

Our Ref:
6252


13/10/2022

Environmental Values Report

Point Cartwright Reserve & La
Balsa Park Master Plan Project

Point Cartwright, Buddina QLD
4575

Client: Sunshine Coast Council



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Signed on behalf of
Future-Plus Environmental

Date: 13 October 2022



Paul Wood
Director

DOCUMENT CONTROL INFORMATION

Project Number: 6252

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Client: Sunshine Coast Council

Report Title: Environmental Values Report

Project Summary: **Assessment of the site's natural environmental values (biodiversity, waterways and coastal systems)** to form part of the master planning process for Point Cartwright Reserve and La Balsa Park.

Site Address: Point Cartwright, Buddina QLD 4575

Document Review

Document Version	Document Status	Author	Reviewed By	Approved By
6252-220715-0.1	Draft	Dr Sarah Ball Simone Forman Dr Peter Young	Daniel Willis	Paul Wood
6252-220715-1.0	Final	Dr Sarah Ball	Daniel Willis	Paul Wood

Issue Approval

Destination	Document Version	Date Dispatched
Client (SCC) – Digital Copy	6252-220715-0.1	9 September 2022
Client (SCC) – Digital Copy	6252-220715-1.0	13 October 2022

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	PROJECT BACKGROUND	1
2.0	METHODOLOGY	2
2.1	DESKTOP ASSESSMENT	2
2.1.1	<i>Supplied Documentation</i>	2
2.2	FIELD SURVEY	3
2.2.1	<i>Timing and Limitations</i>	4
2.3	ANALYSIS OF DATA AND REPORTING	4
3.0	ENVIRONMENTAL VALUES ASSESSMENT	5
3.1	SITE OVERVIEW	5
3.1.1	<i>Land Tenure</i>	5
3.2	VEGETATION	6
3.2.1	<i>Historical Imagery</i>	6
3.2.2	<i>Sunshine Coast Planning Scheme Overlays</i>	6
3.2.3	<i>State Vegetation Mapping</i>	9
3.2.4	<i>Ground-Truthed Vegetative Communities</i>	11
3.3	THREATENED ECOLOGICAL COMMUNITIES	21
3.4	FAUNA	24
3.4.1	<i>Turtle Nesting</i>	25
3.4.2	<i>Seabirds and Shorebirds</i>	25
3.4.3	<i>Marine Mammals</i>	26
3.4.4	<i>Marine Invertebrates</i>	27
4.0	ENVIRONMENTAL MANAGEMENT	28
4.1	CURRENT APPROACHES	28
4.1.1	<i>Vegetation</i>	28
4.1.2	<i>Fauna</i>	28
5.0	KEY RECOMMENDATIONS	31
5.1	RETENTION OF VEGETATED AREAS	31
5.2	WEED TREATMENT, BUSH REVEGETATION & RESTORATION	32
5.3	INCREASING FAUNA HABITAT VALUES	35
5.3.1	<i>Comprehensive Fauna Surveys and Installation of Fauna Nest Boxes</i>	35
5.3.2	<i>Installation of Osprey Platform</i>	35
5.3.3	<i>Seabirds and Shorebirds</i>	36
5.3.4	<i>Consideration of Other Fauna</i>	36
5.4	CONSTRUCTION OF NEW HEADLAND TRACK/STAIRWAY	36
5.5	CONSTRUCTION OF EXCLUSION FENCING	36
5.6	DOG ACCESS	38

6.0 REFERENCES.....	40
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LIST OF FIGURES

Figure 1. Site Land Tenure (Source: QLD Globe 2022)	5
Figure 2. Historical Imagery	7
Figure 3. Native Vegetation Area (Source: <i>Sunshine Coast Planning Scheme 2014</i>)	8
Figure 4. Riparian Protection Area (Source: <i>Sunshine Coast Planning Scheme 2014</i>)	9
Figure 5. Vegetation Management Regional Ecosystem Mapping (Source: QLD Globe 2022).....	10
Figure 6. Protected Plant Trigger Mapping (Source: QLD Globe 2022)	11
Figure 7. Vegetation Communities Mapping	12
Figure 8. Marine Turtle Nest Monitoring 2020-2021 (Source: MyMaps 2022)	26
Figure 9. Sea Turtle Nesting Area (Source: MyMaps 2022).....	27
Figure 10. Current Vegetation Management Activities (Source: MyMaps 2022)	29
Figure 11. Ground-truthed vegetative communities.....	31
Figure 12. Areas suitable for targeted weed treatments	32
Figure 13. Proposed additional revegetation are for RE 12.2.2	34
Figure 14. Recommended areas for fauna nesting boxes	35
Figure 15. Areas of high erosion.....	37
Figure 16. Areas of degradation due to bike trails and recommended fencing areas.....	38

LIST OF TABLES

Table 1. VC1 Description.....	14
Table 2. VC 2 Description.....	16
Table 3. VC 3 Description.....	18
Table 4. VC 4 Description.....	19
Table 5. VC 5 Description.....	20
Table 6. TEC Key Diagnostic Criteria and Condition Thresholds.....	21

Table 7. Conservation Significant Wildnet Records.....	24
Table 8. Weed Species	33
Table 9. SCC LGA Biosecurity Plan (2014) listed weed management.....	34

LIST OF APPENDICES

Appendix A. Desktop Assessment.....	A
Appendix B. Flora Species List	B

LIST OF ABBREVIATIONS

CEEVNT	Listed as Critically Endangered, Endangered, Vulnerable or Near Threatened under the NC Act
DES	Queensland Department of Environment and Science
DR	Queensland Department of Resources
EBPC Act PMR	<i>Environment Protection and Biodiversity Conservation Act 1999</i> Protected Matters Report
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
FPE	Future-Plus Environmental
LBP	La Balsa Park
NC Act	Queensland <i>Nature Conservation Act 1992</i>
PCR	Point Cartwright Reserve
RE	Regional Ecosystem
SCC	Sunshine Coast Council
TEC	Threatened Ecological Community
VC	Vegetation Community
VM Act	Queensland <i>Vegetation Management Act 1999</i>

1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

Point Cartwright Reserve and La Balsa Park are increasingly popular destinations on the Sunshine Coast and hold a number of important environmental attributes. Due to increasing users of the area, Sunshine Coast Council is in the process of preparing a Master Plan to guide the future usage, management, policy direction and investment in the area.

Future-Plus Environmental (FPE) was commissioned by Sunshine Coast Council (SCC) to undertake an assessment of the environmental values present within the Point Cartwright Reserve and La Balsa Park. The assessment is required to inform the Master Plan and provide recommendations on how best to preserve and improve the current environmental values of the area. As such, the scope of the assessment is wide ranging, and includes information on current overlays, mapping, and management practises, vegetative communities, fauna and fauna habitat, and threats such as erosion, degradation and disturbance. Outcomes from this assessment will be used by Council to guide the future management of the area, seeking a balance between the needs of users and the environment.

2.0 METHODOLOGY

2.1 DESKTOP ASSESSMENT

A desktop assessment was undertaken to identify potential environmental values likely or known to occur within and surrounding the area. The desktop assessment included conducting searches of a range of environmental databases and mapping applications including:

- Aerial, topographical and geological mapping;
- Atlas of Living Australia local search tool;
- eBird local search tool;
- *Environment Protection and Biodiversity Conservation Act 1999* (EBPC Act) Protected Matters search tool (DCCEEW 2022);
- Environmental Reports Online – Matters of State Environmental Significance (MSES) and Biodiversity and Conservation Values;
- DES Flora Survey Trigger Mapping;
- SARA Development Assessment Mapping System;
- Sunshine Coast Council Local Government Area Biosecurity Plan 2017;
- *Sunshine Coast Planning Scheme 2014 – Biodiversity, Waterways and Wetlands Overlay Code*;
- Vegetation management report showing regional ecosystem mapping; and
- Wildnet Database.

Copies of relevant desktop search results are provided in Appendix A, while extracts of relevant online mapping are included as figures throughout this report.

2.1.1 Supplied Documentation

The desktop assessment included review of documentation supplied by SCC, specifically the following:

- A Review of Dog Impacts to Beach-nesting Birds and Management Solutions (2018);
- A Snapshot of Wurtulla – Buddina and District;
- Buddina Place and Character Draft – Part B;
- Coastal Hazard Adaption Strategy – Part A;
- Coastal Hazard Adaption Strategy – Part B;
- Coastal Hazard Adaption Strategy – Part C;
- Commemorative Tree and Seat for Balin Stewart Design Plans (2022);
- Community and Stakeholder Engagement Summary Report – Phase 1 (2022);
- Cultural Heritage Lot on Plan report Pt Cartwright - DATSIP (2021);

- Environmental Authority Permit (EA0001823);
- Establishing Restoration Objectives for Point Cartwright Reserve (2022);
- La Balsa Park, Buddina – Landscape Plan (2015);
- Point Cartwright and La Balsa Park Master Plan – Cultural Heritage Survey (2022);
- Point Cartwright – Field Survey and n-Counter Data;
- Point Cartwright Masterplan – Issue E (2002);
- Point Cartwright Reserve – Master Planning Discussion Paper (2021);
- Pt Cartwright Radar Replacement – Slope Risk Assessment (2019);
- Point Cartwright Reserve Regeneration Works Plan (2014);
- Point Cartwright to Alexandra Headland Shorebird Habitat (2022);
- La Balsa Historic Raft Expedition Educational Sign Design
- La Balsa Park Landscape Plan – Issue D (2015);
- Shorebird Conservation Action Plan;
- State Government Correspondence from QPWS&P;
- Sunshine Coast and Moreton Bay Regional Council Benchmark Artificial Light at Night (ALAN) Survey (2017);
- Sunshine Coast Recreation Parks Plan 2021 – 2031 – Strategic Directions;
- Sunshine Coast Turtle Nesting Report (2005-2016);
- RPP Dog Exercise Area (2021);
- The Effects of Domestic Dogs (*Canis familiaris*) as a Disturbance Agent on the Natural Environment (2011); and
- The Australian Brush-Turkey (*Alectura latham*): Population Dynamics at Two Locations: Mooloolaba Spit to Memorial Park, Mooloolaba, and Point Cartwright Lighthouse Reserve (2018).

2.2 FIELD SURVEY

Details derived from the desktop assessment were used to guide the field investigations. An initial site visit with SCC was conducted on the 30 June 2022 with a targeted fauna habitat feature survey, vegetation survey and spotlighting survey conducted on the 26 July 2022. The targeted field assessment included a meandering survey along the site boundaries and along multiple transects through the internal areas of the site, ensuring a representative coverage of all vegetation types present. All plant species observed along the meandering survey were recorded, as well as areas of weed infestation. Qualitative habitat values were recorded as well as any fauna observed during both the diurnal and nocturnal surveys.

2.2.1 Timing and Limitations

The fieldwork was undertaken during winter after a period of dry weather. This may have limited the positive identification of some grasses. However, the species recorded were comparable to previous records of the area and its surroundings. The cold weather and high winds during the spotlighting event may have affected the activity of fauna within the area. Subsequently, these conditions are likely to have influenced the presence of reptiles and amphibians. Fauna surveys were opportunistic in nature and **didn't include any targeted methodologies such as small-mammal trapping, camera monitoring, acoustic monitoring etc.**, due to seasonality/timing and the potential for interference from the public including theft or tampering.

2.3 ANALYSIS OF DATA AND REPORTING

Details from the desktop and site investigations were analysed to distil key environmental attributes identified on the site and to confirm key impacts and risks that were identified with respect to current site activities. Environmental values were documented, with specific elements shown spatially through mapping. A series of recommendations were detailed in relation to the ongoing retention of values on the site, including potential for rehabilitation to occur at various locations.

3.0 ENVIRONMENTAL VALUES ASSESSMENT

3.1 SITE OVERVIEW

3.1.1 Land Tenure

The site extends over multiple parcels of land described as follows and shown in Figure 1:

- Lot 618 on CG812658 Reserve tenured land
- Lot 711 on CG4027 Reserve tenured land
- Lot 712 on CG4027 Reserve tenured land
- Lot 713 on CG4027 Reserve tenured land
- Lot 200 on CG814425 Reserve tenured land
- Lot 1 on SP143293 State land
- Lot 2 on SP143293 State land



Figure 1. Site Land Tenure (Source: QLD Globe 2022)

In addition, easement parcel A on SP261169 extends from the end of Pacific Boulevard across Lot 618 to the water tower. The survey site also contains sections of road corridors with Council nominated as trustee

Several additional land parcels are encompassed within the reserve and are associated with the lighthouse and infrastructure associated with the water supply storage.

3.2 VEGETATION

3.2.1 Historical Imagery

La Balsa Park and Point Cartwright Reserve have undergone extensive modifications within the last 60 years (refer Figure 2). Historical images of the area show the headland to have been continuously vegetated during the 1960s, with wooded vegetation covering the western side transitioning to shrubs towards the headland and dune systems within the east. Yet by the 1970s, a reduction in vegetation cover is evident and houses can be seen populating the southern end of the area, with several tracks forming around the headland. Most noticeable at this time is the large, sandy area that appears in the centre of Point Cartwright Reserve. The reduction in vegetation cover peaks in the 1980s with images in the 1990s showing substantial revegetation, although large areas around the headland remain relatively open in terms of vegetation cover. The information on vegetation change throughout this period is key to understanding and appreciating the current vegetative composition, as well as the opportunities that may exist to improve local ecological values through rehabilitation.

3.2.2 Sunshine Coast Planning Scheme Overlays

Council has identified a number of ecological values in relation to vegetation associated with the area. The Biodiversity, waterways and wetlands overlay in the *Sunshine Coast Planning Scheme 2014* maps the site as containing native vegetation (refer Figure 3) and a riparian protection area (refer Figure 4) bordering the Maroochy River (stream order 5 or above).



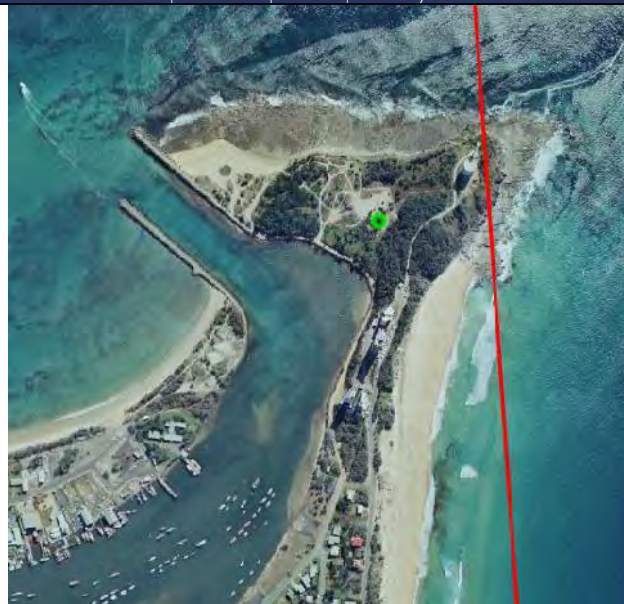
Noosa Heads-Bribie Island 1961 (1:12,500)
Film QAP11311 | Frame 4 | Run 6 | 1st May 1961



Bribie-Teewah Beach Erosion 1972 (1:12,00)
Film QAP2622 | Frame 48 | Run 1 | 19th May 1972



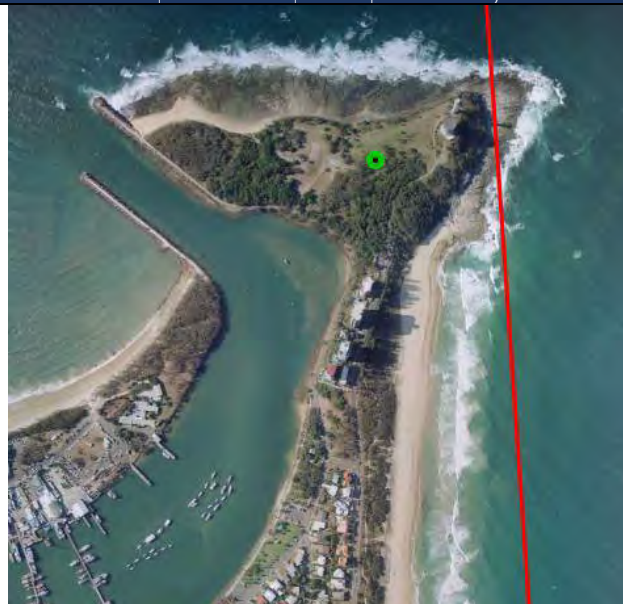
Mooloolaba Palmwoods 1976 (1:14,900)
Film QAP3148 | Frame 3202 | Run 2 | 23rd January 1975



Tweed Heads – Urangan 1982 (1:12,00)
Film QAP4047 | Frame 116 | Run 2 | 29th June 1982



Tweed Heads – Urangan 1994 (1:12,00)
Film QAP5237 | Frame 189 | Run 21 | 25th May 1994



Mooloolaba Boast Harbour 2001 (1:7,500)
Film QAP5906 | Frame 174 | Run 1 | 8th October 2001



Figure 3. Native Vegetation Area (Source: *Sunshine Coast Planning Scheme 2014*)



Figure 4. Riparian Protection Area (Source: *Sunshine Coast Planning Scheme 2014*)

3.2.3 State Vegetation Mapping

Current regulated vegetation management mapping for the site prepared by the State government indicates that the area is mapped as containing two regional ecosystems (RE). The first is Category B 'of concern' RE 12.12.19x3, described as vegetation complex of exposed headlands of remnant Tertiary surfaces. Typically, this vegetation type includes species such as *Themeda triandra* grassland and wind-sheared shrubland and woodland. The second is Category B 'least concern' RE 12.2.14 described as strand and fore dune complex. This vegetation type tends to include species such as *Spinifex sericeus* grassland as well as *Casuarina equisetifolia* subsp. *incana* low woodland/open forest with *Acacia* sp., *Banksia integrifolia* and *Corymbia tessellaris*. Further, there are also areas to the west and north mapped as Category X – non remnant vegetation. The extent of mapped vegetation is shown in Figure 5.

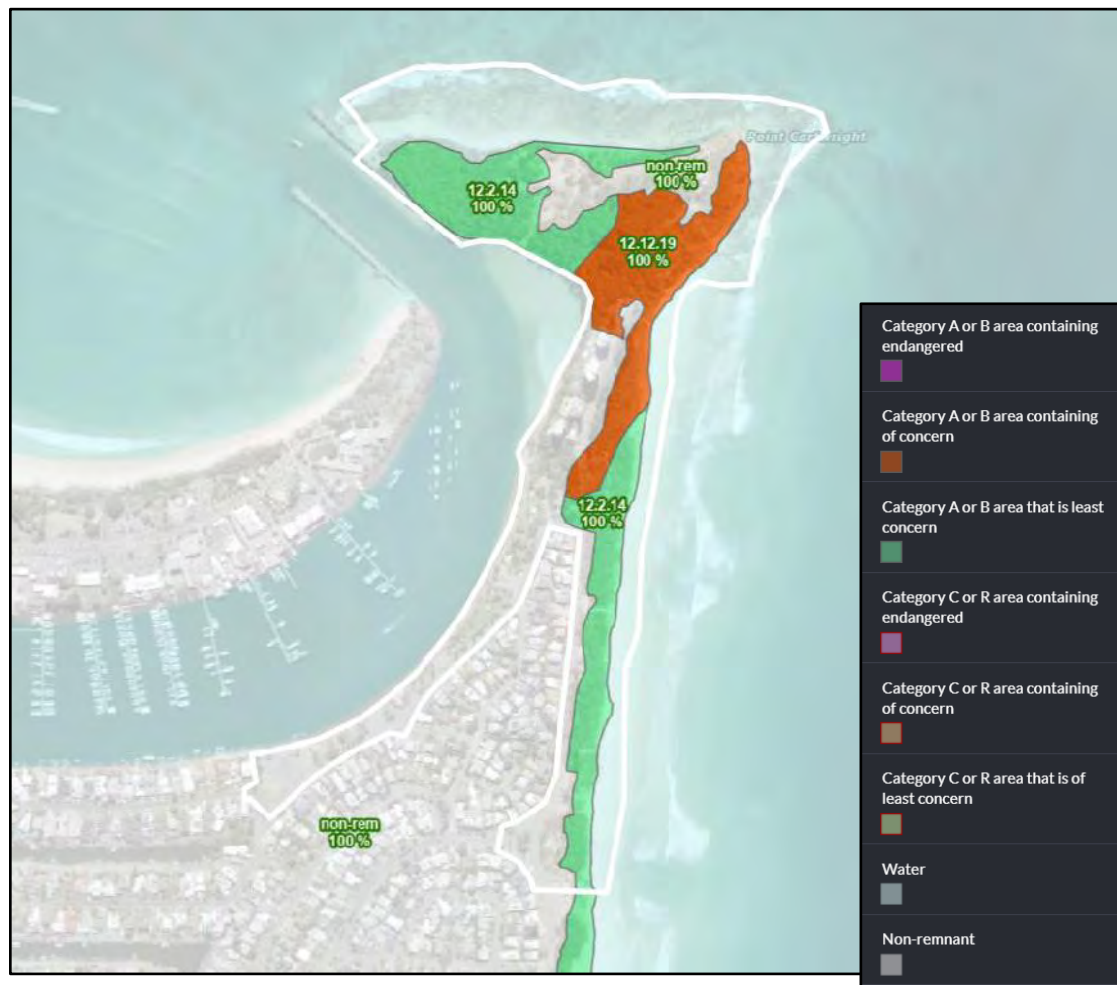


Figure 5. Vegetation Management Regional Ecosystem Mapping (Source: QLD Globe 2022)

Towards the southwestern end of Point Cartwright Reserve is an area mapped as 'high risk' for protected plants (refer Figure 6). A search of documentation for the wider areas revealed a specimen backed record of the 'critically endangered' *Rhodomyrtus psidioides* (native guava) from January 2021 (7km to the south of the site). It is likely that this recorded is associated with the foreshore being mapped as a high-risk area.



Figure 6. Protected Plant Trigger Mapping (Source: QLD Globe 2022)

3.2.4 Ground-Truthed Vegetative Communities

Field surveys found that the area is comprised of five different vegetative communities (VC) in addition to the maintained grass areas with discontinuous trees. These have been described in detail below and correspond to mapping provided in Figure 7. A flora species list of representative species encountered on the site as part of this investigation is available in Appendix B.



Vegetation Management Regional Ecosystem Mapping (QLD Globe 2022)

Ground Truthed Vegetative Community Mapping



Title: Regional Ecosystem and Vegetative Community Mapping
 Project: La Balsa and Point Cartwright Environmental Values Report
 Client: Sunshine Coast Council
 Last Modified: SJB - 22/08/2022

Legend

- | | | |
|--|--|--|
| VC 1 | VC 3 | VC 5 |
| VC 2 | VC 4 | |



COORDINATE SYSTEM: GDA2020
 DATUM: GDA2020

3.2.4.1 Vegetation Community 1

VC 1 is mapped as part of RE 12.12.19x3 (vegetation complex of exposed rocky headlands). The RE subtype “x3” is described as occurring on remnant Tertiary surfaces rather than volcanic rocks typical of Land Zone 12. The bedrock geology at Point Cartwright is mapped as Landsborough Sandstone, however the sandstone may have been affected by Tertiary weathering although this does not appear to be mentioned in detailed local accounts of the geology including Willmott (2007).

The vegetation of VC 1 is both structurally and floristically different from the description of RE 12.12.19x3. The individuality of the flora community present here (which has been aided by bush restoration works) is such that it currently does not align with any regional ecosystem under the Department's regional ecosystem assessment framework.


Two species listed as CEEVNT under the NC Act were encountered during vegetation assessments within VC 1, including:

- *Pararistolochia praevenosa* (Richmond birdwing butterfly vine) – ‘near threatened’. Eight vines were encountered with recruitment evident (seedling plant); and
- *Murraya crenulata* (Smyrell's clausena) – ‘endangered’. One plant was encountered.

From information available, it is likely that both of these species have been planted between 2002 – 2014 due to their absence in historical local records and outside their known distribution and preferred habitat areas. Despite this, they provide ecological value to the site and should be protected and enhanced.

Table 1. VC1 Description

VC 1 – *L. suaveolens* & *C. glauca* closed forest on Landsborough Sandstone with rainforest elements



Geology	Shale and sandstone of Landsborough Sandstone, unit RJ1
---------	---

Vegetation Structure		
Stratum	Height (m)	Cover (%)
T1	20 – 25	80 – 85
T2	18 – 20	15
T3	4 – 8	20
Shrub	1 – 3.5	15 – 20
Ground Layer	0.1 – 0.4	20 – 25

Species Composition	
T1 – T2	Predominantly T1 layer of <i>Lophostemon suaveolens</i> and <i>Casuarina glauca</i> with scattered T2 layer of <i>Archontophoenix cunninghamiana</i> in places (appears to have been planted and has become naturalised on site) along with scattered/occasional <i>Glochidion sumatrensis</i> . Rainforest tree species including <i>Ficus obliqua</i> , <i>Elaeocarpus obovatus</i> , <i>Livistona australis</i> , and vines climbing in tree canopies including <i>Flagellaria indica</i> , <i>Parsonsia straminea</i> , <i>Maclura cochinchinensis</i> and the planted Near Threatened species <i>Pararistolochia praevenosa</i>

T3	Mainly <i>Alectryon coriaceus</i> , <i>Cupaniopsis anacardioides</i> , <i>Acronychia imperforata</i> , <i>Exocarpos cupressiformis</i> , <i>Glochidion ferdinandi</i> , <i>Cyclophyllum coprosmoides</i> , occasional species of other rainforest species, for example, <i>Myrsine howittiana</i> , <i>Syzygium luehmannii</i> , plus species that appear to be planted/naturalised, including <i>Archontophoenix cunninghamiana</i> , <i>Macaranga tanarius</i> , <i>Podocarpus elatus</i> , <i>Araucaria bidwillii</i> , <i>Olea paniculata</i> , <i>Castanospermum australe</i>
Shrub	Small individuals of species listed for T3 plus <i>Psychotria loniceroides</i> , <i>Smilax australis</i> , <i>Gynochthodes jasminoides</i> , <i>Melodinus australis</i> , <i>Geitonoplesium cymosum</i> planted species including Endangered <i>Murraya crenulata</i>
Ground Cover	Predominantly <i>Ottocloa gracillima</i> , patches of naturalised <i>Nephrolepis hirsutula</i> , occasional <i>Austromyrtus dulcis</i> , <i>Megathyrsus maximus</i> ²

² Listed as 'Locally Significant' invasive plants under the SCC LGA Biosecurity Plan 2017

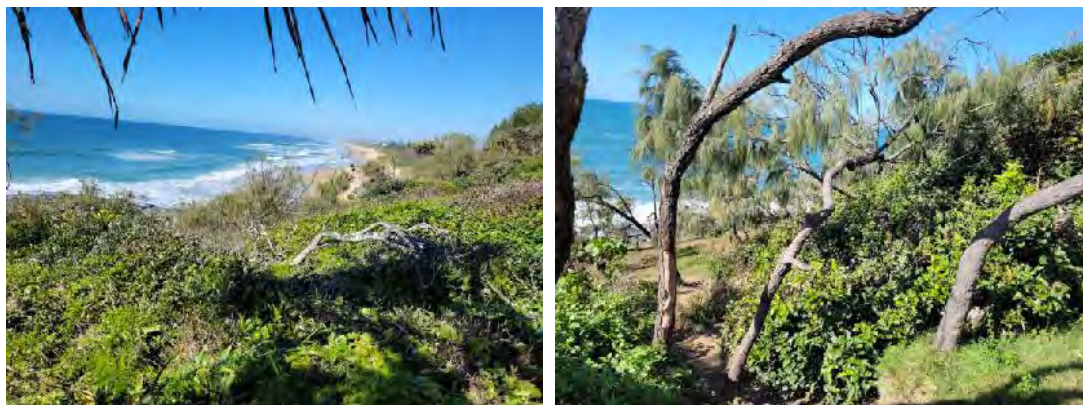
3.2.4.2 Vegetation Community 2

VC 2 is mapped as part of RE 12.12.19x3 (vegetation complex of exposed headlands). This vegetation type occurs on headlands on remnant Tertiary surfaces (see notes under VC 1). The vegetation observed fits the RE description. However, the extent of RE 12.12.19 is less than the mapping suggests, given that VC1 and VC3 were found to be different vegetation communities.

Headlands tend to have distinctive species assemblages including species that are largely endemic to headland environments (Leiper *et al.* 2017). The survey found that the shrubland and grassland patches at Point Cartwright retain a diversity of native species despite competition from habitat-modifying invasive species (Batianoff and Franks 1998). There may be scope for re-introduction of some additional species that appear to have been displaced or have become rare at the site.

Table 2. VC 2 Description

VC 2 – Closed wind-sheared shrubland, *Casuarina equisetifolia* woodland to open woodland with mid-dense to closed shrub layer and patches of grassland (+ herbaceous plants) on Landsborough Sandstone on seaward side of the headland.



Geology	Shale and sandstone of Landsborough Sandstone, unit RJ1	
Vegetation Structure		
Stratum	Height (m)	Cover (%)
T	4 – 8	20 – 35
Shrub	1 – 3	60 – 90
Ground Layer	1 – 4	30 – 90
Species Composition		
T – S	<i>Acacia leiocalyx</i> , <i>Acacia sophorae</i> , <i>Alectryon coriaceus</i> , <i>Asparagus aethiopicus</i> ¹ , <i>Casuarina equisetifolia</i> , <i>Casuarina glauca</i> , <i>Banksia integrifolia</i> subsp. <i>integrifolia</i> , <i>Cupaniopsis anacardioides</i> , <i>Cyclophyllum coprosmoides</i> , <i>Macaranga tanarius</i> , <i>Myoporum acuminatum</i> , <i>Myoporum boninense</i> subsp. <i>australe</i> , <i>Pandanus tectorius</i> , <i>Parsonsia straminea</i> , <i>Schinus terebinthifolius</i> ¹ , <i>Wikstroemia indica</i> , <i>Wollastonia uniflora</i>	
Ground Cover	<i>Asparagus aethiopicus</i> ¹ , <i>Axonopus fissifolius</i> ² , <i>Bidens pilosa</i> ² , <i>Centella asiatica</i> , <i>Chorizandra cymbaria</i> , <i>Cyperus scaber</i> , <i>Dianella longifolia</i> subsp. <i>longifolia</i> , <i>Emilia sonchifolia</i> , <i>Digitaria didactyla</i> , <i>Eragrostis interrupta</i> , <i>Eustrephus latifolius</i> , <i>Hardenbergia violacea</i> , <i>Hibbertia scandens</i> , <i>Hibbertia vestita</i> , <i>Hydrocotyle bonariensis</i> , <i>Hydrocotyle tripartita</i> , <i>Imperata cylindrica</i> , <i>Ipomoea cairica</i>	

	<i>Ischaemum triticeum</i> , <i>Lomandra longifolia</i> , <i>Macropitium atropurpureum</i> ² , <i>Myoporum boninense</i> subsp. <i>australe</i> , <i>Picris angustifolia</i> subsp. <i>carolorum-henricorum</i> , <i>Passiflora suberosa</i> ² , <i>Pimelea linifolia</i> , <i>Rubus parvifolius</i> , <i>Themeda triandra</i> , <i>Urochloa decumbens</i> ² , <i>Zoysia macrantha</i>
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¹ Listed as 'Restricted' under the *Biosecurity Act 2014*, ² Listed as 'Locally Significant' invasive plants under the *SCC LGA Biosecurity Plan 2017*

3.2.4.3 Vegetation Community 3

Mapped as part of RE 12.2.14 (foredune complex), however given the coastal rainforest species present and structure, this vegetation is a better fit for RE 12.2.2 – microphyll/notophyll vine forest on beach ridges. The cover of the ecologically dominant layer (EDL) is currently < 80% in places due to tree death and dieback but is on track to recover to 80 – 90% over time. RE 12.2.2 forms part of the littoral rainforest and coastal vine thickets of eastern Australia threatened ecological community (TEC) (refer Section 3.3 for TEC details). The ecological community is a type of rainforest. It is referred to by a range of terms in addition to microphyll/notophyll vine forest including littoral rainforest and beach scrub, with scrub being a term often used to describe rainforest in southern Queensland due to the dense growth of trees and vines.

Table 3. VC 3 Description

VC 3 – Closed microphyll vine forest growing on foredune (RE 12.2.2)



Geology	Holocene sand, unit Qhcb	
---------	--------------------------	--

Vegetation Structure		
Stratum	Height (m)	Cover (%)
T1	7 – 16	50 – 90
T2	4 – 6	10
Shrub	1 – 2	5 – 10
Ground Layer	0.5	30

Species Composition	
T1 – T2	<i>Cupaniopsis anacardioides</i> , <i>Cyclophyllum coprosmoides</i> with <i>Alectryon coriaceus</i> , <i>Acrorychia imperforata</i> , <i>Elaeocarpus obovatus</i> , <i>Exocarpos cupressiformis</i> , <i>Ficus obliqua</i> , <i>Glochidion ferdinandi</i> , planted <i>Macaranga tanarius</i> on margins and edges.
Shrub	Small individuals of those listed in T1 – T2 above, and <i>Psychotria loniceroides</i> , <i>Syzygium lumeni</i> , <i>Livistona australis</i> , <i>Murraya paniculata</i> ² , vines including <i>Smilax australis</i> , <i>Eustrephus latifolius</i> and <i>Geitonoplesium cymosum</i>
Ground Cover	<i>Asparagus aethiopicus</i> ¹ , <i>Austromyrtus dulcis</i> , <i>Bidens pilosa</i> ² , <i>Dianella congesta</i> , <i>Hibbertia scandens</i> , <i>Megathyrsus maximus</i> ²


¹ Listed as 'Restricted' under the Biosecurity Act 2014, ² Listed as 'Locally Significant' invasive plants under the SCC LGA Biosecurity Plan 2017

3.2.4.4 Vegetation Community 4

VC 4 is mapped as part of RE 12.2.14 (foredune complex). Historical mapping indicates that this area may have included a natural rock platform prior to the construction of the break walls and channel realignment in the 1960s. This area has since been subject to bush regeneration works to redevelop a canopy. Ongoing bush restoration works may consider including planting key RE 12.2.2 species to further enrich the ecological value and increase the current extent of the TEC in the future.

Table 4. VC 4 Description

VC 4 – *Macaranga tanarius* + *Banksia*, *Acacia* & *Casuarina* sp. regeneration area



Geology	Holocene sand, unit Qhcb
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Vegetation Structure

Stratum	Height (m)	Cover (%)
T1	6 – 12	60 – 80%
Shrub	1 - 2	3
Ground Layer	0.2	10 – 15

Species Composition

T1	<i>Macaranga tanarius</i> , <i>Banksia integrifolia</i> subsp. <i>integrifolia</i> , <i>Acacia disparrima</i> , <i>Acacia leiocalyx</i> , <i>Casuarina equisetifolia</i> , <i>Casuarina glauca</i> , <i>Pandanus tectorius</i>
Shrub	Small plants of T1 species
Ground Cover	<i>Asparagus aethiopicus</i> ¹ , <i>Austromyrtus dulcis</i> , <i>Bidens pilosa</i> ² , <i>Dianella congesta</i> , <i>Hibbertia scandens</i> , <i>Megathyrsus maximus</i> ²

¹ Listed as 'Restricted' under the Biosecurity Act 2014, ² Listed as 'Locally Significant' invasive plants under the SCC LGA Biosecurity Plan 2017

3.2.4.5 Vegetation Community 5

Mapped and confirmed as part of RE 12.2.14 – Strand and fore dune complex comprising *Spinifex sericeus* grassland, *Casuarina equisetifolia* subsp. *incana* low woodland/open forest with *Acacia leiocalyx*, *A. disparrima* subsp. *disparrima*, *Banksia integrifolia* subsp. *integrifolia*, *Pandanus tectorius*, *Corymbia tessellaris*, *Cupaniopsis anacardioides*, *Acronychia imperforata* and *Hibiscus tiliaceus*. Occurs mostly on frontal dunes and beaches (but can occur on exposed parts of dunes further inland).

In addition, the southwestern extent of this area was mapped as 'high risk' for protected plants. No protected plants under the NC Act were recorded within the mapped areas.

Table 5. VC 5 Description

VC 5 – Strand and fore dune complex on beach and dunes		
		
Geology	Holocene sand, unit Qhcb	
Vegetation Structure		
Stratum	Height (m)	Cover (%)
T1 (where present)	4 – 10	20 – 50
T2	4 – 6	3 – 10
Shrub	1 – 2	5 – 10
Ground Layer	0.5	30 – 60
Species Composition		
T1	<i>Casuarina equisetifolia</i> subsp. <i>incana</i> , <i>Banksia integrifolia</i> subsp. <i>integrifolia</i> , <i>Pandanus tectorius</i> , <i>Cupaniopsis anacardioides</i> , <i>Acronychia imperforata</i> , <i>Alectryon</i>	

	<i>coriaceus</i> , <i>Macaranga tanarius</i>
Shrub	<i>Asparagus aethiopicus</i> ¹ , <i>Acacia leiocalyx</i> , <i>A. concurrens</i> , <i>Lantana camara</i> ¹ , <i>Alphitonia excelsa</i> , <i>Cyclophyllum coprosmoides</i> , <i>Wikstroemia indica</i> , <i>Wollastonia uniflora</i>
Ground Cover	<i>Spinifex sericeus</i> , <i>Ipomoea pes-caprae</i> , <i>Sesuvium portulacastrum</i> , <i>Vigna marina</i> , <i>Dianella congesta</i> , <i>Hibbertia scandens</i> , <i>Eragrostis interrupta</i> , <i>Carpobrotus glaucescens</i> , <i>Canavalia rosea</i> , <i>Digitaria didactyla</i> , <i>Tetragonia tetragonoides</i> , <i>Stephania japonica</i> , <i>Zoysia macrantha</i> , <i>Lomandra longifolia</i> , <i>Lepturus repens</i> , <i>Asparagus aethiopicus</i> ¹ , <i>Pteridium esculentum</i> , <i>Ipomoea cairica</i> , <i>Bidens pilosa</i> ²

¹ Listed as 'Restricted' under the Biosecurity Act 2014, ² Listed as 'Locally Significant' invasive plants under the SCC LGA Biosecurity Plan 2017

3.3 THREATENED ECOLOGICAL COMMUNITIES

The EPBC Act Protected Matters Report indicated that the following endangered TEC may occur with the search area:

- Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland.

Site investigations concluded that although the above TEC was not present on site, VC 3, described as 'Closed microphyll vine forest growing on foredune' (RE 12.2.2) (refer Table 3 and Figure 7), meets the key diagnostic criteria and condition threshold (refer Table 6) for the *Littoral rainforest and coastal vine thickets of eastern Australia* TEC (DEWHA 2008).

Table 6. TEC Key Diagnostic Criteria and Condition Thresholds

TEC Criteria/Threshold Description	Determination of KDC and CT
Key Diagnostic Criteria (KDC)	
1. The ecological community occurs in the following IBRA bioregions: Cape York Peninsula (from Princess Charlotte Bay southwards), Wet Tropics, Central Mackay Coast, South Eastern Queensland, NSW North Coast, Sydney Basin and South East Corner.	Yes, occurs in south eastern Queensland.
2. Patches of the ecological community occur within two kilometres of the east coast, including offshore	Yes, occurs within two kilometres of the east coast.

TEC Criteria/Threshold Description	Determination of KDC and CT
islands, or adjacent to a large body of salt water, such as an estuary, where they are subject to maritime influence.	
3. The structure of the ecological community typically is a closed canopy of trees that can be interspersed with canopy gaps that are common in exposed situations or with storm events. Usually, several vegetation strata are present. However, where there is extreme exposure to salt laden winds, these strata may merge into a height continuum rather than occurring as distinct vegetation layers. The canopy forms a mosaic due to canopy regeneration, typically in the form of basal coppice following canopy decapitation due to prevailing salt laden winds and storm events. Wind sheared canopy can be present on the frontal section leading to closed secondary canopies. Emergents may be present, for example, species from the genera <i>Araucaria</i> (northern bioregions only), <i>Banksia</i> or <i>Eucalyptus</i> . The ground stratum of the vegetation typically is very sparse.	Canopy is closed. Cover of the ecologically dominant layer (EDL) is currently <80% in places due to tree death and dieback (potentially from past drought) but is on track to recover 80 – 90% over time. Several vegetation strata are present including T1, T2, shrub and ground layer. The ground stratum is sparse (30%).
4. Plants with xeromorphic and succulent features are generally more common in littoral rainforest than in hinterland rainforest types. Canopy stem sizes also tend to be smaller compared to that in hinterland rainforest. Trunks rarely host mosses though lichens are usually common.	Yes, canopy stem sizes were relatively small compared to hinterland rainforest types, with canopy rainforest trees up to 50cm DBH. Mosses were rare but lichens were present.
5. Whilst species can be regionally predictable, there may be considerable variation in the composition of individual stands of the ecological community within any given bioregion. Attachment A provides a list of flora species for each relevant bioregion.	The ecological community has characteristic species present for RE 12.2.2, including <i>Cupaniopsis anacardioides</i> , <i>Acronychia imperforata</i> , <i>Alectryon coriaceus</i> and <i>Elaeocarpus obovatus</i> . It also approximately

TEC Criteria/Threshold Description	Determination of KDC and CT
	15 –18% of species listed in Southern South-East Queensland (refer Appendix A). It is noted that SEQ region is very large and variable.
Condition Thresholds (CT)	
6. Small patches can be resilient and viable, but the minimum size of a patch needs to be 0.1 ha; AND	Yes, patch is >0.1ha (~1.83ha).
7. The cover of transformer weed species (as identified in Attachment A) is 70% or less. Transformer weeds are highly invasive taxa with the potential to seriously alter the structure and function of the ecological community. This threshold recognises the relative resilience and recoverability of the ecological community to invasion by weed species; AND	Yes, cover is less than 70%. Patch has two transformer weeds present – <i>Asparagus aethiopicus</i> and <i>Megathyrsus maximus</i> var. <i>maximus</i> . Weed cover is mostly in canopy gaps near edges and is generally < 20-30%.
8. The patch must have: a) at least 25% of the native plant species diversity characteristic of this ecological community in that bioregion (Attachment A); OR b) At least 30% canopy cover of one rainforest canopy (either tree or shrub) species (Attachment A, excluding Banksia and Eucalyptus species that may be part of the ecological community).	The ecological community has approximately 15-18% of species in the southern SEQ list. Though it is noted that southern SEQ region is very large and variable. Some species from the northern SEQ region are also present. Meets criteria B) given that the T1 canopy is composed entirely of representative rainforest species and cover, though affected by the dieback in places, remains 60 - 90 %.

The *National Recovery Plan for the Littoral Rainforest and Coastal Vine Thickets of Eastern Australia Ecological Community* (DEE 2019) provides guidance on strategies and actions to reduce threats to this TEC, as well as rehabilitation and restoration activities to restore vegetation structure, control invasive plants and create natural buffers. Such strategies can be incorporated into the *Point Cartwright Reserve Regeneration Works Plan* (2014).

3.4 FAUNA

La Balsa Park and Point Cartwright Reserve are unique in that it provides habitat for several important and iconic species, yet there is little data publicly available on fauna other than those studied in detail. For instance, the Wildnet database shows records of fauna within 1km search radius (refer Appendix A). A total of 110 species of fauna were recorded, comprising two amphibia, 96 aves, five insecta, three mammalia and four reptilia. In this case, birds make up the bulk of records, 11 of which are listed as **'special least concern' under the NC Act** (refer Table 7), with little information on other taxa. It is expected that if detailed fauna assessments were completed onsite (camera monitoring, trapping, acoustic recording, etc), a great deal more would be understood in terms of the range of species encountered and the extent of habitat utilisation. Currently the records underrepresent the likely species present, particularly in relation to mammals and reptiles.

Field surveys and spotlighting recorded two additional species - *Pteropus alecto* (black flying-fox) and *Pseudocheirus peregrinus* (common ringtail possum), not previously included within Wildnet records.

Table 7. Conservation Significant Wildnet Records

Class	Scientific Name	Common Name	NC Act	EPBC Act
Mammalia	<i>Arctocephalus tropicalis</i>	Subantarctic fur seal	Vulnerable	Endangered
Aves	<i>Ardenna tenuirostris</i>	short-tailed shearwater	Special Least Concern	-
	<i>Fregata ariel</i>	lesser frigatebird	Special Least Concern	-
	<i>Gelochelidon nilotica</i>	gull-billed tern	Special Least Concern	-
	<i>Hydroprogne caspia</i>	Caspian tern	Special Least Concern	-
	<i>Pandion cristatus</i>	eastern osprey	Special Least Concern	-
	<i>Sterna hirundo</i>	common tern	Special Least Concern	-
	<i>Sternula albifrons</i>	little tern	Special Least Concern	-
	<i>Symposiachrus trivirgatus</i>	spectacled monarch	Special Least Concern	-
	<i>Thalasseus bergii</i>	crested tern	Special Least Concern	-
	<i>Tringa brevipes</i>	grey-tailed tattler	Special Least Concern	-
	<i>Tringa incana</i>	wandering tattler	Special Least Concern	-

3.4.1 Turtle Nesting

The *Sunshine Coast Turtle Nesting Technical Report (2005 – 2016)* details the nesting populations of loggerhead turtles (*Caretta caretta*) and green turtles (*Chelonia mydas*) across the wider Sunshine Coast Region. Point Cartwright is actively monitored by Turtle Care Sunshine Coast since 2009 (refer Figure 8 and Figure 9) and include daily track counts, intermittent night patrols and targeted surveys for incubation. Overall, encounters and successful lays have increased within the Buddina area over time, with loggerhead nesting probability remaining relatively stable. However, threats remain to the nesting population including predation by European red fox (*Vulpes vulpes*), and disorientation due to artificial light. There is little information on other forms of disturbance to turtle nesting, with the report highlighting that existing mitigation measures have ensured disturbance from dogs on turtle nesting is minimal and this is not considered to pose a significant threat to turtle populations at present.

3.4.2 Seabirds and Shorebirds

Point Cartwright Reserve is considered to hold value as a roosting and feeding location for resident and migratory seabirds and shorebirds, including conservation significant species. Surveys conducted by volunteers of the Queensland Wader Study Group have recorded several EPBC Act listed birds within the area, including the eastern osprey (*Pandion cristatus*) and wandering tattler (*Tringa incana*). In addition, searches on eBird found a total of 112 bird species identified at Point Cartwright Reserve and 28 species at La Balsa Park in 2022 (although this list is not limited to seabirds and shorebirds only). Additional seabird species, such as the sooty oystercatcher (*Haematopus fuliginosus*) which is a listed species in NSW and Victoria, but not in Queensland have also been recorded as frequenting the area (<https://birddata.birdlife.org.au>).

Across Queensland, shorebirds are under increasing anthropogenic pressures given their habitat often overlaps with popular recreational areas. *A Review of Dog Impacts to Beach-nesting Birds and Management Solutions* (Maguire 2018) documents particular impacts associated with off-leash dog areas through disturbance, egg and chick predation and egg crushing. Due to the high public use of Point Cartwright Reserve and La Balsa Park, the extent to which shorebirds utilise the area is difficult to ascertain, as there are limited refuges for shorebirds from public disturbance. Furthermore, there is limited data on other key threats such as predation by cats and foxes within the local area. Accordingly, the likelihood of shorebirds using the area, the diversity of species likely to be regularly encountered and whether Point Cartwright Reserve or La Balsa Park play a critical role in the ecology of these species will require further research. This information would be of value in ascertaining the overall impact of current activities on shorebird populations.



Figure 8. Marine Turtle Nest Monitoring 2020-2021 (Source: MyMaps 2022)

3.4.3 Marine Mammals

Point Cartwright is considered a popular sighting point due to its broad ocean views. The seasonal migration of *Megaptera novaeangliae* (humpback whale) runs from June to early October and is a highlight of the tourism calendar. Local groups have noted that in 2020, a total of 23 whale sighting events were recorded around Point Cartwright (HHR Surveys 2010-2020).

Limited data is available on other migratory marine species, although ATLAS of Living Australia does contain some records of *Sousa sahulensis* (Australian humpbacked dolphin) and *Orcaella heinsohni*

(Australian snubfin dolphin), with older records of *Arctocephalus tropicalis* (Subantarctic fur seal) also available.

In addition, information provided by Council includes observations of *Arctocephalus forsteri* (New Zealand fur seal) and *Dugong dugon* (dugong) with the waters surrounding Point Cartwright.



Figure 9. Sea Turtle Nesting Area (Source: MyMaps 2022)

3.4.4 Marine Invertebrates

Nudibranchs are an order of Gastropoda that commonly occur in shallow waters and are famed for their diversity in size, colouring, and shape. The lower reaches of the Mooloolah River have long been established as a popular diving area for marine enthusiasts. Local dive groups have documented the species of nudibranchs found within the Mooloolah River for over 7 years. In total, 610 species of nudibranch have been found along the shores of La Balsa Park. Generally nudibranchs have a short life span of 1 – 12 months (though some species can live up to 6 years). This can make nudibranchs excellent indicators for environmental changes, but also susceptible to disturbances (Armstrong *et al* 2019).

4.0 ENVIRONMENTAL MANAGEMENT

4.1 CURRENT APPROACHES

4.1.1 Vegetation

In the *Point Cartwright Master Plan (2002) – Issue E* it was recommended to protect and enhance the remnant vegetation with a particular focus on the western side of the reserve and upper slopes to the east of the lighthouse. These areas were highlighted due to the presence of weeds within the area and as a public safety issue due to lack of fencing and issues relating to erosion. Further recommendations of this report include limiting mowing to allow natural revegetation as well as rehabilitating the ‘goat tracks’ forming from public use through the dune systems. Figure 10 displays the current vegetation management activities, with a large proportion of the site being subject to regular mowing.

The *Point Cartwright Reserve Regeneration Works Plan (2014)* further reiterated previous recommendations siting fragmentation and edge effects facilitating the incursion of weed species. Although this report did not provide a full species list, it did record the presence of Sunshine Coast Council's significant species including *Casuarina equisetifolia*, *Corymbia intermedia*, *Guioa acutifolia* and *Pararistolochia praevenosa*. As the weed species contained within this report differs from the *Point Cartwright Master Plan (2002) – Issue E*, it is assumed that weed control measures have been actively managed.

4.1.2 Fauna

Historical records and descriptions of fauna observed within Point Cartwright Reserve and La Balsa Park are limited. Although fauna habitat was considered in the *Point Cartwright Master Plan (2002) – Issue E*, the species description only included bird species, with no notes relating to other taxa known to be present in the area. From information provided, as well as online searches, it does not appear that a more targeted fauna survey (e.g., camera traps, small mammal trapping, acoustics) has been conducted within this area, with reports and studies often targeting specific species. Management actions have been centred around these targeted species thus far.

The Australia Brush-Turkey (Alectura lathami): Population Dynamics at Two Locations: Mooloolaba Spit to Memorial Park, Mooloolaba, and Point Cartwright Lighthouse Reserve (2018) was commissioned by Council to gain insight into the environmental impacts of the populations. The report found a total of 40 brush-turkeys recorded in the Point Cartwright Reserve. Field surveys conducted by FPE recorded significantly less than this (noting that there was only one day of data capture), although field surveys were not targeting brush-turkeys. The report suggested the removal of fallen fruit to reduce food attractants within the area as well as trimming of vegetation to remove desirable incubation mound sites

in shaded areas. However, it could not be concluded that brush-turkeys were responsible for erosion, though erosion throughout the site was documented as significant in some areas this was more likely attributed to anthropogenic impacts. No specific population management activities are understood to have been undertaken at Point Cartwright by Council to date.



Figure 10. Current Vegetation Management Activities (Source: MyMaps 2022)

The *Sunshine Coast Turtle Nesting Report (2005-2016)* detailed several management actions implemented by SCC to improve turtle nesting habitat within the area. This included light mitigation actions such as luminaire swaps, lowering streetlight heights and installing front glare shields to reduce the likelihood of ambient light disorientating hatchlings. Further, the report details that revegetation of dune areas may aid in reducing ambient light. The report also details that exclusion meshing over nests

and a strong public awareness campaign had been successful in reducing impacts from both invasive predators such as fox and dog walkers who utilise the nesting area.

The *Shorebird Conservation Action Plan (2020)* highlighted the disturbance to shorebirds by recreation activities. The report specifies that the main sources of disturbances to shorebirds in the Sunshine Coast are people on foot, fisherman and bait collecting, people with dogs, boat and personal watercrafts, kitesurfing and windsurfing and kayaking and SUP-boarding. Further, the report provides several management actions including a large-scale social media campaign to raise public awareness about the presence of shorebirds in high recreational areas.

5.0 KEY RECOMMENDATIONS

5.1 RETENTION OF VEGETATED AREAS

Over the last 40 years La Balsa Park and Point Cartwright Reserve have undergone substantial and rapid modifications due to development (e.g., installation of the revetment wall), public use and coastal erosion. As such, the area now comprises several vegetation communities, each providing a diversity of habitat values. This report has identified five distinct vegetation communities in addition to maintained grass areas and discontinuous trees present for much of the modified areas of the site (refer Figure 11). The 'of concern' RE and TEC (VC 3) and other vegetated areas (VC 2 and VC 5) appear to naturally occur in the area, while VC 1 and VC 4 have been modified through regeneration efforts over the years. These areas should be preserved and improved through supplementary planting, weed control and restricted access as a matter of priority.



Figure 11. Ground-truthed vegetative communities

5.2 WEED TREATMENT, BUSH REVEGETATION & RESTORATION

The Point Cartwright Reserve has an active Point Cartwright Reserve Regeneration Works Plan (2014) and bush restoration works have been ongoing. Comparison between reports indicate that weed treatment works have been very effective in many areas. Field surveys identified some additional areas of significant weeds (including mother-of-millions, Singapore daisy, broad-leaved peppertree, asparagus fern etc.) that could be targeted going forward, with follow-up revegetation works (refer Figure 12). A full list of weeds identified is available in Table 8. Further, three weed species identified are listed within the *Sunshine Coast Council Local Government Area Biosecurity Plan 2014* with associated management actions (refer Table 9).



Figure 12. Areas suitable for targeted weed treatments

Table 8. Weed Species

Species Name	Common Name	Growth Form
<i>Ageratum houstonianum</i> ²	Blue billygoat weed ²	Herb
<i>Asparagus aethiopicus</i> ¹	Basket asparagus ¹	Fern
<i>Axonopus fissifolius</i> ²	Common carpet grass ²	Grass
<i>Bidens pilosa</i> ²	Cobblers peg ²	Herb
<i>Bryophyllum delagoense</i> ¹	Mother of millions ¹	Herb
<i>Emilia sonchifolia</i>	Lilac tassel flower	Herb
<i>Eugenia uniflora</i> ²	Brazilian cherry tree ²	Tree
<i>Hydrocotyle bonariensis</i>	Largeleaf pennywort	Herb
<i>Ipomoea cairica</i>	Mile-a-minute vine	Vine
<i>Lantana camara</i> ¹	Lantana ¹	Shrub
<i>Macroptilium atropurpureum</i> ²	Purple bush-bean ²	Herb
<i>Megathyrsus maximus</i> ^{1,2}	Green panic ^{1,2}	Grass
<i>Murraya paniculata</i> ²	Mock orange ²	Tree
<i>Passiflora suberosa</i> ²	Corky passion vine ²	Vine
<i>Schinus terebinthifolius</i> ¹	Broad leaf pepper tree ¹	Tree
<i>Senna pendula</i> var. <i>galbrata</i> ²	Easter cassia ²	Herb
<i>Setaria sphacelata</i> ²	South African pigeon grass ²	Grass
<i>Sida rhombifolia</i> ²	Common sida ²	Herb
<i>Sphagneticola trilobata</i> ¹	Singapore daisy ¹	Herb
<i>Solanum seaforthianum</i> ²	Brazilian nightshade ²	Vine
<i>Urochloa decumbens</i> ²	Signal grass ²	Grass

¹ Listed as 'Restricted' under the Biosecurity Act 2014

² Listed as 'Locally Significant' invasive plants under the SCC LGA Biosecurity Plan 2017

Table 9. SCC LGA Biosecurity Plan (2014) listed weed management

Species Name	Common Name	SSC LGA Management Response
<i>Asparagus aethiopicus</i>	Basket asparagus	Targeted Landscape Management
<i>Schinus terebinthifolius</i>	Broad leaf pepper tree	Targeted Landscape Management
<i>Sphagneticola trilobata</i>	Singapore daisy	Localised Management

There is opportunity to create new revegetation areas in existing cleared areas (refer Figure 13) to increase the current extent of the TEC and RE 12.2.2 community. Enrichment planting of key RE 12.2.2 species in the existing Council regeneration area to the west (refer VC3, Figure 11) is also recommended.

In addition, following removal of weedy patches on the headland (refer VC 2, Figure 11 and Figure 12), re-establishment of suitable RE 12.12.19 plant species is completed following eradication. There is further opportunity for the reintroduction of several headland species typical of RE 12.12.19 that are missing or have become very rare at the site.



Figure 13. Proposed additional revegetation are for RE 12.2.2

5.3 INCREASING FAUNA HABITAT VALUES

5.3.1 Comprehensive Fauna Surveys and Installation of Fauna Nest Boxes

As part of the information gathering for this report, it was observed that there is a lack of information on the presence of terrestrial mammals and reptiles within the reserve. It is recommended that a comprehensive fauna survey should be conducted to better capture information on species not currently recorded in the area, but likely to occur. This should include small mammal trapping and the deployment of camera traps within the bush area (refer Figure 14).

An outcome of fauna surveys for the area would include informing the need and location for installing fauna nest boxes and other habitat enrichment measures within the area. Nest boxes could be deployed for target species based on the information gained from the surveys.



Figure 14. Recommended areas for fauna nesting boxes

5.3.2 Installation of Osprey Platform

Point Cartwright Reserve is home to several conservation significant birds, including the eastern osprey. Ospreys are considered important and iconic raptors, and often gain a large amount of public interest due to their hunting prowess, and reuse of nesting sites over many years. Historical nesting sites have reduced greatly across the east coast, resulting in many areas constructing artificial platforms. Indeed, an artificial platform installed within the Mooloolaba Spit has been a great success in attracting revisiting mating pairs of ospreys. The installation of an artificial platform at Point Cartwright would not only benefit the inhabiting species, but also be a great opportunity to highlight the local ecology to the public. Further, providing a nesting platform may also deter nests being constructed in non-ideal places, where

they may interfere with operations, or be at risk of public disturbance. It is understood that Council is currently working with the University of the Sunshine Coast in understanding the carrying capacity of the coastline for ospreys. This work takes into account the proximity of other breeding pairs within the area. As such, if the research findings are favourable for the installation of such a platform, there are a number of areas suitable within the reserve but would need to be considered in tandem with future design plans and operational running of the reserve.

5.3.3 Seabirds and Shorebirds

Ongoing management of the area to retain value for seabird and shorebird populations is an important consideration, noting that the intense public interest in the area and popularity for recreation is likely to have bearing on the extent to which specific measures can be implemented. The retention of fencing along cliff faces and improvement of measures to discourage public access from vegetated areas, especially along the dunes and cliff faces would hold merit as a means of limiting impacts on the value of the area for native fauna, including nesting seabirds.

5.3.4 Consideration of Other Fauna

As part of the information gathering process, it was highlighted that non-conservation significant fauna, in particular marine invertebrates that have inhabited artificial surfaces along La Balsa Park are of considerable value to the area. Although such species do not currently have any associated legislative protection, they are a key foraging area and food source for conservation significant fauna such as shorebirds. As such, future management and development of the area should take their presence into account, particularly if the habitat is to be disturbed as part of required maintenance.

5.4 CONSTRUCTION OF NEW HEADLAND TRACK/STAIRWAY

It has been noted in previous reports that the area surrounding Point Cartwright Lighthouse is subject to a high degree of erosion from public use. During field surveys, FPE recorded several **such 'goat tracks'**, with two (referred to as A and B in Figure 15) showing increasing erosion/washout. The tracks in their current state may pose a public safety risk going forward. It is recommended that one of these tracks is formalised as an official pathway and stabilised, with the other closed off and rehabilitated appropriately.

5.5 CONSTRUCTION OF EXCLUSION FENCING

Bike trails throughout the sheltered headland vegetation have been reported as a continuing concern within the community and SCC. Field surveys confirmed the presence of bike trails causing degradation of an ecologically significant vegetation area (VC 1). Although Council has implemented signage along the pathways warning the public not to ride bikes through the vegetation, the area appears to still be in use, preventing natural revegetation from occurring and leading to erosion issues downslope. It is

recommended that exclusion fencing be installed along the pathways adjacent to the vegetation with bike inhibiting gates at the entrance to established pathways/trails (refer Figure 16). The purpose of such fencing is to prevent bikes being used in vegetated areas whilst still allowing their use on sealed/main pathways, thereby reducing the likelihood of further environmental harm. Fencing should be of durable material to withstand the harsh coastal conditions and reduce the maintenance required. However, fencing should not restrict movement of native fauna or pose a hazard for the public.



Figure 15. Areas of high erosion



Figure 16. Areas of degradation due to bike trails and recommended fencing areas

5.6 DOG ACCESS

Information provided by Council indicates that the presence of dogs within Point Cartwright Reserve remains a contentious issue. Currently, dogs are allowed off leash at all times within the centrally cleared area, and along the outskirts between 4pm – 8am, with on leash walking outside of these hours. Opinion surveys suggest that the community remains largely split on whether the current dog access regime should remain or be amended. There are a multitude of factors to be considered with regard to dog access, including social, public use, hygiene and safety. From an environmental perspective, there are potential adverse impacts to both flora and fauna values associated with unrestricted (off leash) dog activity that may require appropriate management.

Dog faeces were noted throughout the reserve during field surveys, including within the vegetated areas. Research has demonstrated that input of nutrients from dog faeces, specifically nitrogen and phosphorus, may have considerable influence on the **area's** biodiversity, ecosystem functioning and subsequent restoration goals (Frenne *et al* 2022). Given the unique vegetation communities within Point Cartwright Reserve, the high faecal influx may increase the risk of weed invasion and slow and/or hinder revegetation and rehabilitation efforts. At a minimum, additional bins should be installed within the Point Cartwright Reserve area to increase the likelihood of faeces being bagged and disposed of. This measure would not address off leash dogs defecating within the densely vegetated areas where they may be out of sight of their owner.

Degradation of vegetation through disturbance and seed dispersal may also occur where unfettered access into vegetation is permitted. As with other disturbance activities (such as unfettered bike and pedestrian access), off leash dogs contribute to the degradation of vegetation communities through direct disturbance. In addition, dogs (as with most large mammals), are vectors for seed dispersal including weeds. Although there are currently no known studies of this effect on Australian ecosystems, research in South African protected areas found a greater number of invasive species along dog walking trails compared to other areas with restricted dog access (Bouchard *et al* 2015).

The disturbance to native fauna and their habitat is also increased where unfettered access by dogs is permitted. Numerous studies have found that dog walking can significantly reduce the diversity and abundance of fauna (particularly birds) of an area (Banks and Bryant 2007). Studies in Tasmania compare disturbance to wildlife by domestic dogs akin to that of cats (Holderness-Roddam and McQuillan 2014). As such, exclusion of dog access from vegetated areas within Point Cartwright Reserve at all times would be consistent with the other recommendations of discouraging public access to enable the environmental values to be retained and enhanced. Therefore, the requirement for all dogs to be on leads and to remain with their owners while on the headland would assist in improving and preserving fauna and flora values associated with vegetation within the reserve.

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Appendix A.
Desktop Assessment

DRAFT

Aquatic Ecosystem Rehabilitation Mapping Report

Part of the Rehabilitation Process

For selected area of interest

Current as at 24/06/2022

This mapping report is a DRAFT report that is available for the purposes of a review process for the Aquatic Ecosystem Rehabilitation Process only.

Please direct any queries or feedback to: wetlands@des.qld.gov.au

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Rehabilitation Mapping Report

Purpose

The purpose of this mapping report is to provide background information related to Aquatic Ecosystem/Wetlands (*Rehabilitation Process, (Step 2 Understanding the Components and Processes, Services and Threats) in a wetland area*). This report is designed to assist with the development of a **Rehabilitation Plan** by providing some of the key information to assist with:

- Understanding the extent of the aquatic ecosystem and the values associated with it
- Understanding constraints and other land use aspects in the surrounding area
- Assisting with determining the ecosystem services which may be provided by the wetland
- Deciding needs and objectives of the project
- Contributing to Detailed Design
- Contributing to the Implementation Plan
- Contributing to evaluation and monitoring in future

The report provides a snapshot of key information to assist with understanding current ecological, hydrological and administrative features that may affect a rehabilitation activity.

The information is for the direct wetland area and some surrounding area but not the broader landscapes (such as, upstream or downstream), which will be required for Whole of System understanding (Link).

A whole-of-system catchment management approach is required to ensure that the purpose of the project reduces unintended outcomes, at the site and catchment/landscape-scales.

For more information on the aquatic ecosystem/wetlands rehabilitation, visit:

<https://wetlandinfo-test.des.qld.gov.au/wetlands/management/rehabilitation-draft/rehab-framework/>

Statutory regulatory planning

Matters of State Environmental Significance (MSES)

<https://environment.des.qld.gov.au/management/planning-guidelines/method-mapping-mses>

Environmental values (EVs) and water quality objectives (WQOs)

<https://environment.des.qld.gov.au/management/water/policy>

Development Assessment Mapping System (DAMS)

<https://dams.dsdip.esriaustraliaonline.com.au/damappingsystem/>

Environmental Reports - General Information

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

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

Important Note to User

Information presented in this report is based upon the mapping of water bodies and wetland regional ecosystems across Queensland. The Queensland wetland mapping was produced using existing information including water body mapping derived from Landsat satellite imagery, regional ecosystem mapping, topographic data, and a springs database. The result is a consistent wetland map for the whole of Queensland.

Ancillary data, such as higher resolution imagery (for example SPOT and aerial photographs), other vegetation and wetland mapping, geology, soil and land system mapping was also used in attributing and assessing the derived Queensland Wetlands Program wetland mapping products.

The wetland mapping was done in accordance with a detailed peer reviewed methodology which included quality assurance measures for all steps in the process. For more detailed information on how the Queensland Wetlands Program wetland mapping was produced, please see the [Wetland Mapping and Classification Methodology](#).

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The following table provides an overview of the area of interest.

Summary Information for , size: 29.89ha

Local Government Area
SUNSHINE COAST

Vegetation category
Category Water
Category B
Category X

Biogeographic region(s)	Biogeographic subregion(s)
Southeast Queensland	Sunshine Coast - Gold Coast Lowlands

Drainage divisions
North East Coast

Drainage basins
Maroochy

Regional ecosystem type
12.2.14
non-remnant
12.12.19x3
estuary
ocean

Landzone
12
2
None

Species Lists

The information in Species List, Weed List, and Pest List is derived from a spatial layer generated from the [WildNet database](#) managed by the Department of Environment and Science. The layer which is generated weekly contains the WildNet wildlife records that are not classed as erroneous or duplicate, that have a location precision equal to or less than 10000 metres and do not have a count of zero.

The WildNet dataset is constantly being enhanced and the taxonomic and status information revised. If a species is not listed in this report, it does not mean it doesn't occur there and listed species may also no longer inhabit the area. It is recommended that you also access other internal and external data sources for species information in your area of interest (Refer Links and Support).

Conservation Significant Species List

Conservation significant species are species listed:

- as [threatened](#) or near threatened under the Nature Conservation Act 1992;
- as threatened under the [Environment Protection and Biodiversity Conservation Act 1999](#) or
- [migratory species](#) protected under the following international agreements:
 - o Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
 - o China-Australia Migratory Bird Agreement
 - o Japan-Australia Migratory Bird Agreement
 - o Republic of Korea-Australia Migratory Bird Agreement

Table 2 lists the species recorded within the area of interest and a **one kilometre buffer**. This information is also found in the report: WildNet Records Conservation Significant Species List.

Table 2. Conservation significant species recorded within the area of interest and its one kilometre buffer

Taxon Id	Kingdom	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1702	Animalia	Aves	Accipitridae	<i>Pandion cristatus</i>	eastern osprey	SL	None	0	17	07/08/2007
1281	Animalia	Aves	Fregatidae	<i>Fregata ariel</i>	lesser frigatebird	SL	None	0	1	31/10/1993
1886	Animalia	Aves	Laridae	<i>Gelochelidon nilotica</i>	gull-billed tern	SL	None	0	1	17/06/2002
1896	Animalia	Aves	Laridae	<i>Hydroprogne caspia</i>	Caspian tern	SL	None	0	4	02/08/2006
1899	Animalia	Aves	Laridae	<i>Sterna hirundo</i>	common tern	SL	None	0	4	05/04/2002
1905	Animalia	Aves	Laridae	<i>Sternula albifrons</i>	little tern	SL	None	0	1	18/03/2006
1895	Animalia	Aves	Laridae	<i>Thalasseus bergii</i>	crested tern	SL	None	0	25	07/08/2007
1597	Animalia	Aves	Monarchidae	<i>Symposiachrus trivirgatus</i>	spectacled monarch	SL	None	0	1	28/07/1993
1190	Animalia	Aves	Procellariidae	<i>Ardenna tenuirostris</i>	short-tailed shearwater	SL	None	0	1	31/01/1994
1860	Animalia	Aves	Scolopacidae	<i>Tringa brevipes</i>	grey-tailed tattler	SL	None	0	1	23/01/1994
1861	Animalia	Aves	Scolopacidae	<i>Tringa incana</i>	wandering tattler	SL	None	0	5	18/03/2006
1060	Animalia	Mammalia	Otariidae	<i>Arctocephalus tropicalis</i>	Subantarctic fur seal	V	E	0	1	02/05/1993

Taxon Id	Kingdom	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
14653	Plantae	Equisetopsida	Cymodoceaceae	<i>Cymodocea serrulata</i>	None	SL	None	1	1	13/04/1980
14102	Plantae	Equisetopsida	Cymodoceaceae	<i>Halodule uninervis</i>	None	SL	None	1	1	13/04/1980
14192	Plantae	Equisetopsida	Cymodoceaceae	<i>Syringodium isoetifolium</i>	None	SL	None	1	1	13/04/1980
11622	Plantae	Equisetopsida	Droseraceae	<i>Drosera pygmaea</i>	None	SL	None	1	1	31/10/1997
31031	Plantae	Equisetopsida	Hydrocharitaceae	<i>Halophila ovalis</i>	None	SL	None	1	1	13/04/1980
15977	Plantae	Equisetopsida	Juncaginaceae	<i>Triglochin striata</i>	streaked arrowgrass	SL	None	1	1	14/07/1964
15939	Plantae	Equisetopsida	Lentibulariaceae	<i>Utricularia caerulea</i>	blue bladderwort	SL	None	1	1	31/10/1997
14140	Plantae	Equisetopsida	Orchidaceae	<i>Calochilus campestris</i>	copper beard orchid	SL	None	1	1	31/08/1959
9265	Plantae	Equisetopsida	Orchidaceae	<i>Corybas barbarae</i>	helmet orchid	SL	None	1	1	30/06/1989
14130	Plantae	Equisetopsida	Zosteraceae	<i>Zostera capricorni</i>	eelgrass	SL	None	1	1	13/04/1980

Taxon Id: Unique identifier of the taxon from the WildNet database.

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

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

Specimens: The number of specimen-backed records of the taxon.

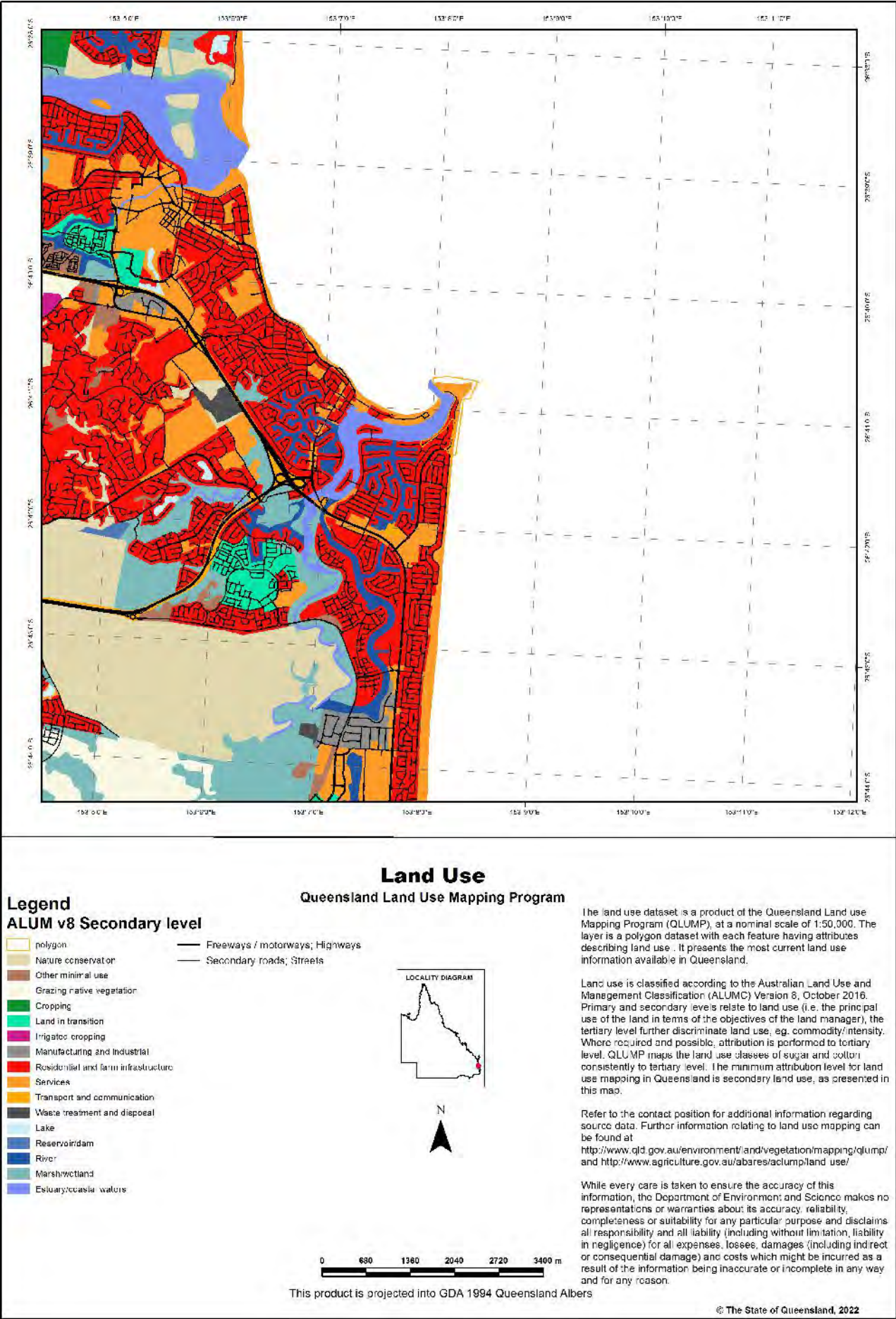
Records: The total number of records of the taxon.

Last record: Date of latest record of the taxon.

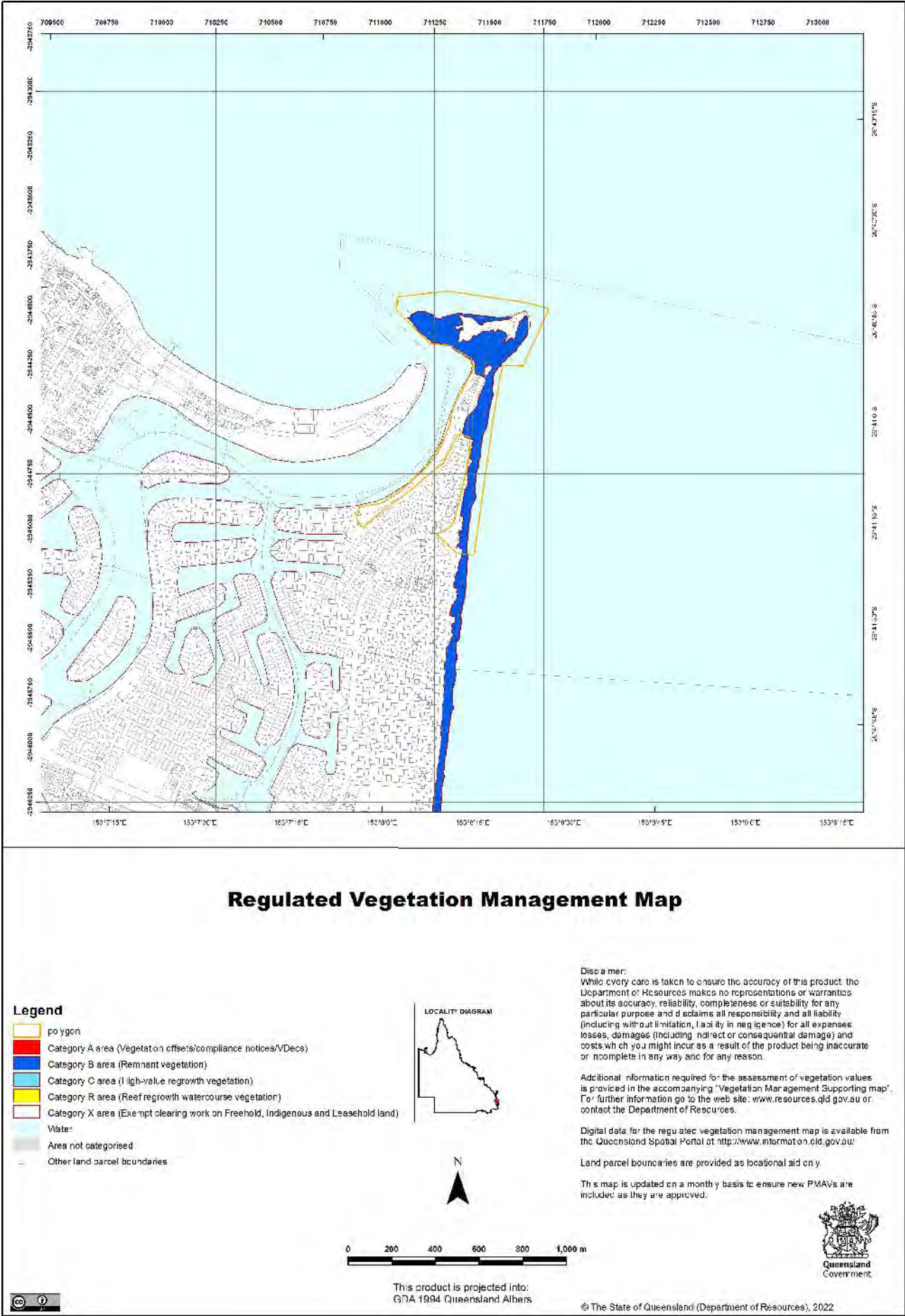
Weed List and Pest List

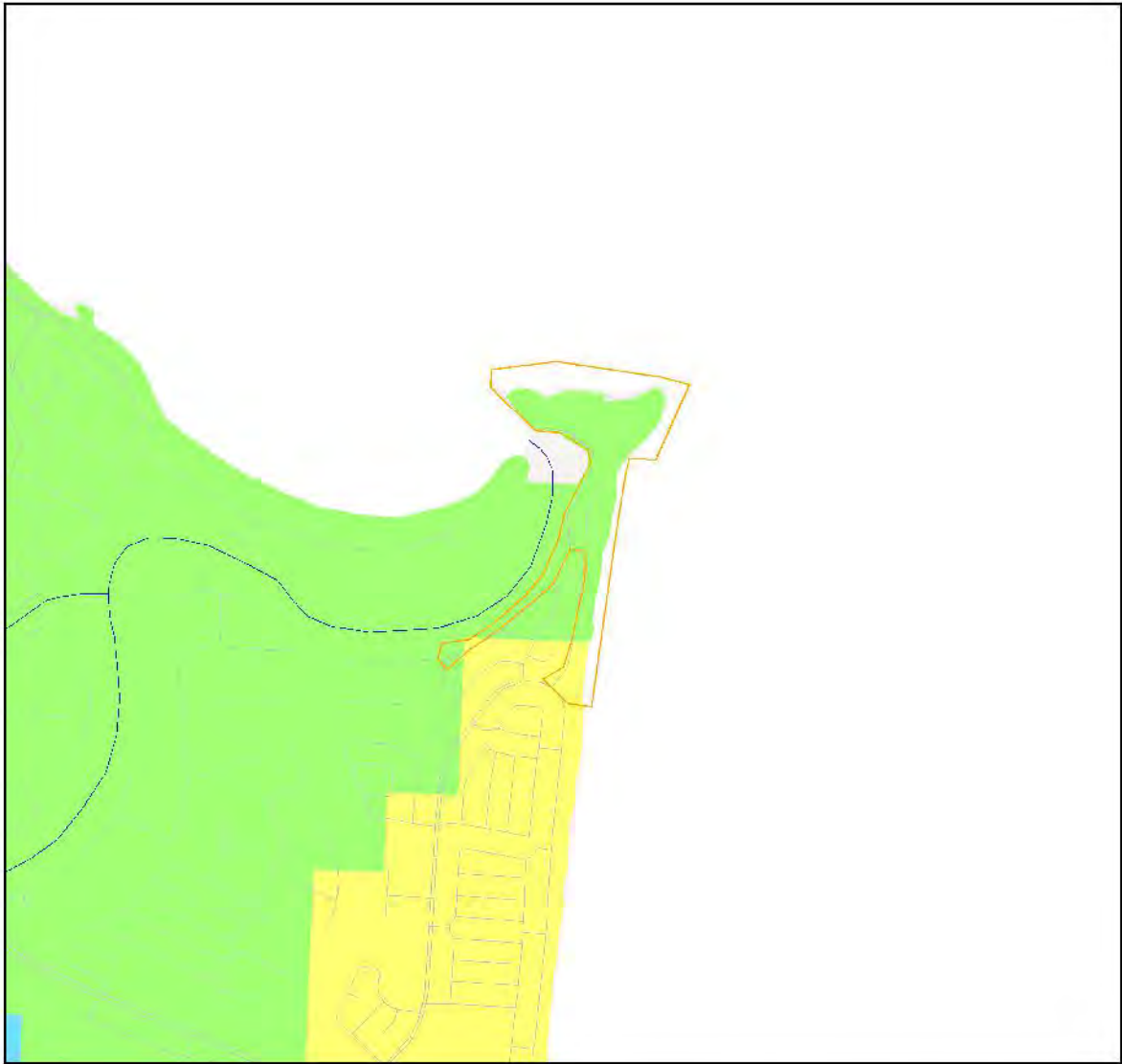
The following lists may be requested from the [Environmental reports online](#) page.

- **WildNet records - Weed list** - summarises wildlife records for all weed species (introduced flora) within a specified location, from the WildNet database
- **WildNet records - Pest list** - summarises wildlife records for all pest species (introduced fauna and flora) within a specified location, from the WildNet database



Regulated Vegetation Management Map





Aquatic Conservation Assessment (ACA) - riverine

Legend

- polygon
- Towns
- Roads
- Rivers/Creeks
- Queensland

ACA Riverine - Subcatchment Significance

- Very High
- High
- Medium
- Low
- Very Low



0 210 420 630 840 1050 m

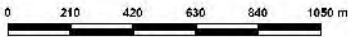
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Aquatic Conservation Assessment (ACA) - nonriverine

- Legend**
- polygon
 - Towns
 - Roads
 - Rivers/Creeks
 - Queensland
- ACA Non-riverine**
- Very High
 - High
 - Medium
 - Low
 - Very Low



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Queensland Government

Department of Environment and Science

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Environmental Reports - General Information

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

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

Figures in tables may be affected by rounding.

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

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

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

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Table of Contents

Assessment Area Details 4

Matters of State Environmental Significance (MSES) 5

 MSES Categories 5

 MSES Values Present 6

 Additional Information with Respect to MSES Values Present 7

 MSES - State Conservation Areas 7

 MSES - Wetlands and Waterways 7

 MSES - Species 7

 MSES - Regulated Vegetation 9

 Map 1 - MSES - State Conservation Areas 10

 Map 2 - MSES - Wetlands and Waterways 11

 Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals 12

 Map 3b - MSES - Species - Koala habitat area (SEQ) 13

 Map 4 - MSES - Regulated Vegetation 14

 Map 5 - MSES - Offset Areas 15

Appendices 16

 Appendix 1 - Matters of State Environmental Significance (MSES) methodology 16

 Appendix 2 - Source Data 17

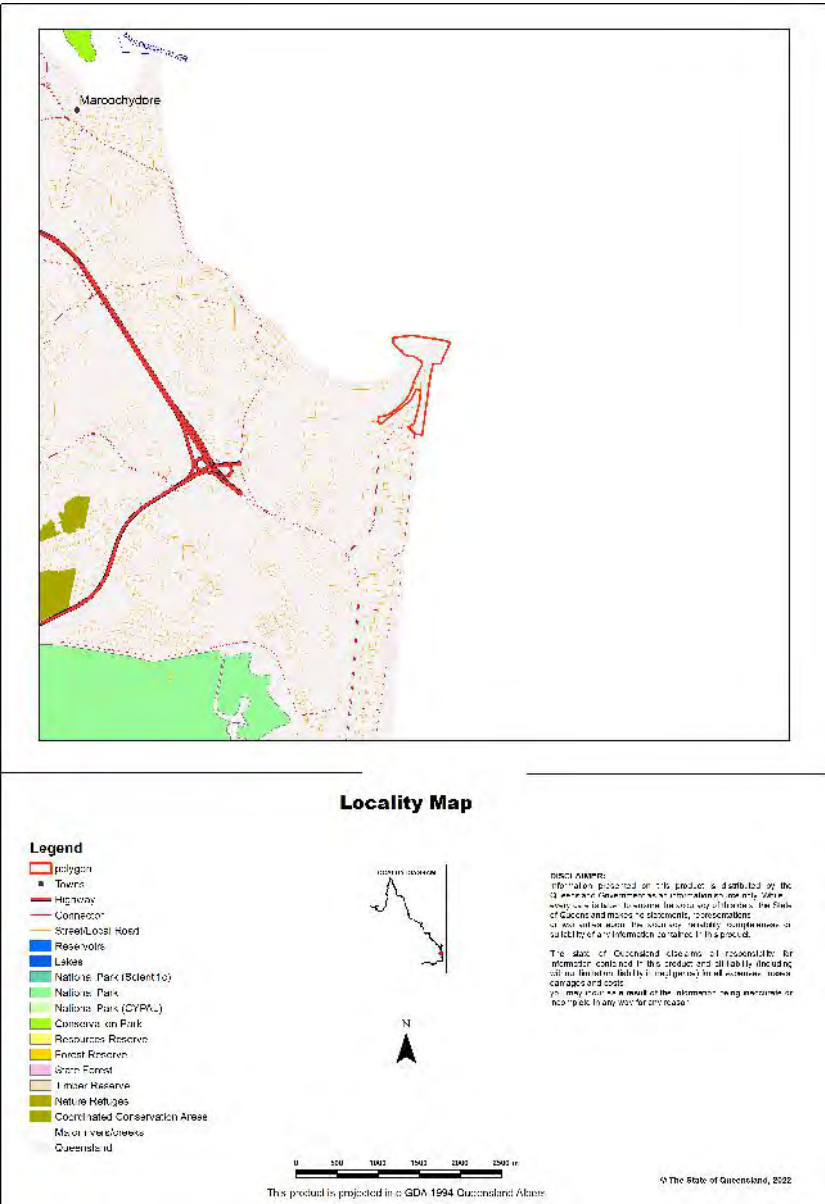
 Appendix 3 - Acronyms and Abbreviations 18

Assessment Area Details

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

Table 1: Summary table, details for AOI

Size (ha)	29.89
Local Government(s)	Sunshine Coast Regional
Bioregion(s)	Southeast Queensland
Subregion(s)	Sunshine Coast - Gold Coast Lowlands
Catchment(s)	Maroochy



Matters of State Environmental Significance (MSES)

MSES Categories

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

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

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

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992* ;
- Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the *Marine Parks Act 2004* ;
- Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008;
- Threatened wildlife under the *Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;
- Regulated vegetation under the *Vegetation Management Act 1999* that is:
 - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
 - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
 - Category R areas on the regulated vegetation management map;
 - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
 - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;
- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;
- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;
- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

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

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0.0 ha	0.0 %
1b Protected Areas- nature refuges	0.0 ha	0.0 %
1c Protected Areas- special wildlife reserves	0.0 ha	0.0 %
2 State Marine Parks- highly protected zones	0.0 ha	0.0 %
3 Fish habitat areas (A and B areas)	0.0 ha	0.0 %
4 Strategic Environmental Areas (SEA)	0.0 ha	0.0 %
5 High Ecological Significance wetlands on the map of Referable Wetlands	4.92 ha	16.5%
6a High Ecological Value (HEV) wetlands	0.0 ha	0.0 %
6b High Ecological Value (HEV) waterways **	0.0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	3.05 ha	10.2%
7b Special least concern animals	11.19 ha	37.4%
7c i Koala habitat area - core (SEQ)	0.0 ha	0.0 %
7c ii Koala habitat area - locally refined (SEQ)	0.0 ha	0.0 %
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	4.36 ha	14.6%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	0.0 ha	0.0 %
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0.0 ha	0.0 %
8d Regulated Vegetation - Essential habitat	3.05 ha	10.2%
8e Regulated Vegetation - intersecting a watercourse **	0.0 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	0.0 ha	0.0 %
9a Legally secured offset areas- offset register areas	0.0 ha	0.0 %
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0.0 ha	0.0 %

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(no results)

1b. Protected Areas - nature refuges

(no results)

1c. Protected Areas - special wildlife reserves

(no results)

2. State Marine Parks - highly protected zones

(no results)

3. Fish habitat areas (A and B areas)

(no results)

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

MSES - Wetlands and Waterways

4. Strategic Environmental Areas (SEA)

(no results)

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

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

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

(no results)

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

(no results)

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

MSES - Species

7a. Threatened (endangered or vulnerable) wildlife

Values are present

7b. Special least concern animals

Values are present

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

Not applicable

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

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
<i>Boronia keysii</i>		V	None
<i>Calyptorhynchus lathamii</i>	Glossy black cockatoo	V	None
<i>Casuarus casuarus johnsonii</i>	Sthn population cassowary	E	None
<i>Crinia tinnula</i>	Wallum froglet	V	Core
<i>Denisonia maculata</i>	Ornamental snake	V	None
<i>Litoria freycineti</i>	Wallum rocketfrog	V	None
<i>Litoria olongburensis</i>	Wallum sedgefrog	V	None
<i>Melaleuca irbyana</i>		E	None
<i>Petaurus gracilis</i>	Mahogany Glider	E	None
<i>Petrogale persephone</i>	Proserpine rock-wallaby	E	None
<i>Phascogale cinereus</i>	Koala - outside SEQ*	V	None
<i>Pezoporus wallicus wallicus</i>	Eastern ground parrot	V	None
<i>Taudactylus pleione</i>	Kroombit tinkertoad	E	None
<i>Xeromys myoides</i>	Water Mouse	V	None

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

Threatened (endangered or vulnerable) wildlife species records

Scientific name	Common name	NCA status	EPBC status	Migratory status
<i>Caretta caretta</i>	loggerhead turtle	E	E	M-B/E

Special least concern animal species records

Scientific name	Common name	Migratory status
<i>Tringa incana</i>	wandering tattler	M-J/B/E
<i>Pandion cristatus</i>	eastern osprey	M-B/E

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

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

To request a species list for an area, or search for a species profile, access Wildlife Online at:

<https://www.qld.gov.au/environment/plants-animals/species-list/>

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

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

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

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

<https://environment.ehp.qld.gov.au/regional-ecosystems/>

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

Regional ecosystem	Vegetation management polygon	Vegetation management status
12.12.19x3	O-dom	rem_oc

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

Not applicable

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

Not applicable

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

(no results)

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

Not applicable

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

MSES - Offsets

9a. Legally secured offset areas - offset register areas

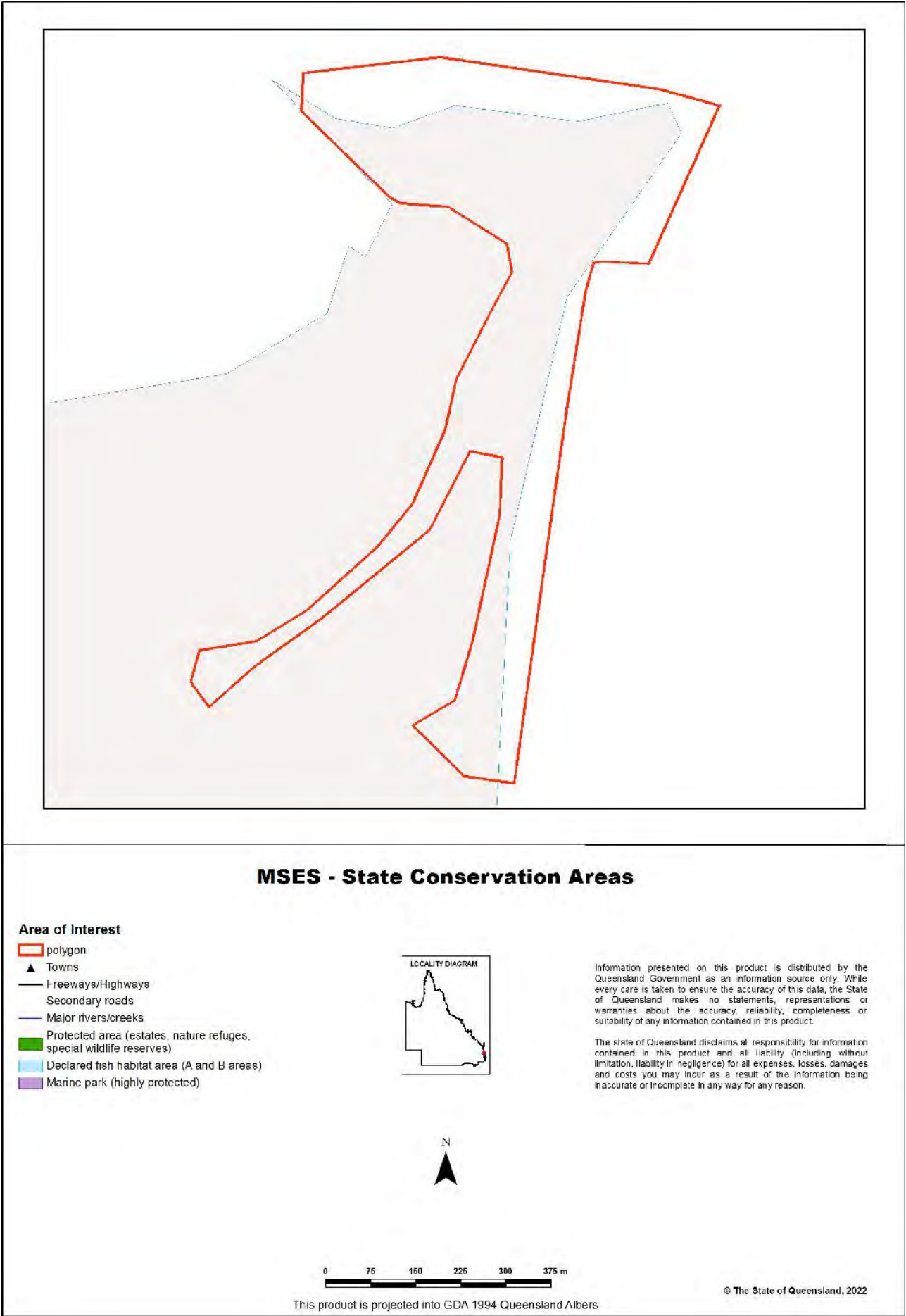
(no results)

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

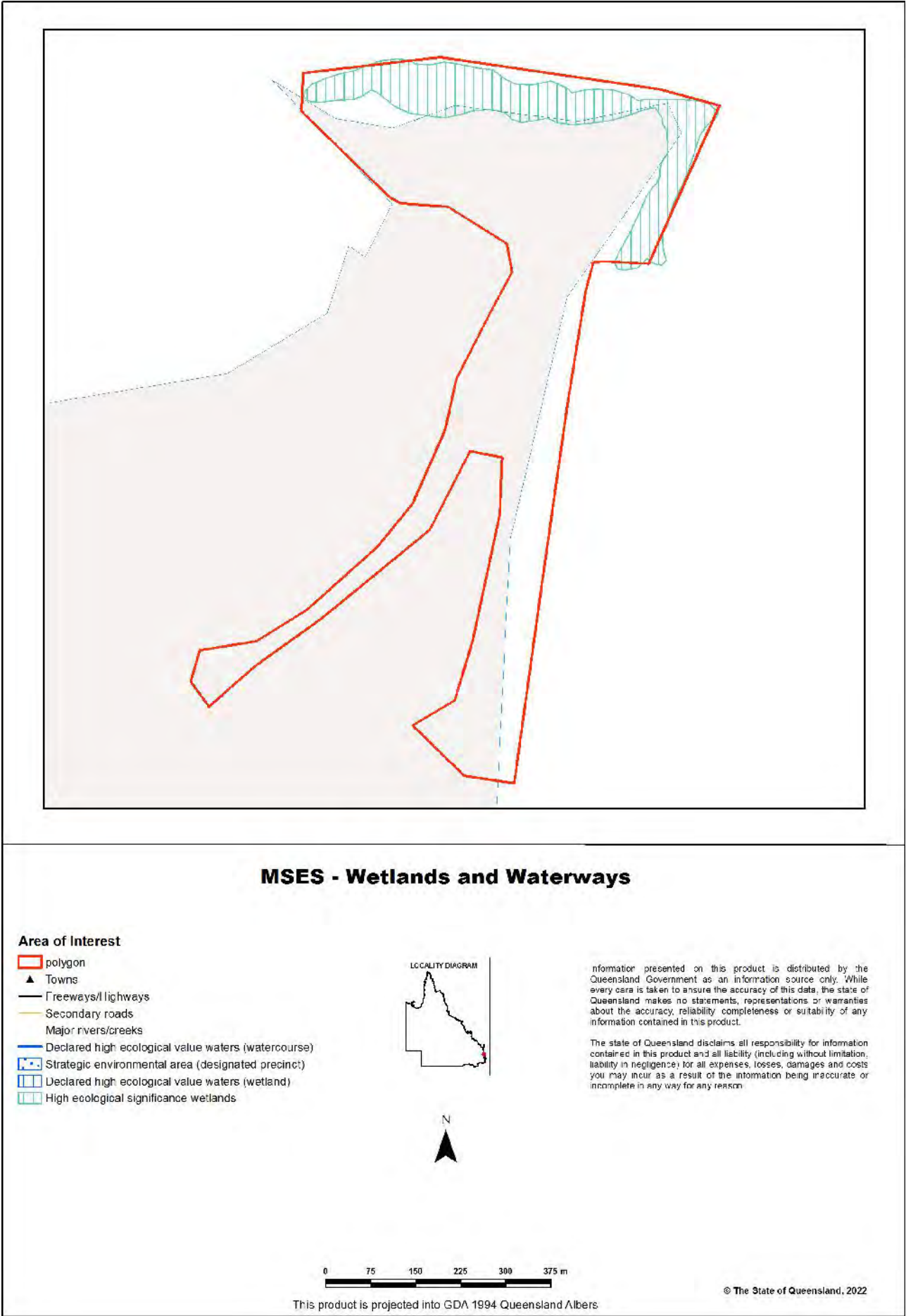
(no results)

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

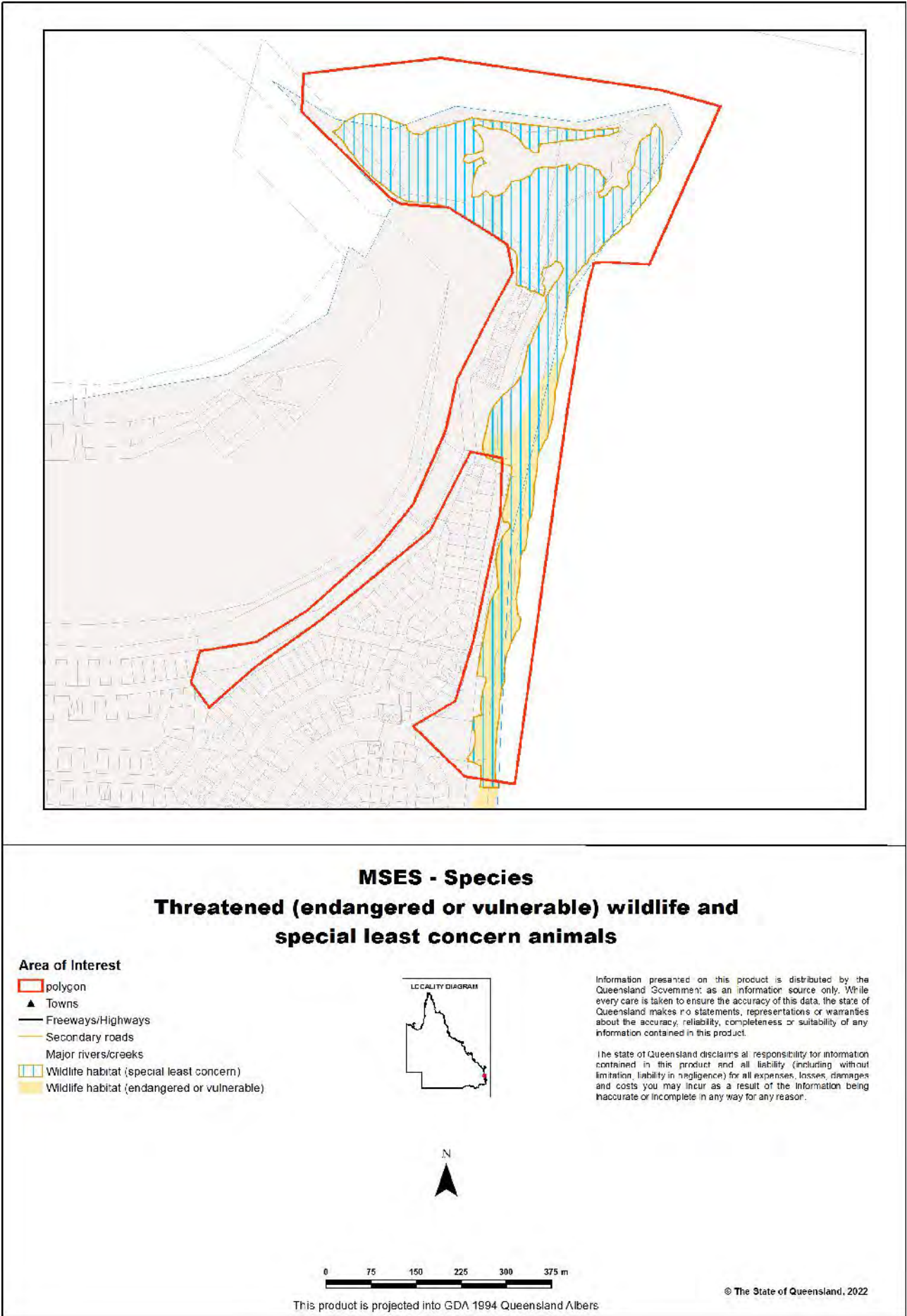
Map 1 - MSES - State Conservation Areas



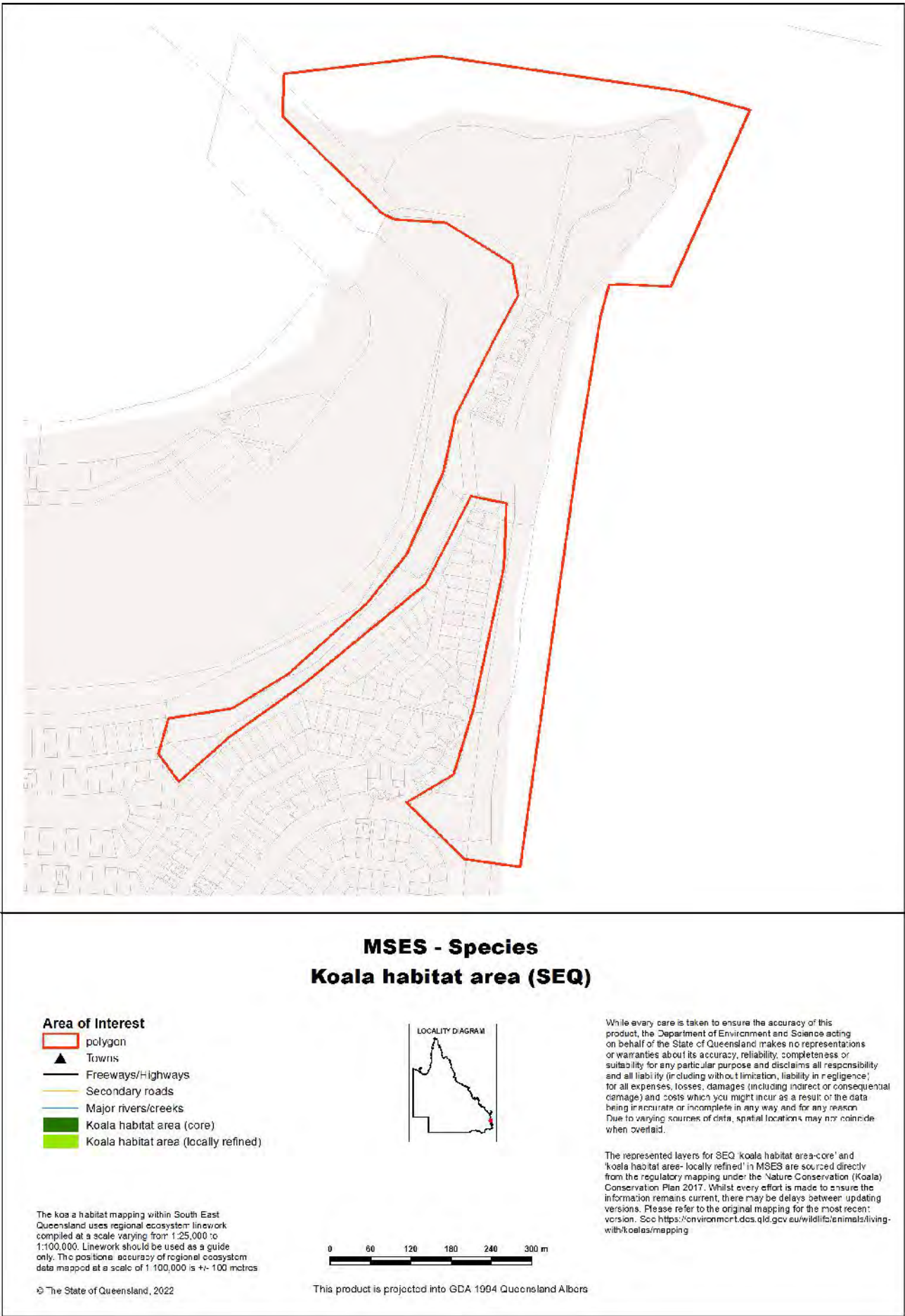
Map 2 - MSES - Wetlands and Waterways



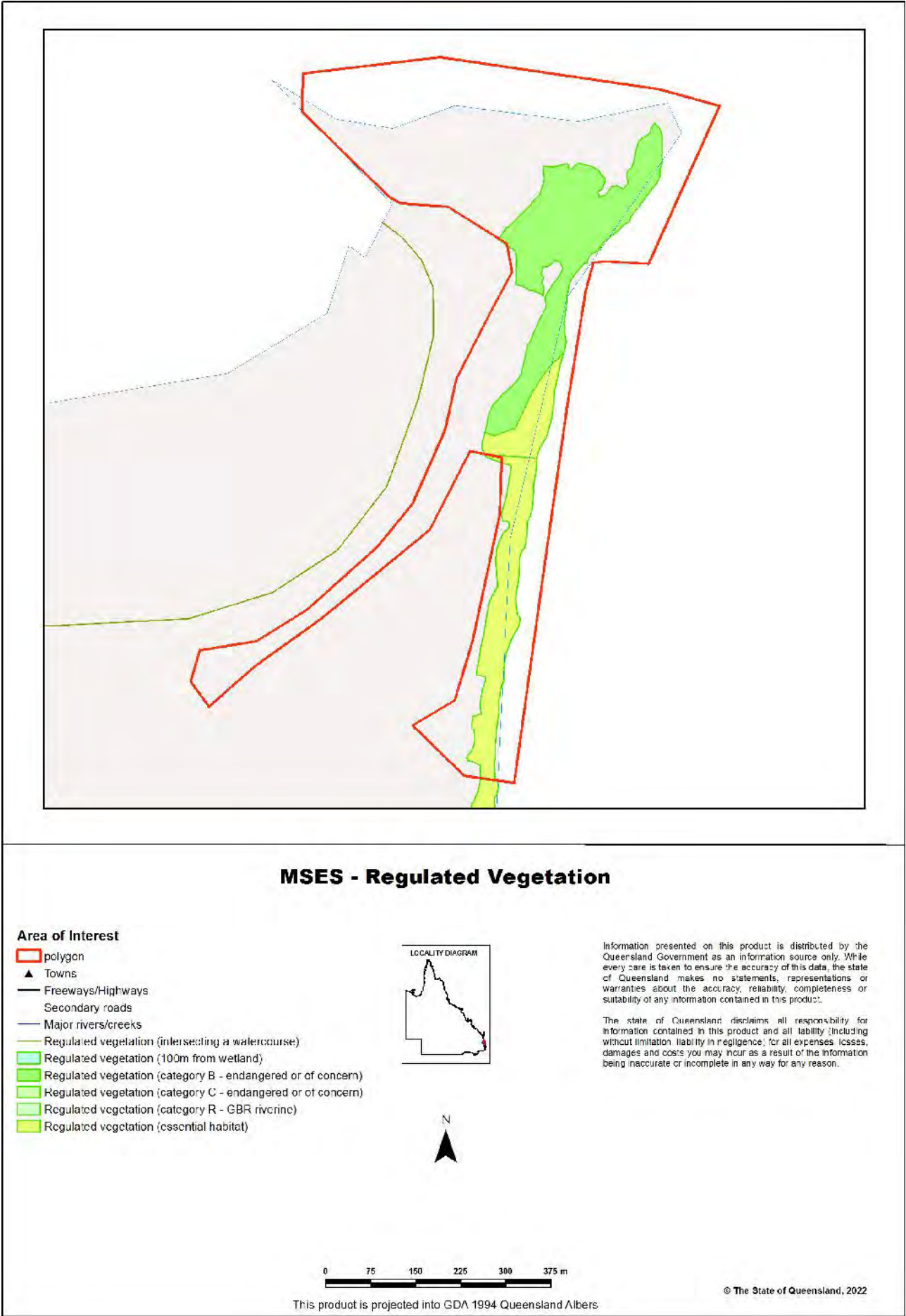
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



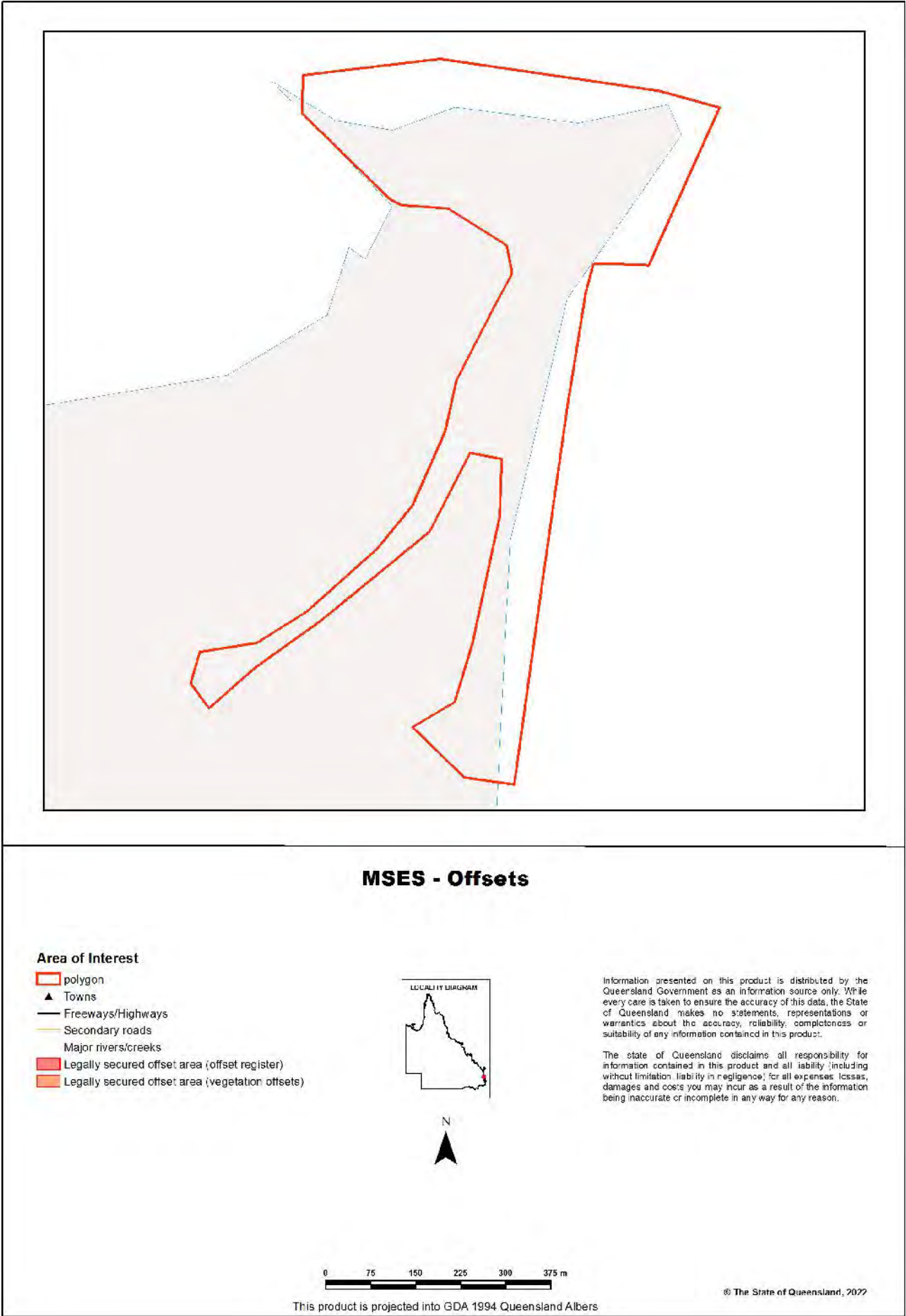
Map 3b - MSES - Species - Koala habitat area (SEQ)



Map 4 - MSES - Regulated Vegetation



Map 5 - MSES - Offset Areas



Appendices

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

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

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

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

Appendix 2 - Source Data

The datasets listed below are available on request from:

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

- Matters of State environmental significance

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

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

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

Appendix 3 - Acronyms and Abbreviations

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



Queensland Government

Department of Environment and Science

Environmental Reports

Biodiversity and Conservation Values

Biodiversity Planning Assessments and Aquatic Conservation Assessments

For the selected area of interest

Environmental Reports - General Information

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

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

Figures in tables may be affected by rounding.

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

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

Please direct queries about these reports to: biodiversity.planning@des.qld.gov.au

Disclaimer

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



Table of Contents

Summary Information	4
Biodiversity Planning Assessments	6
Introduction	6
Diagnostic Criteria	6
Other Essential Criteria	8
Aquatic Conservation Assessments	13
Introduction	13
Explanation of Criteria	13
Riverine Wetlands	14
Non-riverine Wetlands	15
Threatened and Priority Species	17
Introduction	17
Threatened Species	17
BPA Priority Species	18
ACA Priority Species	19
Maps	20
Map 1 - Locality Map	20
Map 2 - Biodiversity Planning Assessment (BPA)	21
Map 3 - Corridors	22
Map 4 - Wetlands and waterways	23
Map 5 - Aquatic Conservation Assessment (ACA) - riverine	24
Map 6 - Aquatic Conservation Assessment (ACA) - non-riverine	25
References	26
Appendices	27
Appendix 1 - Source Data	27
Appendix 2 - Acronyms and Abbreviations	28

Summary Information

Tables 1 to 8 provide an overview of the AOI with respect to selected topographic and environmental values.

Table 1: Area of interest details:

Size (ha)	29.89
Local Government(s)	Sunshine Coast Regional
Bioregion(s)	Southeast Queensland
Subregion(s)	Sunshine Coast - Gold Coast Lowlands
Catchment(s)	Maroochy

The following table identifies available Biodiversity Planning Assessments (BPAs) and Aquatic Conservation Assessments (ACAs) with respect to the AOI.

Table 2: Available Biodiversity Planning and Aquatic Conservation Assessments

Assessment Type	Assessment Area and Version
Biodiversity Planning Assessment(s)	Southeast Queensland v4.1
Aquatic Conservation Assessment(s) (riverine)	South East Queensland Catchments v1.1
Aquatic Conservation Assessment(s) (non-riverine)	South East Queensland Catchments v1.1

Table 3: Remnant regional ecosystems within the AOI as per the Qld Herbarium's 'biodiversity status'

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.0	0.0
Of concern	4.36	14.59
No concern at present	6.82	22.83

The following table identifies the extent and proportion of the user specified area of interest (AOI) which is mapped as being of "State", "Regional" or "Local" significance via application of the Queensland Department of Environment and Science's *Biodiversity Assessment and Mapping Methodology* (BAMM).

Table 4: Summary table, biodiversity significance

Biodiversity significance	Area (Ha)	% of AOI
State Habitat for EVNT taxa	0.0	0.0
State	8.13	27.2
Regional	3.05	10.2
Local or Other Values	0.0	0.0

Table 5: Non-riverine wetlands intersecting the AOI

Non-riverine wetland types intersecting the area of interest	#
(No Records)	

NB. The figures presented in the table above are derived from the relevant non-riverine Aquatic Conservation Assessment(s). Later releases of wetland mapping produced via the Queensland Wetland Mapping Program may provide more recent

information in regards to wetland extent.

Table 6: Named waterways intersecting the AOI

(no results)

Refer to **Map 1** for general locality information.

The following two tables identify the extent and proportion of the user specified AOI which is mapped as being of "Very High", "High", "Medium", "Low", or "Very Low" aquatic conservation value for riverine and non-riverine wetlands via application of the Queensland Department of Environment and Science's *Aquatic Biodiversity Assessment and Mapping Method* (AquaBAMM).

Table 7: Summary table, aquatic conservation significance (riverine)

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
Very High	0.0	0.0
High	0.0	0.0
Medium	17.35	58.05
Low	2.06	6.89
Very Low	0.0	0.0

Table 8: Summary table, aquatic conservation significance (non-riverine)

Aquatic conservation significance (non-riverine wetlands)	Area (Ha)	% of AOI
(No Records)		

Biodiversity Planning Assessments

Introduction

The Department of Environment and Science (DES) attributes biodiversity significance on a bioregional scale through a Biodiversity Planning Assessment (BPA). A BPA involves the integration of ecological criteria using the *Biodiversity assessment and Mapping Methodology* (BAMM) and is developed in two stages: 1) **diagnostic criteria**, and 2) **expert panel criteria**. The diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion, while the expert panel criteria allows for the refinement of the mapped information from the diagnostic output by incorporating local knowledge and expert opinion.

The BAMM methodology has application for identifying areas with various levels of significance solely for biodiversity reasons. These include threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetlands or other types of habitat important for the maintenance of biodiversity or ecological processes. While natural resource values such as dryland salinity, soil erosion potential or land capability are not dealt with explicitly, they are included to some extent within the biodiversity status of regional ecosystems recognised by the DES.

Biodiversity Planning Assessments (BPAs) assign three levels of overall biodiversity significance.

- **State significance** - areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales. In addition, areas flagged as being of State significance due to the presence of endangered, vulnerable and/or near threatened taxa, are identified as "State Habitat for EVNT taxa".
- **Regional significance** - areas assessed as being significant for biodiversity at the subregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance.
- **Local significance and/or other values** - areas assessed as not being significant for biodiversity at state or regional scales. Local values are of significance at the local government scale.

For further information on released BPAs and a copy of the underlying methodology, go to:

<http://www.qld.gov.au/environment/plants-animals/biodiversity/planning/>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<http://qspatial.information.qld.gov.au/geoportal/>

The following table identifies the extent and proportion of the user specified AOI which is mapped as being of "State", "Regional" or "Local" significance via application of the BAMM.

Table 9: Summary table, biodiversity significance

Biodiversity significance	Area (Ha)	% of AOI
State Habitat for EVNT taxa	0.0	0.0
State	8.13	27.2
Regional	3.05	10.2
Local or Other Values	0.0	0.0

Refer to **Map 2** for further information.

Diagnostic Criteria

Diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion. These criteria are diagnostic in that they are used to filter the available data and provide a "first-cut" or initial determination of biodiversity significance. This initial assessment is then combined through a second group of other essential criteria.

A description of the individual diagnostic criteria is provided in the following sections.

Criteria A. Habitat for EVNT taxa: Classifies areas according to their significance based on the presence of endangered, vulnerable and/or rare (EVNT) taxa. EVNT taxa are those scheduled under the *Nature Conservation Act 1992* and/or the

Environment Protection and Biodiversity Conservation Act 1999. It excludes highly mobile fauna taxa which are instead considered in Criterion H and brings together information on EVNT taxa using buffering of recorded sites or habitat suitability models (HSM) where available.

Criteria B. Ecosystem value: Classifies on the basis of biodiversity status of regional ecosystems, their extent in protected areas (presence of poorly conserved regional ecosystems), the presence of significant wetlands; and areas of national importance such as the presence of Threatened Ecological Communities, World Heritage areas and Ramsar sites. Ecosystem value is applied at a bioregional (**B1**) and regional (**B2**) scale.

Criteria C. Tract size: Measures the relative size of tracts of vegetation in the landscape. The size of any tract is a major indicator of ecological significance, and is also strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts.

Criteria D. Relative size of regional ecosystems: Classifies the relative size of each regional ecosystem unit within its bioregion (**D1**) and its subregion (**D2**). Remnant units are compared with all other occurrences with the same regional ecosystem. Large examples of a regional ecosystem are more significant than smaller examples of the same regional ecosystem because they are more representative of the biodiversity values particular to the regional ecosystem, are more resilient to the effects of disturbance, and constitute a significant proportion of the total area of the regional ecosystem.

Criteria F. Ecosystem diversity: Is an indicator of the number of regional ecosystems occurring within an area. An area with high ecosystem diversity will have many regional ecosystems and ecotones relative to other areas within the bioregion.

Criteria G. Context and connection: Represents the extent to which a remnant unit incorporates, borders or buffers areas such as significant wetlands, endangered ecosystems; and the degree to which it is connected to other vegetation.

A summary of the biodiversity status based upon the diagnostic criteria is provided in the following table.

Table 10: Summary of biodiversity significance based upon diagnostic criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
State	Remnant contains at least one Of Concern RE (B1) & Remnant contains an RE that is one of the largest of its type in the bioregion (D1)	4.36	14.59
Local or Other Values	Refer to diagnostic data for additional information	6.82	22.82

Assessment of diagnostic criteria with respect to the AOI

The following table reflects an assessment of the individual diagnostic criteria noted above in regards to the AOI.

Table 11: Assessment of individual diagnostic criteria with respect to the AOI

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
A: Habitat for EVNT Taxa					11.18	37.4		
B1: Ecosystem Value (Bioregion)			4.36	14.6			6.82	22.8
B2: Ecosystem Value (Subregion)	4.36	14.6					6.82	22.8
C: Tract Size					3.05	10.2	8.13	27.2
D1: Relative RE Size (Bioregion)	4.36	14.6					6.82	22.8
D2: Relative RE Size (Subregion)	4.36	14.6			3.05	10.2	3.77	12.6
F: Ecosystem Diversity			8.13	27.2	3.05	10.2		
G: Context and Connection					11.18	37.4		

Other Essential Criteria

Other essential criteria (also known as expert panel criteria) are based on non-uniform information sources and which may rely more upon expert opinion than on quantitative data. These criteria are used to provide a "second-cut" determination of biodiversity significance, which is then combined with the diagnostic criteria for an overall assessment of relative biodiversity significance. A summary of the biodiversity status based upon the other essential criteria is provided in the following table.

Table 12: Summary of biodiversity significance based upon other essential criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
State	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I) & Remnant forms part of a bioregional corridor (J)	4.36	14.59
State	Remnant forms part of a bioregional corridor (J)	3.77	12.61

Biodiversity significance	Description	Area (Ha)	% of AOI
Regional	Remnant forms part of a bioregional corridor (J)	3.05	10.2

A description of each of the other essential criteria and associated assessment in regards to the AOI is provided in the following sections.

Criteria H. Essential and general habitat for priority taxa: Priority taxa are those which are at risk or of management concern, taxa of scientific interest as relictual (ancient or primitive), endemic taxa or locally significant populations (such as a flying fox camp or heronry), highly specialised taxa whose habitat requirements are complex and distributions are not well correlated with any particular regional ecosystem, taxa important for maintaining genetic diversity (such as complex spatial patterns of genetic variation, geographic range limits, highly disjunct populations), taxa critical for management or monitoring of biodiversity (functionally important or ecological indicators), or economic and culturally important taxa.

Criteria I. Special biodiversity values: areas with special biodiversity values are important because they contain multiple taxa in a unique ecological and often highly biodiverse environment. Areas with special biodiversity values can include the following:

- Ia - centres of endemism - areas where concentrations of taxa are endemic to a bioregion or subregion are found.
- Ib - wildlife refugia (Morton *et al.* 1995), for example, islands, mound springs, caves, wetlands, gorges, mountain ranges and topographic isolates, ecological refuges, refuges from exotic animals, and refuges from clearing. The latter may include large areas that are not suitable for clearing because of land suitability/capability.
- Ic - areas with concentrations of disjunct populations.
- Id - areas with concentrations of taxa at the limits of their geographic ranges.
- Ie - areas with high species richness.
- If - areas with concentrations of relictual populations (ancient and primitive taxa).
- Ig - areas containing REs with distinct variation in species composition associated with geomorphology and other environmental variables.
- Ih - an artificial waterbody or managed/manipulated wetland considered by the panel/s to be of ecological significance.
- Ii - areas with a high density of hollow-bearing trees that provide habitat for animals.
- Ij - breeding or roosting sites used by a significant number of individuals.
- Ik - climate change refuge.

The following table identifies the value and extent area of the Other Essential Criteria H and I within the AOI.

Table 13: Relative importance of expert panel criteria (H and I) used to access overall biodiversity significance with respect to the AOI

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
H: Core Habitat Priority Taxa					11.18	37.4		
Ia: Centres of Endemism	4.36	14.6						
Ib: Wildlife Refugia	4.36	14.6						
Ic: Disjunct Populations					4.36	14.6		
Id: Limits of Geographic Ranges					4.36	14.6		
Ie: High Species Richness								

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
If: Relictual Populations								
Ig: Variation in Species Composition								
Ih: Artificial Wetland								
Ii: Hollow Bearing Trees								
Ij: Breeding or Roosting Site								
Ik: Climate Refugia								

NB. Whilst biodiversity values associated with Criteria I may be present within the site (refer to tables 12 and 15), for the New England Tableland and Central Queensland Coast BPAs, area and % area figures associated with Criteria Ia through to Ij cannot be listed in the table above (due to slight variations in data formats between BPAs).

Criteria J. Corridors: areas identified under this criterion qualify either because they are existing vegetated corridors important for contiguity, or cleared areas that could serve this purpose if revegetated. Some examples of corridors include riparian habitats, transport corridors and "stepping stones".

Bioregional and subregional conservation corridors have been identified in the more developed bioregions of Queensland through the BPAs, using an intensive process involving expert panels. Map 3 displays the location of corridors as identified under the Statewide Corridor network. The Statewide Corridor network incorporates BPA derived corridors and for bioregions where no BPA has been assessed yet, corridors derived under other planning processes. *Note: as a result of updating and developing a statewide network, the alignment of corridors may differ slightly in some instances when compared to those used in individual BPAs.*

The functions of these corridors are:

- **Terrestrial** Bioregional corridors, in conjunction with large tracts of remnant vegetation, maintain ecological and evolutionary processes at a landscape scale, by:

- Maintaining long term evolutionary/genetic processes that allow the natural change in distributions of species and connectivity between populations of species over long periods of time;
- Maintaining landscape/ecosystems processes associated with geological, altitudinal and climatic gradients, to allow for ecological responses to climate change;
- Maintaining large scale seasonal/migratory species processes and movement of fauna;
- Maximising connectivity between large tracts/patches of remnant vegetation;
- Identifying key areas for rehabilitation and offsets; and

- **Riparian** Bioregional Corridors also maintain and encourage connectivity of riparian and associated ecosystems.

The location of the corridors is determined by the following principles:

- Terrestrial

- Complement riparian landscape corridors (i.e. minimise overlap and maximise connectivity);
- Follow major watershed/catchment and/or coastal boundaries;
- Incorporate major altitudinal/geological/climatic gradients;
- Include and maximise connectivity between large tracts/patches of remnant vegetation;
- Include and maximise connectivity between remnant vegetation in good condition; and

- Riparian

- Located on the major river or creek systems within the bioregion in question.

The total extent of remnant vegetation triggered as being of "State", "Regional" or "Local" significance due to the presence of an overlying BPA derived terrestrial or riparian corridor within the AOI, is provided in the following table. For further

information on how remnant vegetation is triggered due to the presence of an overlying BPA derived corridor, refer to the relevant landscape BPA expert panel report(s).

Table 14: Extent of triggered remnant vegetation due to the presence of BPA derived corridors with respect to the AOI

Biodiversity Significance	Area (Ha)	% of AOI
State	8.13	27.2
Regional	3.05	10.2
Local	0.0	0.0

NB: area figures associated with the extent of corridor triggered remnant vegetation are only available for those bioregions where a BPA has been undertaken.

Refer to **Map 3** for further information.

Threatening process/condition (Criteria K) - areas identified by experts under this criterion may be used to amend (upgrade or downgrade) biodiversity significance arising from the "first-cut" analysis. The condition of remnant vegetation is affected by threatening processes such as weeds, ferals, grazing and burning regime, selective timber harvesting/removal, salinity, soil erosion, and climate change.

Assessment of Criteria K with respect to the AOI is not currently included in the "Biodiversity and Conservation Values" report, as it has not been applied to the majority of Queensland due to data/information limitations and availability.

Special Area Decisions

Expert panel derived "Special Area Decisions" are used to assign values to Other Essential Criteria. The specific decisions which relate to the AOI in question are listed in the table below.

Table 15: Expert panel decisions for assigning levels of biodiversity significance with respect to the AOI

Decision Number	Description	Panel Recommended Significance	Criteria Values
seqs_fl_58	Coastal heaths between Bribie Island and Noosa	State	Ia (SEQ endemic taxa): VERY HIGH Ib (wildlife refugia): VERY HIGH Ic (disjunct populations): MEDIUM Id (limits of geographic range): MEDIUM
seqs_I_22	Terrestrial bioregional corridors	State or Regional	Criterion J
seqs_I_49	Riparian bioregional corridors	State	Criterion J

Expert panel decision descriptions:

seqs_fl_58

Collectively, the remnant mainland coastal heaths have very high flora and habitat values including:

SEQ endemic taxa (Criterion Ia): **Acacia cincinnata**, **Acacia hubbardiana**, **A. attenuata**, **Agiortia pedicellata**, **Allocasuarina emuina**, **Astrotricha glabra**, **E. conglomerata**, **Genoplesium psammophilum**, **Grevillea leiophylla**, **Haemodorum tenuifolium**, **Hakea actites**, **Macarthuria complanata**, **Monotoca** sp. (Fraser Island P.Baxter 777), **Petrophile shirleyae**, **Philotheca queenslandica**, **Schoenus ornithopodioides**, **Strangea linearis**, **Westringia tenuicaulis**, **Xylomelum benthamii**.

Wildlife refugia (Criterion Ib).

Disjunct populations (Criterion Ic): **Callitris rhomboidea**, (may no longer be present on mainland), **Lepidosperma quadrangulatum**, **Podocarpus spinulosus**, **Schoenus scabripes**.

Limits of range of main area of distribution (Criterion Id): e.g. **Baeckea imbricata**, **Boronia saffrolifera**, **Pultenaea paleacea**, **Schoenus scabripes**, **Stackhousia spathulata**.

seqs_I_22

The expert panel reviewed the existing bioregional corridors for southern SEQ. Corridors were assigned as being of State or Regional significance.

For further information, refer to section 2.3.2 and 3.2 of this report.

seqs_I_49

The riparian bioregional corridors provide connectivity through lowland areas of SEQ.

See Table 4 for list of waterways considered riparian corridors.

For further information, refer to sections 2.3.2 and 3.2 of this report.

Aquatic Conservation Assessments

Introduction

The Aquatic Biodiversity Assessment and Mapping Method or AquaBAMM (Clayton *et al.* 2006), was developed to assess conservation values of wetlands in Queensland, and may also have application in broader geographical contexts. It is a comprehensive method that uses available data, including data resulting from expert opinion, to identify relative wetland conservation/ecological values within a specified study area (usually a catchment). The product of applying this method is an Aquatic Conservation Assessment (ACA) for the study area.

An ACA using AquaBAMM is non-social, non-economic and identifies the conservation/ecological values of wetlands at a user-defined scale. It provides a robust and objective conservation assessment using criteria, indicators and measures that are founded upon a large body of national and international literature. The criteria, each of which may have variable numbers of indicators and measures, are naturalness (aquatic), naturalness (catchment), diversity and richness, threatened species and ecosystems, priority species and ecosystems, special features, connectivity and representativeness. An ACA using AquaBAMM is a powerful decision support tool that is easily updated and simply interrogated through a geographic information system (GIS).

Where they have been conducted, ACAs can provide a source of baseline wetland conservation/ecological information to support natural resource management and planning processes. They are useful as an independent product or as an important foundation upon which a variety of additional environmental and socio-economic elements can be added and considered (i.e. an early input to broader 'triple-bottom-line' decision-making processes). An ACA can have application in:

- determining priorities for protection, regulation or rehabilitation of wetlands and other aquatic ecosystems
- on-ground investment in wetlands and other aquatic ecosystems
- contributing to impact assessment of large-scale development (e.g. dams)
- water resource and strategic regional planning processes

For a detailed explanation of the methodology please refer to the summary and expert panel reports relevant to the ACA utilised in this assessment. These reports can be accessed at Wetland Info:

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<http://qspatial.information.qld.gov.au/geoportal/>

Explanation of Criteria

Under the AquaBAMM, eight criteria are assessed to derive an overall conservation value. Similar to the Biodiversity Assessment and Mapping Methodology, the criteria may be primarily diagnostic (quantitative) or primarily expert opinion (qualitative) in nature. The following sections provide a brief description of each of the 8 criteria.

Criteria 1. Naturalness - Aquatic: This attribute reflects the extent to which a wetland's (riverine, non-riverine, estuarine) aquatic state of naturalness is affected through relevant influencing indicators which include: presence of exotic flora and fauna; presence of aquatic communities; degree of habitat modification and degree of hydrological modification.

Criteria 2. Naturalness - Catchment: The naturalness of the terrestrial systems of a catchment can have an influence on many wetland characteristics including: natural ecological processes e.g. nutrient cycling, riparian vegetation, water chemistry, and flow. The indicators utilised to assess this criterion include: presence of exotic flora and/or fauna; riparian, catchment and flow modification.

Criteria 3. Naturalness - Diversity and Richness: This criterion is common to many ecological assessment methods and can include both physical and biological features. It includes such indicators as species richness, riparian ecosystem richness and geomorphological diversity.

Criteria 4. Threatened Species and Ecosystems: This criterion evaluates ecological rarity characteristics of a wetland. This includes both species rarity and rarity of communities / assemblages. The communities and assemblages are best represented by regional ecosystems. Species rarity is determined by NCA and EPBC status with Endangered, Vulnerable or Near-threatened species being included in the evaluation. Ecosystem rarity is determined by regional ecosystem biodiversity status i.e. Endangered, Of Concern, or Not of Concern.

Criteria 5. Priority Species and Ecosystems: Priority flora and fauna species lists are expert panel derived. These are aquatic, semi-aquatic and riparian species which exhibit at least 1 particular trait in order to be eligible for consideration. For

flora species the traits included:

- It forms significant macrophyte beds (in shallow or deep water).
- It is an important food source.
- It is important/critical habitat.
- It is implicated in spawning or reproduction for other fauna and/or flora species.
- It is at its distributional limit or is a disjunct population.
- It provides stream bank or bed stabilisation or has soil binding properties.
- It is a small population and subject to threatening processes.

Fauna species are included if they meet at least one of the following traits:

- It is endemic to the study area (>75 per cent of its distribution is in the study area/catchment).
- It has experienced, or is suspected of experiencing, a serious population decline.
- It has experienced a significant reduction in its distribution and has a naturally restricted distribution in the study area/catchment.
- It is currently a small population and threatened by loss of habitat.
- It is a significant disjunct population.
- It is a migratory species (other than birds).
- A significant proportion of the breeding population (>one per cent for waterbirds, >75 per cent other species) occurs in the waterbody (see Ramsar criterion 6 for waterbirds).
- Limit of species range.

See the individual expert panel reports for the priority species traits specific to an ACA.

Criteria 6. Special Features: Special features are areas identified by flora, fauna and ecology expert panels which exhibit characteristics beyond those identified in other criteria and which the expert panels consider to be of the highest ecological importance. Special feature traits can relate to, but are not solely restricted to geomorphic features, unique ecological processes, presence of unique or distinct habitat, presence of unique or special hydrological regimes e.g. spring-fed streams. Special features are rated on a 1 - 4 scale (4 being the highest).

Criteria 7. Connectivity: This criterion is based on the concept that appropriately connected aquatic ecosystems are healthy and resilient, with maximum potential biodiversity and delivery of ecosystem services.

Criteria 8. Representativeness: This criterion applies primarily to non-riverine assessments, evaluates the rarity and uniqueness of a wetland type in relation to specific geographic areas. Rarity is determined by the degree of wetland protection within "protected Areas" estate or within an area subject to the *Fisheries Act 1994*, *Coastal Protection and Management Act 1995*, or *Marine Parks Act 2004*. Wetland uniqueness evaluates the relative abundance and size of a wetland or wetland management group within geographic areas such as catchment and subcatchment.

Riverine Wetlands

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water. AquaBAMM, when applied to riverine wetlands uses a discrete spatial unit termed subsections. A subsection can be considered as an area which encompasses discrete homogeneous stream sections in terms of their natural attributes (i.e. physical, chemical, biological and utilitarian values) and natural resources. Thus in an ACA, an aquatic conservation significance score is calculated for each subsection and applies to all streams within a subsection, rather than individual streams as such.

Please note, the area figures provided in Tables 16 and 17, are derived using the extent of riverine subsections within the AOI. Refer to **Map 5** for further information. A summary of the conservation significance of riverine wetlands within the AOI is provided in the following table.

Table 16: Overall level/s of riverine aquatic conservation significance

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
Very High	0.0	0.0

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	0.0	0.0
Medium	17.35	58.05
Low	2.06	6.89
Very Low	0.0	0.0

The individual aquatic conservation criteria ratings for riverine wetlands within the AOI are listed below.

Table 17: Level/s of riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic			2.06	6.9	17.35	58.0		
2. Naturalness catchment			17.35	58.0			2.06	6.9
3. Diversity and richness					19.41	64.9		
4. Threatened species and ecosystems					17.35	58.0		
5. Priority species and ecosystems					19.41	64.9		
6. Special features								
7. Connectivity					19.41	64.9		
8. Representative-ness								

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to riverine wetlands within the AOI.

Table 18: Expert panel decisions for assigning overall levels of riverine aquatic conservation significance

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
(No Records)				

4 is the highest rating/value

Expert panel decision descriptions:

(No Records)

Non-riverine Wetlands

Non-riverine wetlands include both lacustrine and palustrine wetlands, however, do not currently incorporate estuarine, marine or subterranean wetland types. A summary of the conservation significance of non-riverine wetlands within the AOI is provided in the following table. Refer to **Map 6** for further information.

Table 19: Overall level/s of non-riverine aquatic conservation significance

Aquatic conservation significance (non-riverine wetlands)	Area (Ha)	% of AOI
(No Records)		

The following table provides an assessment of non-riverine wetlands within the AOI and associated aquatic conservation criteria values.

Table 20: Level/s of non-riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
(No Records)								

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to non-riverine wetlands within the AOI.

Table 21: Expert panel decisions for assigning overall levels of non-riverine aquatic conservation significance.

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
(No Records)				

4 is the highest rating/value

Expert panel decision descriptions:

(No Records)

Threatened and Priority Species

Introduction

This chapter contains a list of threatened and priority flora and/or fauna species that have been recorded on, or within 4km of the Assessment Area.

The information presented in this chapter with respect to species presence is derived from compiled databases developed primarily for the purpose of BPAs and ACAs. Data is collated from a number of sources and is updated periodically.

It is important to note that the list of species provided in this report, may differ when compared to other reports generated from other sources such as the State government's WildNet, HerbreCs or the federal government's EPBC database for a number of reasons.

Records for threatened and priority species are filtered and checked based on a number of rules including:

- Taxonomic nomenclature - current scientific names and status,
- Location - cross-check co-ordinates with location description,
- Taxon by location - requires good knowledge of the taxon and history of the record,
- Duplicate records - identify and remove,
- Expert panels - check records and provide new records,
- Flora cultivated records excluded,
- Use precise records less than or equal to 2000m,
- Use recent records greater than or equal to 1975 animals, greater than or equal to 1950 plants.

Threatened Species

Threatened species are those species classified as "Endangered" or "Vulnerable" under the *Environment Protection and Biodiversity Conservation Act 1999* or "Endangered", "Vulnerable" or "Near threatened" under the *Nature Conservation Act 1992*.

The following threatened species have been recorded on, or within approximately 4km of the AOI.

Table 22: Threatened species recorded on, or within 4km of the AOI

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Acacia attenuata</i>		V	V	High			FL
<i>Acacia baueri</i> <i>subsp. baueri</i>	tiny wattle	V		Medium		I	FL
<i>Adelotus brevis</i>	tusked frog	V		Medium		I	FA
<i>Blandfordia grandiflora</i>	christmas bells	E		High		I	FL
<i>Carcharias taurus</i>	greynurse shark	E	CE	High		D	FA
<i>Carcharodon carcharias</i>	white shark		V	Critical	Y	D	FA
<i>Caretta caretta</i>	loggerhead turtle	E	E	Critical	Y		FA
<i>Crinia tinnula</i>	wallum froglet	V		High		I	FA
<i>Hemirhamphys fluviorum</i>	estuary stingray	NT		High		D	FA
<i>Limosa lapponica baueri</i>	Western Alaskan bar-tailed godwit	V	V	Low	Y	I	FA
<i>Litoria freycineti</i>	wallum rocketfrog	V		Medium			FA
<i>Litoria olongburensis</i>	wallum sedgefrog	V	V	Medium		I	FA

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Ninox strenua</i>	powerful owl	V		Medium			FA
<i>Numenius madagascariensis</i>	eastern curlew	E	CE	Low	Y	I	FA
<i>Orcaella heinsohni</i>	Australian snubfin dolphin	V		Critical	Y	I	FA
<i>Ornithoptera richmondia</i>	Richmond birdwing	V		Critical			FA
<i>Pararistolochia praevenosa</i>		NT		High			FL
<i>Pezoporus wallicus wallicus</i>	ground parrot	V		High			FA
<i>Phascolarctos cinereus</i>	koala	E	E	Low			FA
<i>Pteropus poliocephalus</i>	grey-headed flying-fox	C	V	Critical			FA
<i>Rostratula australis</i>	Australian painted-snipe	E	E	Medium		I	FA
<i>Xeromys myoides</i>	water mouse	V	V	High		I	FA
<i>Zieria exsul</i>	banished stink bush	CE		Medium			FL

NB. Please note that the threatened species listed in this section are based upon the most recently compiled DES internal state-wide threatened species dataset. This dataset may contain additional records that were not originally available for inclusion in the relevant individual BPAs and ACAs.

*JAMBA - Japan-Australia Migratory Bird Agreement; CAMBA - China-Australia Migratory Bird Agreement; ROKAMBA - Republic of Korea-Australia Migratory Bird Agreement; CMS - Convention on the Conservation of Migratory Species.

**I - wetland indicator species; D - wetland dependent species.

BPA Priority Species

A list of BPA priority species that have been recorded on, or within approximately 4km of the AOI is contained in the following table.

Table 23: Priority species recorded on, or within 4km of the AOI

Species	Common name	Back on Track rank	Identified flora/fauna
<i>Acronychia wilcoxiana</i>	silver aspen	L	FL
<i>Cherax dispar</i>	Lobby	L	FA
<i>Litoria brevipalmata</i>	Green-thighed Frog	M	FA
<i>Litoria dentata</i>	Bleating Treefrog	L	FA
<i>Litoria tyleri</i>	Southern Laughing Treefrog	L	FA
<i>Melaleuca quinquenervia</i>	swamp paperbark	None	FL
<i>Mormopterus norfolkensis</i>	East-coast Freetail Bat	L	FA
<i>Mugil cephalus</i>	Sea Mullet	L	FA
<i>Ophioscincus truncatus</i>	None	L	FA
<i>Pteropus alecto</i>	Black Flying-fox	L	FA
<i>Pteropus scapulatus</i>	Little Red Flying-fox	L	FA
<i>Sternula albifrons</i>	Little Tern	H	FA

Species	Common name	Back on Track rank	Identified flora/fauna
<i>Syzygium oleosum</i>	blue cherry	None	FL

NB. Please note that the list of priority species is based on those species identified in the BPAs, however records for these species may be more recent than the originals used. furthermore, the BPA priority species databases are updated from time to time. At each update, the taxonomic details for all species are amended as necessary to reflect current taxonomic name and/or status changes.

ACA Priority Species

A list of ACA priority species used in riverine and non-riverine ACAs that have been recorded on, or within approximately 4km of the AOI are contained in the following tables.

Table 24: Priority species recorded on, or within 4 km of the AOI - riverine

Species	Common name	Back on Track rank	Identified flora/fauna
<i>Acrocephalus australis</i>	Australian Reed-Warbler	Low	FA
<i>Ardea alba modesta</i>	Eastern Great Egret	Low	FA
<i>Casuarina glauca</i>	swamp she-oak	None	FL
<i>Eucalyptus tereticornis</i>	None	None	FL
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Low	FA
<i>Hydroprogne caspia</i>	Caspian Tern	Low	FA
<i>Melaleuca quinquenervia</i>	swamp paperbark	None	FL
<i>Pandion cristatus</i>	Eastern Osprey	Low	FA
<i>Rostratula australis</i>	Australian Painted Snipe	Medium	FA

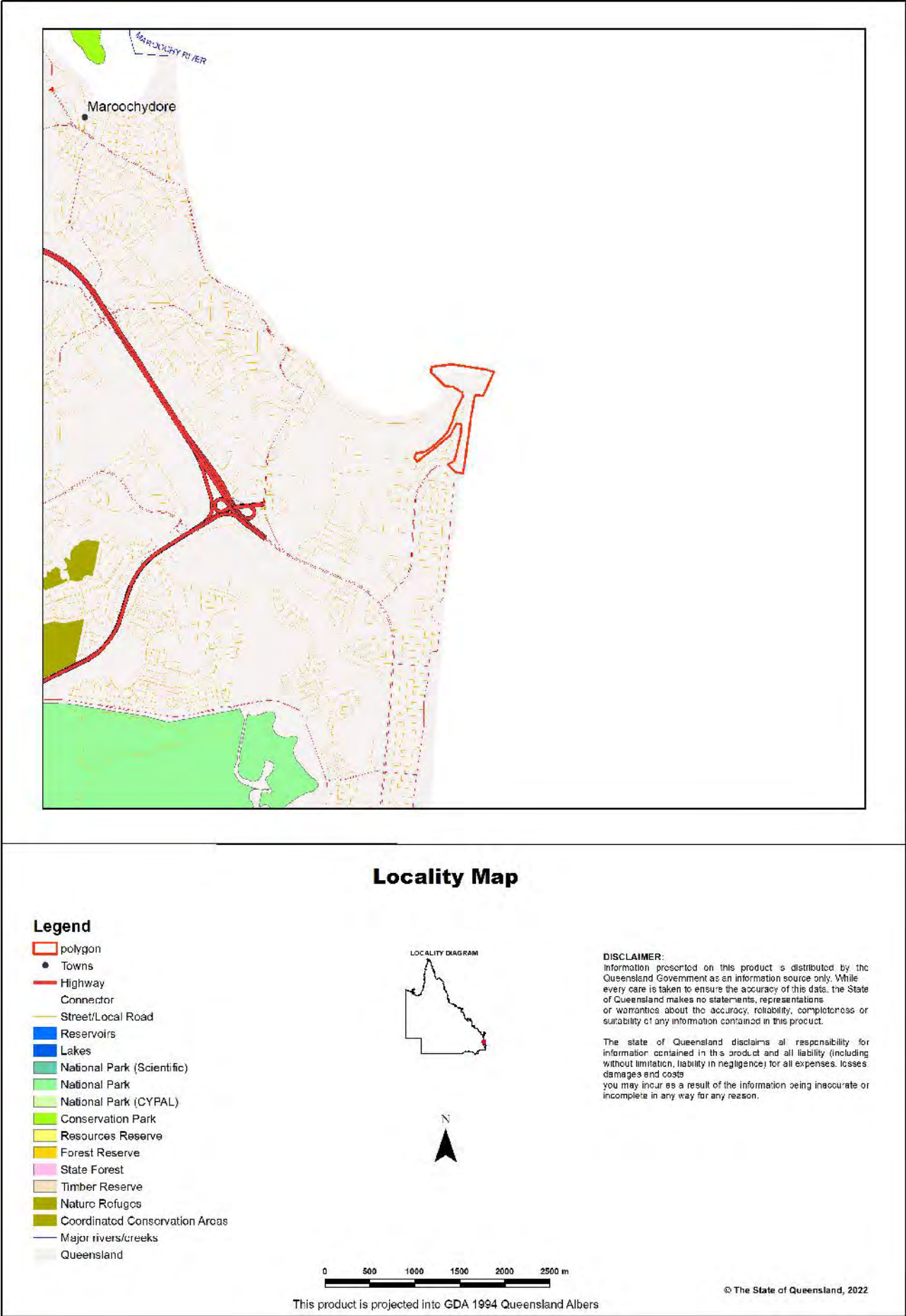
Table 25: Priority species recorded on, or within 4 km of the AOI - non-riverine

Species	Common name	Back on Track rank	Identified flora/fauna
<i>Acrocephalus australis</i>	Australian Reed-Warbler	Low	FA
<i>Ardea alba modesta</i>	Eastern Great Egret	Low	FA
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Low	FA
<i>Cherax dispar</i>	Lobby	Low	FA
<i>Eucalyptus tereticornis</i>	None	None	FL
<i>Gahnia clarkei</i>	tall sawsedge	None	FL
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Low	FA
<i>Hydroprogne caspia</i>	Caspian Tern	Low	FA
<i>Melaleuca quinquenervia</i>	swamp paperbark	None	FL
<i>Pandion cristatus</i>	Eastern Osprey	Low	FA
<i>Rostratula australis</i>	Australian Painted Snipe	Medium	FA
<i>Tringa nebularia</i>	Common Greenshank	Low	FA
<i>Tringa stagnatilis</i>	Marsh Sandpiper	Low	FA

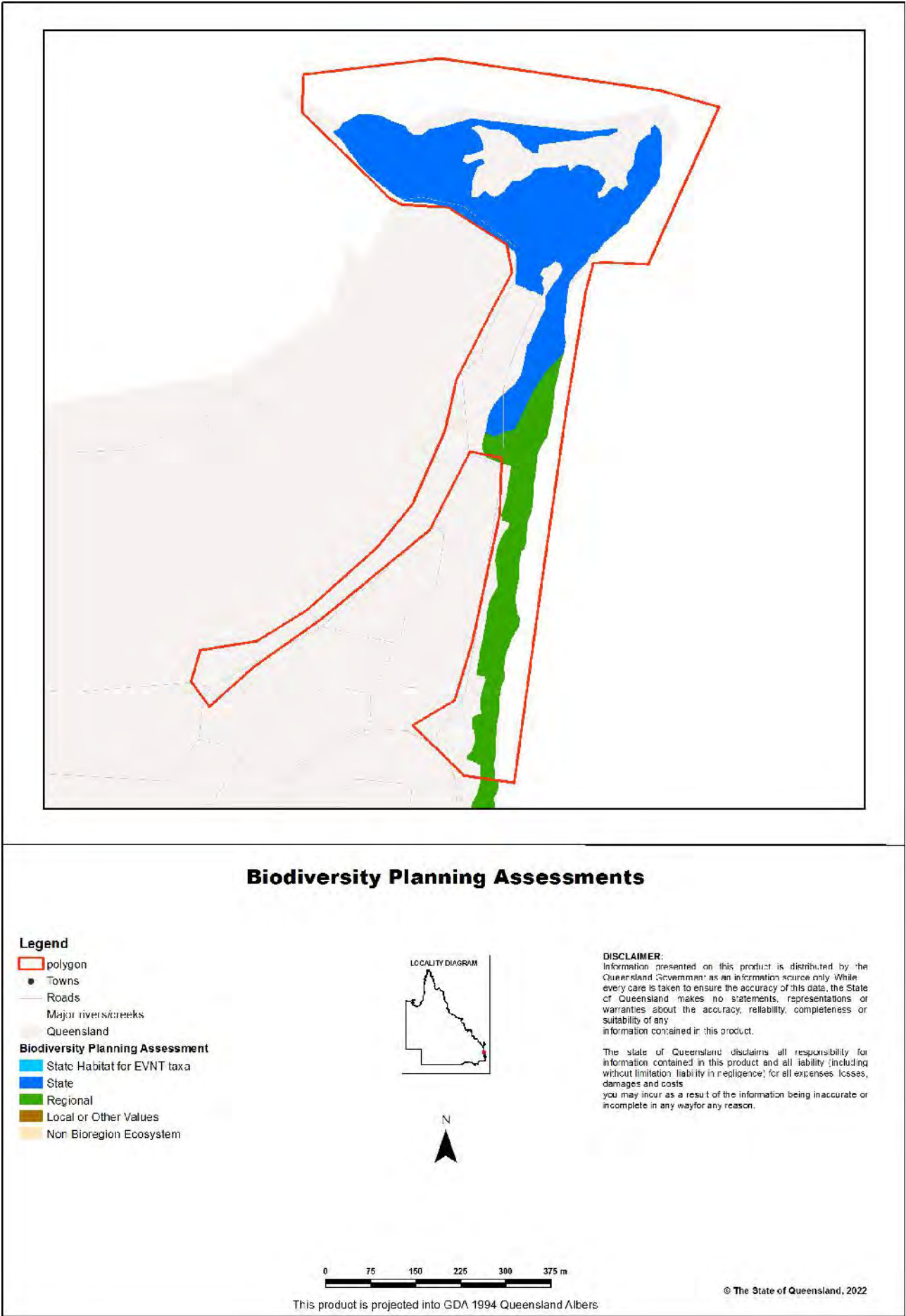
NB. Please note that the priority species records used in the above two tables are comprised of those adopted for the released individual ACAs. The ACA riverine and non-riverine priority species databases are updated from time to time to reflect new release of ACAs. At each update, the taxonomic details for all ACAs records are amended as necessary to reflect current taxonomic name and/or status changes.

Maps

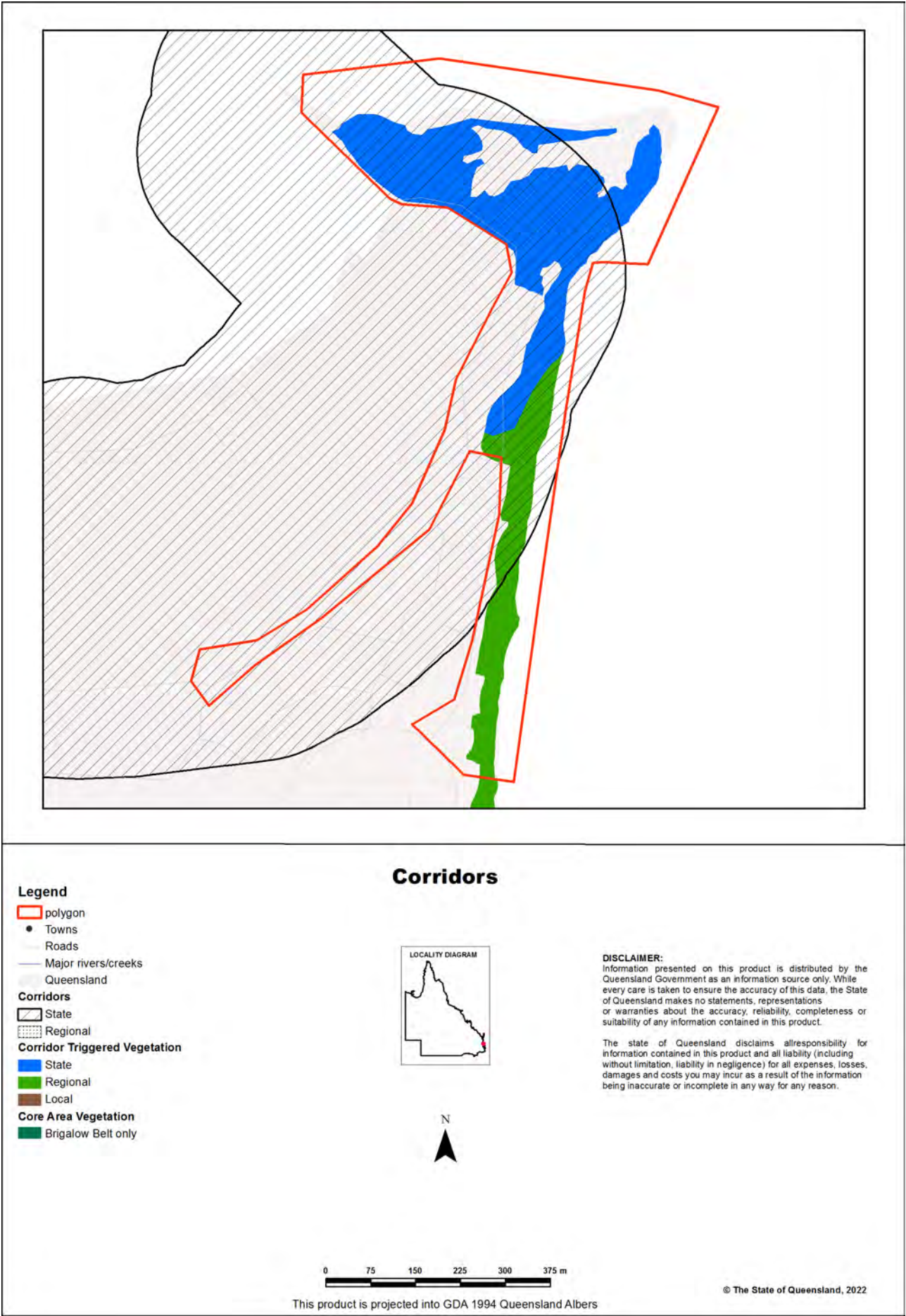
Map 1 - Locality Map



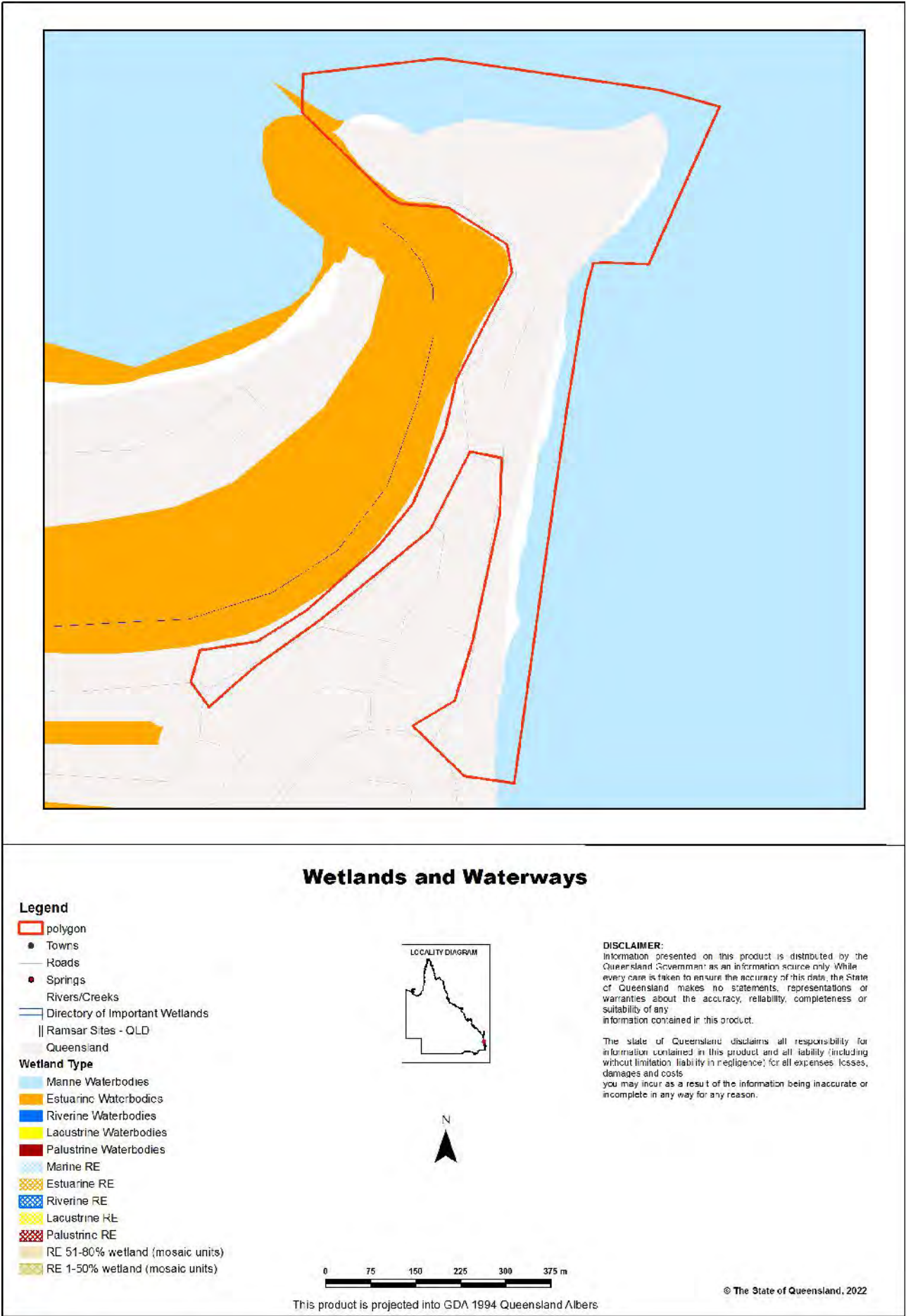
Map 2 - Biodiversity Planning Assessment (BPA)



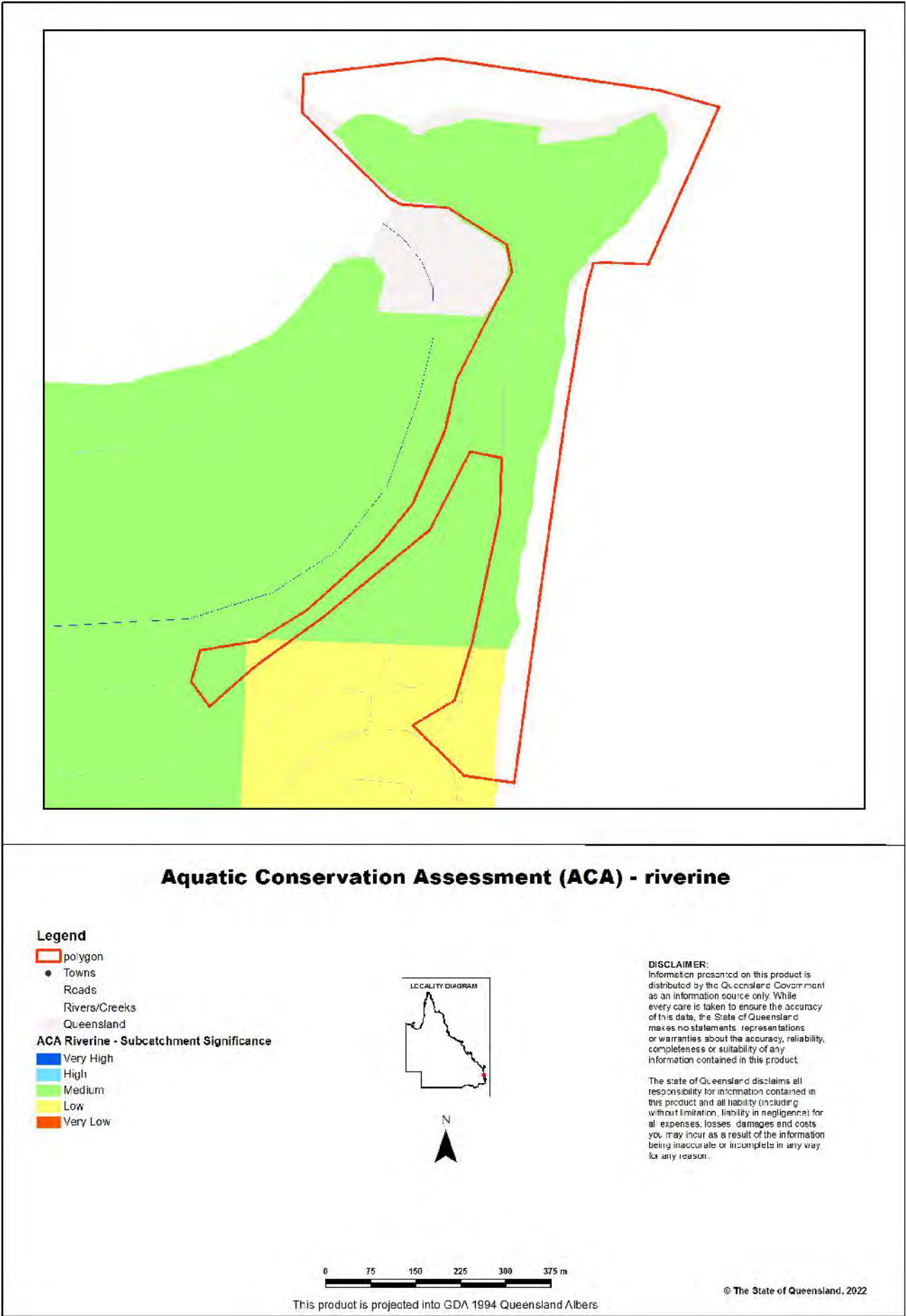
Map 3 - Corridors



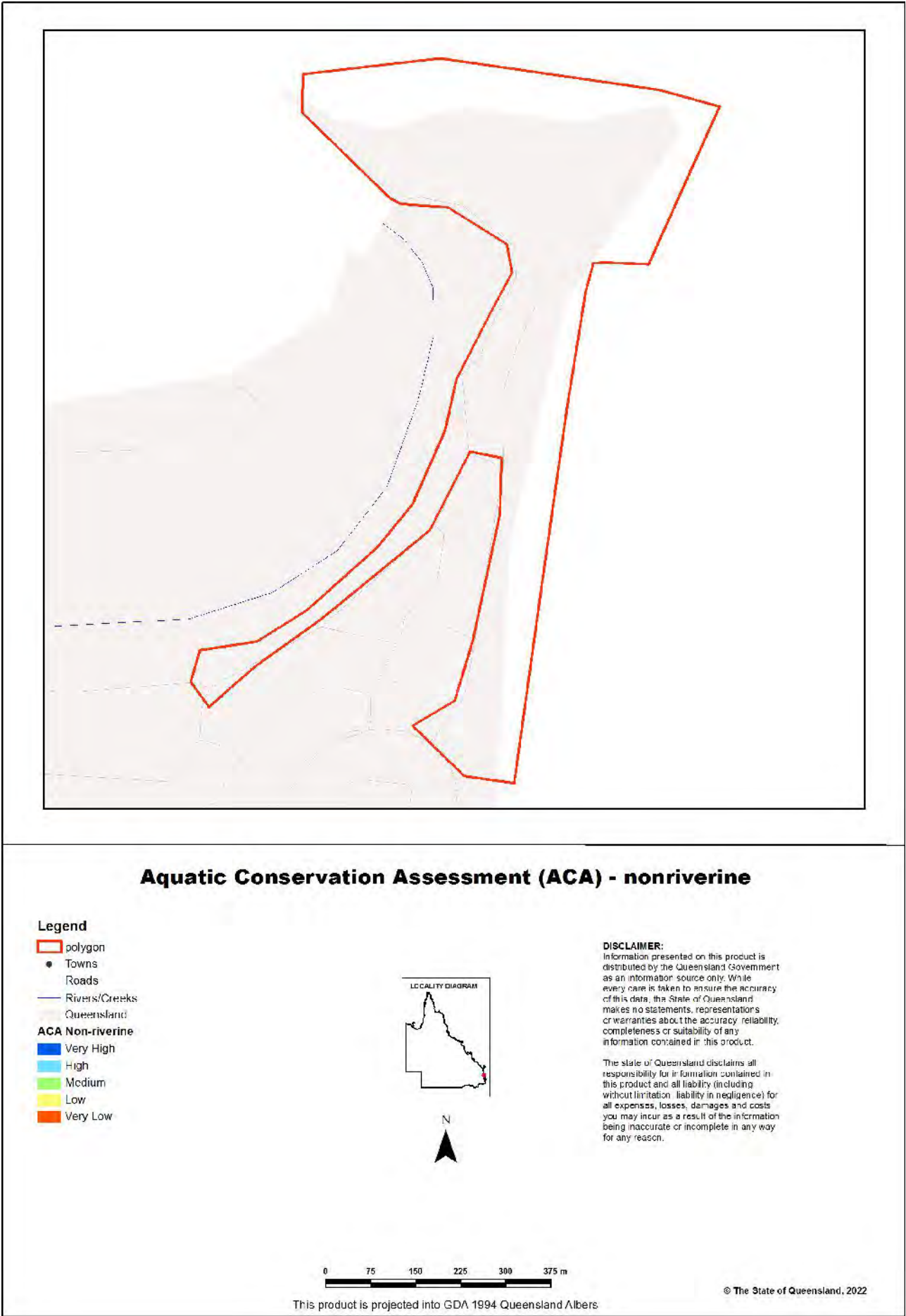
Map 4 - Wetlands and waterways



Map 5 - Aquatic Conservation Assessment (ACA) - riverine



Map 6 - Aquatic Conservation Assessment (ACA) - non-riverine



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Appendices

Appendix 1 - Source Data

Theme	Datasets
Aquatic Conservation Assessments Non-riverine*	Combination of the following datasets: Cape York Peninsula Non-riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Non-riverine v1.3 Lake Eyre and Bulloo Basins v1.1 QMDB Non-riverine ACA v1.4 Southeast Queensland ACA v1.1 WBB Non-riverine ACA v1.1 Southern Gulf Catchments Non-riverine ACA v1.1
Aquatic Conservation Assessments Riverine*	Combination of the following datasets: Cape York Peninsula Riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Riverine v1.1 Lake Eyre and Bulloo Basins v1.1 QMDB Riverine ACA v1.4 Southeast Queensland ACA v1.1 WBB Riverine ACA v1.1 Southern Gulf Catchments Riverine ACA v1.1
Biodiversity Planning Assessments*	Combination of the following datasets: Brigalow Belt BPA v2.1 Cape York Peninsula BPA v1.1 Central Queensland Coast BPA v1.3 Channel Country BPA v1.1 Desert Uplands BPA v1.3 Einasleigh Uplands BPA v1.1 Gulf Plains BPA v1.1 Mitchell Grass Downs BPA v1.1 Mulga Lands BPA v1.4 New England Tableland v2.3 Northwest Highlands v1.1 Southeast Queensland v4.1 Wet Tropics v1.1
Statewide BPA Corridors*	Statewide corridors v1.6
Threatened Species	An internal DES database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
BPA Priority Species	An internal DES database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
ACA Priority Species	An internal DES database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.

*These datasets are available at:

<http://dds.information.qld.gov.au/DDS>

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
ACA	- Aquatic Conservation Assessment
AQUABAMM	- Aquatic Biodiversity Assessment and Mapping Methodology
BAMM	- Biodiversity Assessment and Mapping Methodology
BoT	- Back on Track
BPA	- Biodiversity Planning Assessment
CAMBA	- China-Australia Migratory Bird Agreement
DES	- Department of Environment and Science
EPBC	- <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVNT	- Endangered, Vulnerable, Near Threatened
GDA94	- Geocentric Datum of Australia 1994
GIS	- Geographic Information System
JAMBA	- Japan-Australia Migratory Bird Agreement
NCA	- <i>Nature Conservation Act 1992</i>
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
ROKAMBA	- Republic of Korea-Australia Migratory Bird Agreement



Vegetation management report

For Lot: 712 Plan: CG3995

24/06/2022

This publication has been compiled by Operations Support, Department of Resources.

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Recent changes

Updated mapping

Updated vegetation mapping was released on 8 September 2021 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, wetland, high-value regrowth and essential habitat mapping.

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

Overview

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

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

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

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

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

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

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

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

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

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

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

- the vegetation management framework, which may include:

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

- the protected plant framework, which may include:

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

- the koala protection framework, which may include:

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

Other laws

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

Table of Contents

1. Property details	6
1.1 Tenure and title area	6
1.2 Property location	6
2. Vegetation management framework (administered by the Department of Resources)	7
2.1 Exempt clearing work	7
2.2 Accepted development vegetation clearing codes	7
2.3 Area management plans	8
2.4 Development approvals	8
2.5. Contact information for the Department of Resources	8
3. Vegetation management framework for Lot: 712 Plan: CG3995	9
3.1 Vegetation categories	9
3.2 Regional ecosystems	10
3.3 Watercourses	10
3.4 Wetlands	10
3.5 Essential habitat	10
3.6 Area Management Plan(s)	11
3.7 Coastal or non-coastal	11
3.8 Agricultural Land Class A or B	11
4. Vegetation management framework maps	13
4.1 Regulated vegetation management map	14
4.2 Vegetation management supporting map	15
4.3 Coastal/non-coastal map	16
4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture	17
5. Protected plants framework (administered by the Department of Environment and Science (DES))	18
5.1 Clearing in high risk areas on the flora survey trigger map	18
5.2 Clearing outside high risk areas on the flora survey trigger map	18
5.3 Exemptions	18
5.4 Contact information for DES	18
5.5 Protected plants flora survey trigger map	19
6. Koala protection framework (administered by the Department of Environment and Science (DES))	21
6.1 Koala mapping	21
6.2 Koala habitat planning controls	22
6.3 Koala Conservation Plan clearing requirements	23
6.4 Contact information for DES	23
7. Koala protection framework details for Lot: 712 Plan: CG3995	23
7.1 Koala districts	23
7.2 Koala priority area, koala habitat area and identified koala broad-hectare area map	24
7.3 Koala habitat regional ecosystems for core koala habitat areas	25
8. Other relevant legislation contacts list	26

1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 712 Plan: CG3995, are listed in Table 1.

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

Lot	Plan	Tenure	Property title area (sq metres)
712	CG3995	Reserve	60,000

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

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 712 Plan: CG3995, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Sunshine Coast Regional

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

Catchment(s)
Maroochy

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

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

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

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

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

2.1 Exempt clearing work

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

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

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

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

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

2.2 Accepted development vegetation clearing codes

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

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

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

You can complete the online form at

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

2.3 Area management plans

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

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

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

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

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

2.4 Development approvals

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

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

2.5. Contact information for the Department of Resources

For further information on the vegetation management framework:

Phone 135VEG (135 834)

Email vegetation@resources.qld.gov.au

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

3. Vegetation management framework for Lot: 712 Plan: CG3995

3.1 Vegetation categories

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

Table 3: Vegetation categories for subject property. Total area: 7.34ha

Vegetation category	Area (ha)
Category B	6.3
Category Water	0.0
Category X	1.0

Table 4: Description of vegetation categories

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

Property Map of Assessable Vegetation (PMAV)

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

3.2 Regional ecosystems

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

A description of regional ecosystems can be accessed online at

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

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
12.12.19	Of concern	B	0.64	Vegetation complex of rocky headlands on Mesozoic to Proterozoic igneous rocks	Grassland Sch 4
12.2.14	Least concern	B	5.69	Foredune complex	Sparse
non-rem	None	X	1.00	None	None
ocean	None	Water	less than 0.01	None	None

Please note:

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

2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

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

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

3.3 Watercourses

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

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

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

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

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

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

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

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

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

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

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

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
686	<i>Crinia tinnula</i>	wallum froglet	V	Vegetation community is a mandatory essential habitat factor for this species. Permanent to ephemeral acidic (pH 4.3 - 5.2), soft freshwater in Melaleuca (e.g. <i>M. quinquenervia</i>) swamps, sedgeland, wet and dry heathland (e.g. <i>Banksia robur</i> , <i>Xanthorrhoea</i>) and wallum (<i>Banksia aemula</i> shrubland/woodland) areas coastal lowlands on sand or sandstone, occasionally in adjacent open forest/woodland (e.g. <i>Eucalyptus racemosa</i> , <i>Corymbia citriodora</i>) with heathy understorey; known to persist in small remnants (<10ha); may be found well away from water.	Sea level to 150m.	Sandy and sandy-alluvial substrates.	None
35	<i>Caretta caretta</i>	loggerhead turtle	E	Tropical and warm temperate marine waters, including coral and rocky reefs, soft-bottomed bays and estuaries; with water temperature range of 16o to 20oC. Nests well above high tide mark on sandy beach.	Sea level to 50m.	Sandy substrates.	Beach.

Label	Regional Ecosystem (mandatory unless otherwise specified)
686	12.2.5, 12.2.7, 12.2.9, 12.2.10, 12.2.12, 12.2.15, 12.3.4, 12.3.5, 12.3.6, 12.3.12, 12.3.14, 12.3.20, 12.5.2, 12.5.10. These regional ecosystems are not a mandatory essential habitat factor for this species.
35	All regional ecosystems adjacent to beach.

3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

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

Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

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

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

No Class A

No Class B

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

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 712 Plan: CG3995.

4. Vegetation management framework maps

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

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

Regulated vegetation management map

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

Vegetation management supporting map

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

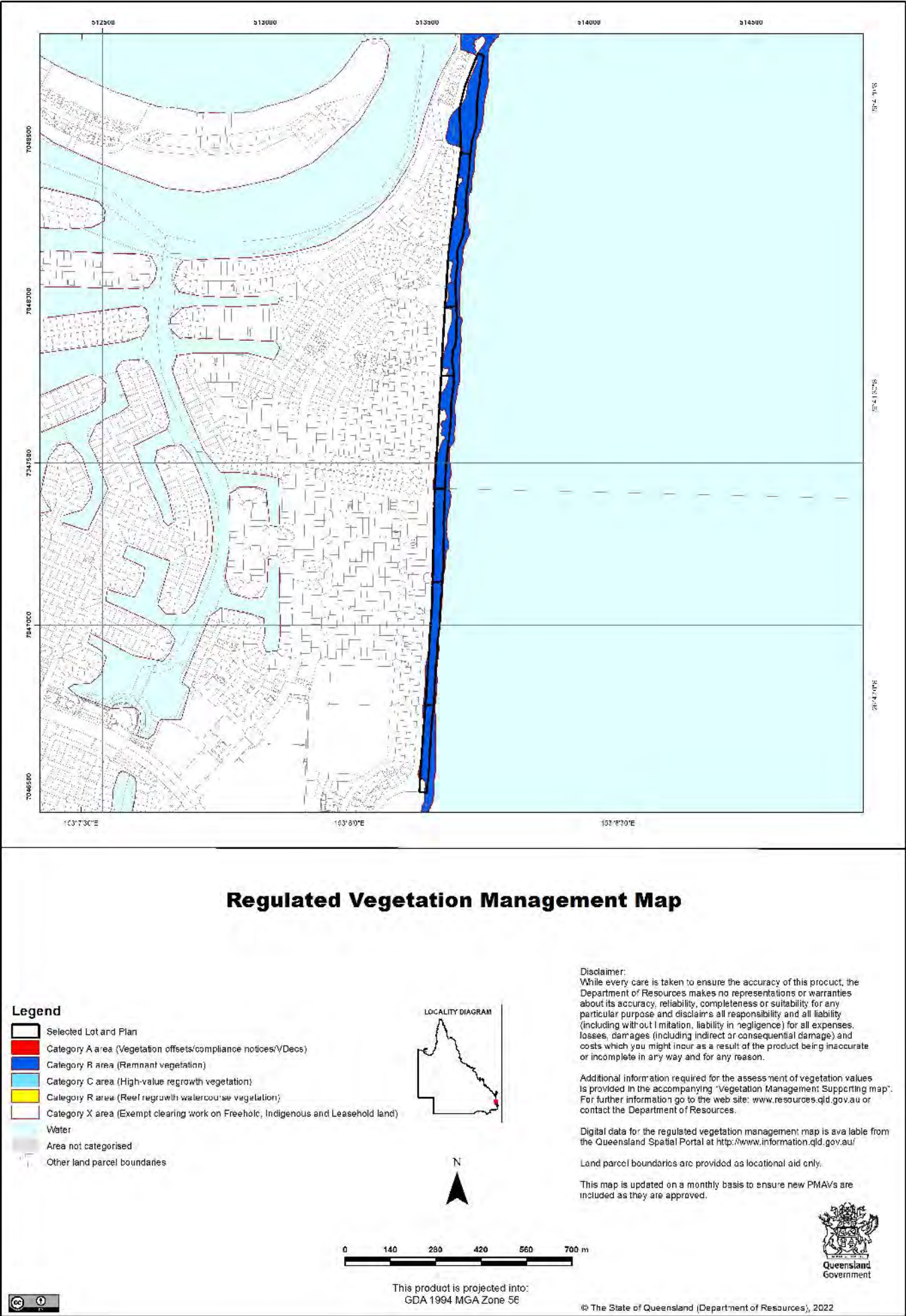
Coastal/non-coastal map

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

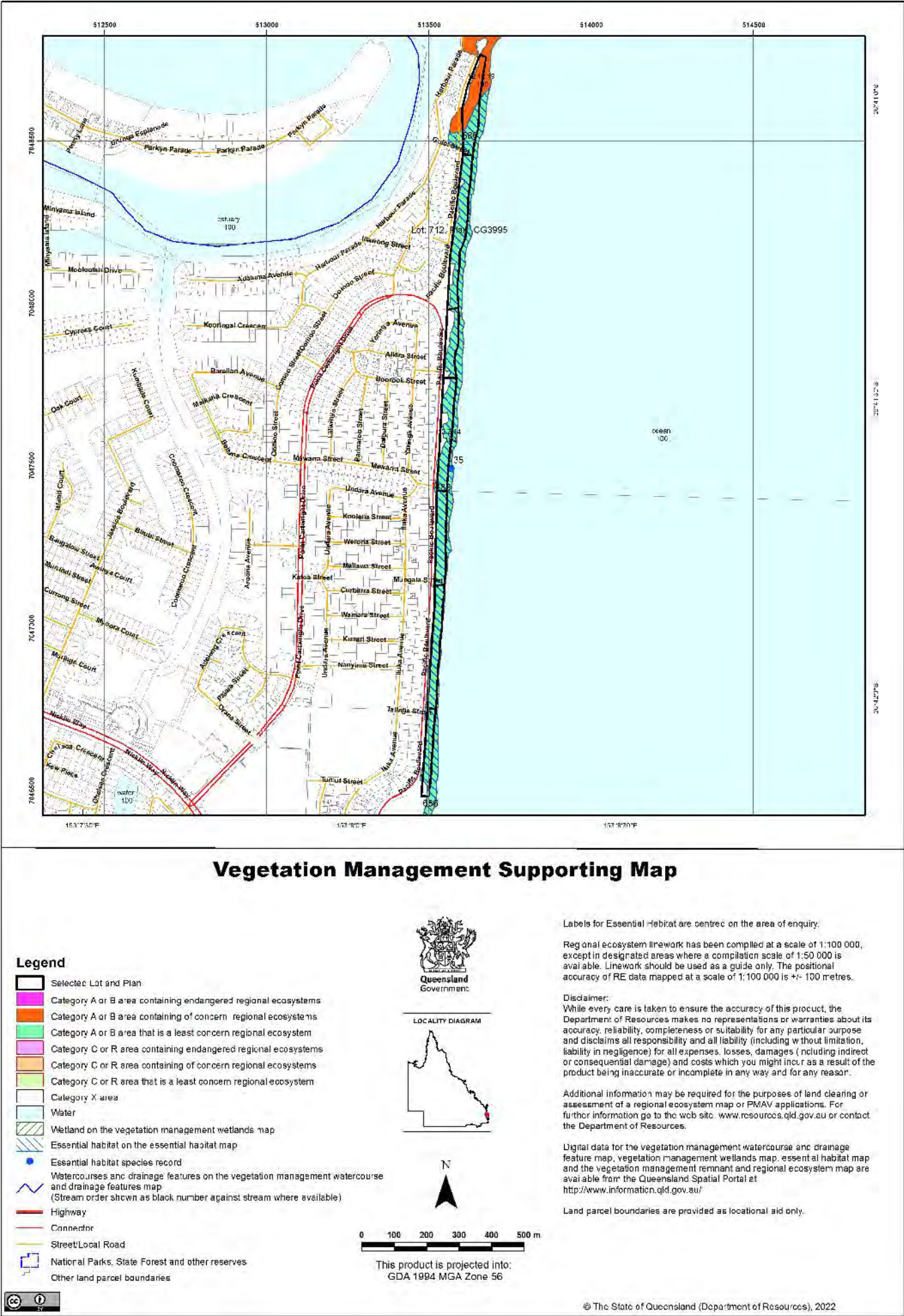
Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

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

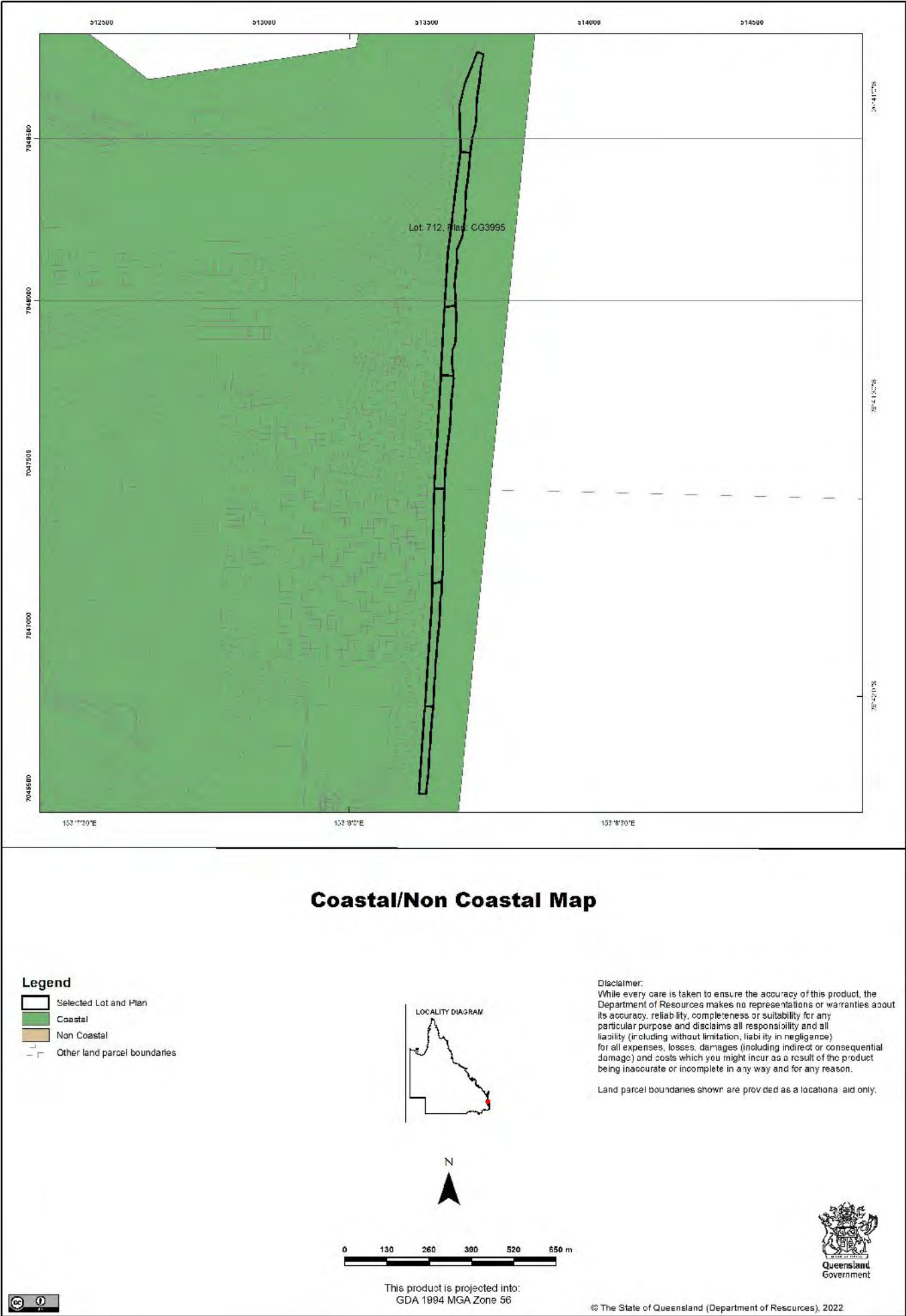
4.1 Regulated vegetation management map



4.2 Vegetation management supporting map



4.3 Coastal/non-coastal map



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



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

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

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

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

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

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

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

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

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

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

5.3 Exemptions

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

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

5.4 Contact information for DES

For further information on the protected plants framework:

Phone 1300 130 372 (and select option four)

Email palm@des.qld.gov.au

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

5.5 Protected plants flora survey trigger map

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

Updates to the data informing the flora survey trigger map

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

Species information

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



Protected Plants Flora Survey Trigger Map

Legend

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

LOCALITY DIAGRAM



N

0 90 180 270 360 450 m

This product is projected into:
GDA 1994 MGA Zone 56

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

Land parcel boundaries are provided as locational aid only.

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

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

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

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

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

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

6.1 Koala mapping

6.1.1 Koala districts

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

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

6.1.2 Koala habitat areas

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

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

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

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

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

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

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

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

6.1.3 Koala priority areas

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

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

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

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

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

6.1.4 Identified koala broad-hectare areas

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

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

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

6.2 Koala habitat planning controls

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

More information on these planning controls can be found here:

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

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

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

Interfering with koala habitat means:

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

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

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

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

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

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

6.3 Koala Conservation Plan clearing requirements

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

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

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

6.4 Contact information for DES

For further information on the koala protection framework:

Phone 13 QGOV (13 74 68)

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

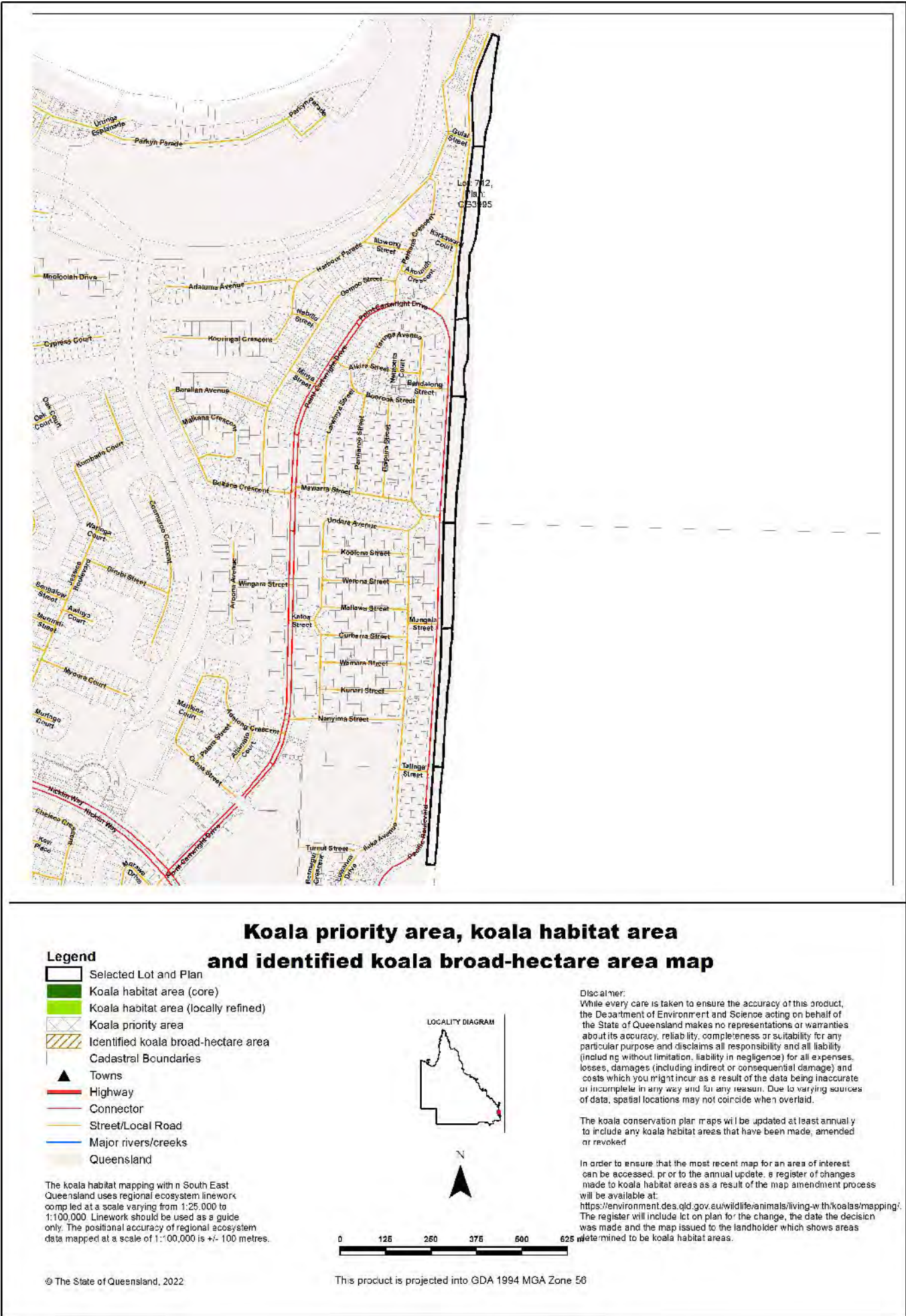
Visit <https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping>

7. Koala protection framework details for Lot: 712 Plan: CG3995

7.1 Koala districts

Koala District A

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



Koala habitat regional ecosystems for core koala habitat areas



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

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This product is projected into GDA 1994 MGA Zone 56

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While every care is taken to ensure the accuracy of this product, the Department of Environment and Science acting on behalf of the State of Queensland 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 data being inaccurate or incomplete in any way and for any reason.

Due to varying sources of data, spatial locations may not coincide when overlaid.

8. Other relevant legislation contacts list

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

WildNet Records

Species List

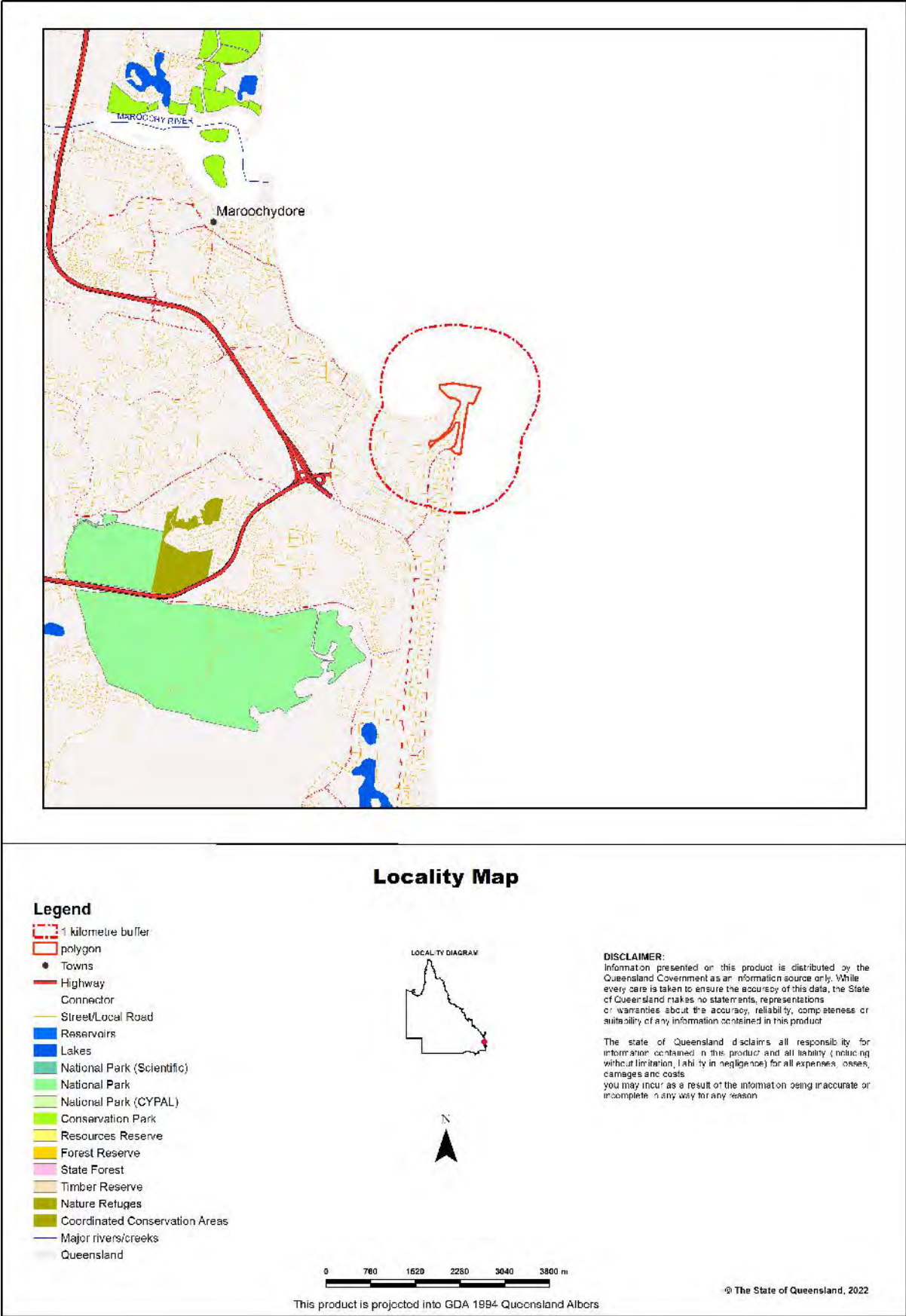


For the selected area of interest 29.89ha

Current as at 24/06/2022

6252-WN

Map 1. Locality Map



Summary Information

The following table provides an overview of the area of interest .

Table 1. Area of interest details

Size (ha)	29.89
Local Government(s)	Sunshine Coast Regional
Bioregion(s)	Southeast Queensland
Subregion(s)	Sunshine Coast - Gold Coast Lowlands
Catchment(s)	Maroochy

Protected Area(s)

No estates or reserves are located within the area of interest.

World Heritage Area(s)

No World Heritage Areas are located within the area of interest.

Ramsar Area(s)

No Ramsar Areas are located within the area of interest.

Species List

Introduction

This report is derived from a spatial layer generated from the [WildNet database](#) managed by the Department of Environment and Science. The layer which is generated weekly contains the WildNet wildlife records that are not classed as erroneous or duplicate, that have a location precision equal to or less than 10000 metres and do not have a count of zero.

The WildNet dataset is constantly being enhanced and the taxonomic and status information revised. If a species is not listed in this report, it does not mean it doesn't occur there and listed species may also no longer inhabit the area. It is recommended that you also access other internal and external data sources for species information in your area of interest (Refer Links and Support).

Table 2 lists the animals recorded within the area of interest and its one kilometre buffer.

Table 3 lists the plants recorded within the area of interest and its one kilometre buffer.

Table 4 lists the fungi recorded within the area of interest and its one kilometre buffer.

Table 5 lists the other species recorded within the area of interest and its one kilometre buffer.

Table 2. Animals recorded within the area of interest and its one kilometre buffer

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
627	Amphibia	Hylidae	<i>Litoria caerulea</i>	common green treefrog	C	None	0	5	29/11/2017
608	Amphibia	Hylidae	<i>Litoria fallax</i>	eastern sedgefrog	C	None	0	2	05/11/2019
1422	Aves	Acanthizidae	<i>Acanthiza nana</i>	yellow thornbill	C	None	0	1	31/01/2000
1423	Aves	Acanthizidae	<i>Acanthiza pusilla</i>	brown thornbill	C	None	0	1	02/08/2006
1408	Aves	Acanthizidae	<i>Gerygone levigaster</i>	mangrove gerygone	C	None	0	2	07/08/2007
1410	Aves	Acanthizidae	<i>Gerygone mouki</i>	brown gerygone	C	None	0	1	12/06/2000
1396	Aves	Acanthizidae	<i>Gerygone olivacea</i>	white-throated gerygone	C	None	0	1	31/01/2000

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1397	Aves	Acanthizidae	<i>Gerygone palpebrosa</i>	fairy gerygone	C	None	0	1	02/08/2006
1720	Aves	Accipitridae	<i>Haliastur indus</i>	brahminy kite	C	None	0	18	02/08/2006
1707	Aves	Accipitridae	<i>Haliastur sphenurus</i>	whistling kite	C	None	0	2	05/04/2002
1702	Aves	Accipitridae	<i>Pandion cristatus</i>	eastern osprey	SL	None	0	17	07/08/2007
1279	Aves	Anhingidae	<i>Anhinga novaehollandiae</i>	Australasian darter	C	None	0	1	13/09/2001
1829	Aves	Ardeidae	<i>Ardea alba modesta</i>	eastern great egret	C	None	0	1	19/11/1992
1840	Aves	Ardeidae	<i>Egretta garzetta</i>	little egret	C	None	0	2	01/11/1993
1826	Aves	Ardeidae	<i>Egretta novaehollandiae</i>	white-faced heron	C	None	0	4	07/08/2007
1813	Aves	Ardeidae	<i>Egretta sacra</i>	eastern reef egret	C	None	0	15	07/08/2007
1660	Aves	Artamidae	<i>Artamus leucorhynchus</i>	white-breasted woodswallow	C	None	0	5	01/11/1993
1654	Aves	Artamidae	<i>Cracticus nigrogularis</i>	pied butcherbird	C	None	0	16	07/08/2007
1656	Aves	Artamidae	<i>Cracticus torquatus</i>	grey butcherbird	C	None	0	2	26/02/2001
1644	Aves	Artamidae	<i>Gymnorhina tibicen</i>	Australian magpie	C	None	0	22	07/08/2007
1194	Aves	Cacatuidae	<i>Cacatua sanguinea</i>	little corella	C	None	0	1	06/10/1993
1185	Aves	Cacatuidae	<i>Calyptorhynchus funereus</i>	yellow-tailed black-cockatoo	C	None	0	3	30/10/2013
1193	Aves	Cacatuidae	<i>Eolophus roseicapilla</i>	galah	C	None	0	9	06/10/1993
1636	Aves	Campephagidae	<i>Coracina novae hollandiae</i>	black-faced cuckoo-shrike	C	None	0	26	07/08/2007
1640	Aves	Campephagidae	<i>Lalage leucomela</i>	varied triller	C	None	0	1	02/08/2006
27774	Aves	Charadriidae	<i>Vanellus miles</i>	masked lapwing	C	None	0	1	14/07/2002
1820	Aves	Ciconiidae	<i>Ephippiorhynchus asiaticus</i>	black-necked stork	C	None	0	1	30/09/1922
18323	Aves	Columbidae	<i>Geopelia placida</i>	peaceful dove	C	None	0	2	01/11/1993
1793	Aves	Columbidae	<i>Ocyphaps lophotes</i>	crested pigeon	C	None	0	12	07/08/2007
1774	Aves	Columbidae	<i>Streptopelia chinensis</i>	spotted dove	None	None	0	25	07/08/2007
1779	Aves	Coraciidae	<i>Eurystomus orientalis</i>	dollarbird	C	None	0	2	19/11/1992
1609	Aves	Corvidae	<i>Corvus orru</i>	Torresian crow	C	None	0	31	07/08/2007
1756	Aves	Cuculidae	<i>Chalcites minutillus barnardi</i>	Eastern little bronze-cuckoo	C	None	0	1	03/01/1993
1738	Aves	Cuculidae	<i>Eudynamys orientalis</i>	eastern koel	C	None	0	3	31/01/1994

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1601	Aves	Dicruridae	<i>Dicrurus bracteatus</i>	spangled drongo	C	None	0	11	14/07/2002
1704	Aves	Falconidae	<i>Falco cenchroides</i>	nankeen kestrel	C	None	0	3	14/07/2002
1281	Aves	Fregatidae	<i>Fregata ariel</i>	lesser frigatebird	SL	None	0	1	31/10/1993
1925	Aves	Haematopodidae	<i>Haematopus fuliginosus</i>	sooty oystercatcher	C	None	0	17	02/08/2006
1926	Aves	Haematopodidae	<i>Haematopus longirostris</i>	Australian pied oystercatcher	C	None	0	5	14/07/2002
1767	Aves	Halcyonidae	<i>Dacelo novaeguineae</i>	laughing kookaburra	C	None	0	9	17/06/2002
1762	Aves	Halcyonidae	<i>Todiramphus sanctus</i>	sacred kingfisher	C	None	0	5	02/08/2006
1572	Aves	Hirundinidae	<i>Hirundo neoxena</i>	welcome swallow	C	None	0	25	07/08/2007
1573	Aves	Hirundinidae	<i>Petrochelidon nigricans</i>	tree martin	C	None	0	1	02/08/2006
1912	Aves	Laridae	<i>Chroicocephalus novaehollandiae</i>	silver gull	C	None	0	27	07/08/2007
1886	Aves	Laridae	<i>Gelochelidon nilotica</i>	gull-billed tern	SL	None	0	1	17/06/2002
1908	Aves	Laridae	<i>Gygis alba</i>	white tern	C	None	2	2	26/04/1974
1896	Aves	Laridae	<i>Hydroprogne caspia</i>	Caspian tern	SL	None	0	4	02/08/2006
1899	Aves	Laridae	<i>Sterna hirundo</i>	common tern	SL	None	0	4	05/04/2002
1905	Aves	Laridae	<i>Sternula albifrons</i>	little tern	SL	None	0	1	18/03/2006
1895	Aves	Laridae	<i>Thalasseus bergii</i>	crested tern	SL	None	0	25	07/08/2007
18458	Aves	Maluridae	<i>Malurus lamberti</i>	variegated fairy-wren	C	None	0	3	26/02/2001
1558	Aves	Maluridae	<i>Malurus melanocephalus</i>	red-backed fairy-wren	C	None	0	7	02/08/2006
1289	Aves	Megaluridae	<i>Cincloramphus timoriensis</i>	tawny grassbird	C	None	0	1	02/08/2006
1694	Aves	Megapodiidae	<i>Alectura lathami</i>	Australian brush-turkey	C	None	0	1	07/08/2007
1542	Aves	Meliphagidae	<i>Anthochaera chrysoptera</i>	little wattlebird	C	None	0	6	07/08/2007
1523	Aves	Meliphagidae	<i>Caligavis chrysops</i>	yellow-faced honeyeater	C	None	0	1	22/06/1993
1539	Aves	Meliphagidae	<i>Entomyzon cyanotis</i>	blue-faced honeyeater	C	None	0	8	02/08/2006
1497	Aves	Meliphagidae	<i>Lichmera indistincta</i>	brown honeyeater	C	None	0	32	07/08/2007
1500	Aves	Meliphagidae	<i>Manorina melanocephala</i>	noisy miner	C	None	0	3	07/08/2007
1504	Aves	Meliphagidae	<i>Meliphaga lewinii</i>	Lewin's honeyeater	C	None	0	13	07/08/2007

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1489	Aves	Meliphagidae	<i>Myzomela sanguinolenta</i>	scarlet honeyeater	C	None	0	2	06/09/1993
1493	Aves	Meliphagidae	<i>Philemon citreogularis</i>	little friarbird	C	None	0	1	02/08/2006
1494	Aves	Meliphagidae	<i>Philemon corniculatus</i>	noisy friarbird	C	None	0	25	02/08/2006
1482	Aves	Meliphagidae	<i>Phylidonyris niger</i>	white-cheeked honeyeater	C	None	0	1	01/11/1992
1764	Aves	Meropidae	<i>Merops ornatus</i>	rainbow bee-eater	C	None	0	6	01/10/1996
1589	Aves	Monarchidae	<i>Grallina cyanoleuca</i>	magpie-lark	C	None	0	8	07/08/2007
1600	Aves	Monarchidae	<i>Myiagra inquieta</i>	restless flycatcher	C	None	0	1	05/05/1993
1586	Aves	Monarchidae	<i>Myiagra rubecula</i>	leaden flycatcher	C	None	0	5	02/08/2006
1597	Aves	Monarchidae	<i>Symposiachrus trivirgatus</i>	spectacled monarch	SL	None	0	1	28/07/1993
1611	Aves	Nectariniidae	<i>Dicaeum hirundinaceum</i>	mistletoebird	C	None	0	2	31/01/2000
1453	Aves	Neositidae	<i>Daphoenositta chrysoptera</i>	varied sittella	C	None	0	1	13/09/2001
1444	Aves	Oriolidae	<i>Sphecotheres vieilloti</i>	Australasian figbird	C	None	0	21	07/08/2007
1450	Aves	Pachycephalidae	<i>Colluricincla megarrhyncha</i>	little shrike-thrush	C	None	0	5	02/08/2006
1437	Aves	Pachycephalidae	<i>Pachycephala rufiventris</i>	rufous whistler	C	None	0	1	22/05/1993
1360	Aves	Passeridae	<i>Passer domesticus</i>	house sparrow	None	None	0	19	14/07/2002
1284	Aves	Pelecanidae	<i>Pelecanus conspicillatus</i>	Australian pelican	C	None	0	20	07/08/2007
1261	Aves	Phalacrocoracidae	<i>Microcarbo melanoleucos</i>	little pied cormorant	C	None	0	9	07/08/2007
1275	Aves	Phalacrocoracidae	<i>Phalacrocorax carbo</i>	great cormorant	C	None	0	1	12/06/2000
1263	Aves	Phalacrocoracidae	<i>Phalacrocorax sulcirostris</i>	little black cormorant	C	None	0	22	07/08/2007
1264	Aves	Phalacrocoracidae	<i>Phalacrocorax varius</i>	pied cormorant	C	None	0	13	07/08/2007
1955	Aves	Podargidae	<i>Podargus strigoides</i>	tawny frogmouth	C	None	0	5	28/10/2009
1190	Aves	Procellariidae	<i>Ardenna tenuirostris</i>	short-tailed shearwater	SL	None	0	1	31/01/1994
1244	Aves	Procellariidae	<i>Daption capense</i>	cape petrel	C	None	1	1	29/09/1999
1214	Aves	Procellariidae	<i>Pterodroma lessonii</i>	white-headed petrel	C	None	1	1	01/02/1949
1199	Aves	Procellariidae	<i>Puffinus gavia</i>	fluttering shearwater	C	None	0	1	26/05/1993
1147	Aves	Psittacidae	<i>Parvipsitta pusilla</i>	little lorikeet	C	None	0	1	25/04/1992

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1136	Aves	Psittacidae	<i>Platycercus adscitus</i>	pale-headed rosella	C	None	0	3	01/11/1992
1124	Aves	Psittacidae	<i>Trichoglossus chlorolepidotus</i>	scaly-breasted lorikeet	C	None	0	8	17/06/2002
1125	Aves	Psittacidae	<i>Trichoglossus moluccanus</i>	rainbow lorikeet	C	None	0	28	02/08/2006
1623	Aves	Psophodidae	<i>Psophodes olivaceus</i>	eastern whipbird	C	None	0	1	07/08/2007
1575	Aves	Rhipiduridae	<i>Rhipidura albiscapa</i>	grey fantail	C	None	0	6	07/08/2007
1576	Aves	Rhipiduridae	<i>Rhipidura leucophrys</i>	willie wagtail	C	None	0	12	07/08/2007
1860	Aves	Scolopacidae	<i>Tringa brevipes</i>	grey-tailed tattler	SL	None	0	1	23/01/1994
1861	Aves	Scolopacidae	<i>Tringa incana</i>	wandering tattler	SL	None	0	5	18/03/2006
1265	Aves	Sulidae	<i>Morus serrator</i>	Australasian gannet	C	None	0	4	07/08/2007
1812	Aves	Threskiornithidae	<i>Threskiornis molucca</i>	Australian white ibis	C	None	0	3	07/08/2007
1800	Aves	Threskiornithidae	<i>Threskiornis spinicollis</i>	straw-necked ibis	C	None	0	2	22/06/1993
1276	Aves	Timaliidae	<i>Zosterops lateralis</i>	silvereye	C	None	0	22	07/08/2007
19177	Insecta	Nymphalidae	<i>Danaus plexippus</i>	monarch	None	None	0	1	01/10/1996
19185	Insecta	Nymphalidae	<i>Euploea corinna</i>	common crow	None	None	0	1	01/10/1996
19163	Insecta	Nymphalidae	<i>Hypolimnas bolina nerina</i>	varied eggfly	None	None	0	1	01/10/1996
19172	Insecta	Nymphalidae	<i>Junonia villida villida</i>	meadow argus	None	None	0	1	01/10/1996
19176	Insecta	Nymphalidae	<i>Tirumala hamata hamata</i>	blue tiger	None	None	0	1	01/10/1996
767	Mammalia	Muridae	<i>Hydromys chrysogaster</i>	water rat	C	None	0	1	24/10/2015
1060	Mammalia	Otariidae	<i>Arctocephalus tropicalis</i>	Subantarctic fur seal	V	E	0	1	02/05/1993
964	Mammalia	Pteropodidae	<i>Pteropus sp.</i>	None	C	None	0	2	01/11/1992
556	Reptilia	Agamidae	<i>Pogona barbata</i>	bearded dragon	C	None	0	3	31/01/1994
361	Reptilia	Elapidae	<i>Hydrophis elegans</i>	elegant sea snake	C	None	0	1	01/08/2011
344	Reptilia	Elapidae	<i>Hydrophis platurus</i>	yellow-bellied sea snake	C	None	0	1	28/11/2020
104	Reptilia	Scincidae	<i>Tiliqua scincoides</i>	eastern blue-tongued lizard	C	None	0	4	31/08/1993

Table 3. Plants recorded within the area of interest and its one kilometre buffer

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
17768	Equisetopsida	Acanthaceae	<i>Brunoniella spiciflora</i>	None	C	None	1	1	13/09/2000

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
9487	Equisetopsida	Agavaceae	<i>Agave americana</i> var. <i>americana</i>	None	None	None	1	1	27/06/1999
19362	Equisetopsida	Agavaceae	<i>Agave attenuata</i>	None	None	None	1	1	27/06/1999
17691	Equisetopsida	Aizoaceae	<i>Carpobrotus glaucescens</i>	pigface	C	None	1	1	23/11/1960
15807	Equisetopsida	Aizoaceae	<i>Tetragonia tetragonoides</i>	New Zealand spinach	C	None	1	1	21/04/1990
11769	Equisetopsida	Anacardiaceae	<i>Schinus terebinthifolius</i>	None	None	None	2	2	04/08/1999
18760	Equisetopsida	Apiaceae	<i>Apium prostratum</i>	None	C	None	1	1	04/08/1999
17710	Equisetopsida	Apocynaceae	<i>Catharanthus roseus</i>	pink periwinkle	None	None	1	1	21/02/1979
6367	Equisetopsida	Araceae	<i>Syngonium podophyllum</i>	None	None	None	1	1	27/06/1999
19747	Equisetopsida	Asparagaceae	<i>Asparagus aethiopicus</i>	ground asparagus	None	None	1	1	27/06/1999
5723	Equisetopsida	Asphodelaceae	<i>Aloe maculata</i>	None	None	None	1	1	27/06/1999
7691	Equisetopsida	Asteraceae	<i>Bidens pilosa</i>	None	None	None	1	1	21/02/1979
10564	Equisetopsida	Asteraceae	<i>Cotula australis</i>	common cotula	C	None	1	1	27/06/1999
15285	Equisetopsida	Asteraceae	<i>Hypochaeris radicata</i>	catsear	None	None	1	1	21/02/1979
7090	Equisetopsida	Asteraceae	<i>Picris angustifolia</i> subsp. <i>carolorum-henricorum</i>	None	C	None	1	1	07/11/2000
34624	Equisetopsida	Asteraceae	<i>Sphaeromorphaea australis</i>	None	C	None	1	1	09/10/1960
26362	Equisetopsida	Asteraceae	<i>Sphagneticola trilobata</i>	None	None	None	1	1	27/06/1999
12221	Equisetopsida	Brassicaceae	<i>Lepidium bonariense</i>	Argentine peppergrass	None	None	1	1	27/06/1999
27691	Equisetopsida	Brassicaceae	<i>Lepidium didymum</i>	None	None	None	2	2	04/08/1999
13981	Equisetopsida	Cannaceae	<i>Canna indica</i>	Indian shot	None	None	1	1	27/06/1999
14771	Equisetopsida	Cannaceae	<i>Canna x generalis</i>	None	None	None	1	1	21/02/1979
17668	Equisetopsida	Caryophyllaceae	<i>Cerastium glomeratum</i>	mouse ear chickweed	None	None	1	1	04/08/1999
10551	Equisetopsida	Crassulaceae	<i>Bryophyllum daigremontianum</i>	None	None	None	1	1	27/06/1999
10550	Equisetopsida	Crassulaceae	<i>Bryophyllum fedtschenkoi</i>	None	None	None	1	1	27/06/1999
17769	Equisetopsida	Crassulaceae	<i>Bryophyllum pinnatum</i>	resurrection plant	None	None	2	2	05/08/1999
14653	Equisetopsida	Cymodoceaceae	<i>Cymodocea serrulata</i>	None	SL	None	1	1	13/04/1980
14102	Equisetopsida	Cymodoceaceae	<i>Halodule uninervis</i>	None	SL	None	1	1	13/04/1980
14192	Equisetopsida	Cymodoceaceae	<i>Syringodium isoetifolium</i>	None	SL	None	1	1	13/04/1980
16946	Equisetopsida	Dilleniaceae	<i>Hibbertia scandens</i>	None	C	None	2	2	13/07/1967
11622	Equisetopsida	Droseraceae	<i>Drosera pygmaea</i>	None	SL	None	1	1	31/10/1997
17268	Equisetopsida	Ericaceae	<i>Epacris obtusifolia</i>	common heath	C	None	1	1	28/08/1968
17160	Equisetopsida	Euphorbiaceae	<i>Euphorbia cyathophora</i>	dwarf poinsettia	None	None	2	2	04/08/1999
16253	Equisetopsida	Goodeniaceae	<i>Scaevola calendulacea</i>	dune fan flower	C	None	1	1	14/07/1964

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
17465	Equisetopsida	Hemerocallidaceae	<i>Dianella congesta</i>	None	C	None	1	1	07/11/2000
31031	Equisetopsida	Hydrocharitaceae	<i>Halophila ovalis</i>	None	SL	None	1	1	13/04/1980
15977	Equisetopsida	Juncaginaceae	<i>Triglochin striata</i>	streaked arrowgrass	SL	None	1	1	14/07/1964
16773	Equisetopsida	Laxmanniaceae	<i>Lomandra laxa</i>	broad-leaved matrush	C	None	1	1	30/06/1989
14894	Equisetopsida	Leguminosae	<i>Acacia suaveolens</i>	sweet wattle	C	None	1	1	31/07/1972
15844	Equisetopsida	Leguminosae	<i>Canavalia rosea</i>	coastal jack bean	C	None	1	1	31/01/1983
14694	Equisetopsida	Leguminosae	<i>Crotalaria grahamiana</i>	None	None	None	1	1	26/06/1982
15468	Equisetopsida	Leguminosae	<i>Crotalaria lanceolata</i> subsp. <i>lanceolata</i>	None	None	None	1	1	21/02/1979
27173	Equisetopsida	Leguminosae	<i>Crotalaria montana</i> var. <i>angustifolia</i>	None	C	None	1	1	21/02/1979
13036	Equisetopsida	Leguminosae	<i>Desmodium incanum</i>	None	None	None	1	1	31/12/1996
15461	Equisetopsida	Leguminosae	<i>Desmodium triflorum</i>	None	None	None	1	1	21/02/1979
15353	Equisetopsida	Leguminosae	<i>Glycine cyrtoloba</i>	None	C	None	2	2	30/09/2007
15357	Equisetopsida	Leguminosae	<i>Glycine tomentella</i>	woolly glycine	C	None	1	1	22/08/1985
9873	Equisetopsida	Leguminosae	<i>Medicago polymorpha</i>	burr medic	None	None	2	2	04/08/1999
15085	Equisetopsida	Leguminosae	<i>Pultenaea myrtilloides</i>	None	C	None	1	1	14/07/1964
15092	Equisetopsida	Leguminosae	<i>Pultenaea villosa</i>	hairy bush pea	C	None	1	1	09/10/1960
14990	Equisetopsida	Leguminosae	<i>Trifolium repens</i> var. <i>repens</i>	white clover	None	None	1	1	27/06/1999
15939	Equisetopsida	Lentibulariaceae	<i>Utricularia caerulea</i>	blue bladderwort	SL	None	1	1	31/10/1997
33123	Equisetopsida	Myrsinaceae	<i>Lysimachia arvensis</i>	None	None	None	1	1	04/08/1999
13414	Equisetopsida	Myrtaceae	<i>Leptospermum laevigatum</i>	coast tea-tree	None	None	1	1	21/02/1979
16820	Equisetopsida	Myrtaceae	<i>Leptospermum liversidgei</i>	None	C	None	1	1	28/08/1968
16047	Equisetopsida	Myrtaceae	<i>Syzygium luehmannii</i>	None	C	None	1	1	30/04/1916
14140	Equisetopsida	Orchidaceae	<i>Calochilus campestris</i>	copper beard orchid	SL	None	1	1	31/08/1959
9265	Equisetopsida	Orchidaceae	<i>Corybas barbarae</i>	helmet orchid	SL	None	1	1	30/06/1989
17093	Equisetopsida	Phyllanthaceae	<i>Glochidion ferdinandi</i> var. <i>ferdinandi</i>	None	C	None	1	1	04/08/1999
16371	Equisetopsida	Picrodendraceae	<i>Pseudanthus orientalis</i>	None	C	None	2	2	11/03/1975
12730	Equisetopsida	Plantaginaceae	<i>Plantago major</i>	greater plantain	None	None	1	1	27/06/1999
15552	Equisetopsida	Poaceae	<i>Chloris inflata</i>	purpletop chloris	None	None	1	1	27/06/1999
11066	Equisetopsida	Poaceae	<i>Digitaria didactyla</i>	Queensland blue couch	None	None	1	1	21/02/1979
15378	Equisetopsida	Poaceae	<i>Eragrostis tenuifolia</i>	elastic grass	None	None	1	1	27/06/1999
10689	Equisetopsida	Poaceae	<i>Eulalia trispicata</i>	None	C	None	1	1	04/05/1911
15218	Equisetopsida	Poaceae	<i>Lepturus repens</i>	stalky grass	C	None	2	2	05/03/2008

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
28420	Equisetopsida	Poaceae	<i>Megathyrsus maximus</i> var. <i>maximus</i>	None	None	None	1	1	04/08/1999
22288	Equisetopsida	Polygonaceae	<i>Acetosa sagittata</i>	None	None	None	1	1	09/01/1997
19434	Equisetopsida	Portulacaceae	<i>Portulaca pilosa</i>	None	None	None	1	1	21/02/1979
5873	Equisetopsida	Proteaceae	<i>Hakea actites</i>	None	C	None	1	1	28/08/1968
12166	Equisetopsida	Rosaceae	<i>Rhaphiolepis indica</i>	Indian hawthorn	None	None	1	1	12/07/2000
16266	Equisetopsida	Rosaceae	<i>Rubus parvifolius</i>	pink-flowered native raspberry	C	None	1	1	21/02/1979
15870	Equisetopsida	Rutaceae	<i>Acronychia imperforata</i>	beach acronychia	C	None	1	1	31/12/1993
17833	Equisetopsida	Rutaceae	<i>Boronia falcifolia</i>	wallum boronia	C	None	1	1	28/08/1968
34855	Equisetopsida	Salviniaceae	<i>Azolla rubra</i>	None	C	None	1	1	21/02/1979
18053	Equisetopsida	Sapindaceae	<i>Alectryon coriaceus</i>	beach alectryon	C	None	2	2	14/07/1964
17387	Equisetopsida	Sapindaceae	<i>Dodonaea viscosa</i> subsp. <i>burmanniana</i>	None	C	None	1	1	09/10/1960
16996	Equisetopsida	Sapindaceae	<i>Guioa acutifolia</i>	northern guioa	C	None	1	1	21/04/1990
8586	Equisetopsida	Scrophulariaceae	<i>Myoporum boninense</i> subsp. <i>australe</i>	None	C	None	1	1	04/08/1999
17358	Equisetopsida	Solanaceae	<i>Duboisia myoporoides</i>	None	C	None	1	1	30/12/1970
16438	Equisetopsida	Thymelaeaceae	<i>Pimelea linifolia</i> subsp. <i>linifolia</i>	None	C	None	1	1	21/04/1990
14130	Equisetopsida	Zosteraceae	<i>Zostera capricorni</i>	eelgrass	SL	None	1	1	13/04/1980
7447	Florideophyceae	Corallinaceae	<i>Jania adhaerens</i>	None	C	None	1	1	31/12/1950
31840	Florideophyceae	Galaxauraceae	<i>Dichotomaria obtusata</i>	None	C	None	1	1	31/12/1982
7748	Florideophyceae	Lithophyllaceae	<i>Amphiroa fragilissima</i>	None	C	None	1	1	31/12/1950
7233	Florideophyceae	Nemaliaceae	<i>Nemalion helminthoides</i>	None	C	None	1	1	25/05/1967
7110	Florideophyceae	Peyssonneliaceae	<i>Peyssonnelia</i>	None	None	None	1	1	31/12/1982
7111	Florideophyceae	Phacelocarpaceae	<i>Phacelocarpus alatus</i>	None	C	None	1	1	27/04/1982
7114	Florideophyceae	Plocamiaceae	<i>Plocamium hamatum</i>	None	C	None	1	1	27/04/1982
18409	Florideophyceae	Pterocladaceae	<i>Pterocladia caerulescens</i>	None	C	None	1	1	09/03/1983
7679	Florideophyceae	Rhodomelaceae	<i>Chondria</i>	None	None	None	1	1	24/03/1986
8530	Ulvophyceae	Boodleaceae	<i>Cladophoropsis</i>	None	None	None	1	1	24/03/1986
8520	Ulvophyceae	Boodleaceae	<i>Cladophoropsis sundanensis</i>	None	C	None	1	1	31/12/1950
8703	Ulvophyceae	Caulerpaceae	<i>Caulerpa racemosa</i>	None	C	None	1	1	24/03/1986
8291	Ulvophyceae	Ulvellaceae	<i>Entocladia</i>	None	None	None	1	1	25/05/1967

Table 4. Fungi recorded within the area of interest and its one kilometre buffer

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
28099	Agaricomycetes	Agaricaceae	<i>Agaricus campestris</i>	None	C	None	1	1	23/07/2015
25652	Agaricomycetes	Agaricaceae	<i>Agaricus xanthodermus</i>	yellow staining mushroom	C	None	1	1	02/04/2012
28979	Agaricomycetes	Geastraceae	<i>Geastrum campestre</i>	None	C	None	1	1	30/06/2013
27831	Agaricomycetes	Sclerodermataceae	<i>Scleroderma verrucosum</i>	None	C	None	1	1	30/06/2013
28746	Agaricomycetes	Tricholomataceae	<i>Melanoleuca</i>	None	None	None	1	1	27/07/2008
34627	Agaricomycetes	Tricholomataceae	<i>Melanoleuca clelandii</i>	None	C	None	1	1	15/06/2012
26567	Arthoniomycetes	Arthoniaceae	<i>Cryptothecia scripta</i>	None	C	None	1	1	15/02/2007
35522	Lecanoromycetes	Caliciaceae	<i>Baculifera xylophila</i>	None	C	None	1	1	15/02/2007
30097	Lecanoromycetes	Caliciaceae	<i>Buellia stellulata</i>	None	C	None	2	2	15/02/2007
23098	Lecanoromycetes	Caliciaceae	<i>Dirinaria confluens</i>	None	C	None	1	1	15/02/2007
28121	Lecanoromycetes	Caliciaceae	<i>Dirinaria consimilis</i>	None	C	None	1	1	15/02/2007
25242	Lecanoromycetes	Caliciaceae	<i>Pyxine australiensis</i>	None	C	None	2	2	15/02/2007
23533	Lecanoromycetes	Caliciaceae	<i>Pyxine cocoas</i>	None	C	None	1	1	15/02/2007
23075	Lecanoromycetes	Coccocarpiaceae	<i>Coccocarpia palmicola</i>	None	C	None	1	1	31/07/1977
30064	Lecanoromycetes	Graphidaceae	<i>Glyphis cicatricosa</i>	None	C	None	2	2	15/02/2007
23141	Lecanoromycetes	Graphidaceae	<i>Graphis</i>	None	None	None	1	1	15/02/2007
23220	Lecanoromycetes	Lecanoraceae	<i>Lecanora oreinoides</i>	None	C	None	1	1	15/02/2007
26826	Lecanoromycetes	Lecanoraceae	<i>Lecanora subfusca</i>	None	C	None	2	2	15/02/2007
23453	Lecanoromycetes	Pannariaceae	<i>Physma</i>	None	None	None	1	1	31/12/1977
34341	Lecanoromycetes	Parmeliaceae	<i>Austroparmelina conlabrosa</i>	None	C	None	1	1	31/12/1977
23368	Lecanoromycetes	Parmeliaceae	<i>Parmotrema austrosinense</i>	None	C	None	1	1	15/02/2007
23370	Lecanoromycetes	Parmeliaceae	<i>Parmotrema crinitum</i>	None	C	None	1	1	15/02/2007
23413	Lecanoromycetes	Pertusariaceae	<i>Pertusaria xanthoplaca</i>	None	C	None	1	1	15/02/2007
23173	Lecanoromycetes	Physciaceae	<i>Hyperphyscia adglutinata</i>	None	C	None	1	1	15/02/2007
23468	Lecanoromycetes	Porinaceae	<i>Porina</i>	None	None	None	1	1	15/02/2007
23549	Lecanoromycetes	Ramalinaceae	<i>Ramalina exigua</i>	None	C	None	1	1	15/02/2007

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
23555	Lecanoromycetes	Ramalinaceae	<i>Ramalina nervulosa</i>	None	C	None	1	1	15/02/2007
23561	Lecanoromycetes	Ramalinaceae	<i>Ramalina subfraxinea</i>	None	C	None	1	1	15/02/2007
23564	Lecanoromycetes	Ramalinaceae	<i>Ramalina subfraxinea</i> var. <i>norstictica</i>	None	C	None	1	1	15/02/2007
30068	Lecanoromycetes	Teloschistaceae	<i>Caloplaca bassiae</i>	None	C	None	2	2	15/02/2007

Table 5. Other species recorded within the area of interest and its one kilometre buffer

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
7895	Phaeophyceae	Acinetosporaceae	<i>Feldmannia irregularis</i>	None	C	None	1	1	24/03/1986
7855	Phaeophyceae	Dictyotaceae	<i>Lobophora variegata</i>	None	C	None	1	1	24/03/1986
7864	Phaeophyceae	Dictyotaceae	<i>Padina</i>	None	None	None	1	1	28/03/1966
33155	Phaeophyceae	Dictyotaceae	<i>Padina boryana</i>	None	C	None	1	1	31/12/1950
7050	Phaeophyceae	Dictyotaceae	<i>Zonaria diesingiana</i>	None	C	None	1	1	31/12/1982
7769	Phaeophyceae	Sphacelariaceae	<i>Sphacelaria</i>	None	None	None	1	1	15/05/1987

Species table headings and codes

Taxon Id: Unique identifier of the taxon from the WildNet database.

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

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

Specimens: The number of specimen-backed records of the taxon.

Records: The total number of records of the taxon.

Last record: Date of latest record of the taxon.

Links and Support

Other sites that deliver species information from the [WildNet database](#) include:

- [Species profile search](#) - access species information approved for publication including species names, statuses, notes, images, distribution maps and records
- [Species lists](#) - generate species lists for Queensland protected areas, forestry areas, local governments and areas defined using coordinates
- [Biomaps](#) - view biodiversity information, including WildNet records approved for publication, and generate reports
- [Queensland Globe](#) - view spatial information, including WildNet records approved for publication
- [Qld wildlife data API](#) - access WildNet species information approved for publication such as notes, images and records etc.
- [Wetland Maps](#) - view species records, survey locations etc. approved for publication
- [Wetland Summary](#) - view wildlife statistics, species lists for a range of area types, and access WildNet species profiles
- [WildNet wildlife records - published - Queensland](#) - spatial layer of WildNet records approved for publication generated weekly
- [Generalised distribution and densities of Queensland wildlife](#) - Queensland species distributions and densities generalised to a 10 km grid resolution

- [Conservation status of Queensland wildlife](#) - access current lists of priority species for Queensland including nomenclature and status information
- [Queensland Confidential Species](#) - the list of species flagged as confidential in the WildNet database.

Please direct queries about this report to the [WildNet Team](#).

Other useful sites for accessing Queensland biodiversity data include:

- [Useful wildlife resources](#)
- [Queensland Government Data](#)
- [Atlas of Living Australia \(ALA\)](#)
- [Online Zoological Collections of Australian Museums \(OZCAM\)](#)
- [Australia's Virtual Herbarium \(AVH\)](#)
- [Protected Matters Search Tool](#)

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Nudibranch.com.au species list Sunshine Coast - 1104 species as of 21-08-2022

red = 610 species found in the Mooloolah River | * No photos available yet, found by others

Cephalaspidea

Ringiculidae

Ringicula dolaris
Ringicula sp. 1
Ringicula sp. 2
Ringicula sp. 3
Ringicula sp. 4
Ringicula sp. 5
Ringicula sp. 6

Acteonidae

Japonacteon suturalis
Acteona affinis
Pupa solidula
Pupa sulcata

Bullinidae

Bullina lineata

Aplustridae

Hydatina albocincta
Hydatina amplustre
Hydatina physis
Micromelo barbaeae
Micromelo scriptus

Cylichnidae

Decorifer insignis
Tornatina apicina
Tornatina avenaria
Tornatina gordonis
Tornatina sp. 1
Tornatina sp. 2
Tornatina sp. 3
Tornatina sp. 4
Tornatina sp. 5
Tornatina sp. 6
Tornatina sp. 7
Tornatina sp. 8
Tornatina sp. 9

Colinatyidae

Colinatus sp. 1

Retusidae

Pyrrunculus nitidus
Pyrrunculus phiala
Retusa amphirostra
Retusa complanata
Retusa delicatula
Retusa minima
Retusa planospira
Retusa pygmaea
Retusa sp. 1
Retusa sp. 2
Retusa sp. 7
Retusa sp. 8
Retusa sp. 9
Retusa waughiana

Rhizoridae

Volvulista rostrata

Philinidae

Philine angasi
Philine orca
Philine rubrata
Philine sp. 1
Philine sp. 2
Philine trapezia

Agalidae

Agalia fulvipunctata
Agalia sp. 1
Cheldonura amoena
Cheldonura electra
Cheldonura hirundinina
Cheldonura sp. 1
Cheldonura sp. 2
Mariagajia inornata
Mariagajia sandrana
Melanochlamys queiroz
Melanochlamys sp. 1

Niparaya

Niparaya sp. 1
Niparaya sp. 2
Niparaya sp. 3
Niparaya sp. 4
Niparaya sp. 5
Niparaya sp. 6
Niparaya sp. 7
Niparaya sp. 8
Niparaya sp. 9
Niparaya sp. 10
Niparaya sp. 11
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Niparaya sp. 34
Niparaya sp. 35
Niparaya sp. 36
Niparaya sp. 37
Niparaya sp. 38
Niparaya sp. 39
Philinopsis falchiphallus
Philinopsis gardineri
Philinopsis inolepta
Philinopsis orientalis
Philinopsis pilsbryi
Philinopsis reticulata
Philinopsis sp. 1
Philinopsis sp. 2
Philinopsis sp. 3
Philinopsis sp. 4
Philinopsis sp. 5
Philinopsis sp. 6
Philinopsis sp. 7
Philinopsis sp. 8
Philinopsis speciosa
Philinopsis taronga

Gastropteridae

Gastropteron minutum
Sagaminopteron ornatum
Sagaminopteron pohnpei
Sagaminopteron psychedelium
Siphoteron maksigii
Siphoteron sp. 1
Siphoteron sp. 2
Siphoteron sp. 3
Siphoteron sp. 4
Siphoteron sp. 5
Siphoteron sp. 6
Siphoteron sp. 7

Colpodaspidae

Colpodaspis sp. 1
Colpodaspis sp. 2
Colpodaspis thompsoni

Bullidae

Bulla orientalis
Bulla quoyi
Bulla sp. 1
Bulla vermiosa

Haminoeidae

Alcilastrum cylindricum
Ays semistriatus
Ays sp. 1
Ays sp. 2
Ays sp. 4
Ays sp. 5
Ays sp. 6
Ays sp. 7
Ays sp. 8

Bakawan

Bakawan hedleyi
Bakawan rotundata
Cyllichnatus angusta
Cyllichnatus campanula
Haloa crociata
Haloa sp. 1
Haloa wallisii

Haminoea sp. 1
Haminoea sp. 2
Haminoea sp. 8
Haminoea sp. 16
Haminoea sp. 18
Haminoea sp. 19
Haminoea sp. 20
Haminoebulla sp. 1
Haminoeidae long-tail sp. 1
Haminoeidae long-tail sp. 2
Haminoeidae long-tail sp. 3
Lamprohaminoea cymbalum
Lila brevis
Lila curta
Lila porcellana
Lila sp. 1
Lila sp. 2
Lila sp. 3
Phanerothermalms sp. 1
Roxaniella leucampyx
Roxaniella sp. 1
Vellicella amphorella
Vellicella mascarea
Weinkauffia reliqua

Mnestiidae

Mnestia granosa
Mnestia sp. 1

Runcinidae

Runcina tijensisi
Runcina sp. 2

Ilbiidae

Ilbia ibi

Anaspidae

Aplysia argus
Aplysia concava
Aplysia extraordinaria
Aplysia juliana
Aplysia oculifera
Aplysia sowerbyi
Bursatella leachi
Dolabrifera brazieri
Dolabrifera dolabrifera
Petalifera sp. 1
Petalifera sp. 2
Phyllaplysia latoni
Phyllaplysia sp. 1
Phyllaplysia sp. 2
Phyllaplysia sp. 3
Phyllaplysia sp. 4
Phyllaplysia sp. 5
Stylochelus longicauda
Stylochelus striatus

Stylochelus

Stylochelus striatus

Oxynoidae

Lobiger sp. 1
Lobiger viridis
Oxynoe jacksoni
Oxynoe sp. 1
Oxynoe viridis

Julidae

Berthellina corallensis
Berthellina limax
Thalia exquistula
Tamanovalva sp. 1

Plakobranchidae

Eysia asbecki
Eysia australis
Eysia bangwaensis
Eysia coogeeensis
Eysia hirasei
Eysia maoria
Eysia marginata
Eysia obtusa
Eysia pusilla
Eysia sp. 1
Eysia sp. 2
Eysia sp. 4
Eysia sp. 5
Eysia sp. 6
Eysia sp. 7
Eysia sp. 8
Eysia sp. 9
Eysia sp. 10
Eysia sp. 11
Eysia sp. 12
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Eysia sp. 35
Eysia sp. 36
Eysia sp. 37
Eysia sp. 38
Eysia sp. 39
Eysia sp. 40
Eysia sp. 41
Eysia thompsoni
Eysia yayeyamana
Plakobranchus ocellatus
Thuridilla albopustulosa
Thuridilla gracilis
Thuridilla carsoni
Thuridilla hofiae
Thuridilla livida
Thuridilla multimarginata
Thuridilla neoma
Thuridilla sp. 1
Thuridilla sp. 2
Thuridilla sp. 3
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Polybranchia orientalis

Volvatellidae

Ascobia fischeri
Volvatella angoliniana
Volvatella sp. 1

Umbraculida

Tyloidiidae

Tyloidea corticalis

Umbraculidae

Umbraculum umbraculum

Pleurobranchida

Pleurobranchidae

Berthella martensi
Berthella postrema
Berthella delicata
Euselene luniceps
Pleurobrancha sp. 1
Pleurobranchus albiguttatus
Pleurobranchus caledonicus
Pleurobranchus forskali
Pleurobranchus grandis
Pleurobranchus peronii
Pleurobranchus sp. 1
Pleurobranchus weberi

Pteropoda

Aegires citrinus
Aegires exeches
Aegires flores
Aegires gardineri
Aegires hapsis
Aegires incusus
Aegires minor
Aegires pruvotfolae
Aegires sp. 1
Aegires villosus *

Hydromylidae

Hydromylus globulosus

Caenolaniidae

Diacaenolania longirostris
Diacaenolania sp. 1

Nudibranchia

Hexabranchidae

Hexabranchus sanguineus

Polyceridae

Chimora sp. 1
Kalinga ornata
Kaloplocamus acutus
Kaloplocamus dokei
Kaloplocamus avani
Kaloplocamus peludo
Kaloplocamus sp. 1
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Kaloplocamus sp. 100

Chromodorididae

Ardeadoris angustolutes
Ardeadoris avani
Ardeadoris electra
Ardeadoris egretta
Ardeadoris rubromaculata
Ardeadoris sp. 1
Ardeadoris sp. 2
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EPBC Act Protected Matters Report

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

Report created: 28-Jun-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	74
Listed Migratory Species:	60

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	92
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	1

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	7
Key Ecological Features (Marine):	None
Biologically Important Areas:	5
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities

[Resource Information]

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

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

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur	In feature area within area

Listed Threatened Species

[Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In feature area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In feature area
Erythroriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In feature area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area	In feature area
FISH			
Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat may occur within area	In feature area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In feature area
Nannoperca oxleyana Oxleyan Pygmy Perch [64468]	Endangered	Species or species habitat may occur within area	In feature area
Pseudomugil mellis Honey Blue Eye, Honey Blue-eye [26180]	Vulnerable	Species or species habitat may occur within area	In feature area
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area
FROG			
Litoria olongburensis Wallum Sedge Frog [1821]	Vulnerable	Species or species habitat may occur within area	In feature area
Mixophyes fleayi Fleay's Frog [25960]	Endangered	Species or species habitat may occur within area	In feature area
INSECT			
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
MAMMAL			
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area	In feature area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat may occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area	In feature area
Potorous tridactylus tridactylus Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			
Acacia attenuata [10690]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Acronychia littoralis Scented Acronychia [8582]	Endangered	Species or species habitat likely to occur within area	In feature area
Allocasuarina thalassoscopica [21927]	Endangered	Species or species habitat may occur within area	In feature area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat may occur within area	In feature area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In feature area
Eucalyptus conglomerata Swamp Stringybark [3160]	Endangered	Species or species habitat may occur within area	In feature area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area	In feature area
Macadamia ternifolia Small-fruited Queensland Nut, Gympie Nut [7214]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In feature area
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat may occur within area	In feature area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In feature area
SHARK			
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species	[Resource Information]		
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardeenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardeenna grisea Sooty Shearwater [82651]		Species or species habitat may occur within area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In feature area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area
Migratory Marine Species			
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In feature area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dugong dugon Dugong [28]		Species or species habitat known to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In feature area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In feature area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In feature area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In feature area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area	In feature area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Breeding known to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area

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

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]		Species or species habitat may occur within area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In feature area
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat may occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Stercorarius skua as Catharacta skua Great Skua [823]		Species or species habitat may occur within area	In buffer area only
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area	In feature area
Fish			
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In feature area
Campichthys tryoni Tryon's Pipefish [66193]		Species or species habitat may occur within area	In feature area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area	In feature area
Corythoichthys ocellatus Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area	In feature area
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area	In feature area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area	In feature area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area	In feature area
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area	In feature area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In feature area
Hippocampus kelloggi Kellogg's Seahorse, Great Seahorse [66723]		Species or species habitat may occur within area	In feature area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area	In feature area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area	In feature area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area	In feature area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In feature area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In feature area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Micrognathus andersonii Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area	In feature area
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area	In feature area
Microphis manadensis Manado Pipefish, Manado River Pipefish [66258]		Species or species habitat may occur within area	In feature area
Solegnathus dunckeri Duncker's Pipehorse [66271]		Species or species habitat may occur within area	In feature area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area	In feature area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In feature area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In feature area
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In feature area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In feature area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In feature area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In feature area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In feature area
Mammal			
Dugong dugon Dugong [28]		Species or species habitat known to occur within area	In feature area
Reptile			
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area	In feature area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area	In feature area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area	In feature area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In feature area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area	In feature area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Emydocephalus annulatus Turtle-headed Seasnake [1125]		Species or species habitat may occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area	In feature area
Laticauda laticaudata a sea krait [1093]		Species or species habitat may occur within area	In feature area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In feature area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area	In feature area

Whales and Other Cetaceans			[Resource Information]
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In feature area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area

Current Scientific Name	Status	Type of Presence	Buffer Status
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In feature area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
Orcaella heinsohni as Orcaella brevirostris Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area	In feature area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Breeding known to occur within area	In feature area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In feature area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In feature area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In feature area

Habitat Critical to the Survival of Marine Turtles			
Scientific Name	Behaviour	Presence	Buffer Status
Nov-Feb			

Scientific Name	Behaviour	Presence	Buffer Status
Caretta caretta			
Loggerhead Turtle [1763]	Nesting	Known to occur	In feature area

Extra Information

EPBC Act Referrals [Resource Information]				
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Japan-Guam-Australia Sunshine Coast Branch Marine Cable Route Survey (JGA) QLD	2018/8373	Not Controlled Action	Completed	In feature area
Maroochydore Rd Upgrade Bruce Hwy to Kunda Park	2005/2207	Not Controlled Action	Completed	In buffer area only
MMTC between Caloundra Rd & Creekside Blvd	2004/1918	Not Controlled Action	Completed	In feature area
Sunshine Motorway duplication between Kawana Way and Sippy Downs Drive	2004/1908	Not Controlled Action	Completed	In feature area
vegetation clearing /residential development on Lot 5/SP149935 and Lot 39/RP 848	2004/1920	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
Japan-Guam-Australia (JGA) Fibre Optic Cable project	2016/7795	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Biologically Important Areas			
Scientific Name	Behaviour	Presence	Buffer Status
Dolphins			
Sousa chinensis			
Indo-Pacific Humpback Dolphin [50]	Breeding	Known to occur	In feature area

Scientific Name	Behaviour	Presence	Buffer Status
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Known to occur	In feature area
Marine Turtles			
Caretta caretta Loggerhead Turtle [1763]	Nesting	Known to occur	In feature area
Sharks			
Carcharias taurus Grey Nurse Shark [64469]	Foraging	Known to occur	In feature area
Whales			
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur	In feature area

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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Appendix B.
Flora Species List

Species Name	EPBC	Additional Notes
<i>Abrus precatorius</i>	LC	
<i>Acacia disparrima</i> subsp. <i>disparrima</i>	LC	
<i>Acacia leiocalyx</i>	LC	
<i>Acacia sophorae</i>		
<i>Acmena smithii</i>	LC	
<i>Acronychia imperforata</i>	LC	
<i>Aegiceras corniculatum</i>	LC	
<i>Ageratum houstonianum</i>	I	
<i>Alectryon coriaceus</i>	LC	
<i>Alphitonia excelsa</i>	LC	
<i>Araucaria bidwillii</i>	LC	Planted
<i>Araucaria bidwillii</i>	LC	Planted
<i>Araucaria heterophylla</i>	I	Planted/naturalised
<i>Archontophoenix cunninghamiana</i>	LC	Most likely planted and has been very successful with trees reaching sub-canopy in the <i>L. suaveolens</i> closed forest.
<i>Asparagus aethiopicus</i> (<i>Asparagus densiflorus</i>)	I	
<i>Austromyrtus dulcis</i>	LC	
<i>Avicennia marina</i> subsp. <i>australasica</i>	LC	
<i>Axonopus</i> CF <i>affinus</i> (no flowers)	I	
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	LC	
<i>Bidens pilosa</i>	I	
<i>Canavalia rosea</i>	LC	
<i>Carpobrotus glaucescens</i>	LC	
<i>Castanospermum australe</i>	LC	Planted
<i>Casuarina equisetifolia</i>	LC	
<i>Casuarina glauca</i>	LC	
<i>Cenchrus caliculatus</i>	LC	
<i>Centella asiatica</i>	LC	
<i>Chorizandra</i> CF <i>cymbaria</i> (dessicated, no flowers)	LC	
<i>Corymbia citriodora</i> ?	LC	Planted
<i>Corymbia intermedia</i>	LC	One individual noted along bank towards La Balsa
<i>Crotalaria lanceolata</i>	I	
<i>Cupaniopsis anacardioides</i>	LC	
<i>Cyclophyllum coprosmoides</i>	LC	
<i>Cymbopogon refractus</i>	LC	
<i>Cyperus</i> CF <i>scaber</i> (dessicated, no flowers)	LC	
<i>Desmodium uncinatum</i>	I	
<i>Dianella congesta</i>	LC	

<i>Dianella longifolia</i> var. <i>longifolia</i>	LC	
<i>Digitaria didactyla</i>	LC	
<i>Duboisia myoporoides</i>	LC	
<i>Elaeocarpus obovatus</i>	LC	
<i>Emilia sonchifolia</i>	I	
<i>Eragrostis curvula</i>	I	
<i>Eragrostis interrupta</i>	LC	
<i>Eucalyptus robusta</i>	LC	Planted
<i>Eugenia uniflora</i>	I	
<i>Euphorbia cyathophora</i>	I	
<i>Eustrephus latifolius</i>	LC	
<i>Exocarpos cupressiformis</i>	LC	
<i>Ficus obliqua</i>	LC	
<i>Flagellaria indica</i>	LC	
<i>Gahnia sieberiana</i>	LC	
<i>Geitonoplesium cymosum</i>	LC	
<i>Glochidion</i> CF <i>lobocarpum</i>	LC	If species confirmed, unknown if planted or otherwise - just south of natural range
<i>Glochidion ferdinandi</i>	LC	
<i>Glochidion sumatranum</i>	PC	
<i>Gloriosa superba</i>	I	
<i>Guioa acutifolia</i>	LC	Interesting record, one shrub noted in <i>L. suaveolens</i> closed forest, also listed by Ann Moran, littoral rainforest/beach scrub species in southern-most part of range.
<i>Gynochthodes jasminoides</i>	LC	
<i>Hardenbergia violacea</i>	LC	
<i>Heptapleurum actinophyllum</i> (<i>Schefflera actinophylla</i>)	LC/I	
<i>Hibbertia scandens</i>	LC	
<i>Hibbertia vestita</i>	LC	
<i>Hibiscus tiliaceus</i>	LC	
<i>Hydrocotyle bonariensis</i>	I	
<i>Hydrocotyle tripartita</i>	LC	
<i>Hypochaeris radicata</i>	I	
<i>Imperata cylindrica</i>	LC	
<i>Ipomoea cairica</i>	LC	
<i>Ipomoea pes-caprae</i>	LC	
<i>Ischaemum triticeum</i>	I	
<i>Lantana camara</i>	I	
<i>Lepturus repens</i>	LC	
<i>Livistona australis</i>	LC	
<i>Lomandra confertifolia</i> subsp. <i>pallida</i>	LC	
<i>Lomandra longifolia</i>	LC	
<i>Lophostemon suaveolens</i>	LC	

<i>Lysimachia arvensis</i>	I	
<i>Macaranga tanarius</i>	LC	Local extent and abundance have been increased by extensive planting.
<i>Maclura cochinchinensis</i>	LC	
<i>Megathyrsus maximus</i>	I	
<i>Melodinus australis</i>	LC	
<i>Murraya crenulata</i>	E	Considered to be planted. Endangered species with formally confirmed occurrences from just two locations, Dundowran Beach and Mon Repos 150 - 250 km to north.
<i>Murraya paniculata</i>	I	
<i>Myoporum acuminatum</i>	LC	
<i>Myoporum boninense</i> subsp. <i>australe</i>	LC	
<i>Myrsine howittiana</i>	LC	
<i>Nephrolepis hirsutulua</i>	LC/I	Native to Qld but naturalised in SEQ
<i>Oenothera drummondii</i>	I	
<i>Olea paniculata</i>	LC	Considered to have been planted
<i>Ottochloa gracillima</i>	LC	
<i>Oxalis chnoodes</i>	LC	
<i>Pandanus tectorius</i>	LC	
<i>Pararistolochia praevenosa</i>	NT	Most likely planted. Near threatened species that grows in rainforest. There are confirmed records within 5 km of site.
<i>Parsonsia straminea</i>	LC	
<i>Passiflora suberosa</i>	I	
<i>Picris angustifolia</i> subsp. <i>carolorum-henricorum</i>		
<i>Pimelea linifolia</i>	LC	
<i>Plantago lanceolata</i>	I	
<i>Plantago major</i>	I	
<i>Psychotria loniceroides</i>	LC	
<i>Pteridium esculentum</i>	LC	
<i>Rhaphiolepis indica</i>	I	
<i>Rubus parvifolius</i>	LC	
<i>Scaevola calendulacea</i>	LC	
<i>Schinus terebinthifolia</i>	I	
<i>Sesuvium porulacastrum</i>	LC	
<i>Sida cordifolia</i>	I	
<i>Sida rhombifolia</i>	I	
<i>Smilax australis</i>	LC	
<i>Solanum americanum</i>	LC	
<i>Solanum seaforthianum</i>	I	
<i>Solanum seaforthianum</i>	LC	
<i>Sonchus oleraceus</i>	I	
<i>Spinifex sericeus</i>	LC	
<i>Sporobolus africanus</i>	I	
<i>Syzygium</i> CF <i>johnsonii</i>	I	Planted

<i>Syzygium luehmannii</i>	LC	Unknown if planted or otherwise, no large trees noted but could be expected to be present in the closed forests.
<i>Tetragonia tetragonoides</i>	LC	
<i>Themeda triandra</i>	LC	
<i>Tinospora smilacina</i>	LC	
<i>Trifolium repens</i>	I	
<i>Urochloa decumbens</i>	I	
<i>Vigna marina</i>	LC	
<i>Wahlenbergia gracilis</i>	SL	
<i>Wikstroemia indica</i>	LC	
<i>Wollastonia uniflora</i>	LC	
<i>Zoysia macrantha</i>	LC	