animals	Strigidae	<i>Ninox boobook</i>	southern boobook		C		3
animals	Sturnidae	<i>Sturnus vulgaris</i>	common starling	Y			2
animals	Sturnidae	<i>Acridotheres tristis</i>	common myna	Y			2
animals	Threskiornithidae	<i>Platalea regia</i>	royal spoonbill		C		1
animals	Threskiornithidae	<i>Threskiornis molucca</i>	Australian white ibis		C		6
animals	Threskiornithidae	<i>Threskiornis spinicollis</i>	straw-necked ibis		C		6
animals	Threskiornithidae	<i>Platalea flavipes</i>	yellow-billed spoonbill		C		1
animals	Timaliidae	<i>Zosterops lateralis</i>	silveryeye		C		14
animals	Timaliidae	<i>Zosterops lateralis cornwalli</i>	silveryeye (eastern)		C		1
insects	Nymphalidae	<i>Euploea corinna</i>	common crow				1
insects	Nymphalidae	<i>Hypocysta metirius</i>	brown ringlet				1
insects	Nymphalidae	<i>Melanitis leda bankia</i>	evening brown				1
insects	Nymphalidae	<i>Danaus plexippus</i>	monarch	Y			1
malacostracans	Parastacidae	<i>Cherax depressus</i>					1
animals	Canidae	<i>Vulpes vulpes</i>	red fox	Y			3
animals	Dasyuridae	<i>Antechinus flavipes flavipes</i>	yellow-footed antechinus (south-east Queensland)		C		3
animals	Dasyuridae	<i>Planigale maculata</i>	common planigale		C		2
animals	Dasyuridae	<i>Sminthopsis murina</i>	common dunnart		C		2
animals	Felidae	<i>Felis catus</i>	cat	Y			3
animals	Leporidae	<i>Lepus europaeus</i>	European brown hare	Y			3
animals	Macropodidae	<i>Macropus rufogriseus</i>	red-necked wallaby		C		7
animals	Macropodidae	<i>Wallabia bicolor</i>	swamp wallaby		C		6
animals	Molossidae	<i>Tadarida australis</i>	white-striped freetail bat		C		3
animals	Molossidae	<i>Mormopterus norfolkensis</i>	east coast freetail bat		C		2
animals	Muridae	<i>Hydromys chrysogaster</i>	water rat		C		2
animals	Muridae	<i>Rattus lutreolus</i>	swamp rat		C		1
animals	Muridae	<i>Mus musculus</i>	house mouse	Y			2
animals	Muridae	<i>Rattus rattus</i>	black rat	Y			2
animals	Peramelidae	<i>Perameles nasuta</i>	long-nosed bandicoot		C		1
animals	Peramelidae	<i>Isodon macrourus</i>	northern brown bandicoot		C		5
animals	Petauridae	<i>Petaurus norfolcensis</i>	squirrel glider		C		2
animals	Petauridae	<i>Petaurus breviceps</i>	sugar glider		C		4
animals	Petauridae	<i>Petaurus australis australis</i>	yellow-bellied glider (southern subspecies)		C		2

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	mammals	Phalangeridae	common brushtail possum		C		6
animals	mammals	Phalangeridae	short-eared possum		C		5
animals	mammals	Phascolarctidae	koala		V	V	482
animals	mammals	Pseudocheiridae	common ringtail possum		C		5
animals	mammals	Pseudocheiridae	southern greater glider		V	V	2
animals	mammals	Pteropodidae	grey-headed flying-fox		C	V	1
animals	mammals	Suidae	pig	Y			2
animals	mammals	Tachyglossidae	short-beaked echidna		SL		3
animals	mammals	Vespertilionidae	hoary wattled bat		C		1
animals	mammals	Vespertilionidae	little broad-nosed bat		C		1
animals	mammals	Vespertilionidae	chocolate wattled bat		C		1
animals	mammals	Vespertilionidae	large-footed myotis		C		1
animals	ray-finned fishes	Anguillidae	southern shortfin eel				1
animals	ray-finned fishes	Anguillidae	longfin eel				2
animals	ray-finned fishes	Eleotridae	firetail gudgeon				4
animals	ray-finned fishes	Eleotridae	empire gudgeon				3
animals	ray-finned fishes	Plotosidae	freshwater catfish				1
animals	ray-finned fishes	Poeciliidae	swordtail	Y			1
animals	ray-finned fishes	Poeciliidae	mosquitofish	Y			5
animals	reptiles	Agamidae	eastern water dragon		C		4
animals	reptiles	Agamidae	bearded dragon		C		5
animals	reptiles	Boidae	carpet python		C		3
animals	reptiles	Chelidae	saw-shelled turtle		C		1
animals	reptiles	Colubridae	green tree snake		C		1
animals	reptiles	Diplodactylidae	robust velvet gecko		C		1
animals	reptiles	Elapidae	yellow-faced whipsnake		C		3
animals	reptiles	Elapidae	eastern small-eyed snake		C		4/1
animals	reptiles	Gekkonidae	dubious dtella		C		1
animals	reptiles	Gekkonidae	house gecko	Y			2
animals	reptiles	Scincidae	elegant snake-eyed skink		C		10
animals	reptiles	Scincidae	scute-snouted calyptotis		C		6
animals	reptiles	Scincidae	dark-flecked garden sunskink		C		6
animals	reptiles	Scincidae	three-clawed worm-skink		C		3
animals	reptiles	Scincidae	friendly sunskink		C		2
animals	reptiles	Scincidae	copper-tailed skink		C		1
animals	reptiles	Scincidae	straight-browed ctenotus		C		3
animals	reptiles	Scincidae	eastern water skink		C		2
animals	reptiles	Scincidae	tussock rainbow-skink		C		3
animals	reptiles	Scincidae	eastern blue-tongued lizard		C		2
animals	reptiles	Typhlopidae	proximus blind snake		C		1/1
animals	reptiles	Varanidae	lace monitor		C		5
fungi	Agaricomycetes	Agaricaceae			C		1/1
fungi	Agaricomycetes	Amanitaceae			C		1/1
fungi	Agaricomycetes	Boletaceae			C		1/1
fungi	Agaricomycetes	Panaeolaceae			C		1/1
fungi	Agaricomycetes	Strophariaceae			C		3/3

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
fungi	arthroniomycetes	<i>Dictyographa</i>			C		1/1
fungi	lecanoromycetes	<i>Candelaria concolor</i>			C		1/1
fungi	lecanoromycetes	<i>Cladonia rigida</i> var. <i>rigida</i>			C		1/1
fungi	lecanoromycetes	<i>Parmotrema crinitum</i>			C		1/1
fungi	lecanoromycetes	<i>Pertusaria thiospoda</i>			C		1/1
fungi	lecanoromycetes	<i>Buellia dissa</i>			C		1/1
fungi	lecanoromycetes	<i>Heterodermia speciosa</i>			C		1/1
plants	Equisetopsida	<i>Marsdenia longiloba</i>			V	V	3
plants	Equisetopsida	<i>Hydrocotyle paludosa</i>			C		1/1
plants	Equisetopsida	<i>Aristolochia meridionalis</i> subsp. <i>meridionalis</i>			C		1/1
plants	Equisetopsida	<i>Senecio madagascariensis</i>	fireweed	Y			1/1
plants	Equisetopsida	<i>Acnella grandiflora</i> var. <i>brachyglossa</i>			C		1/1
plants	Equisetopsida	<i>Saritaea magnifica</i>		Y			1/1
plants	Equisetopsida	<i>Calceolaria triparita</i>	lady's slipper	Y			1/1
plants	Equisetopsida	<i>Lobelia stenophylla</i>			C		1/1
plants	Equisetopsida	<i>Einadia hastata</i>			C		2/2
plants	Equisetopsida	<i>Cyperus aquatilis</i>			C		2/2
plants	Equisetopsida	<i>Fuirena ciliaris</i>			C		1/1
plants	Equisetopsida	<i>Baumea teretifolia</i>			C		1/1
plants	Equisetopsida	<i>Lastreopsis decomposita</i>	trim shield fern		C		1/1
plants	Equisetopsida	<i>Hypopterygium tamarisci</i>			C		1/1
plants	Equisetopsida	<i>Hypoxis hygrometrica</i> var. <i>villosispala</i>			C		1/1
plants	Equisetopsida	<i>Cycnogeton multifructus</i>			C		1/1
plants	Equisetopsida	<i>Acacia fimbriata</i>	Brisbane golden wattle		C		2/2
plants	Equisetopsida	<i>Leptospermum juniperinum</i>	prickly tea-tree		C		1/1
plants	Equisetopsida	<i>Eucalyptus resinifera</i>	red mahogany		C		1/1
plants	Equisetopsida	<i>Spiranthes australis</i>			C		1/1
plants	Equisetopsida	<i>Macadamia integrifolia</i>	macadamia nut		V	V	2/2
plants	Equisetopsida	<i>Macadamia tetraphylla</i>			V	V	1/1
plants	Equisetopsida	<i>Pteris tremula</i>			C		1/1
plants	Equisetopsida	<i>Schizaea bifida</i>			C		1/1
plants	Equisetopsida	<i>Solanum nodiflorum</i>	forked comb fern	Y			2/2
plants	Equisetopsida	<i>Corchorus cunninghamii</i>			E	E	7/2

CODES

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

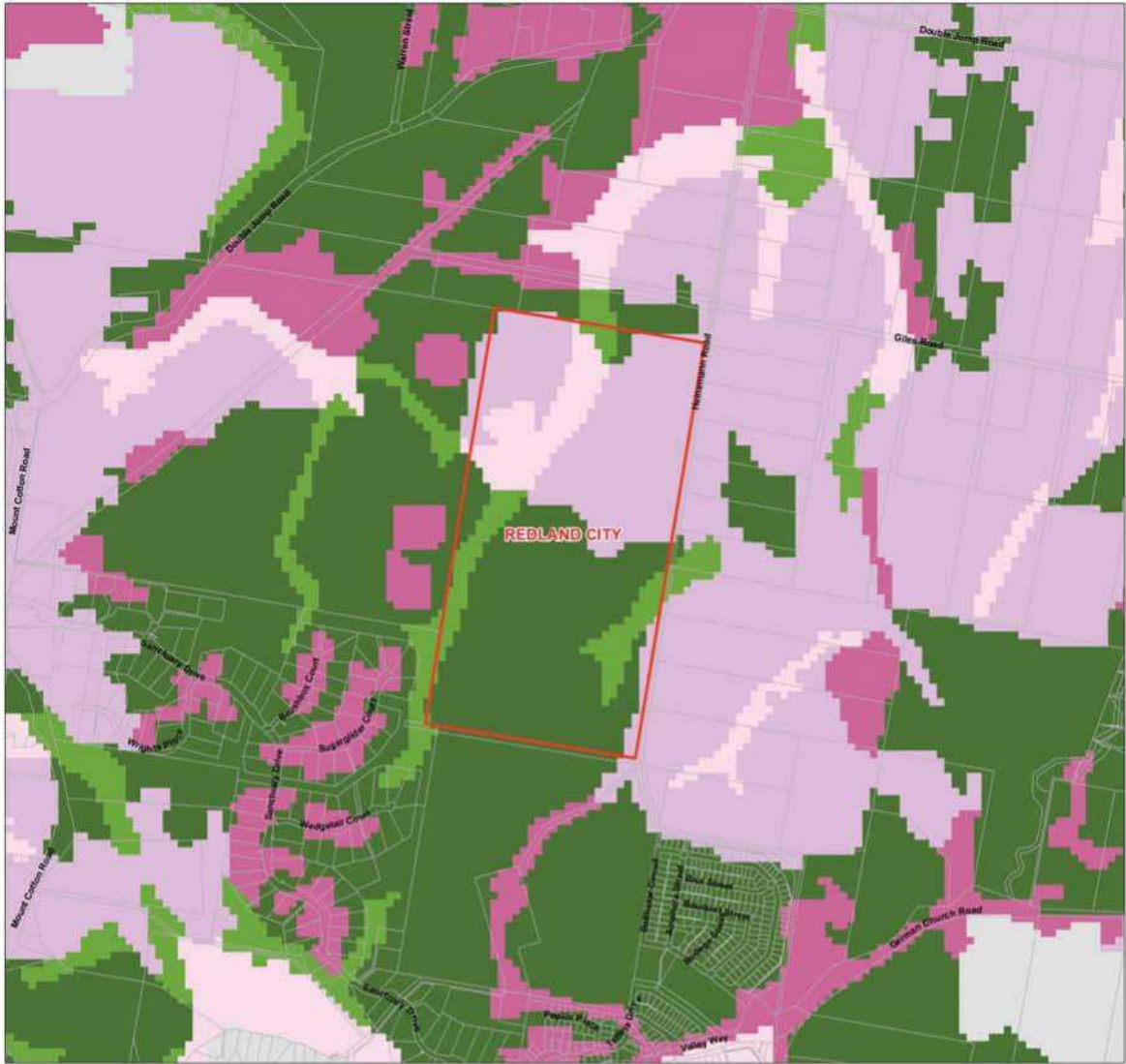
Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992*. The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ().

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

Records - The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).

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

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



Koala Habitat in South East Queensland

- Lot and Plan
- Koala SPP - Habitat Values**
- Bushland Habitat**
 - High Value Bushland
 - Medium Value Bushland
 - Low Value Bushland
- Suitable for Rehabilitation**
 - High Value Rehabilitation
 - Medium Value Rehabilitation
 - Low Value Rehabilitation
- Other Areas of Value**
 - High Value Other
 - Medium Value Other
 - Low Value Other
 - Generally not suitable
 - Water
- South East Queensland Koala Habitat Values western SEQ**
 - Bushland Habitat
 - Suitable for rehabilitation
 - Other areas of value
 - Generally not suitable
 - Water
 - Cadastral Boundaries
 - Local Government Boundaries



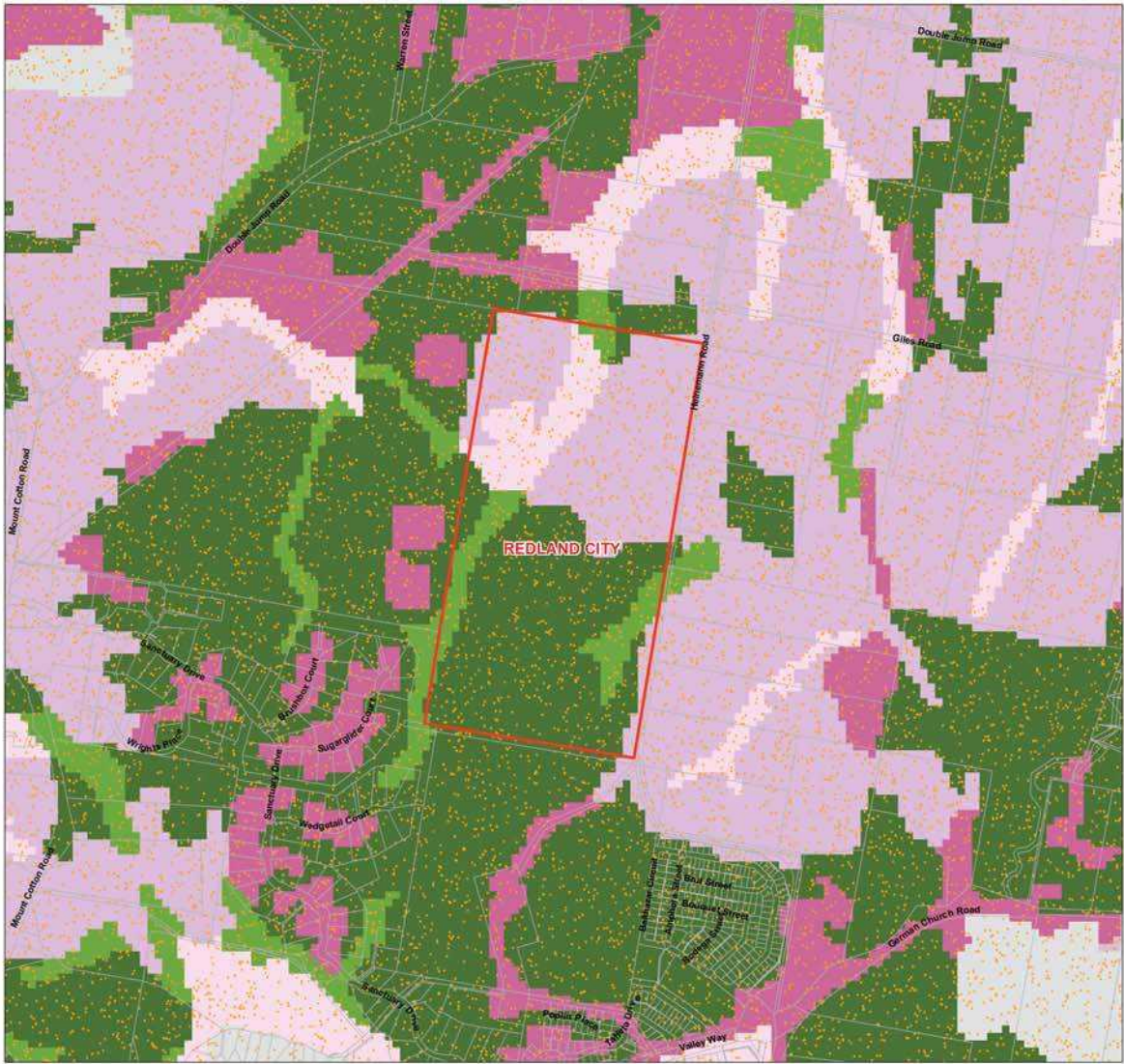
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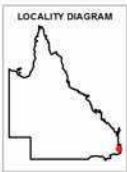
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Note - These maps are not regulatory. Regulatory maps and requirements can be downloaded from the DES website. Further information in relation to regulatory requirements for development and planning activities should be sought from the relevant Local Government Authority or the Department of Environment and Science.



Koala Conservation in South East Queensland State Planning Regulatory Provisions

- Lot and Plan
- Priority Koala Assessable Development Areas
- Koala Assessable Development Areas
- Outside SPRP Koala Assessable Development Areas
- Koala SPRP - Identified Broad-Hectare Areas
- Koala SPRP - Identified Broad-Hectare Areas
- Koala SPRP - Habitat Values
- Bushland Habitat
 - High Value Bushland
 - Medium Value Bushland
 - Low Value Bushland
- Suitable for Rehabilitation
 - High Value Rehabilitation
 - Medium Value Rehabilitation
 - Low Value Rehabilitation
- Other Areas of Value
 - High Value Other
 - Medium Value Other
 - Low Value Other
 - Generally not suitable
 - Water
- Cadastral Boundaries
- Local Government Boundaries



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APPENDIX

B

FLORA AND FAUNA LIKELIHOOD OF OCCURRENCE
ASSESSMENT

Scientific Name	Common Name	Status#		Source^	General habitat requirements	Are habitat requirements known or expected to be present on	Recorded on Wildonline within 5km	Is a suitable landzone present?	Are known or expected associated species present?	Likelihood of Occurrence
		NC Act	EPBC Act							
Flora										
<i>Macadamia integrifolia</i>	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.	Yes	Yes	Yes	Yes	Likely
<i>Macadamia tetraphylla</i>	Rough-shelled bush nut	V	V	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	Yes	Yes	Yes	Unlikely
<i>Marsdenia longiloba</i>	Slender marsdenia	V	V	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.	Yes	Yes	Yes	Yes	Possible
<i>Bosistoa transversa</i>	Three-leaved bosistoa	-	V	PMST	Wet sclerophyll forest, dry sclerophyll forest and rainforest up to 300 m in altitude. Associated vegetation includes Argrodendron trifoliolatum, Syzygium hodgkinsoniae, Endiandra pubens, Dendrocnide photiNophylla, Acmena ingens, Diploglottis australis and Diospyros mabacea.	Yes	No	Yes	Yes	Unlikely
<i>Corchorus cunninghamii</i>	Native jute	E	E	PMST	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.	Yes	No	Yes	Yes	Possible
<i>Endiandra floydii</i>	Floyd's walnut	E	E	PMST	Found in warm-temperate and subtropical rainforest, from sea level to 430 m altitude.	Possible	No	Yes	Yes	Unlikely
<i>Persicaria elatior</i>	KNotweed	V	V	PMST	Grows in damp places, including coastal swampy area, along watercourses, streams and lakes, and swamp forest. May occur in disturbed areas.	No	No	No	Possible	Unlikely
<i>Planchonella eerwah</i>	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	Possible	Unlikely
<i>Samadera bidwillii</i>	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	Possible	Possible	Unlikely
Mammals										
<i>Dasyurus maculatus maculatus</i>	Spotted-tail quoll	V	E	PMST	Intact eucalypt forests and woodlands, coastal heathlands and rainforests.	Possible	No	Yes	Yes	Unlikely
<i>Petauroides volans volans</i>	Greater glider	V	V	WO	Largely restricted to eucalypt forests and woodlands. It is primarily folivorous, with a diet mostly comprising eucalypt leaves, and occasionally flowers.	Yes	No	Yes	Yes	Possible
<i>Phascogale cinerea</i>	Koala	V	V	PMST	During the day it shelters in tree hollows, with a particular selection for large hollows in large, old trees	Yes	Yes	Yes	Yes	Likely
<i>Pteropus poliocephalus</i>	Grey-headed flying fox	-	V	PMST	Eucalypt woodland, forest with an abundance of Food and shelter trees of the genus's Eucalyptus, Corymbia and Lophostemon.	Yes	Yes	Yes	Yes	Likely
Birds										
<i>Hirundapus caudacutus</i>	White-throated needle tail	-	Marine	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.	Yes	Yes	Yes	Yes	Likely
<i>Monarcha melanopsis</i>	Black-faced monarch	-	Marine	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	Yes	Yes	Yes	Possible
<i>Rhipidura rufifrons</i>	Rufous fantail	-	Marine	WO	Found mostly in rainforest environments, sometimes in open eucalypt forests, mountain gullies, coastal foothills and scrub, and occasionally among mangroves.	Yes	Yes	Yes	Yes	Possible
<i>Botaurus poiciloptilus</i>	Australasian Bittern	-	E	PMST	Found mainly in wet sclerophyll forests, often in gullies, sometimes found in subtropical and temperate rainforest.	Yes	No	Yes	Yes	Unlikely
<i>Anthochaera phrygia</i>	Regent Honeyeater	E	CE	PMST	Freshwater wetlands with tall dense vegetation	Yes	No	Yes	Yes	Unlikely
<i>Erythrotriorchis radiatus</i>	Red goshawk	E	V	PMST	The most fertile sites within dry box-ironbark eucalypt woodland and dry sclerophyll forest associations	Yes	No	Yes	Yes	Unlikely
<i>Lathamus discolor</i>	Swift parrot	E	CE	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.	Yes	No	Yes	Yes	Unlikely
<i>Turnix melanogaster</i>	Black breasted button-quail	V	V	PMST	A variety of woodlands with mature eucalypts, where nectar production is plentiful and reliable.	Yes	No	Yes	Yes	Unlikely

= Endangered, V = Vulnerable under both the 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, PM = EPBC Protected Matters Report

**some migratory species not listed in Australia not included

APPENDIX

C

FLORA SPECIES

Family	Scientific Name	Common Name	Status
Acanthaceae	<i>Brunoniella australis</i>		
Acanthaceae	<i>Pseuderanthemum variabile</i>		
Adiantaceae	<i>Cheilanthes seberi</i>		
Agavaceae	<i>Yucca aloifolia</i>		*
Amaranthaceae	<i>Alternanthera brasiliana</i>		*
Amaranthaceae	<i>Alternanthera denticulata</i>	Lesser joyweed	
Amaryllidaceae	<i>Agapanthus sp.</i>	Agapanthus	*
Anacardiaceae	<i>Mangifera indica</i>	Mango	*
Apocynaceae	<i>Asclepias curassavica</i>	Bloodflower	*
Apocynaceae	<i>Catharanthus roseus</i>	Madagascar periwinkle	*
Apocynaceae	<i>Gomphocarpus physocarpus</i>	Balloon cotton bush	*
Apocynaceae	<i>Parsonsia straminea</i>		
Apocynaceae	<i>Marsdenia rostrata</i>		
Araceae	<i>Colocasia esculenta</i>	Taro	*
Araceae	<i>Syngonium podophyllum</i>	Arrowhead vine	*
Araceae	<i>Spirodela punctata</i>		
Araliaceae	<i>Schefflera actinophylla</i>	Queensland umbrella tree	#
Araliaceae	<i>Hydrocotyle tripartita</i>		
Araucariaceae	<i>Araucaria cunninghamii</i>	Hoop pine	
Arecaceae	<i>Syagrus romanzoffiana</i>	Cocos palm	*
Asparagaceae	<i>Asparagus aethiopicus</i>		*R WONS
Asparagaceae	<i>Dracaena fragrans</i>	Happy plant	*
Asteraceae	<i>Ageratum houstonianum</i>	Billy goat weed	*
Asteraceae	<i>Chryscephalum apiculatum</i>	Yellow buttons	
Asteraceae	<i>Cirsium vulgare</i>	Spear thistle	*
Asteraceae	<i>Cyanthillium cinereum</i>		
Asteraceae	<i>Emilia sonchifolia</i> var. <i>javanica</i>	Little Emily	*
Asteraceae	<i>Senecio madagascariensis</i>	Fireweed	*R WONS
Asteraceae	<i>Sonchus oleraceus</i>	Common sow thistle	*
Asteraceae	<i>Sphagneticola trilobata</i>	Singapore daisy	*R
Asteraceae	<i>Tagetes minuta</i>	Stinking Roger	*
Asteraceae	<i>Sonchus asper</i>	Prickly sowthistle	
Asteraceae	<i>Senecio macroglossus</i>		*
Basellaceae	<i>Anredera cordifolia</i>	Madeira vine	*R WONS
Bignoniaceae	<i>Jacaranda mimosifolia</i>	Jacaranda	*
Bignoniaceae	<i>Pandorea pandorana</i>		
Bignoniaceae	<i>Tecoma stans</i>		*R
Blechnaceae	<i>Blechnum indicum</i>	Bungwall	
Brassicaceae	<i>Cardamine hirsuta</i>	Hairy bitter cress	*
Caesalpiniaceae	<i>Senna pendula</i> var. <i>glabrata</i>	Easter cassia	*
Campanulaceae	<i>Lobelia purpurascens</i>	White root	
Campanulaceae	<i>Lobelia quadrangularis</i>		
Campanulaceae	<i>Wahlenbergia gracilis</i>		
Cannaceae	<i>Canna indica</i>	Arrowroot	*
Caryophyllaceae	<i>Drymaria cordata</i> subsp. <i>cordata</i>		*
Casuarinaceae	<i>Allocasuarina littoralis</i>	Black she-oak	
Commelinaceae	<i>Callisia fragrans</i>	Fragrant itch plant	*
Commelinaceae	<i>Commelina diffusa</i>		*
Commelinaceae	<i>Tradescantia fluminensis</i>	Spiderwort	*
Convolvulaceae	<i>Dichondra repens</i>	Creeping dichondra	
Crassulaceae	<i>Bryophyllum delagoense</i>	Mother-of-millions	*R
Crassulaceae	<i>Bryophyllum pinnatum</i>	Live leaf	*
Cyperaceae	<i>Cyperus brevifolius</i>		*
Cyperaceae	<i>Cyperus difformis</i>		
Cyperaceae	<i>Gahnia aspera</i>	Sword sedge	

Family	Scientific Name	Common Name	Status
Cyperaceae	<i>Lepidosperma laterale</i>	Variable sword sedge	
Cyperaceae	<i>Schoenoplectus validus</i>		
Cyperaceae	<i>Eleocharis dulcis</i>	Water chestnut	
Dennstaedtiaceae	<i>Pteridium esculentum</i>	Bracken	
Dennstaedtiaceae	<i>Hypolepis muelleri</i>		
Dicksoniaceae	<i>Calochlaena dubia</i>		
Dilleniaceae	<i>Hibbertia stricta</i>		
Dracaenaceae	<i>Sansevieria trifasciata</i>	Mother in laws tongue	*
Ericaceae	<i>Leucopogon juniperinus</i>		
Ericaceae	<i>Monotoca scoparia</i>		
Fabaceae	<i>Hovea heterophylla</i>		
Fabaceae	<i>Chamaecrista rotundifolia</i>		*
Fabaceae	<i>Daviesia villifera</i>	Short-leaved bitter-pea	
Fabaceae	<i>Desmodium gunnii</i>		
Fabaceae	<i>Desmodium rhytidophyllum</i>		
Fabaceae	<i>Glycine clandestina</i>		
Fabaceae	<i>Neonotonia wightii</i>	Glycine	*
Goodeniaceae	<i>Goodenia rotundifolia</i>		
Hemerocallidaceae	<i>Dianella longifolia</i>		
Hemerocallidaceae	<i>Geitonoplesium cymosum</i>	Srambling lily	
Iridaceae	<i>Dietes grandiflora</i>	Butterfly iris	*
Johnsoniaceae	<i>Tricoryne elatior</i>		
Juncaceae	<i>Juncus usitatus</i>		
Lauraceae	<i>Cinnamomum camphora</i>	Camphor laurel	*R
Laxmanniaceae	<i>Eustrephus latifolius</i>	Wombat berry	
Laxmanniaceae	<i>Lomandra filiformis</i>		
Laxmanniaceae	<i>Lomandra laxa</i>		
Laxmanniaceae	<i>Lomandra longifolia</i>	Spiny-headed mat rush	
Laxmanniaceae	<i>Lomandra multiflora</i>		
Laxmanniaceae	<i>Lomandra confertifolia subsp. pallida</i>		
Lindsaeaceae	<i>Lindsaea ensifolia</i>		
Lythraceae	<i>Cuphea carthagenensis</i>	Colombian waxweed	*
Malvaceae	<i>Sida cordifolia</i>		*
Malvaceae	<i>Urena lobata</i>		*
Meliaceae	<i>Melia azedarach</i>	White cedar	
Menispermaceae	<i>Stephania japonica</i>		
Mimosaceae	<i>Acacia disparrima subsp. disparrima</i>		
Mimosaceae	<i>Acacia fimbriata</i>	Brisbane wattle	
Mimosaceae	<i>Acacia leiocalyx</i>		
Mimosaceae	<i>Acacia maidenii</i>	Maiden's wattle	
Moraceae	<i>Ficus benjamina</i>		#
Moraceae	<i>Ficus coronata</i>	Sandpaper fig	
Moraceae	<i>Ficus obliqua</i>	Small-leaved fig	
Myrtaceae	<i>Angophora leiocarpa</i>	Smooth-barked apple	
Myrtaceae	<i>Corymbia intermedia</i>	Pink bloodwood	
Myrtaceae	<i>Eucalyptus microcorys</i>	Tallowwood	
Myrtaceae	<i>Eucalyptus pilularis</i>	Blackbutt	
Myrtaceae	<i>Eucalyptus propinqua</i>	Small-fruited grey gum	
Myrtaceae	<i>Eucalyptus racemosa</i>	Scribbly gum	
Myrtaceae	<i>Eucalyptus resinifera</i>	Red mahogany	
Myrtaceae	<i>Eucalyptus seeana</i>	Fine-leaved red gum	
Myrtaceae	<i>Eucalyptus siderophloia</i>	Grey ironbark	
Myrtaceae	<i>Eucalyptus tereticornis</i>	Forest red gum	
Myrtaceae	<i>Eucalyptus tindaliae</i>	Queensland white mahogany	
Myrtaceae	<i>Eugenia uniflora</i>	Brazilian cherry	*

Family	Scientific Name	Common Name	Status
Myrtaceae	<i>Leptospermum polygalifolium</i>	Wild may	
Myrtaceae	<i>Lophostemon confertus</i>	Brush box	
Myrtaceae	<i>Lophostemon suaveolens</i>	Swamp box	
Myrtaceae	<i>Melaleuca linariifolia</i>		
Myrtaceae	<i>Melaleuca quinquenervia</i>	Paper-barker Tea-tree	
Nephrolepidaceae	<i>Nephrolepis cordifolia</i>	Fishbone fern	#
Ochnaceae	<i>Ochna serrulata</i>	Ochna	*
Onagraceae	<i>Ludwigia octovalvis</i>		
Onagraceae	<i>Ludwigia peploides</i>		
Orchidaceae	<i>Cymbidium suave</i>		
Orchidaceae	<i>Dipodium punctatum</i>		
Oxalidaceae	<i>Oxalis corniculata</i>		*
Passifloraceae	<i>Passiflora edulis</i>	Stinking passion fruit	*
Passifloraceae	<i>Passiflora suberosa</i>	Corky passion	*
Petiveriaceae	<i>Rivina humilis</i>		*
Philydraceae	<i>Philydrum lanuginosum</i>	Woolly frog's mouth	
Phyllanthaceae	<i>Glochidion ferdinandi</i>	Cheese tree	
Phytolaccaceae	<i>Phytolacca octandra</i>	Ink weed	*
Pittosporaceae	<i>Pittosporum multiflorum</i>		
Poaceae	<i>Alloteropsis semialata</i>	Cockatoo grass	
Poaceae	<i>Aristida queenslandica</i>		
Poaceae	<i>Aristida warburgii</i>		
Poaceae	<i>Axonopus compressus</i>	Broadleaf carpet grass	*
Poaceae	<i>Cymbopogon refractus</i>	Barbed wire grass	
Poaceae	<i>Cynodon dactylon</i>	Bermuda grass	*
Poaceae	<i>Entolasia stricta</i>	Wiry panic	
Poaceae	<i>Eragrostis brownii</i>		
Poaceae	<i>Eremochloa bimaculata</i>	Poverty grass	
Poaceae	<i>Imperata cylindrica</i>	Blady grass	
Poaceae	<i>Melinis repens</i>	Natal red grass	*
Poaceae	<i>Microlaena stipoides</i>	Weeping grass	
Poaceae	<i>Oplismenus aemulus</i>		
Poaceae	<i>Setaria sphacelata</i>	Pigeon grass	*
Poaceae	<i>Sporobolus pyramidalis</i>	Giant rat's tail grass	*R
Poaceae	<i>Panicum effusum</i>	Hairy panic	
Poaceae	<i>Dichelachne micrantha</i>		
Poaceae	<i>Digitaria parviflora</i>		
Poaceae	<i>Eriachne pallescens</i>		
Polygonaceae	<i>Persicaria strigosa</i>		
Pontederiaceae	<i>Eichhornia crassipes</i>	Water hyacinth	*R WONS
Proteaceae	<i>Banksia integrifolia</i>	Coastal banksia	
Rhamnaceae	<i>Alphitonia excelsa</i>	Soap tree	
Rubiaceae	<i>Gynochthodes jasminoides</i>		
Rubiaceae	<i>Pomax umbellata</i>		
Rutaceae	<i>Flindersia australis</i>	Crow's ash	
Rutaceae	<i>Melicope elleryana</i>	Pink euodia	
Sapindaceae	<i>Cupaniopsis anacardioides</i>	Tuckeroo	
Sapindaceae	<i>Jagera pseudorhus</i>	Foambark	
Solanaceae	<i>Capsicum annuum var. glabriusculum</i>	Chilli	*
Solanaceae	<i>Solanum chrysotrichum</i>	Devil's fig	*
Solanaceae	<i>Solanum mauritianum</i>	Wild tobacco	*
Solanaceae	<i>Solanum nigrum</i>		*
Solanaceae	<i>Solanum seaforthianum</i>	Brazilian nightshade	*
Solanaceae	<i>Solanum stelligerum</i>		
Solanaceae	<i>Solanum torvum</i>	Devil's fig	*

Family	Scientific Name	Common Name	Status
Solanaceae	<i>Solanum capsicoides</i>		*
Thymeleaceae	<i>Pimelea linifolia</i>	Rice flower	
Verbenaceae	<i>Duranta erecta</i>	Duranta	*
Verbenaceae	<i>Lantana camara</i>	Lantana	*R WONS
Verbenaceae	<i>Lantana montevidensis</i>	Creeping lantana	*R
Violaceae	<i>Hybanthus stellarioides</i>		
Violaceae	<i>Viola hederacea</i>	Australian native violet	
Xanthorrhoeaceae	<i>Xanthorrhoea johnsonii</i>		
Xanthorrhoeaceae	<i>Xanthorrhoea macronema</i>		
* = Exotic; R= Category 3 Restricted Matter under the Biosecurity Act 2014; WONS = Weed of National Significance; # = Native species out of range			

APPENDIX

D

QUATERNARY DATA

Site Number	T1 - Species	T1 - Height (m)	T2 - Species	T2 - Height (m)	Shrub - Species	Shrub - Height (m)	Ground Layer - Species	Date	x	y
1	<i>Eucalyptus racemosa</i> <i>Corymbia intermedia</i>	20	<i>Melaleuca quinquenervia</i>	15	Absent		<i>Imperata cylindrica</i> <i>Lomandra longifolia</i>	7/06/2019 0:25	153.2566695	-27.61206763
2	<i>Eucalyptus tereticornis</i> <i>Melaleuca quinquenervia</i>	18	<i>Ficus obliqua</i>	3	Absent		<i>Axonopus compressus</i>	7/06/2019 1:07	153.2556119	-27.61201038
3	<i>Melaleuca quinquenervia</i> <i>Lophostemon suaveleons</i>	18	<i>Melaleuca quinquenervia</i>	10	<i>Solanum torvum</i>	3	<i>Juncus spp</i>	7/06/2019 1:21	153.2543122	-27.61431692
4	<i>Melaleuca quinquenervia</i>	10	Absent		<i>Solanum stilligerum</i>	1.5	<i>Ottochloa gracillima</i>	7/06/2019 1:51	153.2527108	-27.61491471
5	<i>Eucalyptus sideropholia</i> <i>Eucalyptus tereticornis</i> <i>Eucalyptus pillularis</i>	25	<i>Melaleuca quinquenervia</i> <i>Lophostemon suaveleons</i>	15	<i>Solanum torvum</i>	1.5	<i>Imperata cylindrica</i>	7/06/2019 2:03	153.2524056	-27.61618386
6	<i>Eucalyptus pillularis</i> <i>Lophostemon confertus</i>	18	<i>Eucalyptus racemosa</i> <i>Eucalyptus carnea</i>	10	<i>Acacia disparrima</i>	2	<i>Lomandra filiformis</i>	7/06/2019 4:04	153.2539846	-27.62313451
7	<i>Eucalyptus pillularis</i> <i>Eucalyptus resinifera</i> <i>Eucalyptus propinqua</i>	20	<i>Lophostemon suaveleons</i> <i>Melaleuca quinquenervia</i>	8	Absent		<i>Entolasia stricta</i>	7/06/2019 4:42	153.2541149	-27.61881951
8	<i>Melaleuca quinquenervia</i> <i>Eucalyptus sideropholia</i> <i>Lophostemon suaveleons</i> <i>Eucalyptus tereticornis</i>	20	<i>Allocasuarina littoralis</i>	15	<i>Lophostemon suaveleons</i>	1.5	<i>Entolasia stricta</i>	7/06/2019 4:56	153.252193	-27.61765836

APPENDIX

E

FAUNA SPECIES

Class	Scientific Name	Common Name
Amphibia	<i>Rhinella marina</i>	Cane toad
Amphibia	<i>Pseudophryne raveni</i>	Copper-backed brood frog
Amphibia	<i>Uperoleia fusca</i>	Dusky toadlet
Aves	<i>Acanthorhynchus tenuirostris</i>	Eastern spinebill
Aves	<i>Anas superciliosa</i>	Pacific black duck
Aves	<i>Aquila audax</i>	Wedge-tailed eagle
Aves	<i>Ardea ibis</i>	Cattle egret
Aves	<i>Cacatua galerita</i>	Sulfur crested cockatoo
Aves	<i>Caligavis chrysops</i>	Yellow faced honey eater
Aves	<i>Chenonetta jubata</i>	Australian wood duck
Aves	<i>Coracina novaehollandiae</i>	Black-faced cuckoo-shrike
Aves	<i>Corvus orru</i>	Torresian crow
Aves	<i>Coturnix ypsilophora</i>	Brown quail
Aves	<i>Cracticus nigrogularis</i>	Pied butcherbird
Aves	<i>Cracticus tibicen</i>	Australian Magpie
Aves	<i>Cracticus torquatus</i>	Grey butcherbird
Aves	<i>Dacelo novaeguineae</i>	Laughing kookaburra
Aves	<i>Dicrurus bracteatus</i>	Spangled drongo
Aves	<i>Entomyzon cyanotis</i>	Blue faced honey eater
Aves	<i>Eolophus roseicapillus</i>	Galah
Aves	<i>Eopsaltria australis</i>	Eastern yellow robin
Aves	<i>Geopelia humeralis</i>	Bar-shouldered dove
Aves	<i>Geopelia striata</i>	Peaceful dove
Aves	<i>Grallina cyanoleuca</i>	Magpie lark
Aves	<i>Hirundo neoxena</i>	Welcome swallow
Aves	<i>Malurus lamberti</i>	Variegated fairy wren
Aves	<i>Malurus melanocephalus</i>	Red-backed fairy wren
Aves	<i>Manorina melanocephala</i>	Noisy minor
Aves	<i>Melithreptus albogularis</i>	White-throated honeyeaters
Aves	<i>Merops ornatus</i>	Rainbow bee-eater
Aves	<i>Myzomela sanguinolenta</i>	Scarlett honey eater
Aves	<i>Ocyphaps lophotes</i>	Crested pigeon
Aves	<i>Pachycephala pectoralis</i>	Golden whistler
Aves	<i>Pardalotus striatus</i>	Striated pardalote
Aves	<i>Phaps chalcoptera</i>	Common bronzewing
Aves	<i>Philemon corniculatus</i>	Noisy friar bird
Aves	<i>Phylidonyris niger</i>	White cheeked honey eater
Aves	<i>Podargus strigoides</i>	Tawny frogmouth
Aves	<i>Rhipidura albiscapa</i>	Grey fantail
Aves	<i>Rhipidura leucophrys</i>	Willie wagtail
Aves	<i>Stizoptera bichenovii</i>	Double barred finch
Aves	<i>Threskiornis spinicollis</i>	Straw-necked ibis
Aves	<i>Trichoglossus chlorolepidotus</i>	Scaly-breasted lorikeet
Aves	<i>Trichoglossus haematodus</i>	Rainbow lorikeet
Aves	<i>Vanellus miles</i>	Masked lapwing
Aves	<i>Egretta novaehollandiae</i>	White-faced heron
Aves	<i>Cacomantis flabelliformis</i>	Fan-tailed cuckoo
Mammalia	<i>Macropus rufogriseus</i>	Red-necked wallaby
Mammalia	<i>Trichosurus vulpecula</i>	Brushtail possum