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ECOLOGICAL MANAGEMENT

SONOMA MLA 700075 VEGETATION COMMUNITY MAPPING TECHNICAL REPORT

Report prepared for

QCoal Pty Ltd

August 2023

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Signed on behalf of Terrestria Pty Ltd

Dr Andrew Daniel
Managing Director

Date: August 2023

SONOMA MLA 700075 VEGETATION COMMUNITY MAPPING TECHNICAL REPORT

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Abbreviations

DAWE	Commonwealth Department of Agriculture Water and the Environment
DES	Department of Environment and Science
DEHP	Department of Environment and Heritage Protection
DoEE	Commonwealth Department of the Environment and Energy
EAR	Environmental Assessment Report
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
MNES	Matters of National Environmental Significance
NC Act	*Nature Conservation Act, 1992*
PMST	EPBC Act Online Protected Matters Search Tool
TEC	Threatened Ecological Community (EPBC Act)
VM Act	*Vegetation Management Act, 1999*.
WONS	Weeds of National Significance

1.0 INTRODUCTION

1.1 BACKGROUND

QCoal Pty Ltd requires updated field-scale vegetation community and regional ecosystem mapping for Sonoma MLA700075 located south of Collinsville in Central Queensland, (**Figure 1.1**). Mining activities are regarded as an Environmentally Relevant Activity (ERA) regulated under the *Environmental Protection Act (1994)*. Appropriately scaled regional ecosystem mapping provides the foundation for assessing the quantum and types of impacts to the site's ecology, allowing project planning to avoid, mitigate and offset any potential impacts to State regulated ecological values.

A bilateral agreement between the Commonwealth of Australia and the State of Queensland relating to environmental assessment allows the Commonwealth Minister for the Environment to rely on specified environmental impact assessment processes of the State of Queensland in assessing actions under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The former Department of Environment and Heritage Protection (DEHP) (now the Department of Environment and Science) published an *EIS information guideline – Flora and fauna* which has informed the scope of this assessment of terrestrial ecological values.

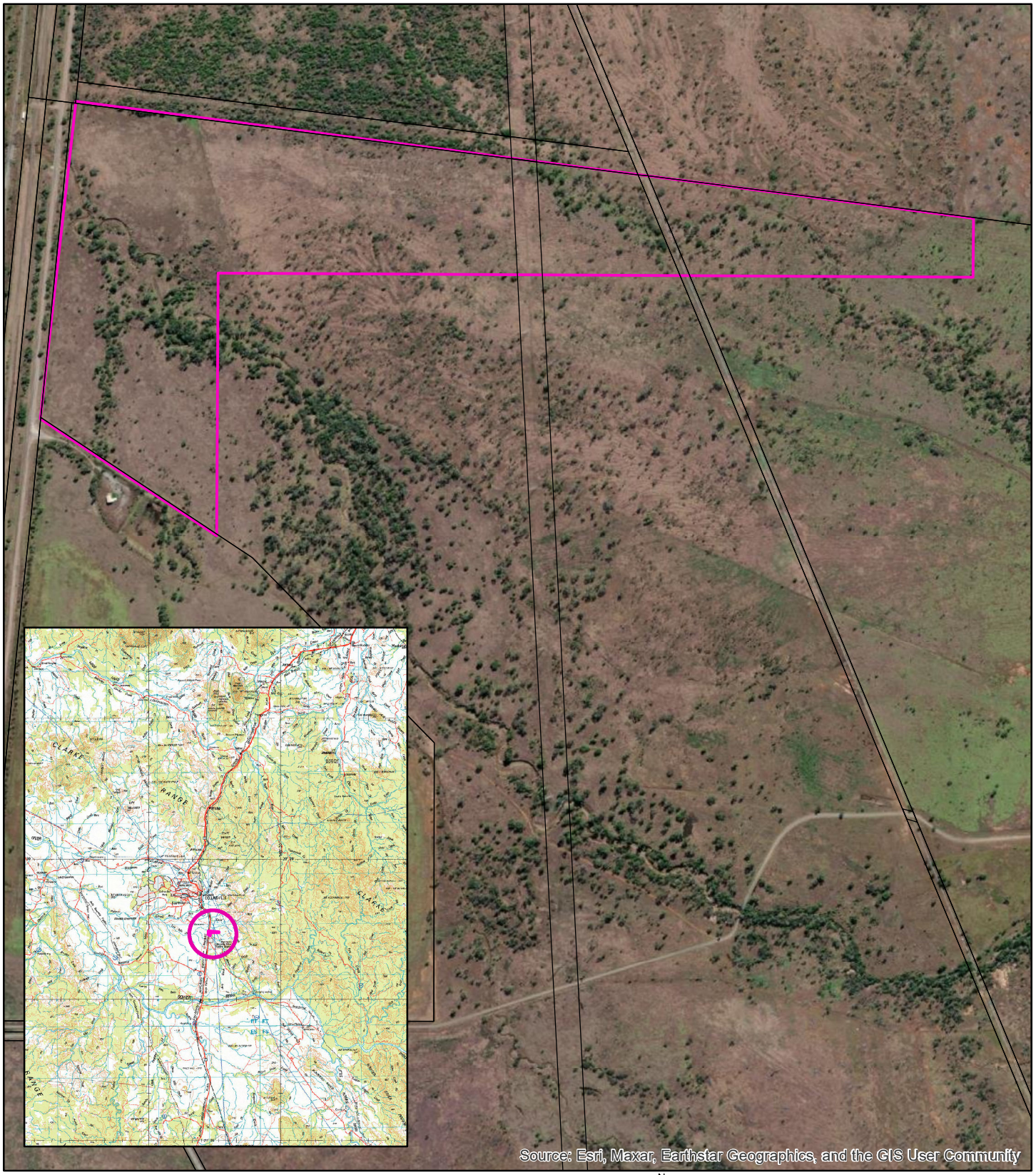
1.2 SCOPE

1.2.1 Planning Context

The scope of this terrestrial vegetation community and regional ecosystem mapping project has been guided by the need to conform to best practise standard survey methods for assessing Queensland's ecological values. To-this-end the following standard survey methods have been followed:

- Department of Environment and Heritage Protection (DEHP) (undated) EIS information guideline – Flora and fauna;
- *Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland*. Version 5.0. Updated March 2019. Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F, Addicott, E.P. and Appelman, C.N. (2019) Queensland Herbarium, Queensland Department of Environment and Science, Brisbane;
- *Flora Survey Guidelines – Protected Plants, Nature Conservation Act*. Prepared by Wildlife and Threatened Species Operations, Department of Environment and Science 31 May 2019 (DEHP 2019);
- Nationally Threatened Ecological Community Conservation Advice[1],

[1]https://www.dcceew.gov.au/environment/biodiversity/threatened/conservation-advices



LEGEND

MLA 700075

FIGURE 1.1

Location and Extent of MLA 700075

Sonoma MLA 700075
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1.3 GENERAL DESCRIPTION OF SONOMA ML

The Project area is located immediately north of the Bowen River approximately 10 km south of Collinsville in north central Queensland. The study area is within the Burdekin Basin and the Northern Bowen Basin sub-bioregion of the Brigalow Belt North bioregion. The region experiences sub-tropical climatic conditions with average temperatures between 21.4 C° and 33.5 C° in the summer months, and 9.1 C° to 27.6 C° in the winter months (BoM 2019). The mean average rainfall for the region is approximately 703 mm with a pronounced wet season. Approximately 75% of the annual rainfall is typically recorded between November and March. Agricultural pursuits, particularly cattle-grazing and cultivation are the predominate land uses in the region (**Figure 1.1**).

The Sonoma MLA700075 area is approximately 74 ha in size, bounded to the west by the Bowen Development Road and dissected by two minor watercourses. Most of the Project area is covered by low rolling hills of sandy clays supporting eucalyptus dominated woodlands that have been variously cleared for cattle grazing and support mostly exotic grass pastures.

2.0 METHODOLOGY

The methodology for this ecological assessment involved a combination of desktop assessment, to build a picture of the potential ecological values their distribution across the Project area, and field-based assessment to confirm extant values. This combined assessment included the following:

- A desktop review of relevant Commonwealth and State databases, vegetation mapping, published ecological studies (where they exist) and any other relevant literature. The desktop review was used to identify spatially explicit data to assist in the production of desk-top field scale maps of vegetation and land zones, occur within the Project area;
- These data were used to build up a picture of the potential extant ecological values and provide a basis for the design and implementation of field surveys;
- Field survey to assess and confirm the presence of Threatened species (NC Act and EPBC Act) and / or suitable habitat for threatened species, and regulated vegetation communities (EPBC Act, EP Act and NC Act) identified during the desktop review; and
- Review field vegetation data and recent aerial imagery to refine existing vegetation community and regional ecosystem mapping across the Project area.

2.1 DESKTOP REVIEW

Prior to the field investigation, Commonwealth and State wildlife databases were interrogated to develop a picture of the vegetation communities and threatened flora species likely to occur within the Project locality. The following statutory mapping for the Project area was reviewed to build a picture of the distribution of ecological values across the Project area:

- EPBC Act Protected Matters Search (**Appendix A**)
- DES's Wildlife Online database (15 km radius) (**Appendix B**) .
- DES's VM Act Regional Ecosystem and Remnant Mapping-Version 12 (**Appendix C**);
- DES's MSES Mapping Report (**Appendix D**)
- Map of Referrable Wetlands – Wetland Protection Areas (Lot 618 SP271121) (EP Regs, 2008) (**Appendix E**);
- DES's Vegetation Management Report (Lot 25 SP234989) (**Appendix F**); and
- Detailed Surface Geology 1:250,000 (DNRM 2015) (**Figure 3.1**).

A desktop database review of existing ecological information was carried out prior to the fieldwork program. The results of these searches build up a picture of the species and communities considered under threat that may possibly occur within the locality. Detailed expert profiling of the species and communities is used to

assess the likelihood of occurrence of these species within the Project area and likely habitats in which they may occur. This work was used to focus survey efforts and develop field work programs.

The results of database and mapping searches were used to inform the field investigation. Information gained from this phase of the study has been used to:

- Produce desk-top derived site-scale regional ecosystem mapping layers in a GIS
- Identify communities of significance[2] known from the locality;
- Polygons with inconsistent or not readily identifiable photo-patterns; and
- Areas that may provide habitat for threatened species.

2.2 FIELD ASSESSMENTS

Ecological surveys required to establish the presence or absence of threatened species and communities listed under State and Commonwealth legislation. Vegetation and flora assessments (using the methods detailed below), were undertaken during the survey undertaken between 24 – 28 April and 08 – 12 May 2023.

2.2.1 Nomenclature and taxonomy

Scientific names of flora cited in this report follow Bostock and Holland (2018). Common names for plants are used where helpful and are cited before the scientific name where they are used.

2.2.2 Vegetation Community Survey

Remnant vegetation in Queensland is mapped by Department of Environment and Science (DES) using the regional ecosystem framework. Regional ecosystems (REs) are defined by Sattler and Williams (1999) as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The conservation status (vegetation management class) under the VM Act of REs is derived through estimating the proportion remaining since clearing commenced upon European settlement. The Biodiversity Status is assigned using expert driven models that assess pervading factors impacting community condition. Data for the State regional ecosystem mapping is provided in shapefile format for use in GIS applications. This data is projected over recent colour aerial photography and other spatially explicit data such as geology, soils, contours and waterway mapping in order to build up a picture of the likely distribution of vegetation communities across the Project area prior to field investigations.

A review of the current (reference mapping) high resolution vegetation mapping was carried out during the field assessment. Prior to field assessment, regional ecosystem line work downloaded from the QSpatial Database was uploaded into ArcPad on a Motion F5 field laptop. Vegetation polygon delineation accuracy and vegetation community attribution was informally reviewed whilst traversing the Project area.

General descriptions of community structure, floristic composition, soil type and geology and ecological condition were made across the Project area to provide sufficient information to refine the Herbarium's 1:100,000 regional ecosystem mapping.

The field assessment was conducted in accordance with the Queensland Herbarium's *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland*, *Version 3.2* (Neldner *et al*., 2022). Where discrepancies were identified in the field between existing RE mapping and

[2] Threatened Ecological Communities listed under the EPBC Act, 1999 and Regional ecosystems with an Endangered or Of Concern Biodiversity Status.

field observations, areas were traversed by foot to confirm the extent of the change. The field survey used standard floristic survey methods to describe vegetation type, structure and composition, as outlined below. The locations of flora assessment survey sites are shown in **Appendix Figure G**. Focus survey areas were chosen based on an inspection of aerial imagery prior to the site visit. Further sites were selected during the survey based on changes in vegetation composition to ensure accurate characterisation of the vegetation communities present. Survey sites were marked by waypoints on a hand-held GPS and accompanied by photographic evidence and site proformas/observations. Quaternary sites were used to confirm vegetation community types, vegetation community boundaries, land zones, and occurrence of creek lines.

The remnant/non-remnant status of native vegetation was determined using the methods set out in Neldner et. al., (2022). The relative dominance of species in each strata were assigned as per the definitions in the August 2012 version of the Regional Ecosystem Map Assessment Kit (Queensland Herbarium, 2012) where:

- d (dominant species) – A species that contributes most to the overall above-ground biomass of a particular stratum
- c (co-dominant species) – Where two or more species contribute more or less equally to form the dominant above-ground biomass of a particular stratum
- s (subdominant species) – A species is considered to be subdominant when it contributes less biomass than the dominant species, but occurs as more than an isolated individual. As a general rule, the species must individually contribute more than 10% of the total biomass of the stratum in which it occurs.
- a (associated species) – Any species is present in a stratum but does not contribute more than 10% of the total biomass of the stratum in which it occurs.

Tertiary Code Sites

Tertiary Code Sites are used to aid in classification and detailed descriptions of REs and vegetation communities. Data collected included location, and environmental information such as land zone. Structural information such as height and covers are estimated for all structural layers. Generally, only the dominant or conspicuous species that characterise each layer are recorded. Site dimensions are restricted to a commonly occurring vegetation type and condition.

Quaternary Assessments

Quaternary site assessments were used to rapidly assess REs and vegetation communities, using linear transects. Data was collected at regular intervals along each transect and where REs and vegetation communities change in structure and composition. Twenty three (23) quaternary sites were carried out across the Project area.

Opportunistic Observations

In addition to the detailed survey plots, opportunistic flora data was collected while traversing roads and tracks and whilst travelling between the more detailed survey sites. This data was used to assist in confirmation of RE mapping and to check relationships between classificatory units (such as vegetation associations, REs, photo-patterns) and landscape features.

All flora species recorded were identified as far as practicable to species and subspecies and incidentally recorded whilst traversing the Project area and during targeted flora species surveys and vegetation community surveys. When a plant could not be identified accurately in the field, a voucher sample was collected, together with notes on habitat, form and height. Collected samples were later identified using a stereo-zoom microscope and botanical texts. Botanical nomenclature followed Bostock PD & Holland AE. (2018).

2.2.3 Protected Plant Flora Survey

The Project area does not contain any high-risk areas on the protected plants flora survey trigger map associated and as such, a protected plants survey according to DES's methodology is not required (DES, 2022). Protected Plant surveys were undertaken by targeted searches within habitat identified as suitable throughout the flora and vegetation community survey program.

An opportunistic flora survey was conducted across the Project area, during vegetation mapping surveys, and through targeted assessment of potential habitat for threatened species known from the locality. If found, the location, extent and estimated numbers of any protected plants were marked by hand-held GPS. Where applicable, notes were also taken on population density, plant health and reproductive status to provide necessary data for future translocation plans should they be required.

A review of the threatened species known to occur within the locality (as derived from database searches and expert knowledge) was undertaken considering known on-ground habitat. Four (4) categories were used to classify the likelihood of threatened flora and fauna species being present within the Project area based on the desktop research and on-site observations. Categories were defined as:

- Present (confirmed during field assessments);
- Likely (suitable habitat observed during field assessments, within known distribution and records of the species occurring within or around the Project area);
- Potential (possibility of suitable habitat, or limited records of the species within the local region); and
- Unlikely (no suitable habitat or not known to occur within the local region).

The presence or potential presence of a species, and species habitat was used to inform assessment of the potential risk of impacts from the Project on identified ecological values. The results of this expert modelling process are presented in **Appendix H**.

2.2.4 Weed Survey

A survey was conducted to identify the presence, cover, abundance, and reproductive status of all plants listed under the *Biosecurity Act 2014*, during vegetation community and protected plant surveys. The survey was undertaken by targeted random meander where the botanist walks in a random pattern to the survey area within areas identified as high risk for the presence of weeds. High risk areas include areas with exposed soils, areas of surface disturbance, and areas of high nutrient and/or water.

3.0 RESULTS

3.1 DESKTOP RESULTS

3.1.1 Conservation Significant Flora species

The results of database searches identified seven (7) flora species listed as conservation significant under the provisions of the EPBC Act and/or the NC Act as potentially occurring in the Project area or within a 15 km radius (**Appendices A** & **B**).

The results of database searches identified one (1) flora species listed as conservation significant under the provisions of the EPBC Act and/or the NC Act as potentially occurring in the Project area or within a 15 km radius. Black ironbox *Eucalyptus raveretiana* (Vulnerable EPBC) is known to occur on the banks of the Bowen River and its larger tributaries. A further Special least concern plants were found to occur within 15 km of the Project area.

Two grass species King Blue-grass *Dichanthium queenslandicum* (Vulnerable NCA; Endangered EPBC) and *Dichanthium setosum* (Vulnerable EPBC) not listed within the WIldNet database search are determined to have the potential to occur within the project area.

A review of the possible occurrence of all threatened flora species predicted to occur within the locality is given in **Appendix H** in light of the extant habitats within the Project area and discussed in light of field survey for the presence of potential habitat in **Section 3.2.1**. Expert knowledge of the habitat preferences for these species was used to identify areas of likely habitat. The likely habitat preferences for these species together with an assessment of the likelihood of their occurrence is provided in **Table 3.4**, below.

3.1.2 Geology

The Department of Natural Resources and Mines (DNRM) Detailed surface geology – Queensland (2015) spatial database mapping layer (**Figure 3.1**) identifies the study area as being dominated throughout its southern half by fine-grained sandstones that give rise to a gently undulating clay plains (Land Zone 9). The northern half of the Project area is dominated by quaternary alluvial clays associated with the Coral Creek (Land Zone 3) (Wilson and Taylor, 2012) (**Table 3.1**).

Table 3.1: Project Area Major Geological Units

Map Symbol	Age	Lithology Description	Land Zone
Qa (Qa-QLD)	Quaternary	Clay, silt, sand and gravel; flood-plain alluvium	3
Pwb Moranbah Coal Measures	Late Permian	Labile sandstone, siltstone, mudstone, coal, conglomerate in the east	9
Pbx Exmoor Formation	Late Permian	Quartzose to sublabile sandstone, siltstone, mudstone, rare limestone	9
Lizzie Creek Volcanic Group	Early Permian	Basalt and andesite, and interbedded volcaniclastic rocks; generally subordinate dacite, rhyolite, trachyte; conglomerate, labile sandstone, siltstone, calcareous siltstone, shale, carbonaceous shale, locally containing fossil plant fragments; minor coal	8
TQa-QLD	Late tertiary - quaternary	Locally red-brown mottled, poorly consolidated sand, silt, clay, minor gravel; high-level alluvial deposits (generally related to present stream valleys but commonly dissected)	3

(Source: Detailed Surface Geology – Queensland, 2018)

3.1.3 Vegetation Community Distribution

The distribution of Remnant (VM Act) regional ecosystems as mapped by the Queensland Herbarium (V12) at a scale of 1:100,000 is shown in **Figure 3.2**. Descriptions from the Regional Ecosystem Description Database (REDD) for these regional ecosystems are presented in **Table 3.2**.

Most of the remnant regional ecosystem areas mapped as occurring on the site can be described as Narrow-leaved ironbark *Eucalyptus crebra* grassy woodland on fine-grained sedimentary rocks (RE 11.9.9) with minor occurrences of Silver-leaved *Eucalyptus melanophloia* and/or Mountain coolabah E. orgadophila woodland to open woodland (11.9.2). Discrete patches of eucalypt woodland with a brigalow (*Acacia harpophylla*) sun-canopy (RE 11.9.10) are mapped as occurring within the southern portion of the Project area.

Table 3.2: Herbarium Mapped Remnant Regional Ecosystems

RE	VM	Biodiversity Status	Description	Area
11.9.2	LC	NCP	*Eucalyptus melanophloia* and/or *E. orgadophila* woodland to open woodland. Other tree species occasionally present as subdominants include *Corymbia erythrophloia*, *Eucalyptus populnea* or *Corymbia dallachiana*. Occurs on rises on undulating plains with cracking clay or texture contrast soils. (BVG1M: 17b)	3.2
11.9.9	LC	NCP	*Eucalyptus crebra* grassy woodland. *Eucalyptus moluccana* sometimes conspicuous on lower slopes. Occurs on Cainozoic to Proterozoic consolidated, fine-grained sediments. (BVG1M: 13c)	12.9
11.9.10	OC	E	*Eucalyptus populnea* open forest forming a distinct but discontinuous canopy. *Acacia harpophylla* and sometimes Casuarina cristata usually form a secondary tree layer which occasionally becomes the dominant layer. A layer of shrubs is usually present and dominated by *Eremophila mitchellii* and *Geijera parviflora* with *Acacia excelsa*, *Atalaya hemiglauca*, *Psydrax oleifolia*, *Alectryon oleifolius* frequent. Scattered low shrubs such as Carissa ovata and *Eremophila deserti* are frequently present. The ground cover is usually sparse, and dominated by the grasses *Aristida ramosa*, *Enteropogon acicularis*, *Bothriochloa decipiens* and *Paspalidium* spp. Occurs on Cainozoic to Proterozoic consolidated, fine-grained sediments. Occurs on lower parts of undulating plains often with deep texture-contrast soils. Occurs on sodic and saline soils which may act as a discharge area if adjacent to alluvium. (BVG1M: 25a)	11.9
non-rem	N/A	N/A		44.9

LC = Least Concern, NCP = No concern at present, OC = Of Concern, E = Endangered

3.1.4 Threatened Ecological Communities

The EPBC Act Protected Matters Search Tool (PMST) (**Appendix A**) detected four (4) Threatened Ecological Communities (TECs) as potentially present within a 20 km radius of the Project area:

- Brigalow (*Acacia harpophylla* dominant and codominant) (Endangered);
- Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin (Endangered);
- Poplar Box Grassy Woodland on Alluvial Plains (Endangered); and
- Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions.

3.1.5 Wetlands and Watercourses

There are no wetlands High Ecological Value (HEV), High Ecological Significance (HES) wetlands or declared high ecological values water (watercourse) within the Project area (**Appendix D**; **Appendix E**). Vegetation Management watercourse stream orders for the mapped watercourses are shown on **Figure 3.1**.

3.1.6 Wetlands of International Importance

The results of the EPBC Act Online PMST shows that the Project area does not occur within the vicinity of any Wetlands of International Importance.

3.2 FIELD RESULTS

3.2.1 Conservation Significant Flora

Opportunistic Protected plants flora surveys were conducted during vegetation mapping and targeted searches in identified potential habitat. Field survey paths are shown on **Appendix Figure G**. These searches did not reveal the presence of any flora species listed as threatened or near threatened by the Commonwealth or State.

Three (3) Conservation significant flora species may occur within the Project area based on habitat suitability modelling (**Table 3.4**). Field investigations determined that none of these species are likely to occur within the Project area. The two threatened grasses (*Dichanthium queenslandicum* and *Dichanthium setosum*) are unlikely to occur due to high grazing pressure and the consequent very high levels of exotic grass invasion.

There is very low potential for the Special Least Concern plant *Lobelia concolor* could occur within moist drainage depressions. The land has been subject to historical clearing, cattle trampling within creek lines has caused major disturbance and most areas are heavily invaded by exotic grasses.

3.2.2 Exotic Flora (Weeds)

Weeds listed under the *Biosecurity Act 2014* and Weeds of National Significance (WoNS) are generally referred to within this document as 'Listed' weeds. Weed species listed under federal and State legislation that were found to occur within the Project area are presented in **Table 3.3**. Landholders are required to control weeds listed under the *Biosecurity Act 2014*. Six (6) listed exotic flora species were located within the Project area (**Table 3.3**), all of which are listed as WoNs. There were some notable infestations of rubber vine (*Cryptostegia grandiflora*) along Coral Creek and Chinee apple (*Ziziphus mauritiana*) is at nuisance levels across large parts of the Project area. There is evidence of the Harrisia mealybug (*Hypogeococcus festerianus*) effectively controlling the Harrisia cactus, which was abundant across the Project area.

Environmental weeds are those exotic species considered to cause significant ecological damage if uncontrolled. This damage can include outcompeting native species by niche occupation and/or smothering. Some species are also regarded as 'ecosystem altering' that is, they can alter the direction of ecosystem regeneration resulting in an undesirable alternative stable community. No environmental weeds were seen to be causing significant harm within the Project area.

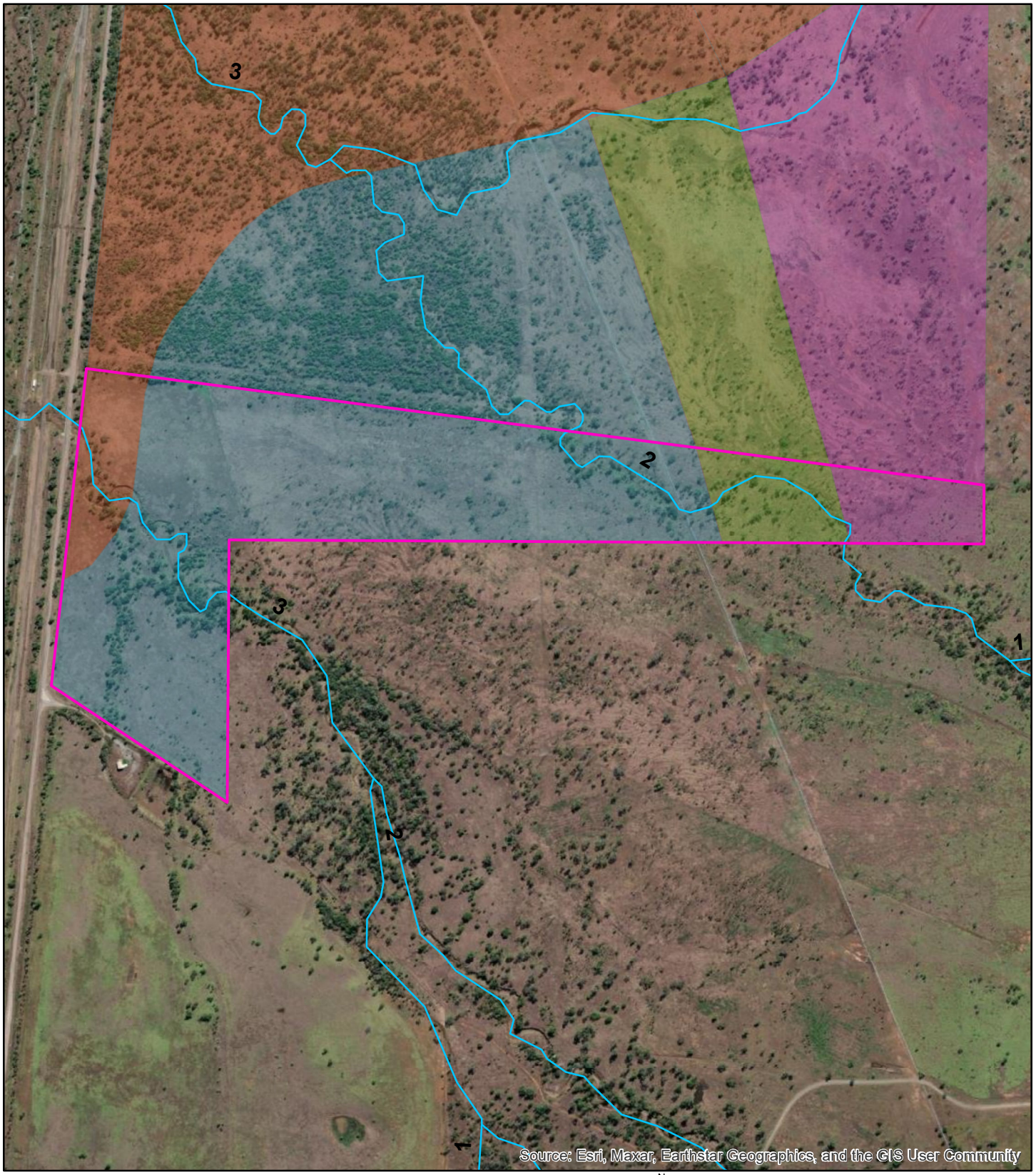
Table 3.3: Listed Weeds Observed within the Project Area

Species	Common Name	Biosecurity Act (2014) Status	WoNS
Lantana camara	Lantana	Category 3	WoNs
Opuntia stricta	Prickly pear	Category 3	WoNs
Opuntia tomentosa	Velvety tree pear	Category 3	WoNs
Cryptostegia grandiflora	Rubber vine	Category 3	WoNs
Parthenium hysterophorus	Parthenium	Category 3	WoNS
Harrisia martinii	Harrisia cactus	Category 3	No
Ziziphus mauritiana	Chinee apple	Category 3	No

Table 3.4: Protected Flora Species that Could Possibly Occur within the Project Area

Scientific Name	NC Act	EPBC Act	Data base	Habitat Preference	Assessment of occurrence
King Blue-grass *Dichanthium queenslandicum*	V	E	W/P	Found in black clay soils	Potentially occurs There are extensive areas of black clay soils that provide the substrate for this species. It is noted that the site has been heavily grazed limiting habitat suitability for this species.
Dichanthium setosum	LC	V	P	Associated with heavy basaltic black soils and stony red-brown hard-setting loam with clay subsoil	Potentially occurs There are extensive areas of black clay soils that provide the substrate for this species. It is noted that the site has been heavily grazed limiting habitat suitability for this species.
Lobelia concolor	SL			Usually grows on heavy soils in moist depressions	Potentially occurs There is habitat for this species associated with the alluvial clays along the banks of the major tributaries of the Bowen River.

NC Act=*Nature Conservation Act 1992*. E=Endangered; V=Vulnerable; NT=Near Threatened; LC=Least Concern. SL = Special Least Concern
EPBC Act=*Environment Protection and Biodiversity Conservation Act 1999*. CE=Critically Endangered; E=Endangered; V=Vulnerable; (-) =Not listed.
W = WildNet, P = Protected Matters database search. NL = not listed



LEGEND

- MLA 700075
- MSES Watercourses
- Exmoor Formation
- Lizzie Creek Volcanic Group
- Moranbah Coal Measures
- Qa-QLD
- TQa-QLD

FIGURE 3.1

State Surface Geology Mapping

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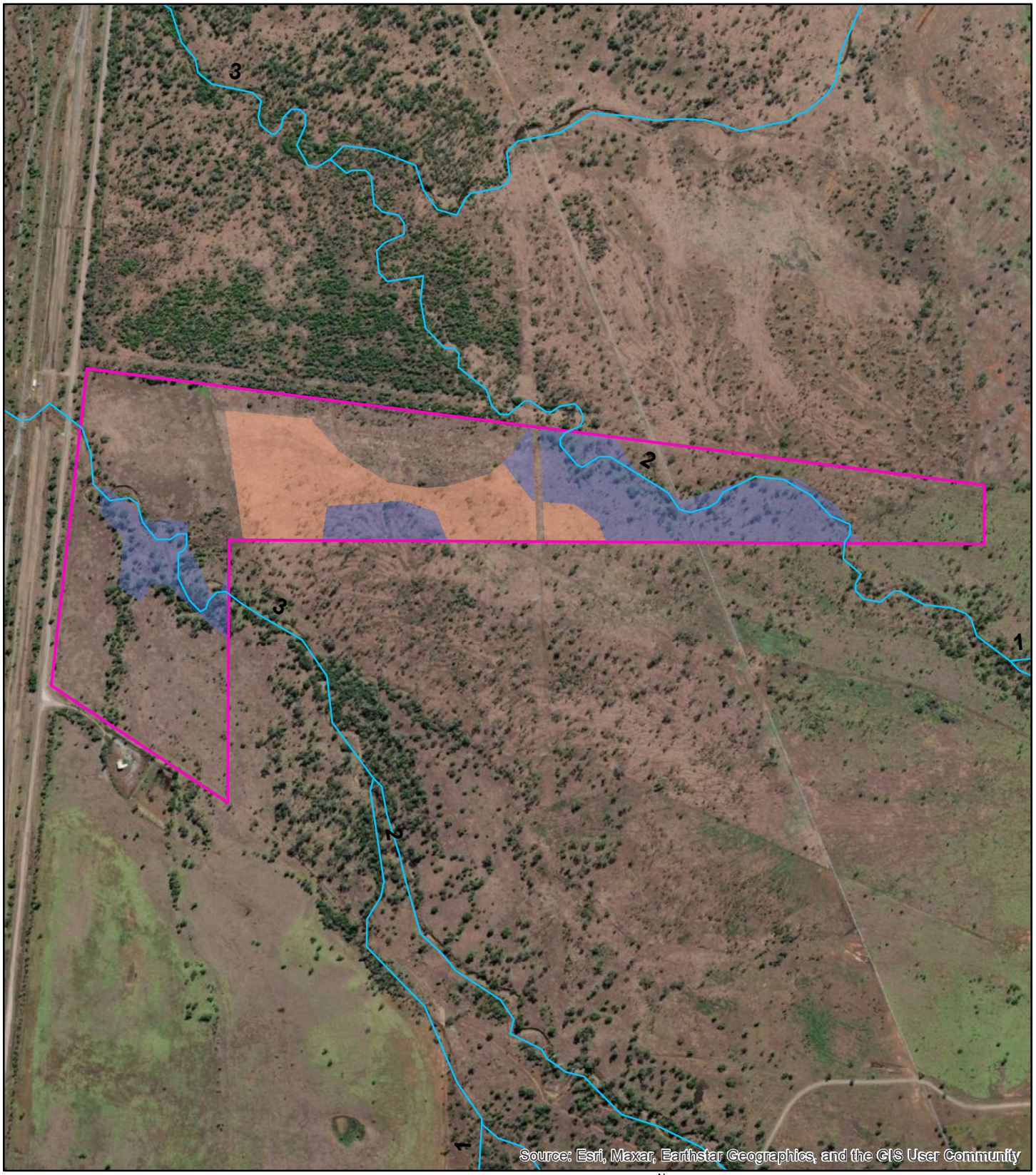

LEGEND

- MLA 700075
- MSES Watercourses
- 11.9.10
- 11.9.9/11.9.2
- non-rem

FIGURE 3.2

State Regional Ecosystem Mapping

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3.2.3 Project Area Vegetation Communities

Vegetation community physiognomy is described in **Table 3.5**. Vegetation Community site assessment sheets that provide the basis for these descriptions are provided along with site photos in **Appendix I**.

The remnant vegetation communities of the Project area are generally in fair condition, with fully developed canopy and subcanopies and well-developed shrub layers in limited parts. Species diversity is good with most expected species characteristic of the various structural layers being present.

Weed invasion is generally low, and the impacts of cattle grazing are not too severe. Ground layers were in relatively poor condition during the survey, with heavy exotic grass invasion across most areas.

3.2.4 Field-Verified Regional Ecosystem Mapping

Field investigations into extant flora community type and distribution combined with land surface observations has produced a site-scale regional ecosystem map (**Figure 3.3**). Changes brought about by the refinement in mapping scale between the Qld Herbarium 1:100,000 regional ecosystem map are given in **Table 3.6**. The reasons for the map modifications are discussed below.

In general, the field-based project scale regional ecosystem mapping confirmed the State's mapping with refinements in linework due to the finer scale and splitting of heterogenous polygons into homogenous vegetation communities. A large area of remnant endangered eucalypt woodland with a brigalow understorey (RE 11.9.10) mapped by the State as covering a section in the south of the Project area has been cleared and an exotic grass dominated grazing paddock. The riparian woodland that fringes the main channel of an anabranch of Coral Creek supports a highly disturbed canopy dominated by *Eucalyptus camaldulensis* (RE 11.3.25), previously mapped as RE 11.9.10.

The changes to State mapped regional ecosystem polygons are detailed in **Appendix K** All State mapped regional ecosystem polygons were assigned a unique numeric identifier code before being split in ArcGIS using the field mapped regional ecosystem shapefile to sub-divide the large, often heterogeneous, 1:100k polygons. Each sub-polygon was assigned a unique alphanumeric code that identifies them as a subset of the original State polygon. The list of original State polygon regional ecosystem and the resultant field assigned regional ecosystem was exported to a database and presented as a table in **Appendix K** – along with an explanation for the changes made.

3.2.5 Federally Threatened Ecological Communities

There are no areas of the following TECs within the Project area:

- Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions (Endangered);
- Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin (Endangered); and
- Weeping Myall Woodlands (Endangered).
- *Brigalow (Acacia harpophylla dominant and codominant)*

Table 3.5: Project Area Remnant Vegetation Community Descriptions

Regional Ecosystem	Dominant Species	Photograph
RE 11.3.25 Biodiversity Status (EP Act): Of Concern RE Code Site	**Canopy (T1)(EDL):** 12 - 20m, S. *Eucalyptus camaldulensis* (c), *Corymbia dallachiana* (a). **Sub-canopy (T2):** 8 - 12m S – VS. *Lysiphyllium hookeri* (c), Lophstemon grandifloras (c), Ficus coronate (c), **Upper shrub layer (S1):** 2 - 4m VS - S, *Lysiphyllium hookeri* (d), *Santalum lanceolatum* (a).. **Lower shrub layer (S2)**: 0.5 – 1.8m S – VS. *Grewia retusifolia* (d) *carissa lanceolata* (c). **Ground Stratum (G)**: 0 – 1.0 MD *Cenchrus ciliaris* (d).	
RE 11.9.2 Biodiversity Status (EP Act): NCP	**Canopy (T1)(EDL):** 12 - 18m, S. (d), *Eucalyptus orgadophila* (d). **Sub-canopy (T2):** 8 - 12m S – VS. *Acacia excelsa (d).* **Upper shrub layer (S1):** generally absent **Lower shrub layer (S2)**: generally absent **Ground Stratum (G)**: *Bothriochloa pertusa (d)*	
RE 11.9.9 Biodiversity Status (EP Act): NCP RE Code Sites: 1166	**Canopy (T1)(EDL):** 12 - 16m, S. *Eucalyptus crebra* (d), *Corymbia dallachiana* (a), *Corymbia clarksoniana* (a), *Corymbia erythrophloia* (a). **Sub-canopy (T2):** 8 - 14m S – VS. *Eucalyptus crebra* (d), *Corymbia dallachiana* (a), *Corymbia clarksoniana* (a), *Corymbia erythrophloia* (a), *Bursaria incana* (a), *Owenia acidula* (a), *Petalostigma pubescens* (a) **Upper shrub layer (S1):** generally absent **Lower shrub layer (S2)**: generally absent **Ground Stratum (G)**: *Cenchrus ciliaris* (d), *Bothriochloapertusa (a)*	

D = Dense, MD = Mid-Dense, S = Sparse, VS = Very Sparse, (a) = associated, (d) = dominant, S = sub-dominant, (c) = Co=dominant

3.2.6 Wetlands and Watercourses

There are no State mapped wetlands within the Survey area (**Figure 3.1**) and none were found to occur during the survey.

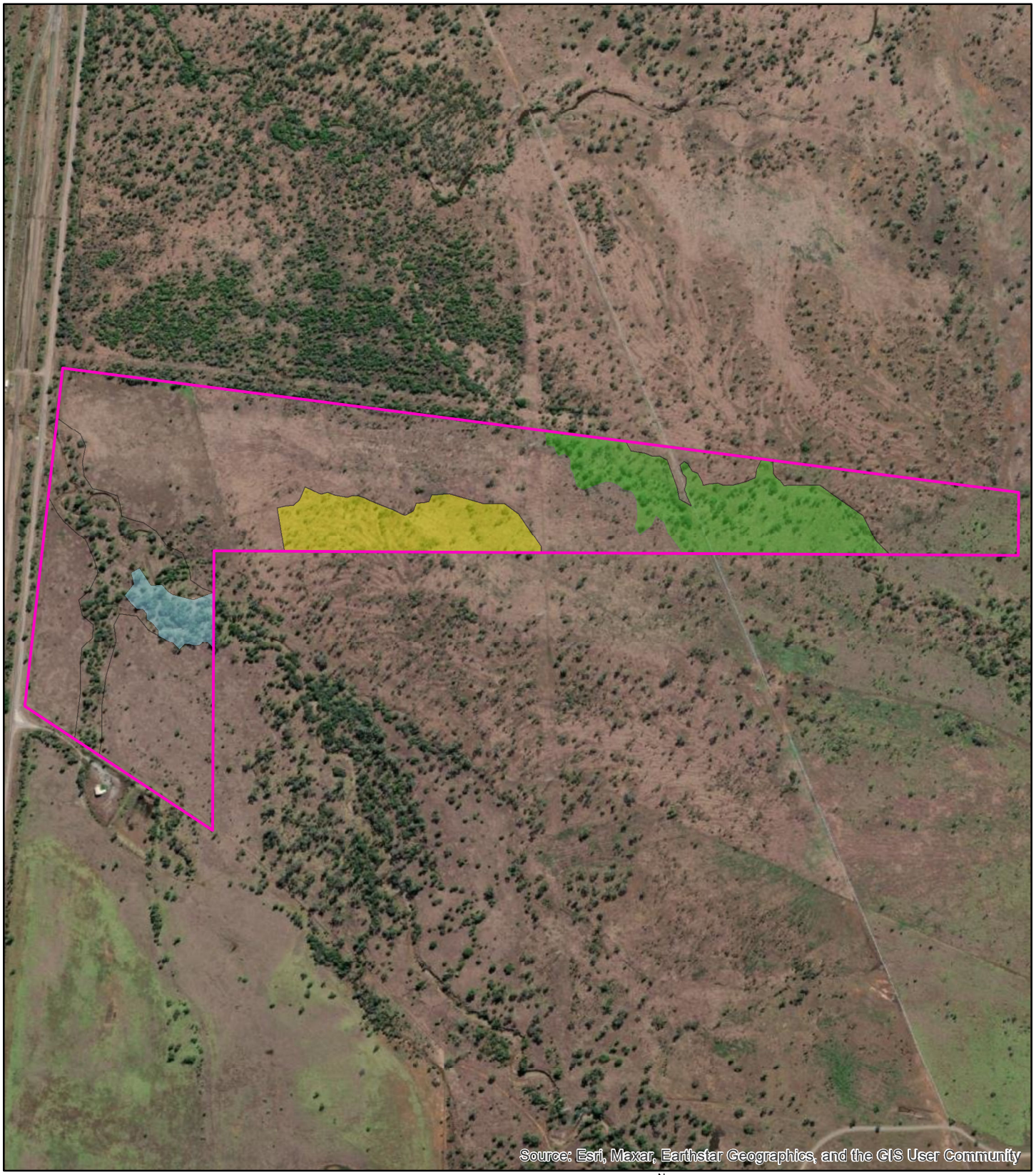
Jacks Creek runs north-south just east of the eastern boundary and some alluvial areas associated with the creek support forested systems within the survey area (**Figure 3.1**).

The Bowen River runs east west to the south of the southern boundary of the Survey area and some alluvial areas associated with the creek support forested systems within the survey area (**Figure 3.1**).

Table 3.6: Field Verified Regional Ecosystems

RE	VMA Class	Biodiversity Status	Description	Herbarium Mapped Area	Field Mapped Area
11.3.25	E	E	*Eucalyptus tereticornis* or *E. camaldulensis* woodland to open forest. Other tree species, including *Casuarina cunninghamiana, E. coolabah, Melaleuca bracteata, Melaleuca viminalis, Livistona* spp. (in north), *Melaleuca* spp. and *Angophora floribunda*, may occur. A tall shrub layer may occur, including *Acacia salicina*, *A. stenophylla* and *Lysiphyllum carronii*. Low shrubs are present, but rarely form a conspicuous layer. The ground layer is open to sparse and dominated by perennial grasses, sedges or forbs. Occurs on fringing levees and banks of major rivers and drainage lines of alluvial plains throughout the region. Soils are very deep, alluvial, grey and brown cracking clays with or without some texture contrast. These are usually moderately deep to deep, soft or firm, acid, neutral or alkaline brown sands, loams or black cracking or non-cracking clays, and may be sodic at depth (Burgess 2003). Riverine. (BVG1M: 16a).	0.0	1.7
11.9.2	LC	NCP	*Eucalyptus melanophloia* and/or *E. orgadophila* woodland to open woodland. Other tree species occasionally present as subdominants include *Corymbia erythrophloia, Eucalyptus populnea* or *Corymbia dallachiana*. Occurs on rises on undulating plains with cracking clay or texture contrast soils. (BVG1M: 17b)	3.2	5.9
11.9.9	LC	NCP	*Eucalyptus crebra* grassy woodland. *Eucalyptus moluccana* sometimes conspicuous on lower slopes. Occurs on Cainozoic to Proterozoic consolidated, fine-grained sediments. (BVG1M: 13c)	12.9	9.2
non-rem	N/A	N/A		44.9	57.1

LC = Least Concern, NCP = No concern at present, OC = Of Concern, E = Endangered



0 0.05 0.1 0.2 0.3 0.4 Kilometers

N

LEGEND

MLA 700075

Field_RE

- 11.3.25
- 11.9.2
- 11.9.9
- non-rem

FIGURE 3.3

Field Verified Regional Ecosystem Mapping

Sonoma MLA 700075
Vegetation Community
Mapping Technical Report

AD 28/07/23
Job No. 0300

terrestria
ECOLOGICAL MANAGEMENT

4.0 DISCUSSION

Field investigations into extant flora community type and distribution combined with land surface observations has produced a site-scale regional ecosystem map (**Figure 3.3**). Changes brought about by the refinement in mapping scale between the Qld Herbarium 1:100,000 regional ecosystem map are given in **Table 3.6**. The reasons for the map modifications are discussed below.

In general, the field-based project scale regional ecosystem mapping confirmed the State's mapping with refinements in linework due to the finer scale and splitting of heterogenous polygons into homogenous vegetation communities. A large area of remnant endangered eucalypt woodland with a brigalow understorey (RE 11.9.10) mapped by the State as covering a section in the south of the Project area has been cleared and an exotic grass dominated grazing paddock. The riparian woodland that fringes the main channel of an anabranch of Two Mile Creek supports a highly disturbed canopy dominated by *Eucalyptus camaldulensis* (RE 11.3.25), previously mapped as RE 11.9.10.

The changes to State mapped regional ecosystem polygons are detailed in **Appendix K** All State mapped regional ecosystem polygons were assigned a unique numeric identifier code before being split in ArcGIS using the field mapped regional ecosystem shapefile to sub-divide the large, often heterogeneous, 1:100k polygons. Each sub-polygon was assigned a unique alphanumeric code that identifies them as a subset of the original State polygon. The list of original State polygon regional ecosystem and the resultant field assigned regional ecosystem was exported to a database and presented as a table in **Appendix K** – along with an explanation for the changes made.

5.0 REFERENCES

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DEHP, 2019. Flora Survey Guidelines - Protected Plants Nature Conservation Act 1992, Prepared by: Business Reform, Nature Conservation Services, Department of Environment and Heritage Protection, State of Queensland.

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DES 2019. Published threatened species survey guidelines https://www.qld.gov.au/environment/plants-animals/biodiversity/vertebrate-survey#download

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Appendix A
Protected Matter Search

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: 22-Jan-2023

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:	3
Listed Threatened Species:	22
Listed Migratory Species:	16

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	21
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	20
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
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
Brigalow (Acacia harpophylla dominant and co-dominant)	Endangered	Community known to occur within area	In buffer area only
Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin	Endangered	Community likely to occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area	In feature 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			
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Erythrotriorchis radiatus			
Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos			
Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Geophaps scripta scripta			
Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may 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 may occur within area	In buffer area only
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat 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
Tyto novaehollandiae kimberli Masked Owl (northern) [26048]	Vulnerable	Species or species habitat may occur within area	In feature area
MAMMAL			
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
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petauroides minor Greater Glider (northern), Greater Glider (north-eastern Queensland) [92008]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
PLANT			
Dichanthium queenslandicum King Blue-grass [5481]	Endangered	Species or species habitat may occur within area	In buffer area only
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Eucalyptus raveretiana Black Ironbox [16344]	Vulnerable	Species or species habitat known to occur within area	In feature area
Omphalea celata [64586]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Solanum graniticum Granite Nightshade [84819]	Endangered	Species or species habitat may occur within area	In buffer area only
REPTILE			
Denisonia maculata Ornamental Snake [1193]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area	In feature area

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Marine Species			
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		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 may occur within area	In buffer area only
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat known to occur within area	In buffer area only
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may 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 buffer area only
[Symposiachrus trivirgatus as Monarcha trivirgatus](#) Spectacled Monarch [83946]		Species or species habitat may occur within area	In buffer area only
Migratory Wetlands Species			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		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 may occur within area	In feature area
Pandion haliaetus			
Osprey [952]		Species or species habitat likely to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may 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
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 may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
[Chalcites osculans as Chrysococcyx osculans](#) Black-eared Cuckoo [83425]		Species or species habitat may occur within area overfly marine area	In feature area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area overfly marine area	In feature area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area overfly marine area	In buffer area only
[Merops ornatus](#) Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In buffer area only
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may 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 may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Pandion haliaetus](#)			
Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
[Rhipidura rufifrons](#)			
Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area	In buffer area only
[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
[Symposiachrus trivirgatus as Monarcha trivirgatus](#)			
Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area	In buffer area only
Reptile			
[Crocodylus porosus](#)			
Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Flagstone	Nature Refuge	QLD	In buffer area only

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
[Alpha Coal Project - Mine and Rail Development](#)	2008/4648	Controlled Action	Post-Approval	In feature area
[BHP Billiton Goonyella to Abbot Point rail project](#)	2011/6082	Controlled Action	Completed	In buffer area only
[Central Queensland Integrated Rail Project](#)	2012/6321	Controlled Action	Completed	In feature area
[CopperString Project](#)	2010/5581	Controlled Action	Completed	In buffer area only
[Diversion of a stretch of Coral Creek to expand the northern reach of the open-cut pit mine](#)	2011/5800	Controlled Action	Post-Approval	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Drake Open Cut Coal Mine	2010/5457	Controlled Action	Post-Approval	In buffer area only
Establishment of Galilee Coal Mine and Associated Infrastructure	2009/4737	Controlled Action	Post-Approval	In feature area
North Galilee Basin Rail Project, Qld	2013/6885	Controlled Action	Post-Approval	In buffer area only
Sarum Coal Project	2011/5906	Controlled Action	Completed	In feature area
Sarum Open Cut & Underground Coal Mining Operation & Associated Infrastructure	2010/5308	Controlled Action	Completed	In buffer area only
Not controlled action				
Construction of Burdekin Pipeline	2005/2209	Not Controlled Action	Completed	In buffer area only
Cows Coal Project, Open-Cut Coal Mine	2009/5216	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Jax Coal Project, Open-Cut Mine Development	2009/5215	Not Controlled Action	Completed	In buffer area only
Nebo to Strathmore 275kV Transmission Line	2006/2997	Not Controlled Action	Completed	In feature area
Sarum Deposit Seismic Exploration Program	2007/3673	Not Controlled Action	Completed	In buffer area only
Sonoma Coal Project, comprising Sonoma-1, Sonoma-2, and Belmore-1	2005/2080	Not Controlled Action	Completed	In feature area
Stage 2 Solar Farm Development, north-west of Collinsville, Queensland	2017/7904	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
275kV Transmission Line from Ross substation to Strathmore Substation (approx 180km)	2008/4390	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Solar Farm development, north-west of Collinsville, Qld	2016/7824	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only

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.

Appendix B
WildNet Database Search

Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Queensland status: All
Records: All
Date: All
Latitude: -20.622
Longitude: 147.874
Distance: 15
Email: adaniel@terrestria.com.au
Date submitted: Sunday 22 Jan 2023 09:28:03
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The number of records retrieved = 438

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	*Rhinella marina*	cane toad	Y			3
animals	amphibians	Hylidae	*Litoria bicolor*	northern sedgefrog		C		1
animals	amphibians	Hylidae	*Litoria caerulea*	common green treefrog		C		2
animals	amphibians	Hylidae	*Litoria nasuta*	striped rocketfrog		C		1/1
animals	amphibians	Limnodynastidae	*Limnodynastes tasmaniensis*	spotted grassfrog		C		2
animals	birds	Acanthizidae	*Gerygone olivacea*	white-throated gerygone		C		6
animals	birds	Acanthizidae	*Gerygone palpebrosa*	fairy gerygone		C		1
animals	birds	Acanthizidae	*Smicrornis brevirostris*	weebill		C		3
animals	birds	Accipitridae	*Accipiter fasciatus*	brown goshawk		C		1
animals	birds	Accipitridae	*Aquila audax*	wedge-tailed eagle		C		3
animals	birds	Accipitridae	*Aviceda subcristata*	Pacific baza		C		1
animals	birds	Accipitridae	*Elanus axillaris*	black-shouldered kite		C		1
animals	birds	Accipitridae	*Haliaeetus leucogaster*	white-bellied sea-eagle		C		2
animals	birds	Accipitridae	*Haliastur sphenurus*	whistling kite		C		12
animals	birds	Accipitridae	*Milvus migrans*	black kite		C		7
animals	birds	Aegothelidae	*Aegotheles cristatus*	Australian owlet-nightjar		C		2
animals	birds	Alaudidae	*Mirafra javanica*	Horsfield's bushlark		C		1
animals	birds	Alcedinidae	*Dacelo leachii*	blue-winged kookaburra		C		6
animals	birds	Alcedinidae	*Dacelo novaeguineae*	laughing kookaburra		C		11
animals	birds	Anatidae	*Anas superciliosa*	Pacific black duck		C		1
animals	birds	Anatidae	*Chenonetta jubata*	Australian wood duck		C		1
animals	birds	Anatidae	*Cygnus atratus*	black swan		C		1
animals	birds	Anatidae	*Nettapus coromandelianus*	cotton pygmy-goose		C		1
animals	birds	Ardeidae	*Ardea pacifica*	white-necked heron		C		2
animals	birds	Ardeidae	*Egretta novaehollandiae*	white-faced heron		C		2
animals	birds	Artamidae	*Artamus cinereus*	black-faced woodswallow		C		1
animals	birds	Artamidae	*Artamus leucorynchus*	white-breasted woodswallow		C		1
animals	birds	Artamidae	*Artamus superciliosus*	white-browed woodswallow		C		1
animals	birds	Artamidae	*Cracticus nigrogularis*	pied butcherbird		C		26
animals	birds	Artamidae	*Gymnorhina tibicen*	Australian magpie		C		30
animals	birds	Artamidae	*Strepera graculina*	pied currawong		C		6
animals	birds	Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo		C		17
animals	birds	Cacatuidae	*Calyptorhynchus banksii*	red-tailed black-cockatoo		C		2
animals	birds	Cacatuidae	*Eolophus roseicapilla*	galah		C		5
animals	birds	Cacatuidae	*Nymphicus hollandicus*	cockatiel		C		3
animals	birds	Campephagidae	*Coracina maxima*	ground cuckoo-shrike		C		2
animals	birds	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike		C		16
animals	birds	Campephagidae	*Coracina papuensis*	white-bellied cuckoo-shrike		C		5
animals	birds	Caprimulgidae	*Caprimulgus macrurus*	large-tailed nightjar		C		1
animals	birds	Columbidae	*Geopelia cuneata*	diamond dove		C		1
animals	birds	Columbidae	*Geopelia placida*	peaceful dove		C		7
animals	birds	Columbidae	*Geophaps scripta scripta*	squatter pigeon (southern subspecies)		V	V	4
animals	birds	Columbidae	*Ocyphaps lophotes*	crested pigeon		C		13
animals	birds	Columbidae	*Phaps chalcoptera*	common bronzewing		C		1
animals	birds	Coraciidae	*Eurystomus orientalis*	dollarbird		C		6
animals	birds	Corcoracidae	*Struthidea cinerea*	apostlebird		C		6

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Corvidae	*Corvus orru*	Torresian crow		C		44
animals	birds	Corvidae	*Corvus sp.*			C		1
animals	birds	Cuculidae	*Cacomantis pallidus*	pallid cuckoo		C		1
animals	birds	Cuculidae	*Cacomantis variolosus*	brush cuckoo		C		3
animals	birds	Cuculidae	*Centropus phasianinus*	pheasant coucal		C		5
animals	birds	Cuculidae	*Chalcites basalis*	Horsfield's bronze-cuckoo		C		1
animals	birds	Cuculidae	*Cuculus optatus*	oriental cuckoo		SL		1
animals	birds	Cuculidae	*Eudynamys orientalis*	eastern koel		C		3
animals	birds	Cuculidae	*Scythrops novaehollandiae*	channel-billed cuckoo		C		6
animals	birds	Dicaeidae	*Dicaeum hirundinaceum*	mistletoebird		C		6
animals	birds	Dicruridae	*Dicrurus bracteatus*	spangled drongo		C		3
animals	birds	Estrildidae	*Lonchura castaneothorax*	chestnut-breasted mannikin		C		1
animals	birds	Estrildidae	*Neochmia modesta*	plum-headed finch		C		1
animals	birds	Estrildidae	*Taeniopygia bichenovii*	double-barred finch		C		3
animals	birds	Falconidae	*Falco berigora*	brown falcon		C		2
animals	birds	Falconidae	*Falco cenchroides*	nankeen kestrel		C		3
animals	birds	Gruidae	*Antigone rubicunda*	brolga		C		1
animals	birds	Hirundinidae	*Petrochelidon ariel*	fairy martin		C		3
animals	birds	Locustellidae	*Cincloramphus mathewsi*	rufous songlark		C		1
animals	birds	Locustellidae	*Poodytes gramineus*	little grassbird		C		2
animals	birds	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren		C		13
animals	birds	Meliphagidae	*Conopophila rufogularis*	rufous-throated honeyeater		C		1
animals	birds	Meliphagidae	*Entomyzon cyanotis*	blue-faced honeyeater		C		12
animals	birds	Meliphagidae	*Lichmera indistincta*	brown honeyeater		C		12
animals	birds	Meliphagidae	*Manorina flavigula*	yellow-throated miner		C		27
animals	birds	Meliphagidae	*Manorina melanocephala*	noisy miner		C		3
animals	birds	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater		C		9
animals	birds	Meliphagidae	*Melithreptus gularis*	black-chinned honeyeater		C		1
animals	birds	Meliphagidae	*Myzomela sanguinolenta*	scarlet honeyeater		C		2
animals	birds	Meliphagidae	*Philemon buceroides*	helmeted friarbird		C		11
animals	birds	Meliphagidae	*Philemon citreogularis*	little friarbird		C		8
animals	birds	Meliphagidae	*Philemon corniculatus*	noisy friarbird		C		5
animals	birds	Meliphagidae	*Stomiopera flava*	yellow honeyeater		C		4
animals	birds	Meropidae	*Merops ornatus*	rainbow bee-eater		C		5
animals	birds	Monarchidae	*Grallina cyanoleuca*	magpie-lark		C		24
animals	birds	Monarchidae	*Myiagra rubecula*	leaden flycatcher		C		2
animals	birds	Motacillidae	*Anthus novaeseelandiae*	Australasian pipit		C		2
animals	birds	Oriolidae	*Sphecotheres vieilloti*	Australasian figbird		C		4
animals	birds	Otididae	*Ardeotis australis*	Australian bustard		C		1
animals	birds	Pachycephalidae	*Colluricincla harmonica*	grey shrike-thrush		C		1
animals	birds	Pachycephalidae	*Colluricincla megarhyncha*	little shrike-thrush		C		1
animals	birds	Pachycephalidae	*Pachycephala rufiventris*	rufous whistler		C		4
animals	birds	Pardalotidae	*Pardalotus punctatus*	spotted pardalote		C		1
animals	birds	Pardalotidae	*Pardalotus rubricatus*	red-browed pardalote		C		1
animals	birds	Pardalotidae	*Pardalotus striatus*	striated pardalote		C		44
animals	birds	Pelecanidae	*Pelecanus conspicillatus*	Australian pelican		C		1

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animals	birds	Petroicidae	*Microeca fascinans*	jacky winter		C		1
animals	birds	Phalacrocoracidae	*Microcarbo melanoleucos*	little pied cormorant		C		1
animals	birds	Phalacrocoracidae	*Phalacrocorax carbo*	great cormorant		C		1
animals	birds	Phasianidae	*Synoicus ypsilophorus*	brown quail		C		2
animals	birds	Podargidae	*Podargus strigoides*	tawny frogmouth		C		1
animals	birds	Pomatostomidae	*Pomatostomus temporalis*	grey-crowned babbler		C		5
animals	birds	Psittaculidae	*Aprosmictus erythropterus*	red-winged parrot		C		10
animals	birds	Psittaculidae	*Platycercus adscitus*	pale-headed rosella		C		25
animals	birds	Psittaculidae	*Trichoglossus chlorolepidotus*	scaly-breasted lorikeet		C		1
animals	birds	Psittaculidae	*Trichoglossus moluccanus*	rainbow lorikeet		C		28
animals	birds	Ptilonorhynchidae	*Chlamydera maculata*	spotted bowerbird		C		1
animals	birds	Ptilonorhynchidae	*Chlamydera nuchalis*	great bowerbird		C		4
animals	birds	Rallidae	*Amaurornis moluccana*	pale-vented bush-hen		C		1
animals	birds	Rallidae	*Gallinula tenebrosa*	dusky moorhen		C		1
animals	birds	Rhipiduridae	*Rhipidura albiscapa*	grey fantail		C		10
animals	birds	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail		C		10
animals	birds	Strigidae	*Ninox boobook*	southern boobook		C		2
animals	birds	Tytonidae	*Tyto javanica*	eastern barn owl		C		2
animals	mammals	Dasyuridae	*Planigale maculata*	common planigale		C		1/1
animals	mammals	Dasyuridae	*Sminthopsis macroura*	stripe-faced dunnart		C		1/1
animals	mammals	Emballonuridae	*Saccolaimus flaviventris*	yellow-bellied sheathtail bat		C		2
animals	mammals	Felidae	*Felis catus*	cat	Y			1
animals	mammals	Macropodidae	*Macropus giganteus*	eastern grey kangaroo		C		1
animals	mammals	Macropodidae	*Osphranter robustus*	common wallaroo		C		1
animals	mammals	Muridae	*Pseudomys delicatulus*	delicate mouse		C		2/2
animals	mammals	Muridae	*Pseudomys gracilicaudatus*	eastern chestnut mouse		C		1/1
animals	mammals	Phascolarctidae	*Phascolarctos cinereus*	koala		E	E	3
animals	mammals	Potoroidae	*Aepyprymnus rufescens*	rufous bettong		C		3
animals	mammals	Tachyglossidae	*Tachyglossus aculeatus*	short-beaked echidna		SL		1
animals	mammals	Vespertilionidae	*Scotorepens greyii*	little broad-nosed bat		C		1
animals	ray-finned fishes	Ambassidae	*Ambassis agassizii*	Agassiz's glassfish				1
animals	ray-finned fishes	Ambassidae	*Ambassis agrammus*	sailfin glassfish				2
animals	ray-finned fishes	Anguillidae	*Anguilla reinhardtii*	longfin eel				12
animals	ray-finned fishes	Apogonidae	*Glossamia aprion*	mouth almighty				1
animals	ray-finned fishes	Ariidae	*Neoarius graeffei*	blue catfish				31
animals	ray-finned fishes	Atherinidae	*Craterocephalus stercusmuscarum*	flyspecked hardyhead				12
animals	ray-finned fishes	Belonidae	*Strongylura krefftii*	freshwater longtom				2
animals	ray-finned fishes	Centropomidae	*Lates calcarifer*	barramundi				16
animals	ray-finned fishes	Cichlidae	*Oreochromis mossambica*	Mozambique mouthbrooder	Y			5
animals	ray-finned fishes	Clupeidae	*Nematalosa erebi*	bony bream				442
animals	ray-finned fishes	Eleotridae	*Hypseleotris sp.*					1
animals	ray-finned fishes	Eleotridae	*Mogurnda adspersa*	southern purplespotted gudgeon				1
animals	ray-finned fishes	Eleotridae	*Oxyeleotris lineolata*	sleepy cod				54
animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia splendida splendida*	eastern rainbowfish				201
animals	ray-finned fishes	Plotosidae	*Neosilurus ater*	black catfish				11
animals	ray-finned fishes	Plotosidae	*Neosilurus hyrtlii*	Hyrtl's catfish				3/2

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animals	ray-finned fishes	Plotosidae	*Neosilurus mollespiculum*	softspine catfish				1
animals	ray-finned fishes	Pseudomugilidae	*Pseudomugil signifer*	Pacific blue eye				1
animals	ray-finned fishes	Terapontidae	*Amniataba percoides*	barred grunter				16
animals	ray-finned fishes	Terapontidae	*Hephaestus fuliginosus*	sooty grunter				23
animals	ray-finned fishes	Terapontidae	*Leiopotherapon unicolor*	spangled perch				18
animals	ray-finned fishes	Toxotidae	*Toxotes chatareus*	sevenspot archerfish				2
animals	reptiles	Agamidae	*Pogona barbata*	bearded dragon		C		1
animals	reptiles	Boidae	*Aspidites melanocephalus*	black-headed python		C		2
animals	reptiles	Chelidae	*Emydura macquarii krefftii*	Krefft's river turtle		C		15
animals	reptiles	Chelidae	*Wollumbinia latisternum*	saw-shelled turtle		C		1
animals	reptiles	Diplodactylidae	*Oedura castelnaui*	northern velvet gecko		C		2
animals	reptiles	Elapidae	*Denisonia devisi*	De Vis' banded snake		C		1
animals	reptiles	Gekkonidae	*Gehyra dubia*	dubious dtella		C		5
animals	reptiles	Scincidae	*Carlia jarnoldae*	lined rainbow-skink		C		1
animals	reptiles	Scincidae	*Carlia vivax*	tussock rainbow-skink		C		3
animals	reptiles	Scincidae	*Cryptoblepharus australis*	inland snake-eyed skink		C		1
animals	reptiles	Scincidae	*Liburnascincus mundivensis*	outcrop rainbow-skink		C		1
animals	uncertain	Indeterminate	*Indeterminate*	Unknown or Code Pending				3
plants	land plants	Acanthaceae	*Pseuderanthemum variabile*	pastel flower		C		1/1
plants	land plants	Acanthaceae	*Rostellularia adscendens var. adscendens*			C		2/2
plants	land plants	Acanthaceae	*Ruellia simplex*		Y			2/2
plants	land plants	Amaranthaceae	*Alternanthera ficoidea*		Y			2/2
plants	land plants	Amaranthaceae	*Alternanthera nodiflora*	joyweed		C		1/1
plants	land plants	Amaranthaceae	*Alternanthera pungens*	khaki weed	Y			1/1
plants	land plants	Amaranthaceae	*Amaranthus cochleitepalus*			C		1/1
plants	land plants	Amaranthaceae	*Amaranthus viridis*	green amaranth	Y			1/1
plants	land plants	Amaranthaceae	*Gomphrena celosioides*	gomphrena weed	Y			3/3
plants	land plants	Amaranthaceae	*Nyssanthes diffusa*	barbed-wire weed		C		1/1
plants	land plants	Amaranthaceae	*Ptilotus fusiformis*			C		1/1
plants	land plants	Amaryllidaceae	*Crinum arenarium*			SL		1/1
plants	land plants	Anacardiaceae	*Pleiogynium timorense*	Burdekin plum		C		1/1
plants	land plants	Anacardiaceae	*Schinus terebinthifolius*		Y			3/3
plants	land plants	Apocynaceae	*Alstonia scholaris*	white cheesewood		C		1/1
plants	land plants	Apocynaceae	*Asclepias curassavica*	red-head cottonbush	Y			1/1
plants	land plants	Apocynaceae	*Carissa ovata*	currantbush		C		1/1
plants	land plants	Apocynaceae	*Cascabela thevetia*	yellow oleander	Y			2/2
plants	land plants	Apocynaceae	*Catharanthus roseus*	pink periwinkle	Y			2/2
plants	land plants	Apocynaceae	*Gomphocarpus physocarpus*	balloon cottonbush	Y			1/1
plants	land plants	Apocynaceae	*Leichhardtia cymulosa*			C		1/1
plants	land plants	Apocynaceae	*Wrightia saligna*			C		1/1
plants	land plants	Araliaceae	*Heptapleurum actinophyllum*			C		1/1
plants	land plants	Asparagaceae	*Asparagus racemosus*	native asparagus		C		1/1
plants	land plants	Asteraceae	*Acanthospermum hispidum*	star burr	Y			2/2
plants	land plants	Asteraceae	*Ageratum conyzoides*	billygoat weed	Y			1/1
plants	land plants	Asteraceae	*Bidens bipinnata*	bipinnate beggar's ticks	Y			1/1
plants	land plants	Asteraceae	*Bidens biternata*		Y			1/1

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plants	land plants	Asteraceae	*Calotis cuneifolia*	burr daisy		C		2/2
plants	land plants	Asteraceae	*Calyptocarpus vialis*	creeping cinderella weed	Y			2/2
plants	land plants	Asteraceae	*Camptacra robusta*			C		1/1
plants	land plants	Asteraceae	*Flaveria trinervia*		Y			1/1
plants	land plants	Asteraceae	*Parthenium hysterophorus*	parthenium weed	Y			3/3
plants	land plants	Asteraceae	*Pseudognaphalium luteoalbum*	Jersey cudweed		C		2/2
plants	land plants	Asteraceae	*Pterocaulon redolens*			C		1/1
plants	land plants	Asteraceae	*Sphaeromorphaea subintegra*			C		2/2
plants	land plants	Asteraceae	*Streptoglossa odora*			C		1/1
plants	land plants	Bignoniaceae	*Pandorea pandorana*	wonga vine		C		2/2
plants	land plants	Boraginaceae	*Heliotropium pauciflorum*			C		1/1
plants	land plants	Boraginaceae	*Trichodesma zeylanicum var. zeylanicum*			C		1/1
plants	land plants	Brassicaceae	*Lepidium africanum*	common peppercress	Y			1/1
plants	land plants	Brassicaceae	*Lepidium bonariense*	Argentine peppercress	Y			1/1
plants	land plants	Brassicaceae	*Lepidium didymum*		Y			1/1
plants	land plants	Byttneriaceae	*Melochia pyramidata*		Y			2/2
plants	land plants	Byttneriaceae	*Seringia hookeriana*			C		2/2
plants	land plants	Capparaceae	*Capparis lasiantha*	nipan		C		1/1
plants	land plants	Capparaceae	*Capparis ornans*			C		1/1
plants	land plants	Caryophyllaceae	*Polycarpaea corymbosa var. corymbosa*			C		1/1
plants	land plants	Caryophyllaceae	*Polycarpaea corymbosa var. minor*			C		1/1
plants	land plants	Caryophyllaceae	*Polycarpaea spirostylis subsp. spirostylis*			C		1/1
plants	land plants	Celastraceae	*Denhamia cunninghamii*			C		1/1
plants	land plants	Celastraceae	*Denhamia oleaster*			C		1/1
plants	land plants	Ceratophyllaceae	*Ceratophyllum demersum*	hornwort		C		1/1
plants	land plants	Chenopodiaceae	*Dysphania carinata*			C		1/1
plants	land plants	Chenopodiaceae	*Salsola australis*			C		3/3
plants	land plants	Cleomaceae	*Arivela viscosa*			C		1/1
plants	land plants	Cleomaceae	*Gynandropsis gynandra*		Y			1/1
plants	land plants	Convolvulaceae	*Bonamia media*			C		3/3
plants	land plants	Convolvulaceae	*Distimake dissectus*		Y			1/1
plants	land plants	Convolvulaceae	*Evolvulus alsinoides*			C		3/3
plants	land plants	Convolvulaceae	*Ipomoea brownii*			C		2/2
plants	land plants	Convolvulaceae	*Ipomoea gracilis*			C		1/1
plants	land plants	Convolvulaceae	*Ipomoea plebeia*	bellvine		C		3/3
plants	land plants	Convolvulaceae	*Ipomoea polymorpha*			C		1/1
plants	land plants	Convolvulaceae	*Ipomoea triloba*		Y			2/2
plants	land plants	Convolvulaceae	*Jacquemontia paniculata*			C		1/1
plants	land plants	Convolvulaceae	*Merremia hederacea*			C		1/1
plants	land plants	Convolvulaceae	*Xenostegia tridentata*			C		1/1
plants	land plants	Cucurbitaceae	*Cucumis anguria var. anguria*	West Indian gherkin	Y			2/2
plants	land plants	Cucurbitaceae	*Cucumis melo*			C		1/1
plants	land plants	Cucurbitaceae	*Diplocyclos palmatus subsp. palmatus*			C		1/1
plants	land plants	Cucurbitaceae	*Momordica charantia*	balsam pear	Y			1/1
plants	land plants	Cycadaceae	*Cycas media subsp. media*			SL		1/1
plants	land plants	Cyperaceae	*Abildgaardia ovata*			C		1/1

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plants	land plants	Cyperaceae	*Cyperus difformis*	rice sedge		C		1/1
plants	land plants	Cyperaceae	*Cyperus fulvus*			C		1/1
plants	land plants	Cyperaceae	*Cyperus involucratus*		Y			2/2
plants	land plants	Cyperaceae	*Cyperus javanicus*			C		1/1
plants	land plants	Cyperaceae	*Cyperus polystachyos var. polystachyos*			C		1/1
plants	land plants	Cyperaceae	*Eleocharis geniculata*			C		1/1
plants	land plants	Euphorbiaceae	*Euphorbia coghlanii*			C		1/1
plants	land plants	Euphorbiaceae	*Euphorbia cyathophora*	dwarf poinsettia	Y			1/1
plants	land plants	Euphorbiaceae	*Euphorbia heterophylla*		Y			1/1
plants	land plants	Euphorbiaceae	*Euphorbia hyssopifolia*		Y			1/1
plants	land plants	Euphorbiaceae	*Ricinus communis*	castor oil bush	Y			1/1
plants	land plants	Goodeniaceae	*Goodenia hirsuta*			C		1/1
plants	land plants	Haloragaceae	*Myriophyllum verrucosum*	water milfoil		C		1/1
plants	land plants	Hydrocharitaceae	*Vallisneria annua*			SL		2/2
plants	land plants	Hypericaceae	*Hypericum gramineum*			C		1/1
plants	land plants	Lamiaceae	*Coleus graveolens*			C		1/1
plants	land plants	Lamiaceae	*Leucas lavandulifolia*		Y			2/2
plants	land plants	Lamiaceae	*Mesosphaerum suaveolens*		Y			1/1
plants	land plants	Lamiaceae	*Ocimum americanum*		Y			1/1
plants	land plants	Lamiaceae	*Ocimum x africanum*		Y			1/1
plants	land plants	Lauraceae	*Cassytha filiformis*	dodder laurel		C		1/1
plants	land plants	Laxmanniaceae	*Eustrephus latifolius*	wombat berry		C		1/1
plants	land plants	Lecythidaceae	*Planchonia careya*	cockatoo apple		C		1/1
plants	land plants	Leguminosae	*Acacia crassa subsp. crassa*			C		1/1
plants	land plants	Leguminosae	*Acacia harpophylla*	brigalow		C		2/2
plants	land plants	Leguminosae	*Acacia holosericea*			C		1/1
plants	land plants	Leguminosae	*Acacia rhodoxylon*	ringy rosewood		C		2/2
plants	land plants	Leguminosae	*Acacia salicina*	doolan		C		2/2
plants	land plants	Leguminosae	*Albizia canescens*			C		1/1
plants	land plants	Leguminosae	*Albizia lebbeck*	Indian siris		C		1/1
plants	land plants	Leguminosae	*Cajanus reticulatus var. reticulatus*			C		2/2
plants	land plants	Leguminosae	*Cajanus scarabaeoides var. scarabaeoides*			C		1/1
plants	land plants	Leguminosae	*Cassia brewsteri*			C		2/2
plants	land plants	Leguminosae	*Cassia fistula*	Indian laburnum	Y			1/1
plants	land plants	Leguminosae	*Chamaecrista absus var. absus*			C		3/3
plants	land plants	Leguminosae	*Chamaecrista concinna*			C		1/1
plants	land plants	Leguminosae	*Clitoria ternatea*	butterfly pea	Y			2/2
plants	land plants	Leguminosae	*Crotalaria incana subsp. incana*		Y			1/1
plants	land plants	Leguminosae	*Crotalaria juncea*	sunhemp	Y			1/1
plants	land plants	Leguminosae	*Crotalaria medicaginea var. neglecta*			C		1/1
plants	land plants	Leguminosae	*Desmodium filiforme*			C		1/1
plants	land plants	Leguminosae	*Galactia tenuiflora var. lucida*			C		1/1
plants	land plants	Leguminosae	*Indigofera australis*			C		1/1
plants	land plants	Leguminosae	*Indigofera colutea*	sticky indigo		C		1/1
plants	land plants	Leguminosae	*Leucaena leucocephala subsp. glabrata*		Y			1/1
plants	land plants	Leguminosae	*Lysiphyllum hookeri*	Queensland ebony		C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Leguminosae	*Macroptilium atropurpureum*	siratro	Y			1/1
plants	land plants	Leguminosae	*Neptunia gracilis*			C		1/1
plants	land plants	Leguminosae	*Senna alata*		Y			2/2
plants	land plants	Leguminosae	*Senna coronilloides*			C		1/1
plants	land plants	Leguminosae	*Senna gaudichaudii*			C		1/1
plants	land plants	Leguminosae	*Senna pendula var. glabrata*	Easter cassia	Y			1/1
plants	land plants	Leguminosae	*Sesbania cannabina var. cannabina*			C		1/1
plants	land plants	Leguminosae	*Stylosanthes hamata*		Y			1/1
plants	land plants	Leguminosae	*Tamarindus indica*		Y			1/1
plants	land plants	Leguminosae	*Tephrosia astragaloides*			C		1/1
plants	land plants	Leguminosae	*Tephrosia barbatala*			C		1/1
plants	land plants	Leguminosae	*Tephrosia filipes var. (Mt Blackjack A.R.Bean+ 7332)*			C		1/1
plants	land plants	Leguminosae	*Tephrosia juncea*			C		1/1
plants	land plants	Leguminosae	*Tephrosia purpurea var. sericea*			C		1/1
plants	land plants	Leguminosae	*Vigna lanceolata var. lanceolata*			C		1/1
plants	land plants	Leguminosae	*Vigna sp. (Greta Creek R.J.Lawn+ AQ532201)*			C		1/1
plants	land plants	Leguminosae	*Zornia muelleriana subsp. muelleriana*			C		1/1
plants	land plants	Linderniaceae	*Torenia crustacea*			C		1/1
plants	land plants	Loranthaceae	*Dendrophthoe glabrescens*			C		1/1
plants	land plants	Malvaceae	*Abutilon cunninghamii*			C		1/1
plants	land plants	Malvaceae	*Abutilon guineense*		Y			1/1
plants	land plants	Malvaceae	*Abutilon oxycarpum var. oxycarpum*			C		1/1
plants	land plants	Malvaceae	*Hibiscus*					2/2
plants	land plants	Malvaceae	*Hibiscus heterophyllus*			C		1/1
plants	land plants	Malvaceae	*Hibiscus meraukensis*	Merauke hibiscus		C		1/1
plants	land plants	Malvaceae	*Hibiscus sturtii*			C		1/1
plants	land plants	Malvaceae	*Hibiscus sturtii var. sturtii*			C		1/1
plants	land plants	Malvaceae	*Malvastrum coromandelianum subsp. coromandelianum*		Y			1/1
plants	land plants	Malvaceae	*Sida atherophora*			C		1/1
plants	land plants	Malvaceae	*Sida brachypoda*			C		2/2
plants	land plants	Malvaceae	*Sida cordifolia*		Y			3/3
plants	land plants	Malvaceae	*Sida rhombifolia*		Y			1/1
plants	land plants	Malvaceae	*Sida sp. (Musselbrook M.B.Thomas+ MRS437)*			C		1/1
plants	land plants	Meliaceae	*Azadirachta indica*		Y			1/1
plants	land plants	Myrtaceae	*Corymbia erythrophloia*	variable-barked bloodwood		C		2/2
plants	land plants	Myrtaceae	*Eucalyptus brownii*	Reid River box		C		1/1
plants	land plants	Myrtaceae	*Eucalyptus camaldulensis subsp. acuta*			C		1/1
plants	land plants	Myrtaceae	*Eucalyptus orgadophila*	mountain coolibah		C		1/1
plants	land plants	Myrtaceae	*Eucalyptus persistens*			C		1/1
plants	land plants	Myrtaceae	*Eucalyptus raveretiana*	black ironbox		C	V	4/4
plants	land plants	Myrtaceae	*Lophostemon grandiflorus subsp. riparius*			C		2/2
plants	land plants	Myrtaceae	*Melaleuca bracteata*			C		2/2
plants	land plants	Myrtaceae	*Melaleuca fluviatilis*			C		1/1
plants	land plants	Myrtaceae	*Melaleuca nervosa*			C		1/1
plants	land plants	Nyctaginaceae	*Boerhavia dominii*			C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Nyctaginaceae	*Bougainvillea glabra*		Y			1/1
plants	land plants	Orobanchaceae	*Striga parviflora*			C		1/1
plants	land plants	Oxalidaceae	*Oxalis radicosa*			C		1/1
plants	land plants	Papaveraceae	*Argemone ochroleuca subsp. ochroleuca*	Mexican poppy	Y			1/1
plants	land plants	Passifloraceae	*Passiflora foetida*		Y			1/1
plants	land plants	Passifloraceae	*Passiflora pallida*		Y			1/1
plants	land plants	Pentapetaceae	*Melhania oblongifolia*			C		1/1
plants	land plants	Phyllanthaceae	*Phyllanthus amarus*		Y			1/1
plants	land plants	Phyllanthaceae	*Phyllanthus similis*			C		1/1
plants	land plants	Picrodendraceae	*Petalostigma pubescens*	quinine tree		C		1/1
plants	land plants	Plantaginaceae	*Scoparia dulcis*	scoparia	Y			2/2
plants	land plants	Poaceae	*Alloteropsis cimicina*			C		2/2
plants	land plants	Poaceae	*Aristida gracilipes*			C		1/1
plants	land plants	Poaceae	*Aristida holathera var. holathera*			C		3/3
plants	land plants	Poaceae	*Aristida hygrometrica*			C		1/1
plants	land plants	Poaceae	*Aristida ingrata*			C		1/1
plants	land plants	Poaceae	*Aristida queenslandica var. dissimilis*			C		2/2
plants	land plants	Poaceae	*Bothriochloa decipiens var. cloncurrensis*			C		1/1
plants	land plants	Poaceae	*Bothriochloa ewartiana*	desert bluegrass		C		1/1
plants	land plants	Poaceae	*Bothriochloa pertusa*		Y			3/3
plants	land plants	Poaceae	*Cenchrus ciliaris*		Y			2/2
plants	land plants	Poaceae	*Chloris gayana*	rhodes grass	Y			1/1
plants	land plants	Poaceae	*Chloris inflata*	purpletop chloris	Y			1/1
plants	land plants	Poaceae	*Chloris ventricosa*	tall chloris		C		1/1
plants	land plants	Poaceae	*Chloris virgata*	feathertop rhodes grass	Y			3/3
plants	land plants	Poaceae	*Cleistochloa subjuncea*			C		1/1
plants	land plants	Poaceae	*Cynodon dactylon var. dactylon*		Y			1/1
plants	land plants	Poaceae	*Dichanthium aristatum*	angleton grass	Y			2/2
plants	land plants	Poaceae	*Dichanthium sericeum subsp. sericeum*			C		1/1
plants	land plants	Poaceae	*Digitaria ammophila*	silky umbrella grass		C		2/2
plants	land plants	Poaceae	*Digitaria longiflora*			C		1/1
plants	land plants	Poaceae	*Digitaria milanjiana*		Y			1/1
plants	land plants	Poaceae	*Digitaria orbata*			C		2/2
plants	land plants	Poaceae	*Echinochloa colona*	awnless barnyard grass	Y			1/1
plants	land plants	Poaceae	*Eleusine indica*	crowsfoot grass	Y			1/1
plants	land plants	Poaceae	*Enneapogon polyphyllus*	leafy nineawn		C		1/1
plants	land plants	Poaceae	*Enneapogon virens*			C		1/1
plants	land plants	Poaceae	*Enteropogon unispiceus*			C		2/2
plants	land plants	Poaceae	*Eragrostis brownii*	Brown's lovegrass		C		1/1
plants	land plants	Poaceae	*Eragrostis cilianensis*		Y			2/2
plants	land plants	Poaceae	*Eragrostis pilosa*	soft lovegrass	Y			1/1
plants	land plants	Poaceae	*Eragrostis sororia*			C		3/3
plants	land plants	Poaceae	*Eriachne rara*			C		1/1
plants	land plants	Poaceae	*Eriochloa crebra*	spring grass		C		1/1
plants	land plants	Poaceae	*Eriochloa pseudoacrotricha*			C		2/2
plants	land plants	Poaceae	*Heteropogon contortus*	black speargrass		C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Poaceae	*Iseilema vaginiflorum*	red flinders grass		C		1/1
plants	land plants	Poaceae	*Megathyrsus maximus var. pubiglumis*		Y			1/1
plants	land plants	Poaceae	*Melinis repens*	red natal grass	Y			1/1
plants	land plants	Poaceae	*Ophiuros exaltatus*			C		1/1
plants	land plants	Poaceae	*Panicum effusum*			C		2/2
plants	land plants	Poaceae	*Panicum laevinode*	pepper grass		C		1/1
plants	land plants	Poaceae	*Paspalidium caespitosum*	brigalow grass		C		1/1
plants	land plants	Poaceae	*Paspalidium rarum*			C		3/3
plants	land plants	Poaceae	*Perotis rara*	comet grass		C		1/1
plants	land plants	Poaceae	*Sehima nervosum*			C		1/1
plants	land plants	Poaceae	*Setaria australiensis*	scrub pigeon grass		C		1/1
plants	land plants	Poaceae	*Setaria surgens*			C		2/2
plants	land plants	Poaceae	*Sorghum halepense*	Johnson grass	Y			1/1
plants	land plants	Poaceae	*Sorghum x almum*		Y			1/1
plants	land plants	Poaceae	*Sporobolus coromandelianus*		Y			1/1
plants	land plants	Poaceae	*Sporobolus creber*			C		1/1
plants	land plants	Poaceae	*Sporobolus jacquemontii*		Y			2/2
plants	land plants	Poaceae	*Themeda avenacea*			C		2/2
plants	land plants	Poaceae	*Themeda quadrivalvis*	grader grass	Y			1/1
plants	land plants	Poaceae	*Themeda triandra*	kangaroo grass		C		1/1
plants	land plants	Poaceae	*Urochloa mutica*		Y			2/2
plants	land plants	Poaceae	*Urochloa panicoides var. panicoides*		Y			1/1
plants	land plants	Poaceae	*Urochloa piligera*			C		1/1
plants	land plants	Poaceae	*Urochloa subquadripara*		Y			1/1
plants	land plants	Poaceae	*Whiteochloa airoides*			C		1/1
plants	land plants	Portulacaceae	*Portulaca filifolia*			C		1/1
plants	land plants	Portulacaceae	*Portulaca pilosa*		Y			3/3
plants	land plants	Proteaceae	*Grevillea parallela*			C		1/1
plants	land plants	Proteaceae	*Grevillea striata*	beefwood		C		2/2
plants	land plants	Proteaceae	*Hakea lorea subsp. lorea*			C		1/1
plants	land plants	Rhamnaceae	*Alphitonia excelsa*	soap tree		C		2/2
plants	land plants	Rhamnaceae	*Ziziphus mauritiana*	Indian jujube	Y			4/4
plants	land plants	Rubiaceae	*Coelospermum reticulatum*			C		1/1
plants	land plants	Rubiaceae	*Paranotis mitrasacmoides subsp. trachymenoides*			C		1/1
plants	land plants	Rubiaceae	*Psydrax odorata subsp. australiana*			C		1/1
plants	land plants	Rubiaceae	*Psydrax saligna forma saligna*			C		1/1
plants	land plants	Rubiaceae	*Richardia brasiliensis*	white eye	Y			1/1
plants	land plants	Rutaceae	*Micromelum minutum*	clusterberry		C		1/1
plants	land plants	Sapindaceae	*Alectryon diversifolius*	scrub boonaree		C		1/1
plants	land plants	Sapindaceae	*Atalaya hemiglauca*			C		1/1
plants	land plants	Sapindaceae	*Cardiospermum halicacabum var. halicacabum*		Y			1/1
plants	land plants	Sapindaceae	*Cardiospermum halicacabum var. microcarpum*		Y			1/1
plants	land plants	Sapindaceae	*Dodonaea viscosa subsp. burmanniana*			C		2/2
plants	land plants	Sapotaceae	*Amorphospermum antilogum*			C		1/1
plants	land plants	Scrophulariaceae	*Eremophila mitchellii*			C		1/1
plants	land plants	Solanaceae	*Capsicum frutescens*		Y			2/2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Solanaceae	*Physalis angulata*		Y			1/1
plants	land plants	Solanaceae	*Solanum ellipticum*	potato bush		C		1/1
plants	land plants	Solanaceae	*Solanum seaforthianum*	Brazilian nightshade	Y			1/1
plants	land plants	Solanaceae	*Solanum torvum*	devil's fig	Y			1/1
plants	land plants	Sparrmanniaceae	*Corchorus olitorius*	jute		C		1/1
plants	land plants	Sparrmanniaceae	*Corchorus trilocularis*			C		1/1
plants	land plants	Sparrmanniaceae	*Grewia asiatica*		Y			6/6
plants	land plants	Sparrmanniaceae	*Grewia savannicola*			C		2/2
plants	land plants	Sparrmanniaceae	*Grewia scabrella*			C		1/1
plants	land plants	Sparrmanniaceae	*Triumfetta pentandra*		Y			2/2
plants	land plants	Sparrmanniaceae	*Triumfetta rhomboidea*	chinese burr	Y			1/1
plants	land plants	Sterculiaceae	*Brachychiton australis*	broad-leaved bottle tree		SL		1/1
plants	land plants	Verbenaceae	*Lantana camara*	lantana	Y			4/4
plants	land plants	Verbenaceae	*Stachytarpheta jamaicensis*	Jamaica snakeweed	Y			1/1
plants	land plants	Verbenaceae	*Verbena litoralis var. litoralis*		Y			1/1
plants	land plants	Violaceae	*Pigea enneasperma*			C		1/1
plants	land plants	Violaceae	*Pigea stellarioides*			C		2/2
plants	land plants	Vitaceae	*Cissus cardiophylla*			C		1/1
plants	land plants	Vitaceae	*Clematicissus opaca*			C		1/1
plants	land plants	Zygophyllaceae	*Tribulus micrococcus*	yellow vine		C		1/1
plants		Mimosoid clade	*Neptunia heliophila*			C		1/1
plants		Papilionoideae	*Canavalia papuana*	wild jack bean		C		1/1
plants		Papilionoideae	*Crotalaria goreensis*	gambia pea	Y			1/1
plants		Papilionoideae	*Crotalaria pallida var. obovata*		Y			1/1
plants		Papilionoideae	*Indigofera hirsuta*	hairy indigo		C		2/2

CODES

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

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

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

Records - The first number indicates the total number of records of the taxon (wildlife records and species listings for selected areas).
This number is output as 99999 if it equals or exceeds this value. A second number located after a / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Appendix C
Department of Environment and Science's Environmental Reports Regional Ecosystems Biodiversity Status (2017)

Queensland Government

Department of Environment and Science

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest
Lot: 25 Plan: SP190745

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 input coordinates.

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 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 Queensland Herbarium's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Resources website https://www.resources.qld.gov.au/

Please direct queries about these reports to: Queensland.Herbarium@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.

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Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Area of interest details: Lot: 25 Plan: SP190745

Size (ha)	14,466.56
Local Government(s)	Whitsunday Regional
Bioregion(s)	Brigalow Belt
Subregion(s)	Northern Bowen Basin, Bogie River Hills
Catchment(s)	Burdekin

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	94.39	0.65
Of concern	381.96	2.64
No concern at present	8,079.56	55.85
Total remnant vegetation	8,555.91	59.14

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

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and are usually distinguished by differences in dominant species, frequently in the shrub or ground layers and are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2020) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Resources website.

https://www.resources.qld.gov.au/

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 per cent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (1000 ha); or patch size (100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

*****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.*

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
11.12.1	Eucalyptus crebra woodland on igneous rocks	No concern at present	5,240.52	36.23
11.12.2	Eucalyptus melanophloia woodland on igneous rocks	No concern at present	139.23	0.96
11.12.7	Eucalyptus crebra woodland with patches of semi-evergreen vine thicket on igneous rocks (boulder-strewn hillsides)	No concern at present	1,749.78	12.1
11.3.1	Acacia harpophylla and/or Casuarina cristata open forest on alluvial plains	Endangered	20.63	0.14
11.3.10	Eucalyptus brownii woodland on alluvial plains	No concern at present	370.16	2.56
11.3.25b	Eucalyptus tereticornis or E. camaldulensis woodland fringing drainage lines	Of concern	361.34	2.5
11.3.7	Corymbia spp. open woodland on alluvial plains	Of concern	20.63	0.14
11.3.9	Eucalyptus platyphylla, Corymbia spp. woodland on alluvial plains	No concern at present	41.25	0.29
11.9.10	Eucalyptus populnea open forest with a secondary tree layer of Acacia harpophylla and sometimes Casuarina cristata on fine-grained sedimentary rocks	Endangered	73.76	0.51
11.9.2	Eucalyptus melanophloia +/- E. orgadophila woodland to open woodland on fine-grained sedimentary rocks	No concern at present	132.84	0.92
11.9.3	Dichanthium spp., Astrebla spp. grassland on fine-grained sedimentary rocks	No concern at present	2.07	0.01
11.9.9	Eucalyptus crebra woodland on fine-grained sedimentary rocks	No concern at present	403.7	2.79
non-remnant	None	None	5,909.63	40.85
water	None	None	1.1	0.01

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer

to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.12.1	Pre-clearing 1418000 ha; Remnant 2019 851000 ha	13c	Not a Wetland	Low
11.12.2	Pre-clearing 470000 ha; Remnant 2019 190000 ha	17b	Not a Wetland	Low
11.12.7	Pre-clearing 92000 ha; Remnant 2019 86000 ha	13c	Not a Wetland	Low
11.3.1	Pre-clearing 784000 ha; Remnant 2019 81000 ha	25a	Not a Wetland	Low
11.3.10	Pre-clearing 260000 ha; Remnant 2019 165000 ha	17a	Not a Wetland	Low
11.3.25b	Pre-clearing 804000 ha; Remnant 2019 519000 ha	22c	Riverine	Low
11.3.7	Pre-clearing 138000 ha; Remnant 2019 61000 ha	9e	Not a Wetland	Low
11.3.9	Pre-clearing 144000 ha; Remnant 2019 63000 ha	9e	Not a Wetland	Low
11.9.10	Pre-clearing 483000 ha; Remnant 2019 78000 ha	25a	Not a Wetland	Low
11.9.2	Pre-clearing 377000 ha; Remnant 2019 143000 ha	17b	Not a Wetland	Medium
11.9.3	Pre-clearing 270000 ha; Remnant 2019 153000 ha	30b	Not a Wetland	Low
11.9.9	Pre-clearing 258000 ha; Remnant 2019 127000 ha	13c	Not a Wetland	Low
non-remnant	None	None	None	None
water	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
11.12.1	Potential habitat for NCA listed species: Acacia islana, Capparis humistrata, Corymbia petalophylla, Cycas megacarpa, Cycas ophiolitica, Macrozamia crassifolia, Sannantha brachypoda, Solanum graniticum
11.12.2	Potential habitat for NCA listed species: Cycas ophiolitica, Sannantha brachypoda
11.12.7	Potential habitat for NCA listed species: Aristida granitica
11.3.1	Habitat for threatened fauna species including painted honeyeater, Grantiella picta particularly in subregion 35 (Oliver et al. 2003).

Regional Ecosystem	Special Values
11.3.10	Potential habitat for NCA listed species: Acacia armitii
11.3.25b	Shown to be associated with a high fauna species richness in the Taroom area (Venz et al. 2002). Within parts of the Fitzroy catchment, this RE is known habitat for the threatened freshwater turtle Rheodytes leukops. Known to be important habitat for other riparian freshwater turtle species. This ecosystem is also known to provide suitable habitat for koalas (Phascolarctos cinereus).
11.3.7	Habitat of the endangered northern hairy-nosed wombat, Lasiorhinus krefftii.
11.3.9	Potential habitat for NCA listed species: Macrozamia serpentina
11.9.10	Potential habitat for NCA listed species: Homopholis belsonii
11.9.2	Potential habitat for NCA listed species: Solanum elachophyllum
11.9.3	Potential habitat for NCA listed species: Cymbonotus maidenii, Swainsona murrayana
11.9.9	Potential habitat for NCA listed species: Capparis humistrata, Leucopogon sp. (Coolmunda D.Halford Q1635), Omphalea celata. This ecosystem is also known to provide suitable habitat for koalas (Phascolarctos cinereus).
non-remnant	None
water	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at:

https://publications.qld.gov.au/dataset/redd/resource/

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	5,910.73	40.86
13c	Woodlands of Eucalyptus crebra (sens. lat.) (narrow-leaved red ironbark), E. drepanophylla (grey ironbark), E. fibrosa (dusky-leaved ironbark), E. shirleyi (shirley's silver-leaved ironbark) on granitic and metamorphic ranges (land zones 12, 11, 9, [5]) (BRB, EIU, SEQ, NET, CQC)	7,394.00	51.11
17a	Woodlands dominated by Eucalyptus populnea (poplar box) (or E. brownii (Reid River box)) on alluvium, sand plains and footslopes of hills and ranges. (land zones 3, 5, 10, 9, 4, 11, 12, [8]) (BRB, MUL, DEU, MUL, EIU)	370.16	2.56
17b	Woodlands to open woodlands dominated by Eucalyptus melanophloia (silver-leaved ironbark) (or E. shirleyi (shirley's silver-leaved ironbark)) on sand plains and footslopes of hills and ranges. (land zones 5, 12, 3, 11, 9, 7) (BRB, DEU, EIU, SEQ, NET, GUP, NWH)	272.07	1.88

BVG (1 Million)	Description	Area (Ha)	% of AOI
22c	Open forests dominated by Melaleuca spp. (M. argentea (silver tea-tree), M. leucadendra (broad-leaved tea-tree), M. dealbata (swamp tea-tree) or M. fluviatilis), fringing major streams with Melaleuca saligna or M. bracteata (black tea-tree) in minor streams. (land zone 3) (CYP, GUP, EIU, BRB, CQC, DEU, NWH, WET, [SEQ])	361.34	2.5
25a	Open forests to woodlands dominated by Acacia harpophylla (brigalow) sometimes with Casuarina cristata (belah) on heavy clay soils. Includes areas co-dominated with A. cambagei (gidgee) and/or emergent eucalypts (land zones 4, 9, 3, 11, 7, 12, [5, 8]) (BRB, MUL, MGD, DEU, [SEQ])	94.39	0.65
30b	Tussock grasslands dominated by Astrebla spp. (mitchell grass) or Dichanthium spp. (bluegrass) often with Iseilema spp. on undulating downs or clay plains. (land zones 9, 3, 4, 8, [5]) (MGD, CHC, GUP, BRB, [EIU, DEU, NWH])	2.07	0.01
9e	Open forests, woodlands and open woodlands dominated by Corymbia clarksoniana (grey bloodwood) (or C. novoguinensis or C. intermedia (pink bloodwood) or C. polycarpa (long-fruited bloodwood)) frequently with Erythrophleum chlorostachys (red ironwood) or Eucalyptus platyphylla (poplar gum) predominantly on coastal sandplains and alluvia. (land zones 3, 5, 2) (CYP, BRB, CQC, WET, EIU)	61.88	0.43

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See:

http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/

The descriptions are compiled using site survey data from the Queensland Herbarium's CORVEG database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2020 (PDF)* section 3.3 of:

https://publications.qld.gov.au/dataset/redd/resource/

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community.

http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/

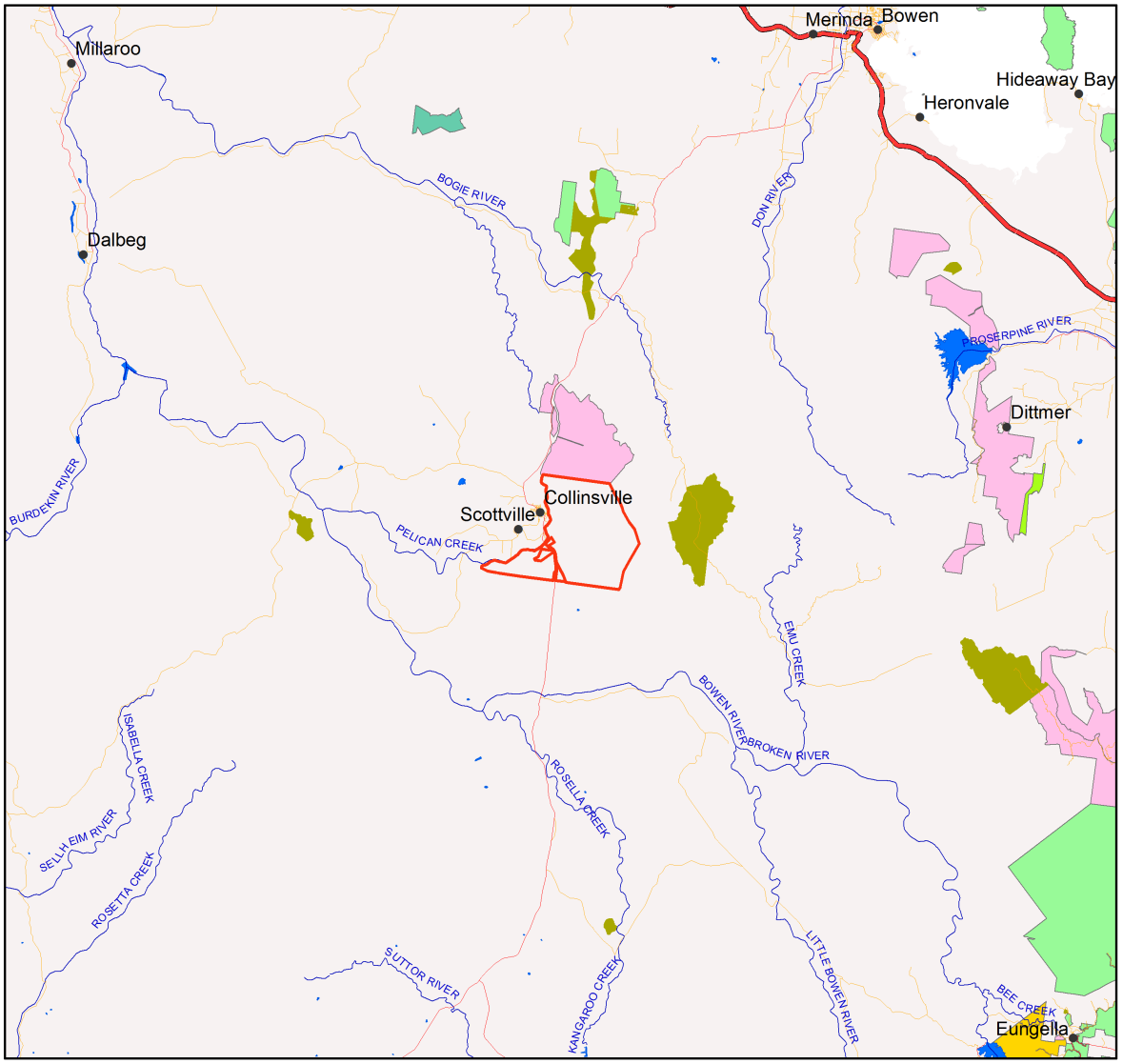
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
11.12.1	Available	Available
11.12.2	Available	Available
11.12.7	Available	Available
11.3.1	Available	Available
11.3.10	Available	Available
11.3.25b	Available	Available
11.3.7	Available	Available
11.3.9	Available	Available
11.9.10	Available	Available
11.9.2	Available	Available
11.9.3	Available	Not currently available
11.9.9	Available	Available
non-remnant	Not currently available	Not currently available
water	Not currently available	Not currently available

Maps

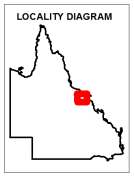
Map 1 - Location



Locality Map

Legend

- Selected Lot and Plan
- Towns
- Highway
- Connector
- Street/Local Road
- Reservoirs
- Lakes
- National Park (Scientific)
- National Park
- National Park (CYPAL)
- Conservation Park
- Resources Reserve
- Forest Reserve
- State Forest
- Timber Reserve
- Nature Refuges
- Coordinated Conservation Areas
- Major rivers/creeks
- Queensland



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0 7400 14800 22200 29600 37000 m

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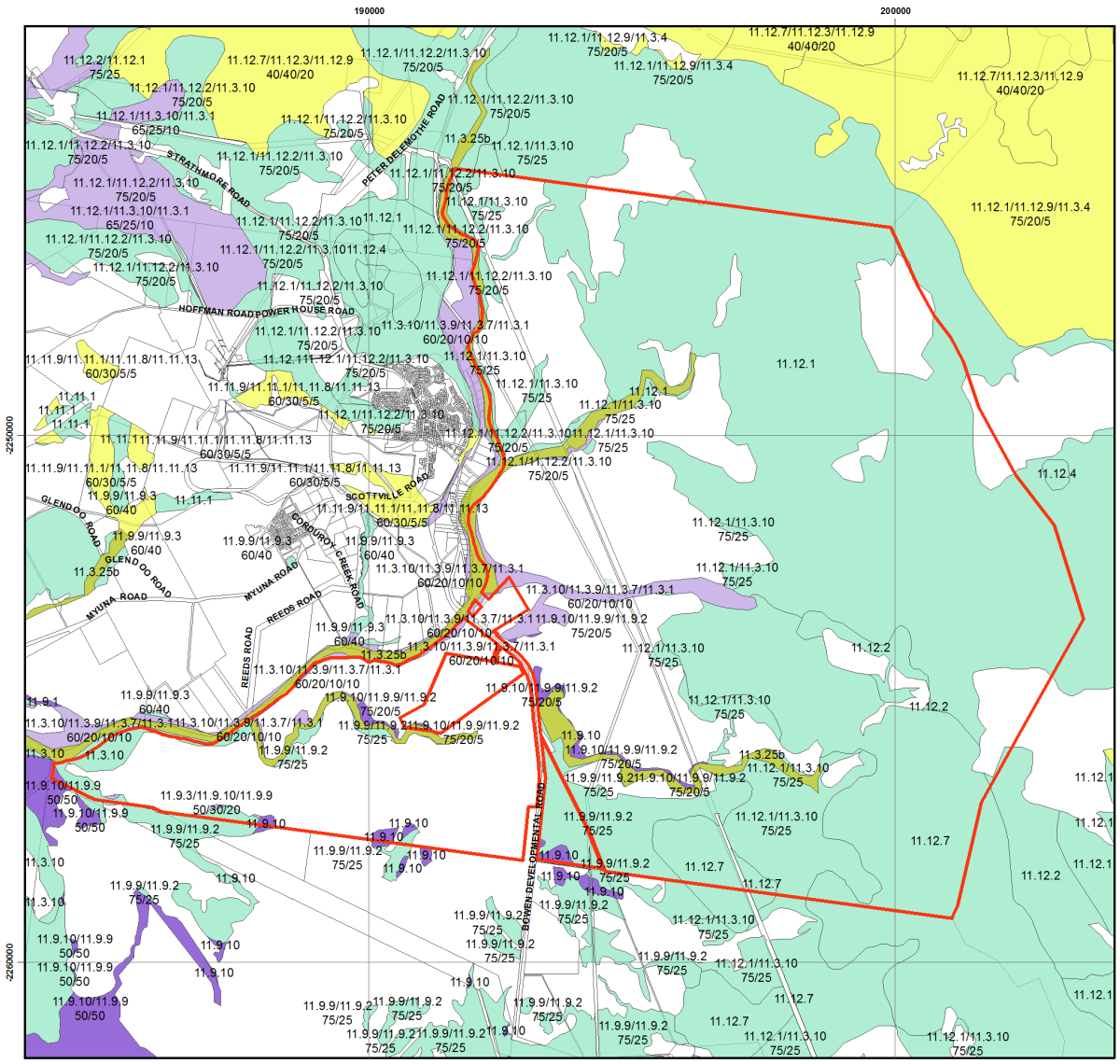
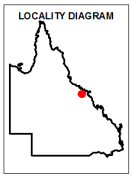
Map 2 - Remnant 2019 regional ecosystems



Remnant 2019 Regional Ecosystems

Biodiversity Status

- Selected Lot and Plan
- Endangered - Dominant vegetation
- Endangered - Sub-dominant
- Of Concern - Dominant
- Of Concern - Sub-dominant
- No concern at present
- Non-remnant vegetation, cultivated or built environment
- Plantation
- Water
- Cadastral Boundaries



N

0 1 2 3 4 km

This product is projected into GDA 1994 Queensland Albers

Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.

Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil.

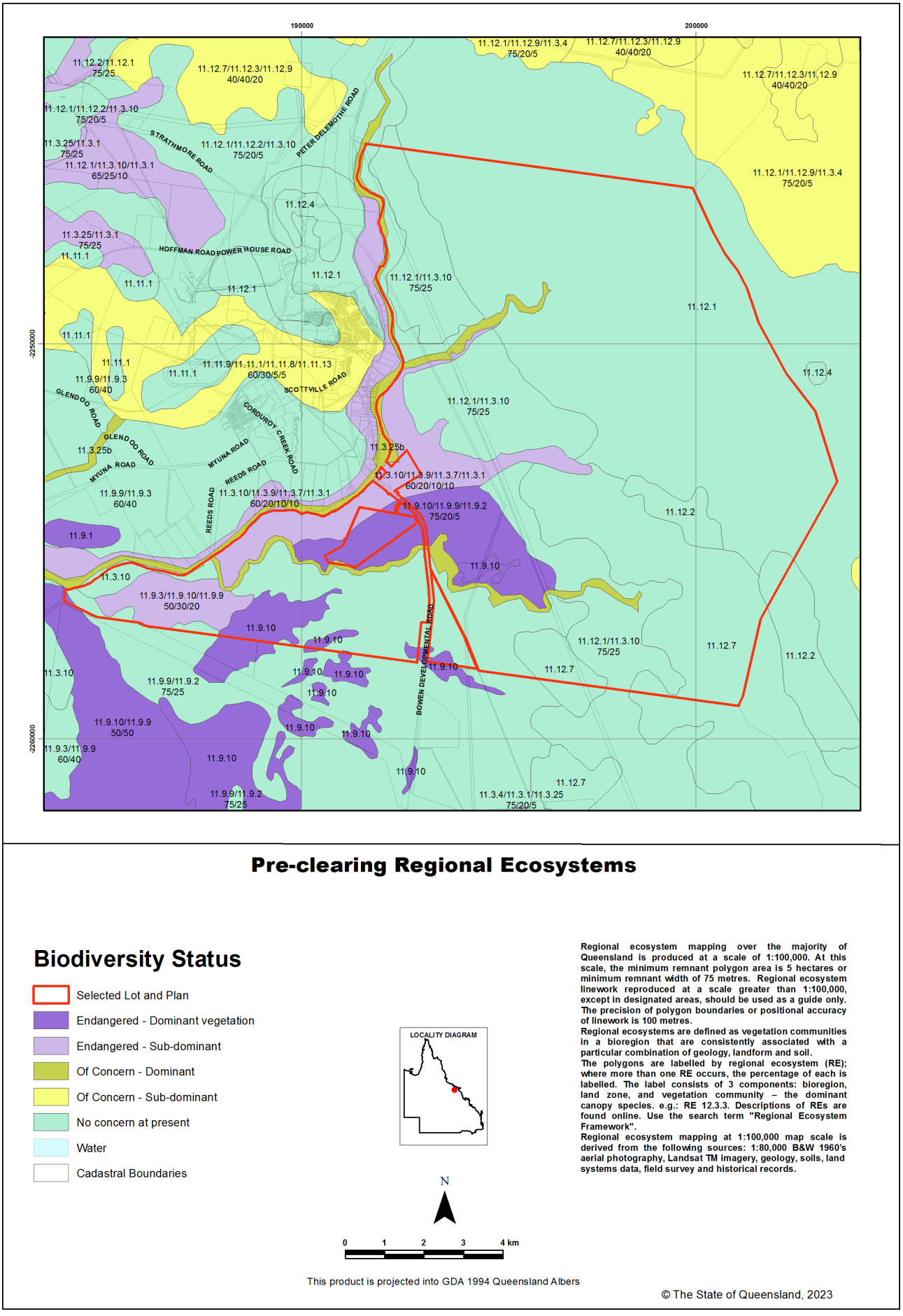
The polygons are labelled by regional ecosystem (RE); where more than one RE occurs, the percentage of each is labelled. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework".

Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.

Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy.

Non-remnant vegetation includes regrowth and disturbed native vegetation.

Map 3 - Pre-clearing regional ecosystems



Pre-clearing Regional Ecosystems

Biodiversity Status

- Selected Lot and Plan
- Endangered - Dominant vegetation
- Endangered - Sub-dominant
- Of Concern - Dominant
- Of Concern - Sub-dominant
- No concern at present
- Water
- Cadastral Boundaries

This product is projected into GDA 1994 Queensland Albers

Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.
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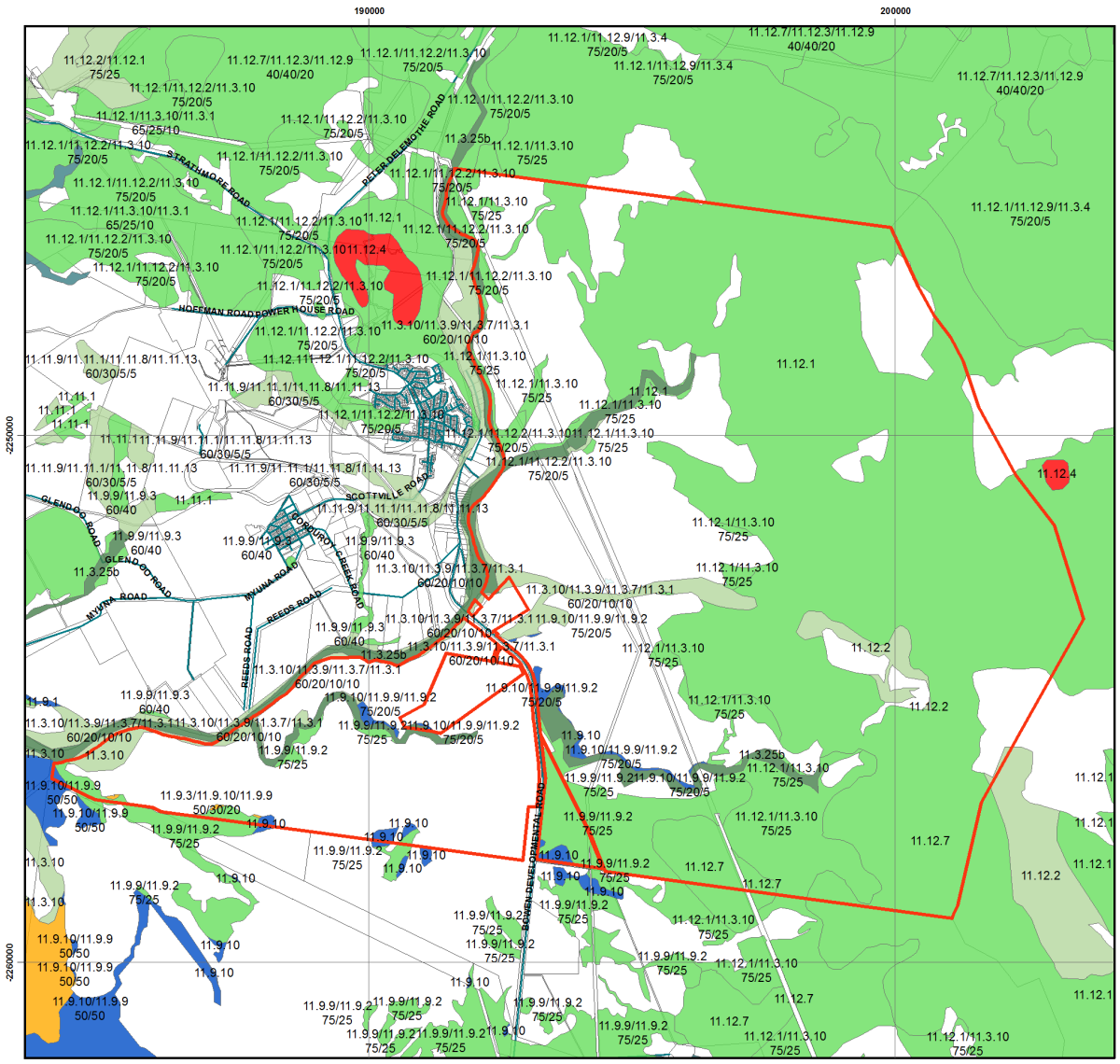
Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.

Map 4 - Remnant 2019 regional ecosystems by BVG (5M)



Remnant 2019 Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups
BVG5M Description (BVG1M codes)

- Selected Lot and Plan
- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Non-remnant vegetation, cultivated or built environment
- Water
- Cadastral Boundaries

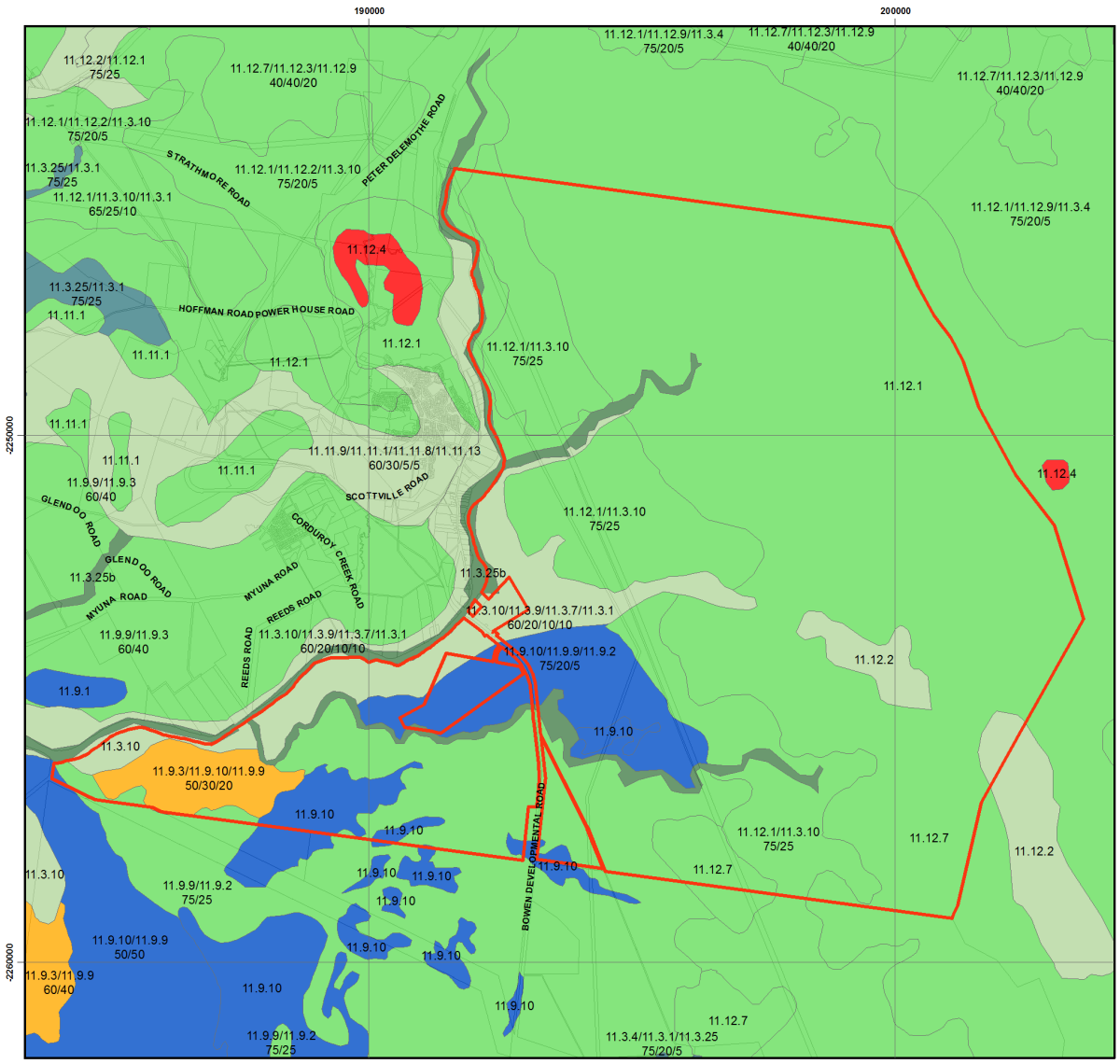
N

0 1 2 3 4 km

This product is projected into GDA 1994 Queensland Albers

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled.
Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.
Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil.
The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework".
Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.
Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy.
Non-remnant vegetation includes regrowth and disturbed native vegetation.

Map 5 - Pre-clearing regional ecosystems by BVG (5M)



Pre-clearing Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups
BVG5M Description (BVG1M codes)

- Selected Lot and Plan
- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
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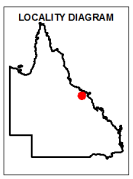
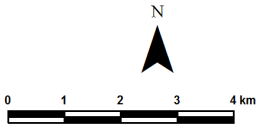
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Water
- Cadastral Boundaries

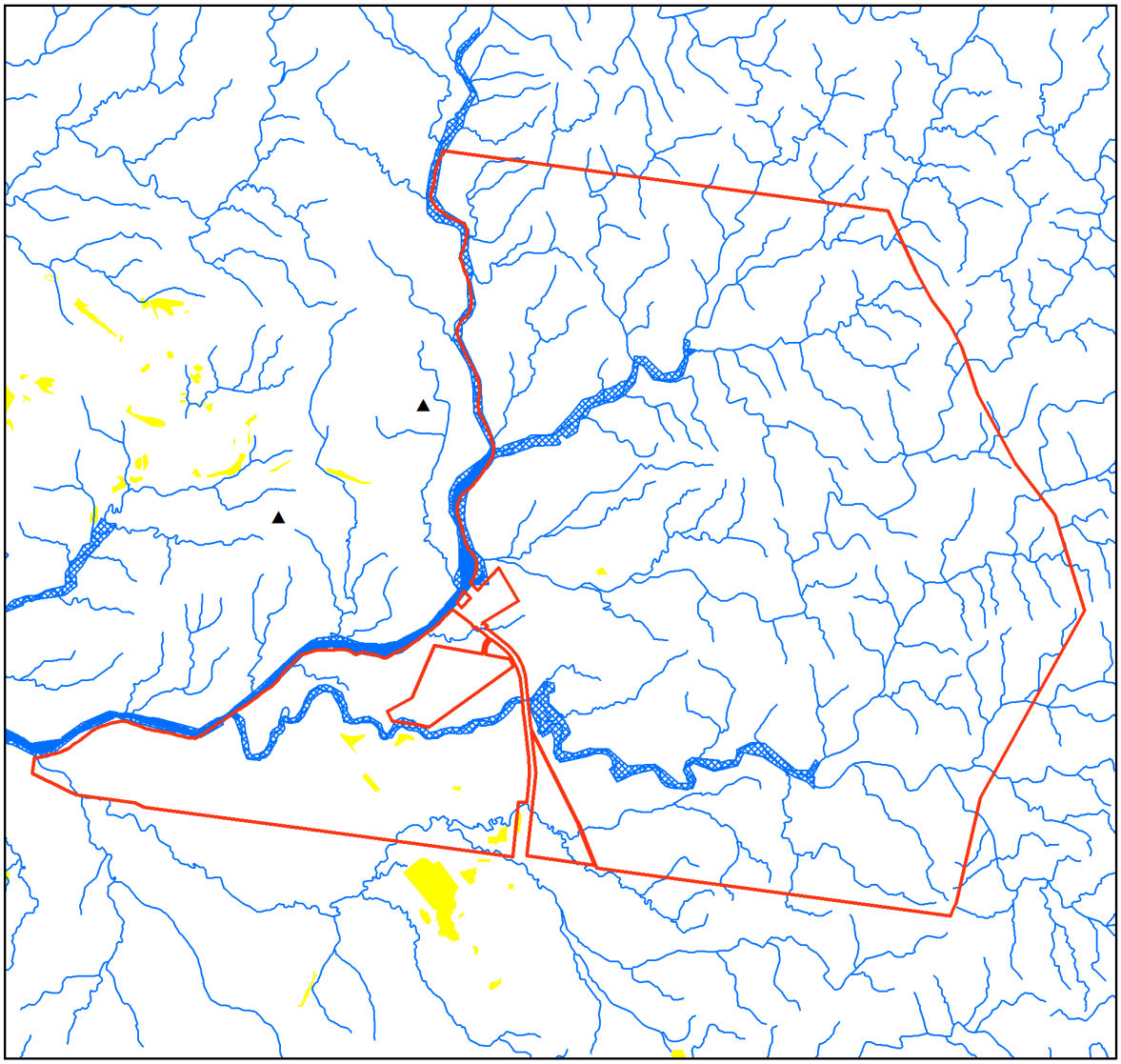




This product is projected into GDA 1994 Queensland Albers

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled.
Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.
Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil.
The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework".
Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.

Map 6 - Wetlands and waterways



Queensland Wetland Data

Legend

- Selected Lot and Plan
- Towns

Queensland Wetland Data

- Riverine Drainage Lines
- Springs

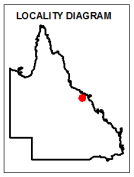
Wetland System - Water Bodies

- Marine Waterbodies
- Estuarine Waterbodies
- Riverine Waterbodies
- Lacustrine Waterbodies
- Palustrine Waterbodies

Wetland System - Regional Ecosystems

- Marine RE
- Estuarine RE
- Riverine RE
- Lacustrine RE
- Palustrine RE
- RE 51-80% wetland (mosaic units)
- RE 1-50% wetland (mosaic units)

LOCALITY DIAGRAM



N

0 1100 2200 3300 4400 5500 m

This product is projected into GDA 1994 Queensland Albers

Accuracy information: The positional accuracy of wetland data mapped at a scale of 1:100,000 is +/-100m with a minimum polygon size of 5ha or 75m wide for linear features, except for areas along the east coa st which are mapped at the 1:50,000 scale with a positional accuracy of +/-50m, with a minimum polygon size of 1ha or 35m wide for linear features. Wetlands smaller than 1ha are not delineated on the wetland data. Consideration of the effects of mapped scale is necessary when interpret ing data at a larger scale, e.g. 1:25,000. For property assessment, digital linework should be used as a guide only. The extent of wetlands depicted on this map is based on rectified 2013 Landsat ETM+ imagery supplied by Statewide Landcover and Trees Study (SLATS), Department of Environment and Science. The extent of water bodies is based on the maximum extent of inundation derived from available Landsat imagery up to and including the 2013 imagery.

Links and Other Information Sources

The Department of Environment and Science's Website -

http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/

provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from:

https://publications.qld.gov.au/dataset/redd/resource/

The methodology for mapping regional ecosystems can be downloaded from:

https://publications.qld.gov.au/dataset/redd/resource/

Technical descriptions for regional ecosystems can be obtained from:

http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/

Benchmarks can be obtained from:

http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Government Information System portal,

http://dds.information.qld.gov.au/dds/

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link:

https://qldglobe.information.qld.gov.au/

References

Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F., Ford, A.J. and Accad, A. (2019). The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 4.0. Queensland Herbarium, Department of Environment and Science.

(https://publications.qld.gov.au/dataset/redd/resource/78209e74-c7f2-4589-90c1-c33188359086)

Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F, Addicott, E.P. and Appelman, C.N. (2020). Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland. Version 5.1. Updated March 2020. Queensland Herbarium, Queensland Department of Environment and Science, Brisbane.

(https://publications.qld.gov.au/dataset/redd/resource/6dee78ab-c12c-4692-9842-b7257c2511e4)

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:

http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/

- Regional Ecosystem Description Database

The datasets listed below are available for download from:

http://dds.information.qld.gov.au/dds/

- Biodiversity status of pre-clearing and 2019 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
GDA94	- Geocentric Datum of Australia 1994
GIS	- Geographic Information System
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
VMA	- *Vegetation Management Act 1999*

Appendix D
Department of Environment and Science's MSES mapping Report

Queensland Government

Department of Environment and Science

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest
Lot: 25 Plan: SP190745

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

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.

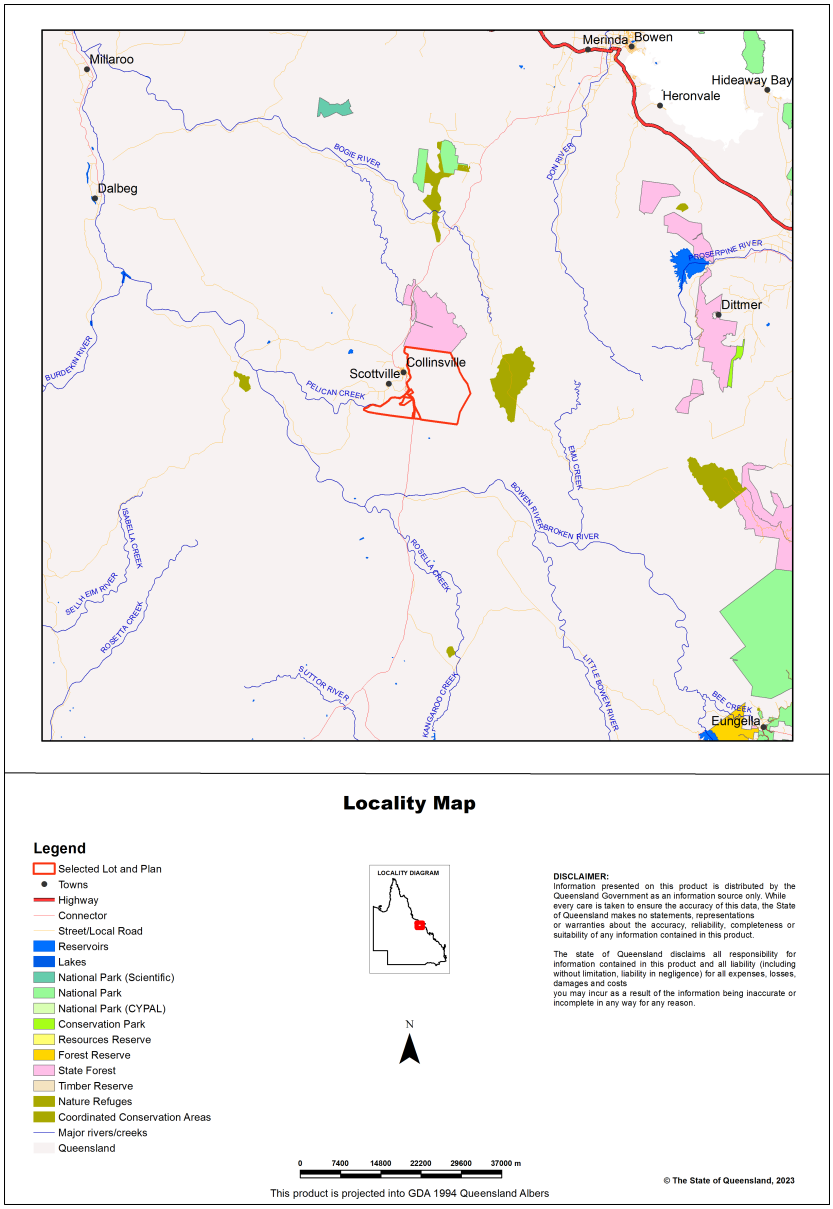
Table of Contents

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: 25 Plan: SP190745

Size (ha)	14,466.56
Local Government(s)	Whitsunday Regional
Bioregion(s)	Brigalow Belt
Subregion(s)	Northern Bowen Basin, Bogie River Hills
Catchment(s)	Burdekin



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	473.09 ha	3.3%
7b Special least concern animals	210.88 ha	1.5%
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 %
7d Sea turtle nesting areas	0.0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	323.29 ha	2.2%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	71.55 ha	0.5%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	327.26 ha	2.3%
8d Regulated Vegetation - Essential habitat	463.19 ha	3.2%
8e Regulated Vegetation - intersecting a watercourse	226.7 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

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

7d. Wildlife habitat (sea turtle nesting areas)

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
Macadamia integrifolia		V	None
Macadamia ternifolia		V	None
Macadamia tetraphylla		V	None
Melaleuca irbyana		E	None
Petaurus gracilis	Mahogany Glider	E	None
Petrogale persephone	Proserpine rock-wallaby	E	None
Pezoporus wallicus wallicus	Eastern ground parrot	V	None
Phascolarctos cinereus	Koala - outside SEQ*	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

Scientific name	Common name	NCA status	EPBC status	Migratory status
Geophaps scripta scripta	squatter pigeon (southern subspecies)	V	V	
Phascolarctos cinereus	koala	E	E	

Special least concern animal species records

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

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

**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, Map 3b - MSES - Species - Koala habitat area (SEQ)** and **Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)** 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
11.3.10/11.3.9/11.3.7/11.3.1	E-subdom	rem_end
11.9.10	O-dom	rem_oc
11.9.3/11.9.10/11.9.9	O-subdom	rem_oc
11.9.10/11.9.9	O-dom	rem_oc
11.9.10/11.9.9/11.9.2	O-dom	rem_oc

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

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.10/11.3.9/11.3.7/11.3.1	E-subdom	hvr_end
11.9.10/11.9.9/11.9.2	O-dom	hvr_oc
11.9.10	O-dom	hvr_oc

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

Regulated vegetation map category	Map number
R	8456

8d. Regulated Vegetation - Essential habitat

Values are present

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

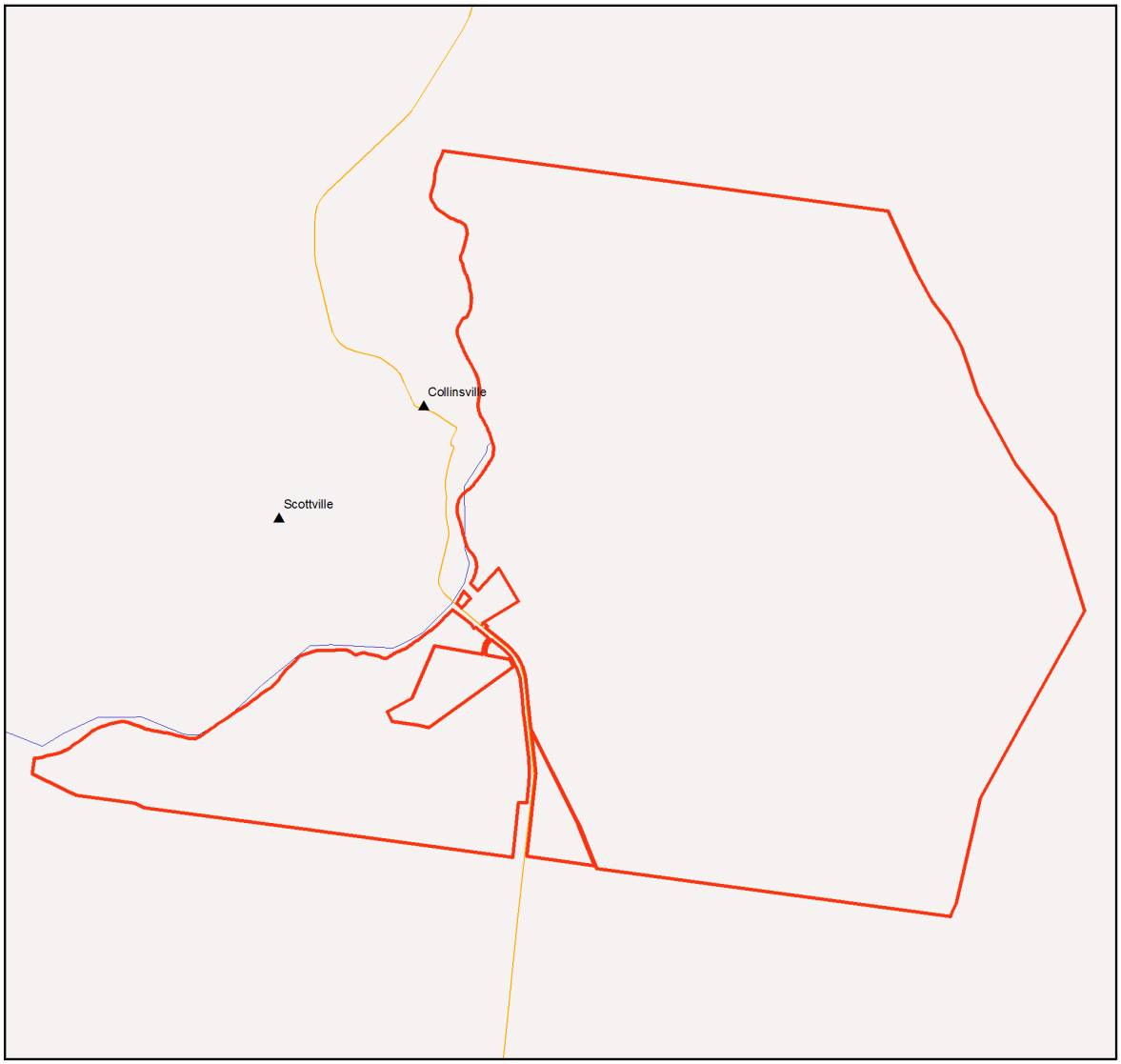
(no results)

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

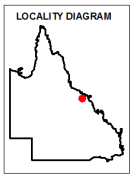


MSES - State Conservation Areas

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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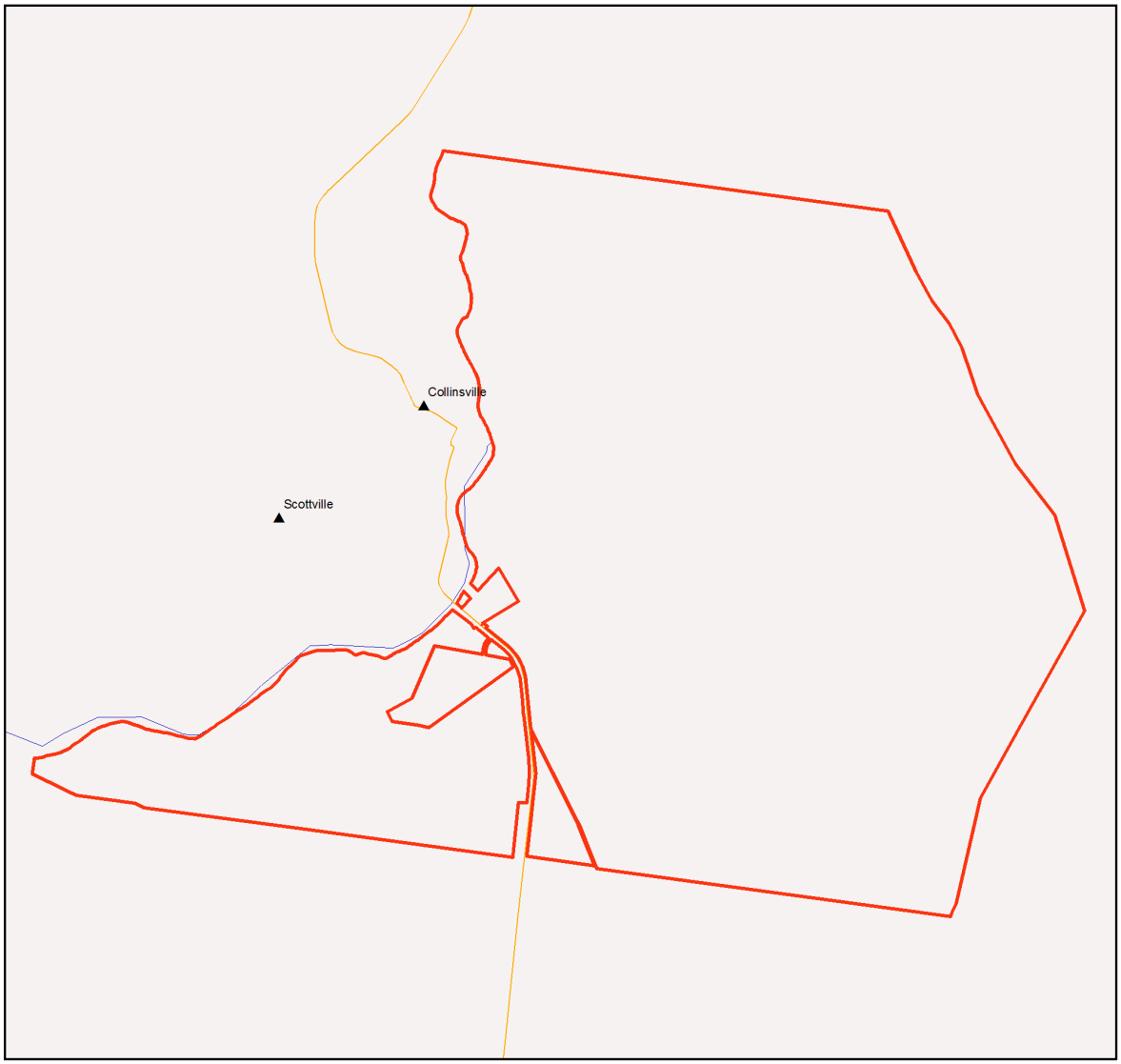
0 1100 2200 3300 4400 5500 m

This product is projected into GDA 1994 Queensland Albers

Map 2 - MSES - Wetlands and Waterways

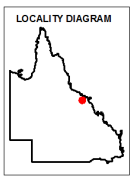


MSES - Wetlands and Waterways

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

LOCALITY DIAGRAM



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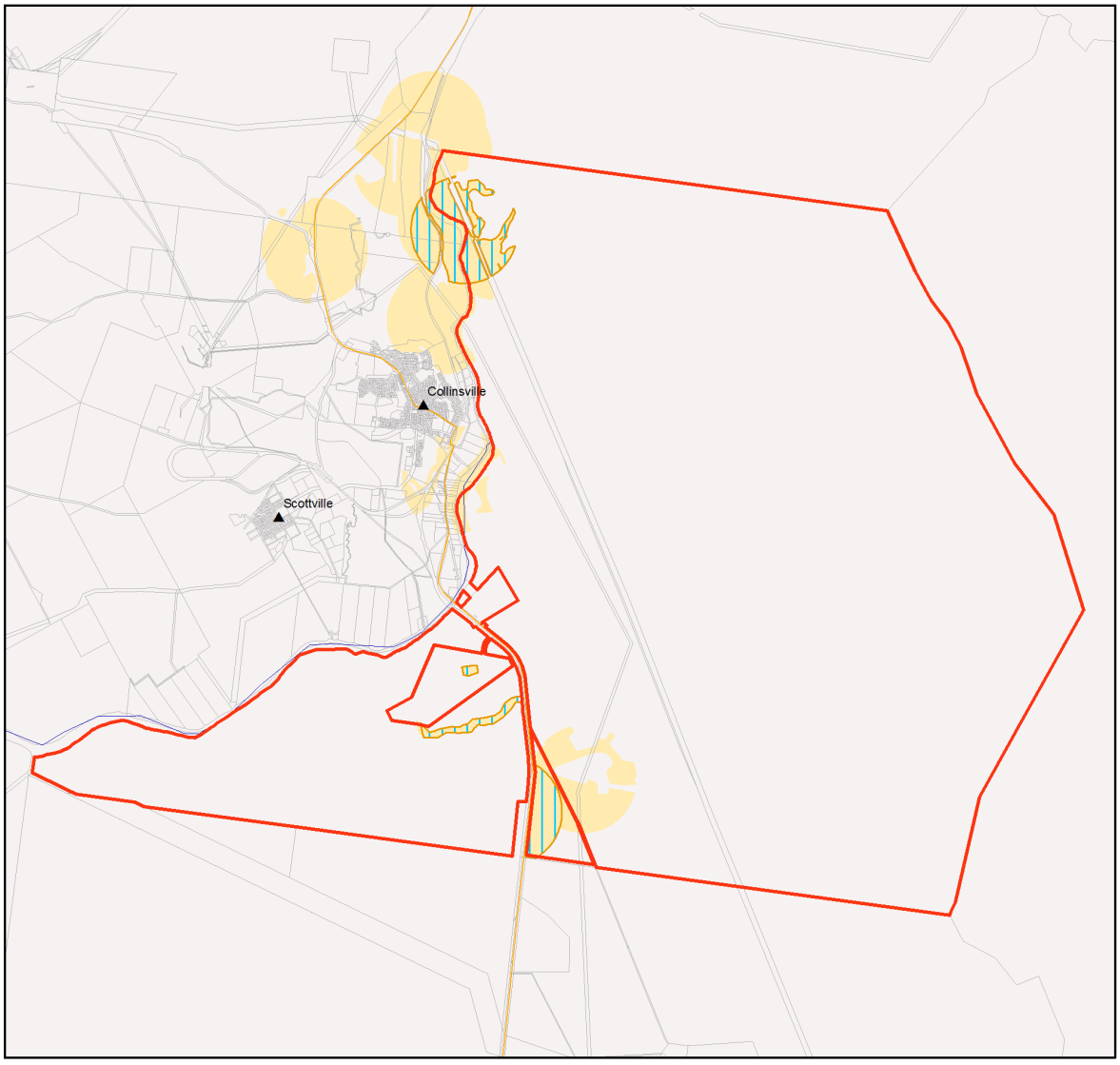
This product is projected into GDA 1994 Queensland Albers

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

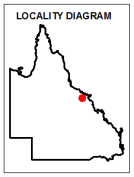


MSES - Species
Threatened (endangered or vulnerable) wildlife and special least concern animals

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)

LOCALITY DIAGRAM



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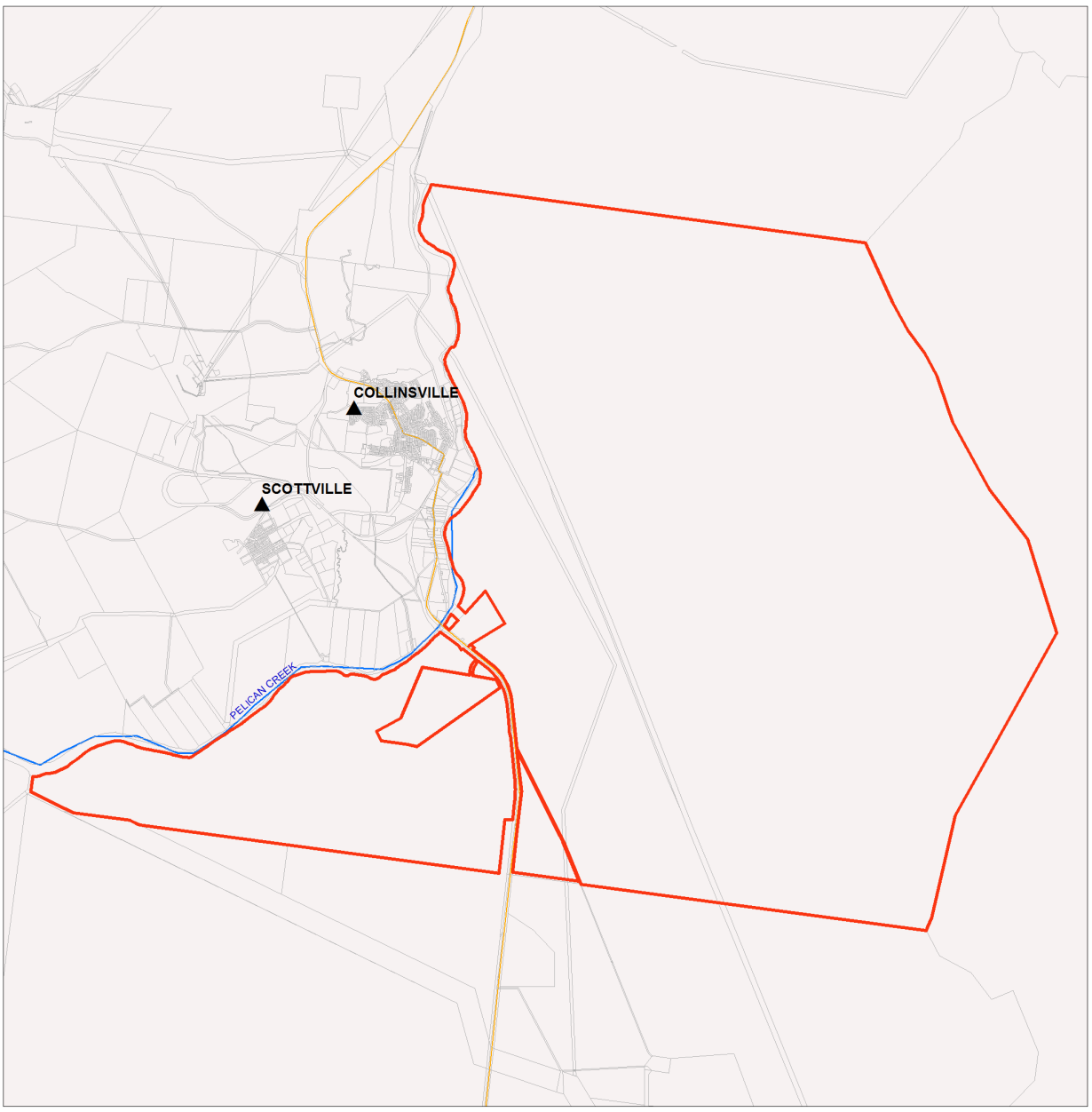
0 1100 2200 3300 4400 5500 m

This product is projected into GDA 1994 Queensland Albers

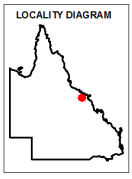
Map 3b - MSES - Species - Koala habitat area (SEQ)



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)

LOCALITY DIAGRAM



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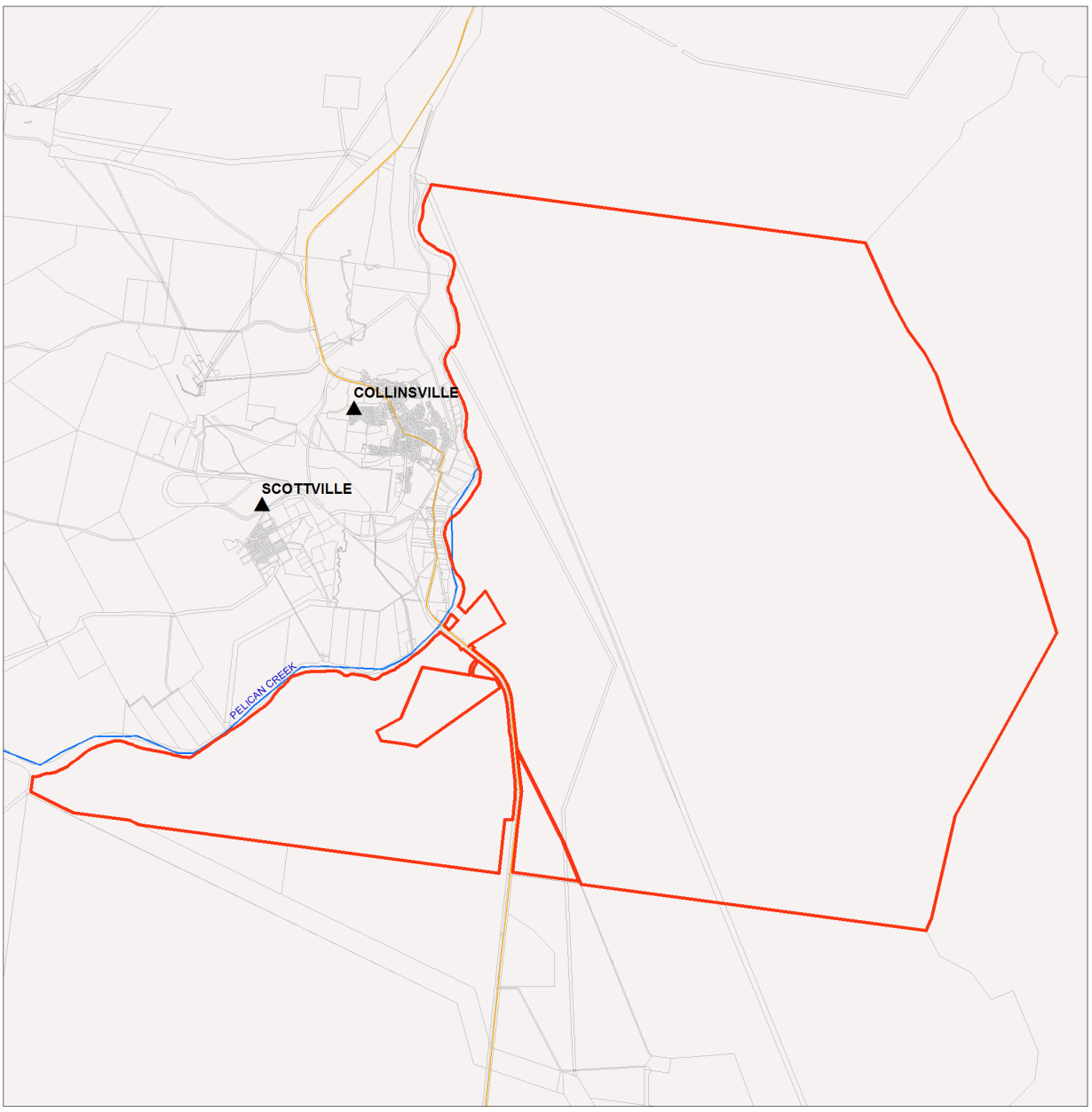
The represented layers for SEQ 'koala habitat area-core' and 'koala habitat area- locally refined' in MSES are sourced directly from the regulatory mapping under the Nature Conservation (Koala) Conservation Plan 2017. Whilst every effort is made to ensure the information remains current, there may be 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.

0 1,000 2,000 3,000 4,000 5,000 m

This product is projected into GDA 1994 Queensland Albers

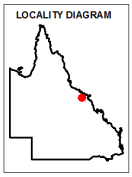
Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)



MSES - Wildlife habitat (sea turtle nesting areas)

Area of Interest
- Selected Lot and Plan
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Wildlife habitat (sea turtle nesting areas)

LOCALITY DIAGRAM



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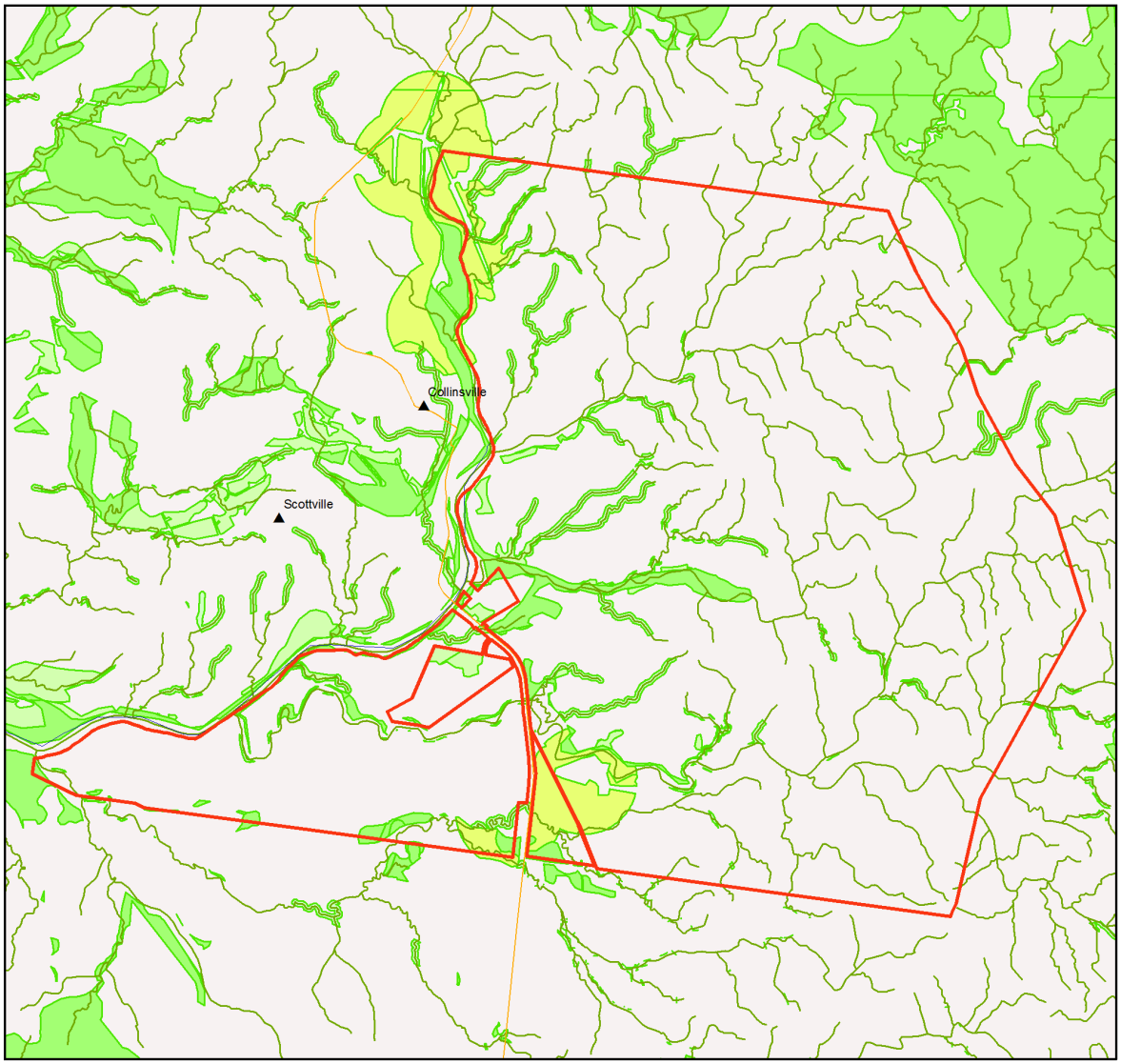
MSES mapping of sea turtle nesting areas identifies beaches where the recorded number of turtle nests are over 1% of the turtle species or genetic stock. The linework is also deliberately extended along nearby rocky coastlines and headlands to recognise that significant numbers of nesting adults and hatchlings can become disoriented by light pollution from development on rocky coastlines and headlands while navigating offshore from nesting beaches.

0 1,000 2,000 3,000 4,000 5,000 m

This product is projected into GDA 1994 Queensland Albers

Map 4 - MSES - Regulated Vegetation

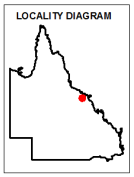


MSES - Regulated Vegetation

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)

LOCALITY DIAGRAM



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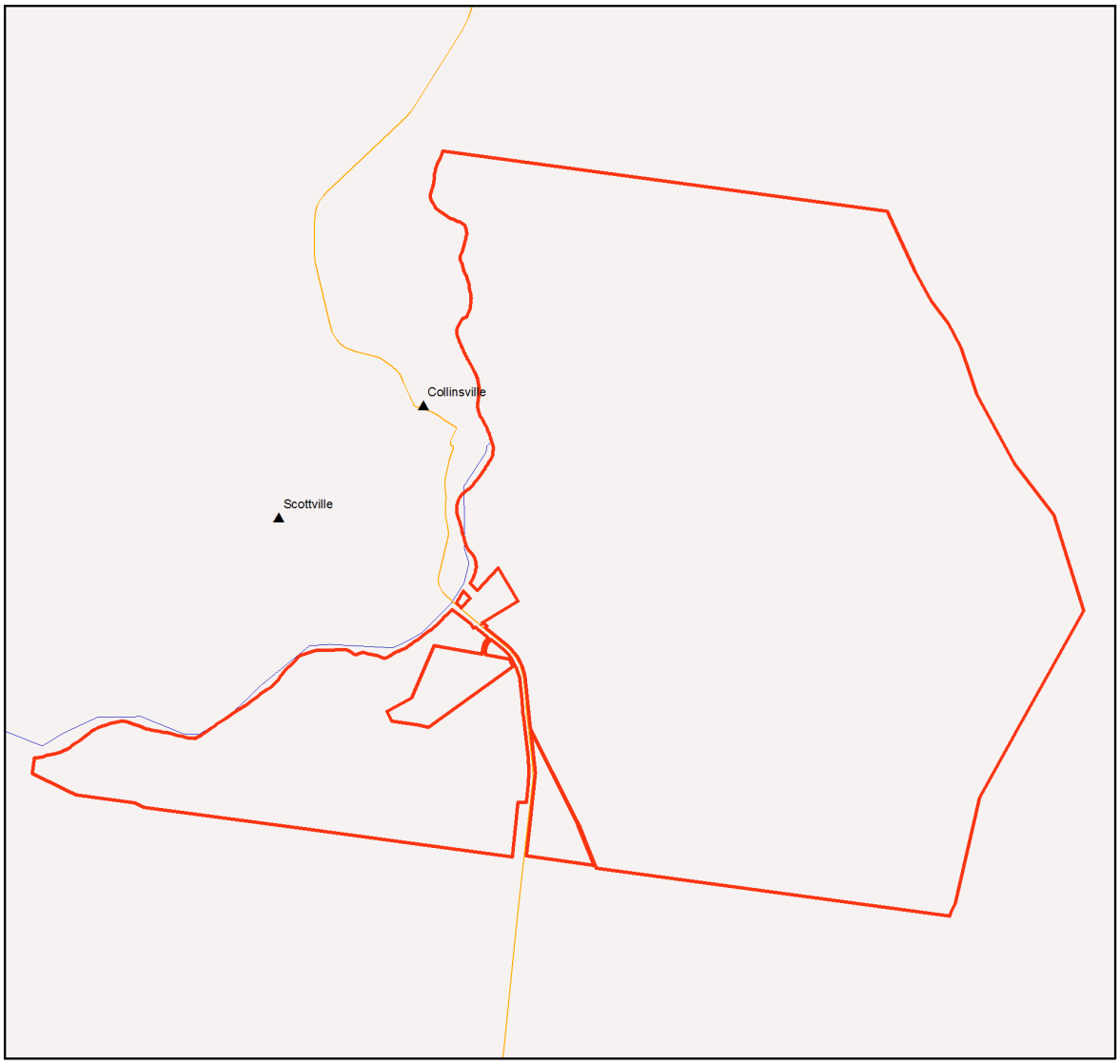
0 1100 2200 3300 4400 5500 m

This product is projected into GDA 1994 Queensland Albers

Map 5 - MSES - Offset Areas

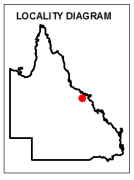


MSES - Offsets

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)

LOCALITY DIAGRAM



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0 1100 2200 3300 4400 5500 m

This product is projected into GDA 1994 Queensland Albers

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.

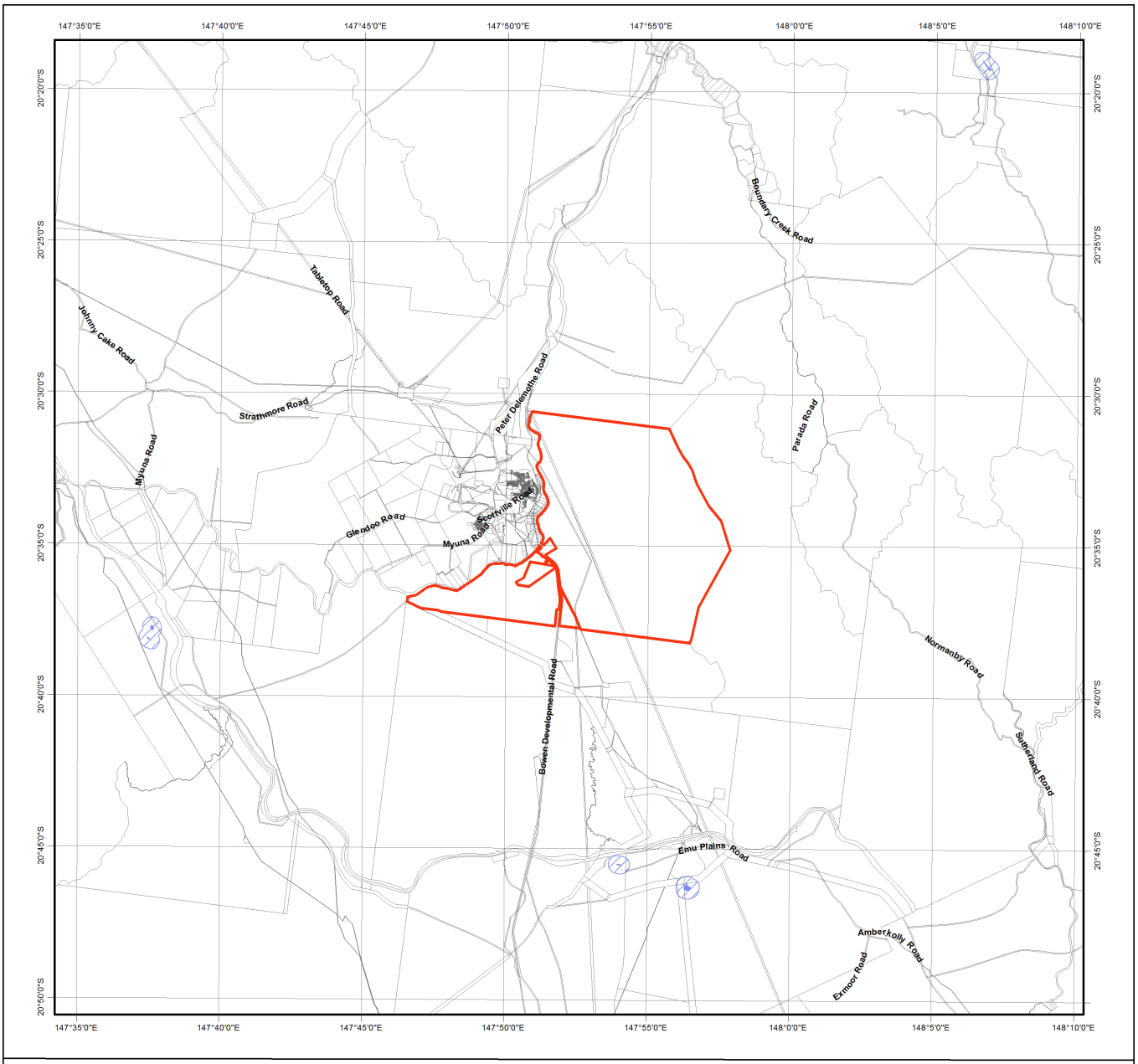
Individual MSES layers can be attributed to the following source data available at QSpatial:

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 - Sea Turtle Nesting Areas records
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

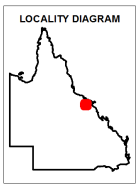
AOI	- Area of Interest
DES	- Department of Environment and Science
EP Act	- *Environmental Protection Act 1994*
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental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

Appendix E
Department of Environment and Science's Map of Referrable Wetlands – Wetland Protection Areas (EP Regs, 2008)



Map of Great Barrier Reef Wetland Protection Areas

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



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

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

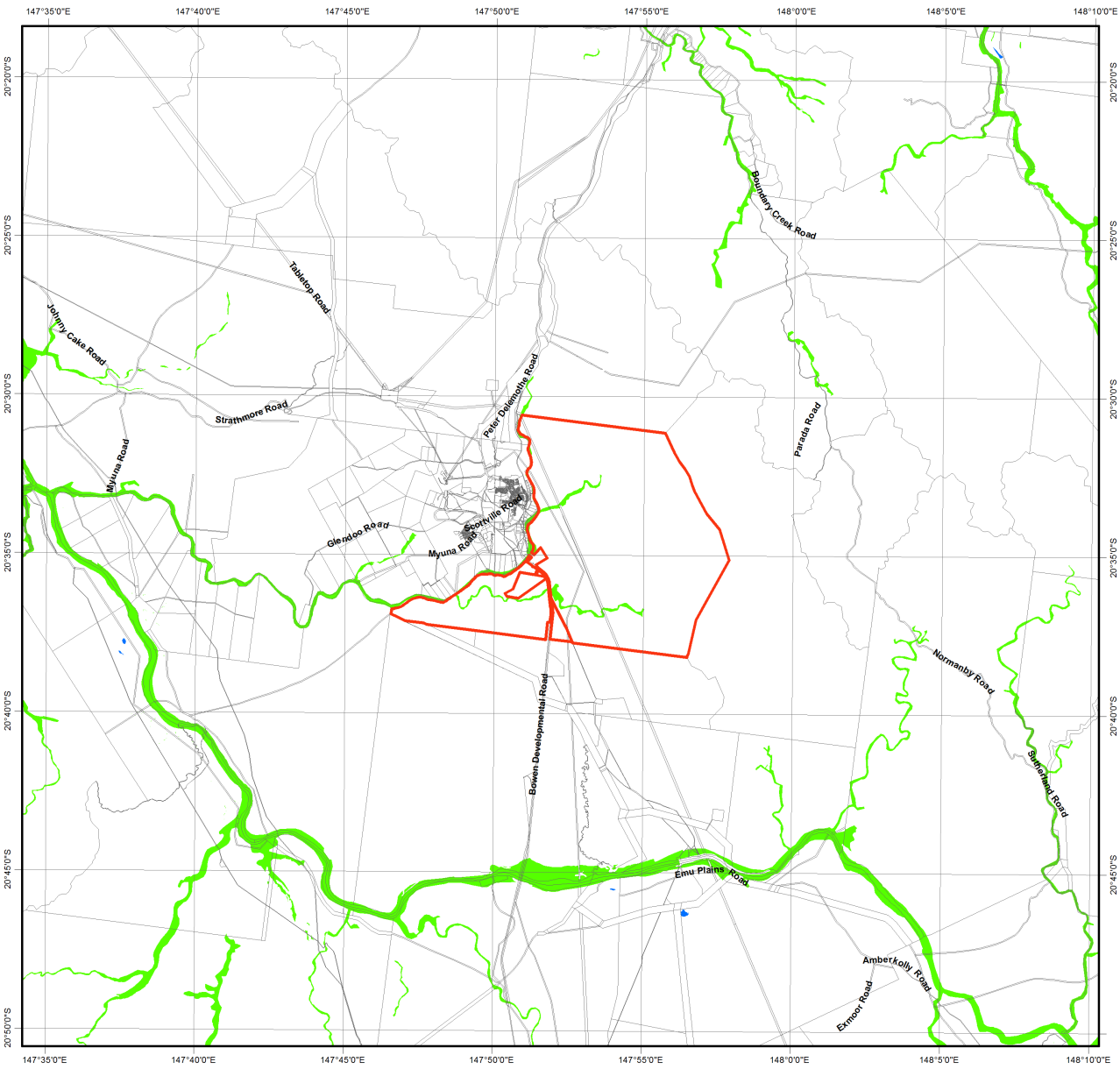
The policy outcome and assessment criteria for assessing these applications are described in the State Development Assessment Provisions (SDAP) *State Code 9 : Great Barrier Reef Wetland Protection Areas.*

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

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

0 3300 6600 9900 13200 16500 m

This product is projected into GDA 1994 MGA Zone 55



Map of Queensland Wetland Environmental Values

Selected Lot and Plan

Cadastral Boundary

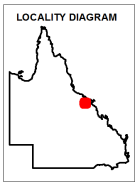
High ecological values waters management intent

Wetlands assessed under section 7

GBR wetland of high ecological significance

Wetland of high ecological significance

Wetland of general ecological significance



N

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

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

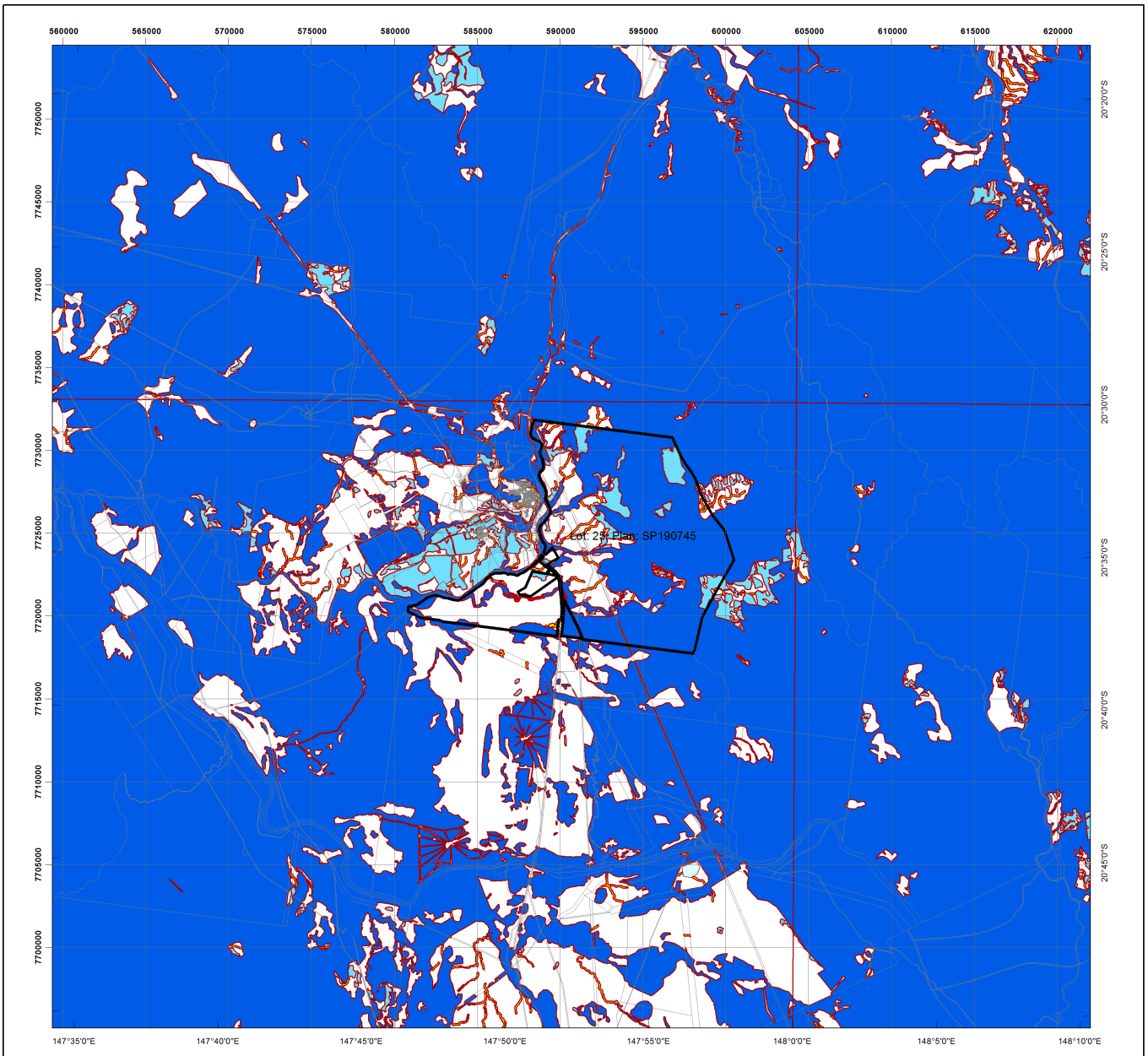
This map is produced at a scale relevant to the size of the lot on plan identified and should be printed at A4 size in portrait orientation. Consideration of the effects of mapped scale is necessary when interpreting data at a large scale.

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

0 3300 6600 9900 13200 16500 m

This product is projected into GDA 1994 MGA Zone 55

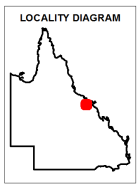
Appendix F
Department of Environment and Science's Vegetation Management Report



Regulated Vegetation Management Map

Legend

- Selected Lot and Plan
- Category A area (Vegetation offsets/compliance notices/VDecs)
- Category B area (Remnant vegetation)
- Category C area (High-value regrowth vegetation)
- Category R area (Reef regrowth watercourse vegetation)
- Category X area (Exempt clearing work on Freehold, Indigenous and Leasehold land)
- Water
- Other land parcel boundaries



N

0 3,300 6,600 9,900 13,200 16,500 m

This product is projected into:
GDA 1994 MGA Zone 55

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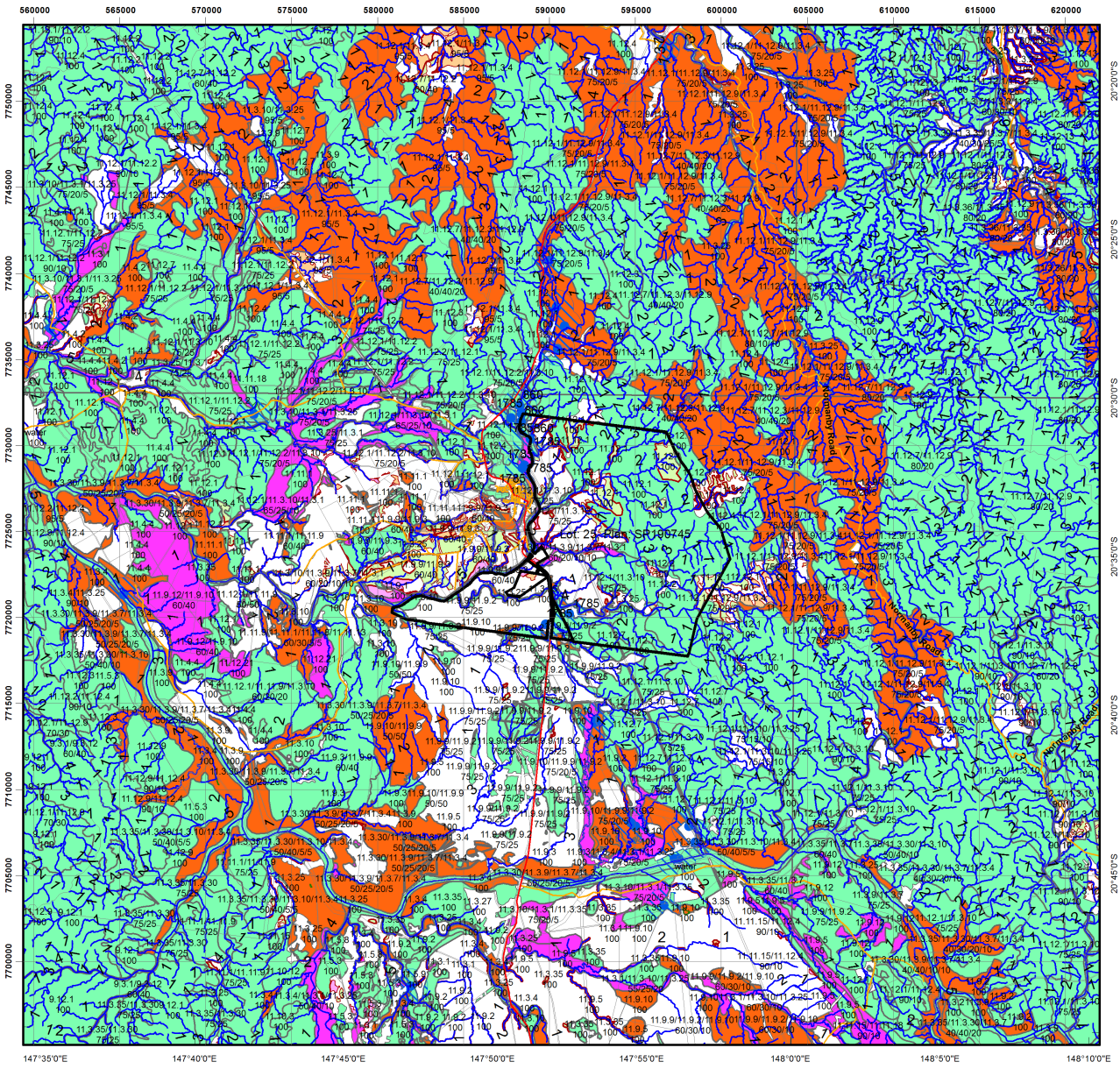
Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

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

Land parcel boundaries are provided as locational aid only.

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

Queensland Government



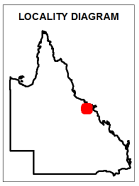
Vegetation Management Supporting Map

Legend

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

Queensland Government

LOCALITY DIAGRAM



N

0 2,400 4,800 7,200 9,600 12,000 m

This product is projected into:
GDA 1994 MGA Zone 55

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

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

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

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

Land parcel boundaries are provided as locational aid only.

Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

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

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

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

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

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

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

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

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

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

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

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

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

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
860	Phascolarctos cinereus	koala	E	Open forests and woodlands containing Eucalyptus, Corymbia, Lophostemon or Melaleuca trees having a trunk of a diameter of more than 10cm at 1.3m above the ground. Tree species used for food and habitat varies across the state and can include: Corymbia citriodora, Corymbia henryi, Corymbia intermedia, Eucalyptus acmenoides, Eucalyptus bancroftii, Eucalyptus biturbinata, Eucalyptus blakelyi, Eucalyptus brownii, Eucalyptus camaldulensis, Eucalyptus carnea, Eucalyptus chloroclada, Eucalyptus coolabah, Eucalyptus crebra, Eucalyptus dealbata, Eucalyptus drepanophylla, Eucalyptus dunnii, Eucalyptus eugenioides, Eucalyptus exserta, Eucalyptus fibrosa, Eucalyptus grandis, Eucalyptus helidonica, Eucalyptus latisinensis, Eucalyptus longirostrata, Eucalyptus major, Eucalyptus melanophloia, Eucalyptus melliodora, Eucalyptus microcarpa, Eucalyptus microcorys, Eucalyptus microtheca, Eucalyptus moluccana, Eucalyptus montivaga, Eucalyptus orgadophila, Eucalyptus papuana, Eucalyptus pilularis, Eucalyptus platyphylla, Eucalyptus populnea, Eucalyptus portuensis, Eucalyptus propinqua, Eucalyptus racemosa, Eucalyptus resinifera, Eucalyptus robusta, Eucalyptus saligna, Eucalyptus seeana, Eucalyptus siderophloia, Eucalyptus sideroxylon, Eucalyptus tereticornis, Eucalyptus thozetiana, Eucalyptus tindaliae, Eucalyptus umbra, Lophostemon confertus, Melaleuca leucadendra, Melaleuca quinquenervia.	Sea level to 1000m.	None	Riparian areas, plains and hill/escarpment slopes.
1785	Geophaps scripta scripta	squatter pigeon (southern subspecies)	V	Dry eucalypt woodland (including poplar box, spotted gum, yellow box, acacia and callitris), with sparse short grass, often on sandy areas near to permanent water; grassy eucalypt woodlands. Nest on ground near or under grass tussock, log or low bush.	None	None	Gravelly ridges, traprock and river flats.

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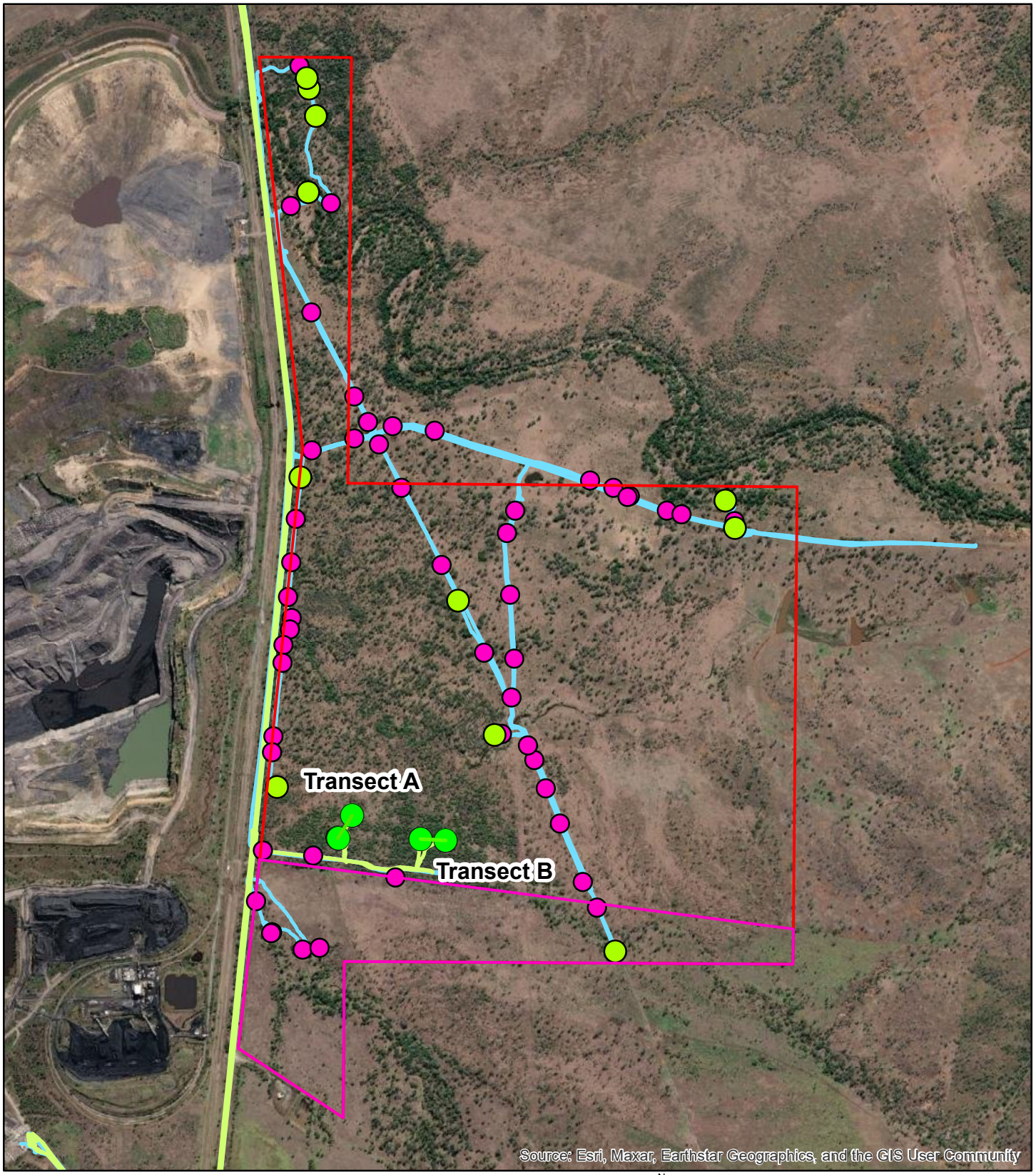
Appendix G
Location of Regional Ecosystem Survey Sites



LEGEND

- MLA 700075
- Sonoma Comnbined MLs
- Transect Data
- RE Code Sites May 23
- RE Code Sites April 23
- Waypoints May 23
- Waypoints April 23
- Survey Tracks May 23
- Suvey Tracks April 23

Appendix Figure G

Location of Vegetation Survey Sites

Sonoma Vegetation Community Mapping Technical Report

AD 23/05/2023
Job No. 0300

terrestria
ECOLOGICAL MANAGEMENT

Appendix H
Potential Occurrence of Threatened Flora within Project Area

Scientific Name	Common Name	NC Act	EPBC Act	Data base	Habitat Preference	Assessment of occurrence
Eucalyptus raveretiana	black ironbox	C	V	W/P	Black Ironbox occurs on the banks of rivers, creeks and other watercourses, on clayey or loamy soil	**Unlikely** There are no major watercourses within the Project Area
Ozothamnus eriocephalus		V	V	W	A range of habitat types, including the margins of notophyll vine forest, margins of gallery forest, microphyll vine forest, tall open *Eucalyptus andrewsii*. *E. resinifera* forest with an understorey of *Allocasuarina littoralis*; tall open forest with *E. drepanophylla*, *E. acmenoides*, *C. intermedia* and *C. citriodora*; in open eucalypt forest and on rocky ridges within Eucalyptus spp. - Acacia spp. scrub. It is also known from the edge of creek banks, crevices on steep granite slopes, often in sunny situations. O. eriocephalus grows from moderate to high elevations ranging from 380 to 950 m. It occurs on skeletal sandy or gravelly soils or occasionally deeper red-brown clay loams derived from granites and sandstones	**Unlikely** No suitable habitat occurs within the Project area.
Polianthion minutiflorum		V	V	W	In forest and woodland on sandstone slopes and gullies with skeletal soil, or sometimes deeper sands adjacent to deeply weathered laterite. Associated species and vegetation includes: open woodland of *Acacia shirleyi*, *Lysicarpus angustifolius*, *Corymbia aureola*; woodland of *Eucalyptus corynodes*, *Corymbia trachyphloia*, *E. cloeziana* on sandy soil over sandstone.; sandstone plateau with *Eucalyptus dura*, *E. fibrosa*, *Angophora leiocarpa*, *E. major*	**Unlikely** No suitable habitat occurs within the Project area.
Ptilotus uncinellus		E	NL	W	No information available	

Scientific Name	Common Name	NC Act	EPBC Act	Data base	Habitat Preference	Assessment of occurrence
Brachychiton sp. (Blackwall Range R.J.Fensham 971)		E	NL	W	Occurs in fragmented dry rainforest on a boulder field and the smaller population (Aureole) was located where elements of dry rainforest occur within savanna on an unnamed geological feature forming an aureole with an inner diameter of approximately 3 km.	**Unlikely** No suitable habitat occurs within the Project area.
Cerbera dumicola		NT	NL	W	Sandstone hills in open stringybark, sand/clay soil; semi-deciduous notophyll-microphyll vine forest on rhyolite hillslopes; open-woodland of silver-leaved ironbark, SEVT, woodland of rosewood on sandy loam and open woodland of mulga	**Unlikely** No suitable habitat occurs within the Project area.
Bertya sharpeana	Mt. Coolum bertya	NT	NL	W	Occurs mostly in heath but occasionally in open forest or woodland communities or on rainforest margins. Soils are recorded as skeletal dark brown organic loams. Local population low open-heath vegetation consisting of *Acacia* spp., *Astroloma* sp., *Leucopogon neo-anglicus, Leptospermum neglectum, Melaleuca pearsonii, Pultenaea retusa* and *Banksia spinulosa*	**Unlikely** No suitable habitat occurs within the Project area.
Solanum sporadotrichum		NT	NL	W	Occurs in vine ticket on slopes, particularly on igneous coastal ranges.	**Unlikely** No suitable habitat occurs within the Project area.
Cycas ophiolitica		E	E	P	Occurs from Marlborough in the north, to the Fitzroy River near Rockhampton in the south, in woodland or open woodland dominated by eucalypts, often on serpentinite substrates	**Unlikely** No suitable habitat occurs within the Project area. Outside of known range of this species.

Scientific Name	Common Name	NC Act	EPBC Act	Data base	Habitat Preference	Assessment of occurrence
Marsdenia pumila		V	NL	W	Only known from one locality, growing amongst grass tussocks on low ridges of laterised conglomerate rocks with low eucalypt woodland. Associated species include *Corymbia leichhardtii*, *C. trachyphloia*, *Lysicarpus angustifolius* and *Acacia shirleyi* as canopy dominants	**Unlikely** No suitable habitat occurs within the Project area.
Dichanthium queenslandicum	King Blue-grass	V	E	W/P	Found in black clay soils	**Potentially occurs** There are extensive areas of black clay soils that provide the substrate for this species. It is noted that the site has been heavily grazed limiting habitat suitability for this species.
Croton magneticus		V	NL	W	In deciduous vine thickets on soils derived from sandstone, granite or acid agglomerate substrates	**Unlikely** No suitable habitat occurs within the Project area.
Dichanthium setosum		LC	V	P	Associated with heavy basaltic black soils and stony red-brown hard-setting loam with clay subsoil	**Potentially occurs** There are extensive areas of black clay soils that provide the substrate for this species. It is noted that the site has been heavily grazed limiting habitat suitability for this species.
Omphalea celata		V	V	P	At Hazlewood Gorge, Omphalea celata grows in fragmented semi-evergreen vine thicket along a watercourse on weathered metamorphics in a steep-sided gorge at an altitude of 560 m (Forster, 1995). On Gloucester Island, plants grow in a rocky	**Unlikely** No suitable habitat occurs within the Project area.

Scientific Name	Common Name	NC Act	EPBC Act	Data base	Habitat Preference	Assessment of occurrence
					granitic gully near Araucaria microphyll vineforest	
Samadera bidwillii		V	V	P	Occurs in lowland rainforest often with Araucaria cunninghamii or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland, it is commonly found in areas adjacent to both temporary and permanent watercourses	**Unlikely** No suitable habitat occurs within the Project area.
Lobelia concolor		SL			Usually grows on heavy soils in moist depressions	**Potentially occurs** There is habitat for this species associated with the alluvial clays along the banks of the major tributaries of the Bowen River.
Cycas media subsp. media		SL			Usually grows in open forest but occasionally found in beach forest, monsoon forest and vine thickets.	**Unlikely** There is low-quality habitat for this species within the open forest/woodland communities of the Project area. Fire frequency would limit the potential of occurrence. This species is restricted to coastal areas
Vallisneria annua		SL			Permanent to semi-permanent ponded waters	**Unlikely** There is no permanent or semi-permanent natural ponded waterbodies within the Project area.

Scientific Name	Common Name	NC Act	EPBC Act	Data base	Habitat Preference	Assessment of occurrence
Potamogeton tricarinatus		SL			Permanent to semi-permanent ponded waters	**Unlikely** There is no permanent or semi-permanent natural ponded waterbodies within the Project area.

Abbreviations:
NC Act=*Nature Conservation Act 1992*. E=Endangered; V=Vulnerable; NT=Near Threatened; LC=Least Concern. SL = Special Least Concern
EPBC Act=*Environment Protection and Biodiversity Conservation Act 1999*. CE=Critically Endangered; E=Endangered; V=Vulnerable; (-) =Not listed.
W = WildNet, P = Protected Matters database search. NL = not listed

Appendix I
RE Code Site Data

A 3.3 Sheet D – Regional Ecosystem type assessment site

Location

Site No. ..... Recorder: A. DANIEL Day/Date: 26/04/23

Purpose .....

Locality: (inc. distance/direction to nearest town) Sonoma

GPS: 55 0590989 7711235 9DA'94

1141
7155
7156

Vegetation structure

Median height of the EDL is to be measured

Stratum	Median height	Height interval	Est. cover density (D,M,S,V)
E		-	
T1	11	9 - 13	S
T2	7	6 - 9	S
T3		-	
S1		-	
S2		-	
G		-	

Structural formation: (including height) Tall Woodland

Ecologically dominant layer: T_1

Plant species

Record relative (numerical) dominance for each stratum;
d – dominant; ***c*** – co-dominant; **s** - subdominant, ***a*** – associated.

Str.	Rel. dom.	Scientific Name
T_1	d	Eucalyptus crebra
T_1	a	Corymbia dallachiana
T_2	c	Corymbia dallachiana
T_2	c	Acacia salicina
S_1	d	Ziziphus mauritiana
		Notolaea longifolia
G	d	Dichanthium sericeum
G	a	Stylothanthes scabra
G	d	Aristida calycina

Geology, landform, soils

Geology map/scale/year: .....

Geology code and rock types: .....

Land system: .....

Landform: .....

Soils: pale Sandy clay

Field observation and notes: .....

Landzone: 9 | 3

RE code changes

Existing RE code: .....

Proposed RE code: 11.3.30

END

A 3.3 Sheet D – Regional Ecosystem type assessment site

Location

Site No. ..... **Recorder:** A. DANIEL **Day/Date:** 26/04/23

Purpose .....

Locality: (inc. distance/direction to nearest town) SONOMA

GPS: 55 0590849 7711475 4 GDA'94

1144 7159
7160

Vegetation structure

*Median height of the EDL is to be measured

Stratum	Median height	Height interval	Est. cover density (D,M,S,V)
E		-	
T1	18	16 - 20	S
T2	12	10 - 14	S
T3		-	
S1		-	
S2		-	
G	0.6	0 - 1	D

Structural formation: (including height) Tall Woodland

Ecologically dominant layer: T_1

Plant species

Record relative (numerical) dominance for each stratum; ***d*** – dominant; ***c*** – co-dominant; ***s*** - subdominant, ***a*** – associated.

Str.	Rel. dom.	Scientific Name
T_1	d	Corymbia dallachiana
T_1	a	Corymbia tessellaris
T_2	d	Corymbia dallachiana
T_2	a	Corymbia tessellaris
T_2	a	Plectogyne tumorense
T_2	a	Acacia Salicina
S_1	c	Ziziphus mauritiana
S_1	c	Vachellia farnesiana
G	g	Stylosanthes Scabra
G	d	Dichanthium sericeum

Geology, landform, soils

Geology map/scale/year: .....

Geology code and rock types: .....

Land system: .....

Landform: .....

Soils: Hard clay loam

Field observation and notes: .....

Landzone: 3

RE code changes

Existing RE code: .....

Proposed RE code: 11.3.7

END

Plaeogynium tumorense

A 3.3 Sheet D – Regional Ecosystem type assessment site

Location

Site No. ..... **Recorder:** A. DANIEL **Day/Date:** 27/04/23

Purpose .....

Locality: (inc. distance/direction to nearest town) Sonoma

GPS: 55 0591882 7720142 GDA 94

1163 7175 7176

Vegetation structure

Median height of the EDL is to be measured

Stratum	Median height	Height interval	Est. cover density (D,M,S,V)
E		-	
T1	26	22 - 28	S
T2	14	12 - 16	S
T3		-	
S1	3	2 - 4	MD
S2		-	
G	1	0 - 1.5	d

Structural formation: (including height) Tall wooded

Ecologically dominant layer: T_1

Plant species

Record relative (numerical) dominance for each stratum;
d – dominant; ***c*** – co-dominant; ***s*** - subdominant, ***a*** – associated.

Str.	Rel. dom.	Scientific Name
T_1	d	Corymbia dallachiana
T_2	d	Corymbia dallachiana
T_2	d	Corymbia erythrophloea
T_2	a	Corymbia tessellaris
T_2	a	Acacia salicina
T_2	a	Pleiogynium timorense
S_1	d	Vachellia farnesiana
S_1	a	Cryptostegia grandiflora
G	d	Megathyrsus maximus

Geology, landform, soils

Geology map/scale/year: .....

Geology code and rock types: .....

Land system: .....

Landform: .....

Soils: Dark brown loamy clay

Field observation and notes: .....

Landzone: 3

RE code changes

Existing RE code: .....

Proposed RE code: 11.11.3 3D /5

END

A 3.3 Sheet D – Regional Ecosystem type assessment site

Location

Site No. .... **Recorder:** A. Daniel **Day/Date:** 27/04/23

Purpose

Locality: (inc. distance/direction to nearest town) Sonono

GPS: 55 0596246 7720242 GDA94

1166

7179

Vegetation structure

Median height of the EDL is to be measured

Stratum	Median height	Height interval	Est. cover density (D,M,S,V)
E		-	
T1	16	14 - 18	S
T2	11	10 - 14	S
T3		-	
S1	3	2 - 4	S
S2	1.5	1 - 2	VS
G	0.6	0 - 1	d

Structural formation: (including height) Tall Woodland

Ecologically dominant layer: T_1

Plant species

Record relative (numerical) dominance for each stratum;
d – dominant; *c* – co-dominant; **s** - subdominant, **a** – associated.

Str.	Rel. dom.	Scientific Name
T_1	d	Eucalyptus crebra
T_1	a	Corymbia dallachiana
T_2	d	Corymbia dallachiana
T_2	a	Eucalyptus crebra
T2	a	Acacia Salicina
S_1	d	Ziziphus mauritianum
S_1	a	Cryptostegia grandiflora
S_2	d	Stylosanthes Scabra
G	d	Dicanthium Sericeum

Geology, landform, soils

Geology map/scale/year:

Geology code and rock types:

Land system:

Landform:

Soils: pale Sandy clay

Field observation and notes:

Landzone: 9

RE code changes

Existing RE code:

Proposed RE code: 11.3.30

END

A 3.3 Sheet D – Regional Ecosystem type assessment site

Location

Site No. ..... **Recorder:** A DANIEL **Day/Date:** 27/04/23

Purpose .....

Locality: (inc. distance/direction to nearest town) SARATOGA

GPS: 55 | 0590148 | 7719035 GDA94

1176
7185
7186

Vegetation structure

Median height of the EDL is to be measured

Stratum	Median height	Height interval	Est. cover density (D,M,S,V)
E		-	
T1	8	5 - 10	S
T2		-	
T3		-	
S1	3	1 - 4	VS
S2		-	
G	0.5	0 - 1	D

Structural formation: (including height) Woodland

Ecologically dominant layer: T1

Plant species

Record relative (numerical) dominance for each stratum; ***d*** – dominant; ***c*** – co-dominant; **s** - subdominant, ***a*** – associated.

Str.	Rel. dom.	Scientific Name
T1	c	Owenia acidula
T1	c	Lysiphyllum hookeri
T1	a	Atalaya hemiglauca
T1	a	Acacia harpophylla
S1	c	Atalaya hemiglauca
S1	c	Owenia acidula
G	cl	Dichanthium sericeum

Geology, landform, soils

Geology map/scale/year: .....

Geology code and rock types: .....

Land system: .....

Landform: .....

Soils: dark brown clay

Field observation and notes: .....

Landzone: 9

RE code changes

Existing RE code: .....

Proposed RE code: regrowth 11.9.10 (Dom?)

END

A 3.3 Sheet D – Regional Ecosystem type assessment site

Location

Site No. ..... **Recorder:** A-DANIEL **Day/Date:** 27/04/23

Purpose .....

Locality: (inc. distance/direction to nearest town) Sonoma

GPS: 55 0590270 7721335 GDA 94

1181 9/192

Vegetation structure

Median height of the EDL is to be measured

Stratum	Median height	Height interval	Est. cover density (D,M,S,V)
E		-	
T1	25	23 - 27	S
T2	16	10 - 19	S
T3		-	
S1		-	
S2		-	
G		-	

Structural formation: (including height) Tall woodland

Ecologically dominant layer: T_1

Plant species

Record relative (numerical) dominance for each stratum; ***d*** – dominant; ***c*** – co-dominant; **s** - subdominant, ***a*** – associated.

Str.	Rel. dom.	Scientific Name
T_1	d	Eucalyptus coolabah
T_2	d	Eucalyptus coolabah
T_2	a	Lophostemon grandiflorus
T_2	a	Melaleuca viminalis
T_2	a	Ficus coronata
g	d	Megathyrsus maximus

Geology, landform, soils

Geology map/scale/year: .....

Geology code and rock types: .....

Land system: .....

Landform: .....

Soils: Sandy loam

Field observation and notes: .....

Landzone: 3

RE code changes

Existing RE code: .....

Proposed RE code: 11-3-37

END E. tavaratuca?

A 3.3 Sheet D – Regional Ecosystem type assessment site

Location

Site No. ..... **Recorder:** A Daniel **Day/Date:** 27/04/23

Purpose .....

Locality: (inc. distance/direction to nearest town) Somerset

GPS: [ ][ ] [0][5][9][0][2][9][8] [7][7][2][1][6][3][1] GDA 94

1183 7196 7197

Vegetation structure

Median height of the EDL is to be measured

Stratum	Median height	Height interval	Est. cover density (D,M,S,V)
E		-	
T1	12	10 - 14	S
T2	9	7 - 10	S
T3		-	
S1		-	
S2		-	
G		-	

Structural formation: (including height) Tall woodland

Ecologically dominant layer: T_1

Plant species

Record relative (numerical) dominance for each stratum;
d – dominant; *c* – co-dominant; *s* - subdominant, *a* – associated.

Str.	Rel. dom.	Scientific Name
T_1	d	Corymbia tessellaris
T_1	a	Acacia harpophylla
T_2	d	Lophostemon grandiflora
T_2	a	Acacia harpophylla
T_2	a	Lysiphyllum hookeri
G	d	Heteropogon contortus

Geology, landform, soils

Geology map/scale/year: .....

Geology code and rock types: .....

Land system: .....

Landform: .....

Soils: Sand

Field observation and notes: .....

Landzone: 3

RE code changes

Existing RE code: .....

Proposed RE code: 11.3.2

END

A 3.3 Sheet D – Regional Ecosystem type assessment site

Location

Site No. ..... **Recorder:** A. DANIEL **Day/Date:** 27/04/23

Purpose .....

Locality: (inc. distance/direction to nearest town) Somma

GPS: 55 0596273 7721736 GDA 94

Vegetation structure

Median height of the EDL is to be measured 1194 7197 7198

Stratum	Median height	Height interval	Est. cover density (D,M,S,V)
E		-	
T1	16	14 - 19	S
T2	12	9 - 14	S
T3		-	
S1	3	2 - 5	S
S2		-	
G	0.6	0 - 0.8	MD

Structural formation: (including height) Tall Woodland

Ecologically dominant layer: T1

Plant species

Record relative (numerical) dominance for each stratum; ***d*** – dominant; ***c*** – co-dominant; ***s*** - subdominant, ***a*** – associated.

Str.	Rel. dom.	Scientific Name
T_1	d	Eucalyptus crebra
T_2	d	Acacia harpophylla
		Terminalia oblongifolia
		Lysiphyllum hookeri
S_1	c	Geijera salicifolia
S_1	c	Lysiphyllum hookeri
S_1	c	Acacia harpophylla
G	d	Dichanthium sericeum

Geology, landform, soils

Geology map/scale/year: .....

Geology code and rock types: .....

Land system: .....

Landform: .....

Soils: Sandy clay gravel inclusion

Field observation and notes: .....

Landzone: 3

RE code changes

Existing RE code: .....

Proposed RE code: 11.3.x? 11.9.10

END

A 3.3 Sheet D – Regional Ecosystem type assessment site

Location

Site No. ..... **Recorder:** A DANIEL **Day/Date:** 10/05/23

Purpose .....

Locality: (inc. distance/direction to nearest town) Sonoma

GPS: ☐☐ 0590702 7718835 GDA'94

1351 7315 7316

Vegetation structure

Median height of the EDL is to be measured

Stratum	Median height	Height interval	Est. cover density (D,M,S,V)
E		-	
T1	7	5 - 12	S
T2		-	
T3		-	
S1		-	
S2		-	
G		-	

Structural formation: (including height)

Ecologically dominant layer: .....

Plant species

Record relative (numerical) dominance for each stratum;
d – dominant; ***c*** – co-dominant; ***s*** - subdominant, ***a*** – associated.

Str.	Rel. dom.	Scientific Name
T1	d	Acacia harpophylla

Geology, landform, soils

Geology map/scale/year: .....

Geology code and rock types: .....

Land system: .....

Landform: .....

Soils: Sandy Clay

Field observation and notes: .....

Landzone: 9

RE code changes

Existing RE code: .....

Proposed RE code: 11.9.10 regrowth

END

A 3.3 Sheet D – Regional Ecosystem type assessment site

Location

Site No. ..... **Recorder:** A JANIFE **Day/Date:** 10/05/23

Purpose .....

Locality: (inc. distance/direction to nearest town) SONOMA

GPS: [ ][ ] [9][5][9][0][3][8][3] [7][7][1][8][5][3][8] **D**

186
354

Vegetation structure

Median height of the EDL is to be measured

Stratum	Median height	Height interval	Est. cover density (D.M.S.V)
E		-	
T1	8	6 - 10	S
T2	4	2 - 6	S
T3		-	
S1		-	
S2		-	
G		-	

Structural formation: (including height) Woodland

Ecologically dominant layer: T_1

Plant species

Record relative (numerical) dominance for each stratum;
d – dominant; ***c*** – co-dominant; **s** - subdominant, ***a*** – associated.

Str.	Rel. dom.	Scientific Name
T_1	d c	Acacia harpophylla
T_1	c	Terminalia oblongata
T_2	c	Terminalia oblongata
T_2	c	Acacia harpophylla

Geology, landform, soils

Geology map/scale/year: .....

Geology code and rock types: .....

Land system: .....

Landform: .....

Soils: black self mulching clay

Field observation and notes: .....

Landzone: 9

RE code changes

Existing RE code: .....

Proposed RE code: .....

END

Appendix J
Quaternary Site Data

Evonne colon

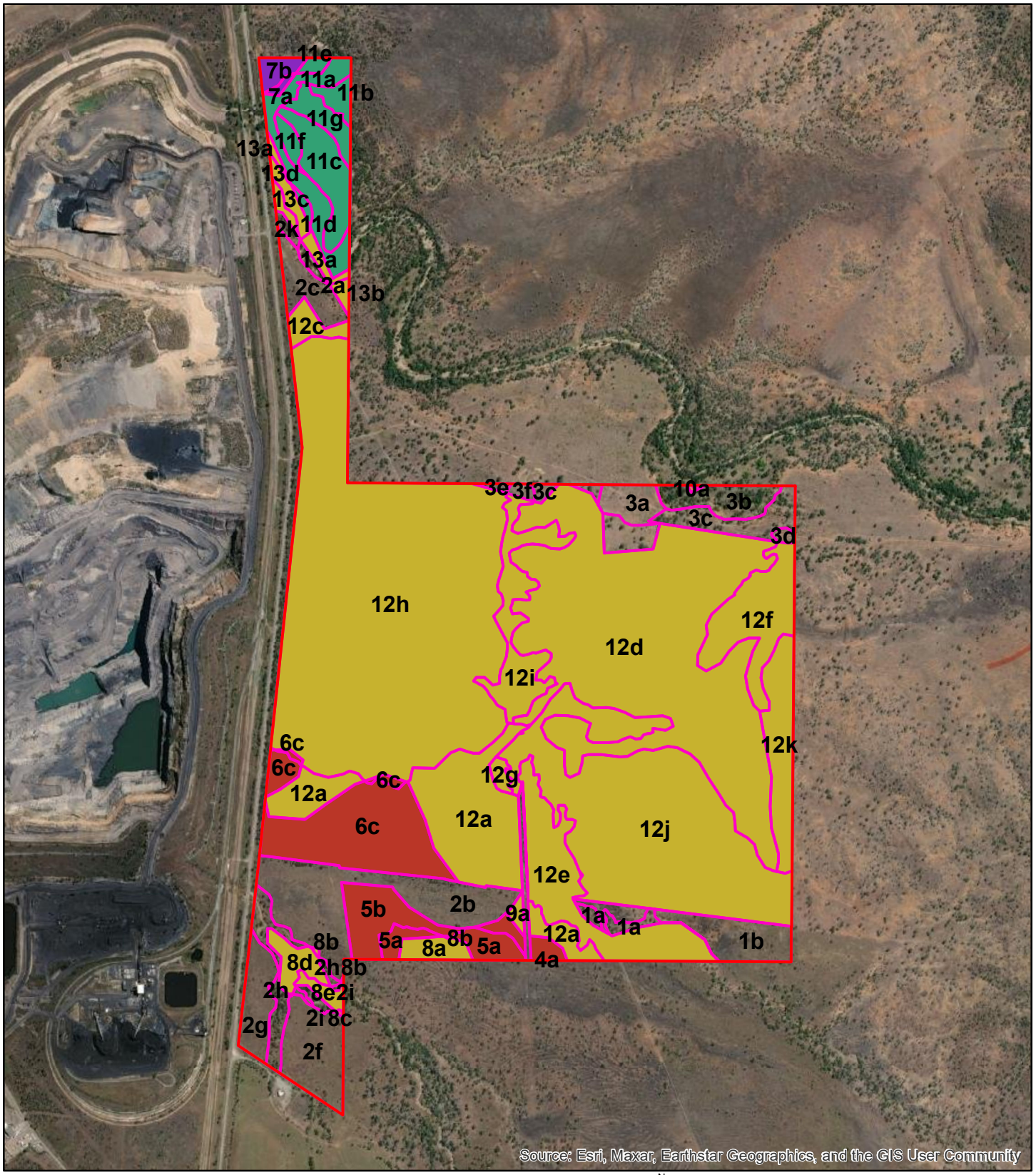
Job: Sonoma Date: 26/04/23

No.	Easting	Northing	Comments	Photo
1125			non-rem creek	7139
1126 /27		T1	Lophostemon suaveolens T2, Melaleuca bracteata	7140
			12m VS 10m	7141
1128			non-rem Creek	7142
1129	native grass under		non-rem brigalow 5m patchy VS	7143
1130		T1	8m Lysiphyllum hookeri S ~~non rem~~	7144
		T2	6m Terminalia oblong S	
1131			Acacia + Aracia harpophylla	7145
1132			Rem 11.9.2 250m South	7146
1133			Rem 11.9.9 SW/SE	7147
1135			Rem 11.9.9 C. dallachiana/erythrophloeum	7151
			cleared either side of pipeline	
1136			Rem 11.9.9 W / NR East / 11.9.9 Far East	
1137			Rem 11.9.9 W / Regrowth non-rem Brigalow East	7152
1138			Endremnant West / NR North & East	
1139			Rem 11.9.9 100 East (chinee apple under)	7153
1140			11.9.9 Remnant	
			Regrowth T1 E. crebra (d), C. dallachiana (a)	7154
1142			edge remnant West. NR East	
1142		REM	C. dallachiana / C. clarksoniana (11.3.7?)	7157
1145			Rem 11.3.7	
1146			Rem 11.3.7	
1147			Non-rem	
1148			Rem 11.3.7	7162
1149			" "	
1150			1 x Squatter pigeon	
1151			11.3.7 Rem	7163
1152			11.3.2 Rem Brownii West / NR East	
1153			11.3.7 Rem	
1154			NR East	
1155			Edge of alluvial / LZ9 South	

Job.....Sarong..... Date..27/04/23

No.	Easting	Northing	Comments	Photo
1156	Rem	11.3.7	Clarksoniana, dallachiana, tessellaris 12m	7165
1157		NR		
1158	dark patch 300m S		Corymbia, Pleiogynium timorense Rem 11.3.7	
1159	Rem	11.3.7	C. tessellaris grassland to 100m South	7166
1160	Rem	11.3.7 N	dark photopeltoh, P. timorense	7167
1162			Edge River terrace	
1164			Clarksoniana? 11.3.7	7177/8
1165			3x Squat Pigeon	
1167			Small NR patch REM 11.9.9 surrounds	
1168		Rem	close to track 11.9.9	
1169		Boundary	11.9.9 N / Regrowth South.	
1170		NR	T, C. dallachiana Tm over A. Salicina Tm	7181
1171		Chinee apple Creek.		7182
1172			Edge of creek (poss Rem) regrowth 11.9.9 South	
1173			Rem 11.9.9	7183
1174			Regrowth/Rem 11.9.9	7184
1175		Edge	11.9.9 N / 11.9.5/10 regrowth South	
1177			RE 11.9.9 (probably). Dallachiana, erythrophloia	
			E. crebra still present	7187
1178			RE 11.9.9	7188
1179			Non-rem bungalow	7189
1180			cleared flat NR	7190
1182			11.3.7 E. crebra 28m East	7193
1184			creek	7199
1186			Ironbark Woodland on LZ3 rem	7200

Appendix K
Explanation of Changes to State Mapping



LEGEND

- Sonoma Comnbined MLs
- Field RE

State RE

- 11.3.25b
- 11.9.10
- 11.9.10/11.9.9/11.9.2
- 11.9.9/11.9.2
- non-rem

Appendix K

Explanation of Changes to State Mapping

Sonoma Vegetation Community Mapping Technical Report

AD 31/05/23
Job No. 0300

terrestria
ECOLOGICAL MANAGEMENT

Lable	State Map	Field_RE	sub	Flabel	Change
1	11.9.9/11.9.2	11.9.9	a	1a	split heterogenous polygon using site data
1	non-rem	non-rem	b	1b	no change
2	11.9.9/11.9.2	11.3.37	a	2a	field data change RE
2	non-rem	non-rem	b	2b	no change
2	non-rem	non-rem	c	2c	no change
2	11.9.9/11.9.2	11.3.4	d	2d	change in land zone from field observations and state surface geology mapping
2	11.9.9/11.9.2	11.9.9	e	2e	split heterogenous polygon using site data
2	non-rem	non-rem	f	2f	no change
2	non-rem	non-rem	g	2g	no change
2	non-rem	non-rem	h	2h	no change
2	non-rem	11.3.25	i	2i	field data change RE
2		non-rem	j	2j	no change
2	11.9.9/11.9.2	11.3.30	k	2k	change in land zone from field observations and state surface geology mapping
3	non-rem	non-rem	a	3a	no change
3	11.9.9/11.9.2	11.9.9	b	3b	split heterogenous polygon using site data
3	11.9.9/11.9.2	11.3.30	c	3c	change in land zone from field observations and state surface geology mapping
3	11.9.9/11.9.2	non-rem	d	3d	refinement of mapped polygons
3	11.9.9/11.9.2	11.3.30	e	3e	change in land zone from field observations and state surface geology mapping
3	11.9.9/11.9.2	non-rem	f	3f	change in linework assoicated with change in scale
4	non-rem	non-rem	a	4a	no change
5	11.9.9/11.9.2	11.9.2	a	5a	split heterogenous polygon using site data
5	non-rem	non-rem	b	5b	no change
6	non-rem	non-rem	c	6c	no change
6	11.9.9/11.9.2	11.3.30	c	6c	change in land zone from field observations and state surface geology mapping
7	11.9.9/11.9.2	11.3.37	a	7a	field data change RE
7	11.9.9/11.9.2	11.9.9	b	7b	split heterogenous polygon using site data
8	11.9.9/11.9.2	11.9.2	a	8a	split heterogenous polygon using site data
8	non-rem	non-rem	b	8b	no change
8	non-rem	non-rem	c	8c	no change

8	non-rem	non-rem	d	8d	no change
8	non-rem	11.3.25	e	8e	field data change RE
9	non-rem	non-rem	a	9a	no change
10	11.9.9/11.9.2	11.9.9	a	10a	split heterogenous polygon using site data
11	11.9.9/11.9.2	11.3.37	a	11a	field data change RE
11	11.9.9/11.9.2	11.9.10	b	11b	Brigalow
11	11.9.9/11.9.2	11.3.30	c	11c	change in land zone from field observations and state surface geology mapping
11	11.9.9/11.9.2	11.3.4	d	11d	change in land zone from field observations and state surface geology mapping
11	11.9.9/11.9.2	11.9.9	e	11e	split heterogenous polygon using site data
11	11.9.9/11.9.2	11.3.4	f	11f	change in land zone from field observations and state surface geology mapping
11	11.9.9/11.9.2	11.3.1	g	11g	brigalew
12	non-rem	non-rem	a	12a	no change
12	non-rem	non-rem	b	12b	no change
12	non-rem	non-rem	c	12c	no change
12	11.9.9/11.9.2	11.3.30	d	12d	change in land zone from field observations and state surface geology mapping
12	11.9.9/11.9.2	11.9.9	e	12e	split heterogenous polygon using site data
12	11.9.9/11.9.2	non-rem	f	12f	
12	11.9.9/11.9.2	11.9.9	g	12g	split heterogenous polygon using site data
12	11.9.9/11.9.2	11.3.30	h	12h	change in land zone from field observations and state surface geology mapping
12	11.9.9/11.9.2	non-rem	i	12i	change in linework assoicated with change in scale
12		non-rem	j	12j	split heterogenous polygon using site data
12	11.9.9/11.9.2	11.3.30	k	12k	change in land zone from field observations and state surface geology mapping
13	11.9.9/11.9.2	11.3.37	a	13a	field data change RE
13	non-rem	non-rem	b	13b	no change
13	11.9.9/11.9.2	11.3.4	c	13c	change in land zone from field observations and state surface geology mapping

13	11.9.9/11.9.2	11.3.30	d	13d	change in land zone from field observations and state surface geology mapping