ELEMENT ECOLOGY

ECOLOGICAL ASSESSMENT REPORT

2 KARINGAL DRIVE, PIMAPMA

Client: Brian Johnston

Project Number: 20024-1

Date: February 2021

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DOCUMENT CONTROL SHEET

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PROJECT **2 Karingal Drive, Pimpama**

FILE REFERENCE **20024-1**

DATE **February 2021**

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Revision	Date	Description	Author	Reviewer
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EXECUTIVE SUMMARY

This report presents an Ecological Assessment Report for a property located at 2 Karingal Drive, Pimpama (Lot 19 on RP152380).

In undertaking this assessment, a desktop review of all relevant environmental legislation and ecological databases and maps – at a Local, State and Federal Government level – was conducted. A field assessment was also completed to ground-truth ecological values identified during the desktop review. This field investigation was undertaken in accordance with best practice standards and methodologies.

The results of the field assessment identified that one (1) vegetation community occurs on site – Vegetation Community A: Non-remnant vegetation. This community is subject to disturbances from historical clearing and modifications, as well as significant weed infestation.

No flora species were detected during the survey that are listed as threatened or near threatened under State or Federal legislation. Although, one (1) City Wide Significant species within the Gold Coast Local Government Area was identified on site during surveys – *Brachychiton bidwillii* (broad-leaved bottle tree) which is considered to have been anthropogenically introduced to the site for horticultural purposes.

No threatened or otherwise significant fauna species were recorded on site. Limited potential habitat for threatened fauna species exists on site for *Calyptorhynchus lathami* (glossy black-cockatoo), *Adelotus brevis* (tusked frog), *Phascolarctos cinereus* (koala) and *Pteropus poliocephalus* (grey-headed flying-fox). However, targeted searches did not find evidence of either of these species on site.

Ecological function associated with the site is relatively low owing to small patch size, condition (i.e. non-remnant vegetation with high weed biomass), ongoing disturbance associated with historical clearing and modifications, and significant landscape barriers in the surrounding areas (e.g. urban development, roads and trainline). The site provides habitat for common flora and fauna that are tolerant of disturbed environments; however, it does not represent core habitat for any of these species.

City Plan mapping indicates that waterways occur on site. Field investigations confirmed that this mapping consists of dams that have been constructed as part of historical land uses. The proposed development presents an opportunity to remediate and rehabilitate the mapped waterway, which is currently highly modified and dominated by invasive weeds.

The proposed development involves disturbance to mapped Koala habitat areas (core) under State Code 25. Any significant residual impacts will result in the delivery of environmental offsets, which will ensure that a positive contribution is made to koalas through the State Government's legislative provisions. Environmental offsets will be calculated as part of the referral to the State Assessment and Referral Agency (SARA).

Based on the results of the field assessment, impacts of the proposed development will be limited to disturbed areas that conform to the definition of non-remnant vegetation. In order to ensure that potential impacts are mitigated to the greatest extent possible, a number of recommendations have been provided to guide the future management of the development.

An assessment of the proposal against Local, State and Federal Government environmental planning provisions has confirmed that the development is compliant with all relevant and applicable ecological policies and regulations.

TABLE OF CONTENTS

1 Introduction 1
1.1 Site Description 1
1.2 Report Objectives and Scope 1
2 Proposed Development 3
3 Methodology 5
3.1 Desktop Assessment 5
3.2 Field Assessment 5
3.2.1 Vegetation Survey 7
3.2.2 Diurnal Bird Survey 7
3.2.3 Amphibian Aural Point Survey 7
3.2.4 Opportunistic Observations and Targeted Searches 7
3.2.5 Voucher Specimen and Sample Protocol 8
3.2.6 Field Survey Limitations 8
4 Desktop Assessment 9
4.1 Vegetation Communities 10
4.2 Flora 14
4.3 Fauna 16
4.4 Waterways and Wetlands 17
4.5 Landscape Context 17
5 Field Assessment 20
5.1 Vegetation Communities 20
5.1.1 Vegetation Community A: Non-remnant Vegetation 20
5.2 Flora 25
5.2.1 Significant Flora 25
5.2.2 Weed Species 25
5.3 Fauna 28
5.3.1 Amphibians 28
5.3.2 Reptiles 28
5.3.3 Birds 28
5.3.4 Mammals 28
5.3.5 Significant Fauna 29
5.4 Ecological Function 29
5.4.1 Core Habitat 29
5.4.2 Ecological Corridors 31
5.4.3 Waterways and Wetlands 31
5.5 Matters of Environmental Significance 33

6 Impacts and Mitigation Measures 35
6.1 Development Impacts 35
6.2 Mitigation Measures 35
6.3 Environmental Offsets 37
6.3.1 Koala Habitat 37
7 Environmental Planning and Approvals 38
8 Conclusions 41
9 References 42

APPENDICES

Appendix A: MLES Desktop Searches
Appendix B: MSES Desktop Searches
Appendix C: MNES Desktop Searches
Appendix D: Flora Species Recorded During Survey
Appendix E: Fauna Species Recorded During Survey
Appendix F: Gold Coast City Plan Code Responses
Appendix G: State Code 25 Responses

TABLES

Table 4.1 Summary of Desktop Assessment Results 9
Table 4.2 Mapped Regional Ecosystem Description 10
Table 4.3 Potentially Occurring TEC Descriptions 11
Table 4.4 Significant Flora Species Potentially Occurring On Site 14
Table 4.5 Significant Fauna Species Potentially Occurring On Site 16
Table 5.1 Classification and Conservation Status of Vegetation Community A 22
Table 5.2 Weed Species Identified On Site 26
Table 5.3 Assessment of Matters of Environmental Significance on Site 34
Table 6.1 Recommended Mitigation Measures 36
Table 7.1 Environmental Planning and Approval Requirements 39

FIGURES

Figure 1.1 Site Location 2
Figure 2.1 Proposed Development Layout 4
Figure 3.1 Field Assessment Survey Effort 6
Figure 4.1 Regulated Vegetation 12
Figure 4.2 Vegetation Management Overlay Map 13
Figure 4.3 Protected Plants 15
Figure 4.4 Koala Habitat Areas Map 18
Figure 4.5 Wetlands and Waterways Overlay Map 19
Figure 5.1 Vegetation Communities 23
Figure 5.2 VC A: Non-remnant Vegetation 24
Figure 5.3 VC A: Non-remnant Vegetation 24
Figure 5.4 VC A: Non-remnant Vegetation 24
Figure 5.5 VC A: Non-remnant Vegetation 24
Figure 5.6 VC A: Non-remnant Vegetation 24
Figure 5.7 VC A: Non-remnant Vegetation 24
Figure 5.8 Typical Existing Dam On Site 32
Figure 5.9 Typical Existing Dam On Site 32

1 Introduction

Element Ecology has been engaged by Brian Johnston to prepare an Ecological Assessment Report for a property located at 2 Karingal Drive, Pimpama (Lot 19 on RP152380), hereafter referred to as 'the site'. This report has been prepared as supporting documentation for a Material Change of Use development application for a proposed Community Title Scheme on the site.

1.1 Site Description

The site is 2.459 ha in size and is located within the Gold Coast Local Government Area (Figure 1.1). It is situated approximately 2 km north of Coomera Town Centre.

The site is currently vacant and unimproved, with the exception of existing easements for underground infrastructure. The site is characterised by open grassed areas with scattered vegetation. Several dams have been historically constructed on site. Access to the site is obtained from Karingal Drive.

The site forms part of the Pimpama River catchment and Yawalpah Road sub-catchment, with the surrounding landform being primarily defined by undulating plains. Site topography is characterised by gently inclined slopes with a westerly aspect. The site has extremely low relief, with elevation ranging from approximately 10 m AHD in the eastern extents of the site, to approximately 3 m AHD in the north-western corner.

The site is immediately bound to the north by Karingal Drive, to the east by similarly sized residential allotments, partly to the south by Imelda Way, and to the west by the Gold Coast to Brisbane trainline. The surrounding area is primarily characterised by medium density residential land uses with interspersed conservation and open space areas. The Pacific Motorway is located approximately 450 m to the west and Yawalpah Road is located approximately 800 m to the north.

1.2 Report Objectives and Scope

The objectives of this Ecological Assessment Report are to:

- Identify the ecological values and functions associated with the site;
- Assess potential impacts on ecological values resulting from the proposed development; and
- Recommend management actions that will mitigate the impacts of the proposed development on significant ecological values.

This report has been prepared in accordance with SC6.7 City Plan policy – Ecological site assessments of the *Gold Coast City Plan Version 8* commencing on 15 December 2020 ('the City Plan').



Figure Title: Figure 1.1 Site Location		
Project Name: 2 Karingal Drive, Pimpama		
Project No: 20024-1	Client: Brian Johnston	
Date: February 2021	Revision: 0	Approved: LG

ELEMENT ECOLOGY

0 37.5 75 150 225

Metres

1: 5,000 Scale @ A4
GDA 94, MGA 94, Zone 56

N

Source:
Aerial photography: Nearmap 2020
Cadastral boundaries: Queensland Government 2020

Disclaimer:
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2 Proposed Development

The proposed development consists of a Material Change of Use application for a Community Title Scheme, consisting of:

- Proposed 71 dwellings.
- Internal road and car parking.
- Communal open space.
- Stormwater infrastructure.

The proposed development layout has been sensitively designed to respond to existing environmental values and constraints. Design considerations include:

- Vegetation within the proposed development footprint is non-remnant and highly modified as a result of historical land uses on the site.
- Remediation of a mapped waterway to ensure enhancement of this feature in the post-development scenario.
- Rehabilitation of the remediated waterway to improve habitat and connectivity values through the site and broader local area.

The proposed development layout has maximised the use of historically cleared and modified areas. Furthermore, restoration of heavily degraded areas will ensure ecological values are improved in the post-development scenario. In order to counterbalance significant residual impacts to these matters, the proposed development will result in the delivery of environmental offsets for State Government Koala Habitat Areas, which will ensure that a positive contribution is made to the city's biodiversity values and ecological functions.

A copy of the proposed development layout is provided in Figure 2.1.

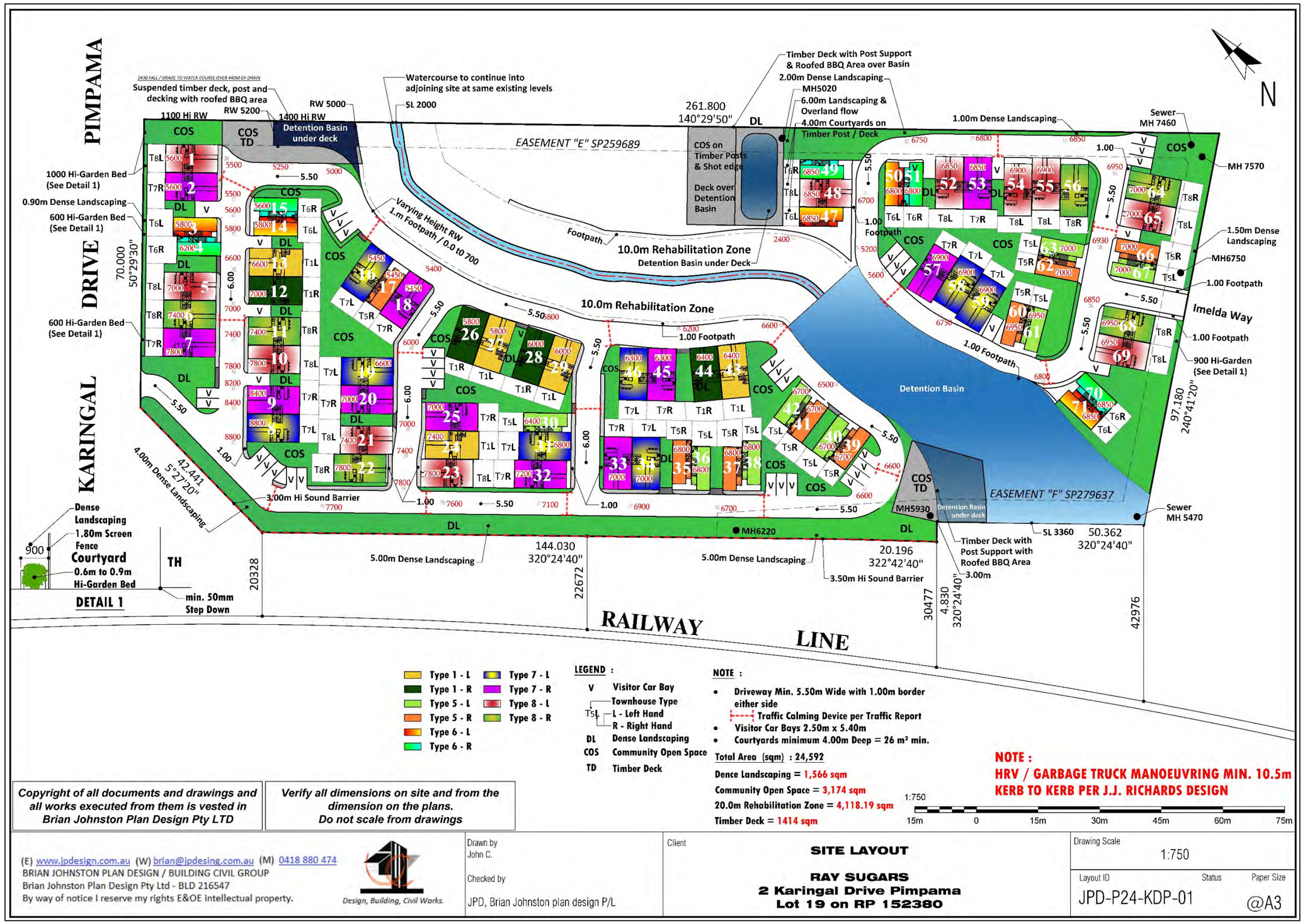


Figure 2.1 Proposed Development Layout

3 Methodology

In preparing the Ecological Assessment Report, a desktop assessment was undertaken to identify ecological values that might potentially occur on site. This information was subsequently used to inform the field assessment methodology for the site.

3.1 Desktop Assessment

In order to identify the ecological values likely to be present on site, a review of relevant Local, State and Federal Government databases and maps was undertaken.

The desktop assessment included a review of the following:

- Department of Environment and Science (DES) Wildlife Online database – 3 km search radius (DES, 2021c);
- Department of Natural Resources, Mines and Energy (DNRME) Regulated Vegetation Management Map (DNRME, 2021);
- DES Map of Great Barrier Reef Wetland Protection Areas and Map of Queensland Wetland Environmental Values (DES, 2021b);
- DES Koala Priority Area, Koala Habitat Area and identified Koala Broad-hectare Area Map (DES, 2021a);
- DES Protected Plants Flora Survey Trigger Map (DES, 2021d);
- Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) Development Assessment Mapping System (2021);
- Gold Coast City Plan Overlay Maps (City of Gold Coast Council, 2019);
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search – 3 km search radius (DAWE, 2021a); and
- Aerial photography.

3.2 Field Assessment

Field investigations were undertaken on 14 January 2021 and included flora and fauna surveys. Weather during the field assessment was sunny and the temperature was typical of summer climatic conditions for south-east Queensland.

The field assessment incorporated the following survey techniques:

- Vegetation survey;
- Diurnal bird survey;
- Amphibian aural point survey;
- Opportunistic observations and targeted searches.

These survey techniques are discussed in further detail in the following sections. Survey effort for the site is depicted on Figure 3.1.



Figure Title: Figure 3.1 Field Assessment Survey Effort

Project Name: 2 Karingal Drive, Pimpama

Project No:	Client:	
20024-1	Brian Johnston	
Date:	Revision:	Approved:
February 2021	0	LG

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0 5 10 20 30
Metres

1: 1,250 Scale @ A4
GDA 94, MGA 94, Zone 56

N

Source:
Aerial photography: Nearmap 2020
Cadastral boundaries: Queensland Government 2020

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3.2.1 Vegetation Survey

The vegetation community assessment was undertaken using a methodology consistent with the Queensland Herbarium process for the identification and mapping of Regional Ecosystems in Queensland (Neldner *et al*., 2019).

The survey methodology incorporated an initial site reconnaissance to ground-truth the results of the desktop assessment and identify the type, location and extent of vegetation communities within the site. Subsequent to the initial site reconnaissance, the vegetation community assessment methodology incorporated a minor divergence from the sampling methods described in Neldner *et al.* (2019).

In particular, no tertiary or quaternary surveys were undertaken and the vegetation within and surrounding the proposed development footprint has been described based on general observations of structure and floristics. This is because:

- A number of historical clearing events and modifications have occurred within the vegetation community on site (e.g. construction of easements, tracks and dams).
- The community is heterogeneous and there are no locations in which a vegetation assessment site could provide a representative sample of vegetation that is present.

Notwithstanding the minor changes to the community assessment methodology, the vegetation on site was assessed for conformance to remnant and regional ecosystem criteria in accordance with Neldner *et al*. (2019).

All vascular flora detected during the vegetation community assessment was recorded and incorporated into a species inventory for the survey area.

3.2.2 Diurnal Bird Survey

Four (4) diurnal bird surveys were undertaken using timed surveys, with survey effort consisting of a minimum of five (5) minutes of active listening at each timed point survey location (Figure 3.1). Bird species were identified through either visual or vocal recognition.

3.2.3 Amphibian Aural Point Survey

Four (4) diurnal amphibian aural point surveys were undertaken in association with the mapped waterways on site (Figure 3.1). This survey consisted of five (5) minutes of active listening for amphibian vocalisations at a fixed point. At the time of field investigations, the dams were holding water.

3.2.4 Opportunistic Observations and Targeted Searches

Opportunistic observations of flora and fauna were recorded for the duration of the survey. Additionally, targeted searches were undertaken throughout the site with a particular focus on threatened flora and fauna identified during the desktop assessment. For targeted searches, survey effort was focused toward ecological features that were considered to be of potential habitat value to threatened species.

As *Phascolarctos cinereus* (koala) is known to occur in the broader local area, targeted searches for this species were conducted and concentrated within the State Government mapping for Koala habitat areas (core). This involved searching a 1 m radius at the base of a selection of non-juvenile koala habitat trees with a circumference greater than 31.5 cm. Survey effort during the field assessment consisted of a minimum of one (1) person hour.

Opportunistic observations and targeted searches involved recording all direct observations of flora and fauna species, as well as any inferential evidence of fauna utilisation. Inferential evidence includes all scats, tracks, scratches, pellets, diggings, shed skins, nests and dreys.

All fauna and vascular flora detected during the opportunistic observations and targeted searches were recorded and incorporated into a species inventory for the survey area.

3.2.5 Voucher Specimen and Sample Protocol

The field investigation followed defined voucher specimen and sample protocols for flora, as well as fauna trace evidence. These protocols are outlined below.

Where any flora species are not able to be conclusively identified in the field, voucher specimens are collected and preserved for post-survey identification by suitably qualified and experienced botanists. All flora voucher specimens are collected and preserved in accordance with the methodology described in *Collecting and preserving plant specimens, a manual* (Queensland Herbarium, 2016).

Unless otherwise specified, any fauna trace evidence (i.e. scats and pellets) suspected of being derived from a threatened or near threatened species is collected and forwarded to a specialist in trace analysis for verification.

3.2.6 Field Survey Limitations

Numerous species of flora occur throughout the Gold Coast Local Government Area which may only be detectable during their flowering or fruiting period. There may be species of this nature which are present within the site, for which neither the flowering nor fruiting period coincided with the field investigations. Therefore, whilst the flora species recorded during the field investigations are representative of the survey period, they may not constitute a comprehensive inventory of flora species that occur within the site.

The fauna survey results presented in this report incorporate those species which were present and detectable within the survey area during the field investigations, or identifiable from inferential evidence. There may be fauna species that occasionally utilise habitat present at the site, but which were not detected during the current survey owing to their mobility and the influence of temporally variable ecological factors (e.g. specific flowering periods). Additionally, there may be fauna species which utilise habitat within the site that are cryptic in nature or for which detection can only be realised by specialised or intensive fauna survey techniques which were not used during the field investigations.

4 Desktop Assessment

A summary of the maps and databases applicable to the site is provided in Table 4.1. The following sections provide an overview the environmental values identified as potentially occurring.

Table 4.1 Summary of Desktop Assessment Results

Database Search	Search Results	Applicable
LOCAL		
City Plan Environmental Significance – Biodiversity Areas Overlay Map	No Biodiversity Areas are mapped on site.	No
City Plan Environmental Significance – Priority Species Overlay Map	One (1) Priority Species category is mapped on site – Koala Habitat Areas which is superseded by the *Planning Regulation 2017* Koala Provisions.	No
City Plan Environmental Significance – Vegetation Management Overlay Map	One (1) Vegetation Management overlay category is mapped on site.	**Yes**
City Plan Environmental Significance – Wetlands and Waterways Overlay Map	No Wetland categories and two (2) Waterway categories are mapped on site.	**Yes**
STATE		
Regulated Vegetation Management Map	Category B regulated vegetation is mapped on site.	**Yes**
Protected Plants Flora Survey Trigger Map	The site is partly mapped in the High Risk Area.	**Yes**
Map of Great Barrier Reef Wetland Protection Areas	The site is not located within: • Wetland in a wetland protection area; or • Great Barrier Reef wetland protection area.	No
Map of Queensland Wetland Environmental Values	The site is not located within: • High ecological values waters management intent; or • Wetlands assessed under section 7.	No
Fish Habitat Areas	The site is not located within any: • Fish habitat management areas; • Tidal waterways; • Queensland waterways for waterway barrier works.	No
Planning Regulation 2017 Koala Provisions	Koala Habitat Areas (Core) are mapped on site. However, the site is not located within a Koala Priority Area.	**Yes**
Wildlife Online Database	Three (3) threatened flora and 12 threatened fauna species listed under the *Nature Conservation Act 1992* have previously been recorded within a 3 km radius of the site. Additionally, seven (7) special least concern fauna have also been recorded within the search area.	**Yes**
FEDERAL		
EPBC Act Protected Matters Search	Two (2) Threatened Ecological Communities, 52 threatened species, 17 migratory species, 24 marine species and one (1) Wetland of International Importance listed under the EPBC Act have been identified as potentially occurring within a 3 km radius of the site.	**Yes**

4.1 Vegetation Communities

The DNRME Regulated Vegetation Management Map identifies that two (2) very small areas are characterised as Category B on the site (Figure 4.1; Appendix B). This vegetation is mapped as Regional Ecosystem (RE) 12.3.11 and 12.11.24, which are listed as Of Concern and Least Concern respectively under the *Vegetation Management Act 1999* (VM Act). The remainder of the site is mapped as a Category X area in which vegetation is not regulated under the VM Act. A description of the Regional Ecosystems mapped on site are provided in Table 4.2.

According to the City Plan Environmental Significance – Vegetation Management Overlay Map, General Priority Vegetation is mapped on the site (Figure 4.2; Appendix A).

In addition to the vegetation communities mapped on site at a State and Local Government level, the EPBC Act Protected Matters Search identified that two (2) Threatened Ecological Communities (TECs) have the potential to occur on site – the Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland TEC, and the Lowland Rainforest of Subtropical Australia TEC (Appendix C). A description of these TECs is provided in Table 4.3.

Table 4.2 Mapped Regional Ecosystem Description

Regional Ecosystem	Long Description	VM Act Status
RE 12.3.11 *Eucalyptus tereticornis* +/- *Eucalyptus siderophloia*, *Corymbia intermedia* open forest on alluvial plains usually near coast	*Eucalyptus tereticornis* +/- *E. siderophloia* and *Corymbia intermedia* open forest to woodland. *Corymbia tessellaris*, *Lophostemon suaveolens* and *Melaleuca quinquenervia* frequently occur and often form a low tree layer. Other species present in scattered patches or low densities include *Angophora leiocarpa*, *E. exserta*, *E. grandis*, *C. trachyphloia*, *C. citriodora* subsp. *variegata*, *E. latisinensis*, *E. tindaliae*, *E. racemosa* and *Melaleuca sieberi*. *E. seeana* may be present south of Landsborough and Livistona decora may occur in scattered patches or low densities in the Glenbar SF and Wongi SF areas. Occurs on Quaternary alluvial plains and drainage lines along coastal lowlands. Rainfall usually exceeds 1000mm/y. (BVG1M: 16c)	Of Concern
RE 12.11.24 *Eucalyptus carnea*, *E. tindaliae*, *Corymbia intermedia* +/- *E. siderophloia* or *E. crebra* woodland on metamorphics +/- interbedded volcanics	*Eucalyptus carnea*, *E. tindaliae*, *Corymbia intermedia* woodland +/- *E. crebra* or *E. siderophloia*, *Eucalyptus resinifera*, *Eucalyptus major*, *E. helidonica*, *Angophora woodsiana*, *C. trachyphloia*, *E. microcorys*, *Corymbia citriodora* subsp. *variegata*, *C. henryi*. Occurs on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics usually at altitudes <300 metres. (BVG1M: 9g)	Least Concern

Table Reference: Queensland Herbarium (2019) Regional Ecosystem Description Database (REDD) Version 11.1.

Table 4.3 Potentially Occurring TEC Descriptions

Threatened Ecological Community	Description	EPBC Act Status
Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community	The Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland TEC occurs along the coast between Curtis Island (south-east Queensland) and Bermagui (southern New South Wales) (DAWE, 2021b). This TEC is found in on soils derived from unconsolidated sediments, including alluvium, typically hydrosols (grey-black clay-loam and/or sandy loam soils) and sometimes organosols (peaty soils) (DAWE, 2021b). The canopy is dominated by *Casuarina glauca* with an understorey of rushes, sedges, forbs and grasses (DAWE, 2021b). *Casuarina glauca* may be found as a co-dominant species with *Melaleuca* and *Eucalyptus* species (DAWE, 2021b). Other sub-canopy species include *Syzygium smithii* (lilly pilly), *Alphitonia excelsa* (soap tree), *Melaleuca salicina* (white bottlebrush), *Cupaniopsis anacardioides* (tuckeroo) and *Glochidion ferdinandi* (cheese tree) can form a sub-canopy (DAWE, 2021b).	Endangered
Lowland Rainforest of Subtropical Australia	This TEC is known to occur between Maryborough in Queensland to the Clarence River near Grafton in New South Wales (DAWE, 2021c). It occurs on basalt and alluvial soils and is occasionally found on enriched rhyolitic soils and basaltically enriched metasediments (DAWE, 2021c). Vegetation structure within the TEC is generally moderately tall to tall (20-30 m) closed forest with a canopy cover of at least 70% (DAWE, 2021c). Multiple canopy layers are often present, and patches of the community typically have high species richness with at least 30 woody species (DAWE, 2021c). The TEC is characterised by the following Regional Ecosystems: 12.3.1, 12.5.13, 12.8.3, 12.8.4, 12.8.13, 12.11.1, 12.11.10, 12.12.1 and 12.12.16. Species from the genera *Eucalyptus*, *Melaleuca* and *Casuarina* generally occur in low abundances within this TEC (DAWE, 2021c).	Critically Endangered

Table Reference: Department of Agriculture, Water and the Environment (2021b, 2021c).

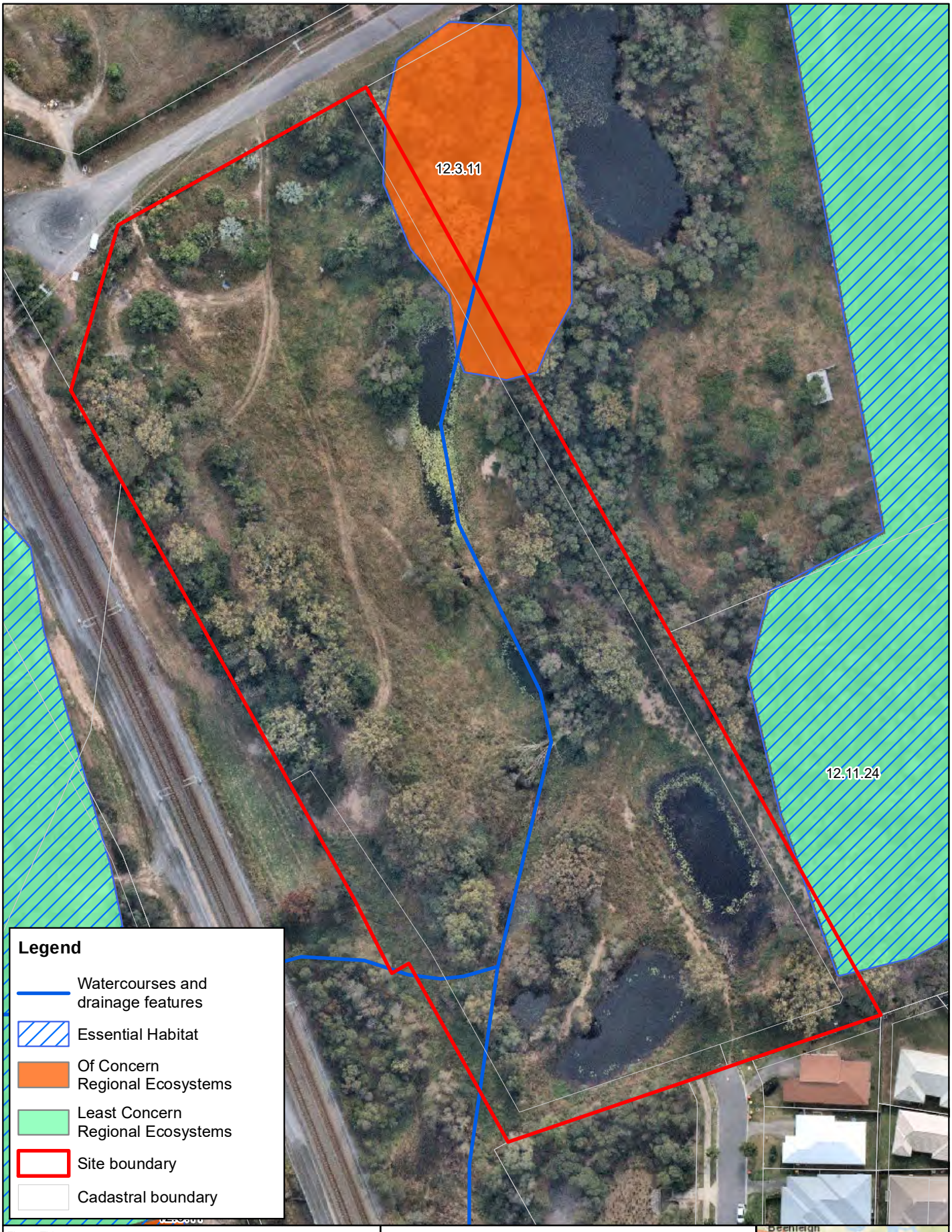


Figure Title: Figure 4.1 Regulated Vegetation

Project Name: 2 Karingal Drive, Pimpama

Project No:	Client:	
20024-1	Brian Johnston	
Date:	Revision:	Approved:
February 2021	0	LG

ELEMENT ECOLOGY

0 5 10 20 30
Metres

1: 1,250 Scale @ A4
GDA 94, MGA 94, Zone 56

N

Source:
Aerial photography: Nearmap 2020
Cadastral boundaries: Queensland Government 2020
Regulated Vegetation data: Queensland Government 2019

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Figure Title:
Figure 4.2 Vegetation Management Overlay Map

Project Name:
2 Karingal Drive, Pimpama

Project No:	Client:	
20024-1	Brian Johnston	
Date:	Revision:	Approved:
February 2021	0	LG

ELEMENT ECOLOGY

0 5 10 20 30
Metres

1: 1,250 Scale @ A4
GDA 94, MGA 94, Zone 56

N

Source:
Aerial photography: Nearmap 2020
Cadastral boundaries: Queensland Government 2020
Environmental Significance – vegetation management:
Council of the City of Gold Coast 2016

Disclaimer:
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4.2 Flora

The Wildlife Online database identified three (3) species of flora listed as threatened or near threatened under the *Nature Conservation (Wildlife) Regulation 2006* (NC Reg) within 3 km of the site (Appendix B). Additionally, the site is partly mapped within the High Risk Area on the DES Protected Plants Flora Survey Trigger Map, indicating that threatened flora species and/or their habitat may be present (Figure 4.3; Appendix B). The EPBC Act Protected Matters Search identifies that 24 flora species protected under the EPBC Act have the potential to occur on site (Appendix C). In total, the desktop assessment identified 26 significant flora species as potentially occurring on site (Table 4.4).

Table 4.4 Significant Flora Species Potentially Occurring On Site

Scientific Name	Common Name	Status[1]	Database[2]	
			WO	PMST
Acacia attenuata	-	V, V#		✓
Acronychia littoralis	scented acronychia	E, E#		✓
Arthraxon hispidus	hairy-joint grass	V, V#		✓
Baloghia marmorata	marbled balogia	V, V#		✓
Bosistoa transversa	three-leaved bosistoa	V#		✓
Coleus habrophyllus	-	E, E#	✓	
Corchorus cunninghamii	native jute	E, E#		✓
Cryptocarya foetida	stinking cryptocarya	V, V#		✓
Cryptostylis hunteriana	leafless tongue-orchid	V#		✓
Cupaniopsis shirleyana	wedge-leaf tuckeroo	V, V#		✓
Endiandra floydii	Floyd's walnut	E, E#		✓
Lepidium peregrinum	wandering pepper-cress	E#		✓
Macadamia integrifolia	macadamia nut	V, V#	✓	✓
Macadamia tetraphylla	macadamia nut	V, V#		✓
Marsdenia longiloba	clear milkvine	V, V#		✓
Persicaria elatior	knotweed	V, V#		✓
Phaius australis	lesser swamp-orchid	E, E#		✓
Planchonella eerwah	shiny-leaved condoo	E#		✓
Plectranthus habrophyllus	-	E#		✓
Rhodamnia rubescens	scrub stringybark	CR		✓
Rhodomyrtus psidioides	native guava	CR, CE#		✓
Samadera bidwillii	quassia	V, V#		✓
Sophora fraseri	-	V#		✓
Syzygium moorei	durobby	V, V#	✓	
Thesium australe	Austral toadflax	V, V#		✓
Tylophora woollsii		E#		✓

[1]Status:
Queensland *Nature Conservation (Plants) Regulation 2020*: CR = Critically Endangered, E = Endangered, V = Vulnerable, NT = Near Threatened.
Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*: CE# = Critically Endangered, E# = Endangered, V# = Vulnerable, CD# = Conservation Dependent, I# = Introduced Species.
[2]Database:
WO = Wildlife Online; PMST = Protected Matters Search Tool.



Figure Title: Figure 4.3 Protected Plants

Project Name: 2 Karingal Drive, Pimpama

Project No: 20024-1

Client: Brian Johnston

Date: February 2021

Revision: 0

Approved: LG

ELEMENT ECOLOGY

0 5 10 20 30

Metres

1: 1,250 Scale @ A4
GDA 94, MGA 94, Zone 56

N

Source:
Aerial photography: Nearmap 2020
Cadastral boundaries: Queensland Government 2020
Protected Plants data: Queensland Government 2019

Disclaimer:
All reasonable care has been taken to ensure that the information displayed on this map is correct and current. However, Element Ecology Pty Ltd does not provide a guarantee that this information is free of error or omission. It is the responsibility of the end user to confirm the accuracy of all information prior to use.



4.3 Fauna

The Wildlife Online database search identified that 12 threatened or near threatened, and seven (7) special least concern fauna species listed under the NC Reg have been recorded within 3 km of the site (Appendix B).

Furthermore, the EPBC Act Protected Matters Search identifies that 28 threatened fauna species, 17 migratory species and 24 marine species protected under the EPBC Act also have the potential to occur on site (Appendix C). In total, the desktop assessment identified 35 significant fauna species as potentially occurring on site (Table 4.5).

State Government mapping identifies Koala Habitat Areas (Core) on the site (Figure 4.4; Appendix B). The DNRME Regulated Vegetation Management Map also identifies Essential Habitat for *Phascolarctos cinereus* (koala) on and within 1.1 km of the site (Figure 4.1; Appendix B).

Table 4.5 Significant Fauna Species Potentially Occurring On Site

Scientific Name	Common Name	Status[1]	Database[2]	
			WO	PMST
AMPHIBIANS				
Adelotus brevis	tusked frog	V	✓	
Crinia tinnula	wallum froglet	V	✓	
Mixophyes fleayi	Fleay's frog	E, E#		✓
REPTILES				
Coeranoscincus reticulatus	three-toed snake-tooth skink	V#		✓
Delma torquata	collared delma	V, V#		✓
BIRDS				
Anthochaera phrygia	regent honeyeater	E, CE#		✓
Botaurus poiciloptilus	Australasian bittern	E, E#		✓
Calidris canutus	red knot	E, E#		✓
Calidris ferruginea	curlew sandpiper	E, CE#		✓
Calyptorhynchus lathami	glossy black cockatoo	V	✓	
Calyptorhynchus lathami lathami	glossy black-cockatoo (eastern)	V	✓	
Erythrotriorchis radiatus	red goshawk	E, V#	✓	✓
Esacus magnirostris	beach stone-curlew	V	✓	
Falco hypoleucos	grey falcon	V		✓
Geophaps scripta scripta	squatter pigeon (southern)	V, V#		✓
Grantiella picta	painted honeyeater	V#		✓
Hirundapus caudacutus	white-throated needletail	V, V#	✓	✓
Lathamus discolor	swift parrot	E, CE#		✓
Limosa lapponica baueri	Western Alaskan bar-tailed godwit	V, V#	✓	✓
Ninox strenua	powerful owl	V	✓	
Numenius madagascariensis	eastern curlew	E, CE#	✓	✓
Rostratula australis	Australian painted snipe	E, E#		✓
Sternula nereis nereis	Australian fairy tern	V#		✓
Thinornis cucullatus cucullatus	hooded plover (eastern)	V#		✓

Scientific Name	Common Name	Status[1]	Database[2]	
			WO	PMST
Turnix melanogaster	black-breasted button-quail	V, V#		✓
MAMMALS				
Chalinolobus dwyeri	large-eared pied bat	V, V#		✓
Dasyurus maculatus maculatus	spotted-tailed quoll	V, E#		✓
Petauroides volans	greater glider	V, V#		✓
Petauroides volans volans	southern greater glider	V, V#	✓	
Phascolarctos cinereus	koala	V, V#	✓	✓
Potorous tridactylus tridactylus	long-nosed potoroo	V, V#		✓
Pseudomys novaehollandiae	New Holland mouse	V, V#		✓
Pteropus poliocephalus	grey-headed flying-fox	V#	✓	✓
Xeromys myoides	water mouse	V, V#		✓
INSECTS				
Argynnis hyperbius inconstans	Australian fritillary	E, CE#		✓

[1]Status:
Queensland *Nature Conservation (Animals) Regulation 2020*: CR = Critically Endangered, E = Endangered, V = Vulnerable, NT = Near Threatened.
Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*: CE# = Critically Endangered, E# = Endangered, V# = Vulnerable, CD# = Conservation Dependent, I# = Introduced Species.
[2]Database:
WO = Wildlife Online; PMST = Protected Matters Search Tool.

4.4 Waterways and Wetlands

According to the City Plan Environmental Significance – Wetlands and Waterways Overlay Map, waterways and buffer areas are mapped on site (Figure 4.5; Appendix A). State Government mapping identifies a Queensland waterway for waterway barrier works (moderate) as traversing the site in a west-east direction (Appendix B).

The EPBC Act Protected Matters Search also identifies that Moreton Bay – a Wetland of International Importance (Ramsar) occurs within 10 km of the site (Appendix C).

No other waterways or wetlands are mapped on site on any other of the Local, State or Federal Government environmental maps and databases reviewed.

4.5 Landscape Context

According to the City Plan Environmental Significance – Biodiversity Areas Overlay Map, the site is not located within a Biodiversity Area (Appendix A). This indicates that the site has not been identified as a strategically important ecological corridor or habitat area within the city.

A review of aerial photography identifies that the site is primarily characterised by open grassed areas and scattered vegetation. Ecological connectivity is restricted by urban development to the north and east, and Gold Coast to Brisbane trainline to the west. Some linear connectivity occurs between the site and an open space area situated to the south of the site (Lot 902 on SP259688). However, owing to the presence of significant and permanent landscape barriers in the landscape (including the Pacific Motorway, Old Pacific Highway and trainline), the site supports very marginal habitat for disturbance-tolerant and highly mobile species. Dixon Reserve is situated 600 m to the north-east of the site with other undeveloped bushland areas earmarked for development (as part of the Coomera Town Centre) located 550 m to the south.



Figure Title: Figure 4.4 Koala Habitat Areas Map

Project Name: 2 Karingal Drive, Pimpama

Project No: 20024-1

Client: Brian Johnston

Date: February 2021

Revision: 0

Approved: LG

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Metres

1: 1,250 Scale @ A4
GDA 94, MGA 94, Zone 56

N

Source:
Aerial photography: Nearmap 2020
Cadastral boundaries: Queensland Government 2020
MSES Koala habitat areas - core: Queensland Government 2018

Disclaimer:
All reasonable care has been taken to ensure that the information displayed on this map is correct and current. However, Element Ecology Pty Ltd does not provide a guarantee that this information is free of error or omission. It is the responsibility of the end user to confirm the accuracy of all information prior to use.





Figure Title:
Figure 4.5 Wetlands and Waterways Overlay Map

Project Name:
2 Karingal Drive, Pimpama

Project No:	Client:	
20024-1	Brian Johnston	
Date:	Revision:	Approved:
February 2021	0	LG

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0 5 10 20 30
Metres

1: 1,250 Scale @ A4
GDA 94, MGA 94, Zone 56

N

Source:
Aerial photography: Nearmap 2020
Cadastral boundaries: Queensland Government 2020
Environmental Significance – wetlands and watercourse: Council of the City of Gold Coast 2016

Disclaimer:
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5 Field Assessment

The field assessment for the Ecological Assessment Report was undertaken on 14 January 2021. The survey ground-truthed ecological values identified on site as part of the desktop assessment.

5.1 Vegetation Communities

One (1) vegetation community was identified on site:

- Vegetation Community A: Non-remnant vegetation.

The location of the community is shown on Figure 5.1, and a description of the community is provided in the following sections.

5.1.1 Vegetation Community A: Non-remnant Vegetation

Vegetation Community A consists of existing cleared and highly modified areas. The community occurs throughout the entire site (Figure 5.1). Key summary points relating to this community are provided below.

- The field investigations confirmed that the vegetation is correctly mapped as Category X (non-remnant) vegetation.
- The vegetation does not conform to the requirements for remnant status owing to height and/or cover throughout the community's extent.
- The vegetation is not analogous to any communities that are significant under Local, State or Federal government policy or regulation.
- The entire community is an extensively disturbed and highly modified environment containing easements, tracks and several constructed dams.
- No significant flora species were recorded within the vegetation community (i.e. 'in the wild').
- The constructed dams are located along the waterway alignment – these features will be remediated and rehabilitated in the post-development scenario.

Representative photographs of the vegetation community are provided below in Figures 5.2-5.7 and a detailed description of this vegetation community is provided in the following sections.

5.1.1.1 Vegetation Description

Vegetation structure and floristics are heterogeneous throughout the community, which has been heavily degraded by historical disturbances and weed invasion. Although there is – in some areas – a canopy layer consisting of irregularly sized and distributed patches and copses of native and exotic trees, these are absent throughout much of the community. Overall, the vegetation is characterised as a non-native grassland with a mixture of native canopy trees and exotic landscape trees. Common species include: *Eucalyptus tereticornis* (forest red gum), *Eucalyptus siderophloia* (grey ironbark), *Corymbia intermedia* (pink bloodwood), *Lophostemon confertus* (brush box), *Lophostemon suaveolens* (swamp box), *Elaeocarpus grandis* (blue quandong), **Syagrus romanzoffiana* (cocos palm) and **Roystonea regia* (Cuban royal palm).

There are no consistent heights or cover to define a sub-canopy or low tree layer. Similarly, the shrub layer does not exhibit any consistency in terms of height or cover. Consequently, the vegetation that would normally occur in these strata in a functional native community has been broadly encompassed within the term 'understorey'.

Common understorey species include: **Archontophoenix alexandrae* (Alexander palm), *Acacia concurrens* (late-flowering hickory), *Acacia disparrima* (hickory wattle), *Glochidion ferdinandi* var. *ferdinandi* (cheese tree), **Lantana camara* (lantana), **Senna pendula* var. *glabrata* (Easter cassia), **Delonix regia* (poinciana), **Schefflera actinophylla* (umbrella tree), **Solanum torvum* (devil's fig) and **Tipuana tipu* (tipuana) and *Melaleuca quinquenervia* (broad-leaved paperbark). Vine species were noted to be smothering and causing tree failure along the mapped waterway.

The ground layer varies throughout the community in terms of height, cover and floristic composition. However, common species include: **Setaria sphacelata* (South African pigeon grass) – which is dominant throughout much of the site – **Asparagus aethiopicus* cv. *Sprengeri* (asparagus fern), **Melinis minutiflora* (molasses grass), **Megathyrsus maximus* (Guinea grass), **Melinis repens* (red natal grass), **Monstera deliciosa* (monstera). *Typha orientalis* (cumbungi) and *Sphagneticola trilobata* (Singapore daisy) occurs more frequently in proximity to dams and low-lying areas opposite the trainline.

5.1.1.2 Disturbance

Disturbance throughout the community primarily consists of historical clearing, residual horticultural infrastructure and weed incursion. The community includes various infrastructure (e.g. fencing, dams, tracks and easements). Historical disturbances and ongoing maintenance have also resulted in a community that exhibits uneven vertical structure and age classes throughout the canopy.

In addition to the being significantly degraded – i.e. compared to a functional native community – as a result of structural disturbances and highly open and exposed character, the community is heavily degraded by environmental weeds. In particular, **Setaria sphacelata* (South African pigeon grass) is abundant throughout much of the community, forming a dense monoculture ground layer across large parts of the site.

The impact of the weed incursions on ecological resilience was noted to be significant. Although there are isolated tracts and patches of juvenile to semi-mature native understorey species (interspersed with woody environmental weeds), the spatial extent and severity of existing weed infestations has excluded natural regenerative processes throughout much of the site. From the density, extent, dominance and abundance of environmental weeds it is expected a native seedbank is absent throughout the majority of the site – including areas along the mapped waterway. Based on this finding, there is only considered to be a low likelihood of success for rehabilitation works relying on the existing soil profile. This is owing to the relative abundance/dominance of environmental weeds within the seedbank, which would continue to out-compete native recruitment/plantings over the longer term without significant and prolonged management input.

5.1.1.3 Classification and Conservation Status

The DNRME Regulated Vegetation Management Map identified Vegetation Community A as mostly Category X (non-remnant) with a very small area of Category B (remnant) in the north-eastern corner of the site. The field survey has confirmed that the entire vegetation community is non-remnant. In particular, the extent of mapped remnant vegetation in the north-eastern corner consists of canopy overhang from trees that are located on the adjacent property to the north (Figure 5.7). So, although the mapped remnant area has been identified on the basis of canopy projection (i.e. from the trees external to the site), there are no canopy trees within the site that are contained within the mapped remnant area.

Based on the field-validated composition of the community, Vegetation Community A is not analogous to any communities that are significant under Local, State or Federal Government regulations or policy (Table 5.1).

Table 5.1 Classification and Conservation Status of Vegetation Community A

Level of Government	Classification	Conservation Status
Local Government	Urba (urban woodland)	n/a
State Government	Category X (non-remnant)	n/a
Federal Government	n/a	n/a

*Local Government classification is consistent with the classification system contained in Ryan *et al*. (2003).



Figure Title: Figure 5.1 Vegetation Communities

Project Name: 2 Karingal Drive, Pimpama

Project No: 20024-1

Client: Brian Johnston

Date: February 2021

Revision: 0

Approved: LG

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0 5 10 20 30

Metres

1: 1,250 Scale @ A4
GDA 94, MGA 94, Zone 56

N



Source:
Aerial photography: Nearmap 2019
Cadastral boundaries: Queensland Government 2019

Disclaimer:
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Notes: Image shows scattered trees and palms over long grass in the northern extents of the site. The community is correctly classified as non-remnant.

Figure 5.2 VC A: Non-remnant Vegetation



Notes: Evidence of historical clearing events, modifications and land uses were noted throughout the site, including internal fencing as shown in the image above.

Figure 5.3 VC A: Non-remnant Vegetation



Notes: Image shows heterogeneity of vegetation in the northern extents of the site and evidence of rubbish and debris scattered throughout the ground layer.

Figure 5.4 VC A: Non-remnant Vegetation



Notes: Biomass consists primarily of invasive grass species, particularly *Setaria sphacelata (South African pigeon grass), **Megathyrsus maximus* (Guinea grass) and **Melinis minutiflora* (molasses grass).

Figure 5.5 VC A: Non-remnant Vegetation



Notes: The site has been subject to historical clearing events as evidence in the extent of open grassed areas that are dominated by invasive weeds. Vines have smothered and caused tree failure in the mapped waterway.

Figure 5.6 VC A: Non-remnant Vegetation



Notes: Mapped areas of remnant vegetation have been historically cleared to construct an easement for underground services that are located immediately adjacent to the site boundary (shown as yellow dashed line).

Figure 5.7 VC A: Non-remnant Vegetation

5.2 Flora

A total of 126 flora species were recorded during the survey, consisting of 62 native and 64 non-native species (Appendix D). Six (6) of the 62 native species do not occur naturally on the Gold Coast – of these, two (2) species are recognised environmental weeds in south-east Queensland.

5.2.1 Significant Flora

For the purposes of this report, significant flora species are defined as:

- Species listed as Critically Endangered, Endangered or Vulnerable under the EPBC Act (threatened species);
- Species listed as Endangered, Vulnerable or Near Threatened under the NC Reg (threatened or near threatened species); and
- Species listed as City Wide Significant (CWS) species under the Gold Coast City Plan Schedule 6.7 Ecological Site Assessments, Appendix 4: Significant Species.

5.2.1.1 Threatened or Near Threatened Species

No flora species that are listed as threatened or near threatened under the NC Reg or EPBC Act were detected during the field survey.

5.2.1.2 City Wide Significant Species

One (1) City Wide Significant flora species was detected during the field survey – *Brachychiton bidwillii* (broad-leaved bottle tree). This species is known to naturally occur in moist eucalypt forest, on slopes such as Mt Tamborine and Buderim and in the Boonah district (Society for Growing Australian Plants, 2008). A review of Atlas of Living Australia also confirmed that this species has not been recorded within a 10 km radius of the site. Owing to the site having been subject to historical clearing events and extensive modifications, this species was mostly likely anthropogenically introduced to the site for horticultural purposes (i.e. amenity and landscaping).

5.2.2 Weed Species

A total of 66 weed species were identified during the survey (Table 5.2). A number of the weed species that were recorded at the site are scheduled under legislation, strategies or management documentation endorsed by Local, State or Federal Governments. These include:

- Eight (8) species scheduled under Council of the City of Gold Coast's *Biosecurity Management Plan 2019-2024*;
- Eight (8) species that are listed as restricted matters under the Queensland *Biosecurity Act 2014*;
- 40 species that are identified in the ranked list of 200 invasive naturalised plants in south-east Queensland (Batianoff and Butler, 2002); and
- Two (2) species that are weeds of national significance (WoNS).

Table 5.2 Weed Species Identified On Site

Scientific Name	Common Name	CoCGC Status[1]	Qld Status[2]	Rank[3]	Score[3]	WoNS[4]
Ageratina adenophora	crofton weed			17	4.6	
Ageratum houstonianum	blue billygoat weed			115	3.8	
Ambrosia artemisiifolia	annual ragweed	AP	3			
Archontophoenix alexandrae	Alexander palm					
Asparagus aethiopicus	ground asparagus	AP	3	23	4.5	WoNS
Aster subulatus	wild aster					
Bidens pilosa	cobbler's pegs			110	3.5	
Callisia elegans	striped inch plant			103	3.9	
Callisia fragrans	purple succulent			103	3.9	
Cecropia peltata	trumpet tree	E	2,3,4,5			
Chloris gayana	Rhodes grass			46	4.3	
Cinnamomum camphora	camphor laurel	AP	3	8	4.8	
Conyza bonariensis	flax-leaf fleabane			185	3.3	
Conyza sumatrensis	fleabane					
Corymbia torelliana	cadaghi					
Delonix regia	poinciana					
Desmodium uncinatum	silver-leaved desmodium			64	4	
Duranta erecta	duranta			96	3.6	
Dypsis lutescens	golden cane palm					
Eragrostis curvula	African lovegrass			34	4.3	
Eriobotrya japonica	loquat			197	3.1	
Eugenia uniflora	Brazilian cherry			118	3.5	
Lantana camara	lantana	AP	3	1	5	WoNS
Lepidium bonariense	Argentine peppercress					
Leucaena leucocephala	leucaena			41	4.3	
Livistona chinensis	Chinese fan palm					
Lotononis bainesii	lotononis					
Macroptilium atropurpureum	siratro			51	4.2	
Macroptilium lathyroides	phasey bean					
Macrotyloma axillare	perennial horse gram			191	3.1	
Mangifera indica	mango					
Megathyrsus maximus	Guinea grass			20	4.6	
Melinis minutiflora	molasses grass			38	4.5	
Melinis repens	red natal grass			65	4.1	
Monstera deliciosa	monstera					

Scientific Name	Common Name	CoCGC Status[1]	Qld Status[2]	Rank[3]	Score[3]	WoNS[4]
Morus alba	white mulberry			162	3.4	
Murraya paniculata	orange jessamine			139	3.6	
Neonotonia wightii	glycine			19	4.7	
Nymphaea caerulea subsp. *zanzibarensis*	blue waterlily			66	4	
Ochna serrulata	ochna			22	4.5	
Oxalis corniculata	yellow wood-sorrell					
Passiflora suberosa	corky passionflower			37	4.2	
Philodendrum bipinnatifidum	tree philodendron					
Ricinus communis	castor-oil plant			81	3.9	
Roystonea regia	Cuban royal palm					
Schefflera arboricola	dwarf umbrella tree					
Schinus terebinthifolius	broad-leaved pepper tree	AP	3	9	4.8	
Setaria sphacelata	South African pigeon grass			85	3.8	
Sida rhombifolia	Paddy's lucerne			153	3.6	
Sida spinosa	spiny sida					
Solanum chrysotrichum	giant devil's fig			135	3.6	
Solanum mauritianum	wild tobacco			61	4	
Solanum nigrum	black-berry nightshade					
Solanum seaforthianum	Brazilian nightshade			55	4	
Solanum torvum	devil's fig			93	3.9	
Sonchus oleraceus	sow thistle					
Spathodea campanulata	African tulip tree	AP	3	190	3.4	
Sphagneticola trilobata	Singapore daisy	AP	3	16	4.6	
Syagrus romanzoffiana	cocos palm			92	3.9	
Syzygium jambos	rose apple					
Tipuana tipu	tipuana			175	3.4	
Urochloa decumbens	signal grass			120	3.5	
Verbena bonariensis	purpletop					
Verbena littoralis	common verbena					
Washingtonia robusta	Mexican fan palm					
Yucca aloifolia	Spanish bayonet					

[1]CoCGC *Biosecurity Management Plan 2019-2024*: E = Eradicated, C= Contained, AP = Asset protection, AS = Advice and support, P = Prevented from establishing.
[2]Queensland *Biosecurity Act 2014*: 1 = Category 1 Restricted Matter; 2 = Category 2 Restricted Matter; 3 = Category 3 Restricted Matter; 4 = Category 4 Restricted Matter; 5 = Category 5 Restricted Matter.
[3]Batianoff and Butler (2002): Rank = rank of invasiveness out of 200; Score = invasiveness potential where 5 represents the highest risk and scores below 3 suggest that invasiveness is doubtful.
[4]Species listed as a Weed of National Significance (WoNS), as initially determined by the Commonwealth Government and supplemented by the addition of species endorsed by the Australian Weeds Committee.

5.3 Fauna

A total of 14 fauna species were identified during the field assessment, including one (1) amphibian, one (1) reptile, nine (9) birds and three (3) mammals (Appendix E). Of these, 13 species are native and one (1) is non-native. The majority of fauna species that were recorded during the field survey are common, disturbance-tolerant species that are often encountered in urban environments and disturbed bushland associated with the urban fringe.

5.3.1 Amphibians

One (1) amphibian species was recorded during the field survey – *Litoria fallax* (eastern sedgefrog). Although the dams are highly modified and disturbed by invasive weeds, these features support potential habitat for amphibians on site. It is expected that these parts of the site would provide habitat for other species, such as **Rhinella marina* (cane toad), *Litoria caerulea* (common green treefrog), *Limnodynastes peronii* (striped marshfrog) and *Crinia parinsignifera* (beeping froglet).

5.3.2 Reptiles

One (1) reptile species was recorded on site – *Lampropholis delicata* (dark-flecked garden sunskink) – a common species that is known to be capable of inhabiting urban and disturbed areas. Suitable habitat is also present for a number of common reptile species as a result of microhabitat including long grass, leaf litter and woody debris. Additional reptile species considered to potentially utilise the site include *Morelia spilota* (carpet python), *Pogona barbata* (eastern bearded dragon), and possibly other semi-aquatic species, such as turtles.

5.3.3 Birds

The nine (9) bird species identified during the field survey are generalist species that commonly occur in urban and disturbed areas. The birds most frequently recorded during surveys were *Corvus orru* (torresian crow) and *Manorina melanocephala* (noisy miner). A range of native and non-native flora species provide foraging resources for bird species on site, including *Eucalyptus*, *Lophostemon* and *Corymbia* species, **Syagrus romanzoffiana* (cocos palm) and **Schefflera actinophylla* (umbrella tree). Several arboreal termitariums with hollows were also observed during surveys (i.e. typical of kookaburra and kingfisher nesting).

5.3.4 Mammals

One (1) mammal species was directly observed during the field survey – **Canis familiaris* (domestic dog), with two (2) native mammals recorded through inferential evidence (i.e. scats) (i.e. possum and macropod). Isolated trees and scattered patches of vegetation support marginal habitat opportunities for arboreal fauna on the site. Balance areas are largely disturbed by historical land uses and invasive weeds, with open grassed areas supporting potential habitat for ground-dwelling mammals, such as kangaroos on a more transitory basis.

Flowering native vegetation on site (e.g. *Eucalyptus* species) also have the potential to provide foraging habitat as part of a larger home range for flying-foxes (such as *Pteropus alecto* [black flying-fox] and *Pteropus poliocephalus* [grey-headed flying-fox]).

5.3.5 Significant Fauna

Although targeted searches were conducted for significant fauna species which may potentially use the site, no threatened or near threatened fauna species listed under the NC Reg or the EPBC Act were detected during the field survey. Additionally, no species classified as City Wide Significant (CWS) fauna species within the Gold Coast Local Government Area were observed.

Potential habitat for four (4) species listed under the NC Reg and/or the EPBC Act was observed on site. This included:

- Non-juvenile koala habitat trees for *Phascolarctos cinereus* (koala) (i.e. *Eucalyptus*, *Corymbia*, *Lophostemon* and *Melaleuca* tree species).
- A very low number of potential feed trees for *Calyptorhynchus lathami* (glossy black-cockatoo) (i.e. *Allocasuarina* species).
- Potential foraging resources for *Pteropus poliocephalus* (grey-headed flying-fox) (e.g. flowering *Eucalyptus* species).
- Limited potential habitat for *Adelotus brevis* (tusked frog) (i.e. constructed dams).

The habitat for these species is compromised owing to the:

- Edge effects associated with historical clearing events and biomass consisting primarily of invasive weeds (i.e. suppression of native seeds); and
- Significant landscape barriers in the surrounding area (i.e. urban development and Gold Coast to Brisbane trainline).

Targeted searches for *Adelotus brevis* (tusked frog), *Calyptorhynchus lathami* (glossy-black cockatoo) and *Phascolarctos cinereus* (koala) did not confirm these species to be utilising the site at time of surveys. No *Pteropus poliocephalus* (grey-headed flying-fox) roosts were observed. Therefore, the results of the field survey suggest that the site does not provide core or otherwise important habitat for any of these species.

5.4 Ecological Function

Ecological function associated with the site has been assessed with regard to habitat and connectivity values. The results of this assessment are presented in the sections below.

5.4.1 Core Habitat

The field assessment identified that the site provides habitat for common flora and common and significant fauna. The results of the habitat assessment are provided below.

5.4.1.1 Flora

The site provides habitat values for common flora species and one (1) species that meets the definition of City Wide Significant under the Gold Coast City Plan. The site does not support significant populations of the native species observed, nor does it provide specialised habitat or an extension of geographic range for any of these species. Consequently, the site is not considered to provide core habitat for flora.

5.4.1.2 Fauna

The site contains suitable foraging and shelter resources for *Phascolarctos cinereus* (koala). Although this species was not recorded during field surveys, the site may support transient opportunities for this species as part of a larger home range. The proposed development layout incorporates the remediation and rehabilitation of a waterway in the post-development scenario. It is anticipated that these works will enhance koala habitat and koala connectivity values through the site.

Limited potential foraging resources for *Calyptorhynchus lathami* (glossy black-cockatoo) occur on site in very low numbers of *Allocasuarina littoralis* (black she-oak) and *Casuarina glauca* (swamp oak). No evidence of this species (i.e. chewed feed cones) was observed during targeted searches undertaken during the field survey. Given the absence of evidence for this species, the site is not considered to represent core habitat for this species. Preferred food tree species can be incorporated into the planting palette for rehabilitation works along the waterway.

Suitable foraging habitat (e.g. flowering *Eucalyptus* species) is also present for *Pteropus poliocephalus* (grey-headed flying-fox). However, no breeding habitat was observed and based on the results of the habitat assessment, the site does not provide core or otherwise important habitat for this species, with any use of the site by the species expected to be limited to foraging on a transient basis as part of a larger home range. Rehabilitation works are expected to enhance habitat and utilisation of the site by this highly mobile species.

Several dams have been historically constructed on the site. These features may support marginal habitat opportunities for *Adelotus brevis* (tusked frog). Targeted searches did not record this species, or find any core habitat for this species on site. The remediation of constructed dams along the waterway will enhance potential habitat opportunities for this species in the post-development scenario.

The site does not provide core habitat for any common species recorded as it does not support significant populations of the species observed, nor does it provide specialised habitat or an extension of geographic range for any of these species.

Furthermore, the ability of the site to provide core habitat is compromised by:

- Historical clearing events throughout the site and modifications to build constructed dams along the mapped waterway;
- Limited important and suitable habitat features for survival and reproduction, such as breeding and roosting habitat (e.g. high diversity of native groundcover and understorey species, areas that are mostly free from weeds and introduced grasses); and
- Disturbance associated with existing residential land uses both on site and in the surrounding area.

However, the results of the field survey identified that the site provides suitable habitat resources for common native fauna species including:

- Microhabitat including long grass, leaf litter and woody debris providing shelter and breeding resources for reptiles;
- Food resources for disturbance-tolerant birds, bats and arboreal mammals associated with flowering native and exotic plant species;
- Potential nesting opportunities in mature canopy and arboreal termitariums; and
- Highly disturbed aquatic habitat and water source associated with the dams.

5.4.2 Ecological Corridors

The surrounding area is primarily characterised by a medium density residential and mixed use development, with heavily trafficked State and sub-arterial roads, Gold Coast to Brisbane trainline situated in proximity to the site. Although vegetation on site is non-remnant and highly modified, the habitat present is expected to provide a measure of a low-level connectivity within the local area.

In particular, vegetation on site is likely to contribute to stepping stone connectivity for highly-mobile and generalist fauna species utilising habitat present within undeveloped parcels of land along Karingal Drive, and between the Pacific Motorway and the trainline. Large, consolidated areas of bushland have been earmarked for development further to the south of the site as part of the Coomera Town Centre.

Notwithstanding, the proposed development has been designed to ensure connectivity is maintained, and enhanced along the mapped waterway alignment. Given the extent and modified condition of vegetation on site, and the presence of significant landscape barriers in the immediate surrounding area, the proposed development will significantly improve linear connectivity through the site.

The City Plan Environmental Significance – Biodiversity Areas Overlay Map confirms the site has not been identified as a strategically important ecological corridor or habitat area. Irrespective, the proposed development will ensure safe movement paths and a functional waterway ecosystem are provided in the post-development scenario.

5.4.3 Waterways and Wetlands

According to the City Plan Wetlands and Waterways Overlay Map, waterways are mapped on site. Field investigations confirmed that there are several dams that have been historically constructed along the mapped waterway (Figures 5.8-5.9). Vegetation around the dams consists of scattered native trees and invasive weed species, with exotic grasses occurring in cover gaps along the mapped waterway.

The constructed dams support marginal habitat for amphibians, as well as other aquatic and semi-aquatic fauna species (e.g. fish, possibly turtles). The dams are highly modified and infested with invasive weed species. The dams and buffer areas are not considered to be ecologically significant or unique to the broader local area.

Some historical stabilising features were noted around the vicinity of the dams, including gabion and concrete blocks/pipes etc. The proposed development will involve the remediation of the dams through removal of anthropogenic materials, which will improve stormwater drainage through the site, as well as bank stability, water quality and ecological connectivity values.

The removal of invasive weed biomass and anthropogenic materials, in combination with remedial stabilisation will significantly improve the functionality of the future waterway and buffer areas. Rehabilitation works along the waterway will involve tubestock planting to restore the pre-clearing vegetation community.



Figure 5.8 Typical Existing Dam On Site



Figure 5.9 Typical Existing Dam On Site

5.5 Matters of Environmental Significance

An assessment against Section SC6.7.4.2 of SC6.7 City Plan policy – Ecological site assessments was undertaken to identify whether any Matters of Environmental Significance are present on site. This assessment has confirmed the presence of the following Matters of Environmental Significance on site:

- Vegetation Management:
  - General priority vegetation.
- Waterways:
  - Waterways and buffer areas.
- State Government:
  - Koala habitat areas (core).

The proposed development has been designed to ensure that all Matters of Environmental Significance will be retained and protected on site in accordance with the City Plan's Environmental Significance Overlay Code (Table 5.3).

Table 5.3 Assessment of Matters of Environmental Significance on Site

Matter of Environmental Significance	Jurisdiction	Description	Comments	Conclusion
Vegetation Management (General Priority Vegetation)	Local	General Priority Vegetation is mapped on site as shown on the City Plan Wetlands and Waterways Overlay Map.	Native vegetation occurs within the mapped areas of General Priority Vegetation. However, the mapped extent is highly modified and does not represent a functioning intact community. Residual horticultural infrastructure (e.g. black plastic sheeting), fencing and tracks were noted in the western GPV polygon. The eastern GPV polygons have been previously cleared and rehabilitated as part of the construction of an easement along the site's boundary.	**MES to be rehabilitated** Vegetation Community A has been subject to historical clearing events and is highly modified as a result of previous land uses. The proposed development presents an opportunity to remediate and rehabilitate a functioning natural community along the mapped waterway. This will also involve the removal of invasive weeds, rubbish and debris, construction materials on the site.
Waterways and buffer areas	Local	Waterways and buffer areas are mapped on site as shown on the City Plan Wetlands and Waterways Overlay Map.	The field assessment has confirmed that the mapped waterway has been subject to historical clearing events and modifications. Several dams have been constructed in the alignment of the waterway and are dominated by invasive weed species.	**MES to be rehabilitated** The proposed development involves the remediation of the mapped waterway and dams in order to improve stormwater drainage through the site, as well as bank stability, water quality and connectivity. Rehabilitation works will be undertaken along the waterway to enhance riparian habitat and connectivity values. A Rehabilitation Management Plan has been prepared by Element Ecology under separate cover to support the restoration of the pre-clearing vegetation community on site.
Category B Regulated Vegetation	State	Category B (Remnant) vegetation is mapped in the northern and southern extents of the site. The DNRME mapping indicates that Category B vegetation occurs as very small patches of RE 12.3.11 and RE 12.11.24 which are listed as Of Concern and Least Concern under the VM Act.	The vegetation assessment determined that the RE mapping is mapped on site owing to overhang from canopy trees on the adjoining site.	**MES to be rehabilitated** The proposed development will involve the remediation and rehabilitation of waterway areas to restore the pre-clearing RE. Rehabilitation works will consist of tubestock planting along the waterway to enhance the habitat and connectivity values. Furthermore, the removal of invasive weed biomass and weed seed bank in the mapped RE areas will allow for natural regeneration of a native seed bank along the waterway.
Koala habitat areas (core)	State	State Government mapping identifies Koala habitat areas (core) in the northern extents of the site and partly along the eastern boundary.	No evidence of koalas was identified on the site during field investigations. Owing to the extent of urban development and significant landscape barriers (e.g. roads and trainline), there is a very low probability this species is utilising highly modified habitat on the site.	**MES to be offset** Environmental offsets are required to counterbalance any significant residual impacts to this matter. The final offset amount will be determined as part of the referral to State Government and final approved plans.

6 Impacts and Mitigation Measures

The proposed development will involve vegetation clearing in order to facilitate construction of the future Community Title Scheme. Potential impacts to ecological values may occur during the construction and operational phases. Details of potential impacts, and mitigation measures designed to ensure that there will be no significant residual impacts as a result of the development, are provided below.

6.1 Development Impacts

The following direct and indirect impacts either will, or have the potential to, adversely affect ecological values as a result of the proposed development:

- Removal of non-remnant vegetation.
- Reduction in fauna microhabitat and foraging resources for common native species that are tolerant of urban environments.
- Introduction of artificial lighting associated with new dwellings and streets.
- Potential fauna mortality resulting from construction and/or use of the site.
- Disturbance to fauna during construction as a result of increased noise, vibration and dust.
- Increased erosion and reduction in water quality during construction.

Despite the potential impacts outlined above, the overall impact of the proposed development on local ecological values is expected to be low owing to the following key considerations:

- Vegetation to be cleared is non-remnant and consists largely of invasive weed species.
- The development footprint does not contain habitat values and/or areas that are unique to the local area, or that provide specialised resources for species recorded on site.
- The development footprint does not provide any important ecological function such as core habitat, connectivity or an ecological buffer.
- Counterbalance of significant residual impacts to Koala habitat areas (core) through the delivery of environmental offsets.
- Remediation and rehabilitation of a native vegetation community along the mapped waterway in the post-development scenario.
- Impacts to fauna during construction are expected to be minimal, with a low potential for fauna mortality and/or permanent displacement likely to result from the removal of this relatively small extent of vegetation.

Owing to the low ecological values associated with the development footprint, impacts to values on site are not expected to significantly impact species, communities or ecosystem values in either a local or a regional context.

6.2 Mitigation Measures

A number of actual and potential impacts associated with the proposed development have been identified. Some of these impacts are unavoidable; however, the extent and severity of these impacts can be managed to create an environmentally sensitive development outcome. In order to reduce potential impacts on ecological values a hierarchical strategy to minimise and mitigate impacts will be adopted.

Table 6.1 below provides an overview of the mitigation measures recommended to effectively manage values on site. Implementation of these measures will ensure that there are no significant residual impacts on ecological values as a result of the proposed development.

Table 6.1 Recommended Mitigation Measures

Management Strategy	Mitigation Measure
Minimise	Minimise impacts to mature native trees on site by situating the development footprint within areas characterised by regrowth vegetation and cleared areas.
	Implement vegetation management strategies to minimise impacts to vegetation during operational works. Recommended actions include, but should not be limited to: • Identify locations of tree protection fencing to designate areas of retained vegetation. • Ensure that cleared vegetation is disposed of in an environmentally sensitive manner. • Prohibit stockpiling, storage of materials and equipment, and vehicle movement within areas of vegetation to be retained. • Ensure that all vehicle and machinery access on site is limited to designated disturbance areas.
	Implement fauna management strategies to minimise impacts to fauna during operational works. Recommended actions include, but should not be limited to: • Identify locations for fauna friendly and fauna exclusion fencing on site to demonstrate areas where fauna egress will be facilitated and areas where fauna access will be prevented). • Undertake directional vegetation clearing to maximise opportunities for safe fauna egress during operational works. • Ensure that a DES licenced Spotter-Catcher is present during all vegetation clearing. • Ensure that clearing is carried out in accordance with the provisions of the *Nature Conservation (Koala) Conservation Plan 2017*. This should include but not be limited to: ▪ Sequential and directional clearing. ▪ Clearing is carried out under the direction and supervision of a koala spotter. ▪ Restricting the presence of dogs on site during the construction phase.
	Develop a Sediment and Erosion Control Plan to minimise impacts of runoff, erosion and sedimentation associated with vegetation clearing and earthworks.
Mitigate	Prior to clearing, clearly mark/fence the location of all vegetation to be retained to minimise the potential for unintended impacts within these areas.
	Undertake routine site inspections during operational works to ensure that weeds and rubbish are not being spread within areas of retained vegetation.
	Where possible, stockpile cleared native vegetation for reuse as mulch in site landscaping.
	Ensure that a DES licenced Spotter-Catcher undertakes an inspection of the site prior to vegetation clearing to relocate any observed native fauna to areas of retained vegetation or nearby habitat.
	Ensure that all vegetation clearing is undertaken in a direction that maximises opportunities for fauna to move from the site into areas of surrounding habitat during vegetation clearing.
	Ensure that the dams on site are dewatered under the supervision of a DES licenced fauna Spotter-Catcher.
	Utilise sensitive vegetation clearing techniques when removing trees with known fauna habitat features.
	Restrict construction operations to daylight hours to minimise impacts on nocturnal fauna.
	Install sediment fences at the base of all batters and around stockpiles to minimise transport of sediment and stockpile material from the site.
	Stabilise disturbed surfaces as soon as possible after clearing to prevent sediment transport.
	Provide adequate waste disposal facilities on site to prevent the unintended spread of materials into areas of retained vegetation.

Management Strategy	Mitigation Measure
	Ensure that all site personnel and contractors are aware of areas of vegetation to be retained and environmental management requirements prior to the commencement of operational works.
	Employ contractors with a reputation for environmentally sensitive construction techniques.
	Consider the use of contractual penalty provisions to cover circumstances in which contractors do not adhere to environmental conditions and management requirements for the site.
	Ensure that all machinery and vehicles entering the site have been thoroughly cleaned to prevent transport of weed propagules between sites.
	Clearly identify all site entries, exits and access points to ensure that only designated locations are traversed.
Offset	Provide environmental offsets in accordance with the Queensland *Environmental Offsets Act 2014*, thereby ensuring that the proposed development results in a net gain in ecological values.

6.3 Environmental Offsets

6.3.1 Koala Habitat

An assessment against *State Code 25: Development in South East Queensland Koala Habitat Areas* has determined that impacts to the Department of Environment and Science (DES) mapped Koala habitat areas (core) will represent a significant residual impact. Therefore, any significant residual impacts are required to be offset under the Queensland Environmental Offsets Policy. An assessment against State Code 25 is provided in Appendix G.

An environmental offset required under the *Environmental Offsets Act 2014* may be delivered through the following offset delivery options:

- Land-based proponent-driven offset;
- Financial settlement offset; or
- A combination of proponent-driven offset and financial settlement offset.

An environmental offset will be required to counterbalance significant residual impacts to koala habitat areas. As a determination on the offset delivery option has not been confirmed, it is expected that the final offset amount will be calculated as part of the referral to State Government and final approved plans.

7 Environmental Planning and Approvals

An overview of the environmental planning and approval requirements applicable to the proposed development is provided in Table 7.1.

Based on this assessment provided, the following environmental planning requirements apply to the proposed development:

- Gold Coast City Plan Environmental Significance Overlay Code.
- *Planning Regulation 2017* Koala Provisions.
- *Environmental Offsets Act 2014*.
- *Nature Conservation Act 1992* Protected Plants Framework.

Table 7.1 outlines how the proposed development addresses each of these instruments. Based on this assessment, the proposed development demonstrates compliance with all relevant Local and State Government environmental planning provisions.

Table 7.1 Environmental Planning and Approval Requirements

Environmental Planning Provision	Legislative Framework	Trigger	Applicable	Comments
LOCAL				
Environmental Significance Overlay Code	Gold Coast City Plan	Impacts within overlay categories mapped as Biodiversity Areas, Priority Species, Vegetation Management and/or Wetlands and Waterways buffers.	**Yes**	Four (4) Environmental Significance overlay categories are mapped on site: • General Priority Vegetation. • Waterway. • Buffer areas. • Koala Habitat Areas (superseded by the *Planning Regulation 2017* Koala Provisions). Consequently, it is necessary to assess the proposed development against the Environmental Significance Overlay Code. An assessment against this code has confirmed that the proposed development complies with either the applicable Acceptable Outcomes, or alternatively with the applicable Performance Outcomes (Appendix F).
STATE				
Regulated Vegetation	*Planning Act 2016* *Vegetation Management Act 1999*	Operational work that is the clearing of mapped regulated vegetation that constitutes assessable development under the *Planning Regulation 2017*	No	Although Category B vegetation is mapped on site, the development application is for an allotment that is less than 5 ha in size. Under Schedule 21, Part 1, Section 1 of the *Planning Regulation 2017*, the clearing of native vegetation on a premises that is less than 5 ha is exempt from assessment against State Code 16. The site is less than 5 ha, and is therefore exempt from assessment against the provisions of the *Vegetation Management Act 1999.*
Planning Regulation 2017 Koala Provisions	*Planning Act 2016*	Impacts to Koala Priority Areas and Koala Habitat Areas (Core and Locally Refined)	**Yes**	The site is <u>not</u> located in a Koala Priority Area, however Koala habitat areas (core) are mapped on site. An assessment against State Code 25 has confirmed that the proposed development is required to provide an offset in accordance with the Queensland Environmental Offsets Policy (Appendix G).
Threatened Fauna	*Nature Conservation Act 1992*	Impacts to threatened, near threatened and special least concern fauna and/or impacts to animal breeding places	No	No threatened fauna were identified on site during the field assessment. Therefore, no specific provisions under the NC Act will need to be addressed. However, should threatened fauna be identified on site at any point in the future, relevant provisions of the NC Act will need to be addressed (including consideration of the need for a Significant Species Management Program and/or environmental offsets).

Environmental Planning Provision	Legislative Framework	Trigger	Applicable	Comments
Fish Habitat Areas	*Planning Act 2016* *Fisheries Act 1994*	Development in a declared fish habitat area and operational works for construction or raising of waterway barrier works in fish habitats	**Yes**	A Queensland waterways for waterway barrier works (i.e. moderate) is mapped in the southern extents of the site. Consequently, at the detailed design stage for the proposed development, it will be necessary to assess the future design and construction requirements to confirm whether future works can comply with the Department of Agriculture and Fisheries (DAF) Accepted development requirements for operational work that is constructing or raising waterway barrier works. Where future works can comply with the DAF accepted development code, all design and works must be in accordance with the requirements of the code. For development that cannot comply with the DAF accepted development code, it will be necessary to refer the development to the State Government and demonstrate that the proposed works comply with the relevant provisions of State Code 18.
Threatened Flora	*Nature Conservation Act 1992*	Vegetation clearing within High Risk Areas mapped on site	**Yes**	The proposed development will result in clearing of vegetation within the High Risk Area mapped on site. Therefore, it will be necessary to address the requirements of the Protected Plants Framework to ensure that there are no adverse impacts of the development on EVNT flora species. In accordance with the NC Act protected plants framework, no more than 12 months prior to vegetation clearing a targeted protected plants survey must be undertaken within the clearing area (where it occurs within the High Risk Area) and within a 100 m buffer of this area (where it occurs within the High Risk Area).
Wetlands	*Planning Act 2016* *Environmental Protection Act 1994*	Operational work that is high impact earthworks in mapped wetland areas	No	No mapped wetland areas are located on the site. Therefore, the proposed development will not result in operational works that impact upon any mapped wetland areas.
FEDERAL				
Matters of National Environmental Significance	*Environment Protection and Biodiversity Conservation Act 1999*	Development results in a significant impact to a Matter of National Environmental Significance (MNES)	No	No MNES were recorded on site during the field assessment. Therefore, further consideration against the EPBC Act is not required. However, should MNES be identified on site at any point in the future, and where the development is likely to significantly impact the MNES in question, it may be necessary to refer the proposed development to DAWE for assessment under the EPBC Act.

8 Conclusions

This Ecological Assessment Report has been prepared to assess the potential impacts of a proposed Community Title Scheme located at 2 Karingal Drive, Pimpama. The findings presented in this report are based on data derived from desktop sources, as well as flora and fauna field surveys undertaken in accordance with industry standards and best practice methodologies.

Key findings of this report include:

- The site contains one (1) vegetation community that is characterised as Vegetation Community A: Non-remnant vegetation.
- The site does not contain any vegetation communities that are threatened or near threatened under State or Commonwealth legislation.
- No flora species listed as threatened or near threatened under the NC Act and EPBC Act were recorded on the site.
- One (1) City Wide Significant species within the Gold Coast Local Government Area was recorded on site – *Brachychiton bidwillii* (broad-leaved bottle tree). This species is considered likely to have been anthropogenically introduced to the site, owing to its availability as a horticultural species and evidence of horticultural infrastructure on site.
- No fauna species listed as threatened or near threatened under the NC Act and EPBC Act, or as City Wide Significant within the Gold Coast Local Government Area, were recorded on site.
- Ecological connectivity is impeded by significant landscape barriers to the north, east and west of the site, although vegetation is expected to support some linear connectivity to the south (in part).
- The proposed development has been designed to ensure there is remediation and rehabilitation of the mapped waterway in the post-development scenario.
- A Rehabilitation Management Plan has been prepared by Element Ecology under separate cover to support the restoration of the pre-clearing vegetation community on site.
- An environmental offset for development impacts to Koala habitat areas (core) will be required through a land-based proponent-driven offset or by a financial settlement offset.
- Although the proposed development will result in a localised reduction in biodiversity values, the provision of environmental offsets in accordance with the Queensland *Environmental Offsets Act 2014* will ensure that the development results in a net gain in biodiversity values and ecological functions within the city.
- Field surveys confirmed the proposed development footprint does not provide core habitat for any threatened or near threatened species.
- A range of mitigation measures have been recommended to ensure potential impacts during the construction phase are minimised to the greatest possible extent.

An assessment of the potential impacts of the development on the site's ecological values has found that the proposal is compliant with all applicable Local, State and Commonwealth environmental statutory provisions.

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APPENDIX A

MLES DESKTOP SEARCHES



City Plan

GOLDCOAST.™

Date: 14/01/2021

N

0 5 10 20 30 40

Metres

Legend

polygonLayer

- Override 1
- GCCC Boundary
- Surrounding Councils Labels

Adjacent Councils

- <all other values>
- Brisbane; Ipswich; Logan; Redland; Scenic Rim
- NSW; Tweed
- Protected areas
- Coastal wetlands and islands core habitat system
- Hinterland core habitat system
- Substantial remnants
- Hinterland to coast critical corridors
- GCCC Boundary
- Suburb Boundary Lines
- NSW Tweed
- Unit numbers
- Suburbs Labels
- Minor Roads
- Waterway Labels

ADJACENT_LGA

- Brisbane City Council; Ipswich City Council; Logan City Council; Redland City Council; Scenic Rim Regional Council
- Tweed Shire Council
- Ocean Labels
- Railway (Brisbane - Robina Line)
- Latest property boundaries

GOLDCOAST.™

City Plan

Date: 14/01/2021



City Plan

GOLDCOAST.™

Date: 14/01/2021

N

0 5 10 20 30 40

Metres

Legend

polygonLayer

- Override 1
- GCCC Boundary
- Surrounding Councils Labels

Adjacent Councils

- <all other values>
- Brisbane; Ipswich; Logan; Redland; Scenic Rim
- NSW; Tweed
- State significant species
- Koala habitat areas
- Local significant species
- GCCC Boundary
- Suburb Boundary Lines
- NSW Tweed
- Unit numbers
- Suburbs Labels
- Minor Roads
- Waterway Labels

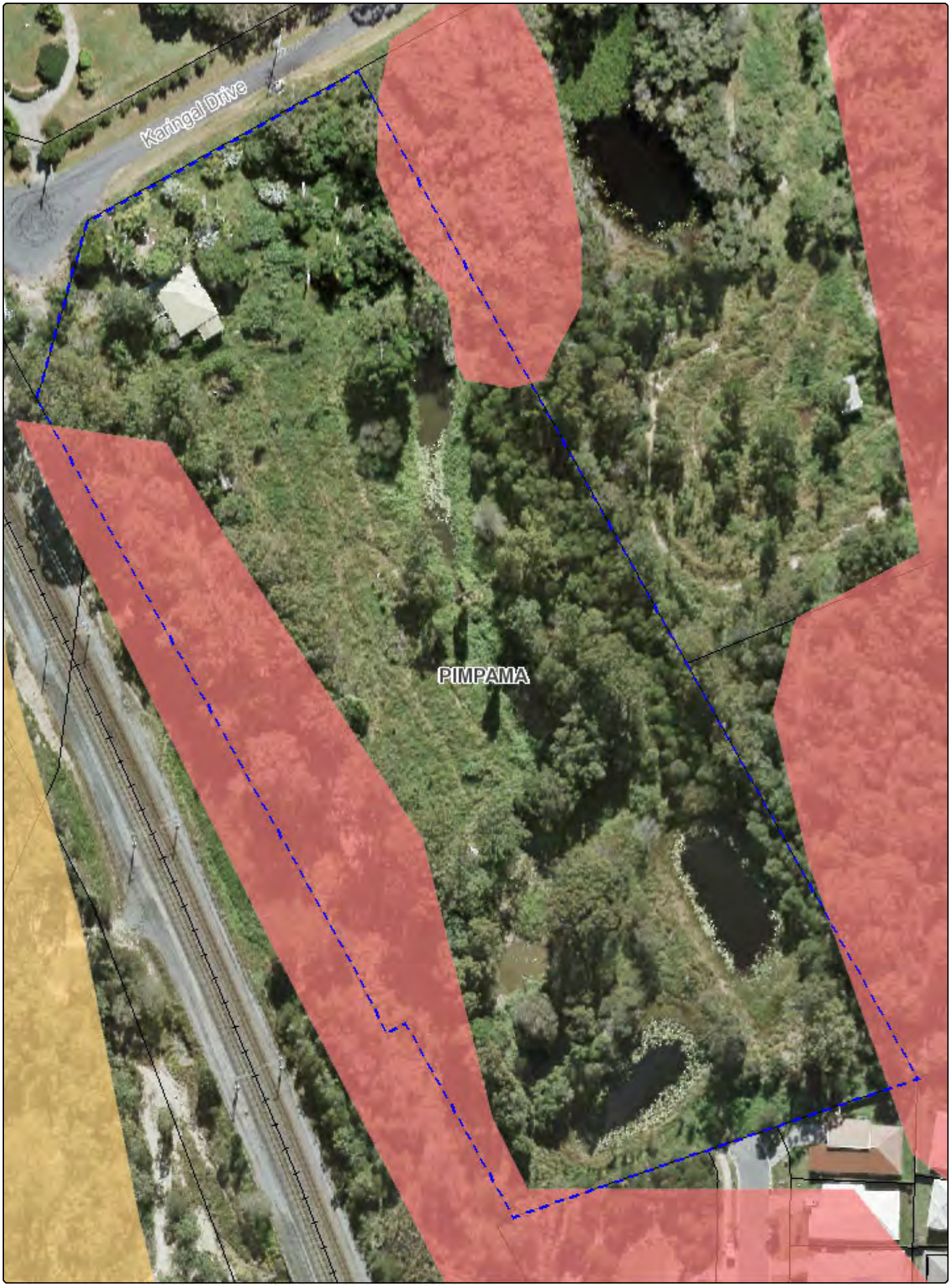
ADJACENT_LGA

- Brisbane City Council; Ipswich City Council; Logan City Council; Redland City Council; Scenic Rim Regional Council
- Tweed Shire Council
- Ocean Labels
- Railway (Brisbane - Robina Line)
- Latest property boundaries

GOLDCOAST.™

City Plan

Date: 14/01/2021



City Plan

GOLDCOAST.™

Date: 14/01/2021

N

0 5 10 20 30 40

Metres

Legend

polygonLayer

- Override 1
- GCCC Boundary
- Surrounding Councils Labels

Adjacent Councils

- <all other values>
- Brisbane; Ipswich; Logan; Redland; Scenic Rim
- NSW; Tweed
- Regulated vegetation
- Vegetation protection order

Vegetation management

- General priority vegetation
- Medium priority vegetation
- High priority vegetation
- GCCC Boundary
- Suburb Boundary Lines
- NSW Tweed
- Unit numbers
- Suburbs Labels
- Minor Roads
- Waterway Labels

ADJACENT_LGA

- Brisbane City Council; Ipswich City Council; Logan City Council; Redland City Council; Scenic Rim Regional Council
- Tweed Shire Council
- Ocean Labels
- Railway (Brisbane - Robina Line)
- Latest property boundaries

GOLDCOAST.™

City Plan

Date: 14/01/2021



City Plan

GOLDCOAST.™

Date: 14/01/2021

N

0 5 10 20 30 40

Metres

Legend

polygonLayer

- Override 1
- GCCC Boundary
- Surrounding Councils Labels

Adjacent Councils

- <all other values>
- Brisbane; Ipswich; Logan; Redland; Scenic Rim
- NSW; Tweed

State significant wetlands and aquatic systems

- State significant wetlands
- State significant aquatic systems
- Local significant wetlands

Waterways

- Major waterway
- Waterway
- Canal
- Lake
- Buffer area
- GCCC Boundary
- Suburb Boundary Lines
- NSW Tweed
- Unit numbers
- Suburbs Labels
- Minor Roads
- Waterway Labels

ADJACENT_LGA

- Brisbane City Council; Ipswich City Council; Logan City Council; Redland City Council; Scenic Rim Regional Council
- Tweed Shire Council
- Ocean Labels
- Railway (Brisbane - Robina Line)
- Latest property boundaries

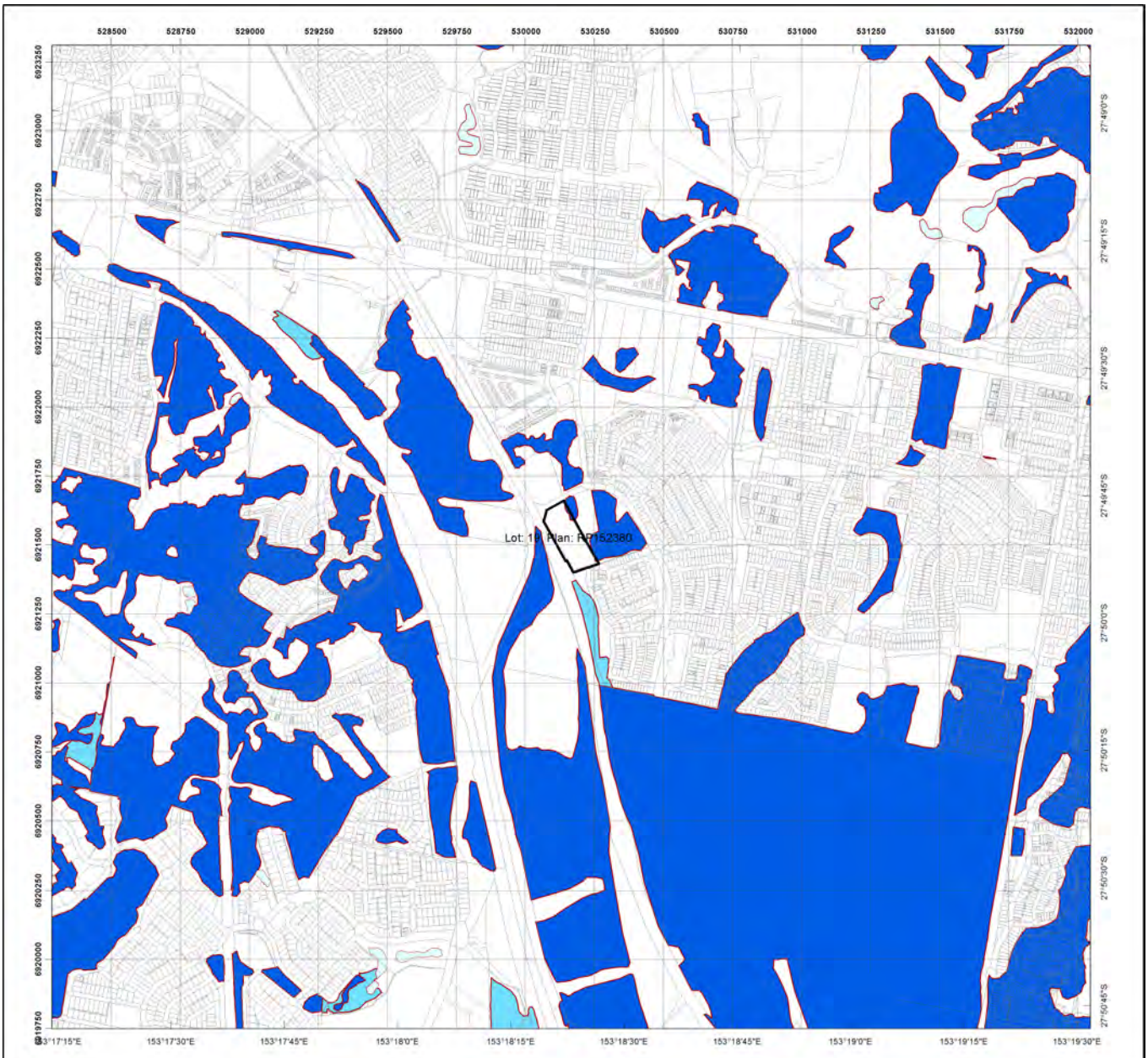
GOLDCOAST.™

City Plan

Date: 14/01/2021

APPENDIX B

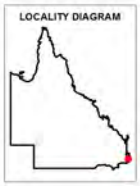
MSES DESKTOP SEARCHES



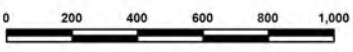
Regulated Vegetation Management Map

Legend

- Selected Lot and Plan
- Category A area (Vegetation offsets/compliance notices/VDecs)
- Category B area (Remnant vegetation)
- Category C area (High-value regrowth vegetation)
- Category R area (Reef regrowth watercourse vegetation)
- Category X area (Exempt clearing work on Freehold, Indigenous and Leasehold land)
- Water
- Area not categorised
- Other land parcel boundaries







This product is projected into:
GDA 1994 MGA Zone 56

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

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

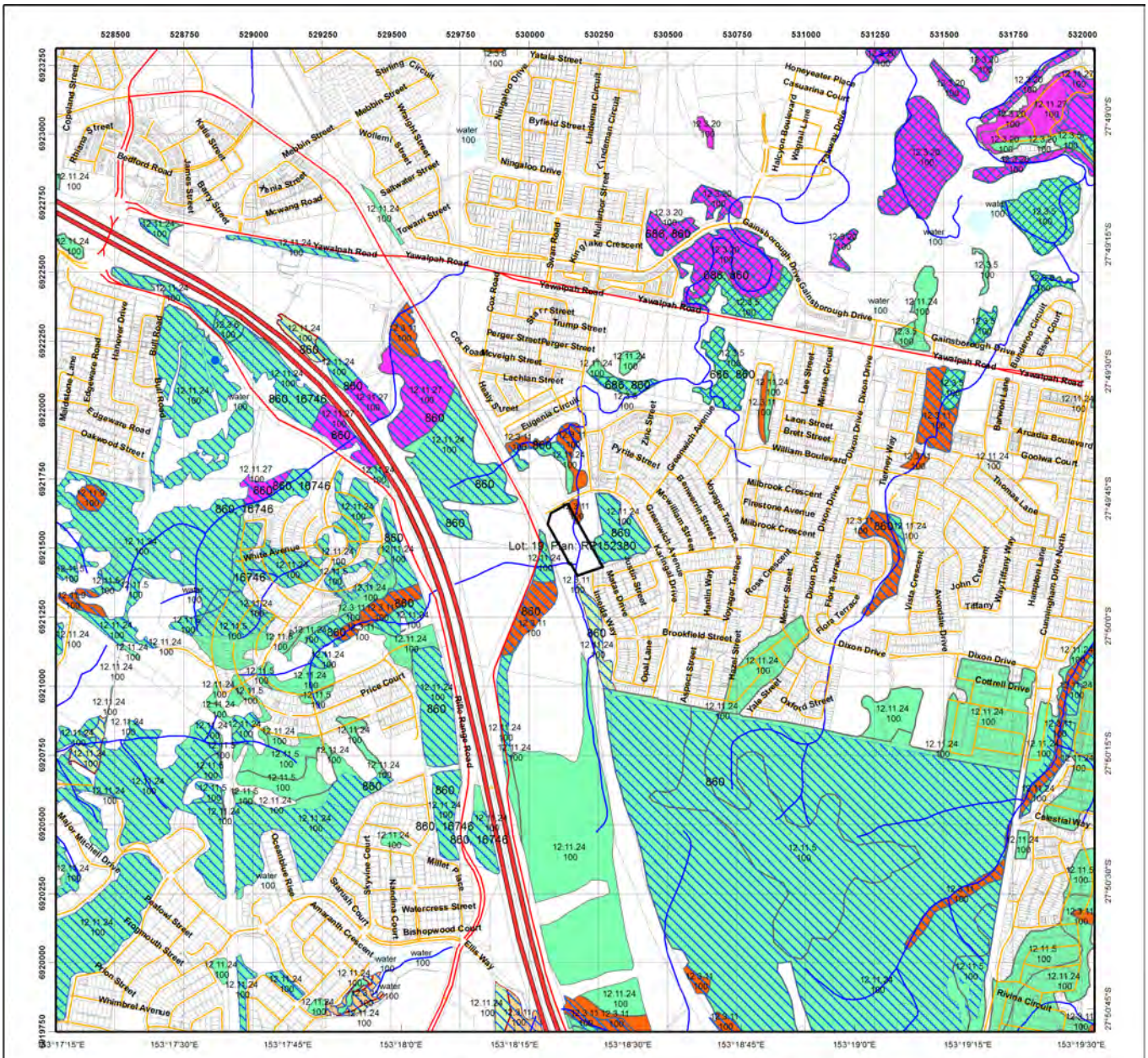
Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

Land parcel boundaries are provided as locational aid only.

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

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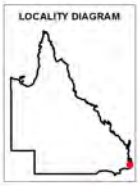
Vegetation Management Supporting Map

Legend

- Selected Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category A or B area under Section 20AH
  These are edged in yellow and filled with the remnant RE Status
- Category C or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R area that is a least concern regional ecosystem
- Category C area under Section 20AI
  These areas are edged in purple and filled with the remnant RE Status
- Category X area
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map
  (Stream order shown as black number against stream where available)
- Highway
- Connector
- Street/Local Road
- National Parks, State Forest and other reserves
- Other land parcel boundaries

Queensland Government

LOCALITY DIAGRAM



N

0 140 280 420 560 700 m

This product is projected into:
GDA 1994 MGA Zone 56

Labels for Essential Habitat are centred on the area of enquiry.

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

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

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

Land parcel boundaries are provided as locational aid only.

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Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

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

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

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

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

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

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

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

Essential habitat, for protected wildlife, means a category A area, a category B area or category C area shown on the regulated vegetation management map-

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or

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

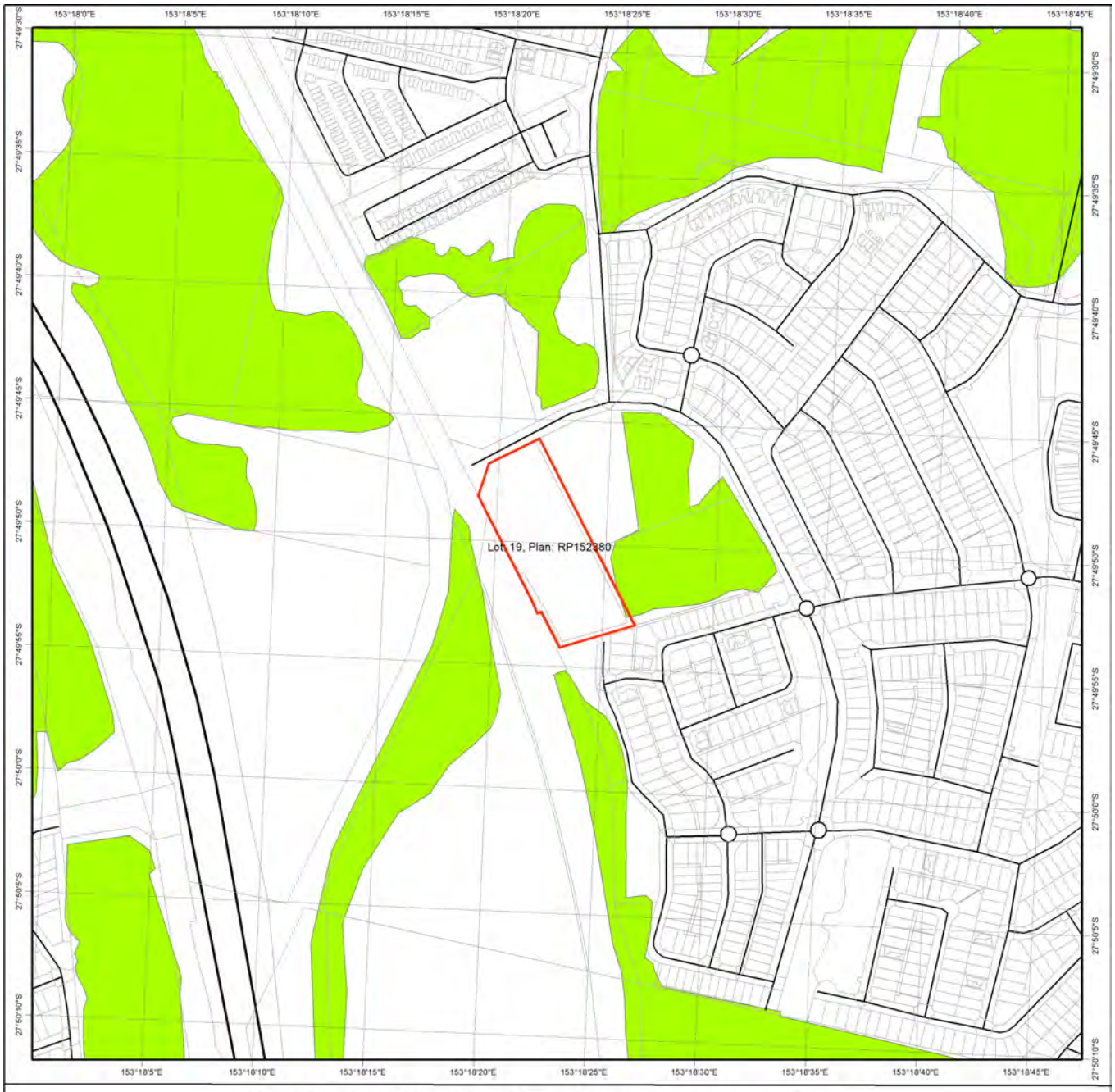
Protected wildlife includes critically endangered, endangered, vulnerable or near-threatened native wildlife prescribed under the *Nature Conservation Act 1992*.

Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
860	Phascolarctos cinereus	koala	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. orgadophilla, 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	Regional Ecosystem (mandatory unless otherwise specified)
860	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, 12.11.15, 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, 4.9.6, 4.9.10, 4.9.12, 4.9.17, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.7, 6.3.8, 6.3.9, 6.3.11, 6.3.12, 6.3.17, 6.3.18, 6.3.22, 6.3.24, 6.3.25, 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.5.1, 6.5.2, 6.5.3, 6.5.5, 6.5.6, 6.5.7, 6.5.8, 6.5.9, 6.5.10, 6.5.11, 6.5.13, 6.5.14, 6.5.15, 6.5.16, 6.5.17, 6.5.18, 6.5.19, 6.6.2, 6.7.1, 6.7.2, 6.7.5, 6.7.6, 6.7.7, 6.7.9, 6.7.11, 6.7.12, 6.7.13, 6.7.14, 6.7.17, 6.9.3, 7.2.3, 7.2.4, 7.2.7, 7.2.11, 7.3.7, 7.3.8, 7.3.9, 7.3.12, 7.3.13, 7.3.14, 7.3.16, 7.3.19, 7.3.20, 7.3.21, 7.3.25, 7.3.26, 7.3.39, 7.3.40, 7.3.42, 7.3.43, 7.3.44, 7.3.45, 7.3.47, 7.3.48, 7.3.50, 7.5.1, 7.5.2, 7.5.3, 7.5.4, 7.8.7, 7.8.8, 7.8.10, 7.8.15, 7.8.16, 7.8.17, 7.8.18, 7.8.19, 7.11.5, 7.11.6, 7.11.13, 7.11.14, 7.11.16, 7.11.18, 7.11.19, 7.11.20, 7.11.21, 7.11.31, 7.11.32, 7.11.33, 7.11.34, 7.11.35, 7.11.37, 7.11.41, 7.11.42, 7.11.43, 7.11.44, 7.11.45, 7.11.46, 7.11.47, 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.

14/01/2021 11:42:47
Lot: 19 Plan: RP152380



Protected Plants Flora Survey Trigger Map

Legend

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



N

0 40 80 120 160 200 m

This product is projected into:
GDA 1994 Queensland Albers

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

Land parcel boundaries are provided as locational aid only.

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

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

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

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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

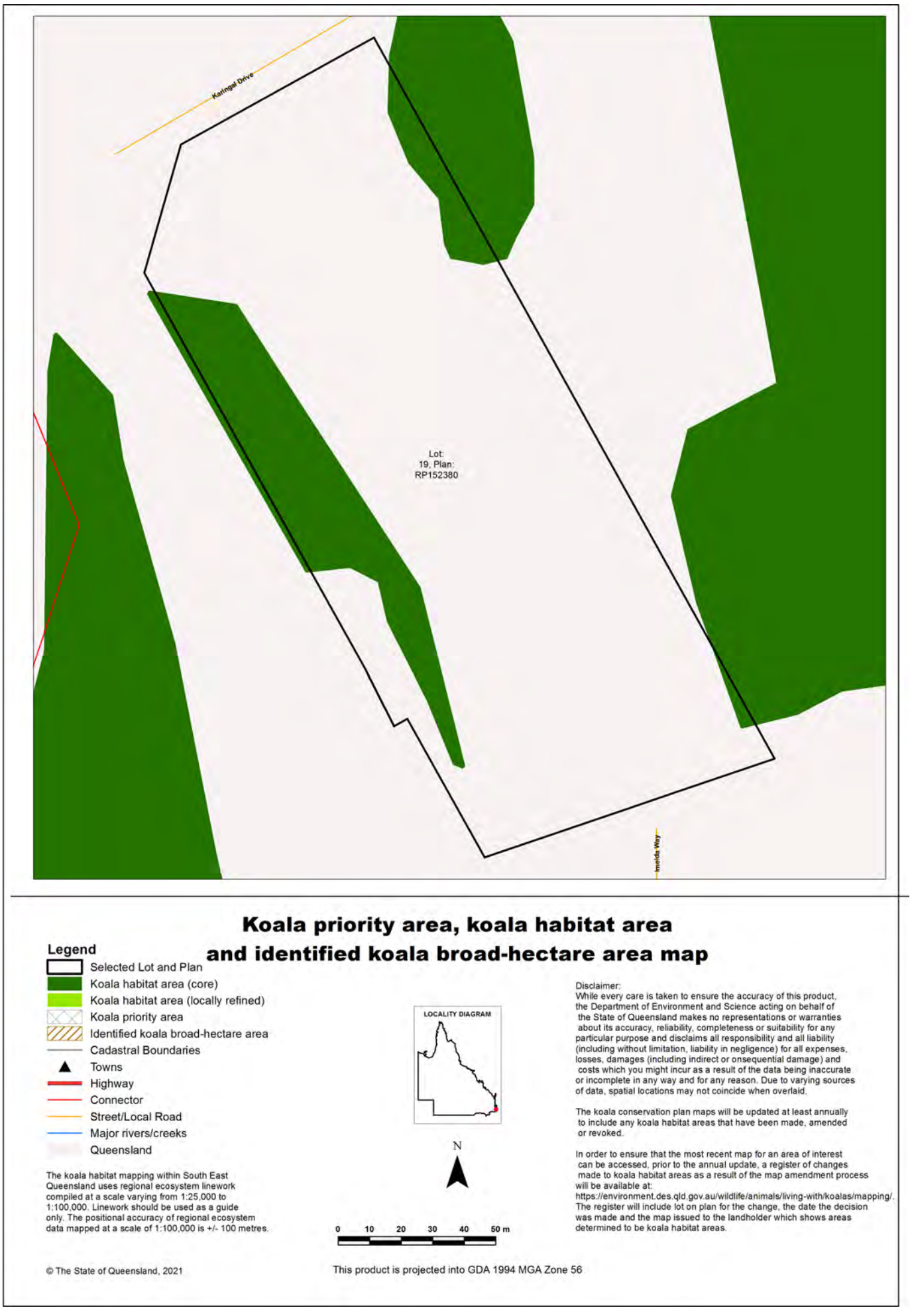
The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

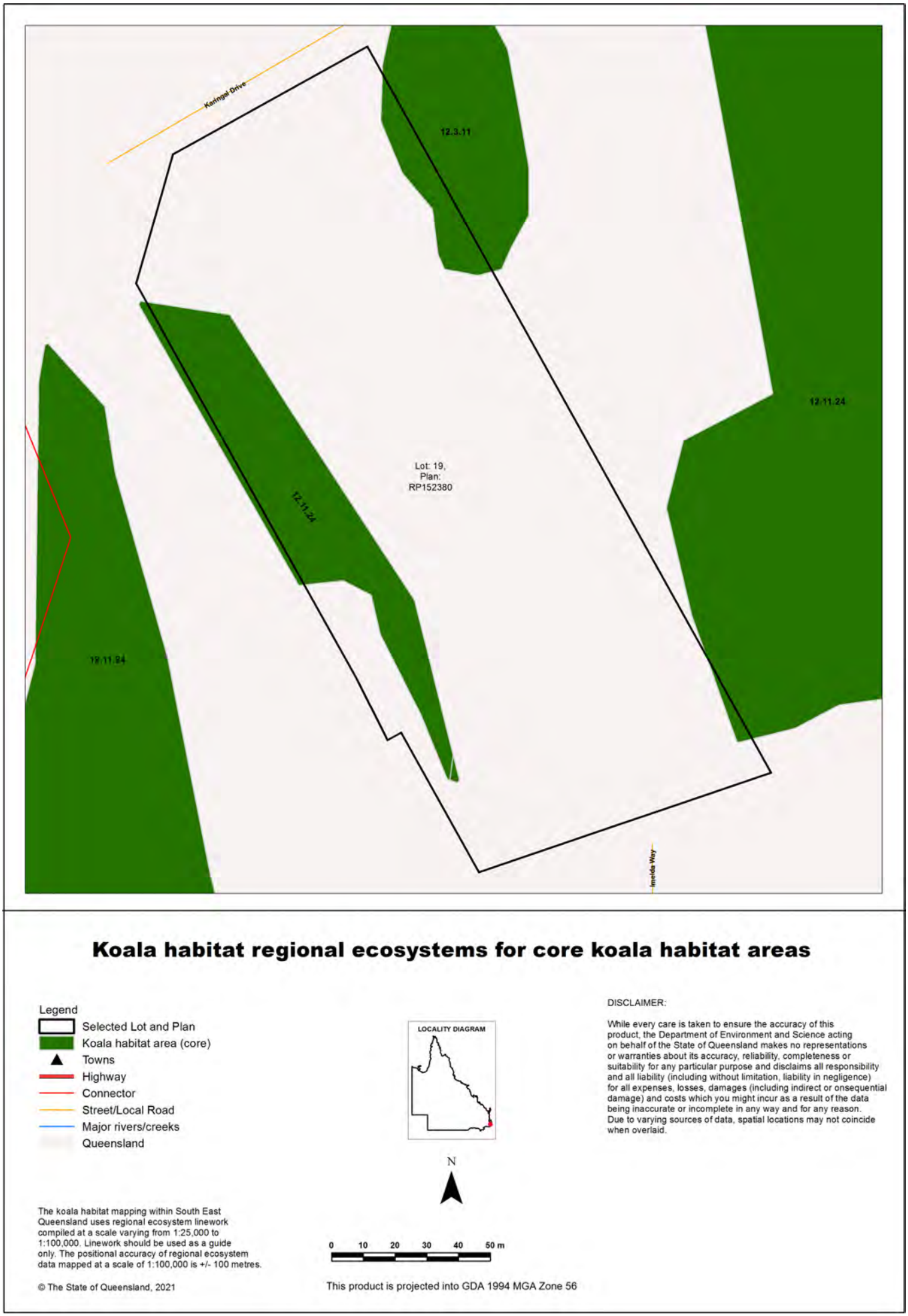
Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of Environment and Science does not provide species information on request.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

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



7.3 Koala habitat regional ecosystems for core koala habitat areas





Map of Great Barrier Reef Wetland Protection Areas

- Selected Lot and Plan
- Cadastral Boundary
- Wetland in a wetland protection area
- Great Barrier Reef wetland protection area



N

Note:
This map shows the location of wetland protection areas which are defined under the Environmental Protection Regulation 2008. Within wetland protection areas, certain types of development involving high impact earthworks are made assessable under Schedule 3 of the Sustainable Planning Regulation 2009.

The Department of State Development, Manufacturing, Infrastructure and Planning is the State Assessment Referral Agency (SARA) under Schedule 7 of the Sustainable Planning Regulation 2009 for assessable development involving high impact earthworks within wetland protection areas. The Department of Environment and Science is a technical agency.

The policy outcome and assessment criteria for assessing these applications are described in the State Development Assessment Provisions (SDAP) *State Code 9 : Great Barrier Reef Wetland Protection Areas.*

This map is produced at a scale relevant to the size of the lot on plan identified and should be printed at A4 size in portrait orientation. Consideration of the effects of mapped scale is necessary when interpreting data at a large scale.

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

0 60 120 180 240 300 m

This product is projected into GDA 1994 MGA Zone 56

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Map of Queensland Wetland Environmental Values

Selected Lot and Plan

Cadastral Boundary

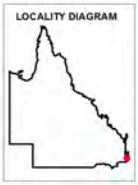
High ecological values waters management intent

Wetlands assessed under section 7

GBR wetland of high ecological significance

Wetland of high ecological significance

Wetland of general ecological significance



N

Note:
This map shows the location of wetlands on the Map of Queensland Wetland Environmental Values under the Environmental Protection (Wetland and Water Biodiversity) Policy 2019. The map also shows high ecological value waters management intent under Schedule 2 of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019.

Wetlands are assessed for ecological significance using the environmental values for wetlands in section 7 of the Environmental Protection (Wetland and Water Biodiversity) Policy 2019. Wetlands are considered either High Ecological Significance (HES) or of General Ecological Significance (GES) for the purposes of the environmental values.

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0 60 120 180 240 300 m

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DA Mapping System – Print Screen

Date: 14/01/2021

0 30 60 90 120

Metres

Department of State Development, Manufacturing, Infrastructure and Planning

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Disclaimer:
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Legend

Cadastre

Cadastre

Queensland waterways for waterway barrier works

1 - Low

2 - Moderate

3 - High

4 - Major

Fish habitat management area A

FHAA

Fish habitat management area B

FHAB

Tidal waterways

Tidal waterways

DA Mapping System – Print Screen

Queensland Government

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Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Status: All
Records: All
Date: All
Latitude: -27.8305
Longitude: 153.3061
Distance: 3
Email: kellie.skov@elementecology.com.au
Date submitted: Thursday 14 Jan 2021 10:44:40
Date extracted: Thursday 14 Jan 2021 10:50:02

The number of records retrieved = 551

Disclaimer

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

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

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

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	*Rhinella marina*	cane toad	Y			15
animals	amphibians	Hylidae	*Litoria nasuta*	striped rocketfrog		C		5
animals	amphibians	Hylidae	*Litoria tyleri*	southern laughing treefrog		C		1
animals	amphibians	Hylidae	*Litoria dentata*	bleating treefrog		C		1
animals	amphibians	Hylidae	*Litoria caerulea*	common green treefrog		C		6
animals	amphibians	Hylidae	*Litoria wilcoxii*	eastern stony creek frog		C		1
animals	amphibians	Hylidae	*Litoria gracilenta*	graceful treefrog		C		7
animals	amphibians	Hylidae	*Litoria latopalmata*	broad palmed rocketfrog		C		5
animals	amphibians	Hylidae	*Litoria fallax*	eastern sedgefrog		C		18
animals	amphibians	Hylidae	*Litoria rubella*	ruddy treefrog		C		1
animals	amphibians	Limnodynastidae	*Limnodynastes tasmaniensis*	spotted grassfrog		C		1
animals	amphibians	Limnodynastidae	*Limnodynastes terraereginae*	scarlet sided pobblebonk		C		2
animals	amphibians	Limnodynastidae	*Platyplectrum ornatum*	ornate burrowing frog		C		1
animals	amphibians	Limnodynastidae	*Limnodynastes peronii*	striped marshfrog		C		16
animals	amphibians	Limnodynastidae	*Adelotus brevis*	tusked frog		V		1
animals	amphibians	Myobatrachidae	*Pseudophryne raveni*	copper backed broodfrog		C		1
animals	amphibians	Myobatrachidae	*Crinia parinsignifera*	beeping froglet		C		12
animals	amphibians	Myobatrachidae	*Mixophyes fasciolatus*	great barred frog		C		1
animals	amphibians	Myobatrachidae	*Pseudophryne coriacea*	red backed broodfrog		C		4
animals	amphibians	Myobatrachidae	*Uperoleia sp.*			C		1
animals	amphibians	Myobatrachidae	*Crinia signifera*	clicking froglet		C		12
animals	amphibians	Myobatrachidae	*Uperoleia fusca*	dusky gungan		C		2
animals	amphibians	Myobatrachidae	*Crinia tinnula*	wallum froglet		V		5
animals	amphibians	Myobatrachidae	*Pseudophryne major*	great brown broodfrog		C		6
animals	birds	Acanthizidae	*Acanthiza pusilla*	brown thornbill		C		7
animals	birds	Acanthizidae	*Acanthiza lineata*	striated thornbill		C		1
animals	birds	Acanthizidae	*Smicrornis brevirostris*	weebill		C		1
animals	birds	Acanthizidae	*Sericornis magnirostra*	large-billed scrubwren		C		1/1
animals	birds	Acanthizidae	*Sericornis frontalis*	white-browed scrubwren		C		6
animals	birds	Acanthizidae	*Gerygone olivacea*	white-throated gerygone		C		6
animals	birds	Accipitridae	*Aviceda subcristata*	Pacific baza		C		5
animals	birds	Accipitridae	*Haliastur sphenurus*	whistling kite		C		13
animals	birds	Accipitridae	*Accipiter fasciatus*	brown goshawk		C		6
animals	birds	Accipitridae	*Pandion cristatus*	eastern osprey		SL		1
animals	birds	Accipitridae	*Elanus axillaris*	black-shouldered kite		C		1
animals	birds	Accipitridae	*Circus assimilis*	spotted harrier		C		1
animals	birds	Accipitridae	*Haliastur indus*	brahminy kite		C		12
animals	birds	Accipitridae	*Aquila audax*	wedge-tailed eagle		C		7
animals	birds	Accipitridae	*Haliaeetus leucogaster*	white-bellied sea-eagle		C		3
animals	birds	Accipitridae	*Erythrotriorchis radiatus*	red goshawk		E	V	1
animals	birds	Accipitridae	*Accipiter novaehollandiae*	grey goshawk		C		3
animals	birds	Accipitridae	*Accipiter cirrocephalus*	collared sparrowhawk		C		1
animals	birds	Accipitridae	*Hieraaetus morphnoides*	little eagle		C		1
animals	birds	Acrocephalidae	*Acrocephalus australis*	Australian reed-warbler		C		1
animals	birds	Aegothelidae	*Aegotheles cristatus*	Australian owlet-nightjar		C		3
animals	birds	Alcedinidae	*Ceyx azureus*	azure kingfisher		C		1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Anatidae	*Anas castanea*	chestnut teal		C		2
animals	birds	Anatidae	*Dendrocygna eytoni*	plumed whistling-duck		C		2
animals	birds	Anatidae	*Chenonetta jubata*	Australian wood duck		C		28
animals	birds	Anatidae	*Anas superciliosa*	Pacific black duck		C		18
animals	birds	Anatidae	*Aythya australis*	hardhead		C		1
animals	birds	Anatidae	*Cygnus atratus*	black swan		C		1
animals	birds	Anhingidae	*Anhinga novaehollandiae*	Australasian darter		C		7
animals	birds	Anseranatidae	*Anseranas semipalmata*	magpie goose		C		3
animals	birds	Apodidae	*Hirundapus caudacutus*	white-throated needletail		V	V	3
animals	birds	Ardeidae	*Nycticorax caledonicus*	nankeen night-heron		C		3
animals	birds	Ardeidae	*Ardea alba modesta*	eastern great egret		C		5
animals	birds	Ardeidae	*Ardea intermedia*	intermediate egret		C		2
animals	birds	Ardeidae	*Ardea pacifica*	white-necked heron		C		4
animals	birds	Ardeidae	*Bubulcus ibis*	cattle egret		C		17
animals	birds	Ardeidae	*Egretta novaehollandiae*	white-faced heron		C		15
animals	birds	Artamidae	*Cracticus nigrogularis*	pied butcherbird		C		25
animals	birds	Artamidae	*Artamus leucorynchus*	white-breasted woodswallow		C		4
animals	birds	Artamidae	*Cracticus torquatus*	grey butcherbird		C		19
animals	birds	Artamidae	*Strepera graculina*	pied currawong		C		7
animals	birds	Artamidae	*Gymnorhina tibicen*	Australian magpie		C		34
animals	birds	Artamidae	*Artamus personatus*	masked woodswallow		C		2
animals	birds	Burhinidae	*Esacus magnirostris*	beach stone-curlew		V		1
animals	birds	Burhinidae	*Burhinus grallarius*	bush stone-curlew		C		2
animals	birds	Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo		C		22
animals	birds	Cacatuidae	*Eolophus roseicapilla*	galah		C		10
animals	birds	Cacatuidae	*Cacatua sanguinea*	little corella		C		2
animals	birds	Cacatuidae	*Calyptorhynchus banksii*	red-tailed black-cockatoo		C		1
animals	birds	Cacatuidae	*Calyptorhynchus lathami*	glossy black-cockatoo		V		1
animals	birds	Cacatuidae	*Calyptorhynchus funereus*	yellow-tailed black-cockatoo		C		3
animals	birds	Cacatuidae	*Calyptorhynchus lathami lathami*	glossy black-cockatoo (eastern)		V		83
animals	birds	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike		C		28
animals	birds	Campephagidae	*Coracina tenuirostris*	cicadabird		C		2
animals	birds	Campephagidae	*Coracina papuensis*	white-bellied cuckoo-shrike		C		6
animals	birds	Campephagidae	*Lalage leucomela*	varied triller		C		3
animals	birds	Campephagidae	*Lalage tricolor*	white-winged triller		C		1
animals	birds	Charadriidae	*Vanellus miles*	masked lapwing		C		2
animals	birds	Charadriidae	*Elseyornis melanops*	black-fronted dotterel		C		2
animals	birds	Charadriidae	*Charadrius ruficapillus*	red-capped plover		C		1
animals	birds	Charadriidae	*Vanellus miles novaehollandiae*	masked lapwing (southern subspecies)		C		22
animals	birds	Ciconiidae	*Ephippiorhynchus asiaticus*	black-necked stork		C		1
animals	birds	Cisticolidae	*Cisticola exilis*	golden-headed cisticola		C		5
animals	birds	Climacteridae	*Cormobates leucophaea metastasis*	white-throated treecreeper (southern)		C		9
animals	birds	Climacteridae	*Climacteris picumnus*	brown treecreeper		C		4
animals	birds	Columbidae	*Lopholaimus antarcticus*	topknot pigeon		C		3
animals	birds	Columbidae	*Streptopelia chinensis*	spotted dove	Y			5
animals	birds	Columbidae	*Geopelia humeralis*	bar-shouldered dove		C		11

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Columbidae	*Macropygia amboinensis*	brown cuckoo-dove		C		10
animals	birds	Columbidae	*Chalcophaps indica*	emerald dove		C		1
animals	birds	Columbidae	*Phaps chalcoptera*	common bronzewing		C		8
animals	birds	Columbidae	*Ocyphaps lophotes*	crested pigeon		C		30
animals	birds	Columbidae	*Columba leucomela*	white-headed pigeon		C		3
animals	birds	Columbidae	*Geopelia striata*	peaceful dove		C		17
animals	birds	Columbidae	*Columba livia*	rock dove	Y			1
animals	birds	Coraciidae	*Eurystomus orientalis*	dollarbird		C		12
animals	birds	Corvidae	*Corvus orru*	Torresian crow		C		39
animals	birds	Cuculidae	*Scythrops novaehollandiae*	channel-billed cuckoo		C		7
animals	birds	Cuculidae	*Cacomantis variolosus*	brush cuckoo		C		2
animals	birds	Cuculidae	*Centropus phasianinus*	pheasant coucal		C		16
animals	birds	Cuculidae	*Cacomantis flabelliformis*	fan-tailed cuckoo		C		7
animals	birds	Cuculidae	*Cacomantis pallidus*	pallid cuckoo		C		1
animals	birds	Cuculidae	*Chalcites lucidus*	shining bronze-cuckoo		C		3
animals	birds	Cuculidae	*Eudynamys orientalis*	eastern koel		C		7
animals	birds	Dicruridae	*Dicrurus bracteatus bracteatus*	spangled drongo (eastern Australia)		C		1
animals	birds	Dicruridae	*Dicrurus bracteatus*	spangled drongo		C		9
animals	birds	Estrildidae	*Neochmia temporalis*	red-browed finch		C		18
animals	birds	Estrildidae	*Taeniopygia guttata*	zebra finch		C		1
animals	birds	Estrildidae	*Taeniopygia bichenovii*	double-barred finch		C		10
animals	birds	Estrildidae	*Lonchura castaneothorax*	chestnut-breasted mannikin		C		1
animals	birds	Eurostopodidae	*Eurostopodus mystacalis*	white-throated nightjar		C		2
animals	birds	Falconidae	*Falco berigora*	brown falcon		C		1
animals	birds	Falconidae	*Falco cenchroides*	nankeen kestrel		C		3
animals	birds	Falconidae	*Falco peregrinus*	peregrine falcon		C		1
animals	birds	Halcyonidae	*Dacelo sp.*			C		1
animals	birds	Halcyonidae	*Todiramphus sanctus*	sacred kingfisher		C		10
animals	birds	Halcyonidae	*Dacelo novaeguineae*	laughing kookaburra		C		35
animals	birds	Halcyonidae	*Todiramphus macleayii*	forest kingfisher		C		9
animals	birds	Hirundinidae	*Petrochelidon nigricans*	tree martin		C		2
animals	birds	Hirundinidae	*Petrochelidon ariel*	fairy martin		C		1
animals	birds	Hirundinidae	*Hirundo neoxena*	welcome swallow		C		31
animals	birds	Jacanidae	*Irediparra gallinacea*	comb-crested jacana		C		1
animals	birds	Laridae	*Chroicocephalus novaehollandiae*	silver gull		C		1
animals	birds	Maluridae	*Malurus cyaneus*	superb fairy-wren		C		11
animals	birds	Maluridae	*Malurus lamberti*	variegated fairy-wren		C		12
animals	birds	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren		C		19
animals	birds	Megaluridae	*Megalurus timoriensis*	tawny grassbird		C		5
animals	birds	Megapodiidae	*Alectura lathami*	Australian brush-turkey		C		2
animals	birds	Meliphagidae	*Manorina melanophrys*	bell miner		C		1
animals	birds	Meliphagidae	*Melithreptus lunatus*	white-naped honeyeater		C		5
animals	birds	Meliphagidae	*Philemon corniculatus*	noisy friarbird		C		23
animals	birds	Meliphagidae	*Manorina melanocephala*	noisy miner		C		31
animals	birds	Meliphagidae	*Myzomela sanguinolenta*	scarlet honeyeater		C		20
animals	birds	Meliphagidae	*Philemon citreogularis*	little friarbird		C		5

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Meliphagidae	*Anthochaera chrysoptera*	little wattlebird		C		9
animals	birds	Meliphagidae	*Lichmera indistincta*	brown honeyeater		C		19
animals	birds	Meliphagidae	*Phylidonyris niger*	white-cheeked honeyeater		C		2
animals	birds	Meliphagidae	*Entomyzon cyanotis*	blue-faced honeyeater		C		6
animals	birds	Meliphagidae	*Caligavis chrysops*	yellow-faced honeyeater		C		11
animals	birds	Meliphagidae	*Meliphaga lewinii*	Lewin's honeyeater		C		10
animals	birds	Meliphagidae	*Ptilotula fusca*	fuscous honeyeater		C		1
animals	birds	Meliphagidae	*Acanthorhynchus tenuirostris*	eastern spinebill		C		6/1
animals	birds	Meliphagidae	*Plectorhyncha lanceolata*	striped honeyeater		C		6
animals	birds	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater		C		14
animals	birds	Meropidae	*Merops ornatus*	rainbow bee-eater		C		13
animals	birds	Monarchidae	*Myiagra rubecula*	leaden flycatcher		C		7
animals	birds	Monarchidae	*Myiagra inquieta*	restless flycatcher		C		1
animals	birds	Monarchidae	*Symposiachrus trivirgatus*	spectacled monarch		SL		2
animals	birds	Monarchidae	*Carterornis leucotis*	white-eared monarch		C		1/1
animals	birds	Monarchidae	*Monarcha melanopsis*	black-faced monarch		SL		1
animals	birds	Monarchidae	*Grallina cyanoleuca*	magpie-lark		C		31
animals	birds	Nectariniidae	*Dicaeum hirundinaceum*	mistletoebird		C		4
animals	birds	Neosittidae	*Daphoenositta chrysoptera*	varied sittella		C		11
animals	birds	Oriolidae	*Sphecotheres vieilloti*	Australasian figbird		C		14
animals	birds	Oriolidae	*Oriolus sagittatus*	olive-backed oriole		C		8
animals	birds	Pachycephalidae	*Falcunculus frontatus*	crested shrike-tit		C		1
animals	birds	Pachycephalidae	*Colluricincla harmonica*	grey shrike-thrush		C		19
animals	birds	Pachycephalidae	*Pachycephala pectoralis*	golden whistler		C		17
animals	birds	Pachycephalidae	*Pachycephala rufiventris*	rufous whistler		C		19
animals	birds	Pachycephalidae	*Pachycephala pectoralis youngi*	golden whistler (south-eastern Australia)		C		1
animals	birds	Pardalotidae	*Pardalotus striatus*	striated pardalote		C		21
animals	birds	Pardalotidae	*Pardalotus punctatus*	spotted pardalote		C		6/1
animals	birds	Passeridae	*Passer domesticus*	house sparrow	Y			3
animals	birds	Pelecanidae	*Pelecanus conspicillatus*	Australian pelican		C		5
animals	birds	Petroicidae	*Petroica rosea*	rose robin		C		8
animals	birds	Petroicidae	*Microeca fascinans*	jacky winter		C		1
animals	birds	Petroicidae	*Eopsaltria australis*	eastern yellow robin		C		13
animals	birds	Phalacrocoracidae	*Phalacrocorax sulcirostris*	little black cormorant		C		2
animals	birds	Phalacrocoracidae	*Microcarbo melanoleucos*	little pied cormorant		C		5
animals	birds	Phalacrocoracidae	*Phalacrocorax varius*	pied cormorant		C		2
animals	birds	Phalacrocoracidae	*Phalacrocorax carbo*	great cormorant		C		1
animals	birds	Phasianidae	*Coturnix ypsilophora*	brown quail		C		8
animals	birds	Phasianidae	*Pavo cristatus*	Indian peafowl	Y			3
animals	birds	Podargidae	*Podargus strigoides*	tawny frogmouth		C		14
animals	birds	Podicipedidae	*Tachybaptus novaehollandiae*	Australasian grebe		C		5
animals	birds	Pomatostomidae	*Pomatostomus temporalis*	grey-crowned babbler		C		6
animals	birds	Psittacidae	*Trichoglossus haematodus moluccanus*	rainbow lorikeet		C		42
animals	birds	Psittacidae	*Platycercus adscitus palliceps*	pale-headed rosella (southern form)		C		2
animals	birds	Psittacidae	*Trichoglossus chlorolepidotus*	scaly-breasted lorikeet		C		30

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Psittacidae	*Platycercus adscitus*	pale-headed rosella		C		15
animals	birds	Psittacidae	*Alisterus scapularis*	Australian king-parrot		C		4
animals	birds	Psittacidae	*Platycercus eximius*	eastern rosella		C		3
animals	birds	Psittacidae	*Platycercus elegans*	crimson rosella		C		1
animals	birds	Psittacidae	*Parvipsitta pusilla*	little lorikeet		C		5
animals	birds	Psophodidae	*Psophodes olivaceus*	eastern whipbird		C		10
animals	birds	Rallidae	*Gallirallus philippensis*	buff-banded rail		C		8
animals	birds	Rallidae	*Gallinula tenebrosa*	dusky moorhen		C		7
animals	birds	Rallidae	*Porzana fluminea*	Australian spotted crake		C		1
animals	birds	Rallidae	*Porphyrio melanotus*	purple swamphen		C		17
animals	birds	Recurvirostridae	*Himantopus himantopus*	black-winged stilt		C		1
animals	birds	Rhipiduridae	*Rhipidura rufifrons*	rufous fantail		SL		1
animals	birds	Rhipiduridae	*Rhipidura leucophrys leucophrys*	willie wagtail (southern)		C		1
animals	birds	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail		C		25
animals	birds	Rhipiduridae	*Rhipidura albiscapa*	grey fantail		C		34
animals	birds	Scolopacidae	*Numenius phaeopus*	whimbrel		SL		1
animals	birds	Scolopacidae	*Numenius madagascariensis*	eastern curlew		E	CE	1
animals	birds	Scolopacidae	*Limosa lapponica baueri*	Western Alaskan bar-tailed godwit		V	V	1
animals	birds	Scolopacidae	*Numenius minutus*	little curlew		SL		1
animals	birds	Strigidae	*Ninox strenua*	powerful owl		V		2
animals	birds	Strigidae	*Ninox boobook*	southern boobook		C		12
animals	birds	Strigidae	*Ninox connivens*	barking owl		C		1
animals	birds	Sturnidae	*Acridotheres tristis*	common myna	Y			4
animals	birds	Sturnidae	*Sturnus vulgaris*	common starling	Y			1
animals	birds	Threskiornithidae	*Platalea flavipes*	yellow-billed spoonbill		C		3
animals	birds	Threskiornithidae	*Threskiornis spinicollis*	straw-necked ibis		C		11
animals	birds	Threskiornithidae	*Platalea regia*	royal spoonbill		C		4
animals	birds	Threskiornithidae	*Threskiornis molucca*	Australian white ibis		C		13
animals	birds	Timaliidae	*Zosterops lateralis*	silvereye		C		17
animals	birds	Turnicidae	*Turnix varius*	painted button-quail		C		1/1
animals	birds	Tytonidae	*Tyto delicatula*	eastern barn owl		C		3
animals	insects	Nymphalidae	*Danaus petilia*	lesser wanderer				1
animals	insects	Nymphalidae	*Euploea corinna*	common crow				2
animals	insects	Nymphalidae	*Acraea andromacha andromacha*	glasswing				1
animals	insects	Nymphalidae	*Melanitis leda bankia*	evening brown				1
animals	insects	Nymphalidae	*Danaus plexippus*	monarch	Y			3
animals	mammals	Acrobatidae	*Acrobates pygmaeus*	feathertail glider		C		7
animals	mammals	Bovidae	*Bos sp.*	cattle	Y			2
animals	mammals	Canidae	*Vulpes vulpes*	red fox	Y			8
animals	mammals	Canidae	*Canis familiaris (dingo)*	dingo				1
animals	mammals	Canidae	*Canis familiaris*	dog	Y			4
animals	mammals	Dasyuridae	*Antechinus stuartii*	brown antechinus		C		1
animals	mammals	Dasyuridae	*Antechinus flavipes flavipes*	yellow-footed antechinus (south-east Queensland)		C		14
animals	mammals	Dasyuridae	*Antechinus sp.*			C		1
animals	mammals	Equidae	*Equus caballus*	horse	Y			2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	mammals	Equidae	*Equus sp.*		Y			1
animals	mammals	Felidae	*Felis catus*	cat	Y			4
animals	mammals	Leporidae	*Lepus europaeus*	European brown hare	Y			11
animals	mammals	Macropodidae	*Notamacropus rufogriseus*	red-necked wallaby		C		15
animals	mammals	Macropodidae	*Macropus giganteus*	eastern grey kangaroo		C		15
animals	mammals	Macropodidae	*Wallabia bicolor*	swamp wallaby		C		8
animals	mammals	Macropodidae	*Macropus sp.*			C		2
animals	mammals	Miniopteridae	*Miniopterus australis*	little bent-wing bat		C		3
animals	mammals	Molossidae	*Mormopterus petersi*	inland free-tailed bat		C		1
animals	mammals	Molossidae	*Tadarida australis*	white-striped freetail bat		C		5
animals	mammals	Molossidae	*Mormopterus sp.*			C		2
animals	mammals	Muridae	*Rattus fuscipes*	bush rat		C		4
animals	mammals	Muridae	*Melomys cervinipes*	fawn-footed melomys		C		1
animals	mammals	Muridae	*Mus musculus*	house mouse	Y			5
animals	mammals	Muridae	*Rattus rattus*	black rat	Y			6
animals	mammals	Muridae	*Rattus tunneyi*	pale field-rat		C		1
animals	mammals	Muridae	*Hydromys chrysogaster*	water rat		C		1
animals	mammals	Muridae	*Rattus lutreolus*	swamp rat		C		2
animals	mammals	Muridae	*Melomys sp.*			C		1
animals	mammals	Peramelidae	*Isoodon macrourus*	northern brown bandicoot		C		11
animals	mammals	Petauridae	*Petaurus norfolcensis*	squirrel glider		C		20
animals	mammals	Petauridae	*Petaurus breviceps sensu lato*	sugar glider		C		12
animals	mammals	Phalangeridae	*Trichosurus vulpecula*	common brushtail possum		C		35
animals	mammals	Phalangeridae	*Trichosurus caninus*	short-eared possum		C		4
animals	mammals	Phascolarctidae	*Phascolarctos cinereus*	koala		V	V	97
animals	mammals	Pseudocheiridae	*Petauroides volans volans*	southern greater glider		V	V	1
animals	mammals	Pseudocheiridae	*Pseudocheirus peregrinus*	common ringtail possum		C		5
animals	mammals	Pteropodidae	*Syconycteris australis*	eastern blossom bat		C		4
animals	mammals	Pteropodidae	*Pteropus poliocephalus*	grey-headed flying-fox		C	V	6
animals	mammals	Pteropodidae	*Pteropus scapulatus*	little red flying-fox		C		2
animals	mammals	Pteropodidae	*Pteropus alecto*	black flying-fox		C		6
animals	mammals	Pteropodidae	*Pteropus sp.*			C		3
animals	mammals	Tachyglossidae	*Tachyglossus aculeatus*	short-beaked echidna		SL		3
animals	mammals	Vespertilionidae	*Chalinolobus morio*	chocolate wattled bat		C		1
animals	mammals	Vespertilionidae	*Myotis macropus*	large-footed myotis		C		4
animals	mammals	Vespertilionidae	*Chalinolobus nigrogriseus*	hoary wattled bat		C		4
animals	mammals	Vespertilionidae	*Nyctophilus gouldi*	Gould's long-eared bat		C		2
animals	mammals	Vespertilionidae	*Chalinolobus gouldii*	Gould's wattled bat		C		8
animals	mammals	Vespertilionidae	*Vespadelus darlingtoni*	large forest bat		C		1
animals	ray-finned fishes	Ambassidae	*Ambassis agassizii*	Agassiz's glassfish				1
animals	ray-finned fishes	Anguillidae	*Anguilla reinhardtii*	longfin eel				12
animals	ray-finned fishes	Anguillidae	*Anguilla australis*	southern shortfin eel				1
animals	ray-finned fishes	Cichlidae	*Oreochromis mossambica*	Mozambique mouthbrooder	Y			5
animals	ray-finned fishes	Clupeidae	*Herklotsichthys castelnaui*	southern herring				1
animals	ray-finned fishes	Eleotridae	*Philypnodon grandiceps*	flathead gudgeon				2
animals	ray-finned fishes	Eleotridae	*Hypseleotris compressa*	empire gudgeon				12

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	ray-finned fishes	Eleotridae	*Hypseleotris galii*	firetail gudgeon				12
animals	ray-finned fishes	Eleotridae	*Gobiomorphus australis*	striped gudgeon				1
animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia duboulayi*	crimsonspotted rainbowfish				5
animals	ray-finned fishes	Mugilidae	*Mugil cephalus*	sea mullet				3
animals	ray-finned fishes	Plotosidae	*Tandanus tandanus*	freshwater catfish				1
animals	ray-finned fishes	Poeciliidae	*Gambusia holbrooki*	mosquitofish	Y			6
animals	ray-finned fishes	Poeciliidae	*Poecilia reticulata*	guppy	Y			1
animals	ray-finned fishes	Poeciliidae	*Xiphophorus hellerii*	swordtail	Y			1
animals	ray-finned fishes	Poeciliidae	*Xiphophorus maculatus*	platy	Y			6
animals	ray-finned fishes	Terapontidae	*Leiopotherapon unicolor*	spangled perch				6
animals	reptiles	Agamidae	*Intellagama lesueurii*	eastern water dragon		C		12
animals	reptiles	Agamidae	*Pogona barbata*	bearded dragon		C		23
animals	reptiles	Boidae	*Morelia spilota*	carpet python		C		18
animals	reptiles	Chelidae	*Chelodina expansa*	broad-shelled river turtle		C		2
animals	reptiles	Chelidae	*Emydura macquarii macquarii*	Murray turtle		C		1
animals	reptiles	Chelidae	*Chelodina longicollis*	eastern snake-necked turtle		C		2
animals	reptiles	Chelidae	*Wollumbinia latisternum*	saw-shelled turtle		C		4
animals	reptiles	Colubridae	*Dendrelaphis punctulatus*	green tree snake		C		15
animals	reptiles	Colubridae	*Tropidonophis mairii*	freshwater snake		C		2/1
animals	reptiles	Colubridae	*Boiga irregularis*	brown tree snake		C		3/1
animals	reptiles	Diplodactylidae	*Nebulifera robusta*	robust velvet gecko		C		3
animals	reptiles	Elapidae	*Demansia psammophis*	yellow-faced whipsnake		C		4
animals	reptiles	Elapidae	*Cryptophis nigrescens*	eastern small-eyed snake		C		4
animals	reptiles	Elapidae	*Pseudechis porphyriacus*	red-bellied black snake		C		6/1
animals	reptiles	Elapidae	*Pseudonaja textilis*	eastern brown snake		C		4
animals	reptiles	Gekkonidae	*Hemidactylus frenatus*	house gecko	Y			1
animals	reptiles	Pygopodidae	*Lialis burtonis*	Burton's legless lizard		C		2
animals	reptiles	Scincidae	*Saiphos equalis*	three-toed skink		C		1
animals	reptiles	Scincidae	*Concinnia tenuis*	bar-sided skink		C		1
animals	reptiles	Scincidae	*Eulamprus quoyii*	eastern water skink		C		1
animals	reptiles	Scincidae	*Lampropholis sp.*			C		1
animals	reptiles	Scincidae	*Concinnia martini*	dark bar-sided skink		C		2
animals	reptiles	Scincidae	*Ctenotus spaldingi*	straight-browed ctenotus		C		5
animals	reptiles	Scincidae	*Tiliqua scincoides*	eastern blue-tongued lizard		C		2
animals	reptiles	Scincidae	*Lampropholis amicula*	friendly sunskink		C		1
animals	reptiles	Scincidae	*Anomalopus verreauxii*	three-clawed worm-skink		C		1
animals	reptiles	Scincidae	*Lampropholis delicata*	dark-flecked garden sunskink		C		24
animals	reptiles	Scincidae	*Pygmaeascincus timlowi*	dwarf litter-skink		C		3
animals	reptiles	Scincidae	*Calyptotis scutirostrum*	scute-snouted calyptotis		C		5
animals	reptiles	Scincidae	*Lampropholis guichenoti*	pale-flecked garden sunskink		C		3
animals	reptiles	Scincidae	*Calyptotis lepidorostrum*	cone-eared calyptotis		C		1
animals	reptiles	Scincidae	*Cryptoblepharus pulcher pulcher*	elegant snake-eyed skink		C		19
animals	reptiles	Typhlopidae	*Anilios ligatus*	robust blind snake		C		2
animals	reptiles	Typhlopidae	*Anilios proximus*	proximus blind snake		C		2
animals	reptiles	Varanidae	*Varanus sp.*	goanna		C		1
animals	reptiles	Varanidae	*Varanus varius*	lace monitor		C		13

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
fungi	lecanoromycetes	Pannariaceae	*Pannaria lurida*			C		1/1
plants	land plants	Alismataceae	*Sagittaria platyphylla*	sagittaria	Y			2/2
plants	land plants	Aneuraceae	*Riccardia graeffei*			C		1/1
plants	land plants	Anthocerotaceae	*Anthoceros punctatus*			C		1/1
plants	land plants	Apocynaceae	*Parsonsia brisbanensis*	broad-leaved monkey vine		C		1/1
plants	land plants	Apocynaceae	*Carissa ovata*	currantbush		C		1/1
plants	land plants	Apocynaceae	*Cascabela thevetia*	yellow oleander	Y			2
plants	land plants	Apocynaceae	*Parsonsia straminea*	monkey rope		C		1
plants	land plants	Apocynaceae	*Catharanthus roseus*	pink periwinkle	Y			1
plants	land plants	Apocynaceae	*Alstonia constricta*	bitterbark		C		1
plants	land plants	Apocynaceae	*Gomphocarpus fruticosus*	narrow-leaved cotton bush	Y			1
plants	land plants	Araliaceae	*Hydrocotyle acutiloba*			C		1/1
plants	land plants	Araliaceae	*Polyscias elegans*	celery wood		C		1
plants	land plants	Arecaceae	*Livistona australis*	cabbage tree palm		C		1
plants	land plants	Arecaceae	*Syagrus romanzoffiana*	Queen palm	Y			1
plants	land plants	Asparagaceae	*Asparagus africanus*	ornamental asparagus	Y			1
plants	land plants	Asteraceae	*Calyptocarpus vialis*	creeping cinderella weed	Y			1
plants	land plants	Asteraceae	*Hypochaeris radicata*	catsear	Y			1
plants	land plants	Asteraceae	*Baccharis halimifolia*	groundsel bush	Y			18
plants	land plants	Asteraceae	*Ambrosia artemisiifolia*	annual ragweed	Y			1/1
plants	land plants	Asteraceae	*Eclipta prostrata*	white eclipta	Y			1/1
plants	land plants	Asteraceae	*Gymnocoronis spilanthoides*		Y			1/1
plants	land plants	Asteraceae	*Chrysanthemoides monilifera subsp. rotundata*	bitou bush	Y			1/1
plants	land plants	Asteraceae	*Bidens pilosa*		Y			1
plants	land plants	Asteraceae	*Sonchus oleraceus*	common sowthistle	Y			1
plants	land plants	Asteraceae	*Emilia sonchifolia*		Y			1
plants	land plants	Asteraceae	*Sphaeromorphaea australis*			C		2/2
plants	land plants	Balsaminaceae	*Impatiens walleriana*	balsam	Y			1/1
plants	land plants	Bartramiaceae	*Philonotis slateri*			C		1/1
plants	land plants	Basellaceae	*Anredera cordifolia*	Madeira vine	Y			1
plants	land plants	Bignoniaceae	*Pandorea jasminoides*			C		1
plants	land plants	Bignoniaceae	*Tecoma stans var. stans*		Y			1
plants	land plants	Bignoniaceae	*Dolichandra unguis-cati*	cat's claw creeper	Y			1
plants	land plants	Blechnaceae	*Blechnum indicum*	swamp water fern		C		1
plants	land plants	Blechnaceae	*Doodia media*			C		1
plants	land plants	Braithwaiteaceae	*Braithwaitea sulcata*			C		1/1
plants	land plants	Bryaceae	*Gemmabryum coronatum*			C		3/3
plants	land plants	Bryaceae	*Rosulabryum billardierei*			C		1/1
plants	land plants	Cactaceae	*Opuntia*					1
plants	land plants	Caesalpiniaceae	*Senna pendula var. glabrata*	Easter cassia	Y			1
plants	land plants	Calymperaceae	*Syrrhopodon armatus*			C		1/1
plants	land plants	Campanulaceae	*Lobelia purpurascens*	white root		C		1
plants	land plants	Cannabaceae	*Cannabis sativa*	Indian hemp	Y			1
plants	land plants	Casuarinaceae	*Casuarina cunninghamiana subsp. cunninghamiana*			C		1
plants	land plants	Casuarinaceae	*Allocasuarina torulosa*			C		1
plants	land plants	Casuarinaceae	*Allocasuarina littoralis*			C		1

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plants	land plants	Cephaloziellaceae	*Cephaloziella*					1/1
plants	land plants	Commelinaceae	*Tradescantia zebrina*		Y			1
plants	land plants	Crassulaceae	*Bryophyllum delagoense*		Y			1
plants	land plants	Cyperaceae	*Carex*					1
plants	land plants	Cyperaceae	*Baumea*					1
plants	land plants	Cyperaceae	*Gahnia aspera*			C		1
plants	land plants	Cyperaceae	*Scleria rugosa*			C		1/1
plants	land plants	Cyperaceae	*Scleria tricuspidata*			C		1/1
plants	land plants	Dennstaedtiaceae	*Pteridium esculentum*	common bracken		C		2
plants	land plants	Dicksoniaceae	*Calochlaena dubia*			C		2
plants	land plants	Dicranaceae	*Holomitrium perichaetiale var. perichaetiale*			C		2/2
plants	land plants	Ditrichaceae	*Ditrichum difficile*			C		1/1
plants	land plants	Ebenaceae	*Diospyros geminata*	scaly ebony		C		1
plants	land plants	Elaeocarpaceae	*Elaeocarpus obovatus*	blueberry ash		C		2
plants	land plants	Entodontaceae	*Entodon mackaviensis*			C		1/1
plants	land plants	Ericaceae	*Leucopogon juniperinus*	prickly heath		C		1
plants	land plants	Ericaceae	*Leucopogon leptospermoides*			C		1/1
plants	land plants	Euphorbiaceae	*Mallotus philippensis*	red kamala		C		2
plants	land plants	Euphorbiaceae	*Alchornea ilicifolia*	native holly		C		1
plants	land plants	Euphorbiaceae	*Ricinus communis*	castor oil bush	Y			1
plants	land plants	Euphorbiaceae	*Euphorbia cyathophora*	dwarf poinsettia	Y			1
plants	land plants	Fabaceae	*Chorizema parviflorum*	eastern flame pea		C		1/1
plants	land plants	Fabaceae	*Trifolium repens var. repens*	white clover	Y			1
plants	land plants	Fabaceae	*Daviesia arborea*	golden pea tree		C		1/1
plants	land plants	Fabaceae	*Hovea acutifolia*			C		1
plants	land plants	Fabaceae	*Crotalaria goreensis*	gambia pea	Y			1/1
plants	land plants	Fabaceae	*Macrotyloma uniflorum var. uniflorum*		Y			1
plants	land plants	Fabaceae	*Hardenbergia violacea*			C		1
plants	land plants	Fabaceae	*Tephrosia grandiflora*		Y			1/1
plants	land plants	Fabaceae	*Austrosteenisia blackii*	bloodvine		C		1
plants	land plants	Fissidentaceae	*Fissidens*					2/2
plants	land plants	Fossombroniaceae	*Fossombronia*					1/1
plants	land plants	Goodeniaceae	*Goodenia*					1
plants	land plants	Haloragaceae	*Gonocarpus chinensis subsp. verrucosus*			C		1/1
plants	land plants	Hemerocallidaceae	*Dianella revoluta*			C		1
plants	land plants	Hemerocallidaceae	*Geitonoplesium cymosum*	scrambling lily		C		1
plants	land plants	Hemerocallidaceae	*Dianella caerulea var. caerulea*			C		1/1
plants	land plants	Hemerocallidaceae	*Dianella longifolia var. longifolia*			C		1/1
plants	land plants	Hydrocharitaceae	*Ottelia ovalifolia subsp. ovalifolia*			C		1/1
plants	land plants	Hypnaceae	*Hypnum sp. (Caboolture J.F.Shirley AQ733970)*			C		1/1
plants	land plants	Hypnaceae	*Hypnum*					1/1
plants	land plants	Hypnaceae	*Hypnum cupressiforme*			C		2/2
plants	land plants	Hypnaceae	*Hypnum sp. (Cairns C.J.Wild AQ733964)*			C		1/1
plants	land plants	Hypoxidaceae	*Hypoxis pratensis var. pratensis*			C		1/1
plants	land plants	Juncaceae	*Juncus polyanthemus*			C		1
plants	land plants	Jungermanniaceae	*Jungermannia*					4/4

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plants	land plants	Lamiaceae	*Coleus australis*			C		1
plants	land plants	Lamiaceae	*Coleus habrophyllus*			E	E	2/2
plants	land plants	Lamiaceae	*Clerodendrum floribundum*			C		1
plants	land plants	Lauraceae	*Cryptocarya microneura*	murrogun		C		1
plants	land plants	Lauraceae	*Persea americana*	avocado	Y			1
plants	land plants	Lauraceae	*Cinnamomum camphora*	camphor laurel	Y			1
plants	land plants	Laxmanniaceae	*Lomandra multiflora subsp. multiflora*			C		1
plants	land plants	Laxmanniaceae	*Thysanotus tuberosus*			C		1
plants	land plants	Laxmanniaceae	*Lomandra multiflora*			C		1
plants	land plants	Laxmanniaceae	*Lomandra hystrix*			C		1
plants	land plants	Laxmanniaceae	*Cordyline rubra*	red-fruited palm lily		C		2
plants	land plants	Laxmanniaceae	*Lomandra*					1
plants	land plants	Laxmanniaceae	*Thysanotus tuberosus subsp. parviflorus*			C		1/1
plants	land plants	Lejeuneaceae	*Spruceanthus thozetianus*			C		1/1
plants	land plants	Lejeuneaceae	*Acrolejeunea securifolia*			C		1/1
plants	land plants	Leucobryaceae	*Campylopus torquatus*			C		1/1
plants	land plants	Leucobryaceae	*Leucobryum candidum*			C		1/1
plants	land plants	Leucobryaceae	*Campylopus introflexus*			C		1/1
plants	land plants	Malvaceae	*Urena lobata*	urena weed	Y			1
plants	land plants	Malvaceae	*Sida rhombifolia*		Y			1
plants	land plants	Menispermaceae	*Pleogyne australis*	wiry grape		C		1
plants	land plants	Meteoriaceae	*Papillaria flexicaulis*			C		1/1
plants	land plants	Metzgeriaceae	*Metzgeria*					1/1
plants	land plants	Mimosaceae	*Acacia concurrens*			C		1
plants	land plants	Mimosaceae	*Acacia melanoxylon*	blackwood		C		1
plants	land plants	Mimosaceae	*Acacia podalyriifolia*	Queensland silver wattle		C		1
plants	land plants	Mimosaceae	*Leucaena leucocephala*		Y			1
plants	land plants	Mimosaceae	*Acacia disparrima subsp. disparrima*			C		3
plants	land plants	Mimosaceae	*Acacia leiocalyx*			C		1
plants	land plants	Mimosaceae	*Acacia fimbriata*	Brisbane golden wattle		C		1
plants	land plants	Mimosaceae	*Mimosa pudica var. hispida*		Y			1/1
plants	land plants	Moraceae	*Trophis scandens subsp. scandens*			C		1
plants	land plants	Moraceae	*Ficus coronata*	creek sandpaper fig		C		2
plants	land plants	Moraceae	*Ficus virens var. virens*			C		1
plants	land plants	Myrtaceae	*Austromyrtus dulcis*	midgen berry		C		1
plants	land plants	Myrtaceae	*Corymbia citriodora*	spotted gum		C		1
plants	land plants	Myrtaceae	*Corymbia intermedia*	pink bloodwood		C		3
plants	land plants	Myrtaceae	*Melaleuca bracteata*			C		1
plants	land plants	Myrtaceae	*Eucalyptus propinqua*	small-fruited grey gum		C		2
plants	land plants	Myrtaceae	*Eucalyptus tindaliae*	Queensland white stringybark		C		1
plants	land plants	Myrtaceae	*Eucalyptus acmenoides*			C		1
plants	land plants	Myrtaceae	*Eucalyptus microcorys*			C		2
plants	land plants	Myrtaceae	*Lophostemon confertus*	brush box		C		2
plants	land plants	Myrtaceae	*Lophostemon suaveolens*	swamp box		C		2
plants	land plants	Myrtaceae	*Melaleuca linariifolia*	snow-in summer		C		3
plants	land plants	Myrtaceae	*Eucalyptus siderophloia*			C		2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Myrtaceae	*Eucalyptus tereticornis*			C		2
plants	land plants	Myrtaceae	*Leptospermum petersonii*			C		1
plants	land plants	Myrtaceae	*Melaleuca quinquenervia*	swamp paperbark		C		2
plants	land plants	Myrtaceae	*Leptospermum polygalifolium*	tantoon		C		1
plants	land plants	Myrtaceae	*Corymbia citriodora subsp. variegata*			C		1
plants	land plants	Myrtaceae	*Melaleuca*					1
plants	land plants	Myrtaceae	*Syzygium moorei*	Durobby		V	V	1/1
plants	land plants	Myrtaceae	*Eucalyptus carnea*			C		1
plants	land plants	Myrtaceae	*Sannantha similis*			C		1
plants	land plants	Myrtaceae	*Melaleuca salicina*			C		1
plants	land plants	Myrtaceae	*Angophora leiocarpa*	rusty gum		C		1
plants	land plants	Nephrolepidaceae	*Nephrolepis cordifolia*	fishbone fern		C		1
plants	land plants	Notothyladaceae	*Phaeoceros carolinianus*			C		1/1
plants	land plants	Nymphaeaceae	*Nymphaea*					1/1
plants	land plants	Ochnaceae	*Ochna serrulata*	ochna	Y			1
plants	land plants	Oleaceae	*Ligustrum sinense*	small-leaved privet	Y			2/1
plants	land plants	Orchidaceae	*Pterostylis nutans*			C		1/1
plants	land plants	Orchidaceae	*Acianthus fornicatus*	pixie caps		C		1/1
plants	land plants	Orthorrhynchiaceae	*Orthorrhynchium elegans subsp. cymbifolioides*			C		4/4
plants	land plants	Passifloraceae	*Passiflora suberosa subsp. litoralis*		Y			1
plants	land plants	Passifloraceae	*Passiflora subpeltata*	white passion flower	Y			1
plants	land plants	Petiveriaceae	*Rivina humilis*		Y			1
plants	land plants	Phyllanthaceae	*Bridelia exaltata*			C		1
plants	land plants	Phyllanthaceae	*Glochidion*					1
plants	land plants	Picrodendraceae	*Petalostigma pubescens*	quinine tree		C		1
plants	land plants	Pinaceae	*Pinus elliottii*	slash pine	Y			1
plants	land plants	Piperaceae	*Peperomia*					1
plants	land plants	Pittosporaceae	*Pittosporum revolutum*	yellow pittosporum		C		1
plants	land plants	Plantaginaceae	*Bacopa monnieri*			C		1/1
plants	land plants	Poaceae	*Aristida warburgii*			C		1/1
plants	land plants	Poaceae	*Oplismenus imbecillis*			C		1
plants	land plants	Poaceae	*Rytidosperma longifolium*			C		1
plants	land plants	Poaceae	*Cynodon dactylon var. dactylon*		Y			1
plants	land plants	Poaceae	*Oplismenus aemulus*	creeping shade grass		C		1
plants	land plants	Poaceae	*Andropogon virginicus*	whiskey grass	Y			1/1
plants	land plants	Poaceae	*Ottochloa gracillima*	pademelon grass		C		1/1
plants	land plants	Poaceae	*Cymbopogon refractus*	barbed-wire grass		C		2
plants	land plants	Poaceae	*Sporobolus fertilis*	giant Parramatta grass	Y			1/1
plants	land plants	Poaceae	*Paspalum conjugatum*	sourgrass	Y			1/1
plants	land plants	Poaceae	*Melinis minutiflora*	molasses grass	Y			1
plants	land plants	Poaceae	*Megathyrsus maximus*		Y			1
plants	land plants	Poaceae	*Imperata cylindrica*	blady grass		C		3
plants	land plants	Poaceae	*Paspalum vaginatum*	saltwater couch	Y			1/1
plants	land plants	Poaceae	*Panicum effusum*			C		1/1
plants	land plants	Poaceae	*Themeda triandra*	kangaroo grass		C		1
plants	land plants	Poaceae	*Entolasia stricta*	wiry panic		C		1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Polygonaceae	*Antigonon leptopus*		Y			1
plants	land plants	Polypodiaceae	*Platycerium bifurcatum*			C		1
plants	land plants	Polypodiaceae	*Platycerium superbum*	staghorn fern		C		1
plants	land plants	Pottiaceae	*Barbula subcalycina*			C		2/2
plants	land plants	Pottiaceae	*Weissia*					1/1
plants	land plants	Pottiaceae	*Weissia sp. (Victoria Park H.Tryon AQ645533)*			C		1/1
plants	land plants	Proteaceae	*Grevillea*					1
plants	land plants	Proteaceae	*Banksia integrifolia*			C		2
plants	land plants	Proteaceae	*Macadamia integrifolia*	macadamia nut		V	V	2/1
plants	land plants	Proteaceae	*Hakea florulenta*	three-nerved willow hakea		C		1
plants	land plants	Proteaceae	*Persoonia cornifolia*	broad-leaved geebung		C		1
plants	land plants	Pteridaceae	*Cheilanthes*					1
plants	land plants	Pteridaceae	*Adiantum hispidulum var. hispidulum*			C		1
plants	land plants	Ptychomniaceae	*Euptychium cuspidatum*			C		1/1
plants	land plants	Pylaisiadelphaceae	*Wijkia*					1/1
plants	land plants	Racopilaceae	*Racopilum*					1/1
plants	land plants	Racopilaceae	*Racopilum cuspidigerum var. cuspidigerum*			C		1/1
plants	land plants	Rhamnaceae	*Alphitonia excelsa*	soap tree		C		1
plants	land plants	Rosaceae	*Prunus rivularis*		Y			1/1
plants	land plants	Rosaceae	*Rubus ellipticus*	yellow raspberry	Y			2/2
plants	land plants	Rubiaceae	*Gynochthodes jasminoides*			C		1
plants	land plants	Rubiaceae	*Psychotria loniceroides*	hairy psychotria		C		1
plants	land plants	Rubiaceae	*Cyclophyllum coprosmoides var. coprosmoides*			C		1
plants	land plants	Rutaceae	*Melicope elleryana*			C		1
plants	land plants	Rutaceae	*Murraya paniculata 'Exotica'*		Y			1
plants	land plants	Sapindaceae	*Cardiospermum grandiflorum*	heart seed vine	Y			1
plants	land plants	Sapindaceae	*Jagera pseudorhus var. pseudorhus*			C		1
plants	land plants	Sapindaceae	*Cupaniopsis anacardioides*	tuckeroo		C		1
plants	land plants	Sapindaceae	*Dodonaea triquetra*	large-leaved hop bush		C		1
plants	land plants	Sapindaceae	*Guioa semiglauca*	guioa		C		1
plants	land plants	Sematophyllaceae	*Sematophyllum subpinnatum*			C		1/1
plants	land plants	Solanaceae	*Solanum seaforthianum*	Brazilian nightshade	Y			1
plants	land plants	Solanaceae	*Solanum chrysotrichum*		Y			1/1
plants	land plants	Solanaceae	*Solanum americanum*		Y			1/1
plants	land plants	Solanaceae	*Cestrum parqui*	green cestrum	Y			1
plants	land plants	Sparrmanniaceae	*Triumfetta rhomboidea*	chinese burr	Y			3/3
plants	land plants	Stylidiaceae	*Stylidium graminifolium*	grassy-leaved trigger-flower		C		1/1
plants	land plants	Thelypteridaceae	*Christella dentata*	creek fern		C		1
plants	land plants	Thymelaeaceae	*Wikstroemia indica*	tie bush		C		1
plants	land plants	Thymelaeaceae	*Pimelea linifolia subsp. linifolia*			C		1/1
plants	land plants	Ulmaceae	*Trema tomentosa*			C		1
plants	land plants	Ulmaceae	*Celtis sinensis*	Chinese elm	Y			1
plants	land plants	Verbenaceae	*Duranta erecta*	duranta	Y			1
plants	land plants	Verbenaceae	*Stachytarpheta cayennensis*		Y			1/1
plants	land plants	Verbenaceae	*Lantana montevidensis*	creeping lantana	Y			1
plants	land plants	Verbenaceae	*Lantana camara*	lantana	Y			2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Xanthorrhoeaceae	*Xanthorrhoea macronema*			C		1

CODES

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

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

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

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

APPENDIX C

MNES DESKTOP SEARCHES

Australian Government

Department of Agriculture, Water and the Environment

EPBC Act Protected Matters Report

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

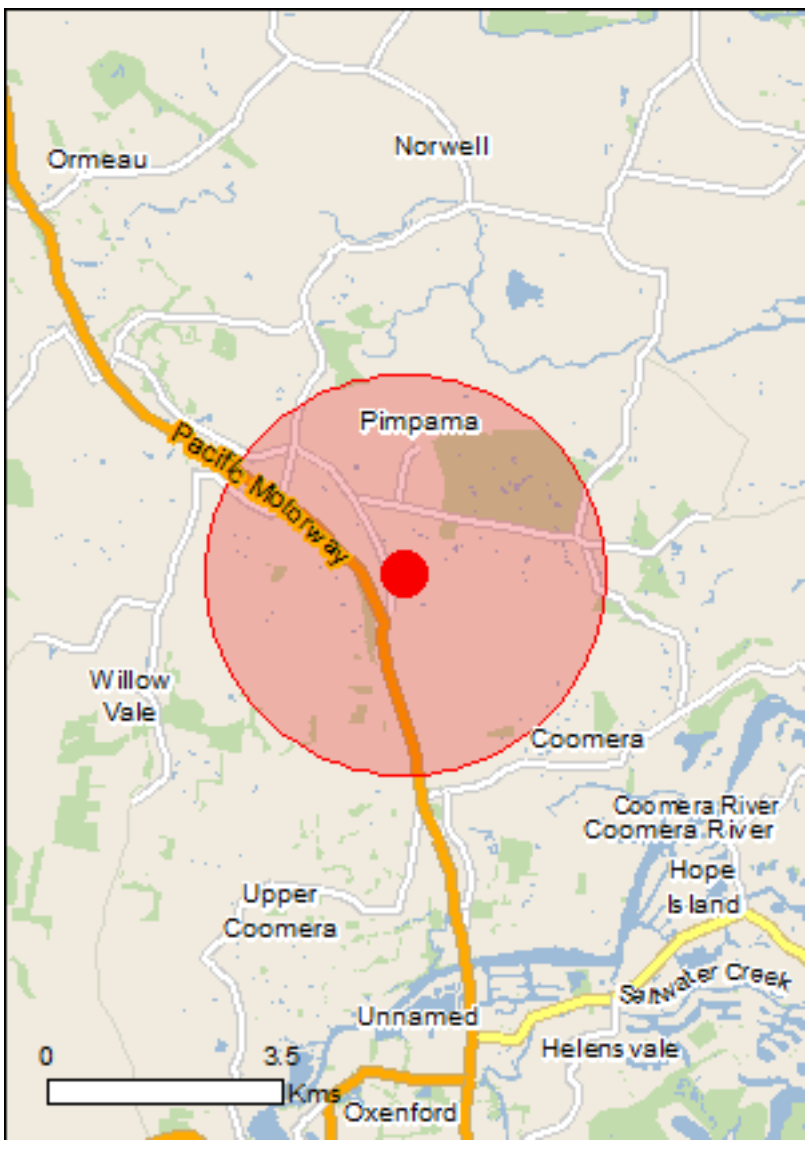
Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

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

Report created: 14/01/21 12:43:10

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

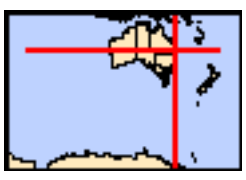
Caveat
Acknowledgements



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2015

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:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	52
Listed Migratory Species:	17

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:	24
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:	None
Regional Forest Agreements:	None
Invasive Species:	34
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

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 likely to 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	Foraging, feeding or related behaviour likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	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
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	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
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area
Thinornis cucullatus cucullatus Hooded Plover (eastern), Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area
Frogs		
Mixophyes fleayi Fleay's Frog [25960]	Endangered	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 known to 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
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to 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 known to occur within area
Plants		

Name	Status	Type of Presence
Acacia attenuata [10690]	Vulnerable	Species or species habitat likely to occur within area
Acronychia littoralis Scented Acronychia [8582]	Endangered	Species or species habitat may occur within area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area
Baloghia marmorata Marbled Balogia, 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 likely to occur within area
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat may occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
Cupaniopsis shirleyana Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat may occur within area
Endiandra floydii Floyd's Walnut [52955]	Endangered	Species or species habitat known to occur within area
Lepidium peregrinum Wandering Pepper-cress [14035]	Endangered	Species or species habitat may 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
Marsdenia longiloba Clear Milkvine [2794]	Vulnerable	Species or species habitat may occur within area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area
Planchonella eerwah Shiny-leaved Condoo, Black Plum, Wild Apple [17340]	Endangered	Species or species habitat likely to occur within area
Plectranthus habrophyllus [64589]	Endangered	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat likely to occur within area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat likely to occur within area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area
Sophora fraseri [8836]	Vulnerable	Species or species habitat may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Tylophora woollsii [20503]	Endangered	Species or species habitat may occur within area
Reptiles		
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat likely to occur within area
Delma torquata Adorned Delma, Collared Delma [1656]	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
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	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 known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
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 likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

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]		Species or species habitat likely 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

Name	Threatened	Type of Presence
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 likely to 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]	Vulnerable	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
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known 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 known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Thinornis rubricollis rubricollis Hooded Plover (eastern) [66726]	Vulnerable*	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

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 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

Name	Status	Type of Presence 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
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
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]		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]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False		Species or species

Name	Status	Type of Presence
Ragweed [19566]		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

-27.8305 153.3061

Acknowledgements

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

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

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

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

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APPENDIX D

FLORA SPECIES RECORDED DURING SURVEY

Scientific Name	Common Name	Status[1]
Acacia concurrens	late-flowering hickory	
Acacia disparrima	hickory wattle	
Acacia fimbriata	Brisbane wattle	
Acacia leiocalyx subsp. *leiocalyx*	early flowering black wattle	
Acacia longissima	long-leaved wattle	
Acmena ingens	red apple	
Ageratina adenophora	crofton weed	Ex
Ageratum houstonianum	blue billygoat weed	Ex
Allocasuarina littoralis	black she-oak	
Alphitonia excelsa	soap tree	
Alternanthera denticulata	lesser joyweed	
Ambrosia artemisiifolia	annual ragweed	Ex
Angophora leiocarpa	smooth-barked apple	
Archontophoenix alexandrae	Alexander palm	N
Asparagus aethiopicus	ground asparagus	Ex
Aster subulatus	wild aster	Ex
Bidens pilosa	cobbler's pegs	Ex
Blechnum cartilagineum	gristle fern	
Brachychiton acerifolius	flame tree	
Brachychiton australis	broad-leaved bottle tree	
Brachychiton bidwillii	rusty kurrajong	CWS
Callisia elegans	striped inch plant	Ex
Callisia fragrans	purple succulent	Ex
Castanospermum australe	black bean	
Casuarina glauca	swamp oak	
Cecropia peltata	trumpet tree	Ex
Chloris gayana	Rhodes grass	Ex
Cinnamomum camphora	camphor laurel	Ex
Commelina diffusa	native wandering jew	
Conyza bonariensis	flax-leaf fleabane	Ex
Conyza sumatrensis	fleabane	Ex
Corymbia intermedia	pink bloodwood	
Corymbia torelliana	cadaghi	N
Cupaniopsis anacardioides	tuckeroo	
Cynodon dactylon	couch	
Delonix regia	poinciana	Ex
Desmodium uncinatum	silver-leaved desmodium	Ex
Drypetes deplanchei	yellow tulip	
Duranta erecta	duranta	Ex
Dypsis lutescens	golden cane palm	Ex
Elaeocarpus grandis	blue quandong	
Eragrostis curvula	African lovegrass	Ex
Eriobotrya japonica	loquat	Ex

Scientific Name	Common Name	Status[1]
Eucalyptus siderophloia	grey ironbark	
Eucalyptus tereticornis	forest red gum	
Eugenia uniflora	Brazilian cherry	Ex
Eustrephus latifolius	wombat berry	
Ficus obliqua var. *petiolaris*	small-leaved fig	
Flagellaria indica	whip vine	
Flindersia australis	crow's ash	
Glochidion ferdinandi var. *ferdinandi*	cheese tree	
Glochidion sumatranum	umbrella cheese tree	
Grevillea robusta	silky oak	
Harpullia pendula	tulipwood	
Imperata cylindrica	blady grass	
Jagera pseudorhus subsp. *pseudorhus*	foambark	
Lantana camara	lantana	Ex
Lepidium bonariense	Argentine peppercress	Ex
Leptospermum polygalifolium	wild may	
Leucaena leucocephala	leucaena	Ex
Livistona australis	cabbage tree palm	
Livistona chinensis	Chinese fan palm	Ex
Lomandra longifolia	long-leaved mat-rush	
Lophostemon confertus	brush box	
Lophostemon suaveolens	swamp box	
Lotononis bainesii	lotononis	Ex
Maclura cochinchinensis	cockspur thorn	
Macroptilium atropurpureum	siratro	Ex
Macroptilium lathyroides	phasey bean	Ex
Macrotyloma axillare	perennial horse gram	Ex
Mangifera indica	mango	Ex
Megathyrsus maximus	Guinea grass	Ex
Melaleuca bracteata	black tea tree	
Melaleuca linariifolia var. *linariifolia*	snow in summer	
Melaleuca quinquenervia	broad-leaved paperbark	
Melaleuca salicina	white bottlebrush	
Melaleuca viminalis	weeping bottlebrush	
Melinis minutiflora	molasses grass	Ex
Melinis repens	red natal grass	Ex
Monstera deliciosa	monstera	Ex
Morus alba	white mulberry	Ex
Murraya paniculata	orange jessamine	Ex
Nauclea orientalis	cheesewood	N
Neonotonia wightii	glycine	Ex
Nephrolepis cordifolia	fishbone fern	N
Nymphaea caerulea subsp. *zanzibarensis*	blue waterlily	Ex

Scientific Name	Common Name	Status[1]
Nymphoides indica	water snowflake	
Ochna serrulata	ochna	Ex
Ottochloa gracillima	graceful grass	
Oxalis corniculata	yellow wood-sorrell	Ex
Passiflora suberosa	corky passionflower	Ex
Persicaria attenuata	-	
Philodendrum bipinnatifidum	tree philodendron	Ex
Platycerium bifurcatum subsp. *bifurcatum*	elkhorn	
Podocarpus elatus	brown pine	
Portulaca pilosa	hairy pigweed	
Ricinus communis	castor-oil plant	Ex
Roystonea regia	Cuban royal palm	Ex
Schefflera actinophylla	umbrella tree	N
Schefflera arboricola	dwarf umbrella tree	Ex
Schinus terebinthifolius	broad-leaved pepper tree	Ex
Setaria sphacelata	South African pigeon grass	Ex
Sida rhombifolia	Paddy's lucerne	Ex
Sida spinosa	spiny sida	Ex
Solanum chrysotrichum	giant devil's fig	Ex
Solanum mauritianum	wild tobacco	Ex
Solanum nigrum	black-berry nightshade	Ex
Solanum seaforthianum	Brazilian nightshade	Ex
Solanum torvum	devil's fig	Ex
Sonchus oleraceus	sow thistle	Ex
Spathodea campanulata	African tulip tree	Ex
Sphagneticola trilobata	Singapore daisy	Ex
Stenocarpus sinuatus	wheel of fire	
Syagrus romanzoffiana	cocos palm	Ex
Syzygium jambos	rose apple	Ex
Syzygium luehmannii	riberry	
Tipuana tipu	tipuana	Ex
Trema tomentosa var. *viridis*	native peach	
Typha orientalis	cumbungi	
Urochloa decumbens	signal grass	Ex
Verbena bonariensis	purpletop	Ex
Verbena littoralis	common verbena	Ex
Washingtonia robusta	Mexican fan palm	Ex
Wikstroemia indica	tie bush	
Xanthostemon chrysanthus	golden penda	N
Yucca aloifolia	Spanish bayonet	Ex

[1]Status:
Ex = exotic species not native to Queensland; N = native species not endemic to the Gold Coast. Council of the City of Gold Coast: CWS = City Wide Significant species
Queensland *Nature Conservation (Plants) Regulation 2020*: CR = Critically Endangered, E = Endangered, V = Vulnerable, NT = Near Threatened. All other species are Least Concern. Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*: CE[#] = Critically Endangered, E[#] = Endangered, V[#] = Vulnerable, CD[#] = Conservation Dependent.

APPENDIX E

FAUNA SPECIES RECORDED DURING SURVEY

Scientific Name	Common Name	Family	Status[1]	Method[2]	Survey Type[3]	Location[4]
AMPHIBIANS						
Litoria fallax	eastern sedge frog	Hylidae		H	A	S
REPTILES						
Lampropholis delicata	dark-flecked garden sunskink	Scincidae		O	O	S
BIRDS						
Colluricincla harmonica	grey shrike-thrush	Pachycephalidae		O	DB	S
Corvus orru	torresian crow	Corvidae		H	O	E
Dacelo novaeguineae	laughing kookaburra	Halcyonidae		H	DB	E
Gerygone olivacea	white-throated gerygone	Acanthizidae		H	DB	E
Grallina cyanoleuca	Australian magpie-lark	Dicruridae		H	DB	E
Manorina melanocephala	noisy miner	Meliphagidae		H	O	S
Meliphaga lewinii	Lewin's honeyeater	Meliphagidae		O	DB	S
Phalacrocorax melanoleucos	little pied cormorant	Phalacrocoracidae		O	O	S
Trichoglossus haematodus	rainbow lorikeet	Psittacidae		Overfly	O	S
MAMMALS						
Canis familiaris	domestic dog	Canidae	I	H	O	E
Macropus sp.	a macropod	Macropodidae		S	O	S
Trichosurus sp.	a possum	Phalangeridae		S	O	S

[1]Status:
Council of the City of Gold Coast: CWS = City Wide Significant Species.
Queensland *Nature Conservation (Animals) Regulation 2020*: CR = Critically Endangered, E = Endangered, V = Vulnerable, NT = Near Threatened.
Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*: CE[#] = Critically Endangered, E[#] = Endangered, V[#] = Vulnerable, CD[#] = Conservation Dependent, I[#] = Introduced Species.
I = Introduced species; All other records are Least Concern species under the Queensland *Nature Conservation (Wildlife) Regulation 2006.*
[2]Primary method of identification:
H = heard, O = visually observed, T = trapped, C = hand captured, S = indirect evidence of presence (e.g. scats, scratches, tracks and other traces), S* = scat identification confirmed by expert analysis.
[3]Survey type:
DB = diurnal bird survey, A = amphibian aural point, S = spotlighting survey; O = opportunistic observation.
[4]Location:
S = recorded within site, E = recorded external to site.

APPENDIX F

GOLD COAST CITY PLAN CODE RESPONSES

City Plan code template

This code template supports the preparation of a development application against either the acceptable outcome(s) or performance outcome(s) contained in the code. Development assessment rules are outlined in **Section 5.3.3** of the City Plan.

Please note:

For assessment against the overall outcomes, refer to the appropriate code.

Note: The whole of the planning scheme is identified as the assessment benchmark for impact assessable development. This specifically includes assessment of impact assessable development against this strategic framework. The strategic framework may contain intentions and requirements that are additional to and not necessarily repeated in zone, overlay or other codes. In particular, the performance outcomes in zone codes address only a limited number of aspects, predominantly related to built form. Development that is impact assessable must also be assessed against the overall outcomes of the code as well as the strategic framework.

Environmental significance overlay code

8.2.6.1 Application

This code applies to assessing all material change of use, reconfiguration of a lot and operational works (vegetation clearing, changes to ground level, infrastructure) for development on land identified in Part 5.10 Categories of development and assessment and containing the following mapped areas:

Overlay map	Mapped area
Environmental significance – Biodiversity areas	**Matters of State Environmental Significance** • Protected Areas **Matters of Local Environmental Significance** • Hinterland core habitat system; • Coastal wetlands and islands core habitat system; • Substantial remnants; and • Hinterland to coast critical corridors.
Environmental significance – Priority species	**Matters of State Environmental Significance** • Koala habitat areas; and • State significant species. **Matters of Local Environmental Significance** • Local significant species.

Overlay map	Mapped area
Environmental significance – Vegetation management	**Matters of State Environmental Significance** • Regulated Vegetation. **Matters of Local Environmental Significance** • High priority vegetation; • Medium priority vegetation; and • General priority vegetation.
Overlay map	**Mapped area**
Environmental significance – Wetlands and waterway	**Matters of State environmental significance** • State significant aquatic systems; • State significant wetlands; and • Buffer area. **Matters of Local environmental significance** • Major waterway; • Waterway; • Local significant wetlands; and • Buffer area.

When using this code, reference should be made to **Section 5.3.2** and, where applicable, **Section 5.3.3,** in **Part 5**.

Note: Buffers are taken as the maximum distance applicable for the site and are not cumulative.

8.2.6.2 Purpose

(1) The purpose of the Environmental significance overlay code is to identify and protect matters of environmental significance and ensure that development is consistent with, and contributes to, the achievement of the objectives of the Nature Conservation Strategy.

(2) The purpose of the code will be achieved through the following overall outcomes:

(a) Matters of environmental significance are identified, protected in situ and enhanced to maintain flora and fauna diversity within:

(i) Hinterland core habitat systems;

(ii) Coastal wetlands and islands core habitat systems;

(iii) Substantial remnants; and

(iv) Hinterland to coast critical corridors.

(b) Degraded matters of environmental significance are protected and rehabilitated.

(c) High priority vegetation is protected in situ.

(d) Outside of Biodiversity Areas:

  (i) Disturbance to regulated and general priority vegetation is minimised;

  (ii) Impacts on medium priority vegetation are managed, in order of priority, by:

    (A) avoiding significant adverse impacts;

    (B) mitigating significant adverse impacts where these cannot be avoided; and

    (C) offsetting any significant residual impacts.

  (iii) State and local significant species and their habitat are identified and protected.

  (iv) The quality or connectivity of habitat for State and local significant species (including the koala) is improved.

(e) Wetlands, waterways and their associated buffers (as prescribed in RO2) are protected and enhanced.

(f) Buffers are provided between matters of environmental significance and any proposed development, to manage impacts.

(g) Appropriate tenure and management arrangements are provided to protect matters of environmental significance and their associated buffers.

(h) Where offsets are required, these are consistent with the *Environmental Offsets Act 2014*.

(i) Management strategies and appropriate clearing practices are implemented to ensure any fauna impacted by development activities are managed and protected during works.

Editor's Note – in addition to the requirements of this planning scheme, obligations for the protection of matters of environmental significance are established by the Commonwealth and Queensland Government. Additional approvals or referrals may be required.

8.2.6.3 Specific benchmarks for assessment

Table 8.2.6-2: Environmental significance overlay code – for assessable development

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets either the performance outcome or overall outcome	Internal use
Ecological site assessment			
PO1 All matters of environmental significance on and adjacent to the development site are identified and protected. **Note - An Ecological Site Assessment prepared in accordance with SC6.7 City Plan policy – Ecological site assessments, is Council's preferred method for addressing this performance outcome.**	**AO1** Proposed works do not impact on: (a) areas identified on **Environmental significance – vegetation management overlay map**; (b) buffers to wetlands and waterways being: (i) 100m from the mapped boundary of a State significant aquatic area, as identified on **Environmental significance – wetlands and waterways overlay map**; (ii) 100m from the outer landward boundary of a State significant wetland, as identified on **Environmental significance – wetlands and waterways overlay map**; (iii) 100m from the outer landward boundary of a Local significant wetland, as identified on Environmental significance **– wetlands and waterways overlay map**; (iv) 60m from the outer bank of a Major Waterway identified on **Environmental significance – wetlands and waterways overlay map**; or (v) 30m from the outer bank of a Waterway identified on **Environmental significance – wetlands and waterways overlay map**; and (c) individual trees within areas mapped on the **Environmental significance – priority species overlay map.**	**COMPLIES PO1** An Ecological Site Assessment has been prepared by Element Ecology (2021) in accordance with SC6.7 City Plan policy – Ecological site assessments. Based on the results of the site assessment, the proposed development has been designed to restore and enhance matters of environmental significance as required by the applicable Performance Outcomes of this code.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets either the performance outcome or overall outcome	Internal use
Biodiversity areas			
PO2 Development does not impact on Protected Areas as identified on the **Environmental significance– biodiversity areas overlay map.**	**AO2.1** No acceptable outcome provided.	**NOT APPLICABLE** The site is not located within any Protected Areas.	
PO3 Development within the Hinterland to Coast Critical Corridors as identified on the **Environmental significance – biodiversity areas overlay map** is located and designed to: (a) provide corridors of sufficient dimensions and characteristics that will enable adequate movement of fauna through the site; (b) protect in situ matters of environmental significance and associated buffers; (c) protect in situ, vegetation identified on the **Environmental significance – vegetation management overlay map** and habitat for native flora and fauna; (d) link matters of environmental significance, existing corridors and/or conservation estate/reserves on adjacent properties; (e) maintain and improve upon the regional connectivity of the Hinterland to Coast Critical Corridors; and (f) allow for the rehabilitation of disturbed, cleared or modified areas that form part of the Hinterland to Coast Critical Corridors.	**AO3.1** No acceptable outcome provided.	**NOT APPLICABLE** The site is not located within a Hinterland to Coast Critical Corridors category.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets either the performance outcome or overall outcome	Internal use
Note : Recommendations provided in an ecological site assessment (prepared in accordance with SC6.7 City Plan policy – Ecological site assessments) are Council's preferred method for determining corridor dimensions.			
PO4 Development within Hinterland Core Habitat Systems, Coastal Wetlands and Islands Core Habitat Systems and Substantial Remnant Areas as identified on the **Environmental significance – biodiversity areas overlay map** is located and designed to: (a) protect in situ matters of environmental significance and associated buffers; (b) protect in situ vegetation identified on the **Environmental significance – vegetation management overlay map** and habitat for native flora and fauna; and (c) allow for the rehabilitation of disturbed, cleared or modified areas.	**AO4** No acceptable outcome provided.	**NOT APPLICABLE** The site is not located within a Hinterland Core Habitat System, Coastal Wetlands and Islands Core Habitat System or Substantial Remnant Area.	
Wetland and waterway			
PO5 Buffers are provided to wetlands and waterways identified on the **Environmental significance – wetlands and waterways overlay map** to ensure the: (a) protection of matters of environmental significance mapped onsite or identified through an ecological site assessment;	**AO5.1** Buffers at least 100m wide are provided between the development and the mapped boundary of a State significant aquatic area, as identified on **Environmental significance – wetlands and waterways overlay map**.	**NOT APPLICABLE** There are no State significant aquatic areas mapped on site.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? **If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome**	Internal use
(b) unimpeded movement of fauna along the waterway; (c) water quality is maintained; (d) bank stability; and (e) protection of property and infrastructure. **Note: The buffer width for wetlands is measured from the outer, landward boundary of the mapped wetland, as shown on Environmental significance – wetland and waterways overlay map.** **Note: Recommendations provided in an ecological site assessment (prepared in accordance with SC6.7 City Plan policy – Ecological site assessments) is Council's preferred method for determining alternative buffer widths.** **Note Artificial waterways are to be addressed through the Coastal erosion hazard overlay code and map. Where a waterbody contains both natural and artificial banks, the natural banks are to be assessed in accordance with this performance outcome.**	**AO5.2** Buffers at least 100m wide are provided between the development and the outer landward boundary of a State significant wetland, as identified on **Environmental significance – wetlands and waterways overlay map.**	**NOT APPLICABLE** There are no State significant wetlands mapped on site.	
	AO5.3 Buffers at least 100m wide are provided between the development and the outer landward boundary of a Local significant wetland as identified on the **Environmental significance – wetlands and waterways overlay map.**	**NOT APPLICABLE** There are no Local significant wetlands mapped on site.	
	AO5.4 Buffers at least 60m wide are provided between the development and the outer bank of a Major Waterway as identified on the **Environmental significance – wetlands and waterways overlay map**.	**NOT APPLICABLE** There are no Major waterways mapped on site.	
	AO5.5 Buffers at least 30m wide are provided between the development and the outer bank of a waterway as identified on the **Environmental significance – wetlands and waterways overlay map**.	**COMPLIES PERFORMANCE BASED SOLUTION** Mapped waterways traverse the site. However, dams have been historically (artificially) constructed within this mapped alignment. A 20 m wide buffer will be provided along the remediated waterway in the post-development scenario (10 m either side of waterway). This buffer will be rehabilitated following the completion of remediation works. The purpose of rehabilitation works will be to restore the pre-clearing RE, as well enhance functional riparian habitat and connectivity through the site.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? **If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome**	Internal use
Vegetation management			
PO6 Regulated vegetation is protected in situ when it is: (a) identified on the **Environmental significance – vegetation management overlay map**; and (b) within biodiversity areas as identified on the **Environmental significance – biodiversity areas overlay map.**	**AO6** Development does not impact on regulated vegetation.	**NOT APPLICABLE** The site is not located in a Biodiversity Area.	
PO7 Development is designed to maintain regulated vegetation and minimise disturbance when it is: (a) identified on the **Environmental significance – vegetation management overlay map**; and (b) outside of biodiversity areas as identified on the **Environmental significance – biodiversity areas overlay map.**	**AO7** Development avoids impacts on regulated vegetation.	**NOT APPLICABLE** No regulated vegetation is mapped on the site.	
PO8 High priority vegetation as identified on the **Environmental significance – vegetation management overlay map** is protected in situ.	**AO8** No acceptable outcome provided.	**NOT APPLICABLE** No High priority vegetation is mapped on site.	
PO9 Medium and general priority vegetation as identified on the **Environmental significance – vegetation management overlay map** within biodiversity areas as identified on the **Environmental significance –biodiversity areas overlay map** is protected in situ.	**AO9** No acceptable outcome provided.	**NOT APPLICABLE** The site is not located in a Biodiversity Area.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? **If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome**	Internal use
PO10 Vegetation is protected when it is: (a) identified as medium priority vegetation on the **Environmental significance – vegetation management overlay map**; and (b) located outside the biodiversity areas identified on the **Environmental significance – biodiversity areas overlay map.**	**AO10** Vegetation is not damaged when it is: (a) identified as medium priority vegetation on the **Environmental significance – vegetation management overlay map**; and (b) located outside the **Environmental significance –biodiversity areas overlay map.** OR Where all attempts have been made to avoid and minimise damage to vegetation as stated above, any significant residual impact is offset consistent with the *Environmental Offsets Act 2014*, at a ratio of 3:1 (area) in accordance with **SC6.9 City Plan policy – Environmental offsets**. OR Damage to medium priority vegetation identified on the **Environmental significance – vegetation management overlay map** and located outside the biodiversity areas identified on the **Environmental significance – biodiversity areas overlay map** is for committed development.	**NOT APPLICABLE** No medium priority vegetation is mapped on site.	
PO11 Disturbance to vegetation is minimised when it is: (a) identified as General priority vegetation on the **Environmental significance – vegetation management overlay map**; and (b) located outside the **Environmental significance – biodiversity areas overlay map**.	**AO11** Development avoids impacts on general priority vegetation. Any damage is minimised to the greatest extent possible.	**COMPLIES PERFORMANCE BASED SOLUTION** Field investigations confirmed that the mapped General Priority Vegetation is highly modified and contains residual horticultural infrastructure (e.g. black plastic sheeting), fencing and tracks. An easement with underground services was also previously constructed along the site's boundaries and within these mapped areas. Notwithstanding, the proposed development presents an opportunity to remediate and rehabilitate native vegetation communities along the waterway buffer.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? **If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome**	Internal use
		This design outcome will consolidate mapped areas and enhance the overall functionality of native vegetation on the site.	
PO12 Buffers are provided that protect the long term viability of high priority and regulated vegetation located on or adjacent to the site.	**AO12** Buffers at least 30m wide are provided between the development and any retained vegetation identified as high priority or regulated vegetation on the **Environmental significance – vegetation management overlay map** on or adjacent to the site.	**NOT APPLICABLE** No high priority vegetation and regulated vegetation is mapped on site or within 30 metres of the development footprint.	
Priority species			
PO13 Assessable koala feed and shelter trees are protected in situ when they are located: (a) in koala habitat areas as identified on the **Environmental significance – priority species overlay map**; and (b) within biodiversity areas as identified on the **Environmental significance – biodiversity areas overlay map**.	**AO13** Development does not impact on assessable koala feed and shelter trees.	**NOT APPLICABLE** The site is not located within a Biodiversity Area.	
PO14 Assessable koala feed and shelter trees are protected when they are: (a) in koala habitat areas as identified on the **Environmental significance – priority species overlay map**; and (b) outside biodiversity areas as identified on the **Environmental significance – biodiversity areas overlay map**.	**AO14** Development avoids impacts on assessable koala feed and shelter trees. Any damage is minimised to the greatest extent possible.	**NOT APPLICABLE** City Plan Koala Habitat Areas mapping is superseded by the *Planning Regulation 2017* Koala Provisions. This matter will be addressed as part of the referral to State Government under State Code 25.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? **If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome**	Internal use
PO15 Site design provides safe koala movement opportunities by incorporating measures to maintain connectivity between areas of koala habitat on and adjacent to the site. **Note : *DEHP's Koala-Sensitive Design Guideline* should be consulted for suitable measures to provide for safe koala movement.**	**AO15** No acceptable outcome provided.	**COMPLIES PO15** The proposed development will involve the remediation and rehabilitation of koala habitat areas along the waterway alignment. These remediation works will consist of removing the invasive weed biomass and replanting with native species to ensure the pre-clearing vegetation community maintains connectivity through the site.	
PO16 During the clearing and construction phases, measures are incorporated to protect koalas from death or injury.	**AO16** Threats to koalas as a result of clearing and construction activities are mitigated by: (a) ensuring no tree in which a koala is present or a tree with a crown overlapping a tree containing a koala is cleared; (b) undertaking clearing of vegetation in stages, and ensuring: (i) no more than 1 ha is cleared per day for sites less than 6 ha in size; (ii) no more than 2 ha is cleared per day for sites greater than 6 ha in size; (iii) that between each stage there is at least 12 hours where no clearing occurs; and (iv) koala habitat is always linked to allow koalas to move out of the site; (c) use of qualified koala spotters; (d) prohibition of domestic dogs and security dogs on site; and (e) use of koala safety fencing.	**WILL COMPLY PO16** Site management measures will be implemented to mitigate threats to koalas as a result of clearing and construction activities. Conditions of approval can be provided by Council to ensure compliance with this AO.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? **If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome**	Internal use
PO17 State significant species, and their habitat, are protected in situ when it is: (a) identified on the **Environmental significance – priority species overlay map,** or through an ecological site assessment; and (b) within biodiversity areas as identified on the **Environmental significance – biodiversity areas overlay map.**	**AO17** Development does not impact on State significant species, and their habitat.	**NOT APPLICABLE** The site is not located within a Biodiversity Area.	
PO18 Development protects state significant species, and their habitat or is designed to minimise and mitigate impacts on habitat values when it is: (a) identified on the **Environmental significance – priority species overlay map**; and (b) outside of biodiversity areas as identified on the **Environmental significance – biodiversity areas overlay map.**	**AO18.1** Development avoids impacts on state significant species, and their habitat.	**NOT APPLICABLE** The State significant species category is not mapped on site.	
	AO18.2 Where development impacts on state significant species and their habitat, the following occurs: (a) flora species are propagated and used in rehabilitation and landscaping onsite; and (b) fauna species are safely relocated by a qualified fauna spotter catcher.	**NOT APPLICABLE**	
PO19 Local significant species, and their habitat, are protected in situ when it is: (a) identified on the **Environmental significance – priority species overlay map,** or through an ecological site assessment; and (b) within biodiversity areas as identified on the **Environmental significance – biodiversity areas overlay map.**	**AO19** Development does not impact on local significant species, and their habitat.	**NOT APPLICABLE** The site is not located within a Biodiversity Area.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? **If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome**	Internal use
PO20 Development protects local significant species, and their habitat or is designed to minimise and mitigate impacts on habitat values when it is: (a) identified on the **Environmental significance – priority species overlay map**; and (b) outside of biodiversity areas as identified on the **Environmental significance – biodiversity areas overlay map.**	**AO20.1** Development avoids impacts on local significant species, and their habitat.	**NOT APPLICABLE** The Local significant species category is not mapped on site.	
	AO20.2 Where development impacts on local significant species and their habitat, the following occurs: (a) flora species are propagated and used in rehabilitation and landscaping onsite; and (b) fauna species are safely relocated by a qualified fauna spotter catcher.	**NOT APPLICABLE**	
Fauna management			
PO21 Development design and location provides for the safe movement of native fauna through the site.	**AO21** Where infrastructure crosses native fauna movement paths, the design of new development incorporates fauna friendly movement solutions. **Note: Fauna friendly movement solutions developed in accordance with the *Queensland Government Fauna Sensitive Road Design Manual Volume 2: Preferred Practices; and the QLD Government Koala-Sensitive Design Guidelines* is Council's preferred method for addressing this outcome.**	**COMPLIES PO21** Safe movement opportunities for fauna will be provided along the waterway and 20 m wide buffer area in the post-development scenario.	
PO22 Where fauna habitat is proposed to be damaged, management strategies must be implemented to ensure: (a) the native fauna is safely relocated to an area of similar habitat; (b) the sequence of habitat disturbance ensures that fauna is not isolated from adjoining areas of habitat; (c) fauna relocation occurs immediately prior to habitat disturbance;	**AO22** No acceptable outcome provided.	**WILL COMPLY PO22** Site clearing will be undertaken under the supervision and direction of a qualified fauna spotter-catcher. Conditions of approval can be provided to ensure compliance with this PO.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets either the performance outcome or overall outcome	Internal use
(d) accredited and experienced spotter catchers, licensed by the Queensland Parks and Wildlife Service, are to be present on the site to direct and undertake the removal and relocation of fauna; and (e) where possible, damaged habitat and nesting sites are rehabilitated outside of development areas. **Note: A Fauna Management Plan prepared by a suitably qualified person and in accordance with SC6.8 City Plan policy – Environmental management plans is Council's preferred method for addressing this outcome.**			
Tenure, ownership and management arrangements			
PO23 Matters of environmental significance and associated buffers, mapped areas as identified on the **Environmental significance – vegetation management overlay map** proposed for retention and areas requiring rehabilitation are suitably protected in perpetuity and will: (a) enable necessary fire management in accordance with an approved fire management plan and any adopted bushfire management plan; (b) allow unimpeded movement of native fauna through matters of environmental significance and associated buffers; (c) enable maintenance access and regular management; (d) enable auditing and reporting of maintenance and management	**AO23** Matters of environmental significance and associated buffers, mapped areas as identified on the **Environmental significance – vegetation management overlay map** proposed for retention and areas requiring rehabilitation are transferred to Council ownership as Public Open Space. OR Where not required for public access, matters of environmental significance and associated buffers, and mapped areas as identified on the **Environmental significance – vegetation management overlay map** proposed for retention and areas requiring rehabilitation are retained in private ownership and protected under a statutory covenant (under the *Land Title Act 1994*). **Note: Where the area is adjacent to existing public open space, or is a buffer to a major waterway, Council's preference is for the**	**COMPLIES PO23** A Rehabilitation Management Plan has been prepared by Element Ecology and submitted under separate cover to address this PO.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? **If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome**	Internal use
activities; (e) provide for public access along major waterways, where such access is consistent with the ecological functions; (f) allow for linkages and buffers to adjacent areas of ecological significance; and (g) allow for a coordinated approach to the management of adjacent areas of conservation estate.	**land to be dedicated as Public Open Space.**		
PO24 An Open Space Management Plan prepared in accordance with **SC6.12 City Plan policy – Landscape work** is prepared for areas to be dedicated to Council as Public Open Space.	**AO24** No acceptable outcome provided.	**NOT APPLICABLE** The dedication of Public Open Space is not proposed.	
PO25 A Covenant Management Plan is prepared for areas to be protected under a statutory covenant. The management plan must include the following details: (a) rehabilitation area and strategy of works; (b) weed eradication and control requirements; (c) how the covenant area will be maintained and managed in perpetuity; (d) feral and domestic animal exclusion requirements; and (e) required maintenance access. **Note: A Covenant Management Plan is prepared by a suitably qualified**	**AO25** No acceptable outcome provided.	**COMPLIES PO25** A Rehabilitation Management Plan has been prepared by Element Ecology and submitted under separate cover to address this PO.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? **If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome**	Internal use
person and in accordance with SC6.8 City Plan policy – Environmental management plans is Council's preferred method for addressing this performance outcome.			
Rehabilitation			
PO26 Disturbed, cleared or modified areas are rehabilitated where they form part of: (a) an ecological corridor; or (b) matters of environmental significance and associated buffers; or (c) areas identified within an Ecological Site Assessment as requiring rehabilitation. **Note : A Rehabilitation Management Plan prepared in accordance with the *South East Queensland Ecological Restoration Framework* and SC6.8 City Plan policy – Environmental management plans is Council's preferred method for addressing this outcome.**	**AO26** No acceptable outcome provided.	**COMPLIES PO26** The waterway and associated buffers will be remediated and rehabilitated as part of the final approved development. A Rehabilitation Management Plan has been prepared by Element Ecology and submitted under separate cover to address this PO.	

APPENDIX G

STATE CODE 25 RESPONSES

State code 25: Development in South East Queensland koala habitat areas

Table 25.2.1 All development

Performance outcomes	Acceptable outcomes	Response
Retaining koala habitat areas		
PO1 Development interfering with koala habitat (including interfering with koala habitat as a result of material change of use and interfering with koala habitat as a result of reconfiguring a lot) does not occur unless the application demonstrates the interfering with koala habitat has: 1. been reasonably avoided; or 2. been reasonably minimised where it cannot be reasonably avoided; and 3. mitigated the impacts of the interfering with koala habitat values.	No acceptable outcome is prescribed.	**COMPLIES PO1** Removal of mapped koala habitat is required to achieve final design surface levels across the site. Remediation and rehabilitation works will be undertaken along the waterway to restore koala habitat and connectivity through the site in the post-development scenario. An environmental offset will be delivered to counterbalance any significant residual impacts to this matter in accordance with the Queensland Environmental Offsets Policy. The final offset amount will be calculated as part of the referral to State Government and final approved plans.
Koala sensitive design and connectivity		
PO2 The design and siting of development avoids fragmenting koala habitat areas within the site.	No acceptable outcome is prescribed.	**COMPLIES PO2** The proposed development layout has been designed to maximise the use of existing cleared and modified areas on site. In order to achieve design surface levels and remediate the mapped waterway (consisting of dams), earthworks will be undertaken throughout the entire site. Subsequent to completion of earthworks and stabilisation of the waterway alignment, rehabilitation will be undertaken. The purpose of rehabilitation is to reinstate the pre-clearing vegetation community, and enhance riparian habitat and connectivity to adjoining properties.
PO3 The design and siting of development does not result in impediments that restrict the movement of koalas by providing for safe koala movement between highly connected patches of retained koala habitat area.	No acceptable outcome is prescribed.	**COMPLIES PO3** The proposed development has been designed to support safe movement opportunities for koalas through the site. These safe movement opportunities will be maintained in a 20 m buffer along the waterway (10 m on either side of waterway). To further improve the waterway buffer, rehabilitation works will be undertaken in to restore the pre-clearing RE vegetation community.

Performance outcomes	Acceptable outcomes	Response
Koala safety from construction activities		
PO4 The construction of the development does not increase the risk of injury or death of koalas.	**AO4.1** A koala management plan is provided that includes: 1. activities that may cause injury or death of koalas from construction activities; and 2. acceptable measures to avoid and mitigate injury or death of koalas from construction activities Note: To demonstrate compliance with this acceptable outcome, a koala management plan must be prepared by a suitably qualified and experienced person. AND **AO4.2** Interfering with koala habitat complies with the sequential clearing and koala spotter requirements under section 10 and 11 of the Nature Conservation (Koala) Conservation Plan 2017.	**COMPLIES PO4** Site management measures will be implemented to mitigate threats to koalas as a result of clearing and construction activities. Conditions of approval can be provided to ensure a koala management plan is prepared and submitted to DES prior to the commencement of clearing works on site.
Matters of State Environmental Significance		
PO5 Development: 1. avoids impacts on matters of state environmental significance; or 2. minimises and mitigates impacts on matters of state environmental significance after demonstrating avoidance is not reasonably possible; and 3. provides an offset if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable significant residual impact on a matter of state environmental significance that is a prescribed environmental matter. Note: Guidance for determining if development will have a significant residual impact on koala habitat areas is provided in Chapter 2A of the Queensland Environmental Offsets Policy. Guidance for determining if development will have a significant residual impact on all other matters of state environmental significance is provided in the Significant Residual Impact Guideline, Department of State Development, Infrastructure and Planning, 2014.	No acceptable outcome is prescribed.	**COMPLIES PO5** Impacts to koalas and koala habitat have been reasonably avoided, minimised and mitigated, where possible by: • Locating the development footprint within existing cleared and highly modified areas. • Remediating the existing waterway alignment to improve stormwater drainage through the site, as well as bank stability, water quality and connectivity to adjacent properties. • Rehabilitation of 20 m wide waterway buffer to enhance koala habitat and connectivity through the site. • Removal of invasive weed seed bank and restoration of the pre-clearing vegetation community RE 12.3.11 along the waterway. Owing to the considerations above, an environmental offset will be delivered to counterbalance any significant residual impacts to this matter in accordance with the Queensland Environmental Offsets Policy. The final offset amount will be calculated as part of the referral to State Government and final approved plans.
Category C and R vegetation		

Performance outcomes	Acceptable outcomes	Response
PO6 Development: 1. avoids impacts on category C areas of vegetation and category R areas of vegetation; or 2. minimises and mitigates impacts on category C areas of vegetation and category R areas of vegetation after demonstrating avoidance is not reasonably possible.	No acceptable outcome is prescribed.	**NOT APPLICABLE** There are no Category C and Category R areas mapped on the site.