Rockhampton Ring Road

Technical Note - Eucalyptus Raveretiana Population Survey

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Department of Transport and Main Roads

Document history and status

Revision	Date	Description	Author	Reviewer	Approver
01	23/07/2021	Eucalyptus Raveretiana Population Survey	C.V.	J.A.	E.V.D.

1. Introduction

1.1 Background

Previous investigations undertaken by AECOM[1] (AECOM, 2020) in support of the Preliminary Evaluation and Detailed Business Case phase of the Rockhampton Ring Road project identified *Eucalyptus raveretiana* (black ironbox), which is listed as 'vulnerable' under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), within the project area. As the species is protected under the EPBC Act, and individuals are anticipated to be impacted by the project, a significant impact assessment was undertaken, and the species was included in the EPBC Act referral submitted to the Commonwealth. The significant impact assessment identified that the works are unlikely to have a significant impact on the species; however, the project was deemed a 'controlled action' by the Department of Agriculture, Water and the Environment and is required to be assessed by Preliminary Documentation.

As part of the Preliminary Documentation, the Department has requested additional information relating to potential impacts to *E. raveretiana*. In this regard, a population survey of *E. raveretiana* individuals was undertaken in (and adjacent to) the previously identified suitable habitat to confirm the number of individuals.

2. Methods

The *E. raveretiana* population survey comprised a desktop review and survey including the following:

- A desktop review of regional ecosystem (RE) mapping, Biomaps and previous reporting
- A targeted survey of *E. raveretiana* individuals in the previously identified suitable habitat.

The population survey was undertaken in general accordance with the random meander survey technique as detailed in the Queensland Government's *Flora Survey Guideline – Protected Plants* (2020).

The population survey was undertaken on 1 December 2020 by Colin Vaughan and Geoff Sinclair, both of whom are tertiary qualified botanists and suitably qualified persons to undertake flora surveys under the Queensland *Flora Survey Guideline – Protected Plants* (2020). All *E. raveretiana* were identified in the field and their location recorded using a handheld GPS. The extent of suitable habitat within the project area was assessed in the field and mapped using QGIS in the office.

The population survey was undertaken at the following locations:

- 200m upstream from where the project traverses Limestone Creek;
- 200m downstream from where the project traverses Limestone Creek; and
- A 100m stretch of Limestone Creek west (downstream) from the Bruce Highway.

The survey effort is presented in Appendix A.

3. Results

3.1 Desktop review

3.1.1 Flora and Wetlands Technical Report (AECOM, 2020)

The Flora and Wetlands Technical Report (AECOM, 2020) identified that *E. raveretiana* are present in varying densities within the project area at Limestone Creek, within 0.61ha of identified habitat for the species. The vegetation community within which the individuals were identified was confirmed as being analogous with RE 11.3.25a, which is described as a *Eucalyptus raveretiana* (sometimes emergent), *Melaleuca fluviatilis* woodland.

[1] AECOM. (2017b). Rockhampton Northern Access Upgrade. Preliminary Flora and Fauna Technical Report. Rockhampton: Unpublished report for DTMR

A range of other species may be present including *Melaleuca leucadendra*, *Corymbia clarksoniana*, *Casuarina cunninghamiana*, *Melaleuca viminalis* and *Nauclea orientalis*. There is often a dense low tree layer dominated by species such as *Acacia salicina*, *Geijera salicifolia*, *Diospyros humilis* and *Mallotus philippensis*. Riverine wetland or fringing riverine wetland.

The Flora and Wetlands Technical Report (AECOM, 2020) identified that approximately eight planted *E. raveretiana* are present adjacent to Limestone Creek.

3.1.2 Regional ecosystem mapping

The Vegetation Management Supporting Map identifies that Category C (high value regrowth) that is an 'of concern' RE mapped as present. The high value regrowth is mapped as containing a mixed polygon of RE 11.12.1 and RE 11.3.4, which are described as follows:

- RE 11.12.1 – the 'least concern' *Eucalyptus crebra* woodland on igneous rocks
- RE 11.3.4 – the 'of concern' *Eucalyptus tereticornis* and/or *Eucalyptus spp*. woodland on alluvial plains

A copy of the Vegetation Management Supporting Map is provided in Appendix B.

3.1.3 Biomaps

The Queensland government's Biomaps, which holds spatially validated records of threatened species, provides a *E. raveretiana* record (recorded in 2013) immediately west of the Bruce Highway along Limestone Creek. No other threatened flora species were identified within a 2km radius of Limestone Creek (within the project area) on Biomaps.

3.2 Targeted survey

3.2.1 Vegetation community

The population survey identified that *E. raveretiana* is present as the dominant canopy species in a narrow fringing riparian open forest along Limestone Creek. Other associated species in the canopy include *Melaleuca fluviatilis*, *Casuarina cunninghamiana* and *Corymbia clarksoniana*. The understorey was dominated by the weed species *Leucaena leucocephala* (leucaena); while the sparse to mid-dense groundcover was dominated by weedy grasses (Plate 1). This vegetation community was assessed as being analogous with the regional ecosystem (RE) 11.3.25a. The extent of this vegetation community and *E. raveretiana* suitable habitat along Limestone Creek is presented in Appendix A.

Plate 1 – *Eucalyptus raveretiana* dominated fringing riparian open forest present along Limestone Creek

3.2.2 Total number of individuals

A total of 63 *E. raveretiana* individuals were identified as present within the surveyed extent of Limestone Creek. All individuals (with the exception of two) were identified growing within the riparian zone associated with Limestone Creek.

Appendix A provides a map showing the location of the identified individuals. Given the extent of suitable habitat along Limestone Creek, additional *E. raveretiana* are anticipated to be present both upstream and downstream of the surveyed extents outlined in Section 2.

A leaf and fruit sample of *E. raveretiana* from the survey area was collected and submitted to the Queensland Herbarium for confirmation, which was returned with a positive identification of *E. raveretiana*. A copy of the confirmation letter is provided in Appendix C.

3.2.3 Population dynamics and health

All individuals appeared to be in good health with no obvious signs of disease or stress (e.g. leaf loss) and gum nuts were identified at the base of several individuals.

Whilst 63 individuals were recorded, the majority of the individuals were mature (approximately 20m in height), with only 10 individuals identified as sub-adult (a height of between >4m - <10m), and no juveniles (<4m) were identified during the survey. In this regard, whilst the population at Limestone Creek is considered to be a robust population, the age structure of the population and lack of recruitment suggests that the population is under threat from invasive species such as *Leucaena leucocephala* (leucaena) which appears to be limiting recruitment potential.

Two of the *E. raveretiana* are located approximately 200m away from Limestone Creek and within the Dreamtime Cultural Centre property and present adjacent to several *Eucalyptus coolabah* (coolabah). The Flora and Wetlands Technical Report (AECOM, 2020) identified that all of the trees at this location are *E. raveretiana*; however, this survey identified that only two of the trees at this location have discolorous leaves – which are the distinguishing characteristic between *E. coolabah* and *E. raveretiana*. Therefore, with the exception of the two *E. raveretiana* present, all other previously identified specimens at the location are *E.coolabah.*

The two *E. raveretiana* individuals appear to have been planted as they are growing outside the suitable habitat associated with Limestone Creek and are in a linear strip of trees on an earthen mound (Plate 2). However, discussions with the Traditional Owners at the Dreamtime Cultural Centre indicate that none of the trees at this location were planted. Irrespective of their origins, the two *E. raveretiana* are sufficiently mature to persist without anthropogenic assistance and are therefore considered as naturalised individuals for the purposes of assessing impacts to the local population.

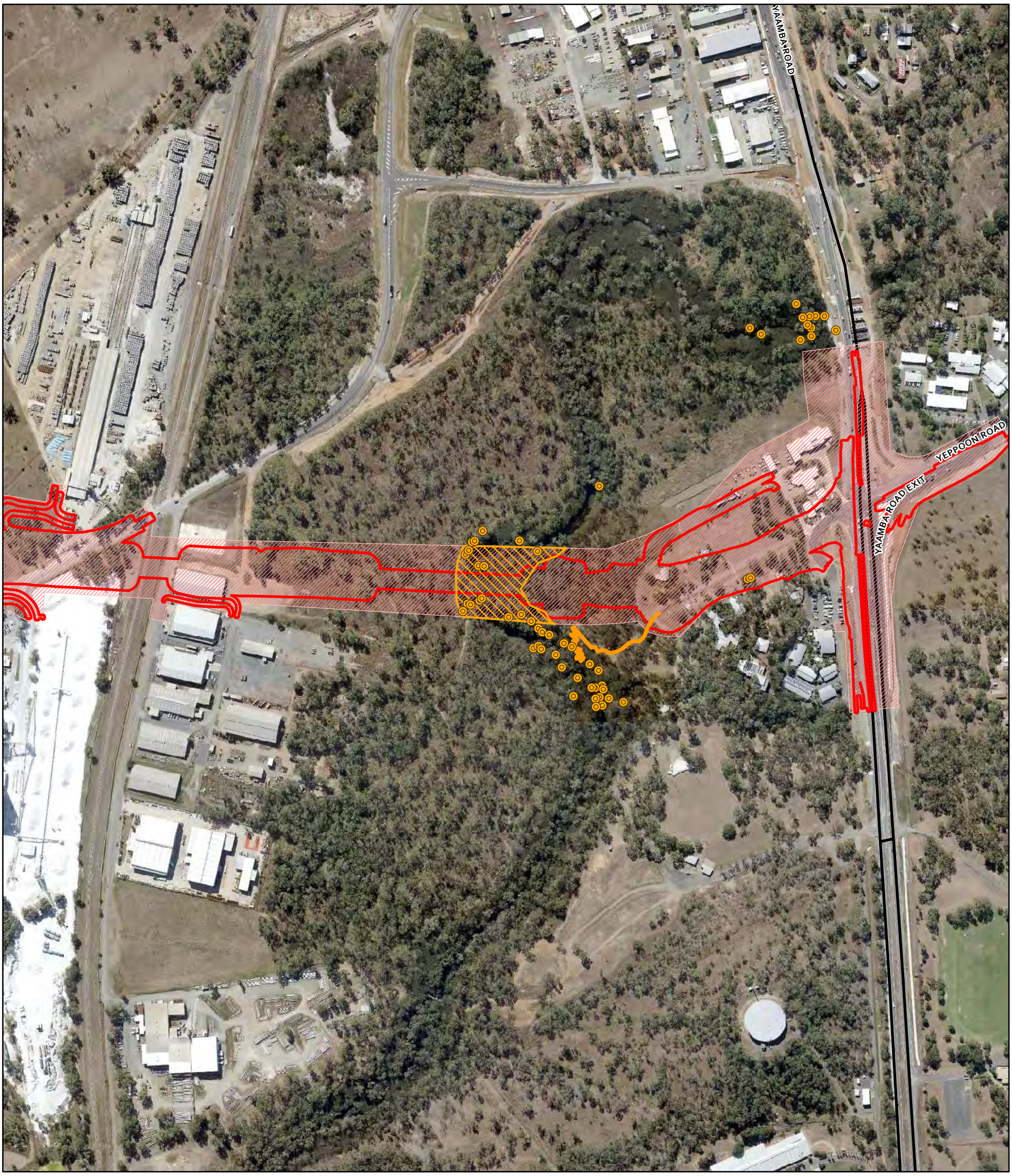
Plate 2 – *Eucalyptus raveretiana* individuals of disputed origin, but considered naturalised

4. Conclusion

E. raveretiana, which is listed as 'vulnerable' under the EPBC Act, was previously identified within the Rockhampton Ring Road project area at Limestone Creek. The project is anticipated to directly impact individuals and suitable habitat. A population survey was undertaken along Limestone Creek to quantify the number of individuals, map suitable habitat, and the assess the population dynamics. The results of the survey are to inform a significant impact assessment and assist with quantifying impacts as part of the addressing the Preliminary Documentation.

Appendix A. *Eucalyptus raveretiana* survey effort and results

Figure 6-1: Black Ironbox Habitat



Legend

- Field validated black ironbox locations
- Black Ironbox Survey
- Highways
- Project Footprint
- Project Area

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GDA 1994 MGA Zone 56

A3 1:5,000

N

0 50 100
Meters

Jacobs SMEC
Jacobs SMEC Design Joint Venture

Rockhampton Ring Road

Source: Queensland Department of Resources: Roads (2020); AECOM: Ironbox Habitat (2021); Metromap: Imagery (2020)

Appendix B. Vegetation Management Supporting Map

Queensland Government

Department of Environment and Science

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest
Lot: 222 Plan: LN2628

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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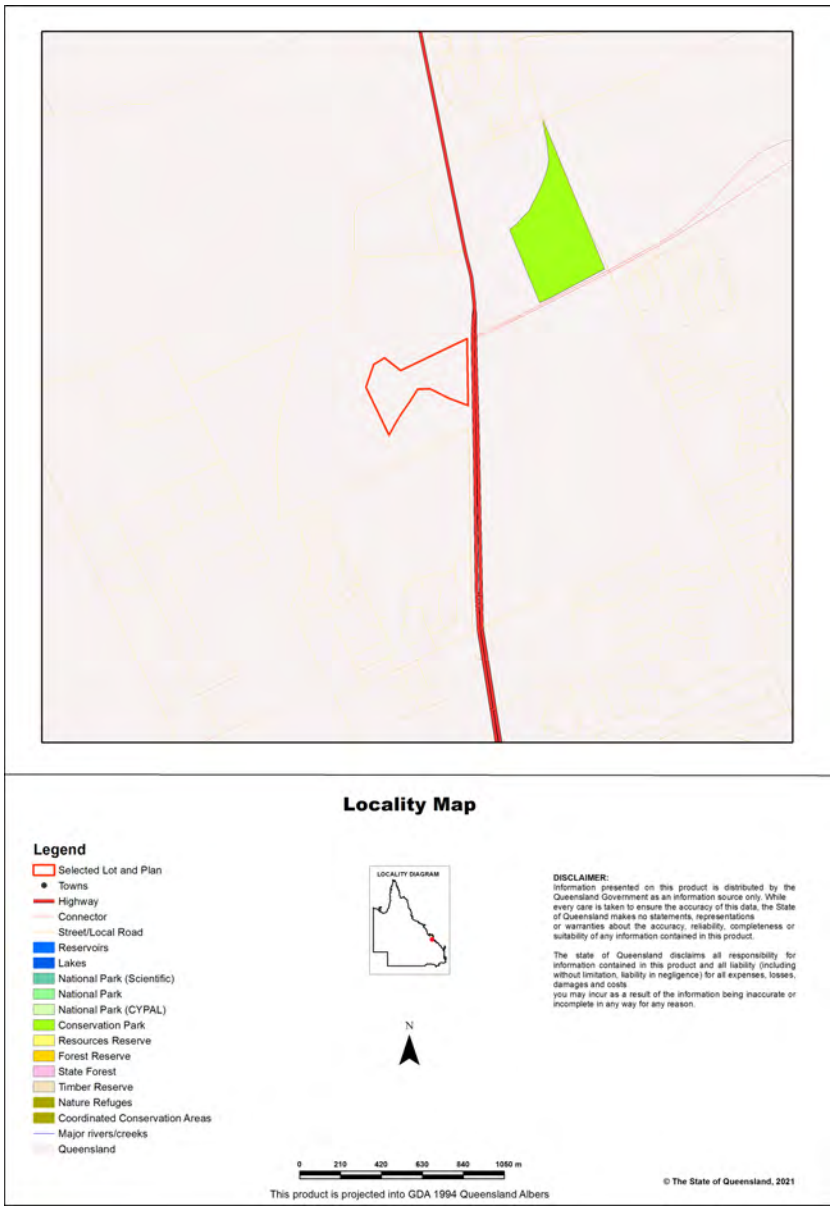
Assessment Area Details

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 Lot: 222 Plan: LN2628

Size (ha)	12.09
Local Government(s)	Rockhampton Regional
Bioregion(s)	Brigalow Belt
Subregion(s)	Marlborough Plains
Catchment(s)	Fitzroy



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	0.0 ha	0.0 %
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	0.0 ha	0.0 %
7b Special least concern animals	0.6 ha	5.0%
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)	0.0 ha	0.0 %
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	7.05 ha	58.3%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0.07 ha	0.54%
8d Regulated Vegetation - Essential habitat	0.0 ha	0.0 %
8e Regulated Vegetation - intersecting a watercourse **	0.4 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

(no results)

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

Not applicable

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
Boronia keysii		V	None
Calyptorhynchus lathami	Glossy black cockatoo	V	None
Casuarius casuarius johnsonii	Sthn population cassowary	E	None
Crinia tinnula	Wallum froglet	V	None
Denisonia maculata	Ornamental snake	V	None
Litoria freycineti	Wallum rocketfrog	V	None
Litoria olongburensis	Wallum sedgefrog	V	None
Melaleuca irbyana		E	None
Petaurus gracilis	Mahogany Glider	E	None
Petrogale persephone	Proserpine rock-wallaby	E	None
Phascolarctos cinereus	Koala - outside SEQ*	V	None
Pezoporus wallicus wallicus	Eastern ground parrot	V	None
Taudactylus pleione	Kroombit tinkerfrog	E	None
Xeromys myoides	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

(no results)

Special least concern animal species records

Scientific name	Common name	Migratory status
Tachyglossus aculeatus	short-beaked echidna	

**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)

Not applicable

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

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.12.1/11.3.4	O-subdom	hvr_oc

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

Regulated vegetation map category	Map number	RVM rule
R	9051	4

8d. Regulated Vegetation - Essential habitat

Not applicable

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

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

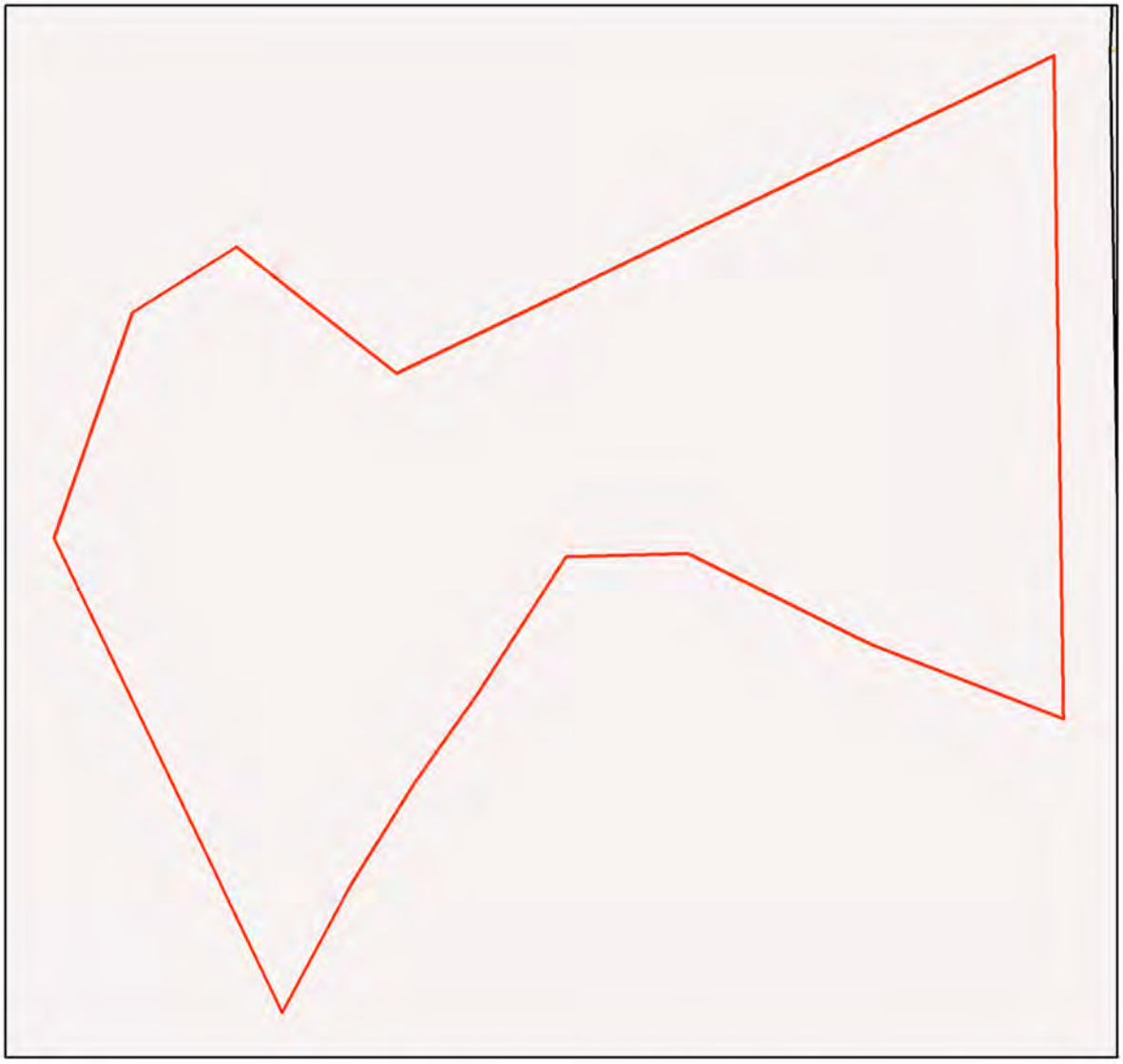
(no results)

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



MSES - State Conservation Areas

Area of Interest

- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Protected area (estates, nature refuges, special wildlife reserves)
- Declared fish habitat area (A and B areas)
- Marine park (highly protected)

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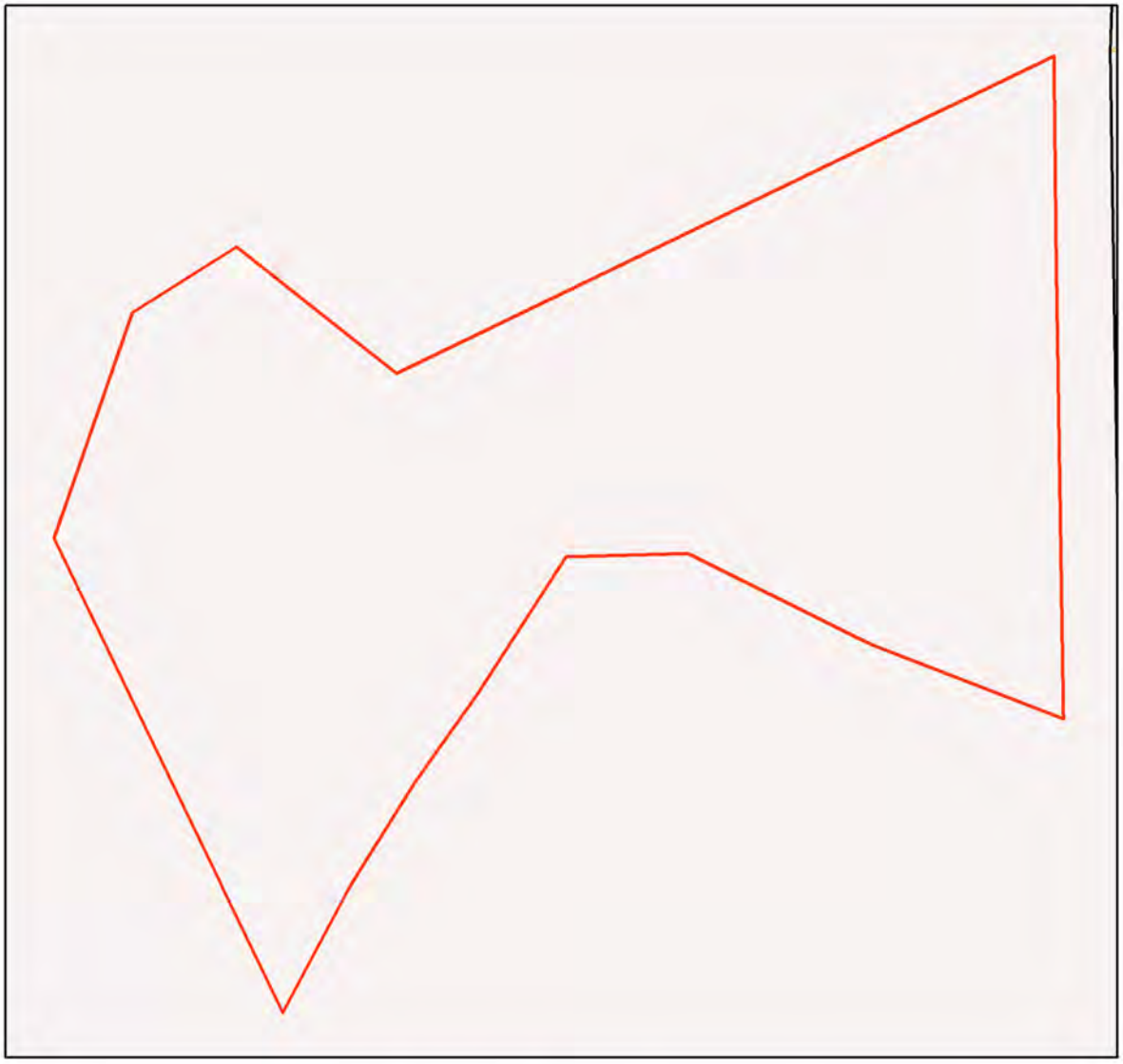
Map 2 - MSES - Wetlands and Waterways



MSES - Wetlands and Waterways

Area of Interest

- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Declared high ecological value waters (watercourse)
- Strategic environmental area (designated precinct)
- Declared high ecological value waters (wetland)
- High ecological significance wetlands

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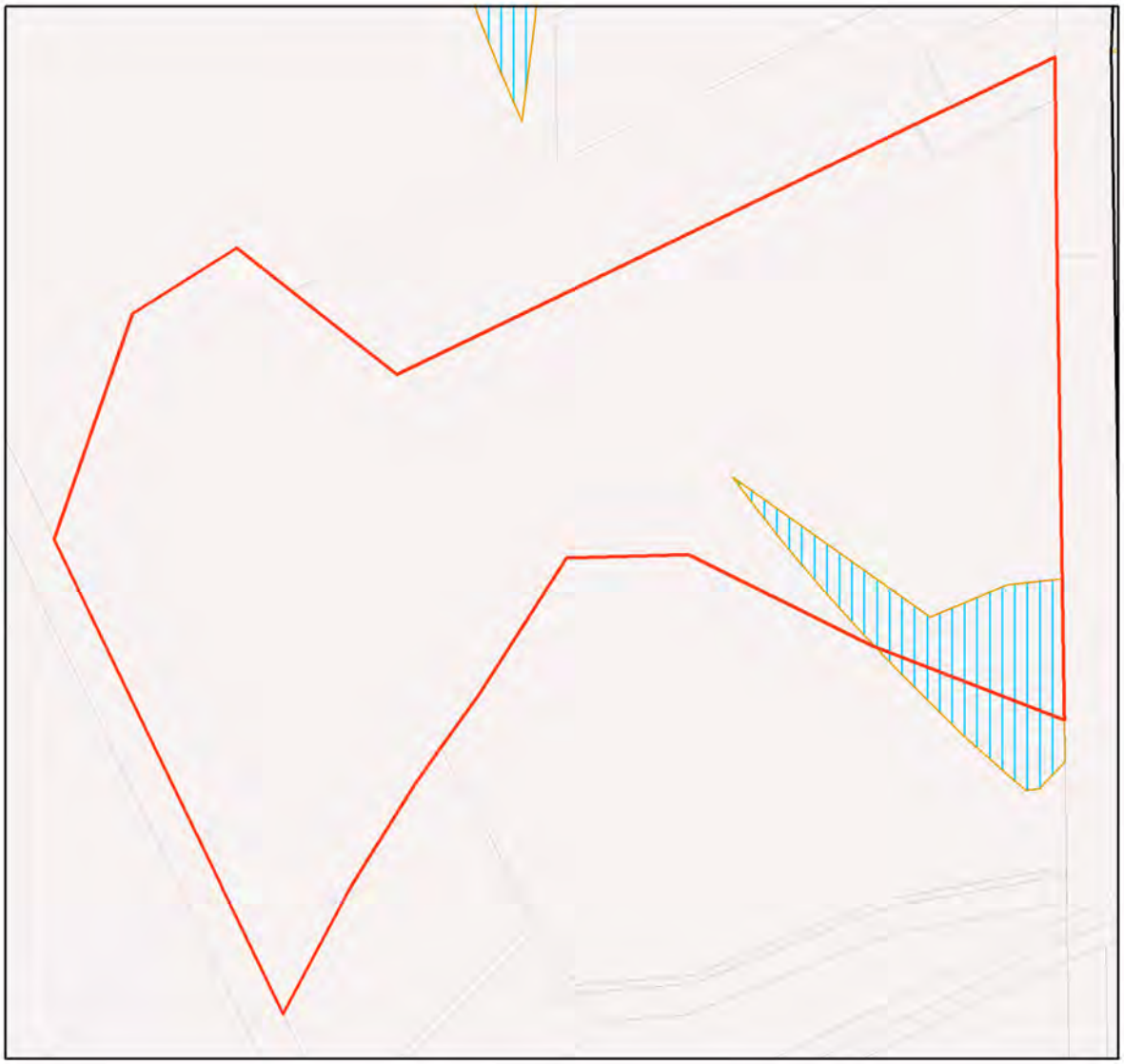
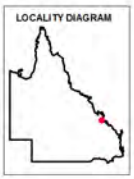
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



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

Area of Interest
- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Wildlife habitat (special least concern)
- Wildlife habitat (endangered or vulnerable)



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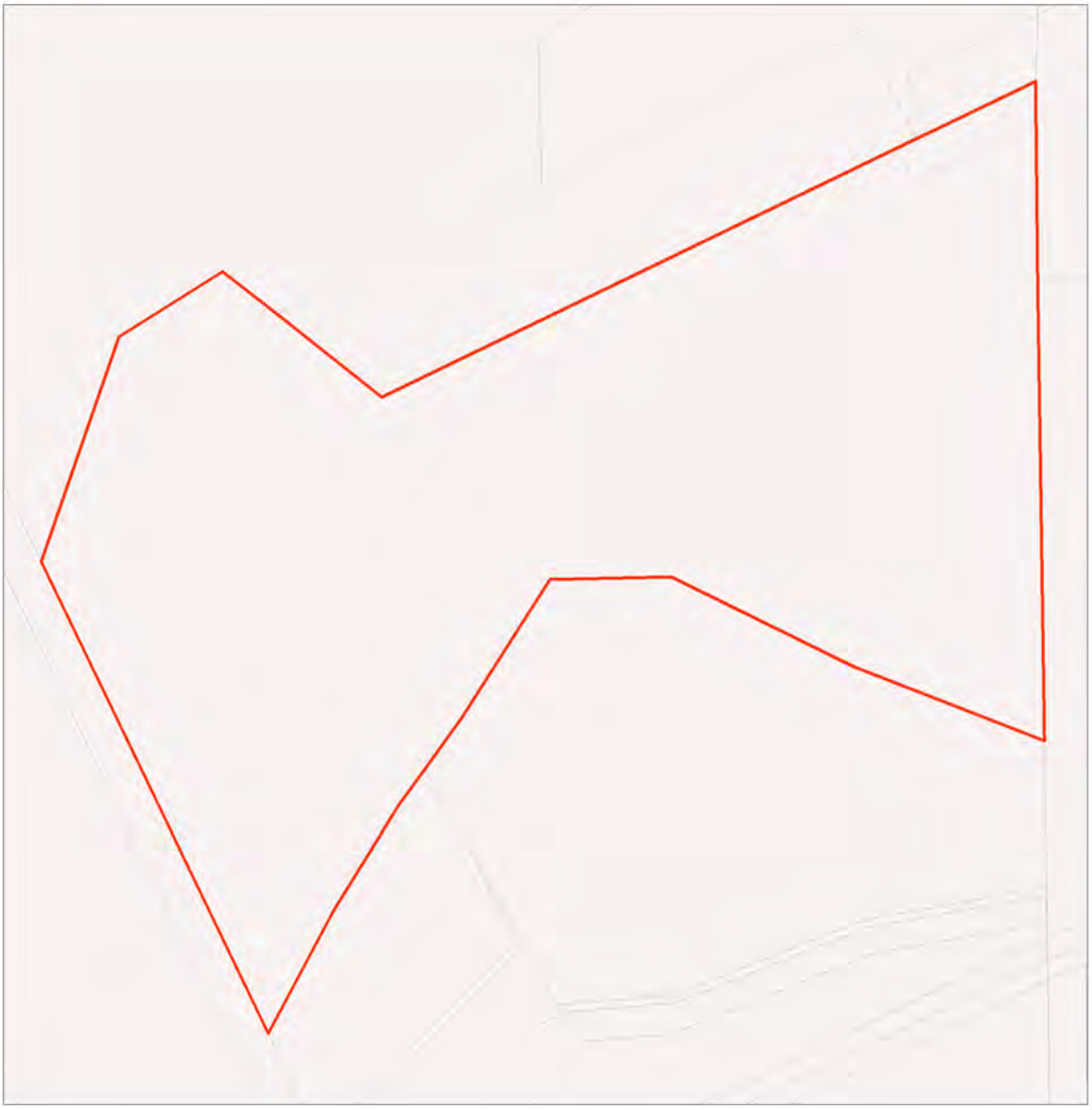
Map 3b - MSES - Species - Koala habitat area (SEQ)



MSES - Species
Koala habitat area (SEQ)

Area of Interest

- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Koala habitat area (core)
- Koala habitat area (locally refined)

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The represented layers for SEQ 'koala habitat area-core' and 'koala habitat area- locally refined' in MSES are sourced directly from the regulatory mapping under the Nature Conservation (Koala) Conservation Plan 2017. Whilst every effort is made to ensure the information remains current, there may be delays between updating versions. Please refer to the original mapping for the most recent version. See https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping

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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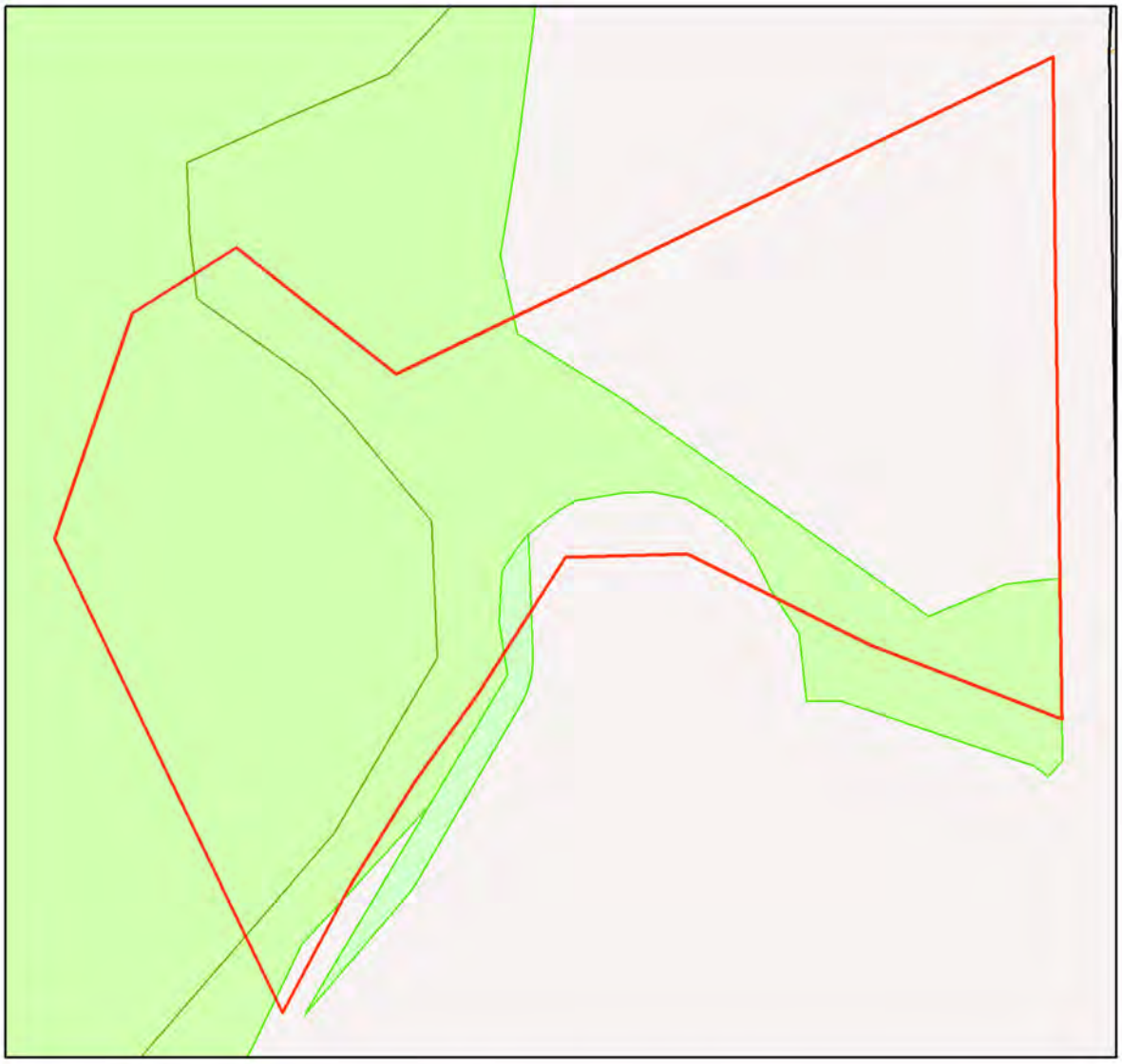
Map 4 - MSES - Regulated Vegetation



MSES - Regulated Vegetation

Area of Interest

- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Regulated vegetation (intersecting a watercourse)
- Regulated vegetation (100m from wetland)
- Regulated vegetation (category B - endangered or of concern)
- Regulated vegetation (category C - endangered or of concern)
- Regulated vegetation (category R - GBR riverine)
- Regulated vegetation (essential habitat)

N

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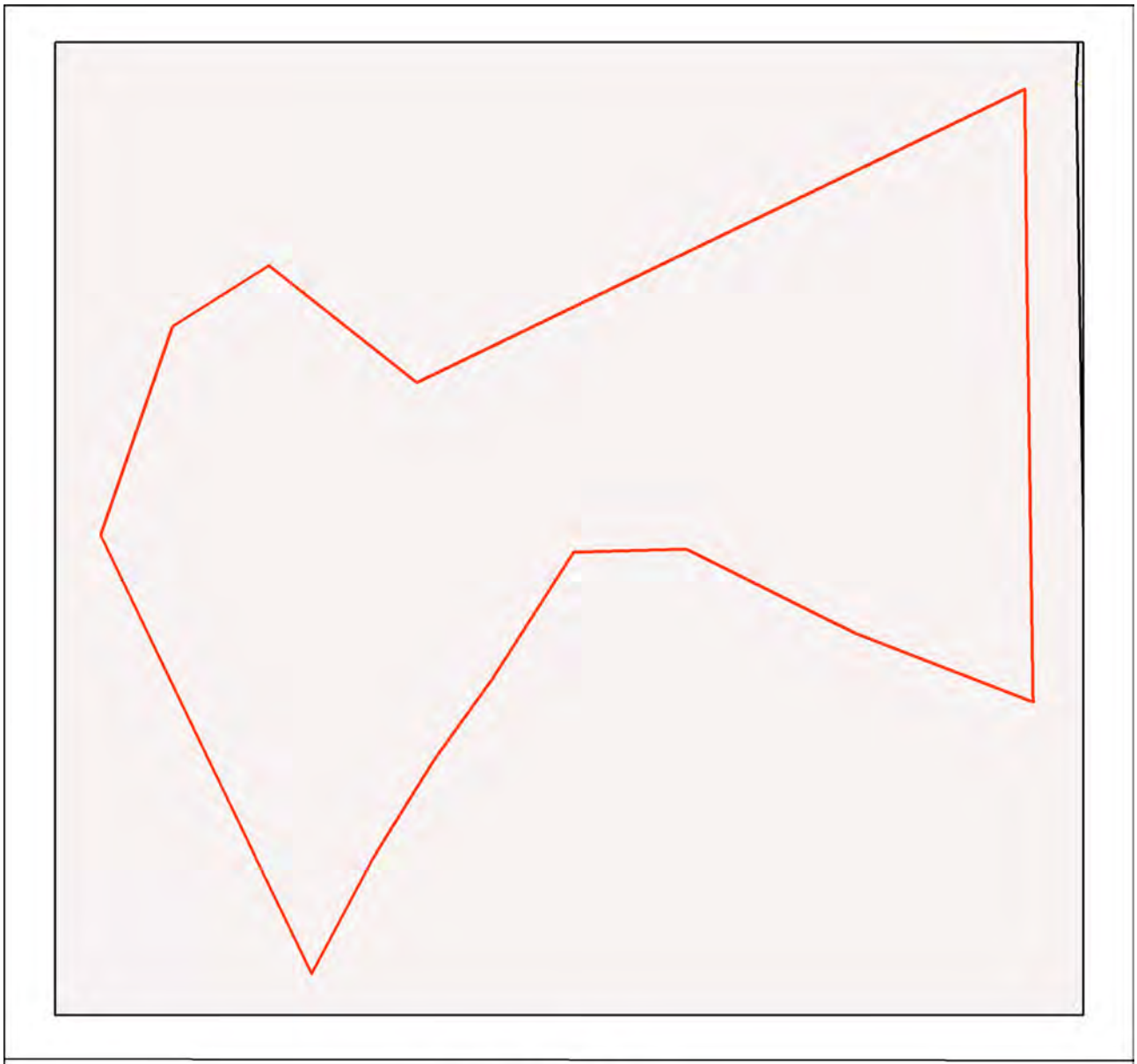
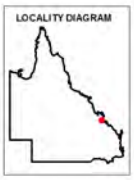
Map 5 - MSES - Offset Areas



MSES - Offsets

Area of Interest

- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Legally secured offset area (offset register)
- Legally secured offset area (vegetation offsets)



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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	- *Environmental Protection Act 1994*
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	- *Nature Conservation Act 1992*
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- *Vegetation Management Act 1999*

Queensland Government

Department of Environment and Science

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest
Lot: 6 Plan: SP307741

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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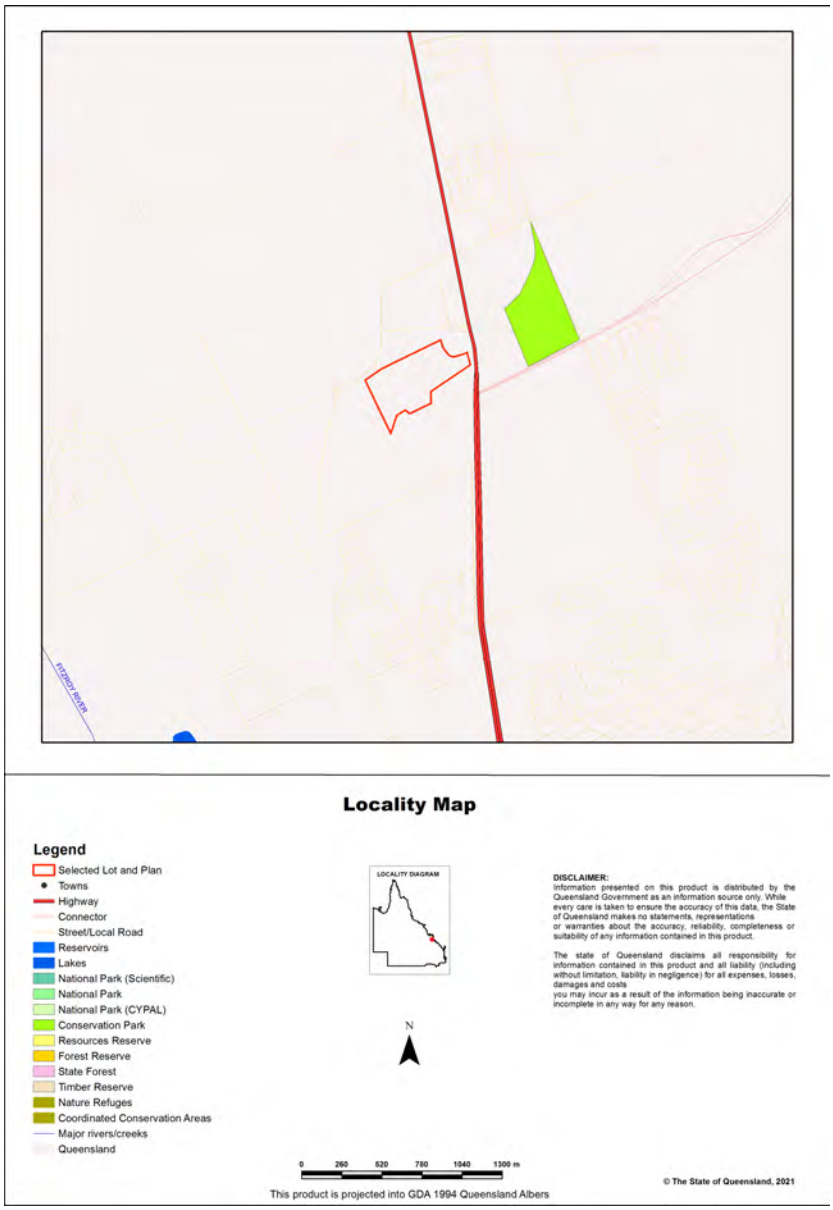
Assessment Area Details

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 Lot: 6 Plan: SP307741

Size (ha)	18.04
Local Government(s)	Rockhampton Regional
Bioregion(s)	Brigalow Belt
Subregion(s)	Marlborough Plains
Catchment(s)	Fitzroy



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	0.0 ha	0.0 %
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	0.0 ha	0.0 %
7b Special least concern animals	5.87 ha	32.5%
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)	0.0 ha	0.0 %
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	16.96 ha	94.0%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0.05 ha	0.28%
8d Regulated Vegetation - Essential habitat	0.0 ha	0.0 %
8e Regulated Vegetation - intersecting a watercourse **	0.7 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

(no results)

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

Not applicable

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
Boronia keysii		V	None
Calyptorhynchus lathami	Glossy black cockatoo	V	None
Casuarius casuarius johnsonii	Sthn population cassowary	E	None
Crinia tinnula	Wallum froglet	V	None
Denisonia maculata	Ornamental snake	V	None
Litoria freycineti	Wallum rocketfrog	V	None
Litoria olongburensis	Wallum sedgefrog	V	None
Melaleuca irbyana		E	None
Petaurus gracilis	Mahogany Glider	E	None
Petrogale persephone	Proserpine rock-wallaby	E	None
Phascolarctos cinereus	Koala - outside SEQ*	V	None
Pezoporus wallicus wallicus	Eastern ground parrot	V	None
Taudactylus pleione	Kroombit tinkerfrog	E	None
Xeromys myoides	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

(no results)

Special least concern animal species records

Scientific name	Common name	Migratory status
Tachyglossus aculeatus	short-beaked echidna	

**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)

Not applicable

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

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.12.1/11.3.4	O-subdom	hvr_oc

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

Regulated vegetation map category	Map number	RVM rule
R	9051	4

8d. Regulated Vegetation - Essential habitat

Not applicable

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

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

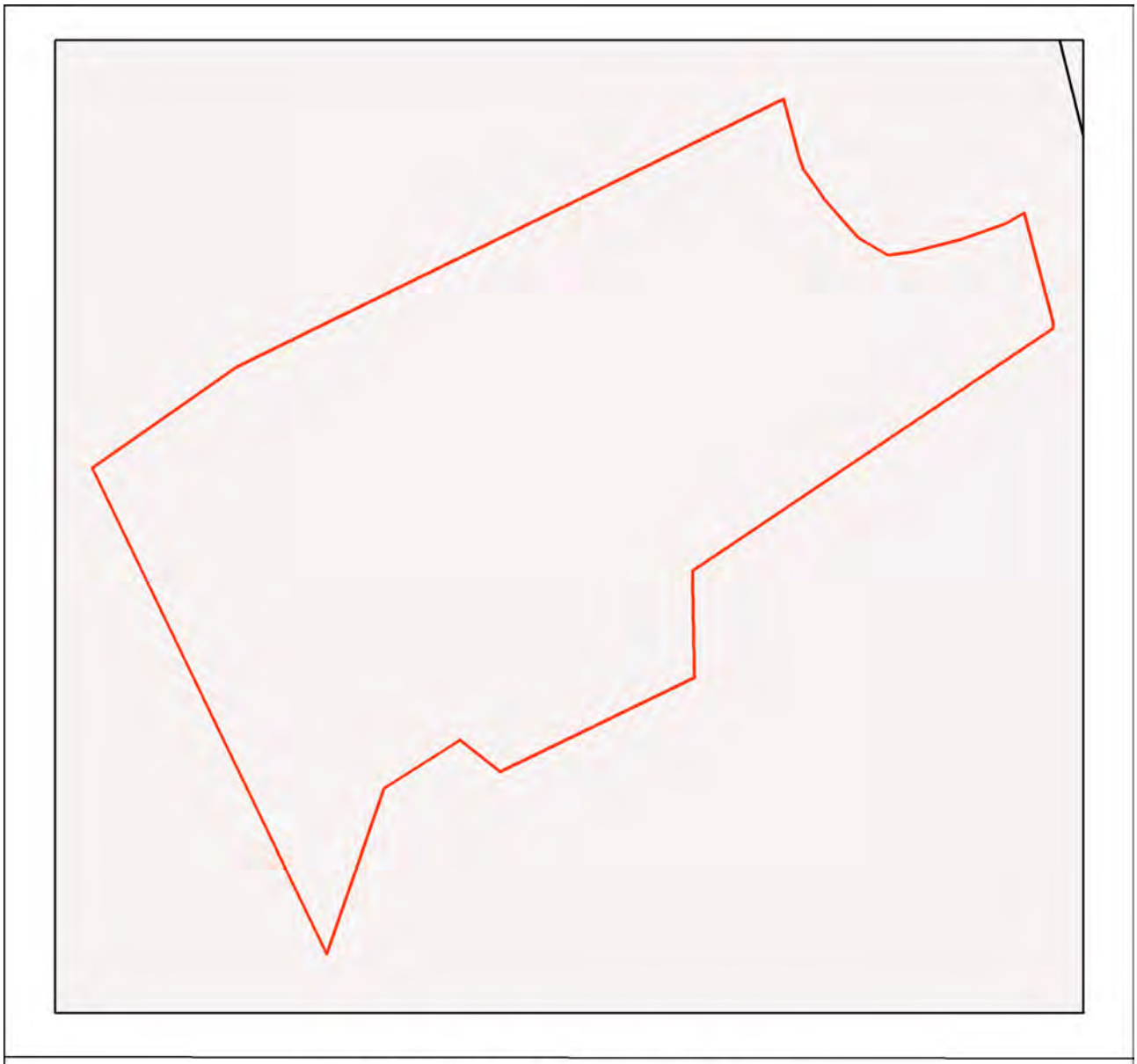
(no results)

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



MSES - State Conservation Areas

Area of Interest

- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Protected area (estates, nature refuges, special wildlife reserves)
- Declared fish habitat area (A and B areas)
- Marine park (highly protected)

LOCALITY DIAGRAM

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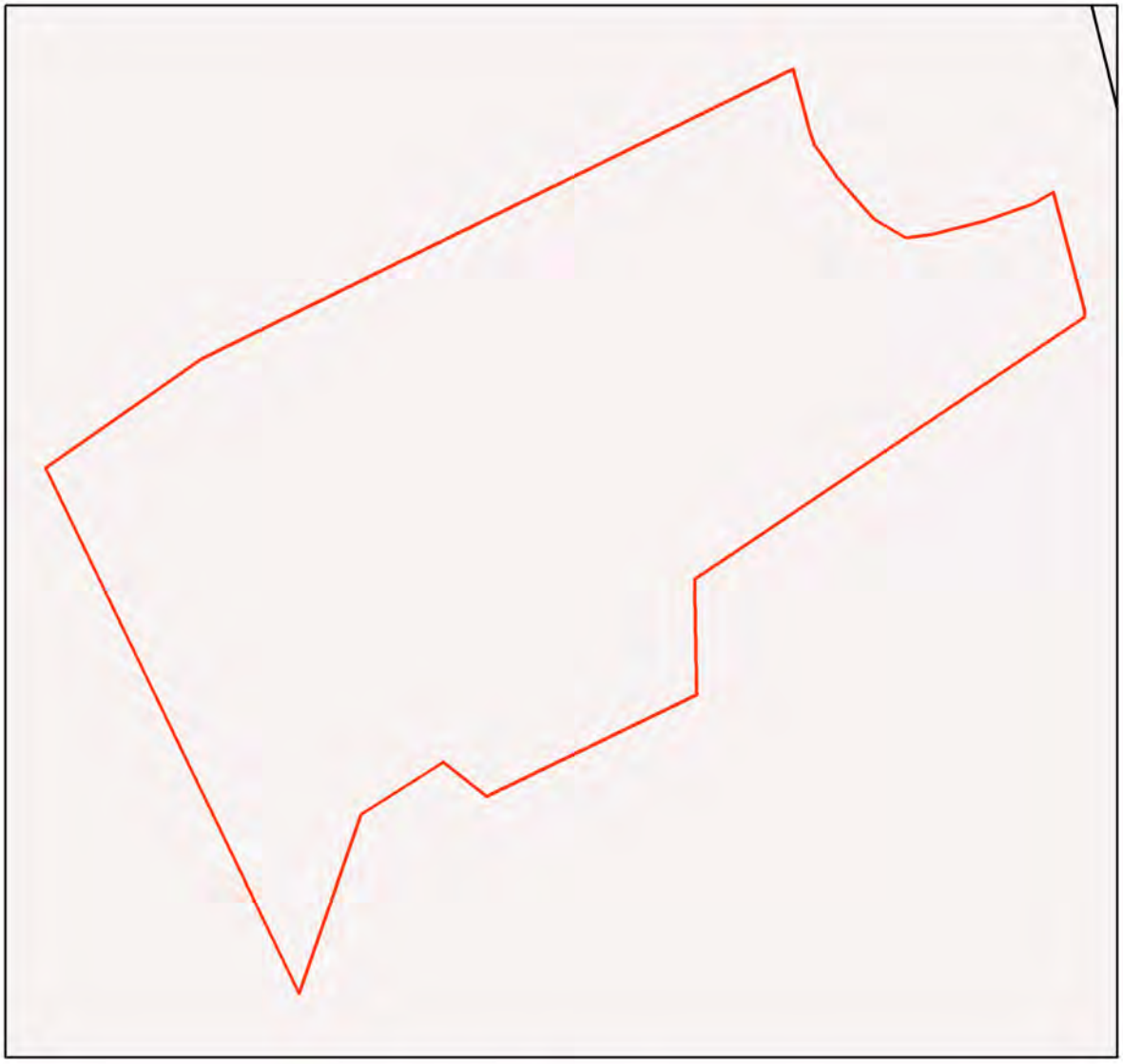
Map 2 - MSES - Wetlands and Waterways



MSES - Wetlands and Waterways

Area of Interest

- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Declared high ecological value waters (watercourse)
- Strategic environmental area (designated precinct)
- Declared high ecological value waters (wetland)
- High ecological significance wetlands

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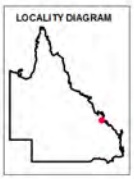
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals

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

Area of Interest
- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Wildlife habitat (special least concern)
- Wildlife habitat (endangered or vulnerable)



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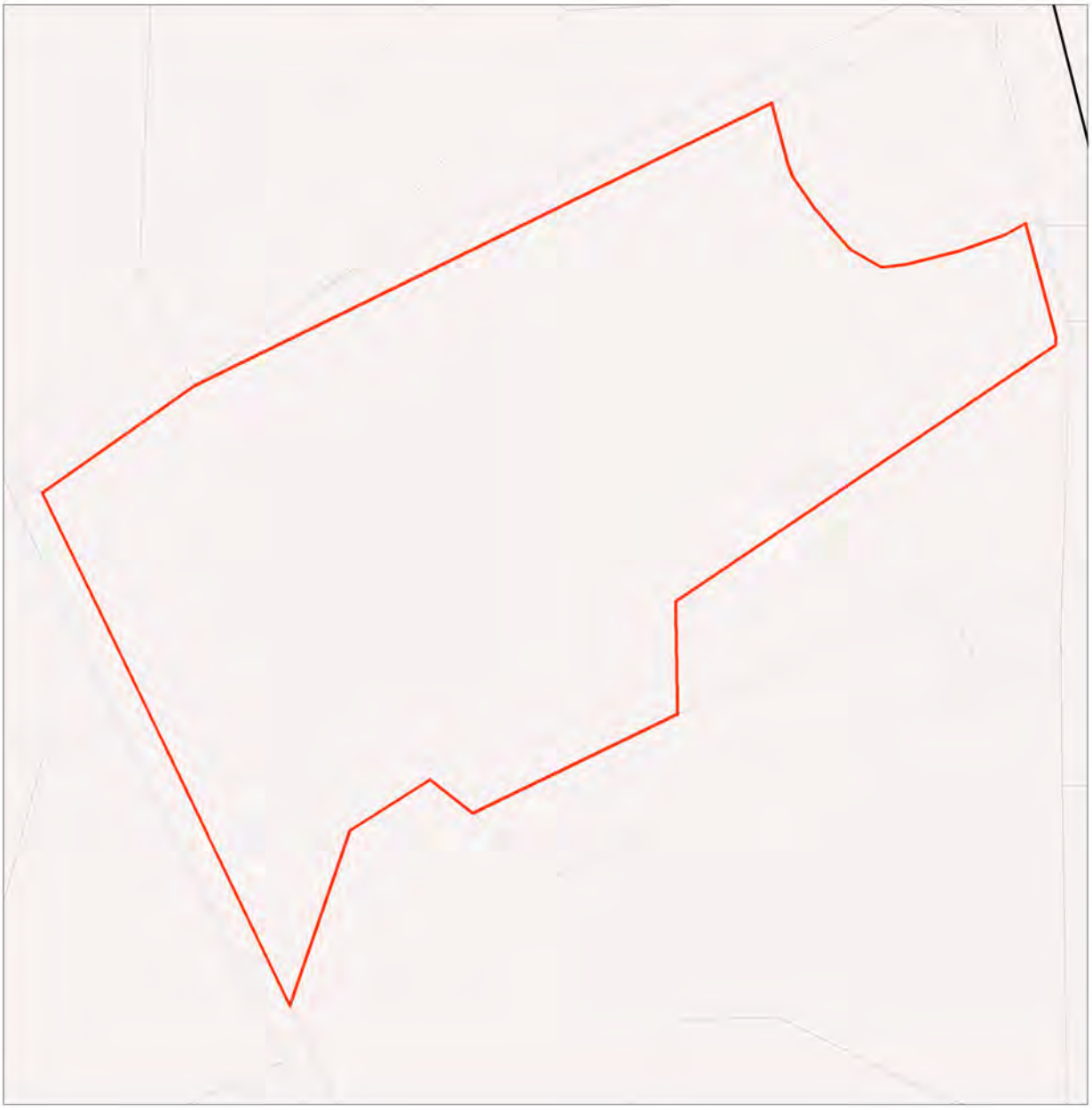
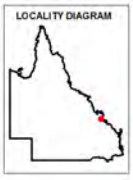
Map 3b - MSES - Species - Koala habitat area (SEQ)



MSES - Species
Koala habitat area (SEQ)

Area of Interest
- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Koala habitat area (core)
- Koala habitat area (locally refined)



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The represented layers for SEQ 'koala habitat area-core' and 'koala habitat area- locally refined' in MSES are sourced directly from the regulatory mapping under the Nature Conservation (Koala) Conservation Plan 2017. Whilst every effort is made to ensure the information remains current, there may be delays between updating versions. Please refer to the original mapping for the most recent version. See https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping

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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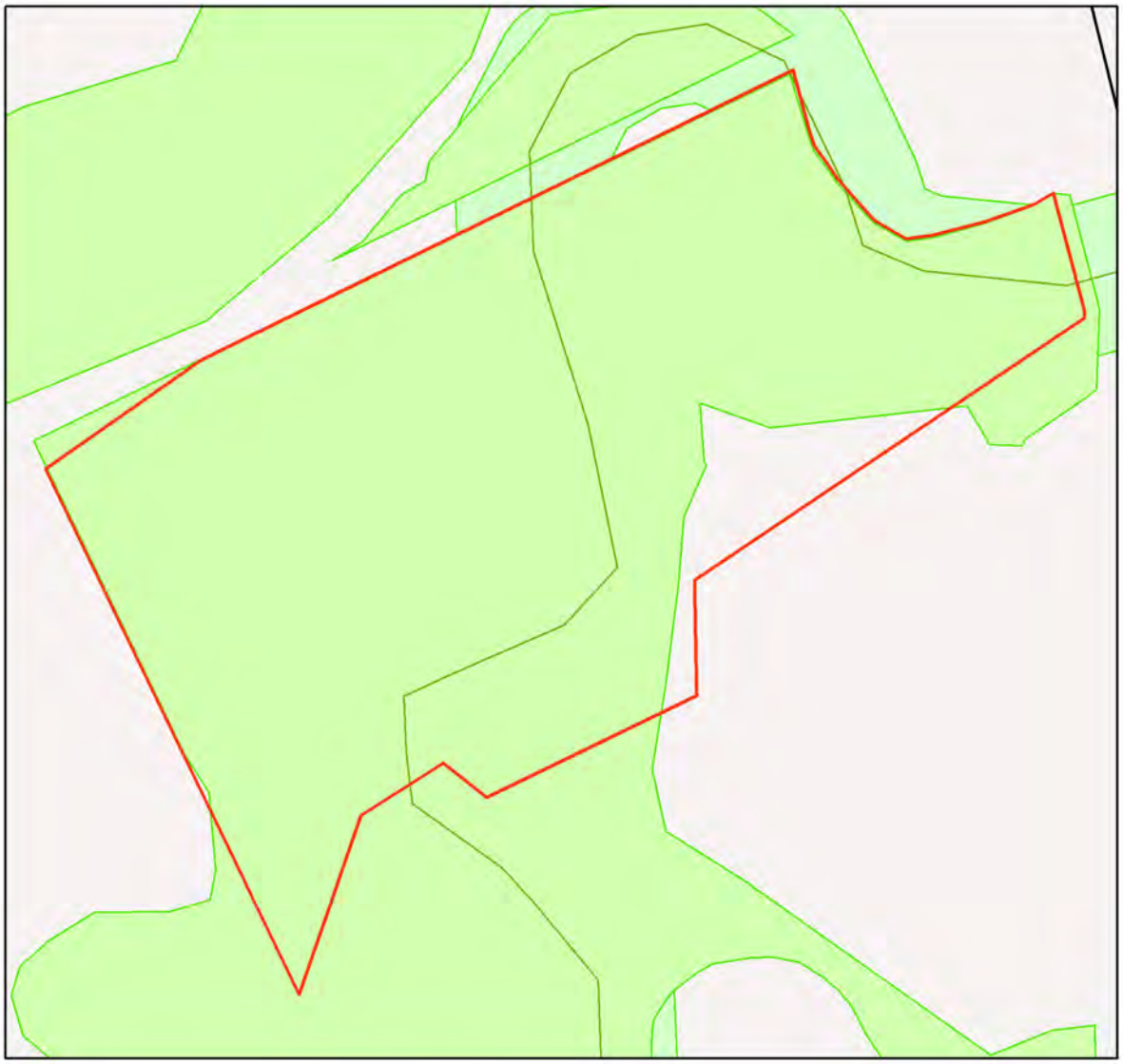
This product is projected into GDA 1994 Queensland Albers

Map 4 - MSES - Regulated Vegetation



MSES - Regulated Vegetation

Area of Interest

- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Regulated vegetation (intersecting a watercourse)
- Regulated vegetation (100m from wetland)
- Regulated vegetation (category B - endangered or of concern)
- Regulated vegetation (category C - endangered or of concern)
- Regulated vegetation (category R - GBR riverine)
- Regulated vegetation (essential habitat)

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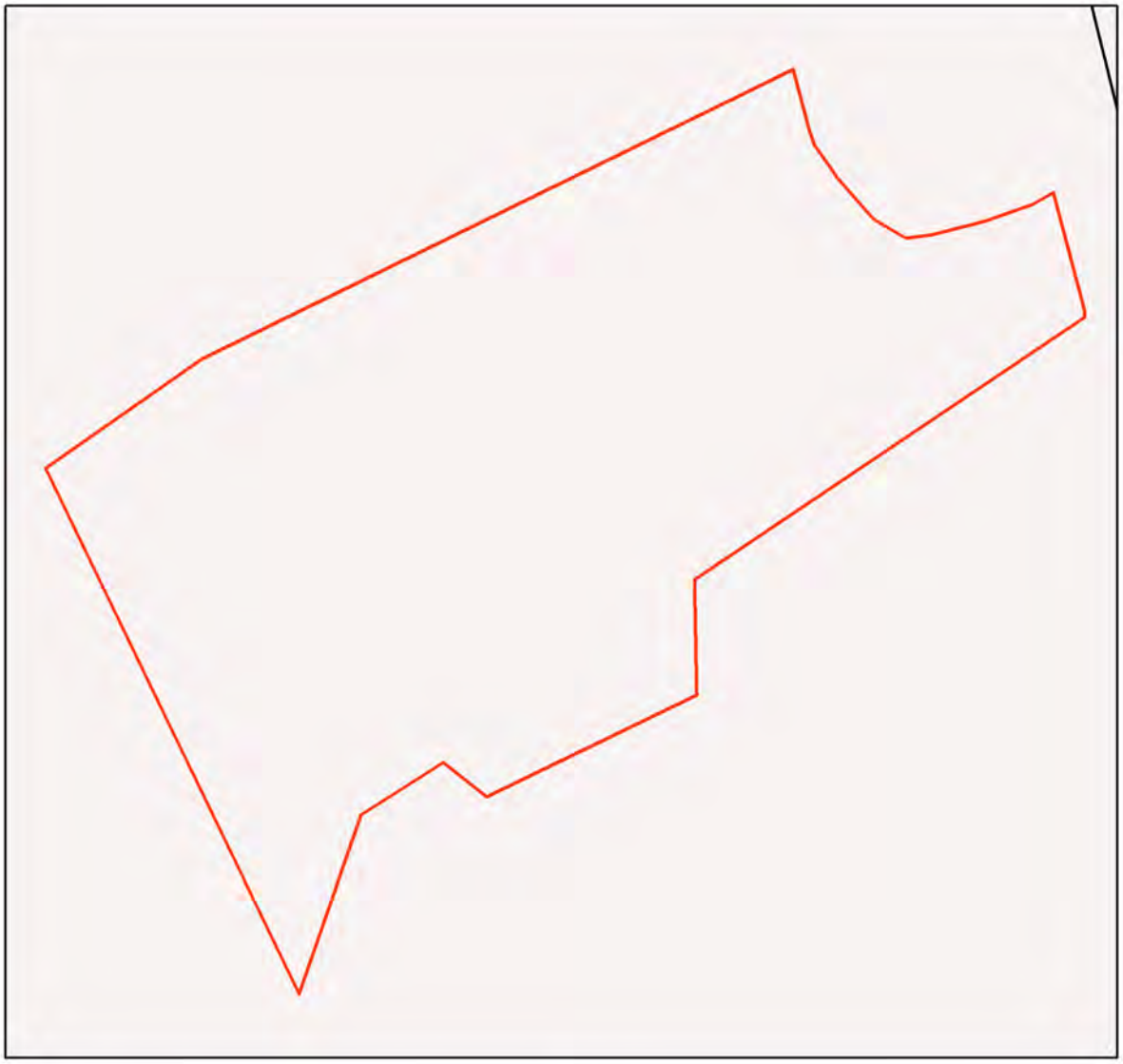
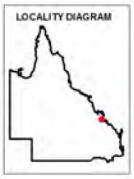
Map 5 - MSES - Offset Areas



MSES - Offsets

Area of Interest

- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Legally secured offset area (offset register)
- Legally secured offset area (vegetation offsets)



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Appendices

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

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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	- *Environmental Protection Act 1994*
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	- *Nature Conservation Act 1992*
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- *Vegetation Management Act 1999*

Appendix C. Queensland Herbarium Confirmation Letter

Queensland
Government

Department of
Environment and Science

Queensland Herbarium
Brisbane Botanic Gardens Mt Coot-tha•Toowong 4066 Queensland•Australia
Telephone +61 7 3199 7699 • Facsimile +61 7 3876 1278
e-mail Queensland.Herbarium@qld.gov.au
http://www.qld.gov.au/herbarium

Enquiries	Nigel Fechner
Telephone	07 3199 7666
Your reference	
Our reference	NF:mh 753/20

6 January 2021

Colin Vaughan
PO Box 179
BUDDINA Qld 4575

Dear Colin,

The botanical specimen received by the Queensland Herbarium on 18 December 2020 has been confirmed as:

Eucalyptus raveretiana

You can contribute to Queensland's biodiversity information by submitting this/these plant identification(s) and associated information to the Atlas of Living Australia using the 'Report a sighting' template at (https://www.ala.org.au/)

Yours sincerely

for G.P.Guymer
Director

Download a full version of Census of the Queensland Flora 2019
https://data.qld.gov.au/dataset/census-of-the-queensland-flora-2019

QUEENSLAND GOVERNMENT

Version 16, Mar 2019

Botanical specimen – submission sheet

Botanical Specimen for Identification

Complete this form (one for **each** specimen) & send with specimen/s to:

Biodiversity Information and Advisory Service
Queensland Herbarium, Department of Environment and Science
Brisbane Botanic Gardens Mt Coot-tha
Mt Coot-tha Road, TOOWONG QLD 4066 Ph: 3199 7699 Fax: 3876 1278

Office Use Only	
Date received	18/12/2020
Identification no.	753/20
Date of despatch	6/1/21

Name: Colin Vaughan **Company / Department:** SMEC

Postal Address: P.O. Box 179, Buddina, 4575

Postcode:

Email: colin.vaughan@smec.com **Contact phone:** 0434628162

Purpose: ☒ commercial (e.g. consultant) ☐ weed spotter network ☐ other (specify)

Send results by: ☒ email ☐ post **Information required:** Species ID

Label Information – please fill out below for each specimen submitted.
Specimens may be retained for scientific study and accurate data is critical for this purpose.

Collector surname: Vaughan **Collector initials:** C.V.

Specimen number/ Code (one for each specimen): **Date of collection:** 1 / 12 / 20

Suggested name (botanical or common name if known): Eucalyptus raveretiana.

Situation (e.g. garden, roadside, paddock, forest, grassland): Riparian forest

Life form (e.g. tree, shrub, vine, herb, water plant, grass): Tree.

Locality (road name, distance & direction from nearest town e.g. Hasthorpe road, 2 km E of Kandanga):
Lot 222 on LN2628. Along Limestone Creek.

DD MM SS.SS	Latitude	-23.315	°S	Longitude	150.5120	°E
Or UTM Coordinates:	DATUM:		Zone:	Easting:		Northing:

Source of Coordinates: ☐ GPS ☐ Map ☒ Google Earth ☐ Other (specify)

Soil / geology description (e.g. shallow gritty sand over granite):
Sandy loam

Surrounding vegetation type (e.g. Eucalyptus microneura low woodland with shrub understorey):
E. raveretiana open forest along Limestone creek. Riparian forest with Leucaena understorey.

Description of plant (e.g. height, flower colour, fruit colour, bark):
~20m tall, mature.

Abundance (please estimate population e.g. no. of individuals or area occupied,):
>50 individuals observed. Most mature. No juveniles.

Landholder permission to collect &/or permit: ☐ Yes ☒ No

Other Information (e.g. landform aspect, altitude, notes):

Cultivated ☐ Yes ☒ No ☐ Unsure

Specimens and data submitted to the Queensland Herbarium will be considered to be in the public domain excepting specific locality data relating to certain sensitive species.
Queensland Herbarium will only use the personal information submitted in this form to assist with processing enquiries and specimens.
For more information on privacy https://www.des.qld.gov.au/legal/privacy/

Signature Vaughan
Date 14-12-20

Please attach permit or permission documents e.g. permit, letter of permission, email correspondence.

For more information Ph: 07 3199 7699, email Queensland.Herbarium@qld.gov.au or visit www.qld.gov.au/herbarium