



Proposed Surat North Development Wandoan, Queensland

TERRESTRIAL ECOLOGY ASSESSMENT

**Report prepared
for
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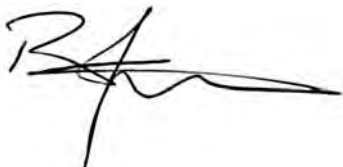
Biodiversity Assessment and Management Pty Ltd has produced this report in its capacity as consultants for and on the request of QGC (the "**Client**") for the sole purpose of undertaking an assessment of terrestrial ecological values within lands potentially impacted by the proposed Surat North Development near Wandoan in southern Queensland (the "**Specified Purpose**"). This information and any recommendations in this report are particular to the Specified Purpose and are based on facts, matters and circumstances particular to the subject matter of the report and the Specified Purpose at the time of production. This report is not to be used, nor is it suitable, for any purpose other than the Specified Purpose. Biodiversity Assessment and Management Pty Ltd disclaims all liability for any loss and/or damage whatsoever arising either directly or indirectly as a result of any application, use or reliance upon the report for any purpose other than the Specified Purpose.

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Date: 23 January 2013



Managing Director

TERRESTRIAL ECOLOGY ASSESSMENT

PROPOSED SURAT NORTH DEVELOPMENT

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List of Abbreviations

ATP	Authority to Prospect
BAAM	Biodiversity Assessment and Management Pty Ltd
BAMM	Biodiversity Assessment and Mapping Methodology
BBS	Brigalow Belt South (bioregion)
BPA	Biodiversity Planning Assessment
CSG	Coal Seam Gas
DoE	Commonwealth Department of Environment
EA	Environmental Approvals
EHP	Queensland Department of Environment and Heritage Protection (formerly DERM)
DERM	Queensland Department of Environment and Resource Management (now EHP)
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EP Act	Queensland <i>Environmental Protection Act 1994</i>
ERM	Environmental Resources Management Australia Pty Ltd
ESA	Environmentally Sensitive Area
EVNT	Endangered, Vulnerable or Near Threatened
LP Act	Queensland <i>Land Protection (Pest and Stock Route Management) Act 2002</i>

MNES	Matter of National Environmental Significance (as recognised under the EPBC Act)
NC Act	Queensland <i>Nature Conservation Act 1992</i>
QGC	Queensland Gas Company
RE	Regional Ecosystem
REDD	Regional Ecosystem Description Database
TEC	Threatened Ecological Community
VM Act	Queensland <i>Vegetation Management Act 1999</i>

1.0 INTRODUCTION

This report has been prepared by Biodiversity Assessment and Management Pty Ltd (BAAM) for QGC for the purpose of providing an independent assessment of the terrestrial ecological values of lands potentially impacted by the Surat North Development (the 'Project'), located near Wandoan in southern Queensland (**Figure 1.1**), to inform subsequent impact assessment in support of an EA application..

QGC (the 'Proponent') is proposing the development of coal seam gas (CSG) fields in an area covering 16 blocks. This includes the 15 blocks of ATP852, plus one graticular block in ATP768 (Pleiades) that is adjacent to ATP852. It is proposed to develop 400 wells and three field compressor stations in the development area, along with associated gathering, access and other ancillary infrastructure. This area (the 'study area') is outside of but contiguous to gas field tenements assessed as part of the QCLNG Project EIS.

Gas and water from the Surat North Development will be processed at the existing Woleebee Creek Central Processing Plant and Water treatment Plant. Gas will then enter the QGC portfolio and may be used to supply either domestic markets or the LNG facility. The Woleebee Creek CPP, WTP and subsequent associated water management are covered by separate approvals and are not assessed in this report.

The specific aims of this assessment are to undertake:

- Desktop assessment of the existing terrestrial ecological values of the study area.
- Field assessments, as required to verify the currently recognised terrestrial ecological values.
- Description/ reporting of baseline data.
- Evaluation of the potential impacts of the development on the terrestrial ecology of the study area, particularly species and communities of State and National significance.
- Description of mitigation measures to avoid, minimise or offset the identified impacts.

All following observations and recommendations are based on a review of relevant, available information and site investigations undertaken by Lui Weber and Alanna Main (flora), and Penn Lloyd and Lindsay Popple (fauna) between 27 March and 5 April 2012, inclusive.

2.0 METHODOLOGY

The following sections outline the methodology adopted for the assessment of existing terrestrial ecological values.

2.1. DESKTOP REVIEW

Publicly available information on currently recognised terrestrial ecological values was accessed and reviewed to provide the study team with sufficient background and ensure survey methods were suitably designed to detect and verify the actual values of the study area. As currently recognised terrestrial ecological values and associated constraints to development are largely defined by Commonwealth and State environmental legislation and planning instruments, this included:

- Use of the Commonwealth Department of Environment (DoE) EPBC Act Online Protected Matters Search Tool for determining whether any 'Matters of National Environmental Significance' as defined under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) may occur. In terms of terrestrial ecology, this may include:
 - Threatened Ecological Communities;
 - Threatened flora and fauna species;
 - Migratory species; and
 - Ramsar wetlands of international importance.
- Review of the Queensland Artesian Springs database to determine if any groundwater-dependent ecosystems (recognised as Threatened Ecological Communities under the EPBC Act) are known to occur within the vicinity of the study area.
- Review of the Queensland Department of Environment and Heritage Planning's (EHP) mapping of 'Environmentally Sensitive Areas' as required under the Queensland *Environmental Protection Regulation 1998* (EP Regulation). In terms

of terrestrial ecological values within the vicinity of the study area, this may include:

- Significant areas proclaimed under the Queensland *Nature Conservation Act 1992* (NC Act) (e.g. National Parks, Conservation Parks), Queensland *Forestry Act 1959* (e.g. State Forests) and international treaties/agreements (e.g. Ramsar wetlands);
- Regional Ecosystems (REs) (as described under the provisions of the Queensland *Vegetation Management Act 1999* (VM Act)) with an Endangered or Of Concern 'Biodiversity Status';
- Areas mapped as 'Essential Habitat for State-listed species'; and
- An area shown as a wetland on an EHP-certified 'map of referable wetlands'.
- Review of current, certified RE mapping to determine which remnant and high-value regrowth vegetation communities (and analogous Threatened Ecological Communities) and associated habitats for significant flora and fauna are currently recognised as occurring on the study area.
- Searches of EHP's WildNet database, the Queensland Herbarium's HERBRECS database, the Queensland Museum fauna database and the Birds Australia New Atlas database to provide a list of terrestrial flora and fauna species known from the region and local area, including species of special conservation significance as listed under the EPBC Act and NC Act and declared pest species as listed under the Queensland *Land Protection (Pest and Stock Route Management) Act 2002* (LP Act).
- Review of the Queensland Herbarium's Regional Ecosystem Description Database (REDD) and relevant specimen collections (as required) to inform vegetation mapping, site selection and species composition and to allow pre-field identification of significant species likely to be encountered to guide targeted field searches.
- Review of DERM's (now EHP) Biodiversity Planning Assessment (BPA) mapping and associated expert panel reports in relation to areas of State or Regional significance for the Brigalow Belt South (BBS) bioregion.
- Biosecurity Queensland's annual and predictive pest mapping to determine which declared pest species could represent a potential threat to the natural environment,

should their numbers and/or distribution be facilitated by the proposed activities.

- Relevant published literature on the terrestrial ecology of the study area, where readily available.

A review of aerial photography and study area boundaries was also undertaken to assist in the delineation of vegetation communities and the determination of suitable representative sampling sites for field survey.

2.2. FIELD SURVEYS

2.2.1. Field survey coverage and timing

Prior to the field survey a list of priority properties were identified. These were chosen based on their mapped potential values for flora and fauna (see **Section 2.2.2**). Access was gained to as many of these as possible, subject to landholder approval. Representative sites assessed during the flora and fauna surveys are shown on **Figure 2.1a** and **Figure 2.1b** respectively.

The survey aimed to provide a broad understanding of the terrestrial ecology values of the study area, including vegetation composition, the presence or potential presence of conservation significant flora and fauna, and habitat suitability for fauna. To achieve this, the survey was undertaken at a time considered most appropriate for capturing these attributes (end of wet season). It was considered that a subsequent survey in winter would add little value, particularly given that additional, detailed investigations will be undertaken by QGC once specific disturbance areas within the study area have been determined.

2.2.2. Terrestrial Flora

The terrestrial flora field assessment was conducted using best practice botanical sampling and methodologies (DEC NSW 2004; Neldner *et al.* 2005), commensurate with the spatial extent and quality of habitats present. Survey techniques encompassed community-level vegetation assessments as well as threatened and near threatened species searches within specific habitats.

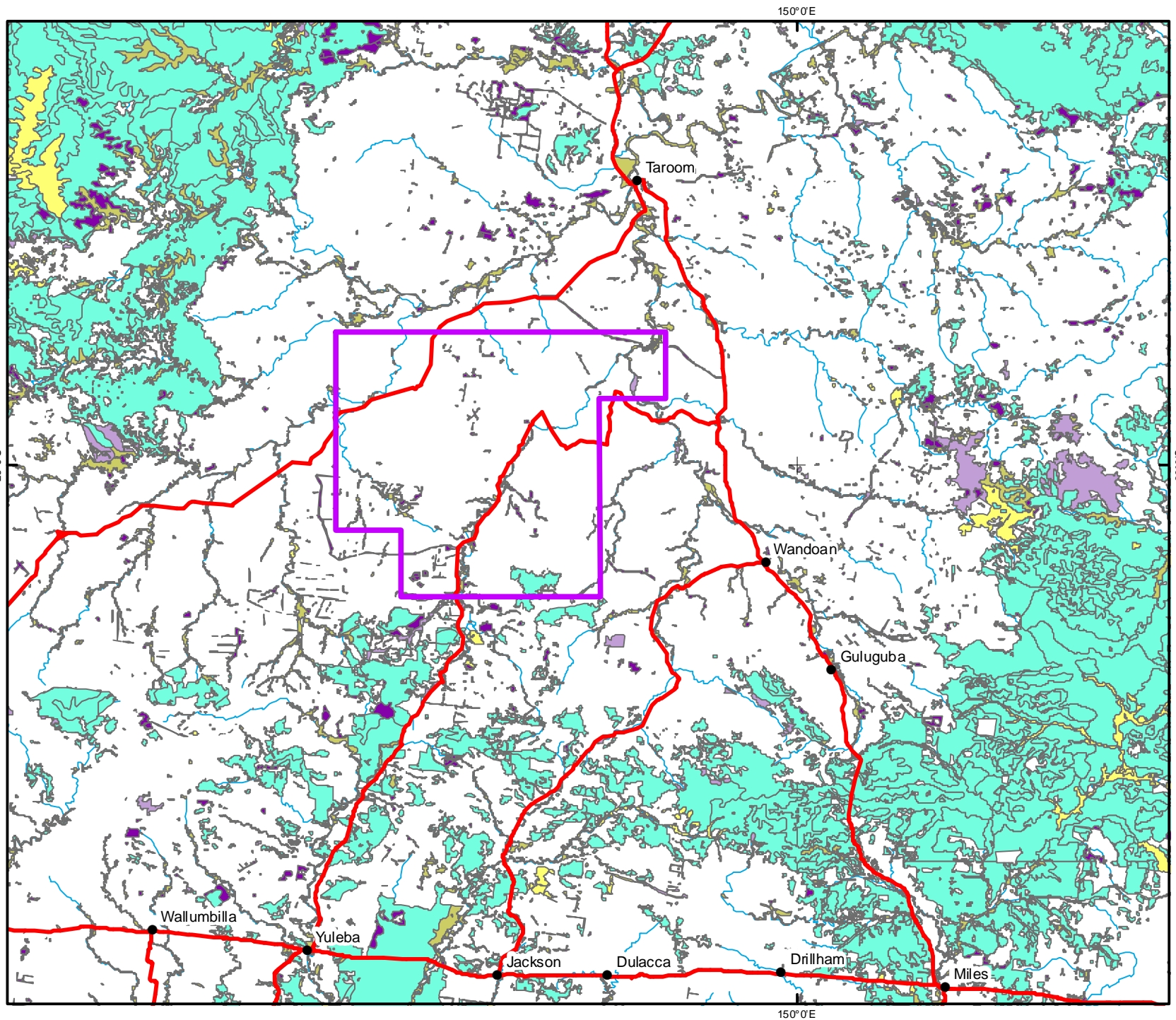


Figure: **1.1**

Title: Study Area Location

Project: **Surat North Development**

Client:



LEGEND

Remnant Regional Ecosystems (V8)


Biodiversity Status:

- Endangered - Dominant
- Endangered - Sub-dominant
- Of Concern - Dominant
- Of Concern - Sub-dominant
- No concern at present
- Study Area Boundary

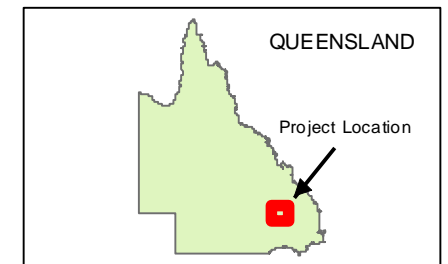
- Major Road
- Watercourse
- Locality
- Minor Road

Notes: Data supplied by QLD Government
Regional Ecosystem V8.0

Coordinate System: GCS GDA 1994
Datum: GDA 1994
Units: Degree

 1:750,000 at A4

0 3.25 6.5 13 19.5 26
Kilometers



Date: 14/01/2014 Drawn By: MG Reviewed by: LP

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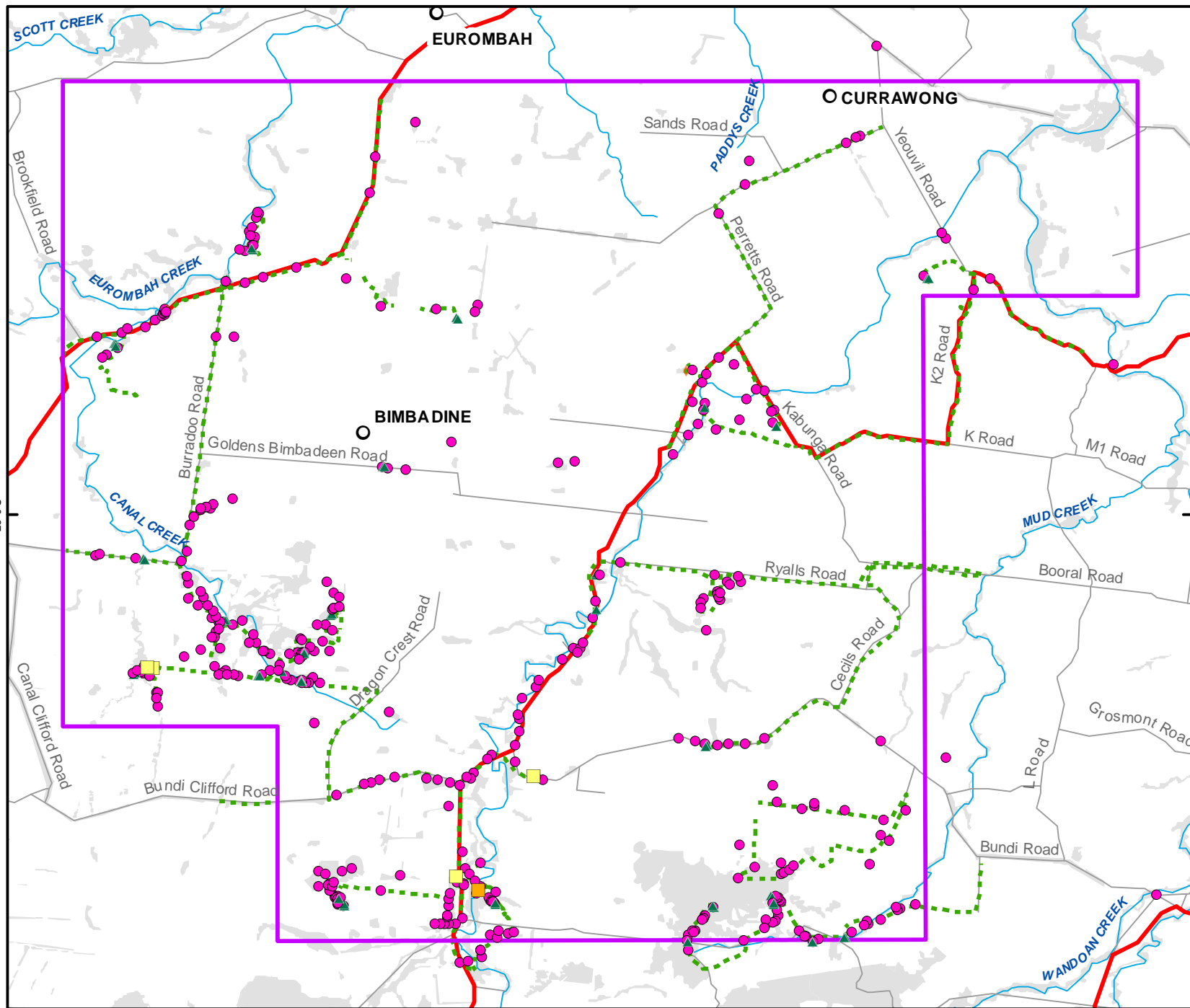


Figure: 2.1a

Title: Flora Survey Site Locations
and Significant Species Records

Project: Surat North Development

Client: **QGC**
A BG Group business

LEGEND

Significant Species:

- Homophilus belsonii*
- Digitaria porrecta*

Flora Survey Sites

Type:

- Secondary
- Tertiary
- Quaternary
- Boundary
- Flora Survey Tracks
- Vegetation
- Major Road
- Watercourse
- Minor Road
- Locality

Coordinate System: GCS GDA 1994
Datum: GDA 1994
Units: Degree

1:235,000 at A4
0 1 2 4 6 8 Kilometers

Date: 23/01/2014

Drawn By: MG

Reviewed by: LP

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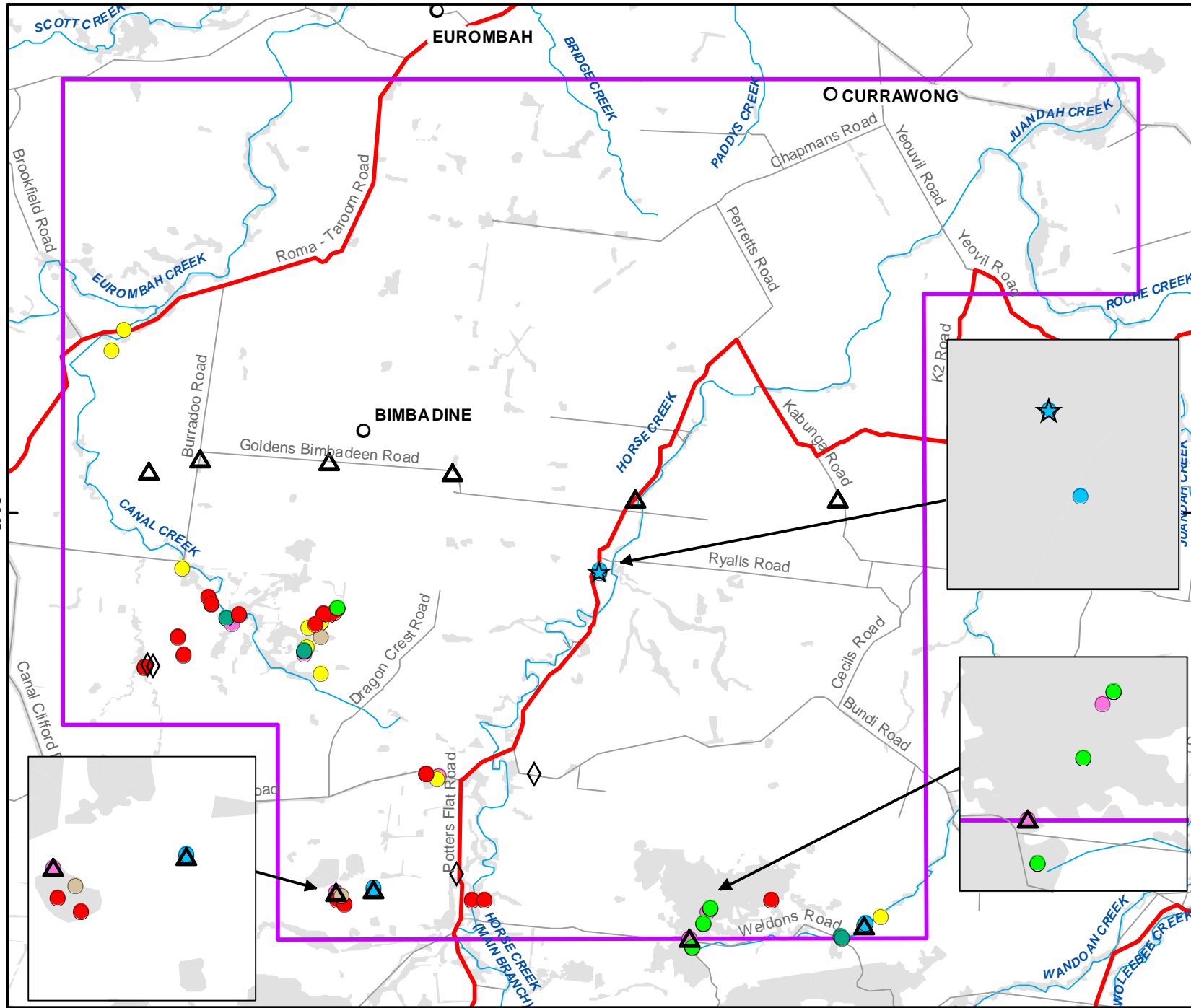


Figure: **2.1b**
 Title: Fauna Survey Site Locations and Significant Species Records

Project: **Surat North Development**

Client: **QGC**
 A BG Group business

LEGEND

Significant Species Record:

- ▲ *Chalinelobus picatus*
- ◇ *Digitaria porrecta*
- ☆ *Nettapus coromandelianus*

Fauna Survey Site

Type:

- Trap site, bird survey
- Trap site, bird survey, ground search
- Anabat
- Anabat, bird survey
- Bird survey
- Bird survey, ground search
- Ground search
- Boundary
- Vegetation

- Major Road
- Minor Road
- Watercourse
- Locality

Coordinate System: GCS GDA 1994
 Datum: GDA 1994
 Units: Degree
 Scale: 1:235,000 at A4
 0 1 2 4 6 8 Kilometers

Date: 23/01/2014 Drawn By: MG Reviewed by: LP

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The survey utilised GPS-enabled personal digital assistants (PDAs—electronic handheld information devices) loaded with the latest GIS and data-entry software. Access to vegetation and geology mapping and high-resolution satellite imagery in the field facilitated optimal assessment stratification and on-the-ground survey decisions.

The field survey required field-traverses of each landscape element and vegetation type represented within the study area. Priority sites to be surveyed were selected from EHP RE polygon mapping and the associated BPA for the BBS bioregion, based on the following considerations:

- EPBC Act listed Threatened Ecological Communities, including regrowth communities that meet the criteria for listing;
- Environmentally Sensitive Areas as described under the EP Act;
- Mapped RE status (i.e. Biodiversity status), with greater emphasis placed on REs listed as Endangered (dominant or sub-dominant) or Of Concern;
- Polygon size, with preference given to relatively large polygons (as a possible indicator of community condition and associated habitat quality);
- Size of the tract of remnant vegetation within which the polygon is located (as above);
- Connectivity at a landscape scale;
- Riparian corridors; and
- Species records.

In addition, a representative sample of RE types was identified, regardless of status, in order to gather information on species that characterise these vegetation communities and factors affecting their general condition.

The eventual inclusion of each of the priority sites within the survey activities was subject to logistical constraints, particularly in regards to obtaining permission to enter private land. Representative sites assessed during the flora surveys are shown on **Figure 2.1a**.

Secondary sites (minimum size 10 x 50 m) provided an optimal level of site detail to provide rigorous data on structure and floristic composition. They were used to assess the species structure, assemblage, diversity and abundance of plant species at each site. Tertiary

site surveys recorded similar information to secondary sites, with slightly less detail on species composition. Quaternary site surveys were used primarily as a record of field traverses and to verify EHP RE mapping. These surveys were completed throughout the field survey. Species lists compiled from secondary sites, along with opportunistic flora sampling during tertiary and quaternary sampling, allowed for the compilation of detailed species lists.

More generally, the flora survey methods enabled:

- Verification of the general accuracy of EHP RE mapping and the associated distribution of Category B ESAs under the EP Act (and also Category C ESAs) and Threatened Ecological Communities (TECs) under the EPBC Act through the use of representative sampling of each RE type within the study area to describe vegetation community structure, floristics and condition according to standard Queensland Herbarium methodologies.
- The identification of representative habitats suitable for targeted searches for significant species.

The approach used in the revised mapping allowed the identification of remnant and regrowth vegetation communities consistent with REs as defined in Sattler and Williams (1999) and Queensland Herbarium (2013).

The mapping of TECs was completed through ground-truthing of mapped REs during the field survey. This was performed in accordance with the listing advice and the relevant EPBC policy statement. Areas of mapped remnant and regrowth vegetation that were in particularly weedy and poor condition were discounted from the TEC (with the exception of SEVT, see **Section 3.2.3**).

In cases where vegetation polygons could not be checked in the field due to access constraints, TECs were mapped more conservatively through examination of aerial photography with reference to EHP's RE mapping. This process took into account the concepts of invasibility and edge effects (Lonsdale 1999) by scrutinising patch size and canopy cover when evaluating TECs (except SEVT, see **Section 3.2.3**). For example, smaller patches with sparse canopy cover are likely to have been subject to more intensive weed invasive than larger patches exhibiting

higher canopy cover. Such smaller patches were generally excluded from the mapping of TECs.

Throughout the survey, targeted searches were undertaken for significant terrestrial flora species within representative habitats. The late summer conditions accounted for species only present during favourable conditions (e.g. ephemerals) or for which fertile material may be required for identification.

During the survey, notes were also made on the distribution and relative abundance of observed environmental and declared weed species.

2.2.3. Terrestrial Fauna

An initial review of aerial imagery indicated that the majority of the study area has been cleared of native vegetation for agricultural purposes, with remaining mapped remnant and regrowth vegetation persisting in discrete patches of various sizes and in association with other remnant/regrowth patches embedded in the agricultural matrix. The terrestrial fauna survey attempted to survey as many of these discrete habitat patches as possible to allow analysis and interpretation of the effects of habitat fragmentation on fauna community structure and occurrence of individual species of interest.

Field survey methodologies were informed by published DoE guidelines for surveying threatened frogs, reptiles, birds, mammals and bats, together with EHP guidelines for undertaking general fauna survey. Important considerations included the following:

- Surveys for EPBC-listed species that may occur within the study area should use targeted survey techniques, as summarised in **Table 2.1**.
- Surveys for Brigalow Belt reptiles should only be undertaken from late September through to late March when weather conditions are warm, not too dry and maximum temperatures are greater than 25°C (SEWPAC 2011).

It should be noted that whilst the survey commenced quite late relative to an average wet season (late March), conditions were still suitable for reptiles, with maximum temperatures exceeding 25°C on every day of the survey.

Representative sites assessed during the survey are shown on **Figure 2.1b**, with locations and a

brief description of each systematic survey site provided in **Table 2.2**.

The following survey techniques were employed during the terrestrial fauna survey:

Systematic and targeted trapping survey:

Each systematic and targeted trapping survey sampled a standardised 1-ha quadrat (Woinarski and Ash 2002; Price et al. 2010) comprised of a nested trap array. This incorporated up to four pitfalls (20 litre buckets) arranged along a 20 to 30 m drift fence with four large (430 x 250 x 250 mm) funnel traps placed in opposite pairs at the ends of the drift fence. Some of the pitfall traps were replaced by funnel traps where the substrate proved highly problematic for digging. All traps were checked early morning in accordance with animal ethics requirements.

Diurnal bird survey: Diurnal birds were surveyed using the Birds Australia Atlas methodology, which involves timed sampling of birds for 20 minutes per 2 ha sampling site, and focused primarily on the 4-hr periods after sunrise and before sunset that are best for bird detection. Birds were identified from either direct observation or detection of their characteristic vocalisations. Species accumulation curves were used to document the number of 20-minute surveys required to capture most species present in the study area.

Diurnal ground search survey: This involved intensive investigation of the ground layer (under logs, rocks and leaf litter), low vegetation (under bark and in tree stumps) and rock crevices for all amphibians, reptiles, bats and animal signs, e.g. scats, feeding remnants, remains and tracks. Each survey site comprised a 20-minute search.






Spotlighting survey: A combination of high-powered spotlights and head torches were used to sample nocturnal mammals, birds, reptiles and frogs. Spotlighting surveys primarily targeted threatened reptile species for which spotlighting is a recommended survey technique, but also other nocturnal fauna more generally during timed 20-minute searches per survey site. Frog species were additionally identified from detection of their characteristic vocalisations during the nocturnal surveys.



Table 2.1. Summary of survey techniques and effort recommended by DOE for surveying EPBC-listed EVNT fauna species that may occur within the study area

Scientific Name	Common Name	Status ¹		DOE Survey Methodology	BAAM Approach
		EPBC Act	NC Act		
<i>Rheodytes leukops</i>	Fitzroy River Turtle	V	V	Not specified.	Diurnal surveys along watercourses.
<i>Delma torquata</i>	Adorned (Collared) Delma	V	V	Pitfall trapping during late spring to summer combined with diurnal ground searching of shelter sites, particularly leaf litter.	Pitfall trapping and active ground searches.
<i>Paradelma orientalis</i>	Brigalow Scalyfoot		V	Diurnal ground searches under rocks, fallen bark and timber and raking through piles of leaf litter combined with nocturnal spotlight searches on the ground as well as lower trunks of rough-barked, sap-exuding trees on warm nights, in appropriate habitats. Pitfall trapping is also a useful survey technique.	Pitfall trapping, spotlighting and active ground searches.
<i>Egernia rugosa</i>	Yakka Skink	V	V	Searching for burrow systems and communal defecation sites is the most reliable method of detection. The species can be confirmed by Elliott trapping around the burrows, by distant observation with binoculars or by shining a torch down the burrows at night.	Active ground searches.
<i>Denisonia maculata</i>	Ornamental Snake	V	V	The primary method is active searching; also spotlighting on warm evenings, with a minimum of three days and nights search effort.	Pitfall trapping, spotlighting along roads and active ground searches.
<i>Furina dunmalli</i>	Dunmall's Snake	V	V	No survey method is known to reliably detect this species. Recommended methods are diurnal ground searching of sheltering sites (under large objects such as rocks, logs, or human-made debris), pitfall trapping, or road driving at night (particularly after wet weather).	Pitfall trapping, spotlighting along roads and active ground searches.
<i>Geophaps scripta scripta</i>	Squatter Pigeon (southern subspecies)	V	V	Per 50 ha of habitat: area searches (15 hours over 3 days) or transect surveys in suitable habitat; flushing surveys (10 hours over 3 days) are also likely to be useful.	Driving survey and diurnal bird survey.
<i>Erythrotriorchis radiatus</i>	Red Goshawk	V	E	Area searches for nest sites in tallest forest recommended at 80 hours over 10 days.	Diurnal bird surveys in potential habitat.
<i>Rostratula australis</i>	Australian Painted Snipe	V, M	V	Per 50 ha of habitat: area searches or transects (10 hrs over 3 days) through suitable wetlands; targeted stationary observations (10 hrs over 5 days) at dawn and dusk of suitable foraging locations within wetlands.	Diurnal bird surveys in suitable wetland habitats, including at dawn and dusk.
<i>Turnix melanogaster</i>	Black-breasted Button-quail	V	V	Per 50 ha of habitat: area searches (15 hours over 3 days) of suitable habitat.	Diurnal bird surveys and ground searches (for feeding platelets) in potential habitat.
<i>Dasyurus hallucatus</i>	Northern Quoll	E	C	Per 50 ha of habitat: baited trapping (50 trap nights).	Active ground searches for scats; trapping not feasible within timeframe of survey.
<i>Phascolarctos cinereus</i>	Koala	V	C	Not specified.	Diurnal searches, spotlighting and active ground searches for scats.
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	ANABAT survey overnight at fixed sites (16 detector nights over 4 nights) and hand-held (6 detector hrs over 3 nights); harp traps and/or mist nets (16 trap/net nights over 4 nights).	ANABAT survey over 9 detector nights; no suitable flyway for harp traps.
<i>Nyctophilus corbeni</i>	South-eastern Long-eared Bat	V	V	Direct trapping is the recommended method: harp traps and/or mist nets (20 trap nights over 5 nights).	Active searches within sandstone caves and crevices; no suitable flyways were identified for setting up harp traps during the survey.

1. Where: E = Endangered; V = Vulnerable; C = Least Concern; M = Migratory

Table 2.2. Descriptions of terrestrial fauna systematic survey site locations

Site	Lat	Long	Habitat Description	Representative image
T1	-26.03717	149.52426	Disturbed Brigalow <i>Acacia harpophylla</i> woodland, with Wilga <i>Geijera parviflora</i> and Bottle Tree <i>Brachychiton rupestris</i> . Ground layer dominated by Buffel Grass <i>Pennisetum ciliare</i> .	
T2	-26.05361	149.51127	Eucalypt woodland dominated by Poplar Box <i>Eucalyptus populnea</i> , with Brigalow <i>Acacia harpophylla</i> and Wilga <i>Geijera parviflora</i> also present. Ground layer dominated by Buffel Grass <i>Pennisetum ciliare</i> .	
T3	-26.04043	149.48116	Eucalypt woodland dominated by Poplar Box <i>Eucalyptus populnea</i> , with Forest Red Gum <i>Eucalyptus tereticornis</i> adjacent. Ground layer dominated by Buffel Grass <i>Pennisetum ciliare</i> .	
T4	-26.15316	149.66846	Open forest to 20m dominated by Spotted Gum <i>Corymbia citriodora</i> subsp. <i>variegata</i> , Narrow-leaved Red Ironbark and Black Wattle <i>Acacia crassa</i> . Ground layer dominated by native grasses.	
T5	-26.15912	149.66566	Open forest to 15m dominated by Belah <i>Casuarina cristata</i> , with Brigalow <i>Acacia harpophylla</i> , Spotted Gum <i>Corymbia citriodora</i> subsp. <i>variegata</i> and Narrow-leaved Red Ironbark <i>Eucalyptus crebra</i> also present. Ground layer dominated by native grasses.	

Site	Lat	Long	Habitat Description	Representative image
T6	-26.16865	149.66157	Open forest to 20m dominated by Brigalow <i>Acacia harpophylla</i> , Belah <i>Casuarina cristata</i> and Narrow-leaved Red Ironbark <i>Eucalyptus crebra</i> , with Wilga <i>Geijera parviflora</i> also present and Spotted Gum <i>Corymbia citriodora</i> subsp. <i>variegata</i> occurring adjacent. Ground layer sparse and dominated by native grasses.	
T7	-26.16471	149.71975	Eucalypt woodland to 20m along a watercourse dominated by Poplar Box <i>Eucalyptus populnea</i> and False Sandalwood <i>Eremophila mitchellii</i> , with stands of Belah <i>Casuarina cristata</i> also present. Ground cover dominated by pasture grasses.	

Driving survey: Driving surveys are a recommended (SEWPAC 2011) and efficient survey technique for reptiles, including threatened reptile species. These surveys were conducted opportunistically during daytime and night-time travel in the study area, with survey effort reported as the km of road surveyed.

ANABAT survey: ANABAT detectors were deployed overnight at appropriate sites, to survey for the presence of micro-bat species. Overnight survey allows the detector to record micro-bat calls throughout the night ensuring sampling of peak nocturnal activity periods. Roost searches were undertaken to confirm presence or roosting in caves, rock overhangs, crevices and man-made structures found within the study area. Results are reported as per the DOE survey guidelines for threatened bats (DEWHA 2010).

Incidental (opportunistic) observations: During the survey, fauna observations were continuous and species records were obtained outside of the systematic methodology of the survey.

2.3. MAPPING OF TERRESTRIAL ECOLOGICAL VALUES

2.3.1. Project-scale Vegetation Mapping

Project-scale vegetation mapping was conducted within the ArcGIS (version 10), platform. Layers used to inform the mapping process included:

- RE polygons supplied in shape-file format by the Queensland Herbarium (EHP 2013);
- High-value Regrowth mapping supplied in shape-file format by the Queensland Herbarium (DERM 2009);
- Pre-clearing polygons supplied in shape-file format by the Queensland Herbarium (15/09/2006);
- Recent aerial photography available from NearMap;
- Secondary, Tertiary and Quaternary site data collected during the field survey work.

2.3.2. Habitat Mapping for Significant Species

Habitat mapping for endangered, vulnerable or near threatened (EVNT) terrestrial flora and fauna species was undertaken to inform the impact assessment. This comprised three principal steps: (1) development of a habitat model of potential habitat as an initial desktop exercise; (2) refinement of potential habitat through field assessment of suitability for supporting the species; and (3) mapping known important habitat associated with known records of the species and potential habitat based upon the outcomes of steps 1 and 2 above.

Mapping of potential habitat for each EVNT species of interest was undertaken on the basis of mapped REs within the study area that are identified as being indicative habitat for the species — i.e. vegetation communities that meet the habitat characteristics of the species. These indicative REs were identified on the basis of published information, particularly the EHP Essential Habitat factors for individual species (where these are available), and expert knowledge of the species' habitat characteristics at a coarse vegetation community scale (including BPA expert panel determinations). This approach is informed by EHP's Essential Habitat mapping methodology that identifies indicative habitat REs as one of the steps for identifying and mapping essential habitat.

The suitability of potential habitat was decided based on field assessment of habitat condition (where possible) and/or habitat patch size and connectivity within the broader landscape, given the known negative impact of habitat fragmentation on species occurrence.

Potential habitat was derived from background information available on each species, subjected to field verification (where possible) and matched with remnant and regrowth REs accordingly. In contrast, Known habitat was mapped as suitable RE polygons in vegetation communities within either a 5 km radius (for EPBC-listed species; equivalent to important habitat as recognised by the commonwealth) or 1 km radius (for NC Act-listed species; equivalent to Essential Habitat mapping records) of a known point record of the species. Point records were drawn from database searches, data from the field survey and data from previous surveys (PB 2008a, b). The buffers for known habitat included only vegetation consistent with REs that are considered to be suitable habitat for the relevant species.

2.3.3. Mapping of Terrestrial Ecological Constraints

The results of the desktop assessment and surveys provided baseline information for the identification of constraints for the development in relation to terrestrial ecology.

In accordance with QGC's Constraints Planning and Field Development Protocol, categorical organisation of verified ESAs (as defined under the EP Act), in combination with the verified mapping of Threatened Ecological Communities (as defined under the EPBC Act), the habitat mapping for EVNT species (**Section 2.3.2**) and additional records derived from the field survey data were used to formulate a zoning system that delineates priority areas for nature conservation. Functionally, this constraint mapping allows for more stringent conditions to be imposed for areas of high conservation value and less restrictive conditions for areas of low conservation value. The proposed methodology followed the rationale outlined in QGC's Constraints Planning and Field Development Protocol with some minor modifications.

The mapping primarily reflects ground-truthed RE polygons and is informed by various EHP GIS layers and land tenure type. The mapping output is a simplified categorisation consisting of four zones with differing levels of constraints. These are:

- Zone 1 – Low Ecological Constraints.
- Zone 2 – Moderate Ecological Constraints.
- Zone 3 – High Ecological Constraints.
- Zone 4 – Very High Ecological Constraints.

The demarcation of the zones allows different mitigation, rehabilitation and offset recommendations to be applied across the development footprint.

A more detailed description of each of the zones is provided in **Section 4.0**.

3.0 EXISTING ENVIRONMENT

3.1. BIOREGIONAL CONTEXT

The study area is located in the headwaters of the Fitzroy River catchment and in the Taroom Downs and Southern Downs provinces of the Brigalow Belt South (BBS) bioregion (Sattler and Williams 1999). The region has a mean annual rainfall of approximately 674 mm, with most falling over the warmer months. Mean temperatures range from 13.6°C (minimum) to 28.2°C (maximum) (BOM 2012).

Taroom Downs (Province 25) is characterised by gently undulating plains with argillaceous sediments. Many of the watercourses are lined with sandy alluvium and the associated floodplains are characterised by clays and texture contrast soils. A small number of sandstone scarps are present in the south. Pre-clearing vegetation on clay plains is dominated by an open forest of Brigalow *Acacia harpophylla* and/or Belah *Casuarina cristata*, with Queensland Blue Grass *Dichanthium sericeum* also present. Poplar Box *Eucalyptus populnea* occurs near drainage lines and ironbark woodlands dominate the scarps (Sattler and Williams 1999).

Southern Downs (Province 26) has only a minor representation within the study area and this is restricted to Mount Organ State Forest in the south. This part of the province is characterised by Cainozoic sand deposits and is dominated by ironbark woodlands (Sattler and Williams 1999).

The vast majority of the study area has been cleared for grazing purposes (**Photo 1**), with only small remnants of vegetation, as discussed in the sections that follow.



Photo 1. A typical representation of the study area, which retains patches and corridors of habitat within a landscape that has largely been cleared for grazing purposes.

3.2. MAPPED VEGETATION COMMUNITIES

3.2.1. *Certified and Revised Mapping of Vegetation*

Current, EHP-certified vegetation mapping (Version 8.0) (EHP 2013 within the study area is shown on **Figure 3.1**. The remnant REs are coloured according to biodiversity status as applicable under the EP Act.

A total of 15 REs are mapped by EHP within the study area, as listed in **Table 3.1**. These REs occur within both homogeneous and heterogeneous polygons and cover an area of approximately 7,237 ha, comprising 5,353 ha, of remnant vegetation and 1,884 ha mapped in the form of high-value regrowth vegetation. This equates to around 4% and 2% of the study area, respectively. The remaining 94% of the study area is either cleared or not currently mapped as remnant or high-value regrowth vegetation.

Biodiversity status (as applicable under the EP Act) is based on the combination of an assessment of the remaining extent of each RE compared to its pre-clearing extent, the condition of the remnant vegetation, and additional criteria relating to degradation, loss of biodiversity, rarity and threatening processes. Of the remnant REs mapped, five (REs 11.3.17, 11.9.1, 11.9.4, 11.9.5 and 11.9.10; covering 2,834 ha) currently have an Endangered biodiversity status, five (REs 11.3.2, 11.3.25, 11.3.27c and 11.9.7; covering 2,977 ha) have an Of Concern biodiversity status, and the remaining five have No Concern At Present Biodiversity Status (1,411 ha) (**Table 3.1**).

Four REs currently mapped within the study area may also correspond to EPBC Act listed TECs as outlined in **Table 3.2** and mapped in **Figure 3.2**. For example, two of the remnant REs mapped within the study area are representative of the Brigalow (*Acacia harpophylla* dominant and co-dominant) TEC (Brigalow TEC) listed as Endangered under the EPBC Act (REs 11.9.1 and 11.9.5).

It should also be noted that certain areas of vegetation do not necessarily need to reach 'remnant' status (as defined under the VM Act) and can be as small as <1 ha, in order to be considered a TEC under the EPBC Act. This may include high-value regrowth vegetation; patches of remnant vegetation that are too small to be mapped on EHP-certified mapping; and other non-remnant vegetation. Inclusion of this

vegetation in TEC mapping is subject to ground-truthing and must meet relevant criteria.

Aerial photograph interpretation and field survey results allowed a revision of the RE mapping, which is shown on **Figures 3.3** and **3.4**, coloured according to status recognised under the EP Act (biodiversity status) and EPBC Act (TECs) respectively. The revised mapping indicates 22 REs occur within the study area (**Table 3.1**). These REs cover an area of approximately 5,039 ha of remnant vegetation (less than 4% of the total area of the study area) and 1,416 ha of regrowth vegetation.

For areas that were able to be accessed during the field survey (**Figure 2.1a**), the revised mapping was conducted at a scale of 1:10,000. Access constraints within the study area led to a reduction in the overall area that could be covered by the revised mapping. When this is accounted for, the overall scale of this mapping was averaged at approximately 1:15,000 across the entire area.

It should be noted that the 1:15,000 scale of the revised mapping with ground-truthing provides considerably more detail than the existing 1:100,000 scale EHP-certified mapping. The main differences between the revised vegetation mapping layer and that of the certified 1:100,000 RE mapping (Version 6.0b) are as follows:

- A reduction in the representation of mapped remnant vegetation in the study area by approximately 314 hectares, representing a decrease of just below 6%.
- A significant reduction in the extent of Endangered remnant vegetation in the study area by approximately 648 hectares (33%). Many areas formerly mapped as 11.9.5 were remapped as land zone 3 due to the presence of creek lines with obvious contemporary floodplains.
- The combined area of riparian and floodplain vegetation on alluvial soils (land zone 3) increased from 2,067 ha to 2,625 ha, representing an increase of 27%. This increase is partly due to an increased mapping scale leading to the mapping of vegetation communities previously too narrow to be mapped under 1:100,000 mapping rules (Neldner et al. 2005).
- An increase in the total area of RE 11.10.1 from 392 ha to 1,083 ha (a 176% increase) as a result of finer mapping of a large area

(Mount Organ State Forest) previously mapped as a mosaic of 11.5.1/11.10.1.

- Sandstone Jump-ups (**Photo 2**) mapped as RE11.9.4 Semi-evergreen vine thicket were found to represent complex mosaics of vegetation ranging from *Acacia shirleyi* woodland 11.10.3, *Eucalyptus crebra* woodland 11.10.7 and *Callitris glaucophylla* woodland 11.10.9, with Semi-evergreen vine thickets restricted to sheltered slopes.
- The state forest mapped as a mix of REs 11.10.1 and 11.5.1 was found to also contain patches of Semi-evergreen vine thicket 11.9.4 and Brigalow, Belah 11.9.5, 11.5.16.
- Areas of Brigalow, grassland and mixed eucalypts on alluvial plains (11.3.1, 11.3.21 and 11.3.4), Mountain Coolibah *Eucalyptus organophila* woodland (11.9.2), Bluegrass Grassland (11.9.3) and *Eucalyptus melanophloia*, *Callitris glaucophylla* woodland (11.5.5) not previously mapped were located within the study area.



Photo 2. An example of a sandstone jump-up in the south-west of the study area.

Regional Ecosystem verification sites are shown on **Figure 2.1a**.

REs 11.3.1, 11.3.4, 11.3.21, 11.5.5, 11.5.16, 11.9.2, 11.9.3, 11.9.6, 11.10.3 and 11.10.7 mapped for the study area are not present on the EHP-certified mapping within the study area and RE 11.5.16 is absent from the same mapping within the relevant provinces. REs mapped that are additional to those mapped by EHP are predominantly a result of greater scrutiny of land zones rather than the addition of dominant canopy species.

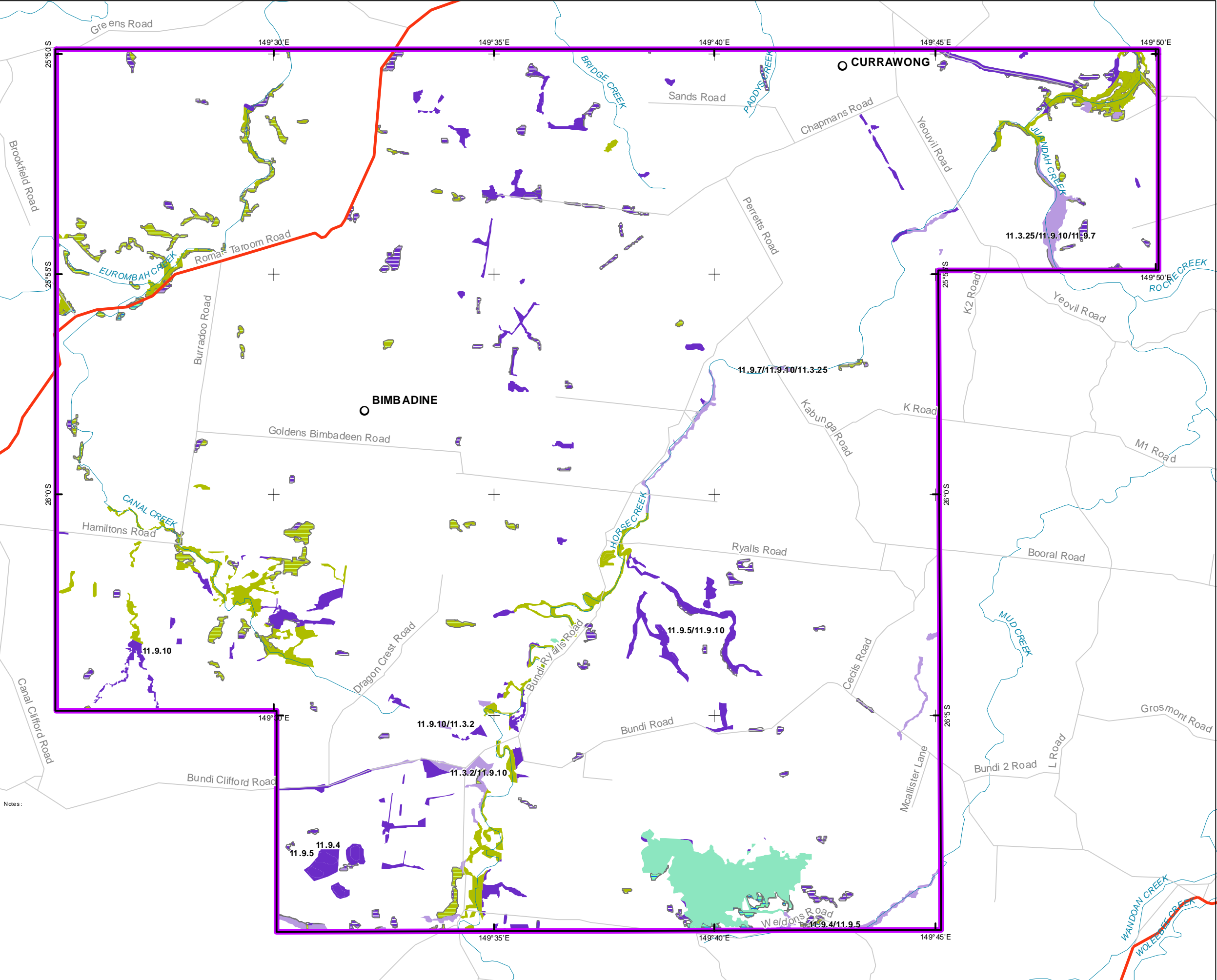


Figure: 3.1
Title: Currently Recognised Distribution of Regional Ecosystems within the Study Area (Based on EHP Vegetation Mapping)

Project: **Surat North Development**
Client: **QGC**
A B3 Group business

LEGEND

Regional Ecosystems V8.0

- #### Biodiversity Status (EHP)
- Endangered - Dominant
 - Of Concern - Dominant
 - Of Concern - Sub-dominant
 - Endangered - Sub-dominant
 - No concern at present

- #### Mature Regrowth
- Endangered - Dominant
 - Of Concern - Dominant
 - No concern at present
 - CSG Field Boundary (QGC)
 - Towns
 - Major Road
 - Minor Road
 - Watercourse

Notes:

Coordinating System: GCS GDA 1994
Datum: GDA 1994
Units: Degree

1:155,000 at A3

0 0.5 1 2 3 4 Kilometers

Date: 16/01/2014 Drawn By: MG Reviewed by: LP

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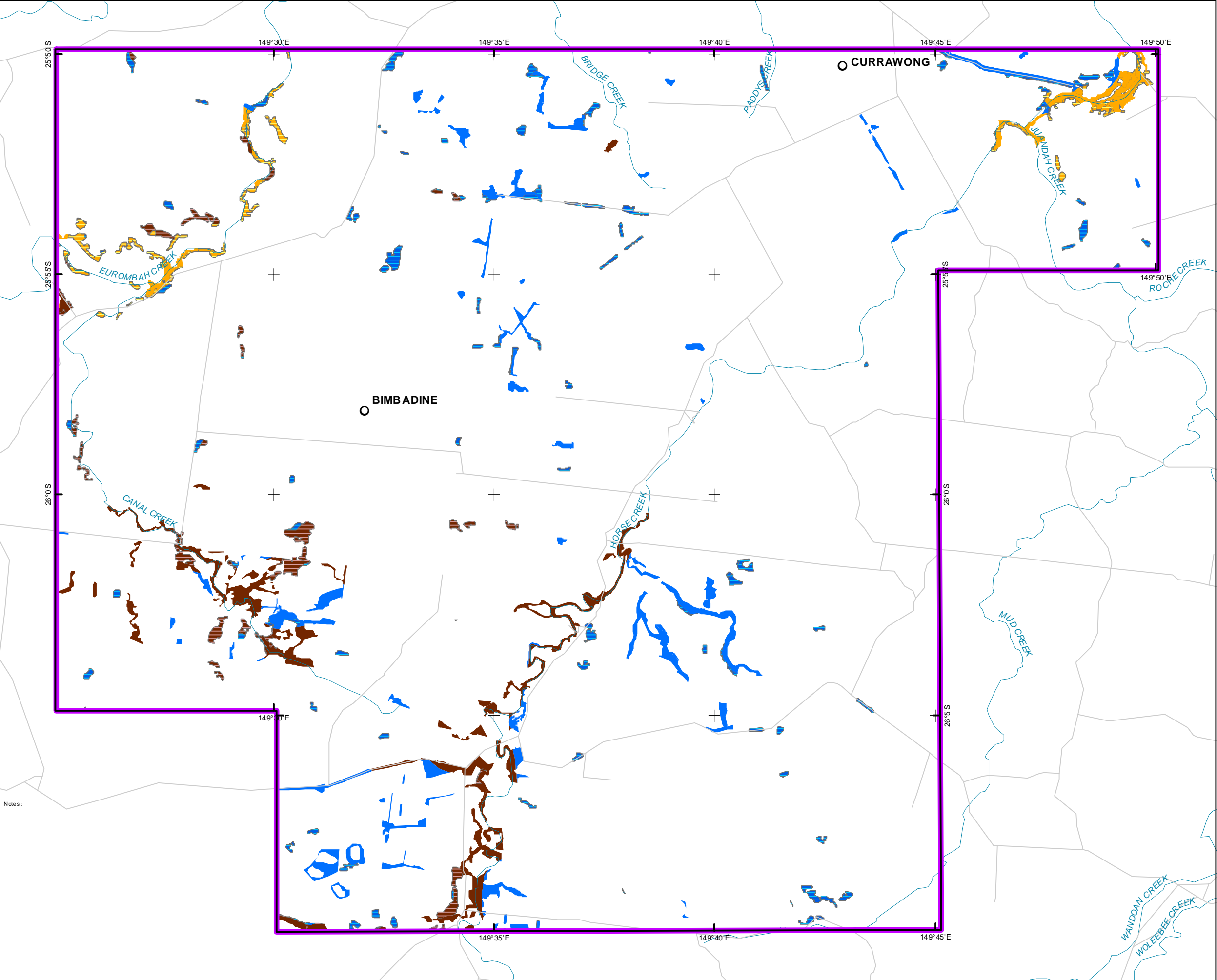


Figure: 3.2
Title: Currently Recognised Distribution of Regional Ecosystems within the Study Area (Based on EHP Vegetation Mapping)

Project: Surat North Development



LEGEND
Regional Ecosystems V8.0
Threatened Ecological Community:

- Brigalow (*Acacia harpophylla* - dominant and co-dominant)
- Coolibah - Black Box Woodland of the Darling Riverine Plains and the Brigalow Belt South Bioregions.
- Weeping Myall Woodlands - present

- Regrowth Vegetation**
- Brigalow
 - Coolibah
 - Potential Weeping Myall

- CSG Field Boundary (QGC)
- Towns
- Major Road
- Minor Road
- Watercourse

Notes: Data Sourced from QLD Government

Coordinat System: GCS GDA 1994
Datum: GDA 1994
Units: Degree

1:155,000 at A3

0 0.5 1 2 3 4 Kilometers

Date: 16/01/2014 Drawn By: MG Reviewed by: LP

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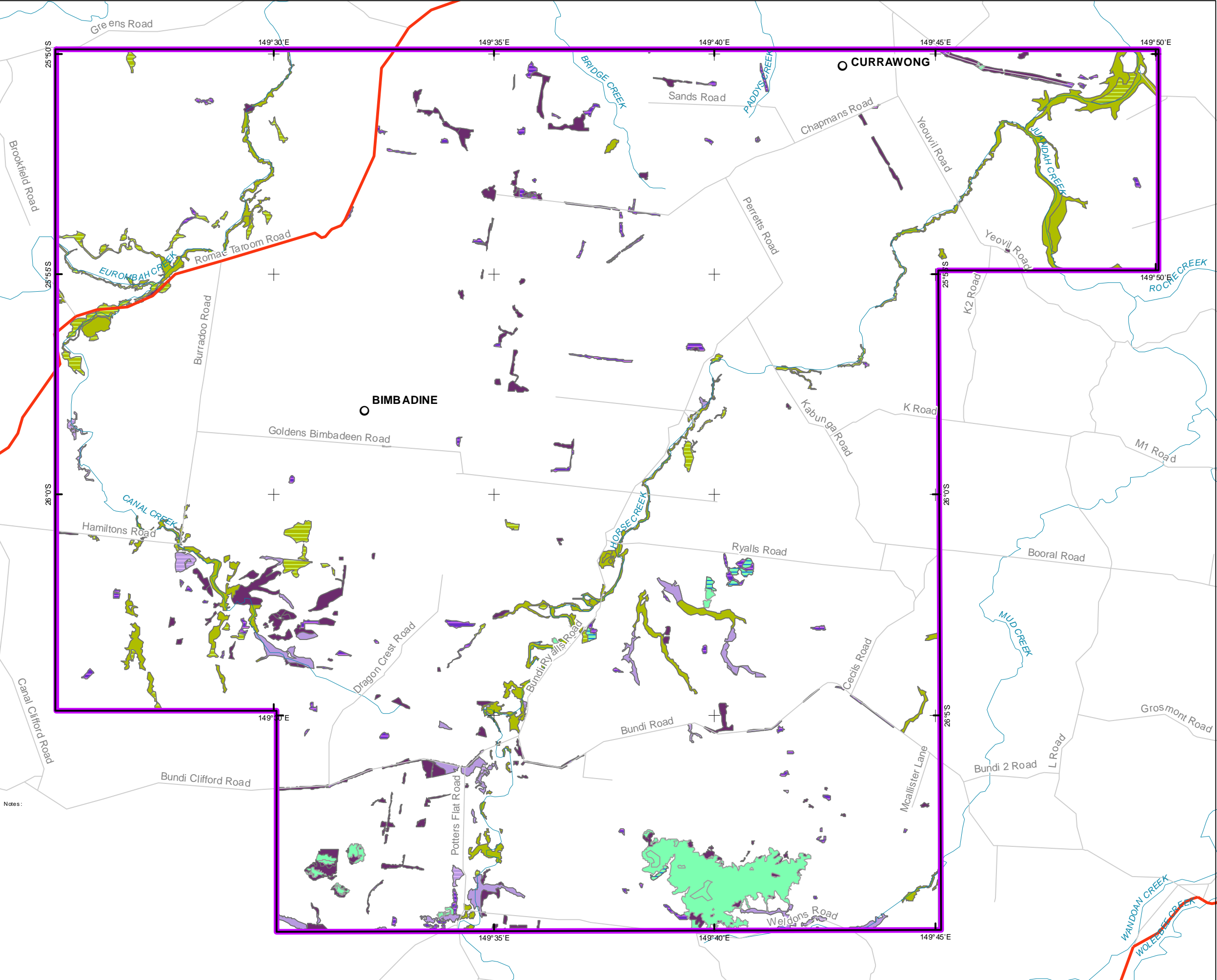


Figure: 3.3
Title: Currently Recognised Distribution of Regional Ecosystems within the Study Area (Based on Ground-truthed Vegetation Mapping)

Project: Surat North Development



LEGEND

Vegetation Mapping (BAAM)

Remnant Regional Ecosystem

- Endangered - Dominant
- Endangered - Sub-dominant
- Of Concern - Dominant
- No concern at present
- Non-Remnant

High Value Regrowth

- Endangered - Dominant
- Endangered - Sub-dominant
- Of Concern - Dominant
- No Concern at Present

CSG Field Boundary (QGC)

- Towns
- Major Road
- Minor Road
- Watercourse

Notes: Data Sourced from BAAM Field Surveys and aerial photography.

Coordinat System: GCS GDA 1994
Datum: GDA 1994
Units: Degree

1:155,000 at A3

0 0.5 1 2 3 4 Kilometers

Date: 14/01/2014 Drawn By: MG Reviewed by: LP

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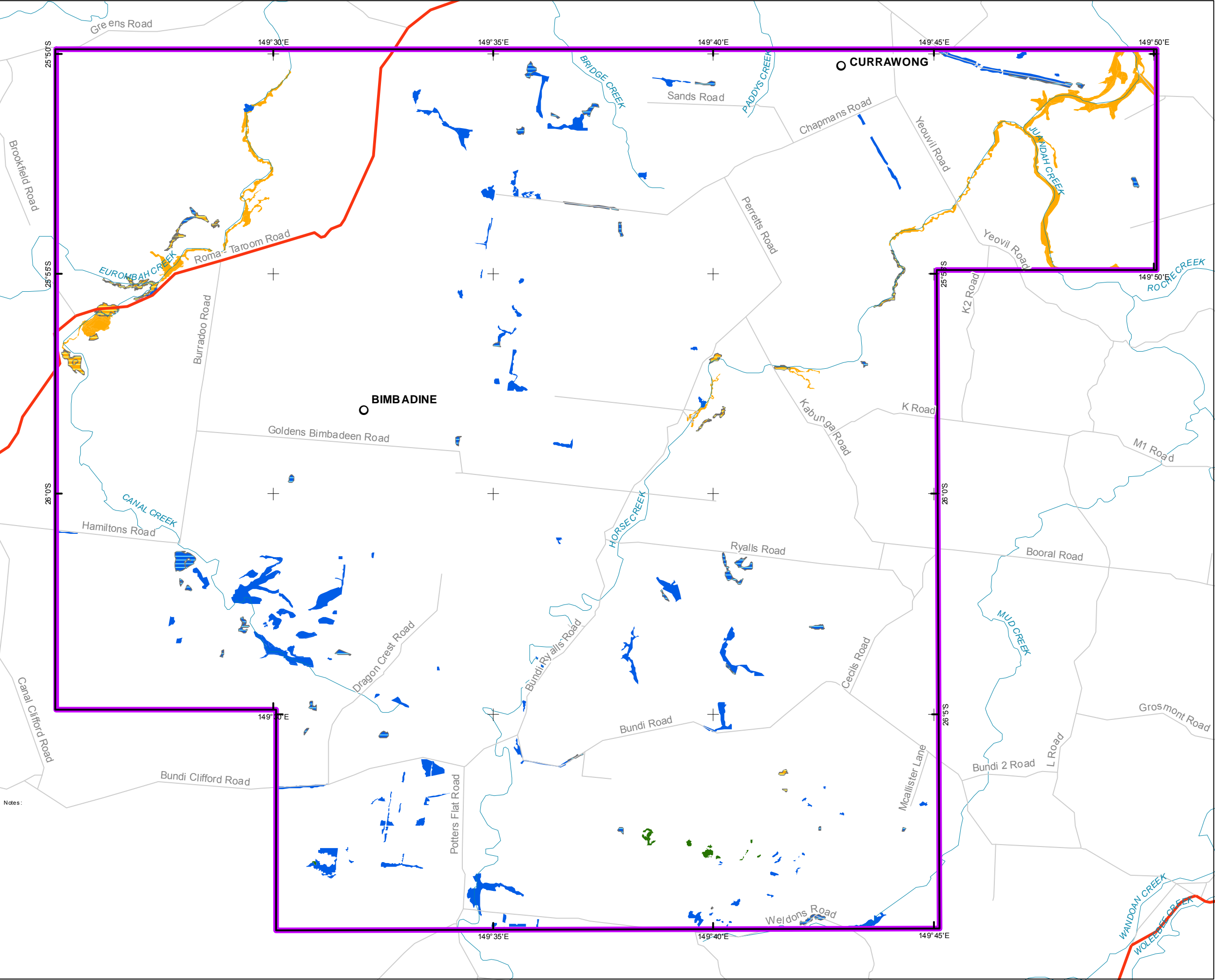


Figure: 3.4
Title: Currently Recognised Distribution of Threatened Ecological Communities within the Study Area (Based on Ground-truthed Vegetation Mapping)

Project: Surat North Development



LEGEND

Vegetation Mapping (BAAM)

Threatened Ecological Communities:

- Brigalow (*Acacia harpophylla* dominant and co-dominant)
- Coolibah – Black Box Woodland of the Darling Riverine Plains and the Brigalow Belt South Bioregions
- Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions TEC

Regrowth Vegetation

- Mosaic Brigalow/Coolibah Polygon
- Brigalow
- Coolibah

CSG Field Boundary (QGC)

- Towns
- Major Road
- Minor Road
- Watercourse

Notes: Data Sourced from BAAM Field Surveys and aerial photography.






Coordinate System: GCS GDA 1994
Datum: GDA 1994
Units: Degree
Scale: 1:155,000 at A3
0 0.5 1 2 3 4 Kilometers






Date: 14/01/2014 Drawn By: MG Reviewed by: LP

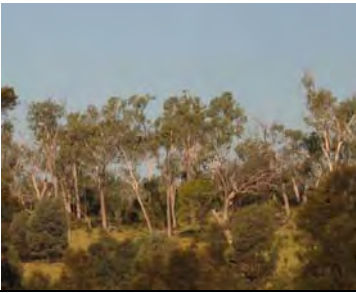




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Table 3.1. REs within the study area as identified on EHP 1:100,000 mapping (EHP 2013) and as revised by BAAM. Note: regrowth shown is considered to be consistent with the REs shown.

RE	Management Status under the EP Act ¹	Short RE Description (REDD ²)	Total Area within Study Area (ha) ³				Representative Photo
			EHP Remnant	EHP Regrowth	Revised Remnant ⁴	Revised Regrowth ⁴	
11.3.1	Endangered	Brigalow <i>Acacia harpophylla</i> and/or Belah <i>Casuarina cristata</i> open forest on alluvial plains	0	0	155	36	
11.3.2	Of Concern	Poplar Box <i>Eucalyptus populnea</i> woodland on alluvial plains	578	324	1171	322	
11.3.3	Of Concern	Coolibah <i>Eucalyptus coolabah</i> woodland on alluvial plains	54	223	460	164	
11.3.4	Of Concern	Queensland Blue Gum <i>Eucalyptus tereticornis</i> and/or <i>Eucalyptus</i> spp. tall woodland on alluvial plains	0	0	5	0	
11.3.17	Endangered	Poplar Box <i>Eucalyptus populnea</i> woodland with Brigalow <i>Acacia harpophylla</i> and/or Belah <i>Casuarina cristata</i> on alluvial plains	0	6	0	0	RE not detected during field survey; may occur as a minor element in association with 11.3.2 in the study area.
11.3.21	Endangered	<i>Dichanthium sericeum</i> and/or <i>Astrebla</i> spp. grassland on alluvial plains. Cracking clay soils	0	0	11	0	

RE	Management Status under the EP Act ¹	Short RE Description (REDD ²)	Total Area within Study Area (ha) ³				Representative Photo
			EHP Remnant	EHP Regrowth	Revised Remnant ⁴	Revised Regrowth ⁴	
11.3.25	Of Concern	Queensland Blue Gum <i>Eucalyptus tereticornis</i> or River Red Gum <i>E. camaldulensis</i> woodland fringing drainage lines	1416	74	732	141	
11.3.27	Of Concern	Freshwater wetlands	23	0	91	109	
11.3.39	No Concern At Present	Silver-leaved Ironbark <i>Eucalyptus melanophloia</i> +/- Baradine Red Gum <i>E. chloroclada</i> woodland on undulating plains and valleys with sandy soils	1	22	0	0	RE not detected during field survey; considered unlikely to be present
11.5.1	No Concern At Present	Narrow-leaved Red Ironbark <i>Eucalyptus crebra</i> , White Cypress Pine <i>Callitris glaucophylla</i> , Smooth-barked Apple <i>Angophora leiocarpa</i> , Buloke <i>Allocasuarina luehmannii</i> woodland on Cainozoic sand plains and remnant surfaces	917	51	50	0	
11.5.5	No Concern At Present	Silver-leaved Ironbark <i>Eucalyptus melanophloia</i> , White Cypress Pine <i>Callitris glaucophylla</i> woodland on Cainozoic sand plains and remnant surfaces with deep sands	0	0	29	33	
11.5.16	Endangered	Brigalow <i>Acacia harpophylla</i> and/or Belah <i>Casuarina cristata</i> open forest in depressions on Cainozoic sand plains/remnant surfaces	0	0	22	0.3	

RE	Management Status under the EP Act ¹	Short RE Description (REDD ²)	Total Area within Study Area (ha) ³				Representative Photo
			EHP Remnant	EHP Regrowth	Revised Remnant ⁴	Revised Regrowth ⁴	
11.9.1	Endangered	Brigalow <i>Acacia harpophylla</i> -Dawson Gum <i>Eucalyptus cambageana</i> open forest to woodland on fine-grained sedimentary rocks	5	5	0	0	RE not detected during field survey; considered unlikely to be present
11.9.2	No Concern At Present	Silver-leaved Ironbark <i>Eucalyptus melanophloia</i> +/- Mountain Coolibah <i>E. orgadophila</i> woodland on fine-grained sedimentary rocks	0	0	6	35	
11.9.3	No Concern At Present	<i>Dichanthium</i> spp., <i>Astrelba</i> spp. grassland on fine-grained sedimentary rocks	0	0	0	0.5	
11.9.4	Endangered	Semi-evergreen vine thicket on fine-grained sedimentary rocks	90	5	69	0	
11.9.5	Endangered	Brigalow <i>Acacia harpophylla</i> and/or Belah <i>Casuarina cristata</i> open forest on fine-grained sedimentary rocks	1441	720	830	397	
11.9.6	Endangered	Yarran <i>Acacia melvillei</i> +/- Brigalow <i>A. harpophylla</i> open forest on fine-grained sedimentary rocks	0	0	0	7	

RE	Management Status under the EP Act ¹	Short RE Description (REDD ²)	Total Area within Study Area (ha) ³				Representative Photo
			EHP Remnant	EHP Regrowth	Revised Remnant ⁴	Revised Regrowth ⁴	
11.9.7	Of Concern	Poplar Box <i>Eucalyptus populnea</i> , False Sandalwood <i>Eremophila mitchellii</i> shrubby woodland on fine-grained sedimentary rocks	17	268	19	0	
11.9.10	Endangered	Brigalow <i>Acacia harpophylla</i> , Poplar Box <i>Eucalyptus populnea</i> open forest on fine-grained sedimentary rocks	406	156	207	90	
11.10.1	No Concern At Present	Spotted Gum <i>Corymbia citriodora</i> open forest on coarse-grained sedimentary rocks	392	21	1083	0	
11.10.3	No Concern At Present	Bendee <i>Acacia catenulata</i> or Lancewood <i>A. shirleyi</i> open forest on coarse-grained sedimentary rocks. Crests and scarps	0	0	47	0	
11.10.7	No Concern At Present	Narrow-leaved Red Ironbark <i>Eucalyptus crebra</i> woodland on coarse-grained sedimentary rocks	0	0	45	0	
11.10.9	No Concern At Present	White Cypress <i>Callitris glaucophylla</i> woodland on coarse-grained sedimentary rocks	6	0.5	3	0	
11.10.11	No Concern At Present	Poplar Box <i>Eucalyptus populnea</i> , Silver-	6	0	3	0	RE not examined during survey due to access constraints

RE	Management Status under the EP Act ¹	Short RE Description (REDD ²)	Total Area within Study Area (ha) ³				Representative Photo
			EHP Remnant	EHP Regrowth	Revised Remnant ⁴	Revised Regrowth ⁴	
		leaved Ironbark <i>E. melanophloia</i> +/- White Cypress <i>Callitris glaucophylla</i> woodland on coarse-grained sedimentary rocks					

¹ 'EP Act' status is based on the 'Biodiversity Status' prescribed on the Queensland Herbarium's Regional Ecosystem Description Database v8. Biodiversity status only applies to remnant vegetation.

² REDD = Regional Ecosystem Description Database (Version 8) (Queensland Herbarium 2013).

³ Based on GIS analysis of current EHP-certified mapping (Version 8.0) (EHP 2013).

⁴ The revised mapping approach allowed the identification of remnant and regrowth vegetation communities consistent with REs as defined in Sattler and Williams (1999) and DERM (Queensland Herbarium 2013).

Table 3.2. Assessment of Potentially Present Threatened Ecological Communities

TEC	EPBC Act status	Likelihood	Notes
Brigalow (<i>Acacia harpophylla</i> dominant and co dominant)	E	Known	RE 11.9.1, RE 11.9.5 and RE 11.9.5a mapped by Qld Government. Revised mapping included RE 11.3.1, RE 11.5.16, RE 11.9.5, RE 11.9.5a and RE 11.9.6. Mapped high-value brigalow regrowth and any Brigalow regrowth that meets the TEC criteria ¹ . Mapped RE 11.3.2 could contain unmapped patches of brigalow.
Coolibah — Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	E	Known	RE 11.3.3 mapped on site. Regrowth RE 11.3.3 may constitute the TEC ² .
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	E	Known	RE 11.9.4a mapped on site. Revised mapping included RE 11.9.4, RE 11.9.4a and RE 11.9.4c.
Weeping Myall Woodlands	E	Unlikely ²	RE 11.3.2 mapped on site, any <i>Acacia pendula</i> dominated patches within this may constitute this TEC ² . Smaller patches of this TEC can occur within other REs. Regrowth vegetation meeting the TEC requirements ² may also constitute the TEC. No <i>Acacia pendula</i> recorded during survey, therefore TEC is not likely to be present.
The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin	E	Unlikely	Occurs to the west of the study area in association with Scotts Creek Springs.

¹ See regrowth information sheet of this community for details (DEWHA 2003).

² Criteria in the relevant conservation listing advice must be met.

Abbreviations: TEC =threatened ecological community; EPBC Act = *Environment Protection and Biodiversity Conservation Act 1999*; E = endangered; CE = critically endangered.

3.2.2. Wetlands and Springs

Ramsar Wetlands and Nationally Important Wetlands

According to DERM's online WetlandMaps mapping tool (DERM 2011), no Ramsar wetlands occur within several hundred kilometres of the study area, or at any location directly downstream in the Fitzroy-Dawson catchment. The nearest Ramsar wetland is associated with the Shoalwater Bay region to the north of Rockhampton.

The Directory of Important Wetlands (Environment Australia 2001) lists no wetlands in the vicinity of the study area; however watercourses within the area form an upstream component of the Fitzroy River catchment. The Fitzroy River Delta and Floodplain are listed as nationally important wetlands (QLD012 and QLD013 respectively). Activities associated with the development could potentially impact upon these wetlands, as both occur downstream on the same catchment as the study area.

State-significant Wetlands and Riparian Vegetation

State wetland system mapping indicates wetlands are a prominent feature of the study area (**Figure 3.5**). Wetlands mapped within the study area include:

- Remnant and non-remnant examples of palustrine wetlands associated with Canal Creek in the west, Horse Creek in the centre and Juandah Creek in the east;
- Lacustrine wetlands in the form of property dams and weirs scattered across the area; and
- Riverine wetlands (RE 11.3.25) and alluvial plains (REs 11.3.2, 11.3.3 and 11.3.25) associated with Canal Creek, Horse Creek and Juandah Creek.

The two largest palustrine wetlands associated with Canal Creek and Horse Creek are recognised as wetlands of High Ecological Significance on EHP's map of referable wetlands, as shown in **Figure 3.6**. Such wetlands are offered specific protection under State legislation, given their location in catchments adjoining the Great Barrier Reef and important role in reducing downstream impacts.

The majority of other palustrine and riverine wetlands mapped in the study area are recognised as wetlands of General Ecological Significance (**Figure 3.6**). These are also shown as referable wetlands on Environmentally Sensitive Area (ESA) mapping for the study area (**Section 3.2.4**), although are no longer shown on referable wetland mapping available from EHP. The requirement for EHP to advise on development applications potentially impacting wetlands of General Ecological Significance was removed in August 2012, and it is anticipated that such features will be removed from ESA mapping in the near future for consistency with referable wetland mapping.

Springs

The Queensland Springs database (DERM 2006) indicates no springs are known from the study area, although a cluster of four springs are mapped just over 12 kilometres to the west in the vicinity of Scotts Creek (**Figure 3.5**). As nationally important Boggomoss Springs occur in the general region (i.e. to the north-east of Taroom), it must be considered that while none were encountered during field investigations, there is some potential for unmapped springs to occur within the study area.

3.2.3. Matters of National Environmental Significance under the EPBC Act

The EPBC Act Online Protected Matters (PM) Search Tool results (**Appendix A**) indicate that a total of four threatened ecological communities (TECs), three threatened terrestrial flora species, 13 threatened terrestrial fauna species and an additional 11 migratory terrestrial fauna species listed under the EPBC Act may occur within the study area.

There is no indication that any Ramsar wetlands occur within the study area. Furthermore, the Queensland artesian springs database does not list any springs within the study area itself; however, a cluster of four springs occur in association with Scotts Creek to the west of the study area, as discussed in **Section 3.2.2**. These springs could potentially be analogous to the groundwater-dependent ecosystem TEC listed under the EPBC Act.

It should be noted that the EPBC Act Online PM Search Tool, whilst based on some species records, relies on modelling of suitable habitats, is largely predictive and requires a desktop and field-based assessment.

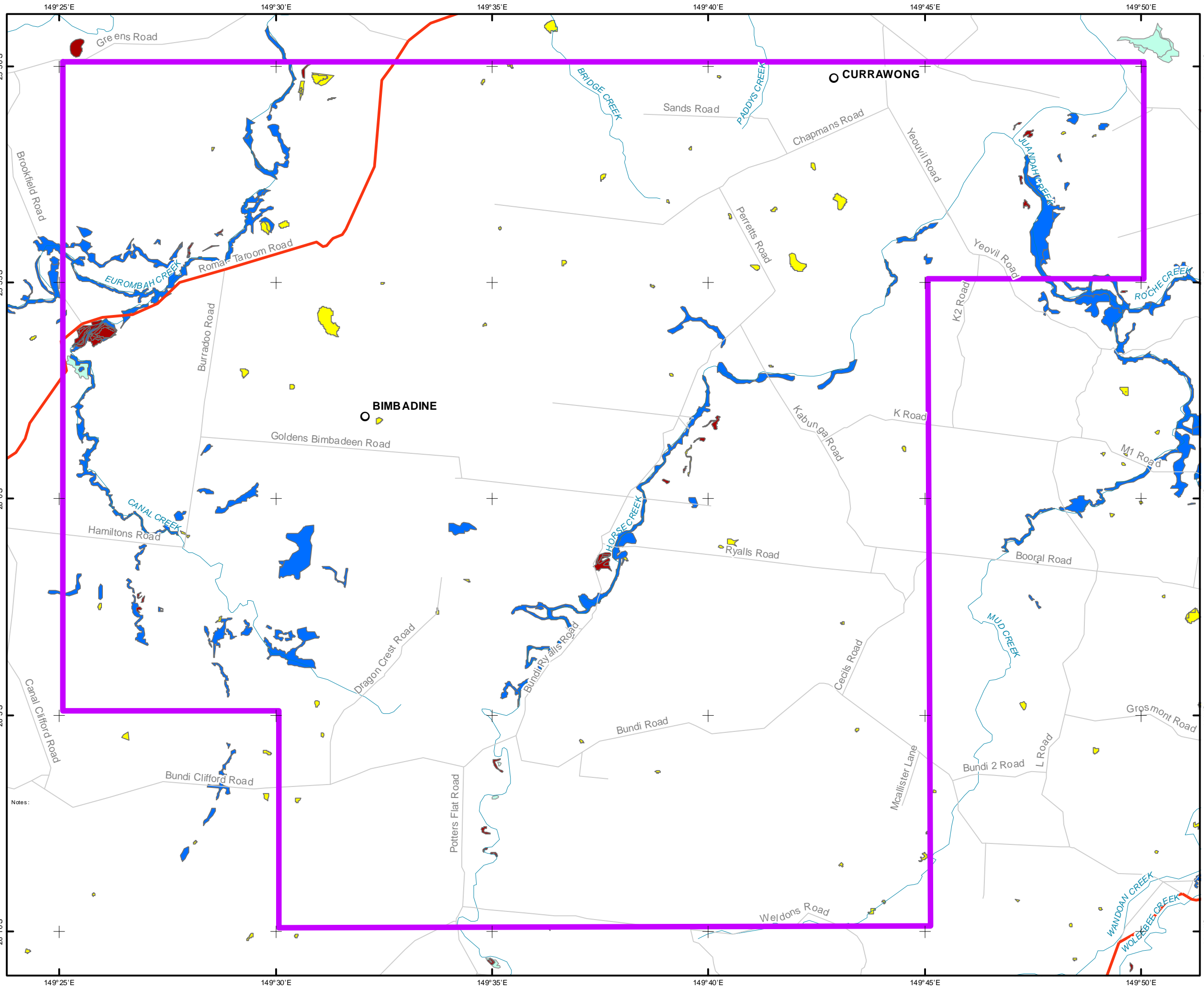


Figure: 3.5
Title: Currently Recognised Distribution of Wetlands and Springs within and adjacent to the Study Area

Project: **Surat North Development**
Client: **QGC**
A B3 Group business

LEGEND
QLD WETLAND SYSTEM MAP 100K
Wetland Classification

- Lacustrine
- Palustrine
- Riverine
- Floodplain
- Towns
- CSG Field Boundary (QGC)
- Major Road
- Minor Road
- Watercourse

Notes: Data Sourced from QLD Government

Coordinat System: GCS GDA 1994
Datum: GDA 1994
Units: Degree

Scale: 1:155,000 at A3

0 0.5 1 2 3 4 Kilometers

Date: 14/01/2014 Drawn By: MG Reviewed by: LP

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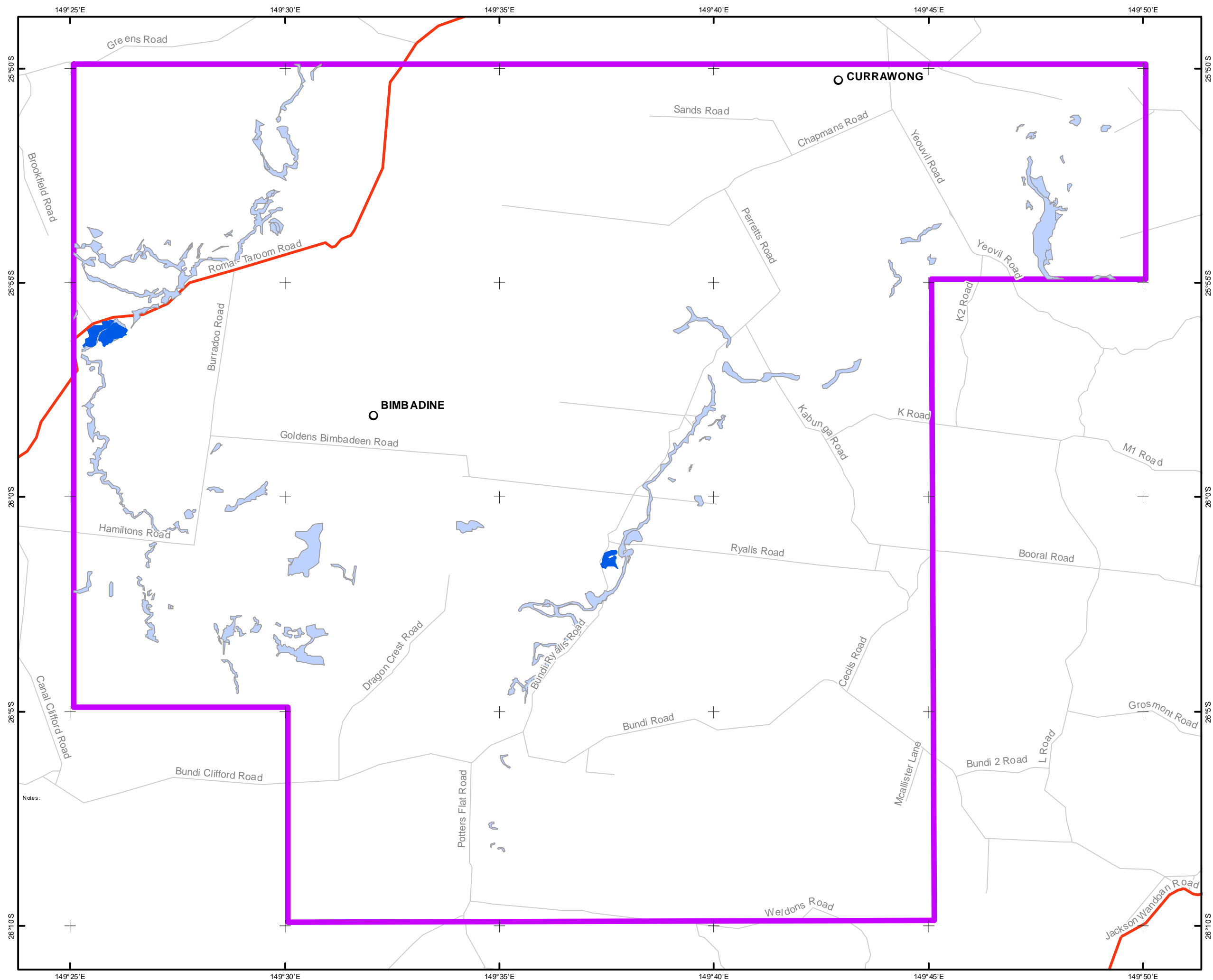


Figure: 3.6

Title: Referable Wetlands within the Study Area

Project: **Surat North Development**

Client: **QGC**
A B2B Group business

LEGEND

- HES Wetland GBR Catchments (WPA)
- GES Wetland (WMA)
- CSG Field Boundary (QGC)
- Major Road
- Minor Road
- Towns

Notes: Data Sourced from QLD Government

Coordinate System: GCS GDA 1994
Datum: GDA 1994
Units: Degree

1:155,000 at A3

0 0.5 1 2 3 4 Kilometers

Date: 17/01/2014 Drawn By: MG Reviewed by: LP

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The currently recognised occurrence of TECs is shown on **Figure 3.2** on the basis of EHP's certified remnant vegetation mapping (Version 8.0) (EHP 2013), which is discussed in **Section 3.2.1** above. A revised representation of the occurrence of TECs is provided in **Figure 3.4** based on field verified vegetation mapping.

Based on EHP certified mapping revised by aerial photograph interpretation and field verification (**Section 3.2.1**), three of the TECs that were highlighted in the PM search were confirmed to occur within the study area. These comprised:

- Brigalow (*Acacia harpophylla* dominant and co-dominant);
- Coolibah — Black Box Woodland of the northern riverine plains in the Darling Riverine Plains and Brigalow Belt South bioregions; and
- Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions.

The Brigalow TEC is analogous to four REs identified within the study area, namely RE 11.3.1, RE 11.5.16, RE 11.9.5 and RE 11.9.6 (**Table 3.2**). Only one of the above REs is mapped by EHP (11.9.5), along with one additional RE (11.9.1) that was not detected during the field survey (**Table 3.1**). Brigalow communities once dominated large portions of the central, northern and western parts of the study area. However, past-clearing has resulted in much of the Brigalow vegetation being confined to narrow shade lines and small shade stands less than one hectare in size or associated with floodplains.

Based on EHP-certified mapping, 1441 hectares of Brigalow remnant vegetation is mapped as occurring within the study area (**Table 3.1**, **Figure 3.2**). Revised mapping for this project based on aerial photograph interpretation and field survey revised the total extent of Brigalow within the study area to 1007ha of remnant vegetation and 440ha of regrowth (**Table 3.1**, **Figure 3.4**), with 1049ha considered likely to represent the TEC.

A total of 614 hectares of Coolibah — Black Box Woodland was identified as present within the study area as part of the revised mapping, plus an additional 30 hectares of wetland (11.3.27) vegetation that may represent the TEC (**Figure 3.4**). Black Box *Eucalyptus largiflorens* was not

recorded from these communities; however, the presence of this species is not required to meet the definition of the TEC. The overall potential coverage of this TEC within the study area should be treated as being 644 hectares in total.

A minor representation of the Semi-evergreen vine thicket TEC (69 ha) was identified during the revised mapping (**Figure 3.4**). Some mapped occurrences of this community in the central southern portion of the study area were not able to be ground-truthed due to access constraints. Mapping for these polygons remains unchanged from EHP's certified mapping.

Weeping Myall *Acacia pendula* is not listed as an EVNT species under State or Commonwealth legislation, however, certain woodland communities of the Darling Riverine Plains and BBS bioregions (including RE 11.3.2) in which it occurs as the dominant canopy species are considered TECs (listed as Endangered) under the EPBC Act. While RE 11.3.2 occurs within the study area (**Table 3.1**), the field survey found no occurrence of Weeping Myall within the Study Area. This TEC is therefore considered unlikely to occur.

One other TEC, "The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin", is recognised by the EPBC Act Protected Matters Search as having potential to occur in the study area. However, no occurrences of this TEC were observed during the field survey. This TEC is mapped 12 km to the west of the study area in association with springs in the vicinity of Scotts Creek (see **Section 3.2.2**). Due to the apparent absence of springs in the study area, this TEC is considered unlikely to occur.

3.2.4. Environmentally Sensitive Areas

The Model Conditions for level 1 environmental authorities for coal seam gas activities released by DERM (now EHP) (31 March 2010) indicate that, "prior to conducting petroleum activities that involve significant disturbance to land, an assessment must be undertaken of the condition, type and ecological value of any vegetation in such areas where the activity is proposed to take place," and that this is to include "the carrying out of field validation surveys, observations and mapping of any category A, B or C Environmentally Sensitive Areas (ESA's)."

Environmentally Sensitive Areas under the EP Regulations

Under the EP Regulations, there are restrictions to the disturbance of Category A and B ESAs and adjacent land.

A review of EHP's Environmentally Sensitive Area (ESA) mapping indicates that there are no Category A ESAs mapped within the study area. However, significant areas of vegetation analogous to REs with an Endangered 'Biodiversity Status' (as listed on the Regional Ecosystem Description Database (Queensland Herbarium 2013) occur within the study area, which are recognised as Category B ESAs under the EP Act (**Figure 3.7**). This mapping is based on EHP's certified remnant vegetation mapping (Version 8.0) (EHP 2013), which is discussed further in **Section 3.2.1**.

Other Environmentally Sensitive Areas

Category C ESAs are not referred to in the EP Act or the associated regulations. However, they do appear on the EHP-certified ESA mapping (depicted in **Figure 3.7**). These include large areas of vegetation analogous to REs with an Of Concern Biodiversity Status, referable wetlands associated with certain drainage lines within the study area, and Mt Organ State Forest situated at the southern end of the study area (**Figure 3.7**). Two other areas of state forest occur outside of the southern boundary of the study area.

As noted in **Section 3.2.2**, referable wetlands shown on the ESA mapping include wetlands of High Ecological Significance and wetlands of General Ecological Significance (see **Figure 3.6**), although the latter are no longer shown on referable wetland mapping available from EHP. The requirement for EHP to advise on development applications potentially impacting wetlands of General Ecological Significance was removed in August 2012, and it is anticipated that such features will be removed from ESA mapping in the near future for consistency with referable wetland mapping.

3.2.5. Biodiversity Planning Assessment

Process

DERM (now EHP) prepared Biodiversity Planning Assessments (BPAs) for a number of Queensland's bioregions (as defined under the

Vegetation Management Act 1999) in order to provide broad-scale ecological data to advise a range a planning and decision-making processes.

The BPAs are based on the Biodiversity Assessment and Mapping Methodology (BAMM) (EPA 2002) using vegetation mapping data generated by the Queensland Herbarium. The methodology identifies areas with various levels of significance for biodiversity reasons, such as threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetland or other types of habitat important for the maintenance of biodiversity processes. This is based largely on remnant vegetation mapping data generated under the *Vegetation Management Act 1999* (QLD) (VM Act), buffered significant flora and fauna records and expert panel determinations.

The BAMM assigns three levels of Biodiversity Significance to provide a measure of the relative significance of terrestrial ecological values across those sections of a study area that fall within the bioregions of interest:

- **State Significance** – Areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales;
- **Regional Significance** – Areas assessed as being significant for biodiversity at the sub-bioregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance; and
- **Local Significance and Other Values** – areas assessed as not being significant for biodiversity at State or Regional scales. Local values are of significance at the local government scale.

The methodology uses seven diagnostic criteria: Habitat for EVNT taxa; Ecosystem value; Tract size; Relative size of Regional Ecosystem; Condition; Ecosystem Diversity; and Context and Connection, utilising Queensland Herbarium RE mapping and buffered EVNT flora and fauna records. Three supplementary criteria refine the mapped information by incorporating local knowledge and expert opinion. These are: Essential and general habitat for priority taxa; Special biodiversity values; and Corridors. Expert Panel Reports are compiled to document the decision-making

process for assessing the supplementary criteria.

Biodiversity Planning Assessment Expert Panel Review – Brigalow Belt South

The study area lies within the southern portion of the Brigalow Belt bioregion, known as Brigalow Belt South (BBS), for which a BPA was initially prepared in 2002 and updated in 2008. Results and relevant information from the Expert Panel Reports (EPA 2008a, b) applicable to the study area are provided in **Appendix B**, with the accompanying mapping shown in **Figure 3.8**.

In summary, the vast majority of land within the study area is currently being used for agriculture such that any remaining, natural vegetation is generally of high significance from a nature refuge and conservation perspective. Areas of State 'Biodiversity Significance' within the study area are generally consistent with the larger patches of remnant vegetation associated with major creeklines (e.g. Juandah Creek and Horse Creek), stockroutes and road reserves, as well as all patches of recognised SEVT habitat (**Figure 3.8**). The remaining areas of habitat are designated as regionally significant, including Mt Organ State Forest.

The mapping of areas of high biodiversity significance under the BPA process has been incorporated into the mapping of terrestrial ecological constraints for consideration by the development Design and Construction team when determining the placement of necessary infrastructure and associated areas of disturbance during Project construction and operation. Where applicable, the BPA expert panel determinations of habitat for significant species have also been incorporated into the mapping of habitat for EVNT species (Section 3.4.1), thereby further contributing to the ecological constraints mapping exercise.

3.3. TERRESTRIAL FLORA AND FAUNA SPECIES

3.3.1. Terrestrial Flora Species

The results from a search of EHP's WildNet database for an area within a 25 km radius centred on the study area (**Appendix C**) identifies six terrestrial flora species listed as endangered, vulnerable or near threatened (EVNTs) under the EPBC Act and/or NC Act as

previously recorded within the vicinity of the study area.

It should be noted that the WildNet database is based on records of species from a wide variety of observers and, although the records are reasonably accurate in terms of spatial location, not all records have been verified.

In addition, data from HERBRECS was obtained for the study area and surrounds (40km radius centred on the study area to compensate for lack of records). HERBRECS is the database of label information from specimens lodged in the Queensland Herbarium (Johnson 1991) and is considered a verified dataset as it is based on actual specimen records. Accuracy is high in terms of taxonomic data, although older records tend to be more inaccurate spatially.

Consideration of all database information, the EPBC Act Online Protected Matters Search Tool results (**Appendix A**) and BAAM staff knowledge of the region and local area identifies a total of 12 EVNT terrestrial flora species listed under the NC Act and/or the EPBC Act and one BMM species considered likely or having the potential to occur in the study area, as summarised in **Appendix D**. Species profiles for the 12 EVNT species are provided in **Appendix E**.

Two EVNT flora species were recorded within the study area during the field survey, as shown on **Figure 2.1a**, along with one BMM species (**Appendix D**). A list of all flora species recorded during the field survey is provided in **Appendix F**.

3.3.2. Terrestrial Fauna Species

The results from a search of EHP's WildNet database, the Queensland Museum's terrestrial fauna database and Birds Australia's New Atlas database for an area within a 25km radius centred on the study area (**Appendix C**) identifies 12 terrestrial fauna species listed as EVNT under the EPBC Act and/or NC Act as previously recorded within the vicinity of the study area, while a further 12 species are listed as Migratory under the EPBC Act, 22 species are considered to be regionally significant within the BBS bioregion, and one additional species is considered to have special 'cultural' significance under the NC Act. These results are summarised in **Appendix D**.

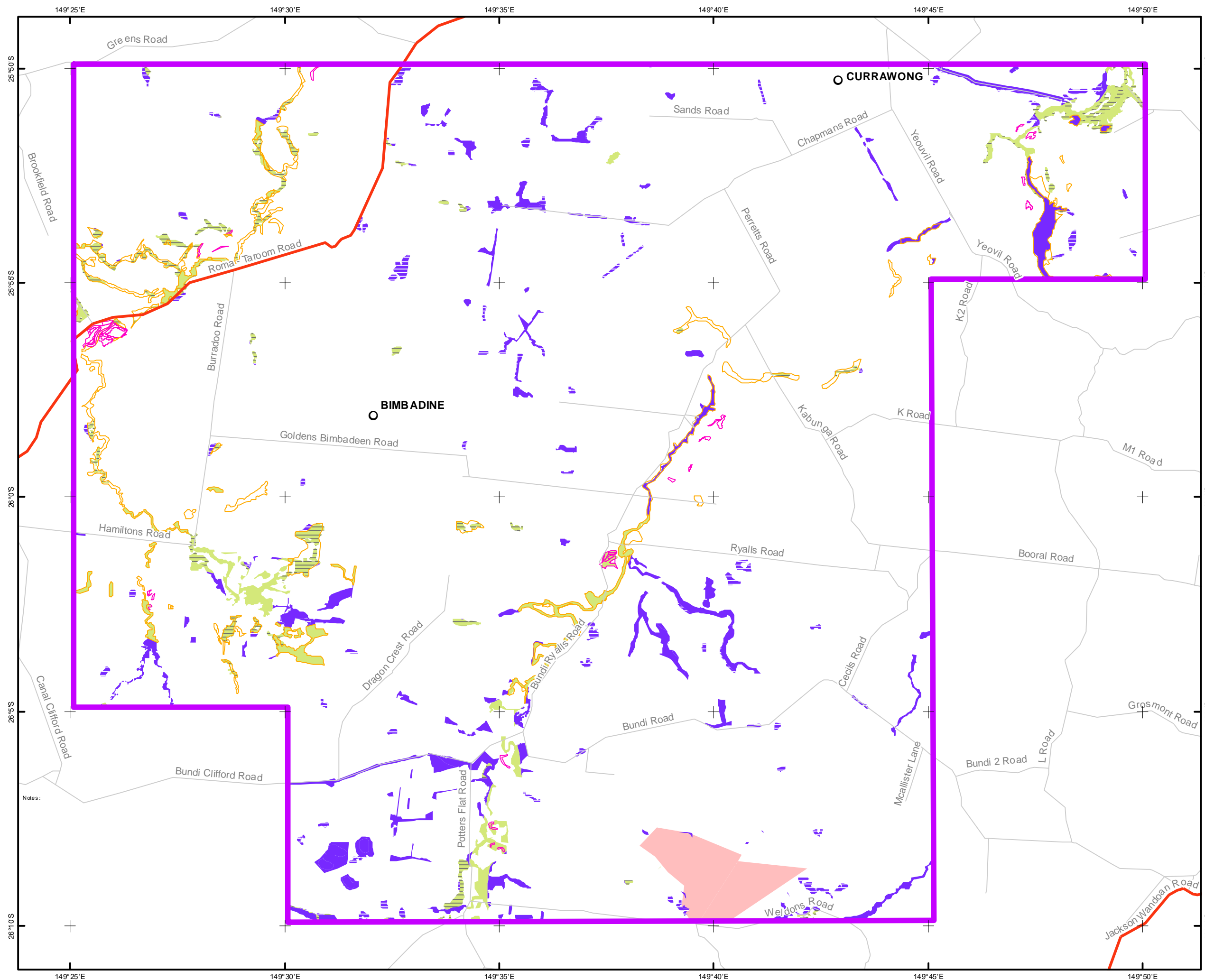


Figure: 3.7
Title: Currently Recognised Distribution of Environmentally Sensitive Areas within and adjacent to the Study Area (Based on EHP Vegetation Mapping)

Project: **Surat North Development**

Client: **QGC**
A B2 Group business

LEGEND
Environmentally Sensitive Areas
Regional Ecosystems V8.0

- Endangered
- Of Concern
- Mature Regrowth**
 - Endangered
 - Of concern
- State Forest
- Wetlands**
 - Wetland
 - Riverine
- Towns
- CSG Field Boundary (QGC)
- Major Road
- Minor Road

Notes: Data Sourced from QLD Government

Coordinate System: GCS GDA 1994
Datum: GDA 1994
Units: Degree

1:155,000 at A3

0 0.5 1 2 3 4 Kilometers

Date: 17/01/2014 Drawn By: MG Reviewed by: LP

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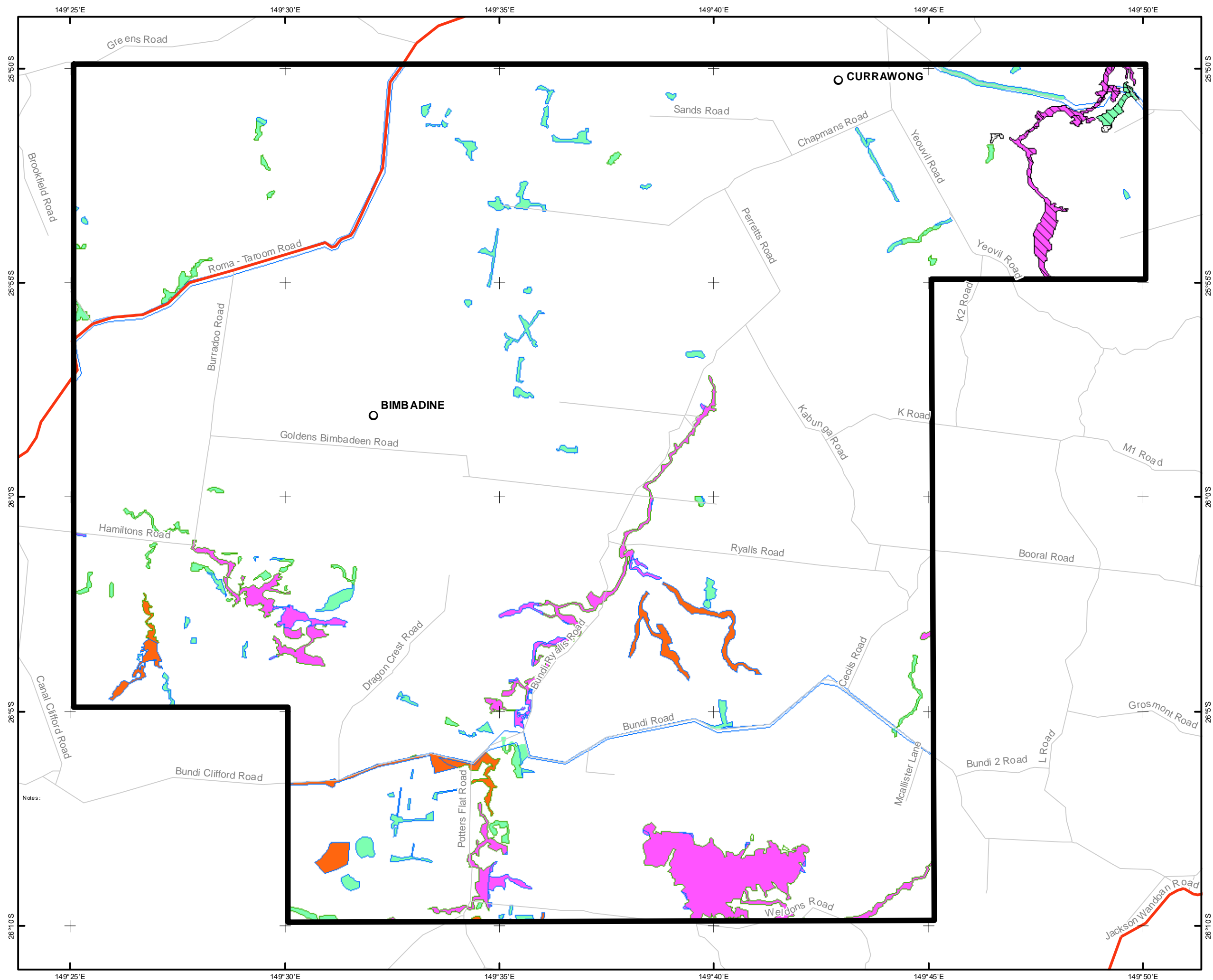


Figure: 3.8

Title: Biodiversity Planning Assessment
Mapping for the Study Area:
Biodiversity Significance and Corridors

Project: **Surat North Development**

Client: **QGC**
A BSG Group business

- LEGEND**
- Towns
 - ▭ CSG Field Boundary (QGC)
 - Major Road
 - Minor Road
 - State Significant Corridor**
 - ▨ Regional
 - ▨ State
 - Biodiversity Significance**
 - ▭ State
 - ▭ Regional
 - Tract Size**
 - ▭ VERY HIGH
 - ▭ HIGH
 - ▭ MEDIUM
 - ▭ LOW

Notes: Data Sourced from QLD Government

Coordinate System: GCS GDA 1994
Datum: GDA 1994
Units: Degree

Scale: 1:155,000 at A3

0 0.5 1 2 3 4 Kilometers

Date: 17/01/2014 Drawn By: MG Reviewed by: LP

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It should be noted that, while the Queensland Museum database is based on actual specimens, the WildNet and Birds Australia New Atlas databases are based on records of species from a wide variety of observers and, although the records from the latter two databases are reasonably accurate in terms of spatial location, not all records have been verified.

Furthermore, in relation to fauna, the nomenclature in use across the above databases is not uniform and may lead to erroneous interpretation of a species presence/absence. This report follows the nomenclature provided by the Australian Faunal Directory maintained by DoE (DEWHA 2009), unless otherwise noted.

A critique of the above database information and other relevant EIS reports (e.g. PB 2008a, b) (**Appendix D**) has identified 22 EVNT fauna species considered likely or having the potential to occur in the study area. Species profiles for these species are provided in **Appendix G**.

All terrestrial vertebrate species recorded during the BAAM field survey are listed in **Appendix H** together with database records from the area. A total of 163 terrestrial vertebrate species were recorded from the study area during the survey comprising seven amphibians, 15 reptiles, 110 birds and 31 mammals. Of the 31 mammals recorded, 14 are micro-bats identified solely by Anabat call analysis (**Appendix I**).

Two EVNT terrestrial fauna species were recorded within the study area during the field survey, as shown on **Figure 2.1b**. Five migratory species, six BAMB species and one culturally significant species were also detected. In addition, there remains a small possibility that the *Nyctophilus* sp. recorded at four Anabat sites (**Appendix I**) represents *N. corbeni* (Vulnerable under the EPBC Act and NC Act); however, these records are far more likely to be *N. geoffroyi*, a common species that has previously been recorded from the region (**Appendix C**). Nevertheless, *N. corbeni* has been assessed as likely to occur in the study area, albeit as an uncommon species, based on habitat requirements and geographical distribution (Appendix D).

Trapping and searching effort for terrestrial fauna is summarised in **Table 3.3**. A species accumulation curve resulting from the timed bird observation surveys is provided in **Figure 3.9**.

The Chao 2 estimator predicted overall bird species richness (± 1 Standard Error) in the study area as 112 ± 11 species.

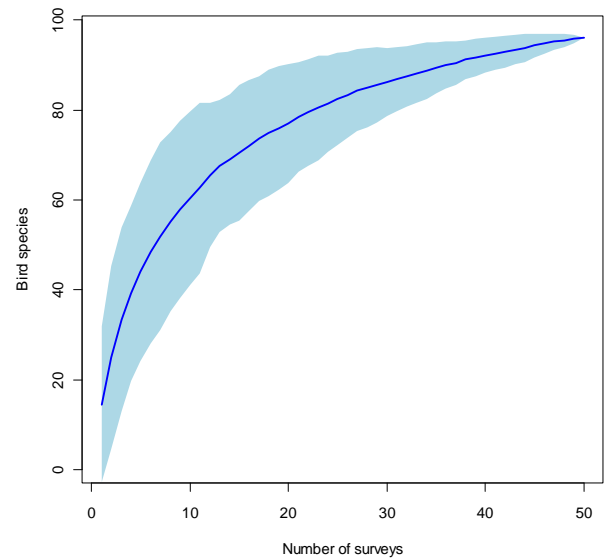


Figure 3.9. Average bird species accumulation curve for surveys across the Surat North Development study area.

Table 3.3. Summary of survey effort during the fauna field survey

Survey component	Effort
Trapping survey sites	7
Pitfall trap-nights	84
Funnel trap-nights	112
ANABAT nights	9
Bird 20-minute surveys	50
Ground search person hours	8 hrs
Spotlighting search team hours	7.5 hrs
Driving survey total distance	1128km

3.3.3. Koala

Koala *Phascolarctos cinereus* has recently been listed as Vulnerable under the provisions of the EPBC Act in Queensland, New South Wales and the Australian Capital Territory. This species now has the same legislative requirements that apply to other Commonwealth listed species, including recognition of any important habitat and associated offset requirements.

According to EHP's Wildnet database, 10 records of Koala have been obtained in the vicinity of the study area (**Appendix C**). Recently, as part of an independent survey by BAAM, a Koala skull was found in Kathleen block, just to the south of Phillip block of

ATP852 (G. Jones pers. comm.). Therefore, this species must be considered likely to occur. Eucalypt communities in the vicinity of watercourses and sclerophyll forests in general provide potential habitat for this species (**Table 3.4; Appendix L**).

3.3.4. Significant Exotic Terrestrial Species

The EPBC Act Online Protected Matters Search Tool results (**Appendix A**) and database search results (**Appendix C**) indicate that a number of exotic terrestrial flora and fauna species occur in the vicinity of the study area. Eight of the exotic plant species identified are listed as Class 2 or Class 3 declared pests under the LP Act, five of which are also listed as Weeds Of National Significance [WONS]. Six of the exotic animal species are listed as Class 2 declared pests under the LP Act. Information on declared weeds and exotic fauna is summarised in **Appendix J**.

Under the LP Act, a Class 2 pest is one that 'is established in Queensland and has, or could have a substantial adverse economic, environmental, or social impact. The management of these pests requires co-ordination and they are subject to local government, community or landowner-led programs. Landowners must take reasonable steps to keep land free from Class 2 pests.'

The field survey confirmed the presence of six weeds and four feral animals declared as Class 2 pests within the study area (**Appendix J**). The locations of weeds detected during the survey are shown in **Figure 3.10**. A further two weeds and one feral animal declared as Class 2 pests are considered likely to occur. Two other weed species declared as Class 3 pests and another declared as a Class 2 pest are considered potential to occur.

3.4. TERRESTRIAL FLORA AND FAUNA HABITAT

3.4.1. Habitat Mapping for EVNT Species

The EHP certified RE mapping (**Section 3.2.1**) indicates that the study area contains no areas mapped as Essential Habitat for terrestrial flora or fauna species listed under the NC Act. However, terrestrial vegetation mapping, when cross-referenced with the RE/habitat preferences of species of special conservation significance known or having the potential to occur in the study area, provides a spatial representation of

available habitat for terrestrial flora or fauna species of special conservation significance within the study area.

The REs important to, or indicative of, EVNT species known or considered to be possible occurrences are detailed in **Table 3.4** and discussed in **Appendix D**. The potential for a species to occur in any given RE has been determined based on the description of the RE and the known distribution of the species in question.

Mapping of potential habitat for threatened flora and fauna species known or considered likely to occur within the study area is shown in **Appendix K** and **Appendix L** respectively, based on the revised vegetation mapping presented in **Figure 3.3**. The REs attributed to each species are drawn from **Table 3.4**. Known habitat is derived from species records resulting from the field work reported in this study and a previous EIS, which covered part of this study area (PB 2008a, b).

The exclusion of an RE in relation to a particular species does not mean that it may not at times occur there, especially for migratory species. Rather, the REs have been chosen to represent the habitats of greatest likelihood of regular occurrence. Waterbirds and wetland species, such as those associated with rank vegetation fringing waterbodies, may use many REs beyond those listed if appropriate waterbodies exist within the area in question. For example, Australian Painted Snipe is not particularly restricted to any RE types in the BBS bioregion. It requires terrestrial shallow wetlands and will use inundated grasslands, dams and bore drains. Therefore, the area of conserved REs for this species gives little indication of the amount of suitable habitat as this species is often recorded from non-remnant vegetation. The habitat requirements of some other species (such as Rainbow Bee-eater) are so broad that they could occur in all REs. It should also be noted that non-remnant vegetation may also provide significant resources for many of the species listed.

Mapping at the RE level identifies many heterogeneous polygons containing multiple REs and large tracts of habitat that may be multiple and contiguous REs, yet these REs may all provide very similar resources and be utilised as though one habitat type by a particular fauna species or suite of species. The habitat values to fauna are therefore discussed under broad headings below to better reflect faunal use of the landscape.

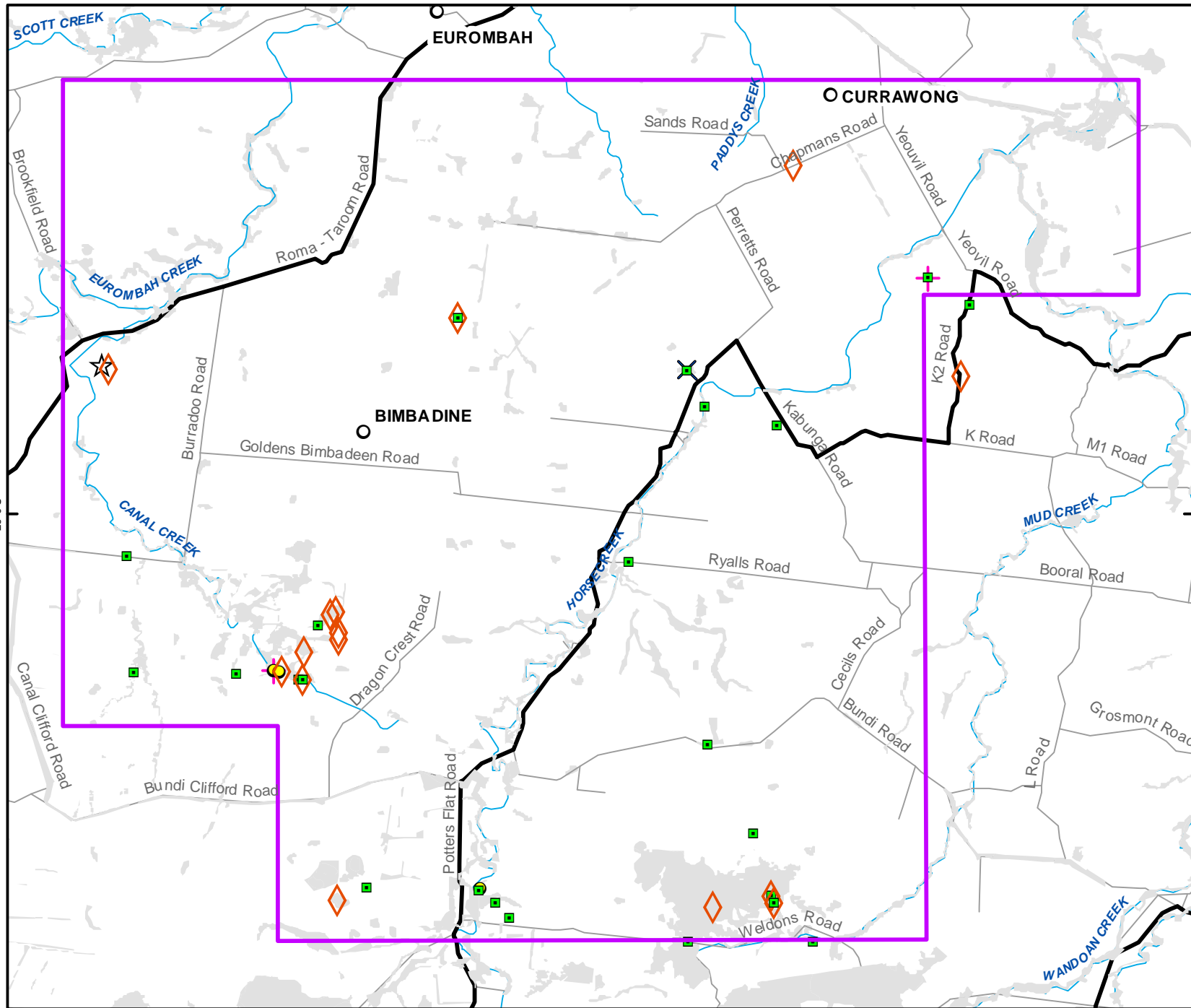


Figure: 3.10

Title: Weeds locations within the Project Site

Project: Surat North Development

Client: **QGC**
A BG Group business

LEGEND

Weed Locations:

- Harrisia martinii*
- Opuntia aurantacea*
- Opuntia stricta*
- Opuntia tomentosa*
- Bryophyllum delagoense*
- Parthenium hysterophorus*

Vegetation

Boundary

Major Road

Minor Road

Watercourse

Locality

Coordinate System: GCS GDA 1994
Datum: GDA 1994
Units: Degree

1:235,000 at A4
0 1 2 4 6 8 Kilometers

Date: 17/01/2014

Drawn By: MG

Reviewed by: LP

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Table 3.4. Regional Ecosystems known or expected to provide habitat for Threatened Terrestrial Flora and Fauna¹

Class/Family	Species Name	Common Name	Management Status ²		Habitat Regional Ecosystem (Known Habitat RE in bold) ³	Area of Potential Habitat (ha) (Known Habitat in parentheses) ³
			EPBC Act	NC Act		
Species that have been recorded within the study area during the field survey						
Magnoliopsida Poaceae	<i>Digitaria porrecta</i>	Finger Panic Grass		NT	11.3.2, 11.3.21, 11.9.3	1,504 (1,142)
Magnoliopsida Poaceae	<i>Homopholis belsonii</i>	Belson's Panic	V	E	11.3.1, 11.3.2, 11.5.16, 11.9.10 , 11.9.5	3,230 (512)
Aves Anatidae	<i>Nettapus coromandelianus</i>	Cotton Pygmy-goose	M	NT	11.3.25g, 11.3.27, 11.3.27c , 11.3.2b	229 (21)
Mammalia Vespertilionidae	<i>Chalinolobus picatus</i>	Little Pied Bat		NT	11.10.1 , 11.10.11, 11.10.3 , 11.10.7, 11.10.9, 11.3.1, 11.3.2 , 11.3.21, 11.3.25 , 11.3.27, 11.3.3, 11.3.4, 11.5.1, 11.5.16, 11.5.5, 11.9.10 , 11.9.2, 11.9.3, 11.9.4, 11.9.5, 11.9.6, 11.9.7	6,550 (1,360)
Species that are considered Likely to Occur within the study area						
Insecta Lycaenidae	<i>Jalmenus eubulus</i>	Pale Imperial Hairstreak		V	11.3.1, 11.5.16, 11.9.5	1,441
Reptilia Gekkonidae	<i>Strophurus taenicauda</i>	Golden-tailed Gecko		NT	11.10.1, 11.10.11, 11.10.9, 11.5.1, 11.5.5	2,428
Reptilia Scincidae	<i>Egernia rugosa</i>	Yakka Skink	V	V	11.10.1, 11.3.1, 11.3.2, 11.3.3, 11.5.1, 11.5.16, 11.5.5, 11.9.3	3,777
Aves Anatidae	<i>Stictonetta naevosa</i>	Freckled Duck		NT	11.3.25g, 11.3.27, 11.3.2b	229
Aves Ciconiidae	<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork		NT	11.3.25g, 11.3.27, 11.3.2b	229
Aves Rostratulidae	<i>Rostratula australis</i>	Australian Painted Snipe	V	V	11.3.25g, 11.3.27, 11.3.2b	229
Aves Cacatuidae	<i>Calyptorhynchus lathami</i>	Glossy Black-Cockatoo		V	11.3.1, 11.3.2, 11.5.16, 11.9.5	2,913
Aves Meliphagidae	<i>Melithreptus gularis</i>	Black-chinned Honeyeater		NT	11.10.1, 11.10.11, 11.10.3, 11.10.7, 11.10.9, 11.3.2, 11.3.25, 11.3.3, 11.3.4, 11.5.1, 11.5.5, 11.9.10, 11.9.2, 11.9.7	4,727
Aves Meliphagidae	<i>Grantiella picta</i>	Painted Honeyeater		V	11.3.1, 11.3.2, 11.9.5	3,188
Mammalia Phascolarctidae	<i>Phascolarctos cinereus</i>	Koala	V	C	11.10.1, 11.3.2, 11.3.25, 11.3.3, 11.5.1, 11.5.5	4,123
Mammalia Vespertilionidae	<i>Nyctophilus corbeni</i> (formerly <i>timoriensis</i>) ⁴	South-eastern Long-eared Bat	V	V	11.10.1, 11.10.11, 11.10.3, 11.10.7, 11.10.9, 11.3.1, 11.3.2, 11.3.21, 11.3.25, 11.3.27, 11.3.3,	6,509

Class/Family	Species Name	Common Name	Management Status ²		Habitat Regional Ecosystem (Known Habitat RE in bold) ³	Area of Potential Habitat (ha) (Known Habitat in parentheses) ³
			EPBC Act	NC Act		
					11.3.4, 11.5.1, 11.5.16, 11.5.5, 11.9.10, 11.9.2, 11.9.3, 11.9.4, 11.9.5, 11.9.6, 11.9.7	
Species that are considered Potential to Occur within the study area						
Magnoliopsida Acanthaceae	<i>Xerothamnella herbacea</i>	Herbaceous Xerothamnella	E	E	11.3.1, 11.5.16, 11.9.5, 11.9.6	1,449
Magnoliopsida Apocynaceae	<i>Tylophora linearis</i>	Slender Tylophora	E	E	11.10.9, 11.5.1, 11.5.5	114
Magnoliopsida Asteraceae	<i>Picris barbarorum</i>	Plains Picris		V	11.3.1, 11.3.2, 11.3.21, 11.3.25, 11.3.3, 11.3.4, 11.5.16, 11.9.5	4,393
Magnoliopsida Cyperaceae	<i>Eleocharis blakeana</i>	Blake's Spikerush		NT	11.3.1, 11.3.2, 11.3.27, 11.3.4	3,095
Magnoliopsida Cyperaceae	<i>Fimbristylis vagans</i>	Wandering Fringe-rush		NT	11.3.27	200
Magnoliopsida Myrtaceae	<i>Micromyrtus carinata</i>	Gurulmundi Heath-myrtle		E	11.10.3, 11.10.7, 11.10.9	96
Magnoliopsida Solanaceae	<i>Solanum stenopterum</i>	Winged Nightshade	V	E	11.3.2, 11.3.21	1,483
Magnoliopsida Surianaceae	<i>Cadellia pentastylis</i>	Ooline	V	V	11.9.4	32
Insecta Lycaenidae	<i>Jalmenus eubulus</i>	Pale Imperial Hairstreak		V	11.3.1, 11.5.16, 11.9.5	1,441
Reptilia Chelidae	<i>Rheodytes leukops</i>	Fitzroy River Turtle	V	V	11.3.25, 11.3.3	1,463
Reptilia Pygopodidae	<i>Delma torquata</i>	Collared Delma	V	V	11.10.1, 11.10.11, 11.10.3, 11.10.7, 11.10.9	1,883
Reptilia Pygopodidae	<i>Paradelma orientalis</i>	Brigalow Scaly-foot		V	11.10.1, 11.3.1, 11.5.1, 11.5.16, 11.9.5	2,495
Reptilia Elapidae	<i>Acanthophis antarcticus</i>	Common Death Adder		NT	11.10.1, 11.5.1, 11.5.16, 11.9.4, 11.9.5	2,451
Reptilia Elapidae	<i>Furina dunmalli</i>	Dunmall's Snake	V	V	11.10.1, 11.10.11, 11.10.3, 11.10.7, 11.10.9, 11.3.1, 11.3.2, 11.3.21, 11.3.25, 11.3.27, 11.3.3, 11.3.4, 11.5.1, 11.5.16, 11.5.5, 11.9.10, 11.9.2, 11.9.3, 11.9.4, 11.9.5, 11.9.6, 11.9.7	6,455
Aves Accipitridae	<i>Lophoictinia isura</i>	Square-tailed Kite		NT	11.10.1, 11.3.25, 11.5.1,	2,006
Species that are considered Low Potential to Occur within the study area						
Magnoliopsida	<i>Eucalyptus curtisii</i>	Plunkett Mallee		NT	11.10.1, 11.10.11, 11.10.3, 11.10.7, 11.10.9,	1,232

Class/Family	Species Name	Common Name	Management Status ²		Habitat Regional Ecosystem (Known Habitat RE in bold) ³	Area of Potential Habitat (ha) (Known Habitat in parentheses) ³
			EPBC Act	NC Act		
Myrtaceae					11.5.1	
Aves Accipitridae	<i>Erythrotriorchis radiatus</i>	Red Goshawk	V	E	11.10.1, 11.3.25, 11.5.1,	2,006
Mammalia Dasyuridae	<i>Dasyurus hallucatus</i>	Northern Quoll	E	C	11.10.1, 11.5.1	1,132
Mammalia Vespertilionidae	<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	11.10.1, 11.10.11, 11.10.3, 11.10.7, 11.10.9	1,183
Species Not Expected to Occur within the Study Area						
Magnoliopsida Eriocaulaceae	<i>Eriocaulon carsonii</i> subsp. <i>orientale</i>	Salt Pipewort	E	E		
Magnoliopsida Myrtaceae	<i>Eucalyptus beaniana</i>	Bean's Ironbark	V	V		
Magnoliopsida Poaceae	<i>Sporobolus partimpatens</i>	Smooth Dropseed		NT		
Amphibia Hylidae	<i>Cyclorana verrucosa</i>	Rough Frog		NT		
Reptilia Elapidae	<i>Denisonia maculata</i>	Ornamental Snake	V	V		
Aves Turnicidae	<i>Turnix melanogaster</i>	Black-breasted Button- Quail	V	V		
Aves Columbidae	<i>Geophaps scripta scripta</i>	Squatter Pigeon (southern subspecies)	V	V		
Aves Estrilidae	<i>Neochmia ruficauda</i> <i>ruficauda</i>	Star Finch (eastern subspecies)	E	E		

¹ Vagrant or marginal species that could occur in any Regional Ecosystem, would only occur in non-remnant vegetation or would occur on artificial waterbodies are excluded.

² Status abbreviations are as follows: **CE** = Critically Endangered, **E** = Endangered, **V** = Vulnerable, **NT** = Near Threatened, **C** = Least Concern wildlife.

³ Known habitat REs are provided only where species records were obtained during the survey and were located within a particular RE. Areas of known habitat are calculated as per the methodology described in **Section 2.3.2**.

⁴ Recently described as *Nyctophilus corbeni* (Parnaby 2009).

3.4.2. Habitats for Terrestrial Fauna Species

Reference to species of conservation significance in this section includes only those listed as Endangered, Vulnerable or Near Threatened at the National and/or State level, unless otherwise noted. Migratory (EPBC Act) and non-EVNT priority species are identified where appropriate.

The habitats within and immediately surrounding the study area can be assigned to eight broad categories:

1. Woodland and open forest on alluvial soils (excluding Brigalow).
2. Woodland and open forest on non-alluvial soils (excluding Brigalow).
3. Brigalow communities.
4. Vine thickets.
5. Grasslands, including pasture.
6. Regrowth.
7. Watercourses and seasonal wetlands.
8. Dams and other artificial waterbodies.

The listed habitat types are not all mutually exclusive. For example, a Brigalow community is also woodland on either alluvial or non-alluvial soil. For clarification, **Table 3.5** identifies which REs found within the study area are allocated to each of the habitat types with remnant vegetation, with comments on any confounding aspects. Woodland and forest have been separated on the basis of soils, alluvial versus non-alluvial, due to the typically greater productivity and species richness, of both flora and fauna, of habitats on alluvial soils

(Jacquemyn et al. 2001; Woinarski and Ash 2002; Martin et al. 2006).

Habitat type is a significant factor in determining the composition of the fauna species assemblage of a certain area. Two components of any particular habitat are especially important; physical structure and resource availability and functionality.

Structure refers to the abundance and complexity of the vegetation, debris and substrate. Habitats with abundant shrubs, thick ground cover and dense sub-canopy and canopy are vertically complex and provide abundant shelter and foraging sites, particularly for bird species. Horizontal complexity refers to characteristics such as the presence of ground plant species, open areas, fallen timber and rock crevices that provide sheltering opportunity for terrestrial species. Habitats with higher vertical and horizontal complexity will generally have higher fauna species diversity. Habitats with a diverse plant species assemblage tend to be more structurally complex due to the different growth forms of different species.

In addition, the availability and variety of resources affect the number and type of vertebrate species inhabiting an area. Those habitats with abundant and variable resources may support more species, even if they compete, while the presence of a preferred dietary item will facilitate the presence of a particular species (for example, Belah for Glossy Black-Cockatoo). Habitat use by certain species may be seasonal or may reflect current conditions, for example recent rainfall or mass flowering events.

Table 3.5. Regional Ecosystem allocation to broad habitat types

Habitat Type	Regional Ecosystems within Study Area	Comments
Woodland and open forest on alluvial soils (excluding Brigalow)	11.3.2, 11.3.3, 11.3.4, 11.3.25	Often occur as mosaics of remnant vegetation that broadly follow drainage lines.
Woodland and open forest on non-alluvial soils (excluding Brigalow)	11.10.1, 11.10.11, 11.10.3, 11.10.7, 11.10.9, 11.5.1, 11.5.5, 11.9.2, 11.9.7	Associated with lower fertility soils.
Brigalow Community	11.3.1, 11.5.16, 11.9.10, 11.9.5, 11.9.6	Brigalow communities may be Brigalow and/or Belah.
Semi-Evergreen Vine Thicket	11.9.4	RE 11.9.5 may also contain components of vine thicket.
Grassland	11.3.21, 11.9.3	Extensive areas of derived grassland occur in the Study Area
Watercourses and seasonal wetlands	11.3.2b, 11.3.25g, 11.3.27, 11.3.3c	Floodplain REs 11.3.2c and 11.3.4 may also act as seasonal wetlands.

The suitability of habitats in the study area to many of the conservation significant fauna species is also dependent, in part, on other factors including disturbance levels and types, patch size and connectivity. These factors are very site specific and may be synergistic, though soil type is typically the driving factor. For example, soil type not only influences species richness and productivity but also influences susceptibility of a habitat to weed invasion and may encourage or discourage grazing/browsing by livestock or feral species.

Weed infestations and degradation by livestock can have deleterious impacts on fauna, particularly reptiles, small mammals and insectivorous birds that forage on the ground (Adair and Groves 1998; Woinarski and Ash 2002; Maron and Lill 2005). These impacts may significantly alter the species assemblage of a habitat patch.

Similarly, micro-habitats such as coarse woody debris and a dense shrub layer are influenced by vegetation species composition, also a product of soil type, but may also reflect past and on-going human activities. For example, large amounts of coarse woody debris, including hollow logs, may be the result of historical logging. Shrub density may be reduced due to thinning or be increased as a consequence of logging creating gaps. Recruitment of shrubs, and other plants, may be constrained by grazing, the intensity of which is determined by the landholder.

Patch size and shape determine edge effects and influence the likelihood of the presence of feral species and native 'increaser' species (Landsberg et al. 1997; Moran et al. 2004) such as Noisy Miner *Manorina melanocephala*, Pied Butcherbird *Cracticus nigrogularis*, Pied Currawong *Strepera graculina* and Laughing Kookaburra *Dacelo novaeguineae*. These large, aggressive species invade disturbed habitats and deleteriously affect many woodland and forest bird species, either through nest predation (Piper and Catterall 2004) or through competitive exclusion (Grey et al. 1998; Fischer and Lindenmayer 2002; Maron 2009). Their presence often reflects the degraded nature of a habitat (Recher 1999; Martin and McIntyre 2007).

Connectivity within the landscape also influences the assemblage of a particular patch of vegetation. Patches surrounded by cleared land have an increased abundance of medium and large-bodied generalist species, including the aggressive species mentioned above, and a decreased abundance of small-bodied

insectivorous species (Loyn 1987; Barrett et al. 1994; Martin et al. 2006; Woinarski et al. 2006).

The description of the values of particular habitat types within the study area to fauna, therefore, must be considered in general terms, with ground-truthing required for accurate assessment of a particular habitat patch.

Woodland and open forest on alluvial soils

All of this habitat type in the study area occurs on Land Zone 3, near-level alluvial plains with riverine components and wetlands (Sattler 1999). The soils include uniform and cracking clays, massive earths, sand, texture contrast soils and loams. Dominant tree species include Forest Red Gum *Eucalyptus tereticornis*, River Red Gum *E. camaldulensis*, Poplar Box *E. populnea*, Coolibah *E. coolabah* and Silver-leaved Ironbark *E. melanophloia*.

The habitat is often characterised by a diverse and variable canopy tree assemblage, and may include a well-developed low tree/shrub layer comprised of various combinations of *Acacia*, *Eremophila*, *Callitris*, *Melaleuca* and *Allocasuarina* species, among others. However, within the study area such a mid-layer may be sparse or absent with many REs associated with Land Zone 3, due to grazing pressures. The ground layer varies with soil and management conditions but may include grasses such as *Bothriochloa*, *Chloris*, *Aristida*, *Eriachne*, *Panicum*, *Dichanthium* and *Themeda* species, forb species and, particularly in riparian areas, sedges (Queensland Herbarium 2013). Within the study area, Buffel Grass *Pennisetum ciliare* is the most prominent ground cover.

A number of the typically dominant tree species, such as Queensland Blue Gum, River Red Gum and Poplar Box, develop large hollows when mature and provide very important roosting and nesting resources for fauna species including Glossy Black-Cockatoo, gliders and some owl and micro-bat species. The higher productivity of alluvial areas, particularly in riparian zones, supports more species overall and can provide greater resources for predators such as raptors and owls. The floodplains, especially areas of cracking clays, are important to frog species.

The majority of conservation significant species recorded, or likely to be recorded in the study area, occur in woodlands and open forests on alluvial soils, at least sporadically. Although the significant impacts of weeds and livestock and the variable amounts of terrestrial micro-habitats mean that faunal use will not be consistent

across the habitat type, even within specific REs, this habitat type is very important to fauna, both conservation significant species and those considered low priority.

Habitat assessments of this habitat type across the study area found that the majority of woodlands on alluvial soils showed conspicuous signs of degradation due to grazing. The presence of exotic grasses, limited recruitment of dominant trees and topsoil erosion were observed to be prominent features of habitat disturbance. Yet, the comparatively high numbers of stag trees with hollows and long corridors of vegetation in the vicinity of drainage lines enable this habitat to be considered valuable for fauna.

Woodland and open forest on non-alluvial soils

Within the study area, this habitat type occurs primarily on Land Zones 5 and 10. Soils include shallow sandy soils and texture contrast soils with sandy surfaces, typically overlying a clay subsoil (Queensland Herbarium 2013).

Generally, vegetation is similar in structure to woodlands and forests on alluvial soils except that the hollows are fewer. Less fertile soils contribute to a lower density of grasses and the habitat is less resilient to grazing. Also, the dominant tree species are not as favoured by folivores. The lower tree/shrub layer beneath the canopy is more likely to be retained where grazing pressure is low. There is a large overlap between species assemblages, though abundances of shared species are often lower on average where there are low fertility soils.

The diversity of soils, topography and vegetation communities in these habitats raise the potential of occurrence for a number of conservation significant species, including Golden-tailed Gecko and Brigalow Scaly-foot. Areas with a dense shrub layer provide habitat for the South-eastern Long-eared Bat and provide shelter and foraging resources for a number of regionally significant birds, including Speckled Warbler, Grey-crowned Babbler and mammals such as Northern Brown Bandicoot. The shrub layer affords protection from aggressive increaser species and reduces the viability of the habitat for Noisy Miner in particular.

Within the study area, this habitat type was found to be the least disturbed (mostly confined to Mount Organ State Forest), with only minor symptoms of grazing and past logging. The

habitat is high value for fauna, although it supports fewer species than woodlands on alluvial soils.

Brigalow communities

Within the study area, this habitat type occurs on Land Zones 3 and 9, and to a lesser degree on Land Zone 5. Brigalow communities do not necessarily always include Brigalow itself. Instead, Belah may be the dominant species (within the study area this refers to REs 11.3.1, 11.5.16 and 11.9.5). Where present, Brigalow may be the canopy species or may be the lower tree layer under a canopy of Poplar Box or other eucalypt species. The lower tree/tall shrub layer typically includes Wilga *Geijera parviflora*, False Sandalwood *Eremophila mitchellii* and, sometimes, Narrow-leaved Bottle Tree *Brachychiton rupestris*. The ground layer is sparse and dominated by grasses in gilgaied cracking clays and deep texture contrast soils (Queensland Herbarium 2013). Much of this habitat within the study area fits well with this broad description, although gilgais were found to be rare and the ground cover was found to be dense where Buffel Grass has invaded.

Brigalow is important for the conservation of the Pale Imperial Hairstreak butterfly which requires this habitat. The regionally significant Salmon-striped Frog is also typically found in this community. Brigalow communities are particularly important for several nationally and state listed reptile species which are either largely restricted to, or are frequently recorded from this vegetation type. Golden-tailed Gecko, Brigalow Scaly-foot, Yakka Skink, Common Death Adder, Dunmall's Snake and several regionally significant species all occur in this habitat type and have potential to occur in the study area. Much of the Brigalow habitat in the study area contained moderate amounts of large coarse woody debris, which provide important micro-habitat resources for reptiles, as well as frogs and small mammals.

Although conservation significant birds generally are less dependent on Brigalow than reptiles the community is important in the landscape as some mature patches function as a closed forest/woodland system, extending the ranges of species found in rainforests to the east. Areas of Belah are very important to Glossy Black-Cockatoo as a food resource and individual plants supporting mistletoe are important for Painted Honeyeaters. Two conservation significant micro-bats, Little Pied Bat and South-

eastern Long-eared Bat, both utilise Brigalow patches.

The conservation status of these fauna species is, in part, a reflection of the loss of this vegetation community from the landscape. Large mature patches are important for all these species, though some species, such as the Pale Imperial Hairstreak, may be more dependent on such stands than others. Some species, including Brigalow Scaly-foot, will also occur in small and/or narrow Brigalow remnants, including roadside vegetation. In addition, the increased number of mistletoes in roadside Brigalow, probably due to increased water as run-off from roads (Norton et al. 1995; Bowen et al. 2009a), provides food for Painted Honeyeaters, meaning that this component of the landscape should not be underestimated in its value to fauna, despite the impacts of edge effects due to patch size and shape.

Much of the Brigalow community in the study area has been heavily disturbed and fragmented through grazing practices. Many patches are small and have been surrounded and/or invaded by pasture grasses (typically Buffel Grass), allowing easy access by livestock. Despite the disturbed nature of this habitat, due to its scarcity, it remains important habitat for threatened fauna.

Vine Thickets

In the study area only small areas of vine thicket remain, in RE 11.9.4 and with minor representations in RE 11.9.5. Characteristic vegetation includes Narrow-leaved Bottle Tree *Brachychiton rupestris*, *Owenia* spp., *Croton* spp., *Psyrax* spp., often with patches of Belah *Casuarina cristata* and with emergent Narrow-leaved Red Ironbark *Eucalyptus crebra*. The ground layer is typically rocky and emergent Narrow-leaved Red Ironbark *Eucalyptus crebra* are typically scattered through the habitat or found on the fringes. The soils are typically heavy clays formed from sediments (Queensland Herbarium 2013).

The small remnants of vine thicket in the study area are highly prone to disturbance, such as fire. The soils are conducive to weed invasion particularly where there are breaks in canopy cover. Nevertheless, the habitat does provide potential value for fauna, particularly in terms of shelter. There is a prevalence of rocks and large coarse woody debris, which provide particularly ideal habitat for reptiles. Yakka Skink may occur where suitable crevices are

available, and the habitat may support Common Death Adder, particularly where there is substantial leaf litter beneath the dense shrub layer. Echidna, a Special Least Concern species, uses this habitat both for foraging and for shelter.

Much of the vine thicket observed in the study area during the field survey was marginal and in poor condition. Nevertheless it does provide an important sheltering habitat for fauna.

Grasslands (including pasture)

Large parts of the study area have been cleared and are dominated by grasslands, featuring both introduced pasture and native grass species. A localised occurrence of grassland RE 11.9.3 was identified on a road reserve during the field survey. Small patches of RE11.3.21 were identified on alluvial plains in two locations. These are the only native grassland communities that have been mapped or identified in the study area.

The existing grasslands, regardless of grass species, are affected by livestock. Grazing alters vegetation structure and composition and trampling increases penetration resistance, which reduces both water infiltration and the buffer of the soil microclimate (Hobbs 2001). Grazing reduces both the diversity and abundance of species (Woinarski and Ash 2002; James 2003) and areas dominated by Buffel Grass typically have reduced species diversity, not just of reptiles, but for all terrestrial vertebrates (Hannah and Thurgate 2001). Nonetheless, the grasslands do provide resources for a number of native fauna species.

Reptiles use grasslands, particularly when actively seeking food resources. The regionally significant Yellow-spotted Monitor *Varanus panoptes* often occurs on open plains. The Brigalow Scaly-foot *Paradelma orientalis* may use such habitats as transitory corridors.

Birds are the most conspicuous component of the fauna assemblage of the grasslands. Important wetland species, Australian Painted Snipe and the migratory Latham's Snipe, will forage in flooded paddocks. Other migratory species such as White-throated Needletail, Fork-tailed Swift and Rainbow Bee-eater will forage above or in paddocks. A number of common bird species such as Ground Cuckoo-shrike, Australian Bustard and Banded Lapwing are largely dependent on grasslands, including pasture.

The presence of conservation significant mammals is quite low. Some micro-bat species may forage in or above the grasslands but roost and breed elsewhere.

Within the study area, the majority of grasslands have been created through disturbance and only some very minor patches of remnant natural grassland persist. In spite of the heavy disturbance, these grasslands are still habitat for a variety of fauna.

Regrowth

The value of regrowth to vertebrate fauna has been little studied, and what has been published has an overwhelming emphasis on birds. Regrowth has been shown to support a greater species assemblage than cleared land but less than woodland areas (Hannah et al. 2007). The value of regrowth to fauna is generally dependent on its age, with older regrowth providing greater resources. Old regrowth has developed a more 'tree-like' structure and typically supports more species and a greater abundance of species (Kutt 1996; Bowen et al. 2009b).

Regrowth is less likely to support nectarivorous and frugivorous birds due to a lack of food availability compared to mature forest and woodland and are more likely to support insectivorous species (Bowen et al. 2009b). Other factors, however, may affect the value of regrowth patches. Younger regrowth in more productive parts of the landscape or areas that have regrown around remnant trees may have values for fauna greater than some older regrowth (Taylor et al. 1997). Some fauna species, including some regionally significant species, appear to actually favour regrowth in some areas (Dorricott et al. 1997).

Although the number of species in regrowth may be less than in remnant vegetation it may still support a substantial number of species — for example regrowth in central Queensland had 75% of the species richness of woodlands (Hannah et al. 2007). Regrowth does increase the amount of wooded habitat in the landscape and can buffer adjacent remnant vegetation from many edge effects (Mesquita et al. 1999; Laurance et al. 2001).

The quality and community composition of regrowth was found to vary widely across the study area. Much of it remains strongly affected by grazing activity. Yet, regrowth eucalypt woodland and Brigalow often provide valuable habitat for threatened fauna.

Watercourses and seasonal wetlands

Rivers and creeks in the Study Area are typically fringed by RE 11.3.25 or 11.3.3. In the study area, these communities are dominated by Forest Red Gum *Eucalyptus tereticornis* and Coolibah *E. coolabah*, respectively.

An important function of waterways is as corridors (Naiman et al. 1993), particularly in a degraded landscape. Riparian vegetation also allows some fauna species to extend their distributions into otherwise unsuitable areas (Woinarski et al. 2000). Such vegetation is usually more complex than adjacent plant communities (Hancock et al. 1996) and is often more susceptible to the impacts of grazing by livestock (e.g. Martin and McIntyre 2007) and weed invasion (Hancock et al. 1996) than other nearby habitats. Even where riparian vegetation is degraded and narrow it serves as a route by which species traverse the landscape or as a stepping stone habitat.

In addition to acting as watering points, rivers and creeks with overhanging vegetation act as flyways for foraging micro-bats, though activity patterns will vary with season and flying insect activity. Riparian zones are important foraging habitat for micro-bats, even ephemeral creeks (Seidman and Zabel 2001).

Many of the larger trees in the region are in close proximity to drainage lines. Arboreal mammals such as gliders use some of these trees as habitat for shelter, breeding hollows and food and to move along the creeklines. The creeks provide habitat for the amphibious mammal species Water Rat *Hydromys chrysogaster*.

Although creeks attract a number of frog species when in flow, none of the species recorded for the study area is a species restricted to, or dependent on, lotic (flowing) waterbodies. The Fitzroy River Turtle *Rheodytes leukops* has potential to enter flowing rivers in the study area during the wet season and utilise these habitats on occasions.

Many of the wetland habitats in the study area, including the watercourses, are seasonal. Good examples of this are blacksoil floodplains, depressions and gilgais that may fill with water during the wet season (**Photo 3**). Gilgais can provide temporary areas of occupancy and breeding habitat, particularly for frogs and waterbirds, such as the Australian Painted Snipe *Rostratula australis*.

Larger waterbodies also serve as important foraging and breeding areas for several bird predators such as the migratory White-bellied Sea-Eagle and Eastern Great Egret. Lakes and billabongs that have aquatic vegetation support Cotton Pygmy-goose.



Photo 3. A large, seasonally-flooded wetland in association with Canal Creek near the western edge of the study area.

The regionally significant Broad-shelled River Turtle *Macrochelodina expansa* has potential to occur in these larger waterbodies.

Watercourses and wetlands in the study area characteristically showed signs of disturbance from both livestock and pig activity. However, wetlands are dynamic environments and this type of disturbance provides no significant detracting from the importance of wetlands to threatened and migratory fauna.

Dams and other artificial waterbodies

There are many artificial waterbodies, of varying sizes, within the study area. The utility of such waterbodies is dependent on factors including depth, edge substrate, presence and nature of fringing vegetation, and disturbance regimes.

Most waterbodies at least function as watering points for fauna but they may also provide habitat for frogs and for those reptiles and birds that prey on them. Migratory species such as Eastern Great Egret will forage at many of these waterbodies and the conservation significant Australian Painted Snipe will utilise those with suitably favourable characteristics. Artificial waterbodies are also more likely than most natural waterbodies in the study area to attract migratory sandpipers and White-bellied Sea-Eagle. The occurrence of sandpipers will be particularly dependent on water depth and the edge substrate.

4.0 CONSTRAINTS MAPPING

4.1. CONSTRAINTS MAPPING METHODOLOGY

In accordance with QGC's Constraints Planning and Field Development Protocol, categorical organisation of verified ESAs (as defined under the EP Act), in combination with the verified mapping of Threatened Ecological Communities (as defined under the EPBC Act), the habitat mapping for EVNT species (**Section 2.3.2**) and additional records derived from the field survey data were used to formulate a zoning system that delineates priority areas for nature conservation. Functionally, this constraint mapping allows for more stringent conditions to be imposed for areas of high conservation value and less restrictive conditions for those areas of low conservation value. The proposed methodology follows the rationale outlined in QGC's Constraints Planning and Field Development Protocol with some minor modifications.

The mapping will primarily reflect ground-truthed RE polygons and be informed by various EHP GIS layers and land tenure type. The mapping output will be a simplified categorisation consisting of four zones with differing levels of constraints. These are:

- Zone 1 – Low Ecological Constraints.
- Zone 2 – Moderate Ecological Constraints.
- Zone 3 – High Ecological Constraints.
- Zone 4 – Very High Ecological Constraints.

The demarcation of the zones will allow different mitigation, rehabilitation and offset recommendations to be applied across the gas field project footprint. A more detailed description of each of the zones is provided in the following sections. **Table 4.1** provides a summary of the allocation of terrestrial ecological values to each zone.

Zone 1 – Low Ecological Constraints

The characteristics of this zone include habitats that have been substantially altered as a result of human activities. These areas are open and/or dominated by exotic species. They typically include cropping areas and grazing pastures, as well as rural residences. To meet the criteria for zone 1, areas must be mapped as non-remnant vegetation. Minor patches of unmapped remnant vegetation may occur; however, these are typically too small in extent to be considered to have significant conservation value.

Table 4.1. Ranked zoning of ecological values for constraints mapping with comments on values within the study area.

Ecological Value	ESA Category	Zone Allocation	Area (hectares) ¹	Comment
TEC	–	4	1763	Four recognised within study area; one other outside and to the west
Endangered Remnant RE	B	4	1294	Eight REs within study area
Wetland	C	4	2717	Includes Referable Wetlands and REs 11.3.27, 11.3.2b, 11.3.3c and 11.3.25g, but not watercourses outside of mapped wetlands.
State significant BPA corridors	–	3	467	Includes Juandah Creek corridor
Essential Habitat for EVNT species	C	3	2740	Includes known habitat for EVNT species resulting from recent surveys ²
State forest	C	3	1268	Mount Organ State Forest
Of Concern Remnant RE	C	3	2478	Six REs within study area
Regionally significant BPA corridors	–	2	18	Unless already mapped under a higher category
Not of Concern Remnant RE	–	2	1266	Not including vegetation within state forest; 10 REs within study area
Non-remnant vegetation	–	1	118387	Including High-Value Regrowth that has not been recognised as a TEC

1. Vegetation area calculations are based on the revised mapping produced as a result of the field survey (**Section 3.2.1**).

2. Known habitat is explained in **Section 2.3.2** and illustrated in **Appendix K** and **Appendix L**.

Zone 2 – Moderate Ecological Constraints

This zone includes polygons of mapped remnant vegetation, outside of State Forests, that are considered to have Not Of Concern Biodiversity Status. It also covers any areas that are mapped as regionally significant BPA corridors.

Zone 3 – High Ecological Constraints

This zone includes polygons of mapped remnant vegetation that are considered to have an Of Concern Biodiversity Status as well as all vegetation within State Forests, with the exception of REs that are classified as Endangered. It also covers any areas that are mapped as Essential Habitat for EVNT species and state significant BPA corridors.

Zone 4 and 4b – Very High Ecological Constraints

These areas are defined as having the highest ecological value.

Zone 4a areas include:

- Threatened Ecological Communities.
- Polygons defined by EHP as Category B Environmentally Sensitive Areas.
- Endangered remnant REs.

Zone 4b areas include:

- Referable wetlands.
- Buffer zones surrounding watercourses with the following dimensions:
 - 50 m from Stream Order 1 and 2 watercourses.
 - 100 m from Stream Order 3 and 4 watercourses.
 - 200 m from Stream Order 5 (or greater) watercourses.

Areas classified as Zone 4a are considered to have the highest conservation priority and the distinction between 4a and 4b is made simply to reflect relative priorities, despite both being considered to have the highest values.

4.2. CONSTRAINTS MAPPING RESULTS

A map of the terrestrial ecological constraints for the study area is provided in **Figure 4.1**. This map demonstrates that while the majority of study area is heavily disturbed and shows obvious signs of degradation, much of the remaining habitat is important for maintaining the existence of recognised terrestrial ecological values. TECs, endangered REs and wetlands in particular form a conspicuous component of the existing environment in the study area and this is reflected in the constraints mapping (**Figure 4.1**).

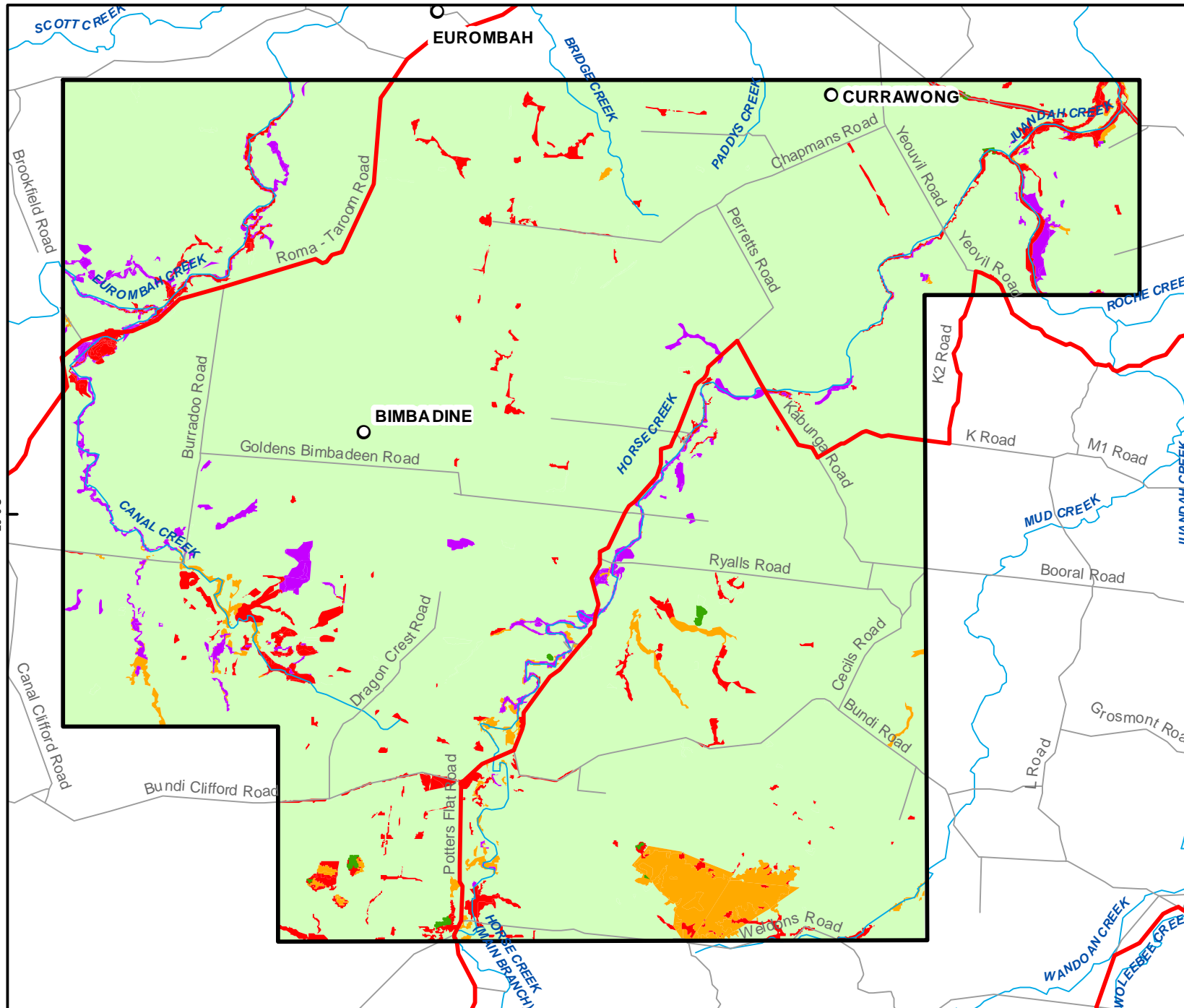


Figure: 4.1
Title: Constraint Zones within the Project Area

Project: **Surat North Development**

Client: **QGC**
A BG Group business

LEGEND

Constraint Zones

- 4a
- 4b
- 3
- 2
- 1
- Boundary

- Major Road
- Watercourse
- Minor Road
- Locality

Coordinate System: GCS GDA 1994
Datum: GDA 1994
Units: Degree
1:235,000 at A4
0 1 2 4 6 8 Kilometers

Date: 15/01/2014 Drawn By: MG Reviewed by: LP

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5.0 IMPACT ASSESSMENT

This section includes assessment of impacts on all values identified in **Section 3**.

5.1. POTENTIAL IMPACTS

In general, impacts on ecological values can be considered in terms of direct and indirect effects, both short-term and long-term. Direct impacts refer to the loss of vegetation and habitat, usually through land clearing, while indirect impacts are secondary effects such as weed invasion.

As the location of the required Project infrastructure has not been finalised, assessment of impacts to specific receptors cannot be undertaken. However, disturbance footprints (e.g. the length and width of infrastructure, roads and pipelines, trunklines, number of wells, FCS etc.) for required infrastructure are known and this knowledge allows generic impacts to be identified and discussed. Potential impacts identified in the following subsections have been assessed based on these limitations and in the knowledge that site specific impact identification will be undertaken during pre-clearance surveys prior to construction. All disturbance calculations are based on the revised vegetation mapping presented in *Figure 3.3*.

A description of the methodology behind the impact assessment is provided in **Appendix M**.

5.1.1. Clearing

Clearing will be required to prepare sites for the construction of a range of infrastructure within the study area. Removal of native vegetation primarily results in a reduction of the overall amount of habitat and populations of flora and fauna, and has the potential to result in isolation of habitats and populations (fragmentation), changes to remaining vegetation that cause the loss of food and shelter for fauna, and exposure to introduced species that are either competitors or predators (Bennett et al. 2000).

Removal of vegetation results in direct loss of plant species, and can result in the mortality of fauna present at the time of clearing. Secondary impacts associated with removal of vegetation include:

- Habitat fragmentation forming barriers to fauna movement, affecting reproductive

cycles and allowing the penetration of pest species and aggressive native “edge” species deeper into woodlands and open forests;

- Soil disturbance/exposure and altered water flow patterns, and subsequent erosion and sedimentation, which may expose tree roots, smother vegetation, and potentially alter the physical form, chemical processes and ecological health of downstream aquatic habitats;
- Salinisation of areas downslope, depending on the clearing extent and nature of the associated landform and geology/soils; and
- Increases in desiccation, light penetration, wind-throw, herbivory, weed invasion, nest predation, and parasitism for adjacent flora and fauna (Murcia 1995). In particular, introduced weeds can change vegetation community composition and in some cases increase the intensity of fire, leading to further community degradation.

While the majority of the study area (94.8%) consists of pasture (93.7%) and regrowth vegetation (1.1%), which has limited values for significant flora and fauna species, the results of the proposed clearing still have the potential to affect local and regional fauna movement and flora and fauna dispersal opportunities.



Photo 4. An example of the modified landscape that is typical in the study area

A total area of approximately 2,500 ha has been calculated as the proposed disturbance area of the development. This represents approximately 2.0% of the study area (approximately 123,500 ha). Assessment of potential impacts on terrestrial ecology values under a pre-mitigation scenario uses a uniformly distributed clearing model whereby the impact on each value is assumed to be unbiased, uniformly distributed and relative to the estimated area of the clearing footprint within

the study area. That is, maximum impact on any particular value will at most be equal to the proportion of the proposed disturbance area (approximately 2,500 ha) to the total study area (123,500 ha) (approximately 2.0%). For calculations of impacts to wetlands and wetland REs, disturbance areas for wells, FCS and ponds are not included as this type of infrastructure

cannot be placed in the vicinity of a wetland due to risk of flooding.

Calculations for clearing based upon this model are provided for vegetation communities based on remnant RE, management status and habitat in **Tables 5.1, 5.2 and 5.3** respectively.

Table 5.1. Estimate of unmitigated remnant vegetation loss in REs from relevant subregions.

RE	Biodiversity Status	Estimated Extent within the Study Area (ha)	Unmitigated Vegetation Loss (ha)	Subregional Extent (ha) ¹	Estimate % Cleared in Subregion
11.3.1	Endangered	155	3.1	155 ²	2.0
11.3.2	Of Concern	1,171	23.4	1,099 ²	2.1
11.3.3	Of Concern	460	9.2	2,851	0.3
11.3.4	Of Concern	5	0.1	486	0.0
11.3.21	Endangered	11	0.2	11 ²	1.8
11.3.25	Of Concern	732	14.6	10,102	0.1
11.3.27	Of Concern	91	1.8	667	0.3
11.5.1	No Concern At Present	50	1.0	56,607 ⁴	0.0
11.5.5	No Concern At Present	29	0.6	29 ²	2.1
11.5.16	Endangered	22	0.4	22 ⁵	1.8
11.9.2	No Concern At Present	6	0.1	6 ²	1.7
11.9.4	Endangered	69	1.4	418	0.3
11.9.5	Endangered	830	16.6	13,340	0.1
11.9.7	Of Concern	19	0.4	665	0.1
11.9.10	Endangered	207	4.1	1,308	0.3
11.10.1	No Concern At Present	1,083	21.7	30,154 ⁴	0.1
11.10.3	No Concern At Present	47	0.9	47 ²	1.9
11.10.7	No Concern At Present	45	0.9	35	2.6
11.10.9	No Concern At Present	3	0.1	82	0.1
11.10.11	No Concern At Present	3	0.1	6	1.7
TOTAL		5,038	100.7	120,974	0.0

1 Subregional extents are quoted for Taroom Downs subregion unless otherwise specified (data from Accad et al. 2012).

2 REs 11.3.1, 11.3.21, 11.5.5, 11.9.2 and 11.10.3 were not recorded in the Taroom Downs subregion prior to the revised mapping presented in this report.

3 The revised mapping identified a greater representation of REs 11.3.2 and 11.10.7 in the study area than their recognised subregional extents (from Accad et al. 2012). As a consequence, the estimated percentage of these REs to be cleared in the subregion is expected to be a slight overestimate and, after incorporation of the revised mapping, is anticipated to be <2.1%.

4 Subregional extents are included for Southern Downs subregion only (data from Accad et al. 2012), as REs 11.5.1, 11.5.16 and 11.10.1 are each restricted to this subregion at the southern end of the study area.

5 RE 11.5.16 was not recorded in the Taroom Downs or Southern Downs subregions prior to the revised mapping presented in this report.

Table 5.2. Estimate of unmitigated vegetation loss by management status.

RE/Ecological Community Status	Estimated Extent within the Study Area (ha)	Unmitigated Vegetation Loss (ha)	Estimated Extent Remaining (ha)	Estimated % to be Cleared in the Study Area (ha)	Estimated % to be Cleared in the Relevant Subregion
Biodiversity Status					
Remnant Endangered	1,294	26	1,268	2.0	0.1
Remnant Of Concern	2,478	50	2,428	2.0	0.3
Remnant No Concern At Present	1,266	25	1,241	2.0	0.0
TOTAL	5,038	101	4,937	2.0	0.0
EPBC Status (remnant and non-remnant)					
Endangered	1,774	35 ¹	1,739	2.0	0.1

Table 5.3. Estimate of unmitigated vegetation loss by habitat type.

Habitat Type	Estimated Extent within the Study Area (ha)	Unmitigated Habitat Loss (ha)	Estimated Extent Remaining (ha)	Estimated % to be Cleared in the Study Area (ha)	Estimated % to be Cleared in the Relevant Subregion
Woodland and open forest on alluvial soils (excluding Brigalow)	2,932	59	2,873	2.0	0.4
Woodland and open forest on non-alluvial soils (excluding Brigalow)	1,433	29	1,404	2.0	0
Brigalow Community	1,744	35	1,709	2.0	0.2
Semi-Evergreen Vine Thicket	69	1	68	2.0	0.4
Native Grassland	11	0	11	2.0	2.0
Seasonal Wetland	233	5	228	2.0	0.7
TOTAL	6,422	128	6,294	2.0	0.1

It should be noted that while new trunklines will be constructed to connect the Surat North Development to the existing Woleebee Creek processing and treatment facilities, WGC will seek to authorise these under PPLs and separate EAs. Therefore, these have been excluded from this assessment and do not form part of the calculations presented herein.

Overall, a total of approximately 101 ha of remnant vegetation would potentially be cleared. While no Regional Ecosystem would lose more than 2.0% of its extent within the relevant subregions (**Table 5.1**), the potential for clearing to further fragment habitats within the study area has significance for a number of flora and fauna species which are highly geographically restricted or occur sparsely throughout their distribution. Habitat loss and fragmentation also has the potential to impact on overall biodiversity

through interference with processes and ecological functioning.

The Constraints Mapping and Field Development Protocol described in **Section 4** provides a mechanism for reducing the extent of vegetation and habitat removal within sensitive ecological communities across the study area.

Assessment of the cumulative impacts associated with clearing on vegetation communities and significant species are, in part, taken into account in the assessment of REs and species of conservation significance under Commonwealth and State legislation. However these do not take into account the potential impacts of all gas field development projects in the Brigalow Belt South bioregion.

5.1.2. Construction Activities

In addition to clearing and the associated secondary (or indirect) impacts, the construction phase has the potential to result in on-going habitat disturbance. Noise, dust and vibration affect habitat adjacent to operational areas due to ground disturbance, the operation and movement of machinery and construction traffic.

Working beyond daylight hours will require night lighting, which may affect behaviour of both nocturnal and diurnal fauna, both vertebrate and invertebrate, including interfering with birds that migrate at night; altering reproductive behaviour of frogs; disrupting communication between individual mammals and birds; focusing the foraging activities of insectivores; and increasing the likelihood of predation for some species (Longcore and Rich 2004).

Another potential impact, particularly for reptiles and small mammals, is becoming trapped in trenches or other excavations that remain open for any period of time. This may lead to mortality either by exposure, starvation, thirst or predation by other species. Open pipes may also attract fauna, particularly micro-bats and reptiles, which may then be injured or killed when the pipes are transported and utilised.

An increase in traffic, both heavy vehicles and construction workers in light vehicles, during the construction phase could contribute to increased animal/vehicle collisions on local roads. Species particularly susceptible to traffic collisions include larger and slow-moving snakes (for example, Spotted Python), monitors and other large lizards, macropods and frogs (during wet periods).

Construction vehicles have the potential to introduce and/or spread weed species and plant pathogens in disturbed soil, while general waste and land disturbance has the potential to attract highly competitive and/or predatory exotic fauna species. Increased human presence has the potential to increase the frequency of accidental fires within vegetated areas, adversely affecting habitat structure and therefore habitat value for a range of significant species.

5.1.3. Operational Phase

The operation of the proposed development has the potential to disrupt natural ecological processes within the local area beyond initial clearing, in terms of both the spatial and temporal scale of impact. This includes:

- Limiting the natural movement and dispersal of ground-dwelling and flightless arboreal fauna (that is, for breeding and foraging purposes), which are unable to traverse the developed landscape, and/or have difficulty traversing other barriers such as roads. This also has the potential to limit the natural spread and regeneration of native flora that rely on such fauna for seed dispersal;
- Altering the local surface and groundwater environment due to landform modification, and subsequent impacts on downstream ecosystems, particularly aquatic habitats, wetlands, riparian vegetation and other sensitive vegetation communities and dependent fauna;
- Traffic during the operational phase contributing to increased fauna strike rates on local roads and on project roads and tracks;
- Creating long-term edge effects along the borders of active areas and adjacent habitat, as well as isolated habitat patches between disturbed areas;
- Altering behaviour and movement of fauna through light pollution at night;
- An increased need for controlled burning of vegetated areas which has the potential to adversely affect habitat structure and therefore habitat value for a range of significant species;
- Potentially increasing the frequency of accidental fire due to increased human presence; and
- Linear clearing for pipeline routes and tracks may alter natural mosaic burning patterns by acting as fire breaks.

5.1.4. Decommissioning Phase

Decommissioning activities have the potential to result in similar impacts to those identified for the construction phase, although they will be staged and therefore less intensive. As for construction, noise, dust and vibration have the potential to affect habitat adjacent to works areas due to ground disturbance and the operation and movement of machinery and vehicles.

An increase in traffic during decommissioning, both heavy vehicles and workers in light vehicles, could contribute to increased animal/vehicle collisions on local roads, although mitigation actions undertaken for the construction and operational phases of the development are likely to have identified and treated particular hot spots. Increased activity involving vehicles from outside of the study area has the potential to introduce

and/or spread weed species and plant pathogens in disturbed soil, while general waste and land disturbance caused by decommissioning activities has the potential to attract highly competitive and/or predatory exotic fauna species.

Increased human presence has the potential to increase the frequency of accidental fires within vegetated areas, adversely affecting habitat structure and therefore habitat value for a range of significant species.

5.2. MITIGATION

The overarching principle of relevant State and Commonwealth environmental protection policies in terms of impact management is to avoid impacts as much as possible in the first instance, following which mitigation measures should be used to reduce unavoidable impacts to acceptable/insignificant levels. Where impacts remain at unacceptable/significant levels post-mitigation, only then should compensatory measures be employed as a last resort. The following sections outline the proposed measures for avoidance, mitigation and compensation to address the identified impacts on terrestrial ecological values within the study area.

5.2.1. Impact Avoidance

The most effective means of impact avoidance is through appropriate development footprint design. The following mitigated impact estimates, including total clearing areas of remnant vegetation and endangered remnant REs, have been provided by QGC and have originated through implementation of the avoidance strategies outlined in **Table 5.4**. Implementation of the Constraints Planning and Field Development Protocol (see **Section 4.0**) ensures that the avoidance of TECs and endangered remnant REs is prioritised and that the estimates for clearing following mitigation are conservative.

Unanticipated clearing of the habitats and communities within Zones 4a and 4b has the potential to occur only for linear infrastructure where no other practicable options exist. Notification will be provided for any unanticipated clearing that exceeds these estimates and offsets will be provided for any clearing of TECs or Endangered REs. Nevertheless, any clearing of the above REs/communities is generally anticipated to be significantly less than the estimates given for the pre-mitigation scenario in **Tables 5.1 to 5.3 (Section 5.1.1)**. Furthermore, implementation of QGC's Constraints Planning

and Field Development Protocol is expected to result in mitigated impacts that approximate the estimates given in **Tables 5.5 and 5.6**.

As for the pre-mitigation scenario, new trunklines to be constructed to connect the Surat North Development to existing infrastructure to the south of ATP852 do not form part of the estimates presented herein as the terrestrial ecology values of this area will be assessed as part of separate approvals.

5.2.2. General Mitigation

QGC has developed a "Constraints Planning and Field Development Protocol" which aids site selection and minimisation of environmental disturbance through avoidance of impacts in the first instance wherever practicable. In particular, TECs and endangered remnant REs are ranked at the highest level of constraint (Zone 4a, **Figure 4.1**) and impacts to these communities will be avoided as a priority. Where impacts are unavoidable and considered more than negligible QGC will utilise proven management and mitigation measures, developed and implemented on their existing projects.

These include:

- Undertake detailed pre-clearance surveys of final infrastructure footprints to ensure associated clearing avoids unmapped significant/sensitive habitats (such as wetlands and patches of vine thicket) and significant plant populations as much as possible, and minimises disturbance to important habitat features such small, off-stream ponds and soaks, large fallen logs, large hollow-bearing trees, active nesting trees, rock outcrops and boulder piles.
- Implement appropriate measures around TECs, significant REs, wetlands and known populations/habitats of significant species with strict controls on construction and operational/maintenance activities that encroach into recommended buffer areas.
- Restrict disturbance and access to areas absolutely necessary for the construction and the operation of the development. Clearly mark and cordon off all adjacent vegetation and buffer extents that are not to be disturbed from clearing activities (usually with high visibility temporary fencing), creating 'no go zones' for vehicles, materials, machinery, workers, excavated soil or fallen timber.

Table 5.4. Constraints zones for clearing and infrastructure

Zone	Constraint Ranking	Description
1	Low	Development permitted with application of standard environmental management measures.
2	Medium	Development permitted with application of additional, non-standard environmental management measures as required.
3	High ¹	Environmental and/or social feasibility must be assessed prior to development and/or landholder agreement and compensation or offsets may be required.
4a and 4b	Very High ¹	Development may not be environmentally and/or socially feasible for the proposed infrastructure, and other location options must be considered.

¹ Very high and high constraint areas will not have infrastructure unless:

- ecological field surveys demonstrate that siting infrastructure in that location will cause minimal adverse impact or can be managed through additional non-standard environmental management measures; or
- other constraints preclude the selection of an alternative location.

Table 5.5. Estimate of mitigated vegetation loss by management status.

RE/Ecological Community Status	Estimated Extent within the Study Area (ha)	Mitigated Vegetation Loss (ha)	Estimated Extent Remaining (ha)	Estimated % to be Cleared in the Study Area	Estimated % to be Cleared in the Relevant Subregion
Biodiversity Status (remnant only)					
Remnant Endangered	1,294	21 ¹	1,273	1.6	0.1
Remnant Of Concern	2,478	37	2,441	1.5	0.2
Remnant No Concern At Present	1,266	25	1,241	2.0	0.0
TOTAL	5,038	83	4,955	1.6	0.0
EPBC Status (remnant and non-remnant)					
Endangered	1,774	22.5 ¹	1,751.5	1.3	0.1

¹ Any unanticipated clearing of remnant Endangered REs or TECs above the estimates provided here will be offset in accordance with the Queensland Biodiversity Offsets Policy (2011) and EPBC Act Environmental Offsets Policy Consultation Draft (2011).

Table 5.6. Estimate of mitigated vegetation loss by habitat type (includes remnant and regrowth vegetation).

Habitat type	Estimated Extent within the Study Area (ha) ¹	Mitigated Habitat Loss (ha)	Estimated Extent Remaining (ha)	Estimated % to be Cleared in the Study Area	Estimated % to be Cleared in the Relevant Subregion
Woodland and open forest on alluvial soils (excluding Brigalow)	2,932	44 ²	2,888	1.5	0.2
Woodland and open forest on non-alluvial soils (excluding Brigalow)	1,433	29	1,404	2.0	0.0
Brigalow Community	1,744	15 ¹	1,729	1	0.2
Semi-Evergreen Vine Thicket	69	4 ¹	65	5.8 ²	1.0
Native Grassland	11	2 ³	9	18.2 ³	18.2 ²
Seasonal Wetland	233	2	231	0.9	0.3
TOTAL	6,422	96	6,326	1.5	0.0

¹ In addition to these estimates, any unanticipated clearing of Endangered REs or communities above the estimates provided here will be offset in accordance with the Queensland Biodiversity Offsets Policy (2011) and EPBC Act Environmental Offsets Policy Consultation Draft (2011).

² This estimate may up to two hectares of Coolibah — Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions.

³ From past operational experience, QGC considers there is a greater chance of encountering this TEC in this area than shown by current RE mapping. Therefore a disturbance limit of greater than that shown in **Table 5.3** (i.e. >2.0%) is considered appropriate.

⁴ This estimate has been derived partly via the assumption that unmapped native grassland communities have a high potential to occur within the study area and consequently the percentage of clearing may be lower in reality.

- Linear infrastructure corridors will pass directly across, rather than along, creeks and waterways to reduce overall disturbance in riparian areas wherever possible.
- Leave ground layer vegetation (grasses and herbs) in situ wherever possible to assist soil stability. Mulching of heavily disturbed areas can assist in reducing soil erosion. Where necessary, temporary interception devices such as hay bales or geotextile fabric fencing can be employed to slow stormwater and intercept sediment.
- Non-millable vegetation can be mulched and used in rehabilitation or soil stabilisation works, provided it is ensured that no weeds are incorporated into the mulch.
- Appropriately qualified fauna spotter/catcher to be present during clearing works to:
 - Check habitat (vegetation, logs, rock outcrops, boulder piles, gilgais) for fauna and breeding sites;
 - Check caves and crevices within rocky areas for bat roosts;
 - Check any stored materials including stockpiled timber, prior to removal; and
 - Check excavations for trapped fauna.
- Undertake clearing of vegetation in a manner which allows native fauna the opportunity to safely relocate.
- Conduct appropriate treatment of injured/orphaned animals through liaison with local Wildlife Carers.
- Where relocation of habitat features (such as hollow bearing trees, hollow logs, boulder piles) does not occur and such features are to be removed or mulched, it must be noted that they can provide an attractive and suitable habitat for a range of species. It is therefore important that removal or mulching is done as quickly as possible. If felled vegetation or other materials are otherwise stored for more than four days it must be assumed that they are occupied by wildlife; thus before being moved or disturbed again they must be checked by a fauna spotter/catcher;
- Establish 'go slow zones' (40 km/hr) for vehicles and machinery where non-gazetted roads or tracks are located adjacent to areas of woodland, wetlands/ gilgais and rock outcrop/jump-up areas.
- Minimise vehicle and machinery access and subsequent soil compaction and weed

transfer risk within and adjacent to retained vegetation.

- Undertake regular monitoring of the health and condition of retained vegetation and habitat, and the health of known significant plant specimens/populations.
- Undertake regular monitoring of excavations for trapped fauna and monitor fauna mortality from vehicle strike.
- Educate the workforce on the location of significant/sensitive communities and species and potential impacts from unauthorised activities.
- Following the construction phase, cleared woodland areas that are not required to remain cleared during on-going operational activities, maintenance or access will be revegetated in order to minimise the net loss of vegetative cover.

While it is acknowledged that the primary intention of fire management for the development will be to protect human life, livestock and infrastructure, there are aspects of fire management that have implications for the condition and functioning of native habitat and fauna within the study area. The proliferation of fire in the landscape can have a serious effect on biodiversity values and ecosystem function. In particular, the encroachment of exotic grasses (such as Buffel Grass) into natural vegetation communities of the study area can increase fire frequency and intensity, subsequently increasing encroachment of these grasses and contributing to die-back of native vegetation.

Appropriate fire intensity and frequency for biodiversity conservation can be achieved through:

- Control of weed infestations;
- Control of fuel loads within buffer areas;
- Regularly monitoring the area of interest for fuel loads and weed infestations; and
- Preparation of control/eradication plan for weeds with follow-up action when and where needed.

Proper implementation of the Fire Management Plan for the study area will involve integration with weed management, rehabilitation and revegetation management measures.

5.2.3. Pre-clearance Surveys

It is understood that detailed pre-clearance surveys will be undertaken by an appropriately qualified ecologist to identify significant/sensitive habitats and habitat features and numbers of EVNT flora specimens requiring removal. Such surveys should also record the numbers and locations of EVNT flora specimens to be retained and monitored, and the presence of significant animal and plant pests. Identification of significant sites for conservation significant plants and animals during the surveys provide opportunities for redesign/realignment, which can be taken into consideration prior to commencement of clearing.

These surveys should be undertaken on a site specific basis once infrastructure locations have been finalised.

5.2.4. Threatened Species Management

It is anticipated that appropriately qualified fauna spotter/catchers will also be present during clearing works to check for fauna within the area of clearing and rescue/relocate/treat fauna as necessary.

Where threatened species are detected within the vicinity of the proposed disturbance area during pre-clearance surveys, fauna spotting surveys and/or by onsite personnel throughout the life of the development, they will be managed in accordance with the QCLNG Significant Species Management Plans. The development of a specific management plan for species not currently included in this plan may be developed, as required/appropriate.

Important components of threatened species management include:

- Identification of the location, extent and health of threatened species' populations within the study area;
- Establishing the importance of the study area to the conservation of individual species;
- Identification and eradication or lowering of threatening processes within the study area, requiring integration with other relevant management protocols;
- Preparing a strategy for protecting and enhancing habitats expected to be impacted, including appropriate buffers;

- Preparing strategies for the translocation, propagation or re-introduction of populations of threatened species, where warranted;
- Training in identification and protection of threatened species to all parties involved in the development; and
- The potential requirement for translocation of threatened plants via seed collection and propagation; propagation via cuttings or tissue culture; direct seeding; transplantation of seedlings or mature plants; or the transfer of soil, leaf litter or brush.

5.2.5. Pest and Weed Management

On-ground and database searches reveal that a large number of exotic species are known or have potential to occur within the study area. These include six animals recognised as declared pests under the LP Act and 10 plants listed Weeds of National Significance (WoNS) and/or declared pests plants under the LP Act. Landholders are legally responsible for the control of declared plants on their land.

The proliferation of weed species in the landscape can have a serious effect on biodiversity values and ecosystem function. In general, weed infestation levels across the study area are low. The weeds currently observed to be causing the most notable ecological nuisance are *Opuntia* species including Prickly Pear, Tree Pear and Tiger Pear. These species proliferate on heavier soils, particularly where there are isolated Brigalow remnants. Fortunately, a suite of biological control agents do assist in slowing the proliferation of these weed species. *Harrisia Cactus*, while not currently a widespread problem in the study area, has the potential to spread following disturbance, particularly on Land Zone 9, and inhibit regeneration processes. *Mother of Millions* has also been detected in the area and can be in linear remnants following disturbance, such as along roadsides.

Although not declared as an environmental or listed (LP Act) weed species, the encroachment of exotic grasses such as Buffel Grass and Green Panic into natural vegetation communities of the study area has the potential to degrade habitat condition both directly and through their influence on fire intensity and frequency. Much of the area has already been affected by the spread of Buffel Grass in particular.

Cat, Rabbit, Feral Pig, Red Fox and Cane Toad are of particular importance within the study area due to their potential to negatively impact on native species and their habitat. With the exception of the Cane Toad it is unlikely that these species would be spread via vehicular movement associated with the development. However, clearing of vegetation can facilitate the movement and predation opportunities for a number of these species. Increases in most of the above species are expected to occur due to construction and operational activities if controls are not implemented.

The following pest and weed management measures are recommended:

- Pre-clearance surveys to identify the presence and extent of declared plant and animal pests;
- Implementation of species-specific weed control measures (DAFF 2012);
- Minimise weed transfer risk through routine vehicle and machinery cleansing at an onsite washdown facility;
- Consult with landholders, property managers and the regional council on a regular basis to communicate awareness of pest animal and plant outbreaks; and
- Monitor pest plant and animal outbreaks and general occurrence to facilitate continued management in the various phases of the development.

5.2.6. *Revegetation and Rehabilitation*

Rehabilitation of native ecosystems is generally required to mitigate landscape degradation and biodiversity loss. Following construction, cleared woodland areas that are not required to remain cleared during on-going operational activities, maintenance or access will be revegetated to minimise the net loss of vegetative cover and to prevent adverse impacts such as soil erosion and weed infestation. Wherever possible, and through liaison with the relevant landholders, attempts should be made to rehabilitate the original habitat in order to compensate for loss of habitat within the study area and the decrease in the condition of retained habitat through secondary impacts. Preferentially, such activities should utilise locally native species (including native grass species for cleared grassland areas). An ideal scenario would include species and planting densities analogous to pre-clearing native ecosystems.

The following revegetation and regeneration management measures are recommended:

- Vegetation cleared as part of the original disturbance for development of gas field infrastructure should be used for the progressive rehabilitation of disturbed areas;
- Mulch created from cleared vegetation should be spread evenly across previously disturbed areas once seeding and planting has been completed to return original topsoil nutrients to the soil and facilitate vegetative growth;
- Traffic should be prevented from disturbing topsoil in rehabilitation areas, except where access is absolutely required for maintenance; and
- Plant growth and condition should be monitored and maintained in accordance with approval conditions.

5.2.7. *Offsets*

QGC's Constraints Planning and Field Development Protocol is designed to minimise the opportunity for impacts to TECs and endangered remnant REs and the application of this protocol will allow impacts to these values to be avoided wherever possible. In the event that an unavoidable impact does occur, appropriate offsets will be provided.

The following scenarios are typically addressed through the implementation of an offset strategy:

- The direct loss of any quantity of Threatened Ecological Communities under Commonwealth legislation, including:
 - Brigalow (*Acacia harpophylla* dominant and co-dominant);
 - Coolibah — Black Box Woodland of the northern riverine plains in the Darling Riverine Plains and Brigalow Belt South bioregions; and
 - Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions.
- The direct loss of any quantity of Endangered RE (or other Category B ESA) under State legislation;
- The direct loss of any quantity of Of Concern RE (VM status) under State legislation;
- Any unavoidable removal of threatened plant specimens (listed under the EPBC Act and/or NC Act); and

- Any unavoidable removal of known habitat for EVNT fauna listed under the EPBC Act (i.e. important habitat) and/or NC Act (Essential Habitat).

Any reduction in the extent of the communities/populations described above is considered a significant impact (according to DoE and EHP) and requires compensation in the form of appropriate offsets. Once the proposed mitigation measures are implemented, the impacts of the development on most terrestrial ecological values are assessed to be insignificant. This assessment relies on the avoidance of disturbance and/or successful implementation of appropriate offsets to the above communities/populations. QGC is currently developing an offset strategy that will provide a mechanism of compensation for impacts to ecological values where they cannot be avoided.

5.3. SUMMARY OF POTENTIAL IMPACTS

5.3.1. *Assessment of Impacts on mapped Remnant Regional Ecosystems and Threatened Ecological Communities*

Less than 23 hectares of Endangered RE or EPBC Act listed Threatened Ecological Community is intended to be cleared for the development. This represents less than 1.6% of vegetation within this category occurring in the study area and 0.1% of its sub-regional extent.

Almost 37 hectares of Remnant Of Concern vegetation will potentially be cleared, representing 1.5% of vegetation within this category occurring in the study area and 0.2% of its sub-regional extent.

Twenty-five hectares of Remnant Not of Concern vegetation will potentially be cleared, representing 2.0% of vegetation within this category occurring in the study area and ~0.0% of its sub-regional extent.

5.3.2. *Assessment of Impacts on Terrestrial Habitats*

The impact assessment method adopted for this assessment provides an indication of the severity of predicted impacts. It should be noted however that under the EPBC Act, any impacts on Threatened Ecological Communities and EPBC Act listed flora and fauna species are considered to represent "significant" impacts regardless of their scale.

Without mitigation there is potential for detrimental impacts on all habitat types (**Figure 5.1**). Application of the impact avoidance outlined in **Table 5.4** and **Section 5.2**, along with the implementation of appropriate offsets (**Section 5.2.7**), reduces the ranking of impacts to 'Insignificant' for all habitat types.

The full impact assessment matrices for all impact types are provided in **Appendix N**.

The Brigalow habitat is an Endangered ecosystem at both the National and State level. Thirteen species associated with this habitat and which may occur within the study area are also conservation significant. A total of 35 ha of this habitat would be directly disturbed under the pre mitigation scenario and, while the examples of the habitat present within the study area are fragmented and generally in poor condition due to grazing, exotic grass infestation and frequent fire, the status of the habitat and the species it supports rates the potential loss of 79 ha and ongoing edge effects as 'Significant' impacts. Under the post-mitigation scenario, where clearing and other impacts on this habitat are reduced to an estimated clearing footprint of 15 ha, the overall impact is rated as 'Insignificant', indicating the effects of the development on this habitat and the species it supports can be adequately mitigated, including the use of offsetting for clearing of Brigalow regrowth where it meets the criteria for the TEC (including ≥15 years old).

Semi-Evergreen Vine Thicket is also an Endangered Ecosystem at both the National and State level. Five species associated with this habitat and which may occur within the study area are also conservation significant. Four hectares of this habitat would be directly disturbed under the pre mitigation scenario and while this may appear to be a small area, the status of the habitat and its low subregional extent rates the potential loss of one hectare and ongoing edge effects as 'Significant' impacts. Based on past experience, QGC considers there is a greater chance of encountering this TEC in this area than shown by current RE mapping. Therefore a disturbance limit of up to four hectares (i.e. greater than 2.0%) is considered appropriate, post-mitigation. The impact may be reduced to 'Insignificant' through successful implementation of impact mitigation measures, such as habitat rehabilitation and an appropriate offset strategy.

HABITAT TYPE	MITIGATION STATUS	IMPACT TYPE													Impact Score	Severity
		Habitat Loss	Habitat Fragmentation	Edge Effects	Introduction and/or Spread of Pest Species	Noise, Dust and Light	Fauna Mortality from Vehicle Strike	Altered Surface Hydrology	Accidental Fire	Mechanical Harm to Fauna	Altered Grazing Regimes	Trenching	Use of Herbicides			
Woodland and Open Forest Habitat on Alluvial Soils (excluding Brigalow)	Pre-Mitigation	2	2	1	0.875	0.75	0.375	0.625	0.4375	0.4375	0.625	0.4375	0.5		0.049-0.6392	Insignificant
	Post-Mitigation	0.625	0.5	0.5	0.15625	0.375	0.109375	0.28125	0.109375	0.125	0.09375	0.09375	0.09375		0.6393-1.2293	Minor
Woodland and Open Forest Habitat on non-Alluvial Soils (excluding Brigalow)	Pre-Mitigation	1.75	1.75	0.875	0.75	0.625	0.375	0.5	0.5	0.4375	0.4375	0.4375	0.4375		1.2294-1.8196	Moderate
	Post-Mitigation	0.5	0.375	0.4375	0.09375	0.28125	0.171875	0.21875	0.09375	0.1875	0.09375	0.125	0.09375		1.8197-2.41	Major
Brigalow Community	Pre-Mitigation	2.5	2.5	2.5	1.125	0.375	0.28125	0.4375	0.375	0.4375	0.6875	0.4375	0.625		2.411-3	Significant
	Post-Mitigation	0.4375	0.375	0.375	0.25	0.171875	0.140625	0.21875	0.09375	0.09375	0.09375	0.09375	0.09375			
Semi-Evergreen Vine Thicket	Pre-Mitigation	3	1.5	1.5	0.875	0.3125	0.28125	0.21875	0.4375	0.5625	0.109375	0.4375	0.34375			
	Post-Mitigation	0.46875	0.40625	0.34375	0.15625	0.140625	0.140625	0.109375	0.15625	0.09375	0.054688	0.09375	0.046875			
Grassland	Pre-Mitigation	2.5	1	1	0.75	0.3125	0.28125	0.34375	0.375	0.4375	0.34375	0.4375	0.34375			
	Post-Mitigation	0.40625	0.34375	0.34375	0.40625	0.140625	0.140625	0.109375	0.203125	0.09375	0.125	0.09375	0.0625			
Seasonal Wetlands	Pre-Mitigation	2.5	0.75	0.75	0.75	0.375	0.21875	0.375	0.375	0.4375	0.34375	0.4375	0.5625			
	Post-Mitigation	0.3125	0.28125	0.28125	0.3125	0.171875	0.109375	0.125	0.15625	0.09375	0.09375	0.09375	0.09375			

Figure 5.1

Impact Score Summary

Clearing within the Woodland and Open Forest on Alluvial Soils (excluding Brigalow) habitat type has been assigned a 'Major' pre-mitigation impact score. The effects of habitat fragmentation under the pre-mitigation scenario are also ranked as 'Major'. While the majority of this habitat does not form a Threatened Ecological Community or Endangered Regional Ecosystem, the ecosystems comprising this habitat type are Of Concern at the State level and potentially support up to 19 conservation significant flora and fauna species. It is also the ecosystem that would be most cleared (133 ha) for the development under the pre-mitigation scenario. Under the post-mitigation scenario, where clearing (reduced to 58 ha) and other impacts are minimised and managed to protect habitat for significant species, the overall impact is rated as 'Insignificant', indicating that the effects of the development on this habitat and the species it supports can be adequately mitigated.

Results for Waterways and Wetlands that without impact mitigation the clearing of even a small portion of these habitats would be 'Significant' as these habitats are poorly represented on a subregional scale. Through mitigation, i.e. avoidance, and implementation of appropriate offsets, the impacts on these areas are rated as 'Insignificant'.

For Native Grassland, the pre-mitigation scenario suggested that less than 0.5 hectares (out of a total of 11 ha) would likely be impacted, based on the assumption of equal impact across REs in the study area. Under the post-mitigation scenario, QGC acknowledges the possibility of additional unmapped grassland that may be cleared in the study area and up to two hectares might be impacted. Impacts to this community may be reduced to 'Insignificant' through the careful implementation of impact mitigation measures and an appropriate offset strategy.

All of the regional ecosystems on site that comprise the habitat described as Woodland and open Forest on Non-Alluvial soils (excluding Brigalow) have a No Concern At Present biodiversity status under Queensland legislation and are part of the most well-represented habitat in the bioregion. Statutory limits to clearing are mostly restricted to the protection of the nationally and state significant species they support (up to 18 species). Under the pre-mitigation scenario 29 ha would be cleared at random across this habitat, which is ranked as a

'Moderate' impact, along with associated habitat fragmentation effects. Under post-mitigation, the same clearing estimate applies; however areas of habitat for significant species and state forest will be avoided wherever possible (**Table 4.1**). In addition, other impacts will be minimised and managed to protect habitat for significant species. As a consequence the overall impact is rated as 'Insignificant', indicating that the effects of the development on this habitat and the species it supports can be adequately mitigated.

It is anticipated that offsets will be implemented whenever Endangered and Of Concern REs, NC Act listed species and EPBC-listed TECs and species are removed with the aim of achieving no significant impacts.

Offsets are discussed in further detail in **Section 5.2.7**.

5.3.3. Conservation Significant Flora

Thirteen flora species of special conservation significance are known or considered possible occurrences within the study area. This includes species listed as threatened under the EPBC Act, listed as threatened or near threatened under the NC Act and as non-EVNT priority species for the BBS bioregion under the BAMM (EPA 2008).

The two EVNT flora species detected during the survey are of special note due to their limited distribution and occurrence in central Queensland. *Digitaria porrecta* and *Homopholis belsonii* (identifications verified by Donovan Sharp, Queensland Herbarium, 30.v.2012) are previously unknown from the Taroom Downs subregion. The former species occurs disjunctively from Nebo in central Queensland south to the Liverpool Plains in New South Wales and the latter species occurs from the Darling Downs in south-east Queensland south to the Western Slopes and Plains of New South Wales (SEWPAC 2012a, b). Both species are easily overlooked in woodland and/or grassland communities and with their limited extents in the subregion and continued grazing pressure, their long-term viability in the Brigalow Belt South bioregion must be considered to be at risk.

Without mitigation, there is potential for 'minor' to 'moderate' significant impacts on the following conservation significant flora species (excluding those ranked as unlikely and low potential to occur):

- EPBC Act Endangered: Herbaceous *Xerothamnella Xerothamnella herbacea* and Slender Tylophora *Tylophora linearis*;
- EPBC Act Vulnerable: Belson's Panic Grass *Homopholis belsonii* and Ooline *Cadellia pentastylis*;
- NC Act Endangered: Winged Nightshade *Solanum stenopterum* and Gurulmundi Heath-myrtle *Micromyrtus carinata*;
- NC Act Vulnerable: Plains Picris *Picris barbarorum*;
- NC Act Near Threatened: Finger Panic Grass *Digitaria porrecta*, Blake's Spikerush *Eleocharis blakeana* and Wandering Fringe-rush *Fimbristylis vagans*; and
- BMM species: Yarran *Acacia melvillei*.

The nature of these species is that they are highly restricted in distribution and/or occur very sparsely throughout their distribution. Mitigation measures include pre-clearance surveys of potential infrastructure locations to determine whether the species occur. If any of these species are identified, they should be avoided in the first instance, and if avoidance of direct or indirect impacts is not possible, application for their removal must be made to DoE and/or EHP, potentially resulting in translocation.

Where direct or indirect impacts to the species can be avoided through implementation of QGC's Constraints Planning and Field Development Protocol and, more specifically, the avoidance strategies outlined in **Section 5.2** and **Table 5.4**, the residual impact is reduced to 'Minor' for Finger Panic Grass and 'Insignificant' for all other flora species. Where individuals must be disturbed through translocation, impacts may still be 'Moderate', depending on the number of individuals involved.

Under the Queensland Biodiversity Offsets Policy (2011), offsets are stipulated for conservation significant flora species. Potential offset requirements for the development are discussed in **Section 5.2.7**.

5.3.4. Conservation Significant Fauna

The most intensive and long term impacts on conservation significant fauna species would result from the clearing of approximately 291 ha (**Table 5.3**) of habitat and the ongoing degradation of habitats through edge effects and fragmentation. Without mitigation, there is potential for 'Minor' to 'Moderate' significant impacts on the following conservation significant fauna species (excluding those ranked as not expected or low potential to occur):

- EPBC Act Vulnerable: Fitzroy River Turtle *Rheodytes leukops*, Collared Delma *Delma torquata*, Yakka Skink *Egernia rugosa*, Dunmall's Snake *Furina dunmalli*, Australian Painted Snipe *Rostratula australis*, Koala *Phascolarctos cinereus* and South-eastern Long-eared Bat *Nyctophilus corbeni*;
- NC Act Vulnerable: Pale Imperial Hairstreak *Jalmenus eubulus*, Brigalow Scaly-foot *Paradelma orientalis*, Glossy Black-Cockatoo *Calyptorhynchus lathami* and Painted Honeyeater *Grantiella picta*; and
- NC Act Near Threatened: Golden-tailed Gecko *Strophurus taenicauda*, Common Death Adder *Acanthophis antarcticus*, Freckled Duck *Stictonetta naevosa*, Cotton Pygmy-Goose *Nettapus coromandelianus*, Black-necked Stork *Ephippiorhynchus asiaticus*, Square-tailed Kite *Lophoictinia isura*, Black-chinned Honeyeater *Meliphreptis gularis* and Little Pied Bat *Chalinolobus picatus*.

The nature of these species is that they are highly restricted in distribution, occur very sparsely throughout their distribution and/or are difficult to detect without targeted surveys.

Fifty-seven fauna species of conservation significance are known or considered possible occurrences within the study area. This includes species listed as Endangered, Vulnerable or Migratory under the EPBC Act, listed as Endangered, Vulnerable, Near Threatened or Special Least Concern under the NC Act and as non-EVNT priority species for the BBS bioregion under the BMM (EPA 2008).

The study area includes known habitat for Cotton Pygmy-Goose and Little Pied Bat. Whilst these are all threatened species, they are also widespread, and any loss of habitat for these taxa in the study area could at most be considered to be locally significant. Other

species, such as Pale Imperial Hairstreak, Brigalow Scaly-foot, Yakka Skink, Dunmall's Snake and Golden-tailed Gecko are more difficult to detect and restricted to the Brigalow Belt bioregion. Therefore, these species must be considered to be particularly prone to disturbance.

During construction, operations and decommissioning, the major threats to conservation significant fauna species are associated with:

- The potential for increase in accidental fire which causes direct mortality, alters the structure and therefore the suitability of habitats for fauna species, and facilitates weed invasion which may increase fire intensity;
- Ongoing edge effects, for example, through increased solar radiation, increase wind effects, desiccation and vegetation dieback;
- The construction of access tracks through remnant vegetation causing increased access for feral predators such as Foxes, Cats and Cane Toads;
- The construction of access tracks causing increased access for competitors such as Cane Toads and aggressive native species (increaser species such as Yellow-throated Miner) which may exclude other native species;
- Increased access for native predators such as Laughing Kookaburra and Pied Butcherbird which may increase predation on native species, particularly small reptiles;
- Construction of access tracks and artificial waterbodies leading to an increase of Cane Toads and subsequent increased potential mortality due to attempted predation of Cane Toads by native frog-eating species, particularly reptiles;
- Increased weed invasion — particularly exotic grasses which outcompete native species and increase fire frequency and intensity;
- Changes to hydrological conditions that may affect habitat for frogs;
- The creation of artificial waterbodies which may provide suitable resources for a variety of native fauna; and
- The more local effects of increased noise and night time lighting.

Where direct or indirect impacts to the species can be avoided through implementation of QGC's Constraints Planning and Field Development Protocol and, more specifically, the avoidance strategies outlined in **Section 5.2** and **Table 5.4**, the residual impact is reduced to 'Insignificant'. For conservation significant fauna species, habitat that is subject to clearing, offsets are set out in the Queensland Biodiversity Offsets Policy (2011).

Amphibious vertebrates of conservation significance that may be impacted in the study area are Fitzroy River Turtle (Vulnerable under the EPBC Act and NC Act), Broad-shelled Turtle and Salmon-striped Frog (both non-EVNT (BAMM) priority species for the bioregion). These species are dependent on the terrestrial environment for breeding and for inputs into the waterbody such as fruit, leaf litter and logs that provide food and shelter resources directly or indirectly through provision of resources for prey species. Inputs from terrestrial environments also affect water quality. Turtles are susceptible to predation by terrestrial vertebrates such as Red Foxes and Feral Pigs, particularly of eggs and hatchlings.

Potential impacts on watercourses that could deleteriously affect these amphibious species include the release of water which, depending on quantities and duration, could underscore banks and destroy nesting areas, remove riparian vegetation necessary for stream health and scour watercourse substrate destroying micro-habitats and flushing food resources downstream. The temperature, pH and salinity of water released into waterbodies may also negatively affect turtles. Conversely, environmentally sound practices governing controlled release of water could enhance waterbodies, increasing habitat and resources for amphibious species.

5.3.5. Bioregional Corridors

A State and Regional Bioregional Corridor (EPA 2008) occurs in associations with Juandah Creek in the Pleiades block of ATP768 in the north-east of the study area (**Figure 3.8**). The significance of these corridors for flora and fauna is lent particular weight within the region due to extreme fragmentation and continued disturbance of remnant vegetation, primarily as a result of grazing practices. Many of the corridors are themselves highly fragmented and habitat patches act as "stepping stones" in some locations where only those species able to

negotiate cleared areas can forage and disperse more widely. The creation of further barriers to fauna movement within the corridors, such as roads, pipelines and clearing for other Project infrastructure, would have a potentially significant and long term negative impact on regional biodiversity without mitigation.

The vast majority of this corridor falls within a wetland, which is subject to avoidance measures (**Section 5.2, Table 5.4**). There is also potential for managed rehabilitation and reinstatement of bioregional corridors upon completion of the development.

5.4. CONCLUSION

With less than 5% of remnant vegetation remaining, the study area is clearly a heavily disturbed and modified environment. Nevertheless, for the terrestrial ecology elements that do persist in this landscape, much of the remaining habitat is important for maintaining the existence of recognised terrestrial ecological values. The minimal extents of habitats remaining are actually rendered more important as a direct consequence of their extensive reduction.

Indeed, it is the past clearing and degradation of this environment that has led many of the vegetation communities relevant to this Project to reach threatened status. The Threatened Ecological Communities, Endangered REs and watercourses in particular together form a conspicuous component of the existing environment in the study area, as depicted in the constraints mapping (**Figure 4.1**).

Unmitigated impacts would cause detrimental impact to all habitat types. However, following application of the proposed mitigation procedures, which include avoidance of areas of high conservation significance, offsetting of unavoidable clearing of significant vegetation communities or habitats (which includes the potential for on-site rehabilitation), and the management of impacts associated with the proposed Project construction, operation and decommissioning activities the residual impacts to these habitats are expected to be “Insignificant”.

6.0 REFERENCES

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APPENDIX A
EPBC ACT ONLINE PROTECTED MATTERS SEARCH
TOOL RESULTS



EPBC Act Protected Matters Report

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

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

Information about the EPBC Act including significance guidelines, forms and application process details can be found at <http://www.environment.gov.au/epbc/assessmentsapprovals/index.html>

Report created: 18/11/11 16:36:09

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[Details](#)

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[Acknowledgements](#)



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[Coordinates](#)

[Buffer: 1.0Km](#)



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 - see <http://www.environment.gov.au/epbc/assessmentsapprovals/guidelines/index.html>

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Threatened Ecological Communities:	4
Threatened Species:	16
Migratory Species:	11

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 and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage/index.html>

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.

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. Information on EPBC Act permit requirements and application forms can be found at <http://www.environment.gov>.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	10
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves:	None

Extra Information

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

Place on the RNE:	None
State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	9
Nationally Important Wetlands:	None

Details

Matters of National Environmental Significance

Threatened Ecological Communities	[Resource Information]
-----------------------------------	--

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

Name	Status	Type of Presence
Brigalow (Acacia harpophylla dominant and co-dominant)	Endangered	Community known to occur within area
Coolibah - Black Box Woodlands of the Darling	Endangered	Community likely to

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

Name	Status	Type of Presence
Riverine Plains and the Brigalow Belt South Bioregions		occur within area
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	Endangered	Community likely to occur within area
Weeping Myall Woodlands	Endangered	Community likely to occur within area

Threatened Species	[Resource Information]
--------------------	--------------------------

Name	Status	Type of Presence
------	--------	------------------

BIRDS

Erythrotriorchis radiatus		
Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta		
Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat likely to occur within area
Neochmia ruficauda ruficauda		
Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Vulnerable	Species or species habitat may occur within area

MAMMALS

Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
Dasyurus hallucatus		
Northern Quoll [331]	Endangered	Species or species habitat may occur within area
Nyctophilus timoriensis (South-eastern form)		
Greater Long-eared Bat, South-eastern Long-eared Bat [66888]	Vulnerable	Species or species habitat may occur within area

PLANTS

Cadellia pentastylis		
Ooline [9828]	Vulnerable	Species or species habitat likely to occur within area
Commersonia argentea		
a shrub [82761]	Vulnerable	Species or species habitat likely to occur within area
Tylophora linearis		
[55231]	Endangered	Species or species habitat may occur within area

REPTILES

Delma torquata		
Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Denisonia maculata		
Ornamental Snake [1193]	Vulnerable	Species or species habitat may occur within area
Egernia rugosa		
Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area
Furina dunmalli		
Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within

Name	Status	Type of Presence
Paradelma orientalis		area
Brigalow Scaly-foot [59134]	Vulnerable	Species or species habitat may occur within area
Rheodytes leukops		
Fitzroy River Turtle, Fitzroy Tortoise, Fitzroy Turtle [1761]	Vulnerable	Species or species habitat may occur within area

Migratory Species

[[Resource Information](#)]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat may occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat may occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area

Migratory Terrestrial Species		
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus		
White-throated Needletail [682]		Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area

Migratory Wetlands Species		
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat may occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Nettapus coromandelianus albipennis		
Australian Cotton Pygmy-goose [25979]		Species or species habitat may occur within area
Rostratula benghalensis s. lat.		
Painted Snipe [889]	Vulnerable*	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		

Name	Threatened	Type of Presence
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat may occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat may occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Nettapus coromandelianus albipennis Australian Cotton Pygmy-goose [25979]		Species or species habitat may occur within area
Rostratula benghalensis s. lat. Painted Snipe [889]	Vulnerable*	Species or species habitat may occur within area

Extra Information

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

Name	Status	Type of Presence
Frogs		
Bufo marinus Cane Toad [1772]		Species or species habitat likely to occur within area
Mammals		
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Acacia nilotica subsp. indica Prickly Acacia [6196]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area

Coordinates

-25.83 149.417,-26.162 149.417,-26.162 149.75,-25.83 149.75,-25.83 149.417

Caveat

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

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

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

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.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

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

- migratory and
- marine

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

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area

- migratory species that are very widespread, vagrant, or only occur in small numbers

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

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

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

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:

- [-Department of Environment, Climate Change and Water, New South Wales](#)
- [-Department of Sustainability and Environment, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment and Natural Resources, South Australia](#)
- [-Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts](#)
- [-Environmental and Resource Management, Queensland](#)
- [-Department of Environment and Conservation, Western Australia](#)
- [-Department of the Environment, Climate Change, Energy and Water](#)
- [-Birds Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-SA 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, Atherton and Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [-State Forests of NSW](#)
- 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.

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APPENDIX B
BIODIVERSITY PLANNING ASSESSMENT (BPA)
RESULTS SUMMARY

1.0 Introduction

The Biodiversity Planning Assessment (BPA) mapping is the product of the Queensland Department of Environment and Resource Management (DERM, now EHP) Biodiversity Assessment Mapping Methodology (BAMM). While not a statutory document, it is an important tool in assessing the significance of an area at a state and regional level. The BAMM consists of eleven criteria (Criteria A through K) that are used to characterise the environmental values of a bioregion. An explanation of these Criteria can be found in **Table 1.1**.

Table 1.1 Biodiversity Significance Criteria.

Criteria	Feature
A ¹	Habitat for EVR (now EVNT) Taxa
B ¹	Ecosystem Value at three scales: B1: state; B2: regional; and B3: local
C ¹	Tract Size
D ¹	Relative Size of Regional Ecosystem at three scales: B1: state; B2: regional; and B3: local
E ¹	Condition
F ¹	Ecosystem Diversity
G ¹	Context & Connection (relationship to water, endangered ecosystems and physical connection between contiguous Remnant Units)
H ²	Essential and General Habitat for Priority Taxa
I ²	Special Biodiversity Values
J ²	Corridors
K ²	Threatening Process (Condition)

1 Defined by DERM as "Diagnostic Criteria" designed for analysis of uniformly available data.

2 Defined by DERM as "Other Essential Criteria" assessed by expert panel using non-uniform data.

The basic unit of the BPA is the Regional Ecosystem (RE) polygon, and these are given scores in each of the eleven criteria to assess their significance as habitat for flora and fauna. Criteria A through G are automated based on a set of rules, while Criteria H through K are discussed and decided by an Expert Panel process for each bioregion, which then feeds back into the automated steps. The Expert Panel also produce up to three reports with supplementary descriptions of specific landscape, fauna and flora values held within each bioregion.

This appendix presents the results of an analysis of the BPA mapping and Expert Panel reports for the area potentially impacted by the proposed ATP852 Gas Field Project, west of Wandoan in southern Queensland.

This appendix presents the following information about the study area:

- A general study area description including landscape features and regional context.
- The Biological Significance of habitats on the study area.
- An analysis of each discrete landscape feature for all eleven BPA criteria.
- A summary of Expert Panel findings relevant to the study area in the context of terrestrial ecology.

2.0 Study Area Description and General Biodiversity Significance

The study area is about 30km west of Wandoan, in the Brigalow Belt South bioregion, and is mostly within the Taroom subregion, though the Mt Organ State Forest and surrounding area are within the Southern Downs subregion. This region has experienced extensive clearing, with some REs now more than 95% cleared. In particular, Brigalow (*Acacia harpophylla*) woodlands, Semi-evergreen Vine Thickets (SEVT) and native grasslands are highly endangered habitat types that occur in the region. The study area can naturally be broken up into discrete landscape features for the purposes of understanding the biodiversity significance of the habitats, as follows:

- Juandah Creek Corridor
- Stockroutes and roadside remnants in the north and northwest
- Horse Creek & tributaries
- Canal Creek & catchment area
- Stockroutes and roadside remnants in the south
- Patches of semi-evergreen vine thicket in the south-west
- Mt Organ State Forest & Mud Creek

The study area as a whole has very little remnant vegetation, with the vast majority currently being under agriculture. What remains is generally of quite high significance, with much of the vegetation mapped as remnant being riparian habitat, Brigalow woodland, or SEVT. The Biosig (Biodiversity Significance) summary layer in the BPA mapping (Fig. 3.5 in the main text) shows the following features as being significant at a state level:

- Juandah Creek & surrounds
- Northern stockroute
- Tributaries of Horse Creek
- Road reserves on Roma-Taroom Rd
- All patches of SEVT habitat
- Half of Canal Creek and catchment area
- Half of the patches of remnant in the north and north-west
- Southern stockroute and associated roadside remnant

The remaining areas of habitat are designated as regionally significant, and include:

- Small parts of Juandah Creek
- Mt Organ State Forest & Mud Creek
- The majority of Horse Creek
- Half of Canal Creek and catchment area
- Half of the patches of vegetation in the north and north-west of the study area

There are 14 Regional Ecosystem types that are currently mapped for the study area, as listed in **Table 2.1** along with their descriptions and Biodiversity Status allocated by the Queensland Herbarium.

Table 2.1: REs present within the study area

RE	Description	Biodiversity Status
11.3.2	Poplar Box (<i>Eucalyptus populnea</i>) open woodland	Of Concern
11.3.3	Coolabah (<i>Eucalyptus coolabah</i>) open woodland with grassy understorey	Of Concern
11.3.25	River Red Gum/Forest Red Gum (<i>Eucalyptus camaldulensis/tereticornis</i>) woodland	Of Concern
11.3.27c	Palustrine wetland	Of Concern
11.3.39	Silver-leaved Ironbark (<i>Eucalyptus melanophloia</i>) woodland	Not Of Concern
11.5.1	Ironbark (<i>Eucalyptus crebra</i>) woodland	Not Of Concern
11.9.1	Brigalow (<i>Acacia harpophylla</i>) woodland	Endangered
11.9.4a	Semi-evergreen Vine Thicket	Endangered
11.9.5/11.9.5a	Brigalow (<i>Acacia harpophylla</i>) open forest/woodland	Endangered
11.9.7	Poplar Box (<i>Eucalyptus populnea</i>) woodland	Of Concern
11.9.10	Poplar Box (<i>Eucalyptus populnea</i>) woodland	Endangered
11.10.1	Spotted Gum (<i>Corymbia citriodora</i>) woodland	Not Of Concern
11.10.9	White Cypress (<i>Callitris glaucophylla</i>) woodland	Not Of Concern
11.10.11	Poplar Box (<i>Eucalyptus populnea</i>) woodland	Not Of Concern

3.0 Biodiversity Planning Assessment Criteria Analysis

3.1 Juandah Creek Corridor

- All
 - Very high value – C, E, F (small patch), G (small patches)
 - High value – F (north half)
 - Medium value – C (small patch), F (small patches), G
 - State – J (most of the corridor)
 - Regional – J (small patches of corridor)
- Brigalow patches along the creek line
 - Very high value - B1, B2
- River Red Gum/Forest Red Gum habitat along the creek line
 - High value – B1
 - Medium value – B2, C
 - Medium value – D2 (25.1% largest in subregion)
- Poplar Box habitat along the creek line
 - High value – B1

3.2 Northern Stockroute & associated roadside remnants

- Continuous Brigalow strip along stockroute alignment
 - Very high value - B1, B2, E, G (small patches), Ib
 - High value – F
 - Medium – C

3.3 Remnants Patches in the north and northwest

- All

- Very high value – E, G (small patch)
 - High value – F
 - Medium – F (small patch), G (small patches)
- Brigalow patches scattered through the north and north-west of the study area
 - Very high value - B1, B2
 - Medium – C
- River Red Gum/Forest Red Gum patches scattered through the north and north-west of the study area
 - High value – B1
- Poplar Box patches scattered through the north and north-west of the study area
 - Very high value – B2
 - High value – B1
- Silver-leaved Ironbark patch in the north-west of the study area
 - High value - B1

3.4 Horse Creek & tributaries

- All
 - Very high value – C, E, G (many patches)
 - High value – F (both tributaries and half of creek)
 - Medium (small part) – C, F (half of creek), G
- Brigalow habitat along the Horse Creek
 - Very high value – B1, B2, F
 - Medium value – A
- Poplar Box habitat along Horse Creek
 - Very high value – B1, B2, F
 - Very high value – D2 (58.6% largest in subregion)
- River Red Gum/Forest Red Gum habitat along Horse Creek (B1)
 - High value – B1, F
 - Medium – B2
- Brigalow habitat along Back Creek and Four Mile Gully (east)
 - Very high value – B1, B2
 - Medium value – A
- Poplar Box habitat along Back Creek and Four Mile Gully (east)
 - Very high value – B1, B2
 - Medium value – D2 (28.8% & 36% largest in subregion)
- River Red Gum/Forest Red Gum habitat along Back Creek and Four Mile Gully (east)
 - High value – B1

3.5 Canal Creek & catchment area

- All
 - Very high – C, E, G (small patches), Ia, Ib, Ig
 - High – C (one tributary), F
 - Medium – C (some patches), F (small patches), G
- Brigalow habitat along the creek and in the catchment area
 - Very high value – B1, B2, F (small patch)
 - Medium value – A
- Poplar Box habitat along the creek and in the catchment area
 - Very high value – B1, B2

- Very high value – D2 (100% largest in subregion)
 - Medium value – D2 (32.5% largest in subregion)
- River Red Gum/Forest Red Gum habitat along the creek and in the catchment area
 - High value – B1
 - Medium value – B2

3.6 Southern Stockroute and associated roadside remnants in the south

- All
 - Very high value – E, G (many patches), Ib
 - High value – F (half)
 - Medium value – F (half), G
- River Red Gum/Forest Red Gum habitat along southern stockroute
 - Very high value – B2
 - High value – B1, C
- Brigalow habitat along southern stockroute
 - Very high value – B2
 - High value – B1, C
- Poplar Box habitat along southern stockroute
 - High value – B1, C
 - Medium value – D2 (28.8% largest in subregion)

3.7 Patches of semi-evergreen vine thicket in the south-west

- Brigalow and SEVT patches west of the Yuleba – Taroom Rd
 - Very high value – B1, B2, E, G, Ia, Ib, Ig
 - High value – C (one patch), F
 - Medium value – A, C
 - Medium value – D2 (25.7%, 33.6%, 33.9% & 49.8% largest in subregion)

3.8 Mt Organ State Forest & Mud Creek

- All
 - Very high – C, E
 - Medium value – F, G
- Brigalow and SEVT patches on the fringes of Mt Organ State Forest
 - Very high value – B1, G
- Forest Red Gum/River Red Gum patches associated with Mt Organ State Forest
 - High value – B1
 - Medium value – B2
 - Medium value – D2 (26.8% & 85.9% largest in subregion)
- Ironbark/Spotted Gum habitat throughout Mt Organ State Forest
 - Medium value – B1, B2

4.0 Expert Panel

4.1 Landscape

The Expert Panel discussion of significant landscape features for the Brigalow Belt South bioregion includes several comments that specifically address values in areas potentially impacted by the Project:

- Taroom Downs is a highly fragmented subregion (~7% of original vegetation remaining), such that any remnant vegetation in the subregion is given a value of “High” under Criteria Ib (refuge from clearing)
- The eastern half of the Southern Downs subregion is also considered highly fragmented (~22% of original vegetation remaining), such that:
 - Any remnant patch that is the largest example in the subregion is given a value of “Very High” under Criteria Ib (refuge from clearing)
 - Stock routes and associated reserves are given a value of “Very High” under Criteria Ib (refuge from clearing)
 - Any remnant vegetation in the subregion is given a value of “High” under Criteria Ib (refuge from clearing)
- Vine Thicket habitats (including 11.9.4a, which occurs on the study area) are considered highly important for endemic snails and insects, and for flora and fauna
 - Both remnant and regrowth habitats are given a value of “Very High” under Criteria Ib (refuge from clearing)
 - Both remnant and regrowth habitats are given a value of “Very High” under Criteria Ig (distinct variation in species composition)
 - Remnant habitat is important for endemic snails and insects and is given a value of “Very High” under Criteria Ia (centre of endemism)

Overall, remnant vegetation of any kind in the study area is of high value because of the amount of habitat already cleared in the immediate area. Any stock routes and roadside remnants are very high in value, as are any SEVT patches.

4.2 Terrestrial Flora and Fauna

While there are many general comments about EVNT flora and fauna species that occur in the region, the following were specific Expert Panel comments that were relevant to the study area.

- RE 11.3.2 is listed as key habitat for Rough Frog *Cyclorana verrucosa* in the bioregion; however, this species is considered unlikely to occur in the study area (see **Appendix D**).
- RE 11.3.2 is considered essential habitat for *Digitaria porrecta*. While this is not currently reflected in the DERM Essential Habitat mapping, this RE should be treated as potential habitat for the species.
- RE 11.9.5 on stockroutes and road reserves in the Southern Downs subregion are considered to be essential habitat for Glossy Black Cockatoo *Calyptorhynchus lathami*. While this is not currently reflected in the DERM Essential Habitat mapping, this RE should be treated as potential habitat for the species.
- RE 11.9.5 and 11.9.10 that contain mistletoe are considered by the panel to be essential habitat for Painted Honeyeater *Grantiella picta*. While this is not currently reflected in the DERM Essential Habitat mapping, these REs should be treated as potential habitat for the species.
- All SEVT habitat is considered potential habitat for *Denhamia parvifolia* and any SEVT habitat with known records of *Sophora fraseri* should be considered habitat for the entire polygon. All SEVT habitat in the east of the bioregion should be considered as potential Black-breasted Button-quail habitat. The study area contains a small representation of RE 11.9.4, an SEVT habitat type; however, there are no records of *S. fraseri* and the two other species mentioned above are considered unlikely to occur (see **Appendix D**).

- RE 11.9.5 is considered essential habitat for the Pale Imperial Hairstreak *Jalmenus eubulus*. While this is not currently reflected in the DERM Essential Habitat mapping, this RE should be treated as potential habitat for the species.

APPENDIX C

PUBLIC DATABASE SEARCH RESULTS

Wildlife Online Species List for a Defined Area

All species Species: All
Type: All
Status: All
Records: All
Date: All
Latitude: 25.6 to 26.4
Longitude: 149.16 to 150
Email: brett@biodiversity.tv
Date submitted: Monday 14 Nov 2011 13:24:08
Date extracted: Monday 14 Nov 2011 13:33:45

The number of records retrieved = 935

Disclaimer

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

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

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Feedback about Wildlife Online should be emailed to Wildlife.Online@derm.qld.gov.au

Description of the CODES

- I - Y indicates that the taxon is introduced to Queensland and has naturalised.
- Q - Indicates the Queensland conservation status of each taxon under the Nature Conservation Act 1992. The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ().
- A - Indicates the Australian conservation status of each taxon under the Environment Protection and Biodiversity Conservation Act 1999. The values of EPBC are Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Extinct in the Wild (XW) and Vulnerable (V).

Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens). The second number located after the / indicates the number of specimen records for the taxon.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Sighting Records	Specimen Records
fungi	lichens	Collemataceae	Collema			C		2	2
fungi	lichens	Collemataceae	Physma			C		3	3
fungi	lichens	Haematommaceae	Haematomma persoonii			C		1	1
fungi	lichens	Lecanoraceae	Lecanora leprosa			C		1	1
fungi	lichens	Parmeliaceae	Bulbothrix isidiza			C		1	1
fungi	lichens		Parmotrema reticulatum			C		3	3
fungi	lichens		Punctelia pseudocoralloidea			C		1	1
fungi	lichens		Xanthoparmelia semiviridis			C		1	1
fungi	lichens	Pertusariaceae	Ochrolechia			C		1	1
fungi	lichens		Ochrolechia africana			C		1	1
fungi	lichens		Pertusaria thiospoda			C		1	1
fungi	lichens	Physciaceae	Buellia			C		1	1
fungi	lichens	Teloschistaceae	Dirinaria applanata			C		3	3
fungi	lichens		Dirinaria confluens			C		1	1
fungi	lichens		Teloschistes sieberianus			C		1	1
fungi	lichens		Teloschistes spinosus			C		1	1
plants	conifers	Cupressaceae	Callitris endlicheri	black cypress pine		C		1	0
plants	conifers	Cupressaceae	Callitris glaucophylla	white cypress pine		C		9	0
plants	ferns	Adiantaceae	Cheilanthes distans	bristly cloak fern		C		3	0
plants	ferns	Adiantaceae	Cheilanthes sieberi subsp. sieberi			C		3	0
plants	ferns	Adiantaceae	Cheilanthes tenuifolia	rock fern		C		2	0
plants	ferns	Marsileaceae	Marsilea hirsuta	hairy nardoo		C		1	0
plants	ferns	Schizaeaceae	Lygodium flexuosum			C		1	0

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Sighting Records	Specimen Records
plants	higher dicots	Acanthaceae	Brunoniella australis	blue trumpet		C		8	0
plants	higher dicots	Acanthaceae	Dipteracanthus australasicus subsp. corynothecus			C		2	2
plants	higher dicots	Acanthaceae	Hypoestes floribunda			C		2	1
plants	higher dicots	Acanthaceae	Hypoestes floribunda var. floribunda			C		1	1
plants	higher dicots	Acanthaceae	Pseuderanthemum variabile	pastel flower		C		2	0
plants	higher dicots	Acanthaceae	Rostellularia adscendens var. adscendens			C		3	0
plants	higher dicots	Aizoaceae	Tetragonia tetragonioides	New Zealand spinach		C		1	1
plants	higher dicots	Aizoaceae	Zaleya galericulata			C		2	1
plants	higher dicots	Amaranthaceae	Achyranthes aspera			C		1	1
plants	higher dicots	Amaranthaceae	Alternanthera denticulata var. denticulata			C		1	1
plants	higher dicots	Amaranthaceae	Alternanthera nana	hairy joyweed		C		2	0
plants	higher dicots	Amaranthaceae	Alternanthera nodiflora	joyweed		C		1	0
plants	higher dicots	Amaranthaceae	Alternanthera pungens	khaki weed	Y			1	1
plants	higher dicots	Amaranthaceae	Deeringia amaranthoides	redberry		C		1	0
plants	higher dicots	Amaranthaceae	Gomphrena celosioides	gomphrena weed	Y			2	2
plants	higher dicots	Amaranthaceae	Nyssanthus erecta			C		6	3
plants	higher dicots	Amaranthaceae	Ptilotus macrocephalus	green pussytails		C		1	1
plants	higher dicots	Amaranthaceae	Ptilotus nobilis subsp. semilanatus			C		1	1
plants	higher dicots	Anacardiaceae	Schinus terebinthifolius		Y			1	1
plants	higher dicots	Apiaceae	Cyclospermum leptophyllum		Y			1	1
plants	higher dicots	Apiaceae	Daucus glochidiatus	Australian carrot		C		1	1
plants	higher dicots	Apocynaceae	Alstonia constricta	bitterbark		C		11	1
plants	higher dicots	Apocynaceae	Carissa ovata	currantbush		C		9	1
plants	higher dicots	Apocynaceae	Marsdenia australis	doubah		C		2	0
plants	higher dicots	Apocynaceae	Marsdenia micradenia	gymnema		C		2	0

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Sighting Records	Specimen Records
plants	higher dicots	Apocynaceae	Marsdenia pleiadenia			C		2	1
plants	higher dicots	Apocynaceae	Marsdenia viridiflora			C		3	0
plants	higher dicots	Apocynaceae	Marsdenia viridiflora subsp. viridiflora			C		1	0
plants	higher dicots	Apocynaceae	Orbea variegata		Y			1	1
plants	higher dicots	Apocynaceae	Parsonsia			C		1	0
plants	higher dicots	Apocynaceae	Parsonsia eucalyptophylla	gargaloo		C		3	1
plants	higher dicots	Apocynaceae	Parsonsia lanceolata	northern silkpod		C		2	0
plants	higher dicots	Apocynaceae	Parsonsia rotata	veinless silkpod		C		2	0
plants	higher dicots	Apocynaceae	Sarcostemma viminale subsp. brunonianum			C		2	2
plants	higher dicots	Apocynaceae	Secamone elliptica			C		1	0
plants	higher dicots	Asteraceae	Bidens bipinnata	bipinnate beggar's ticks	Y			2	2
plants	higher dicots	Asteraceae	Brachyscome ciliaris var. subintegrifolia			C		1	0
plants	higher dicots	Asteraceae	Brachyscome trachycarpa			C		1	1
plants	higher dicots	Asteraceae	Calotis cuneata			C		2	2
plants	higher dicots	Asteraceae	Calotis cuneifolia	burr daisy		C		1	1
plants	higher dicots	Asteraceae	Calotis dentex	white burr daisy		C		1	1
plants	higher dicots	Asteraceae	Calotis lappulacea	yellow burr daisy		C		2	0
plants	higher dicots	Asteraceae	Calyptocarpus vialis	creeping cinderella weed	Y			1	0
plants	higher dicots	Asteraceae	Camptacra barbata			C		1	1
plants	higher dicots	Asteraceae	Centaurea melitensis	Maltese cockspur	Y			2	2
plants	higher dicots	Asteraceae	Centaurea solstitialis	St. Barnaby's thistle	Y			1	1
plants	higher dicots	Asteraceae	Chrysocephalum apiculatum	yellow buttons		C		3	1
plants	higher dicots	Asteraceae	Cirsium vulgare	spear thistle	Y			3	0
plants	higher dicots	Asteraceae	Coronidium oxylepis subsp. lanatum			C		1	1
plants	higher dicots	Asteraceae	Cyanthillium cinereum			C		2	0
plants	higher dicots	Asteraceae	Eclipta prostrata	white eclipta		C		1	1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Sighting Records	Specimen Records
plants	higher dicots	Asteraceae	Epaltes australis	spreading nutheads		C		1	0
plants	higher dicots	Asteraceae	Euchiton sphaericus			C		1	0
plants	higher dicots	Asteraceae	Flaveria trinervia		Y			1	1
plants	higher dicots	Asteraceae	Gamochaeta pensylvanica		Y			1	1
plants	higher dicots	Asteraceae	Glossocardia bidens	native cobbler's pegs		C		1	0
plants	higher dicots	Asteraceae	Gnaphalium polycaulon		Y			1	1
plants	higher dicots	Asteraceae	Helianthus annuus		Y			1	1
plants	higher dicots	Asteraceae	Leiocarpa brevicompta			C		3	3
plants	higher dicots	Asteraceae	Minuria integerrima	smooth minuria		C		2	1
plants	higher dicots	Asteraceae	Olearia canescens			C		5	2
plants	higher dicots	Asteraceae	Parthenium hysterophorus	parthenium weed	Y			1	1
plants	higher dicots	Asteraceae	Podolepis longipedata	tall copper-wire daisy		C		1	1
plants	higher dicots	Asteraceae	Pterocaulon redolens			C		1	0
plants	higher dicots	Asteraceae	Pterocaulon sphacelatum	applebush		C		1	0
plants	higher dicots	Asteraceae	Pycnosorus chrysanthus	golden billy buttons		C		1	1
plants	higher dicots	Asteraceae	Rutidosia murchisonii			C		1	1
plants	higher dicots	Asteraceae	Senecio brigalowensis			C		1	1
plants	higher dicots	Asteraceae	Senecio pinnatifolius var. pinnatifolius			C		1	0
plants	higher dicots	Asteraceae	Sigesbeckia orientalis	Indian weed		C		1	0
plants	higher dicots	Asteraceae	Sonchus oleraceus	common sowthistle	Y			1	1
plants	higher dicots	Asteraceae	Tridax procumbens	tridax daisy	Y			1	1
plants	higher dicots	Asteraceae	Vittadinia dissecta var. dissecta			C		1	1
plants	higher dicots	Asteraceae	Vittadinia dissecta var. hirta			C		2	0
plants	higher dicots	Asteraceae	Vittadinia pterochaeta	rough fuzzweed		C		2	2
plants	higher dicots	Asteraceae	Vittadinia pustulata			C		1	0
plants	higher dicots	Asteraceae	Vittadinia sulcata	native daisy		C		3	1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Sighting Records	Specimen Records
plants	higher dicots	Asteraceae	Wedelia spilanthoides			C		2	2
plants	higher dicots	Asteraceae	Xanthium occidentale		Y			1	0
plants	higher dicots	Asteraceae	Xanthium spinosum	Bathurst burr	Y			1	1
plants	higher dicots	Asteraceae	Zinnia peruviana	wild zinnia	Y			1	1
plants	higher dicots	Bignoniaceae	Macfadyena unguis-cati	cat's claw creeper	Y			1	1
plants	higher dicots	Bignoniaceae	Pandorea pandorana	wonga vine		C		6	0
plants	higher dicots	Bignoniaceae	Tecoma stans var. stans		Y			1	1
plants	higher dicots	Boraginaceae	Echium plantagineum	Paterson's curse	Y			1	1
plants	higher dicots	Boraginaceae	Ehretia membranifolia	weeping koda		C		3	0
plants	higher dicots	Boraginaceae	Heliotropium europaeum	common heliotrope	Y			1	1
plants	higher dicots	Brassicaceae	Lepidium bonariense	Argentine peppergrass	Y			2	1
plants	higher dicots	Brassicaceae	Lepidium didymum		Y			1	1
plants	higher dicots	Brassicaceae	Rapistrum rugosum		Y			2	2
plants	higher dicots	Brassicaceae	Rorippa eustylis			C		2	1
plants	higher dicots	Brassicaceae	Rorippa laciniata			C		1	1
plants	higher dicots	Brassicaceae	Sisymbrium irio	london rocket	Y			1	1
plants	higher dicots	Brassicaceae	Sisymbrium thellungii	African turnip-weed	Y			3	3
plants	higher dicots	Cactaceae	Opuntia aurantiaca	tiger pear	Y			1	0
plants	higher dicots	Cactaceae	Opuntia tomentosa	velvety tree pear	Y			11	0
plants	higher dicots	Caesalpiniaceae	Labichea digitata			C		2	1
plants	higher dicots	Caesalpiniaceae	Lysiphyllum carronii	ebony tree		C		2	0
plants	higher dicots	Caesalpiniaceae	Parkinsonia aculeata	Jerusalem thorn	Y			1	0
plants	higher dicots	Caesalpiniaceae	Senna aciphylla	Australian senna		C		1	1
plants	higher dicots	Caesalpiniaceae	Senna barclayana			C		2	0
plants	higher dicots	Caesalpiniaceae	Senna glutinosa subsp. glutinosa			C		1	0
plants	higher dicots	Caesalpiniaceae	Senna planitiicola			C		1	0

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Sighting Records	Specimen Records
plants	higher dicots	Campanulaceae	Wahlenbergia graniticola	granite bluebell		C		6	1
plants	higher dicots	Capparaceae	Apophyllum anomalum	broom bush		C		1	0
plants	higher dicots	Capparaceae	Capparis			C		6	0
plants	higher dicots	Capparaceae	Capparis arborea	brush caper berry		C		1	0
plants	higher dicots	Capparaceae	Capparis canescens			C		6	1
plants	higher dicots	Capparaceae	Capparis lasiantha	nipan		C		2	0
plants	higher dicots	Capparaceae	Capparis loranthifolia			C		2	2
plants	higher dicots	Capparaceae	Capparis loranthifolia var. bancroftii			C		2	0
plants	higher dicots	Capparaceae	Capparis mitchellii			C		6	1
plants	higher dicots	Caryophyllaceae	Stellaria angustifolia	swamp starwort		C		1	1
plants	higher dicots	Casuarinaceae	Allocasuarina luehmannii	bull oak		C		3	0
plants	higher dicots	Casuarinaceae	Casuarina cristata	belah		C		9	1
plants	higher dicots	Celastraceae	Elaeodendron australe			C		1	0
plants	higher dicots	Celastraceae	Elaeodendron australe var. integrifolium			C		2	0
plants	higher dicots	Celastraceae	Maytenus cunninghamii	yellow berry bush		C		3	1
plants	higher dicots	Celastraceae	Maytenus disperma	orange boxwood		C		2	0
plants	higher dicots	Celastraceae	Maytenus silvestris	narrow-leaved orange bark		C		2	0
plants	higher dicots	Celastraceae	Siphonodon australis	ivorywood		C		1	0
plants	higher dicots	Chenopodiaceae	Atriplex muelleri	lagoon saltbush		C		2	2
plants	higher dicots	Chenopodiaceae	Atriplex semibaccata	creeping saltbush		C		1	1
plants	higher dicots	Chenopodiaceae	Chenopodium carinatum	green crumbweed		C		2	1
plants	higher dicots	Chenopodiaceae	Chenopodium desertorum subsp. anidiophyllum			C		1	0
plants	higher dicots	Chenopodiaceae	Einadia hastata			C		4	0
plants	higher dicots	Chenopodiaceae	Einadia nutans			C		3	0
plants	higher dicots	Chenopodiaceae	Einadia nutans subsp. linifolia			C		1	0
plants	higher dicots	Chenopodiaceae	Einadia nutans subsp. nutans			C		4	1

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plants	higher dicots	Chenopodiaceae	Einadia polygonoides	knotweed goosefoot		C		1	0
plants	higher dicots	Chenopodiaceae	Enchylaena tomentosa			C		5	0
plants	higher dicots	Chenopodiaceae	Maireana microphylla			C		6	1
plants	higher dicots	Chenopodiaceae	Rhagodia spinescens	thorny saltbush		C		2	1
plants	higher dicots	Chenopodiaceae	Salsola kali			C		1	0
plants	higher dicots	Chenopodiaceae	Sclerolaena birchii	galvanised burr		C		4	2
plants	higher dicots	Chenopodiaceae	Sclerolaena calcarata	red burr		C		1	1
plants	higher dicots	Chenopodiaceae	Sclerolaena diacantha	grey copper burr		C		1	0
plants	higher dicots	Convolvulaceae	Convolvulus arvensis		Y			1	1
plants	higher dicots	Convolvulaceae	Convolvulus graminetinus			C		1	1
plants	higher dicots	Convolvulaceae	Cuscuta campestris	dodder	Y			1	1
plants	higher dicots	Convolvulaceae	Evolvulus alsinoides			C		1	0
plants	higher dicots	Convolvulaceae	Evolvulus alsinoides var. villosicalyx			C		1	0
plants	higher dicots	Convolvulaceae	Ipomoea			C		1	0
plants	higher dicots	Convolvulaceae	Polymeria pusilla			C		1	1
plants	higher dicots	Crassulaceae	Bryophyllum fedtschenkoi		Y			1	1
plants	higher dicots	Crassulaceae	Bryophyllum x houghtonii		Y			1	1
plants	higher dicots	Crassulaceae	Graptopetalum paraguayense subsp. paraguayense		Y			1	1
plants	higher dicots	Cucurbitaceae	Diplocyclos palmatus subsp. palmatus			C		1	0
plants	higher dicots	Dilleniaceae	Hibbertia cistoidea			C		1	1
plants	higher dicots	Droseraceae	Drosera peltata	pale sundew		C		1	1
plants	higher dicots	Ebenaceae	Diospyros humilis	small-leaved ebony		C		4	0
plants	higher dicots	Ericaceae	Agiortia pleiosperma			C		1	1
plants	higher dicots	Ericaceae	Leucopogon mitchellii			C		1	1
plants	higher dicots	Ericaceae	Lissanthe pluriloculata			C		2	2
plants	higher dicots	Ericaceae	Melichrus urceolatus	honey gorse		C		1	1

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plants	higher dicots	Erythroxylaceae	Erythroxylum australe	cocaine tree		C		1	0
plants	higher dicots	Erythroxylaceae	Erythroxylum sp. (Splityard Creek L.Pedley 5360)			C		1	0
plants	higher dicots	Euphorbiaceae	Acalypha capillipes	small-leaved acalypha		C		2	0
plants	higher dicots	Euphorbiaceae	Acalypha eremorum	soft acalypha		C		4	1
plants	higher dicots	Euphorbiaceae	Bertya oleifolia			C		2	2
plants	higher dicots	Euphorbiaceae	Chamaesyce dallachyana	mat spurge		C		3	2
plants	higher dicots	Euphorbiaceae	Chamaesyce maculata		Y			1	1
plants	higher dicots	Euphorbiaceae	Chamaesyce prostrata	red caustic weed	Y			1	1
plants	higher dicots	Euphorbiaceae	Croton insularis	Queensland cascarilla		C		12	0
plants	higher dicots	Euphorbiaceae	Croton phebaloides	narrow-leaved croton		C		4	0
plants	higher dicots	Euphorbiaceae	Euphorbia			C		1	0
plants	higher dicots	Euphorbiaceae	Euphorbia tannensis subsp. eremophila			C		2	2
plants	higher dicots	Fabaceae	Crotalaria montana			C		1	0
plants	higher dicots	Fabaceae	Daviesia filipes			C		1	1
plants	higher dicots	Fabaceae	Desmodium brachypodium	large ticktrefoil		C		1	1
plants	higher dicots	Fabaceae	Desmodium varians	slender tick trefoil		C		4	0
plants	higher dicots	Fabaceae	Glycine clandestina			C		1	0
plants	higher dicots	Fabaceae	Glycine clandestina var. sericea			C		3	0
plants	higher dicots	Fabaceae	Glycine tabacina	glycine pea		C		2	0
plants	higher dicots	Fabaceae	Glycine tomentella	woolly glycine		C		1	0
plants	higher dicots	Fabaceae	Hovea longipes	brush hovea		C		2	0
plants	higher dicots	Fabaceae	Hovea parvicalyx			C		1	1
plants	higher dicots	Fabaceae	Indigofera australis subsp. australis			C		1	1
plants	higher dicots	Fabaceae	Indigofera pratensis			C		1	0
plants	higher dicots	Fabaceae	Macroptilium lathyroides		Y			1	0
plants	higher dicots	Fabaceae	Medicago minima var. minima		Y			1	1

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plants	higher dicots	Fabaceae	Medicago polymorpha	burr medic	Y			1	1
plants	higher dicots	Fabaceae	Melilotus indicus	hexham scent	Y			4	4
plants	higher dicots	Fabaceae	Rhynchosia minima var. australis			C		1	1
plants	higher dicots	Fabaceae	Sesbania cannabina			C		1	0
plants	higher dicots	Fabaceae	Sesbania cannabina var. cannabina			C		1	1
plants	higher dicots	Fabaceae	Swainsona luteola	dwarf darling pea		C		1	0
plants	higher dicots	Fabaceae	Swainsona queenslandica			C		1	1
plants	higher dicots	Geraniaceae	Erodium crinitum	blue crowfoot		C		2	2
plants	higher dicots	Goodeniaceae	Dampiera discolor			C		4	1
plants	higher dicots	Goodeniaceae	Goodenia delicata			C		1	0
plants	higher dicots	Goodeniaceae	Goodenia fascicularis			C		2	0
plants	higher dicots	Goodeniaceae	Goodenia glabra			C		1	0
plants	higher dicots	Goodeniaceae	Scaevola spinescens	prickly fan flower		C		1	1
plants	higher dicots	Haloragaceae	Myriophyllum verrucosum	water milfoil		C		1	1
plants	higher dicots	Lamiaceae	Basilicum polystachyon			C		2	2
plants	higher dicots	Lamiaceae	Mentha diemenica	native mint		C		1	0
plants	higher dicots	Lamiaceae	Salvia plebeia	common sage		C		1	1
plants	higher dicots	Lamiaceae	Spartothamnella juncea	native broom		C		7	1
plants	higher dicots	Lamiaceae	Spartothamnella puberula			C		1	1
plants	higher dicots	Lamiaceae	Westringia cheelii			C		1	1
plants	higher dicots	Lentibulariaceae	Utricularia dichotoma	fairy aprons		C		2	0
plants	higher dicots	Lentibulariaceae	Utricularia gibba	floating bladderwort		C		2	0
plants	higher dicots	Loranthaceae	Amyema biniflora			C		1	1
plants	higher dicots	Loranthaceae	Amyema miquelii			C		1	1
plants	higher dicots	Loranthaceae	Amyema quandang var. bancroftii	broad-leaved grey mistletoe		C		1	1
plants	higher dicots	Loranthaceae	Lysiana subfalcata			C		1	1

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plants	higher dicots	Lythraceae	Ammannia multiflora	jerry-jerry		C		1	1
plants	higher dicots	Malvaceae	Abutilon otocarpum			C		1	0
plants	higher dicots	Malvaceae	Abutilon oxycarpum			C		6	0
plants	higher dicots	Malvaceae	Abutilon oxycarpum forma oxycarpum			C		1	0
plants	higher dicots	Malvaceae	Abutilon oxycarpum var. oxycarpum			C		3	0
plants	higher dicots	Malvaceae	Hibiscus brachysiphonius			C		1	1
plants	higher dicots	Malvaceae	Hibiscus sturtii			C		2	0
plants	higher dicots	Malvaceae	Hibiscus sturtii var. sturtii			C		3	0
plants	higher dicots	Malvaceae	Malva parviflora	small-flowered mallow	Y			1	1
plants	higher dicots	Malvaceae	Malvastrum americanum var. americanum		Y			3	1
plants	higher dicots	Malvaceae	Malvastrum coromandelianum	prickly malvastrum	Y			1	0
plants	higher dicots	Malvaceae	Sida			C		2	0
plants	higher dicots	Malvaceae	Sida cordifolia		Y			1	0
plants	higher dicots	Malvaceae	Sida hackettiana			C		2	0
plants	higher dicots	Malvaceae	Sida rhombifolia		Y			1	0
plants	higher dicots	Malvaceae	Sida spinosa	spiny sida	Y			1	0
plants	higher dicots	Malvaceae	Sida trichopoda			C		1	0
plants	higher dicots	Meliaceae	Owenia acidula	emu apple		C		5	0
plants	higher dicots	Meliaceae	Owenia venosa	crow's apple		C		1	0
plants	higher dicots	Mimosaceae	Acacia bancroftiorum			C		1	1
plants	higher dicots	Mimosaceae	Acacia bidwillii			C		1	0
plants	higher dicots	Mimosaceae	Acacia buxifolia subsp. pubiflora			C		1	1
plants	higher dicots	Mimosaceae	Acacia conferta			C		2	1
plants	higher dicots	Mimosaceae	Acacia crassa			C		1	0
plants	higher dicots	Mimosaceae	Acacia crassa subsp. crassa			C		3	0
plants	higher dicots	Mimosaceae	Acacia crassa subsp. longicoma			C		11	1

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plants	higher dicots	Mimosaceae	Acacia decora	pretty wattle		C		2	2
plants	higher dicots	Mimosaceae	Acacia excelsa subsp. excelsa			C		3	1
plants	higher dicots	Mimosaceae	Acacia farnesiana	mimosa bush	Y			1	0
plants	higher dicots	Mimosaceae	Acacia fasciculifera	scaly bark		C		2	1
plants	higher dicots	Mimosaceae	Acacia harpophylla	brigalow		C		9	0
plants	higher dicots	Mimosaceae	Acacia implexa	lightwood		C		1	1
plants	higher dicots	Mimosaceae	Acacia jucunda			C		4	0
plants	higher dicots	Mimosaceae	Acacia leiocalyx subsp. leiocalyx			C		3	3
plants	higher dicots	Mimosaceae	Acacia longispicata			C		2	2
plants	higher dicots	Mimosaceae	Acacia melvillei			C		3	3
plants	higher dicots	Mimosaceae	Acacia oswaldii	miljee		C		1	1
plants	higher dicots	Mimosaceae	Acacia pendula	myall		C		1	0
plants	higher dicots	Mimosaceae	Acacia podalyriifolia	Queensland silver wattle		C		1	0
plants	higher dicots	Mimosaceae	Acacia salicina	doolan		C		4	1
plants	higher dicots	Mimosaceae	Acacia shirleyi	lancewood		C		38	1
plants	higher dicots	Mimosaceae	Acacia sparsiflora			C		2	0
plants	higher dicots	Mimosaceae	Acacia spectabilis	pilliga wattle		C		1	1
plants	higher dicots	Mimosaceae	Acacia stenophylla	belalie		C		2	1
plants	higher dicots	Mimosaceae	Acacia triptera			C		1	1
plants	higher dicots	Mimosaceae	Leucaena leucocephala subsp. glabrata		Y			1	1
plants	higher dicots	Mimosaceae	Neptunia gracilis forma gracilis			C		2	2
plants	higher dicots	Molluginaceae	Glinus lotoides	hairy carpet weed		C		2	1
plants	higher dicots	Moraceae	Ficus platypoda			C		2	0
plants	higher dicots	Moraceae	Ficus virens var. sublanceolata			C		6	0
plants	higher dicots	Moraceae	Trophis scandens			C		1	0
plants	higher dicots	Moraceae	Trophis scandens subsp. scandens			C		1	0

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plants	higher dicots	Myoporaceae	Eremophila debilis	winter apple		C		2	0
plants	higher dicots	Myoporaceae	Eremophila deserti			C		6	2
plants	higher dicots	Myoporaceae	Eremophila mitchellii			C		12	1
plants	higher dicots	Myoporaceae	Myoporum			C		1	1
plants	higher dicots	Myoporaceae	Myoporum acuminatum	coastal boobialla		C		1	0
plants	higher dicots	Myrtaceae	Calytrix tetragona	fringe myrtle		C		3	2
plants	higher dicots	Myrtaceae	Corymbia citriodora	spotted gum		C		1	0
plants	higher dicots	Myrtaceae	Corymbia citriodora subsp. variegata			C		46	3
plants	higher dicots	Myrtaceae	Corymbia clarksoniana			C		1	1
plants	higher dicots	Myrtaceae	Corymbia intermedia	pink bloodwood		C		1	1
plants	higher dicots	Myrtaceae	Corymbia tessellaris	Moreton Bay ash		C		4	3
plants	higher dicots	Myrtaceae	Eucalyptus apothalassica			C		4	1
plants	higher dicots	Myrtaceae	Eucalyptus beaniana			V	V	25	0
plants	higher dicots	Myrtaceae	Eucalyptus camaldulensis			C		1	0
plants	higher dicots	Myrtaceae	Eucalyptus cambageana	Dawson gum		C		1	1
plants	higher dicots	Myrtaceae	Eucalyptus chloroclada	Baradine red gum		C		2	2
plants	higher dicots	Myrtaceae	Eucalyptus coolabah	coolabah		C		1	1
plants	higher dicots	Myrtaceae	Eucalyptus crebra	narrow-leaved red ironbark		C		10	3
plants	higher dicots	Myrtaceae	Eucalyptus decorticans			C		2	2
plants	higher dicots	Myrtaceae	Eucalyptus drepanophylla			C		4	2
plants	higher dicots	Myrtaceae	Eucalyptus exserta	Queensland peppermint		C		1	0
plants	higher dicots	Myrtaceae	Eucalyptus fibrosa subsp. fibrosa			C		1	1
plants	higher dicots	Myrtaceae	Eucalyptus fibrosa subsp. nubila			C		2	2
plants	higher dicots	Myrtaceae	Eucalyptus melanophloia			C		1	0
plants	higher dicots	Myrtaceae	Eucalyptus melliodora	yellow box		C		1	0
plants	higher dicots	Myrtaceae	Eucalyptus orgadophila	mountain coolibah		C		1	1

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plants	higher dicots	Myrtaceae	Eucalyptus panda			C		1	1
plants	higher dicots	Myrtaceae	Eucalyptus populnea	poplar box		C		3	2
plants	higher dicots	Myrtaceae	Eucalyptus rhombica			C		1	0
plants	higher dicots	Myrtaceae	Eucalyptus tereticornis subsp. tereticornis			C		46	3
plants	higher dicots	Myrtaceae	Eucalyptus tholiformis			C		1	1
plants	higher dicots	Myrtaceae	Eucalyptus thozetiana			C		1	1
plants	higher dicots	Myrtaceae	Kardomia jucunda			C		4	3
plants	higher dicots	Myrtaceae	Kunzea opposita			C		4	1
plants	higher dicots	Myrtaceae	Melaleuca linariifolia	snow-in summer		C		25	0
plants	higher dicots	Myrtaceae	Melaleuca thymifolia	thyme honeymyrtle		C		1	0
plants	higher dicots	Myrtaceae	Micromyrtus carinata	Gurulmundi heath-myrtle		E		1	1
plants	higher dicots	Nyctaginaceae	Boerhavia dominii			C		3	1
plants	higher dicots	Oleaceae	Jasminum			C		1	0
plants	higher dicots	Oleaceae	Jasminum didymum subsp. lineare			C		3	0
plants	higher dicots	Oleaceae	Jasminum didymum subsp. racemosum			C		3	1
plants	higher dicots	Oleaceae	Jasminum simplicifolium subsp. australiense			C		6	0
plants	higher dicots	Oleaceae	Notelaea microcarpa			C		6	0
plants	higher dicots	Oleaceae	Notelaea microcarpa var. microcarpa			C		6	0
plants	higher dicots	Oleaceae	Olea europaea subsp. europaea		Y			1	1
plants	higher dicots	Oxalidaceae	Oxalis corniculata		Y			2	0
plants	higher dicots	Oxalidaceae	Oxalis radicata			C		1	1
plants	higher dicots	Phyllanthaceae	Phyllanthus virgatus			C		1	0
plants	higher dicots	Picrodendraceae	Petalostigma pachyphyllum			C		1	0
plants	higher dicots	Picrodendraceae	Petalostigma pubescens	quinine tree		C		5	0
plants	higher dicots	Pittosporaceae	Auranticarpa rhombifolia			C		3	1

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plants	higher dicots	Pittosporaceae	Bursaria incana			C		2	0
plants	higher dicots	Pittosporaceae	Bursaria spinosa subsp. spinosa			C		4	0
plants	higher dicots	Pittosporaceae	Pittosporum angustifolium			C		1	1
plants	higher dicots	Pittosporaceae	Pittosporum lancifolium			C		2	0
plants	higher dicots	Pittosporaceae	Pittosporum spinescens			C		7	0
plants	higher dicots	Plantaginaceae	Plantago cunninghamii	sago weed		C		2	1
plants	higher dicots	Polygonaceae	Emex australis		Y			3	2
plants	higher dicots	Polygonaceae	Muehlenbeckia florulenta	lignum		C		1	1
plants	higher dicots	Polygonaceae	Rumex tenax			C		2	1
plants	higher dicots	Portulacaceae	Portulaca oleracea	pigweed	Y			1	0
plants	higher dicots	Portulacaceae	Portulaca pilosa subsp. pilosa		Y			1	0
plants	higher dicots	Proteaceae	Grevillea floribunda subsp. floribunda			C		2	2
plants	higher dicots	Proteaceae	Grevillea striata	beefwood		C		2	0
plants	higher dicots	Proteaceae	Hakea lorea subsp. lorea			C		2	1
plants	higher dicots	Rhamnaceae	Alphitonia excelsa	soap tree		C		8	1
plants	higher dicots	Rhamnaceae	Ventilago viminalis	supplejack		C		2	1
plants	higher dicots	Rubiaceae	Asperula conferta			C		1	1
plants	higher dicots	Rubiaceae	Cyclophyllum coprosmoides			C		1	0
plants	higher dicots	Rubiaceae	Cyclophyllum coprosmoides var. coprosmoides			C		1	1
plants	higher dicots	Rubiaceae	Pomax umbellata			C		1	0
plants	higher dicots	Rubiaceae	Psyrax johnsonii			C		4	1
plants	higher dicots	Rubiaceae	Psyrax odorata			C		5	0
plants	higher dicots	Rubiaceae	Psyrax odorata forma buxifolia			C		1	0
plants	higher dicots	Rubiaceae	Psyrax oleifolia			C		2	1
plants	higher dicots	Rubiaceae	Richardia brasiliensis	white eye	Y			1	0
plants	higher dicots	Rubiaceae	Spermacoce multicaulis			C		2	2

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plants	higher dicots	Rubiaceae	Triflorensia ixoroides			C		1	0
plants	higher dicots	Rutaceae	Acronychia pauciflora	soft acronychia		C		1	0
plants	higher dicots	Rutaceae	Boronia bipinnata	rock boronia		C		1	0
plants	higher dicots	Rutaceae	Boronia glabra			C		2	1
plants	higher dicots	Rutaceae	Boronia occidentalis			C		1	1
plants	higher dicots	Rutaceae	Citrus glauca			C		4	0
plants	higher dicots	Rutaceae	Flindersia australis	crow's ash		C		3	0
plants	higher dicots	Rutaceae	Flindersia collina	broad-leaved leopard tree		C		1	0
plants	higher dicots	Rutaceae	Geijera parviflora	wilga		C		15	1
plants	higher dicots	Rutaceae	Geijera salicifolia	brush wilga		C		1	0
plants	higher dicots	Rutaceae	Phebalium squamulosum subsp. gracile			C		2	1
plants	higher dicots	Salicaceae	Salix babylonica	weeping willow	Y			2	1
plants	higher dicots	Santalaceae	Anthobolus leptomerioides			C		3	3
plants	higher dicots	Santalaceae	Santalum lanceolatum			C		3	1
plants	higher dicots	Sapindaceae	Alectryon connatus	grey birds-eye		C		2	0
plants	higher dicots	Sapindaceae	Alectryon diversifolius	scrub boonaree		C		10	1
plants	higher dicots	Sapindaceae	Alectryon oleifolius			C		2	0
plants	higher dicots	Sapindaceae	Alectryon oleifolius subsp. elongatus			C		3	0
plants	higher dicots	Sapindaceae	Atalaya hemiglauca			C		6	2
plants	higher dicots	Sapindaceae	Dodonaea peduncularis			C		1	1
plants	higher dicots	Sapindaceae	Dodonaea triangularis			C		3	0
plants	higher dicots	Sapindaceae	Dodonaea viscosa subsp. spatulata			C		3	0
plants	higher dicots	Sapindaceae	Elattostachys xylocarpa	white tamarind		C		1	1
plants	higher dicots	Sapotaceae	Planchonella cotinifolia			C		4	1
plants	higher dicots	Sapotaceae	Planchonella pubescens			C		1	1
plants	higher dicots	Scrophulariaceae	Mimulus			C		2	2

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plants	higher dicots	Solanaceae	Datura ferox	fierce thornapple	Y			1	1
plants	higher dicots	Solanaceae	Nicotiana forsteri			C		1	1
plants	higher dicots	Solanaceae	Nicotiana megalosiphon subsp. megalosiphon			C		3	3
plants	higher dicots	Solanaceae	Physalis lanceifolia		Y			1	1
plants	higher dicots	Solanaceae	Solanum aviculare	kangaroo apple		C		1	0
plants	higher dicots	Solanaceae	Solanum coracinum			C		1	1
plants	higher dicots	Solanaceae	Solanum ellipticum	potato bush		C		4	3
plants	higher dicots	Solanaceae	Solanum ferocissimum			C		1	1
plants	higher dicots	Solanaceae	Solanum jucundum			C		2	2
plants	higher dicots	Solanaceae	Solanum mitchellianum			C		2	2
plants	higher dicots	Solanaceae	Solanum nemophilum			C		4	1
plants	higher dicots	Solanaceae	Solanum parvifolium			C		7	0
plants	higher dicots	Solanaceae	Solanum parvifolium subsp. parvifolium			C		2	2
plants	higher dicots	Solanaceae	Solanum semiaratum	prickly nightshade		C		7	0
plants	higher dicots	Sparrmanniaceae	Grewia latifolia	dysentery plant		C		3	1
plants	higher dicots	Stackhousiaceae	Stackhousia muricata			C		1	0
plants	higher dicots	Stackhousiaceae	Stackhousia viminea	slender stackhousia		C		3	1
plants	higher dicots	Sterculiaceae	Brachychiton australis	broad-leaved bottle tree		C		4	0
plants	higher dicots	Sterculiaceae	Brachychiton populneus			C		1	0
plants	higher dicots	Sterculiaceae	Brachychiton populneus subsp. trilobus			C		1	0
plants	higher dicots	Sterculiaceae	Brachychiton rupestris			C		14	0
plants	higher dicots	Surianaceae	Cadellia pentastylis	ooline		V	V	31	5
plants	higher dicots	Urticaceae	Urtica urens	small nettle	Y			1	1
plants	higher dicots	Verbenaceae	Phyla canescens		Y			1	1
plants	higher dicots	Verbenaceae	Verbena aristigera	Mayne's pest	Y			5	1
plants	higher dicots	Verbenaceae	Verbena halei		Y			1	1

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plants	higher dicots	Verbenaceae	Verbena litoralis	verbena	Y			1	0
plants	higher dicots	Viscaceae	Viscum articulatum	flat mistletoe		C		1	1
plants	higher dicots	Viscaceae	Viscum whitei subsp. whitei			C		1	1
plants	higher dicots	Vitaceae	Cayratia clematidea	slender grape		C		1	1
plants	higher dicots	Vitaceae	Clematicissus opaca			C		1	1
plants	higher dicots	Zygophyllaceae	Roepera apiculata			C		1	1
plants	higher dicots	Zygophyllaceae	Tribulus micrococcus	yellow vine		C		1	1
plants	lower dicots	Menispermaceae	Tinospora smilacina	snakevine		C		1	0
plants	lower dicots	Nymphaeaceae	Nymphaea gigantea			C		1	0
plants	lower dicots	Papaveraceae	Argemone ochroleuca subsp. ochroleuca	Mexican poppy	Y			1	1
plants	lower dicots	Papaveraceae	Fumaria officinalis subsp. officinalis		Y			1	1
plants	lower dicots	Papaveraceae	Papaver aculeatum	bristle poppy	Y			1	1
plants	lower dicots	Ranunculaceae	Clematis decipiens			C		1	1
plants	lower dicots	Ranunculaceae	Clematis microphylla			C		2	2
plants	monocots	Alismataceae	Echinodorus cordifolius subsp. cordifolius		Y			1	1
plants	monocots	Commelinaceae	Commelina			C		1	0
plants	monocots	Commelinaceae	Murdannia graminea	murdannia		C		2	0
plants	monocots	Cyperaceae	Abildgaardia ovata			C		1	1
plants	monocots	Cyperaceae	Baumea juncea	bare twigrush		C		2	1
plants	monocots	Cyperaceae	Baumea rubiginosa	soft twigrush		C		1	0
plants	monocots	Cyperaceae	Carex appressa			C		1	1
plants	monocots	Cyperaceae	Carex inversa	knob sedge		C		1	1
plants	monocots	Cyperaceae	Cyperus			C		2	0
plants	monocots	Cyperaceae	Cyperus betchei subsp. betchei			C		1	1
plants	monocots	Cyperaceae	Cyperus concinnus			C		2	1
plants	monocots	Cyperaceae	Cyperus difformis	rice sedge		C		1	0

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plants	monocots	Cyperaceae	Cyperus exaltatus	tall flatsedge		C		2	1
plants	monocots	Cyperaceae	Cyperus gracilis			C		6	1
plants	monocots	Cyperaceae	Cyperus laevigatus			C		5	1
plants	monocots	Cyperaceae	Cyperus perangustus			C		1	1
plants	monocots	Cyperaceae	Cyperus pygmaeus	dwarf sedge		C		1	1
plants	monocots	Cyperaceae	Cyperus rotundus	nutgrass	Y			1	1
plants	monocots	Cyperaceae	Cyperus sanguinolentus			C		3	0
plants	monocots	Cyperaceae	Cyperus squarrosus	bearded flatsedge		C		1	1
plants	monocots	Cyperaceae	Cyperus tuberosus		Y			1	1
plants	monocots	Cyperaceae	Eleocharis			C		1	0
plants	monocots	Cyperaceae	Eleocharis pallens	pale spikerush		C		1	1
plants	monocots	Cyperaceae	Eleocharis plana	ribbed spikerush		C		1	1
plants	monocots	Cyperaceae	Eleocharis pusilla	small spikerush		C		1	1
plants	monocots	Cyperaceae	Fimbristylis ferruginea			C		3	1
plants	monocots	Cyperaceae	Gahnia aspera			C		4	0
plants	monocots	Cyperaceae	Schoenoplectus validus			C		2	0
plants	monocots	Cyperaceae	Schoenus falcatus			C		1	0
plants	monocots	Cyperaceae	Schoenus kennyi			C		1	0
plants	monocots	Cyperaceae	Scleria mackaviensis			C		3	1
plants	monocots	Cyperaceae	Scleria sphacelata			C		7	4
plants	monocots	Eriocaulaceae	Eriocaulon carsonii			E	E	3	0
plants	monocots	Eriocaulaceae	Eriocaulon carsonii subsp. orientale			E		1	1
plants	monocots	Hemerocallidaceae	Dianella caerulea			C		1	0
plants	monocots	Hemerocallidaceae	Dianella longifolia var. longifolia			C		1	0
plants	monocots	Hemerocallidaceae	Dianella rara			C		2	0
plants	monocots	Hemerocallidaceae	Dianella revoluta var. revoluta			C		3	0

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plants	monocots	Johnsoniaceae	Tricoryne anceps subsp. anceps			C		1	0
plants	monocots	Johnsoniaceae	Tricoryne elatior	yellow autumn lily		C		1	0
plants	monocots	Juncaceae	Juncus aridicola	tussock rush		C		2	0
plants	monocots	Juncaceae	Juncus usitatus			C		2	1
plants	monocots	Laxmanniaceae	Eustrephus latifolius	wombat berry		C		3	0
plants	monocots	Laxmanniaceae	Laxmannia gracilis	slender wire lily		C		1	0
plants	monocots	Laxmanniaceae	Lomandra			C		1	0
plants	monocots	Laxmanniaceae	Lomandra confertifolia subsp. pallida			C		1	0
plants	monocots	Laxmanniaceae	Lomandra filiformis			C		1	0
plants	monocots	Laxmanniaceae	Lomandra filiformis subsp. filiformis			C		3	0
plants	monocots	Laxmanniaceae	Lomandra leucocephala subsp. leucocephala			C		1	1
plants	monocots	Laxmanniaceae	Lomandra longifolia			C		2	0
plants	monocots	Laxmanniaceae	Lomandra multiflora subsp. multiflora			C		6	0
plants	monocots	Orchidaceae	Caladenia caerulea var. caerulea			C		1	1
plants	monocots	Orchidaceae	Cymbidium canaliculatum			C		7	1
plants	monocots	Poaceae	Ancistrachne uncinulata	hooky grass		C		12	2
plants	monocots	Poaceae	Aristida			C		1	0
plants	monocots	Poaceae	Aristida caput-medusae			C		8	1
plants	monocots	Poaceae	Aristida holathera var. holathera			C		1	0
plants	monocots	Poaceae	Aristida jerichoensis var. jerichoensis			C		1	1
plants	monocots	Poaceae	Aristida jerichoensis var. subspinulifera			C		1	0
plants	monocots	Poaceae	Aristida leichhardtiana			C		2	0
plants	monocots	Poaceae	Aristida muricata			C		2	0
plants	monocots	Poaceae	Aristida personata			C		5	0
plants	monocots	Poaceae	Aristida ramosa	purple wiregrass		C		5	3
plants	monocots	Poaceae	Aristida vagans			C		1	0

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plants	monocots	Poaceae	Arundinella nepalensis	reedgrass		C		2	1
plants	monocots	Poaceae	Austrostipa ramosissima	bamboo grass		C		1	0
plants	monocots	Poaceae	Austrostipa verticillata	slender bamboo grass		C		1	0
plants	monocots	Poaceae	Avena fatua x A.sativa		Y			1	1
plants	monocots	Poaceae	Avena ludoviciana		Y			1	1
plants	monocots	Poaceae	Bothriochloa bladhii subsp. bladhii			C		1	1
plants	monocots	Poaceae	Bothriochloa decipiens var. decipiens			C		4	0
plants	monocots	Poaceae	Brachyachne convergens	common native couch		C		2	2
plants	monocots	Poaceae	Bromus catharticus	prairie grass	Y			1	1
plants	monocots	Poaceae	Cenchrus ciliaris		Y			1	1
plants	monocots	Poaceae	Cenchrus purpurascens			C		1	1
plants	monocots	Poaceae	Chloris divaricata var. divaricata	slender chloris		C		2	0
plants	monocots	Poaceae	Chloris gayana	rhodes grass	Y			3	0
plants	monocots	Poaceae	Chloris ventricosa	tall chloris		C		2	0
plants	monocots	Poaceae	Chrysopogon fallax			C		3	1
plants	monocots	Poaceae	Cleistochloa subjuncea			C		3	2
plants	monocots	Poaceae	Cymbopogon refractus	barbed-wire grass		C		5	0
plants	monocots	Poaceae	Cynodon dactylon		Y			2	0
plants	monocots	Poaceae	Cynodon nlemfuensis var. nlemfuensis		Y			1	1
plants	monocots	Poaceae	Dichanthium sericeum subsp. sericeum			C		2	1
plants	monocots	Poaceae	Digitaria diffusa			C		1	1
plants	monocots	Poaceae	Digitaria parviflora			C		1	0
plants	monocots	Poaceae	Echinochloa colona	awnless barnyard grass	Y			1	0
plants	monocots	Poaceae	Enneapogon lindleyanus			C		5	1
plants	monocots	Poaceae	Enneapogon truncatus			C		1	0
plants	monocots	Poaceae	Enteropogon acicularis	curly windmill grass		C		2	0

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plants	monocots	Poaceae	Enteropogon unispiceus			C		3	2
plants	monocots	Poaceae	Entolasia stricta	wiry panic		C		1	0
plants	monocots	Poaceae	Eragrostis brownii	Brown's lovegrass		C		2	2
plants	monocots	Poaceae	Eragrostis lacunaria	purple lovegrass		C		10	2
plants	monocots	Poaceae	Eragrostis leptocarpa	drooping lovegrass		C		1	0
plants	monocots	Poaceae	Eragrostis setifolia			C		1	1
plants	monocots	Poaceae	Eragrostis sororia			C		2	1
plants	monocots	Poaceae	Eriachne rara			C		2	2
plants	monocots	Poaceae	Eriochloa meyeriana		Y			1	0
plants	monocots	Poaceae	Eriochloa procera	slender cupgrass		C		1	0
plants	monocots	Poaceae	Eulalia aurea	silky browntop		C		2	1
plants	monocots	Poaceae	Hemarthria uncinata var. uncinata			C		1	1
plants	monocots	Poaceae	Heteropogon contortus	black speargrass		C		1	0
plants	monocots	Poaceae	Homopholis belsonii			E	V	1	1
plants	monocots	Poaceae	Leersia hexandra	swamp rice grass		C		1	0
plants	monocots	Poaceae	Leptochloa			C		1	0
plants	monocots	Poaceae	Leptochloa decipiens subsp. asthenes			C		1	1
plants	monocots	Poaceae	Leptochloa decipiens subsp. decipiens			C		2	1
plants	monocots	Poaceae	Leptochloa decipiens subsp. peacockii			C		4	3
plants	monocots	Poaceae	Leptochloa fusca subsp. fusca			C		1	1
plants	monocots	Poaceae	Megathyrsus maximus var. pubiglumis		Y			1	1
plants	monocots	Poaceae	Panicum buncei			C		1	1
plants	monocots	Poaceae	Panicum effusum			C		3	1
plants	monocots	Poaceae	Panicum larcomianum			C		1	1
plants	monocots	Poaceae	Panicum queenslandicum			C		1	0
plants	monocots	Poaceae	Paspalidium albobillosum			C		2	2

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plants	monocots	Poaceae	Paspalidium caespitosum	brigalow grass		C		3	1
plants	monocots	Poaceae	Paspalidium constrictum			C		1	1
plants	monocots	Poaceae	Paspalidium gracile	slender panic		C		3	0
plants	monocots	Poaceae	Paspalidium jubiflorum	warrego grass		C		1	1
plants	monocots	Poaceae	Paspalum dilatatum	paspalum	Y			1	0
plants	monocots	Poaceae	Pennisetum alopecuroides	swamp foxtail		C		2	0
plants	monocots	Poaceae	Pennisetum ciliare			C		1	0
plants	monocots	Poaceae	Phragmites australis	common reed		C		3	0
plants	monocots	Poaceae	Poa fordeana	sweet swampgrass		C		1	1
plants	monocots	Poaceae	Setaria oplismenoides			C		1	1
plants	monocots	Poaceae	Sporobolus actinocladus	katoora grass		C		2	1
plants	monocots	Poaceae	Sporobolus caroli	fairy grass		C		6	3
plants	monocots	Poaceae	Sporobolus coromandelianus		Y			1	1
plants	monocots	Poaceae	Sporobolus elongatus			C		2	0
plants	monocots	Poaceae	Sporobolus partimpatens			NT		1	1
plants	monocots	Poaceae	Thellungia advena	coolibah grass		C		2	0
plants	monocots	Poaceae	Themeda triandra	kangaroo grass		C		1	0
plants	monocots	Poaceae	Triraphis mollis	purple plumegrass		C		2	2
plants	monocots	Poaceae	Urochloa mosambicensis	sabi grass	Y			2	2
plants	monocots	Typhaceae	Typha orientalis	broad-leaved cumbungi		C		1	0
plants	mosses	Dicranaceae	Sclerodontium clavinerve			C		1	1
animals	amphibians	Bufoidea	Rhinella marina	cane toad	Y			19	0
animals	amphibians	Hylidae	Cyclorana alboguttata	greenstripe frog		C		4	2
animals	amphibians	Hylidae	Cyclorana brevipes	superb collared frog		C		1	0
animals	amphibians	Hylidae	Cyclorana novaehollandiae	eastern snapping frog		C		1	0
animals	amphibians	Hylidae	Litoria caerulea	common green treefrog		C		2	0

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animals	amphibians	Hylidae	Litoria fallax	eastern sedgefrog		C		15	15
animals	amphibians	Hylidae	Litoria latopalmata	broad palmed rocketfrog		C		2	0
animals	amphibians	Hylidae	Litoria peronii	emerald spotted treefrog		C		2	0
animals	amphibians	Hylidae	Litoria rubella	ruddy treefrog		C		1	0
animals	amphibians	Hylidae	Litoria wilcoxii	eastern stony creek frog		C		2	2
animals	amphibians	Limnodynastidae	Limnodynastes fletcheri	barking frog		C		12	12
animals	amphibians	Limnodynastidae	Limnodynastes salmini	salmon striped frog		C		3	1
animals	amphibians	Limnodynastidae	Limnodynastes tasmaniensis	spotted grassfrog		C		9	5
animals	amphibians	Limnodynastidae	Limnodynastes terraereginae	scarlet sided pobblebonk		C		4	2
animals	amphibians	Limnodynastidae	Platyplectrum ornatum	ornate burrowing frog		C		4	0
animals	amphibians	Myobatrachidae	Uperoleia rugosa	chubby gungan		C		11	11
animals	birds	Acanthizidae	Acanthiza apicalis	inland thornbill		C		16	0
animals	birds	Acanthizidae	Acanthiza chrysorrhoa	yellow-rumped thornbill		C		13	0
animals	birds	Acanthizidae	Acanthiza lineata	striated thornbill		C		3	0
animals	birds	Acanthizidae	Acanthiza nana	yellow thornbill		C		18	1
animals	birds	Acanthizidae	Acanthiza pusilla	brown thornbill		C		6	0
animals	birds	Acanthizidae	Acanthiza reguloides	buff-rumped thornbill		C		6	1
animals	birds	Acanthizidae	Acanthiza uropygialis	chestnut-rumped thornbill		C		7	0
animals	birds	Acanthizidae	Chthonicola sagittata	speckled warbler		C		8	1
animals	birds	Acanthizidae	Gerygone albogularis	white-throated gerygone		C		15	1
animals	birds	Acanthizidae	Gerygone fusca	western gerygone		C		5	0
animals	birds	Acanthizidae	Sericornis frontalis	white-browed scrubwren		C		5	1
animals	birds	Acanthizidae	Smicromis brevirostris	weebill		C		42	0
animals	birds	Accipitridae	Accipiter fasciatus	brown goshawk		C		3	0
animals	birds	Accipitridae	Aquila audax	wedge-tailed eagle		C		32	0
animals	birds	Accipitridae	Aviceda subcristata	Pacific baza		C		1	0

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animals	birds	Accipitridae	Elanus axillaris	black-shouldered kite		C		7	1
animals	birds	Accipitridae	Haliaeetus leucogaster	white-bellied sea-eagle		C		1	0
animals	birds	Accipitridae	Haliastur sphenurus	whistling kite		C		17	0
animals	birds	Accipitridae	Hieraaetus morphnoides	little eagle		C		1	0
animals	birds	Accipitridae	Lophoictinia isura	square-tailed kite		NT		1	0
animals	birds	Accipitridae	Milvus migrans	black kite		C		3	0
animals	birds	Acrocephalidae	Acrocephalus australis	Australian reed-warbler		C		4	0
animals	birds	Aegothelidae	Aegotheles cristatus	Australian owl-nightjar		C		12	1
animals	birds	Alaudidae	Mirafrja javanica	Horsfield's bushlark		C		4	1
animals	birds	Alcedinidae	Ceyx azureus	azure kingfisher		C		6	0
animals	birds	Anatidae	Anas gracilis	grey teal		C		22	0
animals	birds	Anatidae	Anas rhynchotis	Australasian shoveler		C		6	0
animals	birds	Anatidae	Anas superciliosa	Pacific black duck		C		29	0
animals	birds	Anatidae	Aythya australis	hardhead		C		13	0
animals	birds	Anatidae	Chenonetta jubata	Australian wood duck		C		12	0
animals	birds	Anatidae	Cygnus atratus	black swan		C		16	0
animals	birds	Anatidae	Dendrocygna arcuata	wandering whistling-duck		C		1	0
animals	birds	Anatidae	Dendrocygna eytoni	plumed whistling-duck		C		7	0
animals	birds	Anatidae	Malacorhynchus membranaceus	pink-eared duck		C		1	0
animals	birds	Anatidae	Nettapus coromandelianus	cotton pygmy-goose		NT		6	0
animals	birds	Anatidae	Stictonetta naevosa	freckled duck		NT		2	0
animals	birds	Anhingidae	Anhinga novaehollandiae	Australasian darter		C		9	0
animals	birds	Anseranatidae	Anseranas semipalmata	magpie goose		C		2	0
animals	birds	Apodidae	Apus pacificus	fork-tailed swift		C		3	0
animals	birds	Apodidae	Hirundapus caudacutus	white-throated needletail		C		3	0
animals	birds	Ardeidae	Ardea ibis	cattle egret		C		1	0

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animals	birds	Ardeidae	Ardea intermedia	intermediate egret		C		7	0
animals	birds	Ardeidae	Ardea modesta	eastern great egret		C		14	0
animals	birds	Ardeidae	Ardea pacifica	white-necked heron		C		18	0
animals	birds	Ardeidae	Egretta garzetta	little egret		C		1	0
animals	birds	Ardeidae	Egretta novaehollandiae	white-faced heron		C		15	0
animals	birds	Ardeidae	Ixobrychus flavicollis	black bittern		C		1	0
animals	birds	Ardeidae	Nycticorax caledonicus	Nankeen night-heron		C		7	0
animals	birds	Artamidae	Artamus cyanopterus	dusky woodswallow		C		1	0
animals	birds	Artamidae	Artamus leucorhynchus	white-breasted woodswallow		C		8	1
animals	birds	Artamidae	Artamus personatus	masked woodswallow		C		1	0
animals	birds	Artamidae	Artamus superciliosus	white-browed woodswallow		C		1	0
animals	birds	Artamidae	Cracticus nigrogularis	pied butcherbird		C		32	0
animals	birds	Artamidae	Cracticus tibicen	Australian magpie		C		56	0
animals	birds	Artamidae	Cracticus torquatus	grey butcherbird		C		68	0
animals	birds	Artamidae	Strepera graculina	pied currawong		C		22	0
animals	birds	Burhinidae	Burhinus grallarius	bush stone-curlew		C		1	0
animals	birds	Cacatuidae	Cacatua galerita	sulphur-crested cockatoo		C		42	0
animals	birds	Cacatuidae	Calyptorhynchus funereus	yellow-tailed black-cockatoo		C		1	0
animals	birds	Cacatuidae	Calyptorhynchus lathami	glossy black-cockatoo		V		4	0
animals	birds	Cacatuidae	Eolophus roseicapillus	galah		C		44	0
animals	birds	Cacatuidae	Nymphicus hollandicus	cockatiel		C		25	0
animals	birds	Campephagidae	Coracina maxima	ground cuckoo-shrike		C		5	0
animals	birds	Campephagidae	Coracina novaehollandiae	black-faced cuckoo-shrike		C		33	0
animals	birds	Campephagidae	Coracina papuensis	white-bellied cuckoo-shrike		C		16	0
animals	birds	Campephagidae	Coracina tenuirostris	cicadabird		C		6	2
animals	birds	Campephagidae	Lalage leucomela	varied triller		C		1	0

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animals	birds	Campephagidae	Lalage sueurii	white-winged triller		C		7	0
animals	birds	Casuariidae	Dromaius novaehollandiae	emu		C		14	0
animals	birds	Charadriidae	Elseornis melanops	black-fronted dotterel		C		6	0
animals	birds	Charadriidae	Erythrogonys cinctus	red-kneed dotterel		C		1	0
animals	birds	Charadriidae	Vanellus miles	masked lapwing		C		3	0
animals	birds	Charadriidae	Vanellus miles miles	masked lapwing (northern subspecies)		C		1	0
animals	birds	Charadriidae	Vanellus miles novaehollandiae	masked lapwing (southern subspecies)		C		11	0
animals	birds	Charadriidae	Vanellus tricolor	banded lapwing		C		1	0
animals	birds	Ciconiidae	Ephippiorhynchus asiaticus	black-necked stork		NT		4	0
animals	birds	Cisticolidae	Cisticola exilis	golden-headed cisticola		C		3	2
animals	birds	Climacteridae	Climacteris picumnus	brown treecreeper		C		3	0
animals	birds	Climacteridae	Cormobates leucophaea	white-throated treecreeper		C		2	0
animals	birds	Columbidae	Columba livia	rock dove	Y			5	0
animals	birds	Columbidae	Geopelia cuneata	diamond dove		C		1	0
animals	birds	Columbidae	Geopelia humeralis	bar-shouldered dove		C		17	1
animals	birds	Columbidae	Geopelia striata	peaceful dove		C		23	0
animals	birds	Columbidae	Ocyphaps lophotes	crested pigeon		C		42	0
animals	birds	Columbidae	Phaps chalcoptera	common bronzewing		C		6	0
animals	birds	Coraciidae	Eurystomus orientalis	dollarbird		C		13	0
animals	birds	Corcoracidae	Corcorax melanorhamphos	white-winged chough		C		9	0
animals	birds	Corcoracidae	Struthidea cinerea	apostlebird		C		41	0
animals	birds	Corvidae	Corvus coronoides	Australian raven		C		25	2
animals	birds	Corvidae	Corvus orru	Torresian crow		C		71	1
animals	birds	Cuculidae	Cacomantis flabelliformis	fan-tailed cuckoo		C		1	0
animals	birds	Cuculidae	Cacomantis pallidus	pallid cuckoo		C		5	0
animals	birds	Cuculidae	Centropus phasianinus	pheasant coucal		C		14	0

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Sighting Records	Specimen Records
animals	birds	Cuculidae	Chalcites basal	Horsfield's bronze-cuckoo		C		4	0
animals	birds	Cuculidae	Chalcites lucidus	shining bronze-cuckoo		C		2	0
animals	birds	Cuculidae	Chalcites osculans	black-eared cuckoo		C		1	0
animals	birds	Cuculidae	Eudynamys orientalis	eastern koel		C		6	1
animals	birds	Cuculidae	Scythrops novaehollandiae	channel-billed cuckoo		C		5	0
animals	birds	Dicruridae	Dicrurus bracteatus	spangled drongo		C		5	0
animals	birds	Estrildidae	Neochmia modesta	plum-headed finch		C		3	0
animals	birds	Estrildidae	Neochmia ruficauda	star finch		E		1	0
animals	birds	Estrildidae	Stagonopleura guttata	diamond firetail		C		1	0
animals	birds	Estrildidae	Taeniopygia bichenovii	double-barred finch		C		25	0
animals	birds	Estrildidae	Taeniopygia guttata	zebra finch		C		7	1
animals	birds	Eurostopodidae	Eurostopodus mystacalis	white-throated nightjar		C		3	0
animals	birds	Falconidae	Falco berigora	brown falcon		C		11	0
animals	birds	Falconidae	Falco cenchroides	nankeen kestrel		C		19	0
animals	birds	Falconidae	Falco longipennis	Australian hobby		C		6	0
animals	birds	Falconidae	Falco peregrinus	peregrine falcon		C		1	0
animals	birds	Falconidae	Falco subniger	black falcon		C		2	0
animals	birds	Gruidae	Grus rubicunda	brlga		C		8	0
animals	birds	Halcyonidae	Dacelo novaeguineae	laughing kookaburra		C		39	0
animals	birds	Halcyonidae	Todiramphus macleayii	forest kingfisher		C		1	0
animals	birds	Halcyonidae	Todiramphus pyrrhopygius	red-backed kingfisher		C		1	0
animals	birds	Halcyonidae	Todiramphus sanctus	sacred kingfisher		C		16	0
animals	birds	Hirundinidae	Hirundo neoxena	welcome swallow		C		6	0
animals	birds	Hirundinidae	Petrochelidon ariel	fairy martin		C		11	0
animals	birds	Hirundinidae	Petrochelidon nigricans	tree martin		C		8	2
animals	birds	Jacaniidae	Irediparra gallinacea	comb-crested jacana		C		2	0

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animals	birds	Laridae	Chlidonias hybrida	whiskered tern		C		1	0
animals	birds	Maluridae	Malurus cyaneus	superb fairy-wren		C		25	0
animals	birds	Maluridae	Malurus lamberti	variegated fairy-wren		C		18	0
animals	birds	Maluridae	Malurus leucopterus	white-winged fairy-wren		C		1	0
animals	birds	Maluridae	Malurus melanocephalus	red-backed fairy-wren		C		15	1
animals	birds	Megaluridae	Cincloramphus cruralis	brown songlark		C		2	0
animals	birds	Megaluridae	Cincloramphus mathewsi	rufous songlark		C		3	0
animals	birds	Megapodiidae	Alectura lathami	Australian brush-turkey		C		5	0
animals	birds	Meliphagidae	Acanthagenys rufogularis	spiny-cheeked honeyeater		C		21	1
animals	birds	Meliphagidae	Caligavis chrysops	yellow-faced honeyeater		C		3	2
animals	birds	Meliphagidae	Entomyzon cyanotis	blue-faced honeyeater		C		19	0
animals	birds	Meliphagidae	Gavicalis virescens	singing honeyeater		C		3	0
animals	birds	Meliphagidae	Lichenostomus melanops	yellow-tufted honeyeater		C		1	0
animals	birds	Meliphagidae	Lichmera indistincta	brown honeyeater		C		16	0
animals	birds	Meliphagidae	Manorina flavigula	yellow-throated miner		C		14	3
animals	birds	Meliphagidae	Manorina melanocephala	noisy miner		C		81	0
animals	birds	Meliphagidae	Meliphaga lewinii	Lewin's honeyeater		C		6	1
animals	birds	Meliphagidae	Melithreptus albogularis	white-throated honeyeater		C		4	0
animals	birds	Meliphagidae	Melithreptus brevirostris	brown-headed honeyeater		C		3	1
animals	birds	Meliphagidae	Melithreptus gularis	black-chinned honeyeater		NT		3	0
animals	birds	Meliphagidae	Melithreptus lunatus	white-naped honeyeater		C		1	0
animals	birds	Meliphagidae	Myzomela sanguinolenta	scarlet honeyeater		C		1	0
animals	birds	Meliphagidae	Nesoptilotis leucotis	white-eared honeyeater		C		2	0
animals	birds	Meliphagidae	Philemon citreogularis	little friarbird		C		32	0
animals	birds	Meliphagidae	Philemon corniculatus	noisy friarbird		C		26	1
animals	birds	Meliphagidae	Plectorhyncha lanceolata	striped honeyeater		C		43	1

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animals	birds	Meliphagidae	Ptilotula penicillatus	white-plumed honeyeater		C		17	0
animals	birds	Meropidae	Merops ornatus	rainbow bee-eater		C		24	0
animals	birds	Monarchidae	Grallina cyanoleuca	magpie-lark		C		62	0
animals	birds	Monarchidae	Myiagra cyanoleuca	satin flycatcher		C		1	0
animals	birds	Monarchidae	Myiagra inquieta	restless flycatcher		C		15	0
animals	birds	Monarchidae	Myiagra rubecula	leaden flycatcher		C		19	2
animals	birds	Motacillidae	Anthus novaeseelandiae	Australasian pipit		C		10	3
animals	birds	Nectariniidae	Dicaeum hirundinaceum	mistletoebird		C		31	0
animals	birds	Neosittidae	Daphoenositta chrysoptera	varied sittella		C		9	0
animals	birds	Oriolidae	Oriolus sagittatus	olive-backed oriole		C		17	1
animals	birds	Oriolidae	Sphecotheres vieilloti	Australasian figbird		C		6	0
animals	birds	Otididae	Ardeotis australis	Australian bustard		C		19	0
animals	birds	Pachycephalidae	Colluricincla harmonica	grey shrike-thrush		C		30	0
animals	birds	Pachycephalidae	Falcunculus frontatus	crested shrike-tit		C		1	0
animals	birds	Pachycephalidae	Pachycephala pectoralis	golden whistler		C		1	0
animals	birds	Pachycephalidae	Pachycephala rufiventris	rufous whistler		C		42	0
animals	birds	Pardalotidae	Pardalotus punctatus	spotted pardalote		C		3	0
animals	birds	Pardalotidae	Pardalotus striatus	striated pardalote		C		48	1
animals	birds	Passeridae	Passer domesticus	house sparrow	Y			14	0
animals	birds	Pelecanidae	Pelecanus conspicillatus	Australian pelican		C		5	0
animals	birds	Petroicidae	Eopsaltria australis	eastern yellow robin		C		12	0
animals	birds	Petroicidae	Microeca fascinans	jacky winter		C		14	0
animals	birds	Petroicidae	Petroica goodenovii	red-capped robin		C		3	0
animals	birds	Phalacrocoracidae	Microcarbo melanoleucos	little pied cormorant		C		7	0
animals	birds	Phalacrocoracidae	Phalacrocorax carbo	great cormorant		C		2	0
animals	birds	Phalacrocoracidae	Phalacrocorax sulcirostris	little black cormorant		C		7	0

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animals	birds	Phalacrocoracidae	Phalacrocorax varius	pied cormorant		C		1	0
animals	birds	Phasianidae	Coturnix pectoralis	stubble quail		C		1	0
animals	birds	Phasianidae	Coturnix ypsilophora	brown quail		C		2	0
animals	birds	Podargidae	Podargus strigoides	tawny frogmouth		C		7	0
animals	birds	Podicipedidae	Podiceps cristatus	great crested grebe		C		1	0
animals	birds	Podicipedidae	Poliiocephalus poliocephalus	hoary-headed grebe		C		3	1
animals	birds	Podicipedidae	Tachybaptus novaehollandiae	Australasian grebe		C		10	0
animals	birds	Pomatostomidae	Pomatostomus temporalis	grey-crowned babbler		C		39	0
animals	birds	Psittacidae	Alisterus scapularis	Australian king-parrot		C		4	0
animals	birds	Psittacidae	Aprosmictus erythropterus	red-winged parrot		C		20	0
animals	birds	Psittacidae	Glossopsitta pusilla	little lorikeet		C		3	0
animals	birds	Psittacidae	Melopsittacus undulatus	budgerigar		C		4	0
animals	birds	Psittacidae	Northiella haematogaster	blue bonnet		C		4	1
animals	birds	Psittacidae	Platycercus adscitus	pale-headed rosella		C		36	0
animals	birds	Psittacidae	Psephotus haematonotus	red-rumped parrot		C		7	0
animals	birds	Psittacidae	Trichoglossus chlorolepidotus	scaly-breasted lorikeet		C		13	0
animals	birds	Psittacidae	Trichoglossus haematodus moluccanus	rainbow lorikeet		C		23	0
animals	birds	Ptilonorhynchidae	Ptilonorhynchus maculatus	spotted bowerbird		C		10	1
animals	birds	Rallidae	Fulica atra	Eurasian coot		C		8	0
animals	birds	Rallidae	Gallinula tenebrosa	dusky moorhen		C		14	0
animals	birds	Rallidae	Gallirallus philippensis	buff-banded rail		C		1	0
animals	birds	Rallidae	Porphyrio porphyrio	purple swampphen		C		6	0
animals	birds	Rallidae	Porzana tabuensis	spotless crane		C		1	0
animals	birds	Rallidae	Tribonyx ventralis	black-tailed native-hen		C		1	0
animals	birds	Recurvirostridae	Himantopus himantopus	black-winged stilt		C		11	0
animals	birds	Rhipiduridae	Rhipidura albiscapa	grey fantail		C		27	0

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Sighting Records	Specimen Records
animals	birds	Rhipiduridae	Rhipidura leucophrys	willie wagtail		C		56	0
animals	birds	Rhipiduridae	Rhipidura rufifrons	rufous fantail		C		2	1
animals	birds	Scolopacidae	Gallinago hardwickii	Latham's snipe		C		2	0
animals	birds	Scolopacidae	Tringa nebularia	common greenshank		C		1	0
animals	birds	Strigidae	Ninox boobook	southern boobook		C		5	1
animals	birds	Sturnidae	Sturnus vulgaris	common starling	Y			3	0
animals	birds	Threskiornithidae	Platalea flavipes	yellow-billed spoonbill		C		14	0
animals	birds	Threskiornithidae	Platalea regia	royal spoonbill		C		6	0
animals	birds	Threskiornithidae	Plegadis falcinellus	glossy ibis		C		2	0
animals	birds	Threskiornithidae	Threskiornis molucca	Australian white ibis		C		11	0
animals	birds	Threskiornithidae	Threskiornis spinicollis	straw-necked ibis		C		11	0
animals	birds	Timaliidae	Zosterops lateralis	silvereye		C		2	0
animals	birds	Turnicidae	Turnix pyrrhorthorax	red-chested button-quail		C		11	0
animals	birds	Turnicidae	Turnix sp.					1	0
animals	birds	Tytonidae	Tyto javanica	eastern barn owl		C		1	0
animals	birds	Tytonidae	Tyto tenebricosa multipunctata	lesser sooty owl		C		1	0
animals	bony fish	Ambassidae	Ambassis agassizii	Agassiz's glassfish				3	1
animals	bony fish	Anguillidae	Anguilla reinhardtii	longfin eel				2	0
animals	bony fish	Atherinidae	Craterocephalus stercusmuscarum	flyspecked hardyhead				3	1
animals	bony fish	Clupeidae	Nematalosa erebi	bony bream				5	1
animals	bony fish	Cyprinidae	Carassius auratus	goldfish	Y			2	0
animals	bony fish	Eleotridae	Hypseleotris galii	firetail gudgeon				1	0
animals	bony fish	Eleotridae	Hypseleotris klunzingeri	western carp gudgeon				2	1
animals	bony fish	Eleotridae	Hypseleotris species 1	Midgley's carp gudgeon				1	0
animals	bony fish	Eleotridae	Philypnodon grandiceps	flathead gudgeon				1	1
animals	bony fish	Melanotaeniidae	Melanotaenia splendida splendida	eastern rainbowfish				3	1

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animals	bony fish	Osteoglossidae	Scleropages leichardti	southern saratoga				6	0
animals	bony fish	Percichthyidae	Macquaria ambigua	golden perch				6	2
animals	bony fish	Plotosidae	Tandanus tandanus	freshwater catfish				6	1
animals	bony fish	Pseudomugilidae	Pseudomugil signifer	Pacific blue eye				2	0
animals	bony fish	Scorpaenidae	Notesthes robusta	bullrout				1	1
animals	bony fish	Terapontidae	Amniataba percoides	barred grunter				1	0
animals	bony fish	Terapontidae	Hephaestus fuliginosus	sooty grunter				1	0
animals	bony fish	Terapontidae	Leiopotherapon unicolor	spangled perch				4	1
animals	bony fish	Terapontidae	Scortum hillii	leathery grunter				3	2
animals	insects	Hesperiidae	Ocybadistes walkeri sothis	green grass-dart (Bassian subspecies)				2	0
animals	insects	Hesperiidae	Toxida parvulus	banded grass-skipper				1	0
animals	insects	Hesperiidae	Trapezites petalia	black-ringed ochre				1	0
animals	insects	Lycaenidae	Euchrysops cnejus cnidus	five-spotted pea-blue				1	0
animals	insects	Lycaenidae	Jalmenus daemeli	emerald hairstreak				1	0
animals	insects	Lycaenidae	Jalmenus eubulus	pale imperial hairstreak		V		3	0
animals	insects	Lycaenidae	Nacaduba berenice berenice	large purple line-blue				2	0
animals	insects	Lycaenidae	Psychonotis caelius	small green-banded blue				1	0
animals	insects	Lycaenidae	Theclinessthes miskini miskini	wattle blue (Australian subspecies)				1	0
animals	insects	Lycaenidae	Theclinessthes serpentata serpentata	salt-bush blue				2	0
animals	insects	Lycaenidae	Zizina labradus labradus	common grass-blue (Australian subspecies)				3	0
animals	insects	Nymphalidae	Acraea andromacha andromacha	glasswing				3	0
animals	insects	Nymphalidae	Danaus chrysippus petilia	lesser wanderer				5	0
animals	insects	Nymphalidae	Danaus plexippus plexippus	monarch				2	0
animals	insects	Nymphalidae	Euploea core corinna	common crow				6	0
animals	insects	Nymphalidae	Hypocysta pseudirius	grey ringlet				3	0

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animals	insects	Nymphalidae	Hypolimnias bolina nerina	varied eggfly				3	0
animals	insects	Nymphalidae	Junonia orithya albicincta	blue argus				1	0
animals	insects	Nymphalidae	Junonia villida calybe	meadow argus				4	0
animals	insects	Nymphalidae	Melanitis leda bankia	common evening-brown				3	0
animals	insects	Nymphalidae	Phaedyra shepherdii shepherdii	white-banded plane (southern subspecies)				1	0
animals	insects	Nymphalidae	Polyura sempronius sempronius	tailed emperor				2	0
animals	insects	Nymphalidae	Tirumala hamata hamata	blue tiger				1	0
animals	insects	Papilionidae	Papilio aegaeus					1	0
animals	insects	Papilionidae	Papilio aegaeus aegaeus	orchard swallowtail (Australian subspecies)				5	0
animals	insects	Papilionidae	Papilio anactus	dingy swallowtail				3	0
animals	insects	Papilionidae	Papilio demoleus sthenelus	chequered swallowtail				5	0
animals	insects	Pieridae	Belenois java teutonia	caper white				4	0
animals	insects	Pieridae	Catopsilia pomona pomona	lemon migrant				3	0
animals	insects	Pieridae	Catopsilia pyranthe crokera	white migrant				3	0
animals	insects	Pieridae	Cepora perimale					2	0
animals	insects	Pieridae	Delias argentona argentona	scarlet jezebel				2	0
animals	insects	Pieridae	Delias nysa nysa	yellow-spotted jezebel (Australian subspecies)				1	0
animals	insects	Pieridae	Elodina angulipennis	southern pearl-white				1	0
animals	insects	Pieridae	Elodina parthia	striated pearl-white				2	0
animals	insects	Pieridae	Eurema alitha	scalloped grass-yellow				1	0
animals	insects	Pieridae	Eurema hecabe phoebus	large grass-yellow				4	0
animals	insects	Pieridae	Eurema smilax	small grass-yellow				4	0
animals	insects	Pieridae	Pieris rapae	cabbage white				1	0
animals	mammals	Bovidae	Bos taurus	European cattle	Y			2	0
animals	mammals	Bovidae	Capra hircus	goat	Y			2	0

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Sighting Records	Specimen Records
animals	mammals	Canidae	Canis familiaris	dog	Y			2	0
animals	mammals	Canidae	Canis lupus dingo	dingo				2	0
animals	mammals	Canidae	Canis sp.					1	0
animals	mammals	Canidae	Vulpes vulpes	red fox	Y			10	0
animals	mammals	Dasyuridae	Sminthopsis murina	common dunnart		C		2	1
animals	mammals	Emballonuridae	Saccolaimus flaviventris	yellow-bellied sheath-tail bat		C		7	3
animals	mammals	Equidae	Equus caballus	horse	Y			2	0
animals	mammals	Felidae	Felis catus	cat	Y			1	0
animals	mammals	Leporidae	Lepus capensis	brown hare	Y			6	0
animals	mammals	Leporidae	Oryctolagus cuniculus	rabbit	Y			4	0
animals	mammals	Macropodidae	Macropus dorsalis	black-striped wallaby		C		7	0
animals	mammals	Macropodidae	Macropus giganteus	eastern grey kangaroo		C		15	0
animals	mammals	Macropodidae	Macropus parryi	whiptail wallaby		C		3	0
animals	mammals	Macropodidae	Macropus robustus	common wallaroo		C		3	0
animals	mammals	Macropodidae	Macropus rufogriseus	red-necked wallaby		C		20	0
animals	mammals	Macropodidae	Wallabia bicolor	swamp wallaby		C		18	0
animals	mammals	Molossidae	Mormopterus beccarii	Beccari's freetail bat		C		5	5
animals	mammals	Molossidae	Mormopterus planiceps	southern freetail bat		C		3	2
animals	mammals	Molossidae	Mormopterus sp. 3	inland freetail bat		C		4	0
animals	mammals	Molossidae	Tadarida australis	white-striped freetail bat		C		2	1
animals	mammals	Muridae	Hydromys chrysogaster	water rat		C		1	1
animals	mammals	Muridae	Mus musculus	house mouse	Y			8	1
animals	mammals	Muridae	Rattus rattus	black rat	Y			1	1
animals	mammals	Ornithorhynchidae	Ornithorhynchus anatinus	platypus		C		2	0
animals	mammals	Petauridae	Petaurus australis australis	yellow-bellied glider (southern subspecies)		C		6	0
animals	mammals	Petauridae	Petaurus breviceps	sugar glider		C		2	0

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animals	mammals	Phalangeridae	Trichosurus vulpecula	common brushtail possum		C		10	0
animals	mammals	Phascolarctidae	Phascolarctos cinereus	koala		C		10	0
animals	mammals	Potoroidae	Aepyprymnus rufescens	rufous bettong		C		6	0
animals	mammals	Pseudocheiridae	Petauroides volans	greater glider		C		2	0
animals	mammals	Pteropodidae	Pteropus alecto	black flying-fox		C		1	0
animals	mammals	Pteropodidae	Pteropus scapulatus	little red flying-fox		C		6	3
animals	mammals	Suidae	Sus scrofa	pig	Y			8	0
animals	mammals	Tachyglossidae	Tachyglossus aculeatus	short-beaked echidna		C		9	0
animals	mammals	Vespertilionidae	Chalinolobus gouldii	Gould's wattled bat		C		18	13
animals	mammals	Vespertilionidae	Chalinolobus picatus	little pied bat		NT		3	1
animals	mammals	Vespertilionidae	Nyctophilus geoffroyi	lesser long-eared bat		C		2	2
animals	mammals	Vespertilionidae	Nyctophilus sp.					1	0
animals	mammals	Vespertilionidae	Scotorepens greyii	little broad-nosed bat		C		17	13
animals	mammals	Vespertilionidae	Scotorepens sanborni	northern broad-nosed bat		C		1	0
animals	reptiles	Agamidae	Amphibolurus muricatus	jacky lizard		C		1	1
animals	reptiles	Agamidae	Amphibolurus nobbi			C		1	1
animals	reptiles	Agamidae	Intellagama lesueurii	eastern water dragon		C		3	0
animals	reptiles	Agamidae	Pogona barbata	bearded dragon		C		6	0
animals	reptiles	Boidae	Antaresia maculosa	spotted python		C		1	0
animals	reptiles	Boidae	Morelia spilota	carpet python		C		2	0
animals	reptiles	Chelidae	Chelodina expansa	broad-shelled river turtle		C		2	0
animals	reptiles	Chelidae	Chelodina longicollis	eastern snake-necked turtle		C		4	1
animals	reptiles	Chelidae	Elseya albagula	southern snapping turtle		C		1	0
animals	reptiles	Chelidae	Emydura macquarii krefftii	Krefft's river turtle		C		1	0
animals	reptiles	Chelidae	Rheodytes leukops	Fitzroy River turtle		V	V	1	1
animals	reptiles	Chelidae	Wollumbinia latisternum	saw-shelled turtle		C		1	0

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Sighting Records	Specimen Records
animals	reptiles	Colubridae	Boiga irregularis	brown tree snake		C		1	0
animals	reptiles	Colubridae	Dendrelaphis punctulata	common tree snake		C		1	0
animals	reptiles	Colubridae	Tropidonophis mairii	freshwater snake		C		1	1
animals	reptiles	Diplodactylidae	Diplodactylus vittatus	wood gecko		C		2	0
animals	reptiles	Diplodactylidae	Oedura monilis			C		6	0
animals	reptiles	Diplodactylidae	Oedura robusta	robust velvet gecko		C		1	0
animals	reptiles	Diplodactylidae	Oedura tryoni	southern spotted velvet gecko		C		1	1
animals	reptiles	Diplodactylidae	Strophurus taenicauda	golden-tailed gecko		NT		6	0
animals	reptiles	Elapidae	Brachyurophis australis	coral snake		C		1	1
animals	reptiles	Elapidae	Cryptophis nigrescens	eastern small-eyed snake		C		4	0
animals	reptiles	Elapidae	Demansia vestigiata	black whip snake		C		1	0
animals	reptiles	Elapidae	Furina diadema	red-naped snake		C		3	2
animals	reptiles	Elapidae	Hoplocephalus bitorquatus	pale-headed snake		C		4	3
animals	reptiles	Elapidae	Pseudechis australis	king brown snake		C		1	0
animals	reptiles	Elapidae	Pseudonaja textilis	eastern brown snake		C		4	0
animals	reptiles	Elapidae	Suta dwyeri			C		1	0
animals	reptiles	Elapidae	Suta suta	myall snake		C		1	0
animals	reptiles	Elapidae	Vermicella annulata	bandy-bandy		C		1	0
animals	reptiles	Gekkonidae	Gehyra dubia			C		28	6
animals	reptiles	Gekkonidae	Hemidactylus frenatus	house gecko	Y			1	0
animals	reptiles	Gekkonidae	Heteronotia binoei	Bynoe's gecko		C		30	4
animals	reptiles	Scincidae	Anomalopus leuckartii			C		3	2
animals	reptiles	Scincidae	Carlia pectoralis			C		17	3
animals	reptiles	Scincidae	Cryptoblepharus pannosus	ragged snake-eyed skink		C		1	0
animals	reptiles	Scincidae	Cryptoblepharus pulcher pulcher	elegant snake-eyed skink		C		19	1
animals	reptiles	Scincidae	Cryptoblepharus virgatus sensu lato			C		1	0

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Sighting Records	Specimen Records
animals	reptiles	Scincidae	Ctenotus robustus			C		3	2
animals	reptiles	Scincidae	Ctenotus sp.					2	0
animals	reptiles	Scincidae	Ctenotus taeniolatus	copper-tailed skink		C		2	2
animals	reptiles	Scincidae	Cyclodomorphus gerrardii	pink-tongued lizard		C		1	1
animals	reptiles	Scincidae	Egernia rugosa	yakka skink		V	V	1	1
animals	reptiles	Scincidae	Egernia striolata	tree skink		C		4	2
animals	reptiles	Scincidae	Lerista fragilis			C		18	1
animals	reptiles	Scincidae	Lerista punctatovittata			C		9	1
animals	reptiles	Scincidae	Lerista sp.					1	0
animals	reptiles	Scincidae	Lerista timida			C		2	1
animals	reptiles	Scincidae	Liopholis modesta			C		1	1
animals	reptiles	Scincidae	Lygisaurus foliorum			C		13	2
animals	reptiles	Scincidae	Menetia greyii			C		3	1
animals	reptiles	Scincidae	Menetia timlowi			C		1	0
animals	reptiles	Scincidae	Morethia boulengeri			C		12	5
animals	reptiles	Scincidae	Morethia taeniopleura	fire-tailed skink		C		1	0
animals	reptiles	Scincidae	Tiliqua rugosa aspera	shingle-back (eastern subspecies)		C		1	0
animals	reptiles	Scincidae	Tiliqua scincoides	eastern blue-tongued lizard		C		1	0
animals	reptiles	Typhlopidae	Ramphotyphlops proximus			C		2	2
animals	reptiles	Varanidae	Varanus gouldii	sand monitor		C		3	1
animals	reptiles	Varanidae	Varanus panoptes	yellow-spotted monitor		C		1	0
animals	reptiles	Varanidae	Varanus varius	lace monitor		C		16	0

PLANT RECORDS FROM THE HERBRECS DATABASE

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Acanthaceae	Hypoestes floribunda R.Br. var. floribunda	28-Aug-90	EUROMBAH ROAD C 23KM SW OF TAROOM C 8KM W OF WANDOAN TURNOFF	149.625	-25.79166667
Acanthaceae	Dipteracanthus australasicus subsp. corynothecus (F.Muell. ex Benth.) R.M.Barker	14-Sep-02	TAROOM-INJUNE ROAD, 20KM FROM TAROOM	149.6255556	-25.69
Adiantaceae	Cheilanthes distans (R.Br.) Mett.	4-May-60	25M NW OF WANDOAN (P)	149.5833333	-25.91666667
Aizoaceae	Trianthema portulacastrum L.	15-May-73	WANDOAN-TAROOM RD CA 40KM FROM WANDOAN	149.9166667	-25.91666667
Aizoaceae	Trianthema triquetra Rottb. ex Willd.	27-Feb-59	TAROOM 2M W OF	149.75	-25.58333333
Aizoaceae	Trianthema triquetra Rottb. ex Willd.	16-Nov-30	WANDOAN	149.9166667	-26.08333333
Amaranthaceae	Ptilotus nobilis subsp. semilanatus (Lindl.) A.R.Bean	15-Nov-30	WANDOAN	149.9166667	-26.25
Amaranthaceae	Ptilotus macrocephalus (R.Br.) Poir.	17-Nov-30	NR WANDOAN	149.9166667	-26.08333333
Amaranthaceae	Gomphrena celosioides Mart.	14-Jan-59	'BROOKFIELD', YULEBA, WESTERN LINE	149.4416667	-25.89166667
Amaranthaceae	Nyssanthes erecta R.Br.	26-Mar-10	JUANDAH SF, SW OF WANDOAN	149.7819444	-26.21416667
Amaranthaceae	Achyranthes aspera L.	26-Mar-10	JUANDAH SF, SW OF WANDOAN	149.7791667	-26.22194444
Apiaceae	Daucus glochidiatus (Labill.) Fisch., C.A.Mey. & Ave-Lall.	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Apiaceae	Platysace ericoides (Sieber ex Spreng.) C.Norman	17-Nov-30	NR WANDOAN	149.9166667	-26.25
Apiaceae	Daucus glochidiatus (Labill.) Fisch., C.A.Mey. & Ave-Lall.	24-Oct-98	PROSSERS ROAD NW OF WANDOAN (GPS 25 50 57 149 44 00)	149.7333333	-25.84916667
Apiaceae	Cyclospermum leptophyllum (Pers.) Sprague ex Britton & P.Wilson	25-Oct-98	INJUNE-TAROOM ROAD 0.1KM FROM YEDNA TURNOFF (GPS 25 41 59 149 11 51)	149.1975	-25.69972222
Apocynaceae	Carissa ovata R.Br.	1-Jul-46	WANDOAN	149.9166667	-26.25
Apocynaceae	Carissa ovata R.Br.	26-Jul-45	NNW OF BUNGUNYA	149.5416667	-26.15833333

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Apocynaceae	Marsdenia viridiflora R.Br. subsp. viridiflora	24-Oct-63	12M S OF WANDOAN	149.916667	-26.25
Apocynaceae	Asclepias curassavica L.	19-Jun-58	TAROOM VERBENA PARK	149.75	-25.58333333
Apocynaceae	Gomphocarpus physocarpus E.Mey.	9-Jan-57	WOODVALE TAROOM	149.75	-25.58333333
Apocynaceae	Orbea variegata (L.) Haw.	21-Apr-69	17M N OF WALLUMBILLA	149.1916667	-26.275
Apocynaceae	Marsdenia viridiflora R.Br. subsp. viridiflora	7-Feb-61	C 6KM NW OF TAROOM	149.75	-25.58333333
Apocynaceae	Sarcostemma viminalis subsp. brunonianum (Wight & Arn.) P.I.Forst.	20-Dec-82	19.3KM FROM WANDOAN ON TAROOM RD GRID REF 8846-904256	149.9004543	-25.95879131
Apocynaceae	Marsdenia pleiadenia (F.Muell.) P.I.Forst.	28-Aug-90	EUROMBAH ROAD C 23KM SW OF TAROOM C 8KM W OF WANDOAN TURNOFF	149.625	-25.79166667
Asteraceae	Brachyscome ciliaris var. subintegrifolia G.L.R.Davis	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Asteraceae	Brachyscome ciliaris var. subintegrifolia G.L.R.Davis	16-Apr-59	POPLAR BOX & YARRAN CA 3M NE OF WANDOAN	149.916667	-26.083333
Asteraceae	Brachyscome whitei G.L.R.Davis	7-Jul-55	CA 20M SE OF WANDOAN ON WANDOAN-JACKSON ROAD	149.75	-26.25
Asteraceae	Calotis cuneata (F.Muell. ex Benth.) G.L.R.Davis	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Asteraceae	Calotis dentex R.Br.	8-Apr-61	PONY HILLS 30M E OF INJUNE	149.0833333	-25.75
Asteraceae	Cassinia laevis R.Br.	16-Nov-30	WANDOAN	149.9166667	-26.08333333
Asteraceae	Centipeda minima (L.) A.Braun & Asch. subsp. minima	15-Nov-30	WANDOAN	149.916667	-26.083333
Asteraceae	Pycnosorus chrysanthus (Schltdl.) Sond.	20-Apr-59	BROOKFIELD 30M SW OF TAROOM	149.425	-25.925
Asteraceae	Pycnosorus chrysanthus (Schltdl.) Sond.	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Asteraceae	Flaveria trinervia (Spreng.) C.Mohr	11-Nov-30	WANDOAN	149.9166667	-26.08333333
Asteraceae	Chrysocephalum apiculatum (Labill.) Steetz	Nov-30	WANDOAN	149.9166667	-26.08333333
Asteraceae	Rhodanthe floribunda (DC.) Paul G.Wilson	Sep-18	TAROOM	149.75	-25.58333333

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Asteraceae	Rhodanthe polyphylla (F.Muell.) Paul G.Wilson	Nov-30	WANDOAN	149.9166667	-26.08333333
Asteraceae	Leiocarpa brevicompta (F.Muell.) Paul G.Wilson	20-Apr-59	BROOKFIELD 30M SW OF TAROOM	149.4166667	-25.91666667
Asteraceae	Leiocarpa brevicompta (F.Muell.) Paul G.Wilson	27-Feb-59	CLUDEN CA 26M N OF WANDOAN	149.9166667	-25.75
Asteraceae	Leiocarpa brevicompta (F.Muell.) Paul G.Wilson	15-Oct-54	CLUDEN SE OF TAROOM	149.9166667	-25.75
Asteraceae	Rutidosia murchisonii F.Muell.	Nov-30	WANDOAN (R)	149.9166667	-26.08333333
Asteraceae	Sonchus	26-Sep-69	CA 12M W OF WANDOAN ROADSIDE ADJACENT TO PROPERTY AS HORN DELFIELD	149.75	-26.08333333
Asteraceae	Vittadinia pterochaeta (F.Muell. ex Benth.) J.M.Black	Nov-30	WANDOAN	149.9166667	-26.08333333
Asteraceae	Vittadinia sulcata N.T.Burb.	16-Apr-59	POPLAR BOX & YARRAN CA 3M NE OF WANDOAN	149.9166667	-26.08333333
Asteraceae	Parthenium hysterophorus L.	13-Nov-83	TAROOM SHIRE PORTION 27 PARISH OF ROCHEDALE	149.75	-25.58333333
Asteraceae	Gamochaeta pensylvanica (Willd.) Cabrera	7-Oct-00	JUANDAH CREEK, LEICHHARDT HWY	149.9172222	-26.07277778
Asteraceae	Centaurea melitensis L.	14-Dec-01	11.6KM N OF WANDOAN	149.9133333	-26.03027778
Asteraceae	Helianthus annuus L.	14-Dec-01	11.6KM N OF WANDOAN	149.9133333	-26.03027778
Asteraceae	Bidens bipinnata L.	14-Dec-01	11.6KM N OF WANDOAN	149.9133333	-26.03027778
Asteraceae	Calotis cuneata (F.Muell. ex Benth.) G.L.R.Davis	25-Oct-98	INJUNE-TAROOM ROAD 0.1KM FROM YEDNA TURNOFF (GPS 25 41 59 149 11 51)	149.1975	-25.69972222
Asteraceae	Coronidium oxylepis subsp. lanatum Paul G.Wilson	25-Oct-98	TAROOM-INJUNE ROAD NE OF BAROONDAH (GPS 25 38 07 149 19 13)	149.3202778	-25.63527778
Asteraceae	Calotis dentex R.Br.	25-Oct-98	TAROOM-INJUNE ROAD NE OF BAROONDAH (GPS 25 38 07 149 19 13)	149.3202778	-25.63527778
Asteraceae	Xanthium spinosum L.	24-Oct-98	EUROMBAH CK SW OF TAROOM (GPS 25 48 35 149 31 15)	149.5208333	-25.80972222

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Asteraceae	Centaurea melitensis L.	24-Oct-98	PROSSERS ROAD NW OF WANDOAN (GPS 25 50 57 149 44 00)	149.7333333	-25.84916667
Asteraceae	Leiocarpa brevicompta (F.Muell.) Paul G.Wilson	22-Nov-00	81KM N OF MILES ON TAROOM ROAD	149.9083333	-26.04166667
Asteraceae	Calotis lappulacea Benth.	8-Jul-55	C 20 MILES SW OF WANDOAN ON WANDOAN - JACKSON ROAD	149.75	-26.25
Asteraceae	Calotis cuneata (F.Muell. ex Benth.) G.L.R.Davis	14-Sep-02	TAROOM - INJUNE ROAD, 20KM FROM TAROOM	149.6255556	-25.69
Asteraceae	Brachyscome trachycarpa F.Muell.	14-Sep-02	TAROOM-INJUNE ROAD 20KM FROM TAROOM	149.6255556	-25.69
Asteraceae	Leiocarpa brevicompta (F.Muell.) Paul G.Wilson	14-Sep-02	TAROOM-INJUNE ROAD, 20KM FROM TAROOM	149.6255556	-25.69
Asteraceae	Olearia canescens (Benth.) Hutch.	16-Sep-10	'NULLIN', C. 43KM NNE OF YULEBA, SEQ.	149.4905556	-26.27083333
Asteraceae	Olearia canescens (Benth.) Hutch.	26-Mar-10	JUANDAH STATE FOREST, SW OF WANDOAN	149.7791667	-26.22194444
Bignoniaceae	Tecoma stans (L.) Juss. ex Kunth var. stans	31-Oct-73	GLEN ARDEN 72KM NE OF ROMA	149.3416667	-26.14166667
Boraginaceae	Echium plantagineum L.	8-Oct-73	40KM SW OF TAROOM	149.9166667	-25.91666667
Boraginaceae	Cynoglossum australe R.Br.	15-Nov-30	WANDOAN BY SIDE RAILWAY TRACK	149.916667	-26.25
Boraginaceae	Heliotropium europaeum L.	9-Feb-70	10M NW OF WANDOAN	149.8583333	-26.04166667
Boraginaceae	Echium plantagineum L.	7-Oct-00	JUANDAH CREEK, LEICHHARDT HWY	149.9277778	-26.07277778
Brassicaceae	Lepidium bonariense L.	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Brassicaceae	Sisymbrium thellungii O.E.Schulz	26-Nov-66	WANDOAN	149.9166667	-26.08333333
Brassicaceae	Sisymbrium thellungii O.E.Schulz	12-Jun-79	60KM FROM ROMA ON THE DURHAM DOWNS RD	149.0833333	-26.08333333
Brassicaceae	Lepidium bonariense L.	7-Oct-00	JUANDAH CREEK, LEICHHARDT HWY	149.9277778	-26.07277778
Brassicaceae	Rapistrum rugosum (L.) All.	7-Oct-00	JUANDAH CREEK, LEICHHARDT HWY	149.9278333	-26.07297222
Brassicaceae	Sisymbrium thellungii O.E.Schulz	14-Dec-01	11.6KM N OF WANDOAN	149.9133333	-26.03027778

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Brassicaceae	Lepidium didymum L.	25-Oct-98	INJUNE-TAROOM ROAD 0.1KM FROM YEDNA TURNOFF (GPS 25 41 59 149 11 51)	149.1975	-25.69972222
Brassicaceae	Cardamine	26-Mar-10	JUANDAH STATE FOREST, SW OF WANDOAN	149.7786111	-26.22138889
Caesalpiniaceae	Senna barclayana (Sweet) Randell	Apr-58	WANDOAN	149.9166667	-26.08333333
Caesalpiniaceae	Senna barclayana (Sweet) Randell	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Caesalpiniaceae	Senna sophora var. (40Mile Scrub J.R.Clarkson+ 6908)	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Caesalpiniaceae	Senna coronilloides (Benth.) Randell	15-Nov-30	NEAR WANDOAN	149.9166667	-26.08333333
Caesalpiniaceae	Senna artemisioides subsp. zygophylla (Benth.) Randell	1908	TAROOM	149.75	-25.58333333
Caesalpiniaceae	Lysiphyllum carronii (F.Muell.) Pedley	Apr-79	WANDOAN W OF GROSSMOUNT	149.9166667	-26.08333333
Caesalpiniaceae	Parkinsonia aculeata L.	Apr-95	TAROOM SALES YARDS	149.75	-25.58333333
Campanulaceae	Lobelia concolor R.Br.	18-Mar-98	LESS THAN 10KM FROM TAROOM	149.75	-25.58333333
Capparaceae	Apophyllum anomalum F.Muell.	26-Apr-64	5.5M N WANDOAN	149.9166667	-26.08333333
Capparaceae	Capparis lasiantha R.Br. ex DC.	15-Oct-75	35KM N OF WANDOAN ON TAROOM RD	149.9083333	-25.85833333
Capparaceae	Capparis loranthifolia var. bancroftii C.T.White ex M.Jacobs	1-Jun-46	WANDOAN	149.9166667	-26.08333333
Capparaceae	Capparis loranthifolia var. bancroftii C.T.White ex M.Jacobs	15-Oct-75	CA 32KM W TAROOM ON INJUNE RD	149.525	-25.70833333
Capparaceae	Capparis mitchellii Lindl.	16-Oct-30	WANDOAN	149.9166667	-26.083333
Capparaceae	Capparis loranthifolia var. bancroftii C.T.White ex M.Jacobs	26-Apr-64	10M N WANDOAN	149.9166667	-25.91666667
Capparaceae	Apophyllum anomalum F.Muell.	26-Nov-06	YEOVIL ROAD, LEICHHARDT HIGHWAY BETWEEN TAROOM AND WANDOAN.	149.8997222	-25.94416667
Caryophyllaceae	Stellaria angustifolia Hook.	24-Oct-98	EUROMBAH CK SW OF TAROOM (GPS 25 48 35 149 31 15)	149.5208333	-25.80972222
Casuarinaceae	Casuarina cristata Miq.	15-May-73	WANDOAN-TAROOM ROAD CA 17.6KM FROM WANDOAN	149.425	-26.00833333

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Casuarinaceae	Casuarina cristata Miq.	23-Oct-63	5M N OF NATHAN ROAD & LEICHHARDT HWY JUNCTION	149.9166667	-26.08333333
Casuarinaceae	Casuarina cunninghamiana Miq. subsp. cunninghamiana	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Celastraceae	Elaeodendron australe var. integrifolium (Tratt.) DC.	16-Nov-30	WANDOAN	149.9166667	-26.083333
Celastraceae	Elaeodendron australe var. integrifolium (Tratt.) DC.	1-Jun-46	WANDOAN	149.9166667	-26.08333333
Celastraceae	Maytenus cunninghamii (Hook.) Loes.	28-Apr-64	18M SW OF WANDOAN	149.75	-26.25
Celastraceae	Elaeodendron australe var. integrifolium (Tratt.) DC.	31-Jan-54	5M NW OF TAROOM	149.25	-25.75
Celastraceae	Maytenus cunninghamii (Hook.) Loes.	26-Mar-10	JUANDAH SF, SW OF WANDOAN	149.7791667	-26.22194444
Chenopodiaceae	Atriplex muelleri Benth.	18-Nov-30	WANDOAN	149.9166667	-26.08333333
Chenopodiaceae	Atriplex muelleri Benth.	4-Dec-59	WANDOAN	149.9166667	-26.08333333
Chenopodiaceae	Sclerolaena tetracuspis (C.T.White) A.J.Scott	Nov-30	WANDOAN	149.9166667	-26.08333333
Chenopodiaceae	Enchylaena tomentosa R.Br.	26-Apr-64	5.5M N OF WANDOAN	149.9166667	-26.08333333
Chenopodiaceae	Enchylaena tomentosa R.Br.	27-Feb-59	TAROOM 2M W	149.9166667	-25.75
Chenopodiaceae	Enchylaena tomentosa R.Br.	26-Apr-64	10M N OF WANDOAN	149.9166667	-25.91666667
Chenopodiaceae	Enchylaena tomentosa R.Br.	27-Feb-59	TAROOM 2M W	149.75	-25.58333333
Chenopodiaceae	Maireana enchylaenoides (F.Muell.) Paul G.Wilson	4-May-60	CA 25M NW OF WANDOAN (R)	149.75	-25.91666667
Chenopodiaceae	Maireana microphylla (Moq.) Paul G.Wilson	8-Jul-63	13M SW OF TAROOM TOWNSHIP	149.5833333	-25.75
Chenopodiaceae	Maireana microphylla (Moq.) Paul G.Wilson	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Chenopodiaceae	Maireana microphylla (Moq.) Paul G.Wilson	26-Apr-64	5.5M N OF WANDOAN	149.9166667	-26.08333333
Chenopodiaceae	Maireana microphylla (Moq.) Paul G.Wilson	15-May-73	WANDOAN-TAROOM ROAD CA 32KM FROM WANDOAN	149.925	-25.90833333
Chenopodiaceae	Salsola kali L.	26-Apr-64	10M N OF WANDOAN	149.9166667	-25.91666667

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Chenopodiaceae	Dysphania carinata (R.Br.) Mosyakin & Clemants	18-Nov-30	WANDOAN	149.9166667	-26.08333333
Chenopodiaceae	Einadia nutans (R.Br.) A.J.Scott subsp. nutans	26-Apr-81	10M N OF WANDOAN	149.9166667	-25.91666667
Chenopodiaceae	Rhagodia spinescens R.Br.	26-Apr-64	10M N OF WANDOAN	149.9166667	-26.08333333
Chenopodiaceae	Rhagodia spinescens R.Br.	27-Feb-59	TAROOM 2M W	149.75	-25.58333333
Chenopodiaceae	Einadia nutans subsp. linifolia (R.Br.) Paul G.Wilson	27-Feb-59	TAROOM 2M W	149.75	-25.58333333
Chenopodiaceae	Rhagodia spinescens R.Br.	28-Aug-90	EUROMBAH ROAD C 23KM SW OF TAROOM C 8KM W OF WANDOAN TURNOFF	149.625	-25.79166667
Chenopodiaceae	Sclerolaena calcarata (Ising) A.J.Scott	11-Jul-08	'MOORABINDA', CA. 70KM WNW OF WANDOAN.	149.2869444	-25.89194444
Collemataceae	Collema	31-Aug-85	30 KM SOUTH OF TAROOM	149.875	-25.80833333
Collemataceae	Physma	31-Aug-85	30 KM SOUTH OF TAROOM	149.875	-25.80833333
Commelinaceae	Commelina diffusa Burm.f.	27-Feb-59	TAROOM 2M W OF	149.9166667	-25.75
Convolvulaceae	Convolvulus arvensis L.	22-Mar-72	TRELINGA 2M W OF WANDOAN	149.925	-26.14166667
Convolvulaceae	Ipomoea plebeia R.Br.	1-Mar-59	DALZIEL CA 26M N OF WANDOAN	149.9166667	-25.75
Convolvulaceae	Cuscuta campestris Yunck.	Nov-30	WANDOAN N OF MILES	149.0833333	-26.08333333
Convolvulaceae	Cuscuta campestris Yunck.	1-Dec-50	WALLOCKATOO WANDOAN	149.9166667	-26.25
Convolvulaceae	Evolvulus alsinoides (L.) L.	13-Sep-02	'YEBNA', C 60KM W OF TAROOM	149.1459484	-25.66746431
Cucurbitaceae	Cucumis melo subsp. (Manfred D.Davidson 47)	26-Apr-59	CA 3M SW OF TAROOM	149.75	-25.75
Cucurbitaceae	Cucumis melo subsp. (Manfred D.Davidson 47)	26-Apr-59	3M SW OF TAROOM	149.75	-25.58333333
Cupressaceae	Callitris endlicheri (Parl.) F.M.Bailey	17-Nov-30	MAIN RA NEAR GURULMUNDI NEAR WANDOAN	149.916667	-26.25
Cyperaceae	Cyperus gracilis R.Br.	15-Nov-30	WANDOAN	149.9166667	-26.25

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Cyperaceae	Cyperus exaltatus Retz.	17-Nov-30	WANDOAN	149.9166667	-26.25
Cyperaceae	Eleocharis cylindrostachys Boeck.	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Cyperaceae	Carex inversa R.Br.	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Cyperaceae	Cyperus laevigatus L.	28-Jan-99	MOORABINDA	149.2877778	-25.89388889
Cyperaceae	Eleocharis plana S.T.Blake	24-Oct-98	EUROMBAH CK SW OF TAROOM (GPS 25 48 35 149 31 15)	149.5208333	-25.80972222
Cyperaceae	Eleocharis pusilla R.Br.	24-Oct-98	EUROMBAH CK SW OF TAROOM (GPS 25 48 35 149 31 15)	149.5208333	-25.80972222
Cyperaceae	Cyperus concinnus R.Br.	24-Oct-98	EUROMBAH CK SW OF TAROOM (GPS 25 48 35 149 31 15)	149.5208333	-25.80972222
Cyperaceae	Carex appressa R.Br.	24-Oct-98	EUROMBAH CK SW OF TAROOM (GPS 25 48 35 149 31 15)	149.5208333	-25.80972222
Cyperaceae	Eleocharis pallens S.T.Blake	24-Oct-98	EUROMBAH CK SW OF TAROOM (GPS 25 48 35 149 31 15)	149.5208333	-25.80972222
Cyperaceae	Fimbristylis ferruginea (L.) Vahl	28-Jan-99	MOORABINDA W OF TAROOM (GPS 25 53 34 149 17 06)	149.285	-25.89277778
Cyperaceae	Baumea juncea (R.Br.) Palla	28-Jan-99	MOORABINDA W OF TAROOM (GPS 25 53 34 149 17 06)	149.285	-25.89277778
Cyperaceae	Carex inversa R.Br.	26-Mar-10	JUANDAH SF, SW OF WANDOAN	149.7786111	-26.22138889
Cyperaceae	Cyperus squarrosus L.	26-Mar-10	JUANDAH STATE FOREST, SW OF WANDOAN	149.7786111	-26.22138889
Eriocaulaceae	Eriocaulon carsonii subsp. orientale R.J.Davies	28-Jan-99	MOORABINDA APPROX 55KM SW OF TAROOM (GPS 25 53 34 149 17 06)	149.285	-25.89277778
Euphorbiaceae	Chamaesyce dallachyana (Baill.) D.C.Hassall	15-Nov-30	WANDOAN	149.9166667	-26.25
Euphorbiaceae	Euphorbia tannensis subsp. eremophila (A.Cunn.) D.C.Hassall	25-Oct-63	12 MILES S OF WANDOAN.	149.9166667	-26.25
Euphorbiaceae	Bertya oleifolia Planch.	26-Sep-85	50KM N OF WALLUMBILLA BUNGIL SHIRE	149.25	-26.25

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Euphorbiaceae	Acalypha eremorum Muell.Arg.	15-Apr-59	CA 15M N OF WANDOAN ON RD TO TAROOM	149.9166667	-25.91666667
Euphorbiaceae	Euphorbia hyssopifolia L.	7-Jan-03	57KM NW OF WANDOAN	149.5833333	-25.75
Euphorbiaceae	Bertya oleifolia Planch.	4-Jul-08	'STRATHBLANE', TRACK UNDER POWERLINE IN KNOB PADDOCK, E INJUNE	149.1966667	-25.905
Fabaceae	Crotalaria dissitiflora Benth. subsp. dissitiflora	6-Dec-61	RICHON 38M S OF TAROOM	149.4166667	-25.91666667
Fabaceae	Crotalaria incana L. subsp. incana	18-May-59	18M NW OF WANDOAN	149.75	-25.91666667
Fabaceae	Desmodium varians (Labill.) G.Don	16-Apr-59	C 3M NE OF WANDOAN	149.916667	-26.083333
Fabaceae	Hovea longipes Benth.	1908	TAROOM	149.75	-25.583333
Fabaceae	Hovea longipes Benth.	23-Dec-59	WANDOAN HEADWATERS OF DAWSON RIVER 50M N OF YULEBA	149.916667	-26.083333
Fabaceae	Indigofera linnaei Ali	15-Jan-63	WANDOAN GOLF CLUB	149.9166667	-26.08333333
Fabaceae	Jacksonia scoparia R.Br.	17-Nov-30	MAIN RA NEAR WANDOAN	149.9166667	-26.08333333
Fabaceae	Lotus australis Andrews	17-Nov-30	WANDOAN	149.9166667	-26.08333333
Fabaceae	Rhynchosia minima var. australis (Benth.) C.Moore	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Fabaceae	Swainsona luteola F.Muell.	24-Aug-60	TAROOM WOODVALE	149.75	-25.58333333
Fabaceae	Trifolium subterraneum L.	Nov-30	WANDOAN N OF MILES	149.9166667	-26.08333333
Fabaceae	Swainsona galegifolia (Andrews) R.Br.	22-Sep-81	LIGHTHOUSE 50KM NE OF ROMA	149.125	-26.09166667
Fabaceae	Melilotus indicus (L.) All.	7-Oct-00	LEICHHARDT HWY 6-7KM N OF WANDOAN	149.9091667	-25.90722222
Fabaceae	Melilotus indicus (L.) All.	7-Oct-00	JUANDAH CREEK, LEICHHARDT HWY	149.9277778	-26.07277778
Fabaceae	Indigofera australis Willd. subsp. australis	28-Aug-90	EUROMBAH ROAD C 23KM SW OF TAROOM C 8KM W OF WANDOAN TURNOFF	149.625	-25.79166667
Fabaceae	Indigofera brevidens Benth.	13-Sep-02	NEAR 'YEBNA', C 60KM W OF TAROOM	149.1318965	-25.66587409

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Fabaceae	Hovea longipes Benth.	13-Sep-02	NEAR 'YEBNA', C 60KM W OF TAROOM	149.1318965	-25.66587409
Fabaceae	Melilotus indicus (L.) All.	14-Sep-02	TAROOM - INJUNE ROAD, 31KM FROM TAROOM	149.5248386	-25.70552992
Fabaceae	Swainsona queenslandica Joy Thomps.	14-Sep-02	TAROOM-INJUNE ROAD, 31KM FROM TAROOM	149.5248386	-25.70552992
Fabaceae	Stylosanthes scabra Vogel	11-May-09	'YEBNA', AT YEBNA 1 GAS WELL, NE INJUNE.	149.1480556	-25.71527778
Gentianaceae	Schenkia australis (R.Br.) G.Mans.	15-Nov-30	WANDOAN	149.9166667	-26.25
Geraniaceae	Erodium crinitum Carolin	24-Oct-98	PROSSERS ROAD NW OF WANDOAN (GPS 25 50 57 149 44 00)	149.7333333	-25.84916667
Goodeniaceae	Goodenia fascicularis F.Muell. & Tate	14-Oct-54	WANDOAN	149.9166667	-26.25
Goodeniaceae	Scaevola spinescens R.Br.	26-Mar-10	JUANDAH STATE FOREST, SW OF WANDOAN	149.7791667	-26.22194444
Gyrostemonaceae	Codonocarpus attenuatus (Hook.) H.Walter	Jul-27	TAROOM	149.75	-25.58333333
Haloragaceae	Haloragis aspera Lindl.	15-Oct-54	CLUDEN SE OF TAROOM	149.9166667	-25.91666667
Haloragaceae	Myriophyllum verrucosum Lindl.	22-Jan-71	KIMBERLEY WANDOAN PROPERTY OF R.M.TAYLOR	149.925	-26.14166667
Juncaceae	Juncus aridicola L.A.S.Johnson x J.usitatus L.A.S.Johnson	15-Nov-30	WANDOAN	149.9166667	-26.25
Lamiaceae	Plectranthus parviflorus Willd.	27-Feb-59	TAROOM 2M W OF	149.75	-25.58333333
Lamiaceae	Spartothamnella juncea (A.Cunn. ex Walp.) Briq.	1-Jun-46	WANDOAN	149.9166667	-26.25
Lamiaceae	Basilicum polystachyon (L.) Moench	24-Oct-98	EUROMBAH CK SW OF TAROOM (GPS 25 48 35 149 31 15)	149.5208333	-25.80972222
Lamiaceae	Salvia plebeia R.Br.	24-Oct-98	EUROMBAH CK SW OF TAROOM (GPS 25 48 35 149 31 15)	149.5208333	-25.80972222
Lamiaceae	Spartothamnella juncea (A.Cunn. ex Walp.) Briq.	26-Mar-10	JUANDAH SF, SW OF WANDOAN	149.7819444	-26.21416667

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Loranthaceae	Amyema congener subsp. rotundifolia Barlow	15-Nov-30	WANDOAN	149.916667	-26.083333
Loranthaceae	Amyema quandang (Lindl.) Tiegh. var. quandang	8-Jul-63	13M SW OF JAROOM TOWNSHIP	149.583333	-25.75
Loranthaceae	Amyema quandang var. bancroftii (F.M.Bailey) Barlow	1-Jun-46	WANDOAN	149.916667	-26.083333
Loranthaceae	Lysiana subfalcata (Hook.) Barlow	1-Jun-46	WANDOAN	149.916667	-26.083333
Loranthaceae	Lysiana subfalcata (Hook.) Barlow	10-Jul-81	12KM W OF WANDOWAN	149.841667	-26.175
Loranthaceae	Amyema miquelii (Lehm. ex Miq.) Tiegh.	29-Jul-03	10KM NORTH OF WANDOAN	149.925	-26.058333
Lythraceae	Ammannia multiflora Roxb.	26-Mar-10	JUANDAH SF, SW OF WANDOAN	149.778611	-26.221389
Malvaceae	Abutilon fraseri (Hook.) Hook. ex Walp. subsp. fraseri	1-Mar-59	DALZIEL C 26M N OF WANDOAN	149.916667	-25.916667
Malvaceae	Abutilon oxycarpum (F.Muell.) F.Muell. ex Benth.	14-Oct-54	WANDOAN	149.916667	-26.083333
Malvaceae	Hibiscus sturtii Hook. var. sturtii	1-Mar-59	DALZIEL C 26M N OF WANDOAN	149.916667	-25.75
Malvaceae	Hibiscus verdcourtii Craven	3-May-64	ROBINSON CK 14M NW OF TAROOM	149.75	-25.583333
Malvaceae	Sida trichopoda F.Muell.	27-Feb-59	LILYVALE 6M S OF TAROOM	149.75	-25.75
Malvaceae	Sida corrugata subsp. (Bollon S.L.Everist 3674)	Jan-60	EUROMBAH N OF ROMA	149.583333	-25.75
Malvaceae	Sida corrugata Lindl.	15-Nov-30	WANDOAN	149.916667	-26.083333
Malvaceae	Abutilon tubulosum Hook. var. tubulosum	Apr-79	30M NW OF WANDOAN & SW OF GROSSMONT	149.583333	-25.916667
Malvaceae	Hibiscus brachysiphonius F.Muell.	Apr-79	30M NW OF WANDOAN	149.583333	-25.916667
Malvaceae	Hibiscus	7-Nov-63	TAROOM-THEODORE RD CA 30M FROM TAROOM	149.916667	-26.083333
Malvaceae	Gossypium sturtianum J.H.Willis	21-Jul-09	EXPEDITION RESOURCE RESERVE, ALONG SOUTHERN BOUNDARY ADJOINING 'YEBNA'.	149.119167	-25.6325

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Meliaceae	Turraea pubescens Hellen.	31-Jan-54	5M NW OF TAROOM	149.25	-25.75
Mimosaceae	Acacia salicina Lindl.	26-Apr-59	C 18M SW TAROOM ON TAROOM-ROMA RD	149.625	-25.75833333
Mimosaceae	Acacia excelsa Benth. subsp. excelsa	16-Nov-30	WANDOAN	149.916667	-26.25
Mimosaceae	Acacia harpophylla F.Muell. ex Benth.	16-Oct-64	WONDOAN	149.916667	-26.25
Mimosaceae	Acacia melvillei Pedley	10-Aug-62	16M N OF WANDOAN	149.916667	-25.9166667
Mimosaceae	Acacia melvillei Pedley	1-Jun-46	WANDOAN	149.916667	-26.08333333
Mimosaceae	Acacia pendula A.Cunn. ex G.Don	30-Apr-64	7M NW OF MYALL DOWNS	149.916667	-26.25
Mimosaceae	Acacia stenophylla A.Cunn. ex Benth.	26-Apr-59	C 3M SW OF TAROOM	149.75	-25.75
Mimosaceae	Acacia stenophylla A.Cunn. ex Benth.	25-Apr-64	TAROOM DAWSON RIVER	149.75	-25.58333333
Mimosaceae	Acacia triptera Benth.	17-Nov-30	NEAR WANDOAN	149.916667	-26.08333333
Mimosaceae	Neptunia gracilis Benth. forma gracilis	26-Apr-59	C 3M SW OF TAROOM	149.75	-25.58333333
Mimosaceae	Acacia melvillei Pedley	Jul-81	TAROOM SHIRE ROCHEDALE PARISH PORTION 23	149.75	-25.9166667
Mimosaceae	Acacia shirleyi Maiden	12-Sep-79	CA 40KM W OF TAROOM	149.375	-25.675
Mimosaceae	Acacia leiocalyx (Domin) Pedley subsp. leiocalyx	12-Sep-79	CA 37KM W OF TAROOM	149.4083333	-25.675
Mimosaceae	Acacia longispicata Benth.	12-Sep-79	CA 37KM W OF TAROOM	149.4083333	-25.675
Mimosaceae	Acacia bancroftiorum Maiden	12-Sep-79	CA 37KM W OF TAROOM	149.4083333	-25.675
Mimosaceae	Acacia longispicata Benth.	27-Nov-84	TAROOM 2KM N ON THEODORE RD	149.75	-25.58333333
Mimosaceae	Acacia leiocalyx (Domin) Pedley subsp. leiocalyx	10-May-60	ALONG TAROOM-BAUHINEA DOWNS RD	149.5833333	-25.58333333
Mimosaceae	Acacia melvillei Pedley	9-Sep-53	EUROMBAH CA 20M SSW OF TAROOM	149.575	-25.825
Mimosaceae	Neptunia gracilis Benth. forma gracilis	26-Mar-10	WANDOAN-JACKSON ROAD, SW OF WANDOAN	149.8344444	-26.23388889
Myoporaceae	Eremophila deserti (A.Cunn. ex Benth.) Chinnock	9-Jul-63	36M W OF WANDOAN TOWNSHIP	149.7583333	-26.14166667

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Myoporaceae	Myoporum	9-Jul-63	36M W OF WANDOAN TOWNSHIP	149.341667	-26.175
Myoporaceae	Myoporum	15-May-73	WANDOAN-TAROOM RD. CA. 12.8KM FRON WANDOAN	149.9166667	-26.08333333
Myoporaceae	Eremophila deserti (A.Cunn. ex Benth.) Chinnock	16-Nov-62	DURHAM DOWNS RD	149.0833333	-26.08333333
Myoporaceae	Eremophila mitchellii Benth.	15-Nov-30	WANDOAN	149.9166667	-26.25
Myoporaceae	Eremophila mitchellii Benth.	Jul-64	WANDOAN ROAD	149.1416667	-26.125
Myoporaceae	Eremophila mitchellii Benth.	26-Nov-06	YEOVIL ROAD, LEICHHARDT HIGHWAY BETWEEN TAROOM AND WANDOAN.	149.8997222	-25.94416667
Myrtaceae	Eucalyptus baileyana F.Muell.	22-May-73	NR WANDOAN	149.9166667	-26.08333333
Myrtaceae	Angophora floribunda (Sm.) Sweet	28-Apr-64	20M SW OF WANDOAN	149.75	-26.25
Myrtaceae	Eucalyptus baileyana F.Muell.	May-57	CA NW OF TAROOM IN PARISH	149.5833333	-25.58333333
Myrtaceae	Eucalyptus camaldulensis subsp. acuta Brooker & M.W.McDonald	16-Nov-30	WANDOAN ON & NR CK & NR WATERHOLE	149.9166667	-26.08333333
Myrtaceae	Eucalyptus crebra F.Muell. x E.orgadophila Maiden & Blakely	17-Nov-30	NR WANDOAN	149.9166667	-26.08333333
Myrtaceae	Eucalyptus melanophloia F.Muell.	16-Nov-30	NR WANDOAN	149.9166667	-26.08333333
Myrtaceae	Eucalyptus coolabah Blakely & Jacobs	25-Apr-64	TAROOM DAWSON RIVER	149.75	-25.58333333
Myrtaceae	Eucalyptus orgadophila Maiden & Blakely		TAROOM ROAD N OF MILES ON WESTERN RAILWAY LINE	149.9166667	-25.91666667
Myrtaceae	Eucalyptus orgadophila Maiden & Blakely	23-Oct-63	8M SE OF TAROOM	149.9166667	-25.75
Myrtaceae	Eucalyptus orgadophila Maiden & Blakely		TAROOM ROAD N OF MILES	149.9166667	-25.91666667
Myrtaceae	Eucalyptus orgadophila Maiden & Blakely	6-Nov-63	8M W OF MYALL DOWNS	149.9166667	-26.25
Myrtaceae	Eucalyptus orgadophila Maiden & Blakely	Dec-30	WOOLEEBEE CK N OF JACKSON	149.75	-26.25
Myrtaceae	Eucalyptus populnea F.Muell.	24-Sep-70	3.3M S OF WANDOAN	149.9166667	-26.25
Myrtaceae	Eucalyptus populnea F.Muell.	Nov-30	WANDOAN	149.9166667	-26.08333333
Myrtaceae	Eucalyptus populnea F.Muell.	15-Nov-30	NR WANDOAN	149.9166667	-26.08333333

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Myrtaceae	Eucalyptus melanophloia F.Muell.		LIVINGA WANDOAN	149.9166667	-26.08333333
Myrtaceae	Eucalyptus fibrosa subsp. nubila (Maiden & Blakely) L.A.S.Johnson	5-Nov-63	10M NW OF HORNET BANK HS	149.4166667	-25.75
Myrtaceae	Eucalyptus tereticornis Sm. subsp. tereticornis	29-Jun-66	10M N OF TAROOM ON TAROOM-THEODORE RD	149.75	-25.583333
Myrtaceae	Eucalyptus cambageana Maiden	18-Apr-75	28.5M N OF WANDOAN TOWARDS TAROOM	149.8416667	-25.79166667
Myrtaceae	Eucalyptus chloroclada (Blakely) L.A.S.Johnson & K.D.Hill	25-Apr-75	11.7M W OF YEBNA TAROOM-INJUNE	149.2083333	-25.70833333
Myrtaceae	Eucalyptus orgadophila Maiden & Blakely	18-Apr-75	27.2M N OF WANDOAN TOWARDS TAROOM	149.8416667	-25.80833333
Myrtaceae	Eucalyptus decorticans (F.M.Bailey) Maiden	25-Apr-75	14.7M E OF YEBNA TAROOM-INJUNE	149.375	-25.675
Myrtaceae	Eucalyptus rhombica A.R.Bean & Brooker	25-Apr-75	15.3M E OF YEBNA BETWEEN TAROOM & INJUNE	149.3916667	-25.675
Myrtaceae	Eucalyptus fibrosa F.Muell. subsp. fibrosa	25-Apr-75	15.3M E OF YEBNA BETWEEN TAROOM & INJUNE	149.3916667	-25.675
Myrtaceae	Lophostemon suaveolens (Sol. ex Gaertn.) Peter G.Wilson & J.T.Waterh.		TAROOM	149.75	-25.58333333
Myrtaceae	Corymbia erythrophloia (Blakely) K.D.Hill & L.A.S.Johnson	8-Feb-61	TAROOM 7KM NW OF	149.75	-25.75
Myrtaceae	Eucalyptus tereticornis Sm. subsp. tereticornis	6-May-60	THE BENTLEY CA 20KM W OF TAROOM	149.5833333	-25.75
Myrtaceae	Eucalyptus woollsiana R.T.Baker	7-Sep-53	CA 24M N OF YULEBA	149.4166667	-26.25
Myrtaceae	Eucalyptus rhombica A.R.Bean & Brooker	12-Sep-79	C 40KM W OF TAROOM	149.375	-25.675
Myrtaceae	Eucalyptus chloroclada (Blakely) L.A.S.Johnson & K.D.Hill	30-Apr-87	CA 12KM W OF LUCKY DOWNS	149.5083333	-26.25833333
Myrtaceae	Eucalyptus tholiformis A.R.Bean & Brooker	17-May-95	SF 46 BAROONDAH APPROX 50KM WEST OF TAROOM	149.75	-25.58333333

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Myrtaceae	Eucalyptus beaniana L.A.S.Johnson & K.D.Hill	25-Oct-98	TAROOM-INJUNE ROAD NE OF BAROONDAH (GPS 25 38 07 149 19 13)	149.3202778	-25.63527778
Myrtaceae	Eucalyptus orgadophila Maiden & Blakely	26-Mar-10	WANDOAN-JACKSON ROAD, SW OF WANDOAN	149.8372222	-26.24694444
Myrtaceae	Eucalyptus populnea F.Muell.	26-Mar-10	WANDOAN-JACKSON ROAD, SW OF WANDOAN	149.8344444	-26.23388889
Nyctaginaceae	Boerhavia dominii Meikle & Hewson	5-Mar-59	SPRING CK (PARISH BUNDI) CA 18M NW OF WANDOAN	149.75	-25.91666667
Oleaceae	Jasminum didymum subsp. lineare (R.Br.) P.S.Green	12-Oct-55	CLUDEN S OF TAROOM	149.9166667	-25.91666667
Oleaceae	Olea europaea L. subsp. europaea	20-Aug-70	BIRRALEE 8M N OF WANDOAN	149.925	-26.00833333
Orchidaceae	Caladenia caerulea R.Br. var. caerulea	Jul-59	TAROOM	149.75	-25.58333333
Orchidaceae	Cymbidium canaliculatum R.Br.	15-Oct-75	80KM E OF INJUNE	149.1916667	-25.74166667
Orchidaceae	Cymbidium canaliculatum R.Br.	3-Oct-80	TRELINGA PORTION 86 PARISH OF WANDOAN TAROOM SHIRE	149.9166667	-26.25
Papaveraceae	Argemone ochroleuca Sweet subsp. ochroleuca	7-Oct-00	JUANDAH CREEK, LEICHHARDT HWY	149.9278333	-26.07297222
Papaveraceae	Papaver aculeatum Thunb.	25-Oct-98	INJUNE-TAROOM ROAD 0.1KM FROM YEDNA TURNOFF (GPS 25 41 59 149 11 51)	149.1975	-25.69972222
Parmeliaceae	Parmotrema reticulatum (Taylor) M.Choisy	31-Aug-85	30KM S OF TAROOM	149.875	-25.80833333
Passifloraceae	Passiflora aurantia G.Forst. var. aurantia	31-Jan-54	5M NW OF TAROOM	149.25	-25.75
Pertusariaceae	Pertusaria thiospoda C.Knight	31-Aug-85	30 KM SOUTH OF TAROOM	149.875	-25.80833333
Phyllanthaceae	Bridelia leichhardtii Baill. ex Muell.Arg.	31-Jan-54	5M NW OF TAROOM	149.25	-25.75
Phyllanthaceae	Phyllanthus maderaspatensis L.	18-Mar-98	LESS THAN 10KM FROM TAROOM	149.75	-25.58333333
Physciaceae	Dirinaria confluens (Fr.) D.D.Awasthi	31-Aug-85	30 KM SOUTH OF TAROOM	149.875	-25.80833333
Pittosporaceae	Pittosporum angustifolium Lodd.	15-Nov-30	WANDOAN	149.9166667	-26.25
Pittosporaceae	Auranticarpa rhombifolia (A.Cunn. ex Hook.) L.Cayzer, Crisp & I.Telford	27-Apr-70	WANDOAN	149.9166667	-26.08333333

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Pittosporaceae	Pittosporum spinescens (F.Muell.) L.Cayzer, Crisp & I.Telford	20-Sep-55	BROOKFIELD BETWEEN TAROOM AND YULEBA	149.4166667	-25.91666667
Pittosporaceae	Pittosporum spinescens (F.Muell.) L.Cayzer, Crisp & I.Telford	1-Jun-46	WANDOAN	149.9166667	-26.25
Pittosporaceae	Pittosporum spinescens (F.Muell.) L.Cayzer, Crisp & I.Telford	22-Apr-59	10M W OF TAROOM (P)	149.5833333	-25.58333333
Pittosporaceae	Auranticarpa rhombifolia (A.Cunn. ex Hook.) L.Cayzer, Crisp & I.Telford	16-Sep-10	'NULLIN', C. 43KM NNE OF YULEBA, SE QLD.	149.4891667	-26.27111111
Pittosporaceae	Pittosporum angustifolium Lodd.	26-Mar-10	JUANDAH SF, SW OF WANDOAN	149.7791667	-26.22194444
Plantaginaceae	Plantago cunninghamii Decne.	14-Sep-02	TAROOM-INJUNE ROAD, 20KM FROM TAROOM	149.6255556	-25.69
Poaceae	Aristida leptopoda Benth.	27-Feb-59	CLUDEN C 26M N OF WANDOAN	149.9166667	-25.75
Poaceae	Astrebla lappacea (Lindl.) Domin	1930	NR WANDOAN ON PLAINS OF ROCHE CK	149.9166667	-26.25
Poaceae	Astrebla lappacea (Lindl.) Domin	6-May-53	WANDOAN	149.9166667	-26.25
Poaceae	Bothriochloa bladhii (Retz.) S.T.Blake subsp. bladhii	27-Feb-59	LILYVALE 6M S OF TAROOM	149.75	-25.75
Poaceae	Urochloa foliosa (R.Br.) R.D.Webster	5-Mar-59	SPRING CK PARISH BUNDI C 18M NW OF WANDOAN	149.75	-25.91666667
Poaceae	Capillipedium spicigerum S.T.Blake	26-Apr-64	5.5M N OF WANDOAN	149.9166667	-26.08333333
Poaceae	Cenchrus echinatus L.	13-Jan-60	TAROOM	149.75	-25.58333333
Poaceae	Heteropogon contortus (L.) P.Beauv. ex Roem. & Schult.	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Poaceae	Iseilema membranaceum (Lindl.) Domin	30-Apr-53	WANDOAN	149.9166667	-26.08333333
Poaceae	Megathyrsus maximus var. pubiglumis (K.Schum.) B.K.Simon & S.W.L.Jacobs	26-Apr-64	5.5M N WANDOAN	149.9166667	-26.08333333
Poaceae	Chloris gayana Kunth	26-Apr-64	5.5M N OF WANDOAN	149.9166667	-26.08333333
Poaceae	Cymbopogon refractus (R.Br.) A.Camus	15-Nov-30	WANDOAN	149.9166667	-26.25

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Poaceae	Digitaria bicornis (Lam.) Roem. & Schult.	17-May-66	WYBARA 50M NNE OF ROMA	149.0833333	-25.91666667
Poaceae	Echinochloa inundata P.W.Michael & Vickery	29-Jan-57	KOOROORA WANDOAN	149.9166667	-26.08333333
Poaceae	Echinochloa inundata P.W.Michael & Vickery	24-Apr-61	WANDOAN	149.9166667	-26.08333333
Poaceae	Enteropogon ramosus B.K.Simon	5-Mar-59	SPRING CK CA 18M NW WANDOAN PARISH OF BUNDI	149.9166667	-25.91666667
Poaceae	Enteropogon acicularis (Lindl.) Lazarides	5-Mar-59	SPRING CK PARISH BUNDI C 18M NW OF WANDOAN	149.9166667	-25.91666667
Poaceae	Eragrostis cilianensis (All.) Vignolo ex Janch.	26-Apr-64	5.5M N OF WANDOAN	149.9166667	-26.08333333
Poaceae	Eragrostis megalosperma F.Muell. ex Benth.	15-Apr-59	TAROOM-WANDOAN CA 15M N OF WANDOAN	149.9166667	-25.91666667
Poaceae	Paspalidium constrictum (Domin) C.E.Hubb.	Feb-26	TAROOM	149.75	-25.58333333
Poaceae	Paspalidium globoideum (Domin) Hughes	27-Feb-59	CLUDEN 26M N WANDOAN	149.9166667	-25.75
Poaceae	Paspalum dilatatum Poir.	Jun-08	TAROOM	149.75	-25.58333333
Poaceae	Paspalum dilatatum Poir.	1930	10M NW WANDOAN	149.9166667	-26.08333333
Poaceae	Perotis rara R.Br.	26-Apr-64	13M S WANDOAN	149.9166667	-26.25
Poaceae	Setaria paspalidioides Vickery	1-Mar-59	DALZIEL 26M N WANDOAN	149.9166667	-25.75
Poaceae	Sarga leiocladum (Hack.) Spangler	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Poaceae	Thellungia advena Stapf ex Probst	15-Nov-30	WANDOAN	149.9166667	-26.25
Poaceae	Thellungia advena Stapf ex Probst	15-Nov-30	WANDITAN	149.9166667	-26.25
Poaceae	Tragus australianus S.T.Blake	15-Nov-30	WANDOAN	149.9166667	-26.25
Poaceae	Triraphis mollis R.Br.	17-Nov-30	WANDOAN	149.9166667	-26.25
Poaceae	Urochloa panicoides P.Beauv. var. panicoides	Dec-46	WANDOAN	149.9166667	-26.25
Poaceae	Urochloa panicoides P.Beauv. var. panicoides	1-Mar-59	DALZIEL 26M W WANDOAN	149.9166667	-25.75
Poaceae	Sporobolus scabridus S.T.Blake	27-Feb-59	TAROOM	149.75	-25.58333333
Poaceae	Austrostipa ramosissima (Trin.) S.W.L.Jacobs & J.Everett	15-Apr-59	TAROOM - WANDOAN RD 15M N OF WANDOAN	149.916667	-25.916667

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Poaceae	Austrostipa verticillata (Nees ex Spreng.) S.W.L.Jacobs & J.Everett	26-Apr-64	5.5M N OF WANDOAN	149.9166667	-26.08333333
Poaceae	Enneapogon intermedius N.T.Burb.	Mar-79	SW OF GROSMONT 15M NW OF WANDOAN	149.75	-26.08333333
Poaceae	Enteropogon ramosus B.K.Simon	Mar-79	SW OF GROSMONT 15M NW OF WANDOAN	149.75	-26.08333333
Poaceae	Panicum buncei F.Muell. ex Benth.	Mar-79	SW OF GROSMONT 15M NW WANDOAN	149.75	-26.08333333
Poaceae	Dichelachne crinita (L.f.) Hook.f.	16-Nov-30	WANDOAN	149.9166667	-26.08333333
Poaceae	Aristida calycina var. praealta Domin	16-Nov-30	WANDOAN	149.9166667	-26.08333333
Poaceae	Paspalidium gracile (R.Br.) Hughes	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Poaceae	Eragrostis elongata (Willd.) J.Jacq.	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Poaceae	Ancistrachne uncinulata (R.Br.) S.T.Blake	16-Nov-30	WANDOAN	149.9166667	-26.08333333
Poaceae	Capillipedium parviflorum (R.Br.) Stapf	17-Nov-30	S OF WANDOAN TOWARDS GURULMUNDI	149.9166667	-26.08333333
Poaceae	Eragrostis sororia Domin	16-Nov-30	WANDOAN	149.9166667	-26.08333333
Poaceae	Eragrostis alveiformis Lazarides	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Poaceae	Thellungia advena Stapf ex Probst	15-Nov-30	WANDOAN	149.916667	-26.083333
Poaceae	Sporobolus caroli Mez	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Poaceae	Paspalidium caespitosum C.E.Hubb.	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Poaceae	Aristida echinata Henrard	16-Nov-30	WANDOAN	149.9166667	-26.08333333
Poaceae	Paspalidium distans (Trin.) Hughes	15-Nov-30	NEAR WANDOAN	149.9166667	-26.08333333
Poaceae	Cynodon nlemfuensis Vanderyst var. nlemfuensis	20-Aug-84	PORTION 23 PARISH CHERWONDAH & PORTION 68 PARISH ROCHEDALE WANDOAN SHIRE	149.916667	-26.083333
Poaceae	Panicum antidotale Retz.	Aug-85	PARISH OF TAROOM PORTION 21V	149.75	-25.58333333
Poaceae	Elymus multiflorus (Banks & Sol. ex Hook.f.) A.Love & Connor var. multiflorus	15-Nov-30	NR WANDOAN	149.9166667	-26.08333333

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Poaceae	Digitaria	31-Jan-54	GASSMANS MOUNTAIN CA 5M NW OF TAROOM	149.75	-25.75
Poaceae	Panicum coloratum L.	May-88	TAROOM SHIRE PARISH OF ROCHEDALE PORTION 64 BLUEHILLS	149.9166667	-25.91666667
Poaceae	Pennisetum glaucum (L.) R.Br.	12-Jun-89	KINGSWOOD TAROOM SHIRE PARISH OF WANDOAN PORTION 77	149.9166667	-26.08333333
Poaceae	Bromus catharticus Vahl	7-Oct-00	JUANDAH CREEK, LEICHHARDT HWY	149.9278333	-26.07297222
Poaceae	Eragrostis	1930	CONLOI CREEK, NEAR GILIGULGIL	149.9166667	-26.25
Poaceae	Eragrostis setifolia Nees	28-Aug-90	EUROMBAH ROAD C 23KM SW OF TAROOM C 8KM W OF WANDOAN TURNOFF	149.625	-25.79166667
Poaceae	Panicum coloratum L.	20-Mar-02	6 MILE GULLY RESERVE, OPPOSITE BARUNGA LANE, APPROX. 15KM FROM WANDOAN BESIDE TRUCK STOP, LEICHHARDT HIGHWAY	149.9166667	-26.08333333
Poaceae	Echinochloa crus-galli (L.) P.Beauv.	13-Apr-02	YEBNA, NW OF TAROOM	149.1027778	-25.73277778
Poaceae	Setaria australiensis (Scribn. & Merr.) Vickery	13-Mar-01	YEBNA, NW OF TAROOM	149.1036111	-25.72611111
Poaceae	Setaria pumila subsp. subtesselata (Buse) B.K.Simon	20-Jun-93	GLEN ELLEN TAROOM SHIRE	149.75	-25.58333333
Poaceae	Aristida muricata Henrard	May-93	'GLEN ELLEN' TAROOM	149.75	-25.58333333
Poaceae	Sporobolus actinocladius (F.Muell.) F.Muell.	28-Jan-99	MOORABINDA (GPS 25 53 39 149 17 11)	149.2863889	-25.89416667
Poaceae	Cenchrus purpurascens Thunb.	28-Jan-99	MOORABINDA (GPS 25 53 38 149 17 16)	149.2877778	-25.89388889
Poaceae	Avena ludoviciana Durieu	7-Oct-00	JUANDAH CREEK, LEICHHARDT HIGHWAY	149.9278333	-26.07297222
Poaceae	Leptochloa decipiens subsp. peacockii (Maiden & Betcher) N.Snow	25-Oct-98	TAROOM-INJUNE ROAD NE OF BAROONDAH (GPS 25 38 07 149 19 13)	149.3202778	-25.63527778
Poaceae	Chrysopogon fallax S.T.Blake	25-Oct-98	TAROOM-INJUNE ROAD NE OF BAROONDAH (GPS 25 38 07 149 19 13)	149.3202778	-25.63527778

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Poaceae	Panicum decompositum R.Br. var. decompositum	15-Nov-30	NEAR WANDOAN	149.9166667	-26.08333333
Poaceae	Panicum decompositum R.Br. var. decompositum	15-Nov-30	NEAR WANDOAN, NEAR RAILWAY TRACK	149.9166667	-26.08333333
Poaceae	Enneapogon lindleyanus (Domin) C.E.Hubb.	13-Sep-02	YEBNA, C. 60KM W OF TAROOM	149.1459484	-25.66746431
Poaceae	Sporobolus partimpatens R.Mills ex B.K.Simon	23-Feb-05	SCOTT'S CREEK SPRINGS, MOORABINDA, W OF TAROOM	149.2933333	-25.889
Poaceae	Homopholis belsonii C.E.Hubb.	15-Oct-07	JACKSON-WANDOAN RD, C. 8KM FROM WANDOAN.	149.8634046	-26.14603965
Poaceae	Triodia mitchellii Benth.	4-Jul-08	'STRATHBLANE', ALONG FLOW LINE BETWEEN GAS WELLS SG50 AND DM3, E INJUNE	149.1383333	-25.90166667
Poaceae	Eragrostis bahiensis Schrad. ex Schult.	4-Jul-08	'STRATHBLANE', MAIN TRACK S OF MAILBOX, E INJUNE	149.1102778	-25.82666667
Poaceae	Sporobolus creber De Nardi	4-Jul-08	'STRATHBLANE', TRACK BESIDE FLOW LINE IMMEDIATELY N OF GAS WELL #SG13, E INJUNE	149.1036111	-25.86055556
Poaceae	Triraphis mollis R.Br.	4-Jul-08	'STRATHBLANE', TRACK BESIDE FLOW LINE IMMEDIATELY N OF GAS WELL #SG13, E INJUNE	149.1036111	-25.86055556
Poaceae	Eulalia aurea (Bory) Kunth	26-Mar-10	WANDOAN-JACKSON ROAD, SW OF WANDOAN	149.8344444	-26.23388889
Poaceae	Sporobolus caroli Mez	26-Mar-10	JUANDAH SF, SW OF WANDOAN	149.7819444	-26.21416667
Poaceae	Ancistrachne uncinulata (R.Br.) S.T.Blake	26-Mar-10	JUANDAH STATE FOREST, SW OF WANDOAN	149.7791667	-26.22194444
Poaceae	Enneapogon lindleyanus (Domin) C.E.Hubb.	26-Mar-10	JUANDAH STATE FOREST, SW OF WANDOAN	149.7819444	-26.21416667
Poaceae	Enteropogon unispiceus (F.Muell.) Clayton	26-Mar-10	JUANDAH STATE FOREST, SW OF WANDOAN	149.7786111	-26.22138889

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Poaceae	Leptochloa decipiens (R.Br.) Stapf ex Maiden subsp. decipiens	26-May-09	'SPRING GULLY', NW OF GAS WELL SG36, NE ROMA.	149.1072222	-25.91666667
Poaceae	Leptochloa fusca (L.) Kunth subsp. fusca	1-Apr-08	TAROOM AIRPORT ROAD	149.8858333	-25.80527778
Poaceae	Bothriochloa bladhii (Retz.) S.T.Blake subsp. bladhii	1-Apr-08	TAROOM AIRPORT ROAD	149.8858333	-25.80972222
Polygonaceae	Muehlenbeckia florulenta Meisn.	26-Apr-59	3M SW OF TAROOM (R)	149.75	-25.58333333
Polygonaceae	Persicaria lapathifolia (L.) Gray	16-Nov-30	WANDOAN	149.9166667	-26.25
Polygonaceae	Rumex tenax Rech.f.	26-Apr-59	3M SW OF TAROOM	149.75	-25.58333333
Polygonaceae	Persicaria hydropiper (L.) Spach	12-Mar-02	DAWSON RIVER 'YEBNA', NW OF TAROOM	149.1280556	-25.70055556
Polygonaceae	Emex australis Steinh.	24-Oct-98	PROSSERS ROAD NW OF WANDOAN (GPS 25 50 57 149 44 00)	149.7333333	-25.84916667
Polygonaceae	Muehlenbeckia florulenta Meisn.	24-Oct-98	EUROMBAH CK SW OF TAROOM (GPS 25 48 35 149 31 15)	149.5208333	-25.80972222
Polygonaceae	Rumex tenax Rech.f.	24-Oct-98	EUROMBAH CK SW OF TAROOM (GPS 25 48 35 149 31 15)	149.5208333	-25.80972222
Pontederiaceae	Monochoria cyanea (F.Muell.) F.Muell.	Apr-63	10M N OF TAROOM	149.75	-25.58333333
Portulacaceae	Portulaca sp. (Blackall G.Le Gros AQ101965)	1-Mar-59	DALZIEL 26M N OF WANDOAN	149.9166667	-25.75
Proteaceae	Grevillea decora Domin subsp. decora	22-May-73	NR WANDOAN	149.9166667	-26.08333333
Proteaceae	Grevillea longistyla Hook.	23-Jun-60	65M SW OF THEODORE	149.4166667	-25.75
Proteaceae	Grevillea striata R.Br.	Nov-30	WANDOAN	149.9166667	-26.08333333
Proteaceae	Hakea lorea (R.Br.) R.Br. subsp. lorea	11-Aug-60	31.7M N OF TAROOM THEODORE RD	149.75	-25.58333333
Pteridaceae	Pteris vittata L.	13-Apr-02	DAWSON RIVER 'YEBNA', NW OF TAROOM	149.1052778	-25.71972222
Ranunculaceae	Clematis decipiens H.Eichler ex Jeanes	24-Aug-54	NEAR ROCHEDALE CK S OF WANDOAN	149.9166667	-25.91666667
Ranunculaceae	Clematis decipiens H.Eichler ex Jeanes	21-Aug-64	BETHANY 18M W OF WANDOAN	149.5833333	-26.08333333
Ranunculaceae	Clematis decipiens H.Eichler ex Jeanes	21-Aug-64	BETHANY 18M W OF WANDOAN	149.5833333	-26.08333333
Ranunculaceae	Clematis decipiens H.Eichler ex Jeanes	15-Oct-75	35KM N OF WANDOAN ON TAROOM RD	149.9083333	-25.85833333

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Ranunculaceae	Clematis microphylla DC.	11-Aug-60	11.8M N OF WANDOAN	149.9166667	-26.08333333
Ranunculaceae	Clematis microphylla DC.	Oct-03	BARTON CREEK, TAROOM SHIRE, NEAR ROAD RESERVE	149.425	-26.275
Ranunculaceae	Clematis microphylla DC.	16-Sep-10	'NULLIN', C. 43KM NNE OF YULEBA, SE QLD.	149.5011111	-26.27083333
Rhamnaceae	Ventilago viminalis Hook.	15-Oct-75	32KM W OF TAROOM ON INJUNE RD	149.525	-25.70833333
Rhamnaceae	Alphitonia excelsa (Fenzl) Benth.	12-Sep-79	CA 40KM W OF TAROOM	149.375	-25.675
Rubiaceae	Asperula conferta Hook.f.	15-Nov-30	WANDOAN	149.9166667	-26.25
Rubiaceae	Psydrax johnsonii S.T.Reynolds & R.J.F.Hend.	1-Jun-46	WANDOAN	149.9166667	-26.08333333
Rubiaceae	Psydrax oleifolia (Hook.) S.T.Reynolds & R.J.F.Hend.	16-Nov-30	WANDOAN	149.9166667	-26.08333333
Rubiaceae	Psydrax johnsonii S.T.Reynolds & R.J.F.Hend.	16-Nov-30	WANDOAN	149.916667	-26.25
Rubiaceae	Psydrax oleifolia (Hook.) S.T.Reynolds & R.J.F.Hend.	Nov-30	WANDOAN N OF MILES	149.9166667	-26.08333333
Rubiaceae	Psydrax johnsonii S.T.Reynolds & R.J.F.Hend.	28-Aug-90	EUROMBAH ROAD C 23KM SW OF TAROOM C 8KM W OF WANDOAN TURNOFF	149.625	-25.79166667
Rubiaceae	Asperula conferta Hook.f.	22-Nov-00	81KM N OF MILES ON TAROOM ROAD	149.9083333	-26.04166667
Rubiaceae	Spermacoce multicaulis Benth.	13-Sep-02	YEBNA, C. 60CM W OF TAROOM	149.1459484	-25.66746431
Rubiaceae	Cyclophyllum coprosmoides (F.Muell.) S.T.Reynolds & R.J.F.Hend. var. coprosmoides	16-Sep-10	'NULLIN', C. 43KM NNE OF YULEBA, SEQ.	149.5022222	-26.26888889
Rutaceae	Citrus glauca (Lindl.) Burkill	15-Oct-30	WANDOAN	149.9166667	-26.25
Rutaceae	Geijera parviflora Lindl.	1-Jun-46	JUANDAH CK BETWEEN WANDOAN & GILIGULGUL	149.9166667	-26.08333333
Rutaceae	Geijera parviflora Lindl.	17-Nov-30	WANDOAN	149.9166667	-26.08333333

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Rutaceae	Geijera parviflora Lindl.	Jan-60	EUROWBAH DOME N OF ROMA	149.5833333	-25.75
Rutaceae	Flindersia collina F.M.Bailey	Oct-12	TAROOM	149.75	-25.58333333
Santalaceae	Santalum lanceolatum R.Br.	16-Nov-30	WANDOAN	149.9166667	-26.25
Santalaceae	Santalum lanceolatum R.Br.	26-Nov-06	YEOVIL ROAD, LEICHHARDT HIGHWAY, BETWEEN TAROOM AND WANDOAN.	149.8997222	-25.94416667
Sapindaceae	Alectryon diversifolius (F.Muell.) S.T.Reynolds	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Sapindaceae	Dodonaea viscosa subsp. spatulata (Sm.) J.G.West	17-Nov-30	NEAR WANDOAN	149.9166667	-26.08333333
Sapindaceae	Atalaya hemiglauc (F.Muell.) F.Muell. ex Benth.	15-Oct-75	GAWON-INJUNE RD 50KM W OF TAROOM	149.375	-25.74166667
Sapindaceae	Alectryon pubescens (S.T.Reynolds) S.T.Reynolds	31-Jan-54	5M NW OF TAROOM	149.25	-25.75
Sapindaceae	Alectryon diversifolius (F.Muell.) S.T.Reynolds	26-Mar-10	JUANDAH SF, SW OF WANDOAN	149.7791667	-26.22194444
Sapotaceae	Planchonella pubescens (P.Royen) Swenson, Bartish & Munzinger	1-Jun-46	WANDOAN	149.9166667	-26.08333333
Scrophulariaceae	Mimulus gracilis R.Br.	15-Oct-54	CLUDEN SE OF TAROOM BUNGABAN CK	149.9166667	-25.91666667
Scrophulariaceae	Mimulus	11-Aug-11	NULLIN, C. 42KM NORTH NORTH EAST OF YULEBA.	149.4952778	-26.25444444
Scrophulariaceae	Mimulus	9-Aug-11	NULLIN, 45KM NORTH NORTH EAST OF YULEBA.	149.5319444	-26.23416667
Solanaceae	Solanum opacum A.Braun & C.D.Bouche	7-Jul-55	CLUDEN 15M SSE OF TAROOM	149.9166667	-25.91666667
Solanaceae	Solanum mitchellianum Domin	24-Oct-69	30M W OF TAROOM	149.4166667	-25.75
Solanaceae	Nicotiana megalosiphon Van Heurck & Muell.Arg. subsp. megalosiphon	14-Dec-01	11.6KM N OF WANDOAN	149.9133333	-26.03027778
Solanaceae	Nicotiana megalosiphon Van Heurck & Muell.Arg.	24-Nov-60	3.7M S S OF WANDOAN	149.9166667	-26.08333333

Family_Name	Botanical_Name	Collect_Date	Locality	Long_Decimal	Lat_Decimal
Solanaceae	Solanum jucundum A.R.Bean	20-Jun-93	MORABINDA TAROOM SHIRE	149.75	-25.58333333
Solanaceae	Solanum coracinum Symon	29-Aug-99	19KM W OF WANDOAN POR46 PARISH JUANDAH COUNTY FORTESCUE TAROOM SHIRE	149.75	-26.08333333
Solanaceae	Nicotiana megalosiphon Van Heurck & Muell.Arg. subsp. megalosiphon	22-Nov-00	81KM N OF MILES ON TAROOM ROAD	149.9083333	-26.04166667
Solanaceae	Solanum coracinum Symon	16-Sep-10	'NULLIN', C. 43KM NNE OF YULEBA, SE QLD.	149.5011111	-26.27083333
Solanaceae	Solanum mitchellianum Domin	4-Jul-08	'STRATHBLANE', EASTERN SIDE OF KNOB PADDOCK, E INJUNE	149.2063889	-25.91083333
Solanaceae	Solanum ellipticum R.Br.	26-Mar-10	JUANDAH STATE FOREST, SW OF WANDOAN	149.7791667	-26.22194444
Solanaceae	Physalis ixocarpa Brot. ex Hornem.	8-Apr-09	'YEBNA', E INJUNE.	149.15	-25.7225
Sterculiaceae	Brachychiton australis (Schott & Endl.) A.Terracc.	1-Jun-46	WANDOAN	149.9166667	-26.08333333
Teloschistaceae	Teloschistes spinosus (Hook.f. & Taylor) J.S.Murray	31-Aug-85	30KM S OF TAROOM	149.875	-25.80833333
Thymelaeaceae	Pimelea microcephala R.Br. subsp. microcephala	8-Jul-63	13M SW OF TAROOM	149.5833333	-25.75
Verbenaceae	Verbena aristigera S.Moore	14-Sep-02	TAROOM - INJUNE ROAD, 20KM FROM TAROOM	149.6255556	-25.69
Viscaceae	Viscum articulatum Burm.f.	29-Jul-03	10KM N OF WANDOAN	149.925	-26.05833333
Viscaceae	Viscum whitei Blakely subsp. whitei	21-May-06	'STRATHBLANE', HILL SLOPE ABOVE SCOTTS CREEK, E INJUNE	149.1983333	-25.895
Vitaceae	Clematicissus opaca (F.Muell.) Jackes & Rossetto	8-Feb-61	CA 4M NW OF TAROOM	149.75	-25.58333333
Zygophyllaceae	Roepera apiculata (F.Muell.) Beier & Thulin	15-Nov-30	WANDOAN	149.9166667	-26.08333333
Zygophyllaceae	Roepera apiculata (F.Muell.) Beier & Thulin	1908	TAROOM	149.75	-25.58333333
Zygophyllaceae	Roepera apiculata (F.Muell.) Beier & Thulin	28-Aug-90	EUROMBAH ROAD C 23KM SW OF TAROOM C 8KM W OF WANDOAN TURNOFF	149.625	-25.79166667

QUEENSLAND MUSEUM TERRESTRIAL FAUNA DATABASE SEARCH RESULTS

Taxon - Family	Taxon - Genus	Taxon - Species	Taxon - Subspecies	Taxon - Common Name	Locality Name	Latitude export	Longitude export	Field Coll Date
Limnodynastidae	Limnodynastes	fletcheri		Long-thumbed frog	Richon Waterhole campsite	-25.85	149.37	22-Mar-79
Limnodynastidae	Limnodynastes	salmini		Salmon-striped Frog	Richon Stn	-25.85	149.38	22-Mar-79
Limnodynastidae	Limnodynastes	tasmaniensis		Spotted Marshfrog	Wandoan	-26.12	149.97	7-Dec-62
Limnodynastidae	Limnodynastes	tasmaniensis		Spotted Marshfrog	Yebna Stn dam	-25.68	149.18	3-Nov-79
Limnodynastidae	Limnodynastes	tasmaniensis		Spotted Marshfrog	Yebna Stn	-25.68	149.18	3-Nov-79
Limnodynastidae	Limnodynastes	tasmaniensis		Spotted Marshfrog	Yebna Stn dam	-25.68	149.18	11-Mar-80
Limnodynastidae	Limnodynastes	terraereginae		Scarlet-sided Pobblebonk	Moorabinda Stn	-25.88	149.32	9-Nov-77
Limnodynastidae	Platyplectrum	ornatum		Ornate Burrowing Frog	Wandoan	-26.12	149.97	7-Dec-62
Limnodynastidae	Platyplectrum	ornatum		Ornate Burrowing Frog	Taroom, 6km N, on Highway	-25.6	149.77	21 Sep 1997- 17 Dec 1997
Myobatrachidae	Pseudophryne	major		Great Brown Broodfrog	Taroom	-25.65	149.63	17-Jun-96
Myobatrachidae	Uperoleia			Frog	Hornet Bank, Injune Rd	-25.75	149.4	9-Nov-77
Myobatrachidae	Uperoleia	rugosa		Chubby Gungan	Hornet Bank, Injune Rd	-25.75	149.4	9-Nov-77
Myobatrachidae	Uperoleia	rugosa		Chubby Gungan	Hornet Bank, Injune Rd	-25.75	149.4	10-Nov-77
Hylidae	Cyclorana	alboguttata		Green-stripe Frog	N of Taroom	-25.6	149.77	7-Jan-00
Hylidae	Cyclorana	brevipes		Superb Collared-frog	Moorabinda Stn, SW of Taroom	-25.88	149.32	
Hylidae	Cyclorana	brevipes		Superb Collared-frog	N of Taroom	-25.6	149.77	7-Jan-00
Hylidae	Litoria	caerulea		Green Treefrog	Yebna Stn, Taroom/Injune Rd	-25.68	149.18	24-Jan-77
Hylidae	Litoria	fallax		Eastern Sedgefrog	Yebna Stn, Taroom-Injune Rd	-25.68	149.18	24-Jan-77
Hylidae	Litoria	fallax		Eastern Sedgefrog	Hornet Bank Stn, Injune Rd	-25.72	149.35	9-Nov-77
Hylidae	Litoria	fallax		Eastern Sedgefrog	Hornet Bank Stn, Injune Rd	-25.72	149.35	10-Nov-77
Hylidae	Litoria	fallax		Eastern Sedgefrog	Richon Stn	-25.85	149.38	22-Mar-79

Taxon - Family	Taxon - Genus	Taxon - Species	Taxon - Subspecies	Taxon - Common Name	Locality Name	Latitude export	Longitude export	Field Coll Date
Hylidae	Litoria	latopalmata		Broad-palmed Rocketfrog	Moorabinda Stn, bore	-25.88	149.32	26-Sep-79
Hylidae	Litoria	latopalmata		Broad-palmed Rocketfrog	Yebna Stn dam	-25.68	149.18	3-Nov-79
Hylidae	Litoria	latopalmata		Broad-palmed Rocketfrog	N of Taroom	-25.6	149.77	7-Jan-00
Hylidae	Litoria	peronii		Green-spotted Tree Frog	Yebna Stn, Taroom-Injune Rd	-25.68	149.18	24-Jan-77
Hylidae	Litoria	peronii		Green-spotted Tree Frog	Hornet Bank Stn, Injune Rd	-25.72	149.35	9-Nov-77
Hylidae	Litoria	peronii		Green-spotted Tree Frog	Hornet Bank Stn, Injune Rd	-25.72	149.35	10-Nov-77
Hylidae	Litoria	peronii		Green-spotted Tree Frog	Baroondah - Dawson R Crossing	-25.7	149.2	4-Nov-79
Hylidae	Litoria	rubella		Naked Treefrog	Waterhole, Hornet Bank Stn, Injune Rd	-25.75	149.4	10-Nov-77
Hylidae	Litoria	rubella		Naked Treefrog	Yebna Stn dam	-25.68	149.18	3-Nov-79
Hylidae	Litoria	rubella		Naked Treefrog	Dawson R Crossing, Baroondah	-25.68	149.22	4-Nov-79
Hylidae	Litoria	rubella		Naked Treefrog	Glebe Weir, nr Taroom	-25.65	149.8	8-Nov-79
Hylidae	Litoria	wilcoxii			Dawson R, Baroondah	-25.68	149.22	3-Nov-79
Cheluidae	Chelodina	longicollis		Eastern Long-necked Turtle	Waterhole, Hornet Bank, Injune Rd	-25.7	149.18	10-Nov-77
Cheluidae	Elseya	albagula		White-throated Snapping Turtle	Dawson R Xing, at Baroondah Stn	-25.68	149.22	3-Nov-79
Diplodactylidae	Diplodactylus	vittatus		Stone Gecko	Yebna Stn, 80km E Injune	-25.68	149.18	
Diplodactylidae	Oedura	ocellata		Ocellated Velvet Gecko	Gullugimbi, ~15km N Jackson	-26.38	149.59	27-Mar-03
Diplodactylidae	Oedura	rhombifer		ZigZag Velvet Gecko	Yebna Stn, 80km E Injune	-25.68	149.18	
Diplodactylidae	Oedura	tryoni		Southern Spotted Velvet Gecko	Yebna Stn, 80km E Injune	-25.68	149.18	
Diplodactylidae	Oedura	tryoni		Southern Spotted Velvet Gecko	Moorabindah	-25.88	149.32	9-Nov-77
Diplodactylidae	Strophurus	elderi		Jewelled gecko	Cypress Downs	-26.4	149.6	9-Feb-03

Taxon - Family	Taxon - Genus	Taxon - Species	Taxon - Subspecies	Taxon - Common Name	Locality Name	Latitude export	Longitude export	Field Coll Date
					Reserve, 26km N of Jackson			
Diplodactylidae	Strophurus	taenicauda		Golden-tailed Gecko	Taroom, CWA Hall	-25.65	149.63	20-Jun-96
GEKKONIDAE	Gehyra	dubia		Dubious Dtella	Yebna Stn, 80km E Injune	-25.68	149.18	
GEKKONIDAE	Gehyra	dubia		Dubious Dtella	Moorabindah Stn, SW of Taroom	-25.88	149.32	
GEKKONIDAE	Gehyra	dubia		Dubious Dtella	Moorabindah Stn, SW of Taroom	-25.88	149.32	9-Nov-77
GEKKONIDAE	Gehyra	dubia		Dubious Dtella	Richon	-25.85	149.37	25-Mar-79
GEKKONIDAE	Gehyra	dubia		Dubious Dtella	Wandoan	-26.12	149.97	17-Aug-80
GEKKONIDAE	Gehyra	dubia		Dubious Dtella	Taroom, 9km N on Theodore Rd	-25.6	149.78	15-Jun-96
GEKKONIDAE	Gehyra	dubia		Dubious Dtella	Taroom, on rd to Cracow	-25.65	149.8	13-Jan-97
GEKKONIDAE	Heteronotia	binoei		Bynoe's Gecko	Yebna Stn, 80km E Injune	-25.68	149.18	
GEKKONIDAE	Heteronotia	binoei		Bynoe's Gecko	Richon	-25.85	149.37	23-Mar-79
GEKKONIDAE	Heteronotia	binoei		Bynoe's Gecko	Dawson R Xing, at Baroondah Stn	-25.68	149.22	4-Nov-79
GEKKONIDAE	Heteronotia	binoei		Bynoe's Gecko	Taroom, 9km N on Theodore Rd	-25.6	149.78	16-Jun-96
PYGOPODIDAE	Pygopus	schraderi		Eastern Hooded Scaly-foot	Taroom	-25.65	149.8	
Scincidae	Anomalopus	leuckartii		Two-clawed Worm-skink	Baroondah - Dawson R Crossing	-25.7	149.2	3-Nov-79
Scincidae	Carlia	pectoralis	pectoralis	Open-litter Rainbow Skink	Moorabinda Stn, SW of Taroom	-25.88	149.32	18-Apr-80
Scincidae	Carlia	pectoralis	pectoralis	Open-litter Rainbow Skink	Taroom, 5km N, on Highway	-25.62	149.78	17 Dec 1997-04 Apr 1998
Scincidae	Carlia	pectoralis	pectoralis	Open-litter Rainbow Skink	Stones Country Resources Reserve	-26.39	149.88	3-Feb-02
Scincidae	Carlia	pectoralis	pectoralis	Open-litter Rainbow Skink	Gullagimbi, 15km N of Jackson	-26.38	149.59	27-Mar-03
Scincidae	Cryptoblepharus			Wall Skink	Dawson R Xing, at Baroondah Stn	-25.68	149.22	3-Nov-79

Taxon - Family	Taxon - Genus	Taxon - Species	Taxon - Subspecies	Taxon - Common Name	Locality Name	Latitude export	Longitude export	Field Coll Date
Scincidae	Cryptoblepharus			Wall Skink	Taroom Shire	-25.65	149.8	18-Apr-80
Scincidae	Cryptoblepharus			Wall Skink	Taroom, rock wallaby site on hill	-25.65	149.8	10-Sep-96
Scincidae	Ctenotus	ingrami		Unspotted Yellow-sided Ctenotus	Gullagimbi, 15km N of Jackson	-26.38	149.59	Pre 2006
Scincidae	Ctenotus	robustus		Eastern Striped Skink	Yebna Stn, 80km E Injune	-25.68	149.18	
Scincidae	Ctenotus	robustus		Eastern Striped Skink	Dawson R Xing, at Baroondah Stn	-25.68	149.22	
Scincidae	Ctenotus	taeniolatus		Copper-tailed Skink	Dawson R Xing, at Baroondah Stn	-25.68	149.22	
Scincidae	Ctenotus	taeniolatus		Copper-tailed Skink	Moorabinda Stn	-25.88	149.33	9-Nov-77
Scincidae	Cyclodomorphus	gerrardii		Pink-tongued Skink	Taroom	-25.65	149.8	
Scincidae	Egernia	rugosa		Yakka Skink	Baroondah - Dawson R Crossing	-25.7	149.2	2-Nov-79
Scincidae	Egernia	striolata		Tree Skink	Moorabindah	-25.88	149.32	9-Nov-77
Scincidae	Egernia	striolata		Tree Skink	Richon	-25.85	149.37	23-Mar-79
Scincidae	Eulamprus	brachysoma			Yebna Stn, 80km E Injune	-25.68	149.18	
Scincidae	Eulamprus	sokosoma			Yebna Stn, 80km E Injune	-25.68	149.18	
Scincidae	Lerista	fragilis		Eastern Mulch-slider	Yebna Stn, 80km E Injune	-25.68	149.18	
Scincidae	Lerista	fragilis		Eastern Mulch-slider	Baroondah - Dawson R Crossing	-25.7	149.2	3-Nov-79
Scincidae	Lerista	fragilis		Eastern Mulch-slider	Taroom, 9km N on Theodore Rd	-25.6	149.78	15-Jun-96
Scincidae	Lerista	punctatovittata		Eastern Robust Slider	Taroom	-25.65	149.8	
Scincidae	Lerista	punctatovittata		Eastern Robust Slider	Taroom, 6km N, on Highway	-25.6	149.77	21 Sep 1997- 17 Dec 1997
Scincidae	Liopholis	modesta		Eastern Ranges Rock-skink	Baroondah - Dawson R Crossing	-25.7	149.2	3-Nov-79
Scincidae	Lygisaurus	foliorum		Burnett's Skink	Taroom	-25.65	149.63	14-Jun-96
Scincidae	Lygisaurus	foliorum		Burnett's Skink	Gullagimbi, 15km N of	-26.38	149.59	27-Mar-03

Taxon - Family	Taxon - Genus	Taxon - Species	Taxon - Subspecies	Taxon - Common Name	Locality Name	Latitude export	Longitude export	Field Coll Date
					Jackson			
Scincidae	Menetia	greyii		Common Dwarf Skink	Yebna Stn, 80km E Injune	-25.68	149.18	
Scincidae	Menetia	greyii		Common Dwarf Skink	Cypress Downs Reserve, 26km N of Jackson	-26.4	149.6	15-Feb-03
Scincidae	Morethia	boulengeri		South-eastern Morethia Skink	Moorabinda Stn	-25.88	149.32	19-May-79
Scincidae	Morethia	boulengeri		South-eastern Morethia Skink	Moorabinda Stn Bore	-25.88	149.32	26-Sep-79
Scincidae	Morethia	boulengeri		South-eastern Morethia Skink	Moorabinda Stn	-25.88	149.32	19-May-80
Scincidae	Morethia	boulengeri		South-eastern Morethia Skink	Taroom	-25.65	149.63	14-Jun-96
Scincidae	Morethia	boulengeri		South-eastern Morethia Skink	Taroom, Spring Ck gully	-25.65	149.63	19-Jun-96
Scincidae	Morethia	boulengeri		South-eastern Morethia Skink	Taroom, 6km N, on Highway	-25.6	149.77	21 Sep 1997- 17 Dec 1997
Scincidae	Morethia	boulengeri		South-eastern Morethia Skink	Gullagimbi, 15km N of Jackson	-26.37	149.61	27-Mar-03
Scincidae	Morethia	taeniopleura		North-eastern Firetail Skink	Yebna Stn, 80km E Injune	-25.68	149.18	
Agamidae	Amphibolurus	muricata		Jacky Lizard	Moorabindah Stn, SW of Taroom	-25.88	149.32	9-Jun-77
Agamidae	Physignathus	lesueurii		Eastern Water Dragon	Dawson R, Yebna, via Taroom	-25.68	149.18	
VARANIDAE	Varanus	gouldii		Sand Goanna	Injune to Taroom Rd, Hornet Bank T'off	-25.75	149.4	24-Jan-77
TYPHLOPIDAE	Ramphotyphlops	ligatus		Robust Blind Snake	Taroom	-25.65	149.8	
TYPHLOPIDAE	Ramphotyphlops	proximus		Proximus Blind Snake	Wandoan	-26.12	149.97	
TYPHLOPIDAE	Ramphotyphlops	proximus		Proximus Blind Snake	Taroom	-25.65	149.8	4-Dec-92
PYTHONIDAE	Antaresia	maculosa		Spotted Python	Wallumbilla	-26.3	149.24	2004
PYTHONIDAE	Aspidites	melanocephalus		Black-headed Python	Wandoan	-26.12	149.97	19-Aug-04
PYTHONIDAE	Morelia	spilota		Carpet Python	Taroom	-25.65	149.8	

Taxon - Family	Taxon - Genus	Taxon - Species	Taxon - Subspecies	Taxon - Common Name	Locality Name	Latitude export	Longitude export	Field Coll Date
COLUBRIDAE	Boiga	irregularis		Brown Tree Snake	Kinnoul Mt, nr Taroom	-25.67	149.67	
COLUBRIDAE	Boiga	irregularis		Brown Tree Snake	Taroom	-25.65	149.8	
COLUBRIDAE	Tropidonophis	mairii		Freshwater Snake	Kinneul Stn, Taroom	-25.68	149.63	
COLUBRIDAE	Tropidonophis	mairii		Freshwater Snake	Kinnoul, nr Taroom	-25.68	149.63	
COLUBRIDAE	Tropidonophis	mairii		Freshwater Snake	Taroom	-25.65	149.8	
COLUBRIDAE	Tropidonophis	mairii		Freshwater Snake	Wandoan	-26.12	149.97	
COLUBRIDAE	Tropidonophis	mairii		Freshwater Snake	Taroom	-25.65	149.8	10-Sep-76
Elapidae	Acanthophis	antarcticus		Common Death Adder	Taroom	-25.65	149.8	01 Sep 1968- 30 Sep 1968
Elapidae	Brachyurops	australis		Australian Coral Snake	Wandoan	-26.12	149.97	
Elapidae	Cryptophis	nigrescens		Small-eyed Snake	Taroom, 2nd stop after Cockatoo Ck	-25.64	149.91	20-Jun-96
Elapidae	Demansia	psammophis		Yellow-faced Whip Snake	Wandoan	-26.12	149.97	
Elapidae	Furina	diadema		Red-naped Snake	Wandoan	-26.12	149.97	
Elapidae	Furina	diadema		Red-naped Snake	Pony Hills SF	-25.8	149.17	11-Mar-80
Elapidae	Furina	diadema		Red-naped Snake	Gullagimbi, 15km N of Jackson	-26.38	149.59	27-Mar-03
Elapidae	Hoplocephalus	bitorquatus		Pale-headed Snake	Taroom	-25.65	149.8	
Elapidae	Hoplocephalus	bitorquatus		Pale-headed Snake	Wandoan	-26.12	149.97	
Elapidae	Hoplocephalus	bitorquatus		Pale-headed Snake	Guluguba, nr Wandoan	-26.12	149.97	
Elapidae	Hoplocephalus	bitorquatus		Pale-headed Snake	Yebna Stn, 80km E Injune	-25.68	149.18	24-Jan-77
Elapidae	Hoplocephalus	bitorquatus		Pale-headed Snake	Moorabindah Stn, SW of Taroom	-25.88	149.32	19-May-80
Elapidae	Pseudonaja	textilis		Eastern Brown Snake	Wandoan, 13km N, on rd	-26.02	149.92	
Elapidae	Pseudonaja	textilis		Eastern Brown Snake	Wandoan	-26.12	149.97	
Elapidae	Pseudonaja	textilis		Eastern Brown Snake	Wandoan, 10km NW	-26.05	149.92	18-Mar-88
Elapidae	Pseudonaja	textilis		Eastern Brown Snake	Wanaringa, 45km W	-25.63	149.37	31-Mar-97

Taxon - Family	Taxon - Genus	Taxon - Species	Taxon - Subspecies	Taxon - Common Name	Locality Name	Latitude export	Longitude export	Field Coll Date
					Taroom			
Elapidae	Suta	suta		Myall Snake	Wandoan	-26.12	149.97	
Elapidae	Suta	suta		Myall Snake	Wandoan, Cattle Downs	-26.12	149.97	
Elapidae	Suta	suta		Myall Snake	Wandoan	-26.12	149.97	11 Jul 1996 {Recd}
Elapidae	Vermicella	annulata		Bandy Bandy	Taroom	-25.65	149.8	
CASUARIIDAE	Dromaius	novaehollandiae	novaehollandiae		Taroom	-25.65	149.8	2-Nov-48
ANATIDAE	Anas	platyrhynchos	platyrhynchos		Verbena Park Stn, Taroom	-25.65	149.8	31-Jul-37
ANATIDAE	Anas	rhynchotis	rhynchotis		Wandoan	-26.12	149.97	
ANATIDAE	Aythya	australis	australis		Taroom	-25.65	149.8	1-Jul-78
OTIDIDAE	Ardeotis	australis		Australian Bustard	Taroom, 27k N	-25.63	149.78	27-Nov-03
COLUMBIDAE	Geopelia	humeralis	humeralis		Moorabinda Stn	-25.87	149.27	9-Nov-77
PSITTACIDAE	Northiella	haematogaster		Blue Bonnet	Moorabinda Hs	-25.87	149.27	20-May-80
CUCULIDAE	Chrysococcyx	lucidus	plagosus		State Forest, Pony Hills	-25.83	149.37	17-Jun-77
CUCULIDAE	Eudynamys	scolopacea	cynocephala		Bauhinia Pk, Lockan Rd	-25.8	149.7	8-Nov-77
TYTONIDAE	Tyto	alba	delicatula		Injune Rd, Taroom Shire	-25.65	149.72	20-Jan-77
TYTONIDAE	Tyto	alba	delicatula		Dawson R between Theodore & Taroom	-25.62	149.95	01 Jan 1980- 31 Dec 1980
STRIGIDAE	Ninox	novaeseelandiae	boobook		Leichhardt Hwy, S of Taroom	-25.83	149.9	15-Jun-77
AEGOTHELIDAE	Aegotheles	cristatus	cristatus		Dawson R Crossing, Baroondah	-25.68	149.22	4-Nov-79
ALCEDINIDAE	Alcedo	azurea	azureus		Dawson R, Gelena Stn, via Taroom	-25.65	149.8	25-Sep-68
ALAUDIDAE	Mirafra	javanica	horsfieldii		Moorabinda Stn	-25.87	149.27	21-Mar-79
HIRUNDINIDAE	Petrochelidon	nigricans	nigricans		Richan Waterhole	-25.85	149.37	22-Mar-79
MOTACILLIDAE	Anthus	novaeseelandiae	australis		Bauhinia Pk, Lockan Rd	-25.8	149.7	8-Nov-77
MOTACILLIDAE	Anthus	novaeseelandiae	australis		Moorabinda Stn	-25.87	149.27	21-Mar-79

Taxon - Family	Taxon - Genus	Taxon - Species	Taxon - Subspecies	Taxon - Common Name	Locality Name	Latitude export	Longitude export	Field Coll Date
CAMPEPHAGIDAE	Coracina	novaehollandiae	melanops		Dawson R Crossing, Baroondah	-25.68	149.22	4-Nov-79
CAMPEPHAGIDAE	Coracina	tenuirostris	tenuirostris		Scrub NW of Bauhinia Pk	-25.8	149.7	8-Nov-77
SYLVIIDAE	Cincloramphus	mathewsi		Rufous Songlark	Yebna Stn	-25.68	149.18	25-Nov-76
SYLVIIDAE	Cisticola	exilis	exilis		Bauhinia Pk, Lockan Rd	-25.8	149.7	8-Nov-77
SYLVIIDAE	Cisticola	exilis	exilis		Richan Waterhole	-25.85	149.37	22-Mar-79
MALURIDAE	Malurus	melanocephalus	melanocephalus		Bauhinia Pk, Lockan Rd	-25.8	149.7	8-Nov-77
ACANTHIZIDAE	Acanthiza	chrysorrhoa	chrysorrhoa		Bauhinia Pk, Lockan Rd	-25.8	149.7	8-Nov-77
ACANTHIZIDAE	Acanthiza	nana	modesta		Moorabinda Stn	-25.87	149.27	9-Nov-77
ACANTHIZIDAE	Acanthiza	reguloides	reguloides		Moorabinda Stn, Brumby Gully Bore	-25.83	149.25	25-Sep-79
ACANTHIZIDAE	Chthonicola	sagittata		Speckled Warbler	Moorabinda Stn	-25.87	149.27	9-Nov-77
ACANTHIZIDAE	Gerygone	olivacea	olivacea		Dawson R Crossing, Baroondah	-25.68	149.22	3-Nov-79
ACANTHIZIDAE	Sericornis	frontalis	laevigaster		Dawson R Crossing, Baroondah	-25.68	149.22	2-Nov-79
ACANTHIZIDAE	Sericornis	frontalis	laevigaster		Dawson R Crossing, Baroondah	-25.68	149.22	3-Nov-79
MONARCHIDAE	Myiagra	rubecula	yorki		Dawson R Crossing, Baroondah	-25.68	149.22	2-Nov-79
MONARCHIDAE	Rhipidura	rufifrons	rufifrons		Dawson R Crossing, Baroondah	-25.68	149.22	3-Nov-79
PARDALOTIDAE	Pardalotus	striatus		Striated Pardalote	Dawson R, between Theodore & Taroom	-25.62	149.95	8-Jan-80
PARDALOTIDAE	Pardalotus	striatus	melanocephalus		Richan Waterhole	-25.85	149.37	22-Mar-79
MELIPHAGIDAE	Acanthagenys	rufogularis	rufogularis		Moorabinda Stn	-25.87	149.27	25-Sep-79
MELIPHAGIDAE	Lichenostomus	chrysops	chrysops		Moorabinda Stn	-25.87	149.27	9-Nov-77
MELIPHAGIDAE	Lichmera	indistincta	ocularis		Taroom	-25.65	149.8	1-Nov-47
MELIPHAGIDAE	Manorina	flavigula	flavigula		Bauhinia Pk, Lockan Rd	-25.8	149.7	8-Nov-77
MELIPHAGIDAE	Manorina	melanocephala	melanocephala		Taroom	-25.65	149.8	7-Feb-63

Taxon - Family	Taxon - Genus	Taxon - Species	Taxon - Subspecies	Taxon - Common Name	Locality Name	Latitude export	Longitude export	Field Coll Date
MELIPHAGIDAE	Meliphaga	lewinii	lewinii		Moorabinda Stn	-25.87	149.27	9-Nov-77
MELIPHAGIDAE	Melithreptus	brevirostris	brevirostris		Dawson R Crossing, Baroondah	-25.68	149.22	2-Nov-79
MELIPHAGIDAE	Philemon	corniculatus	corniculatus		Taroom	-25.65	149.8	14-Sep-65
MELIPHAGIDAE	Philemon	corniculatus	corniculatus		Scrub NW of Bauhinia Pk	-25.8	149.7	8-Nov-77
MELIPHAGIDAE	Plectorhyncha	lanceolata		Striped Honeyeater	Moorabinda Stn	-25.87	149.27	9-Nov-77
ESTRILDIDAE	Taeniopygia	guttata	castanotis		Bauhinia Pk, Lockan Rd	-25.8	149.7	8-Nov-77
ORIOIDAE	Oriolus	sagittatus	sagittatus		Bauhinia Pk	-25.8	149.7	8-Nov-77
ARTAMIDAE	Artamus	leucorhynchus	leucopygialis		Richan Waterhole	-25.85	149.37	22-Mar-79
PTILONORHYNCHIDAE	Chlamydera	maculata		Spotted Bowerbird	Moorabinda Stn	-25.87	149.27	24-Sep-78
CORVIDAE	Corvus	coronoides	coronoides		Moorabinda Stn, Brumby Gully Bore	-25.83	149.25	25-Sep-79
CORVIDAE	Corvus	coronoides	coronoides		Moorabinda Stn, Brumby Gully Bore	-25.83	149.25	26-Sep-79
CORVIDAE	Corvus	orru	ceciliae		Richan Waterhole	-25.85	149.37	22-Aug-79
Dasyuridae	Sminthopsis	macroura		Stripe-faced dunnart	Taroom, 5.3km down Bungaban Rd	-25.63	149.8	19-Jun-96
Peramelidae	Isoodon	macrourus		Northern brown bandicoot	Taroom area	-25.63	149.8	
Phascolarctidae	Phascolarctos	cinereus		Koala	Livonia, Taroom	-25.65	149.75	
Pseudocheiridae	Petauroides	volans		Greater glider	Woleebee, 28.8km from Wandoan	-26.33	149.82	22-Mar-89
Phalangeridae	Trichosurus	vulpecula		Common brushtail possum	Yebna Stn, 80km W Taroom	-25.68	149.18	24-Sep-68
Macropodidae	Macropus	dorsalis		Black-striped wallaby	Livonia, Taroom	-25.65	149.75	
Macropodidae	Macropus	dorsalis		Black-striped wallaby	Wandoan & Taroom, btwn	-25.83	149.92	
Macropodidae	Macropus	giganteus		Eastern grey kangaroo	Livonia, Taroom	-25.65	149.75	
Macropodidae	Macropus	giganteus		Eastern grey kangaroo	Yebna Stn, 80km W Taroom	-25.68	149.18	25-Sep-68
Macropodidae	Macropus	robustus		Common wallaroo	Rock Wallaby Hill,	-25.65	149.8	10-Sep-96

Taxon - Family	Taxon - Genus	Taxon - Species	Taxon - Subspecies	Taxon - Common Name	Locality Name	Latitude export	Longitude export	Field Coll Date
					Taroom			
Macropodidae	Wallabia	bicolor		Swamp wallaby	Livonia, Taroom	-25.65	149.75	
Macropodidae	Wallabia	bicolor		Swamp wallaby	Taroom, Livonia	-25.63	149.8	13-Nov-16
Pteropodidae	Pteropus	scapulatus		Little red flying-fox	Hornet Bank, Injune Rd	-25.72	149.35	9-Nov-77
Pteropodidae	Pteropus	scapulatus		Little red flying-fox	Hornet Bank, Injune Rd	-25.72	149.35	9-Nov-79
Emballonuridae	Saccolaimus	flaviventris		Yellow-bellied sheath-tail-bat	Yebna Stn, 80km W Taroom	-25.68	149.18	24-Sep-68
Emballonuridae	Saccolaimus	flaviventris		Yellow-bellied sheath-tail-bat	Moorabanda Stn	-25.93	149.2	25-Sep-79
Emballonuridae	Saccolaimus	flaviventris		Yellow-bellied sheath-tail-bat	Moorabanda Stn	-25.88	149.33	25-Sep-79
Emballonuridae	Saccolaimus	flaviventris		Yellow-bellied sheath-tail-bat	Dawson R Crossing	-25.68	149.22	2-Nov-79
Vespertilionidae	Chalinolobus	gouldii		Goulds wattled bat	Moorabundah Stn	-25.93	149.2	25-Sep-79
Vespertilionidae	Chalinolobus	gouldii		Goulds wattled bat	Moorabanda Stn	-25.93	149.2	25-Sep-79
Vespertilionidae	Chalinolobus	gouldii		Goulds wattled bat	Moorabunda Stn	-25.93	149.2	25-Sep-79
Vespertilionidae	Chalinolobus	gouldii		Goulds wattled bat	Moorabundah Stn	-25.93	149.2	26-Sep-79
Vespertilionidae	Chalinolobus	gouldii		Goulds wattled bat	Moorabunda Stn	-25.93	149.2	26-Sep-79
Vespertilionidae	Chalinolobus	gouldii		Goulds wattled bat	Moorabanda Stn	-25.93	149.2	26-Sep-79
Vespertilionidae	Chalinolobus	gouldii		Goulds wattled bat	Moorabinda Stn	-25.93	149.2	26-Sep-79
Vespertilionidae	Chalinolobus	gouldii		Goulds wattled bat	Tank on Taroom - Injune Rd	-25.75	149.2	2-Nov-79
Vespertilionidae	Chalinolobus	picatus		Little pied bat	Moorabanda Stn	-25.93	149.2	26-Sep-79
Vespertilionidae	Nyctophilus	timoriensis		Greater long-eared bat	Yebna Stn, 80km W Taroom	-25.68	149.18	24-Sep-68
Vespertilionidae	Scotorepens	greyii		Little broad-nosed bat	Taroom, Moorabundah Stn	-25.93	149.2	25-Sep-77
Vespertilionidae	Scotorepens	greyii		Little broad-nosed bat	Taroom, Moorabundah Stn	-25.93	149.2	26-Sep-77
Vespertilionidae	Scotorepens	greyii		Little broad-nosed bat	Taroom, Waterhole Richon	-25.83	149.42	24-Apr-79

Taxon - Family	Taxon - Genus	Taxon - Species	Taxon - Subspecies	Taxon - Common Name	Locality Name	Latitude export	Longitude export	Field Coll Date
Vespertilionidae	Scotorepens	greyii		Little broad-nosed bat	Taroom, tank nr Round Mtn	-25.63	149.78	23-Sep-79
Vespertilionidae	Scotorepens	greyii		Little broad-nosed bat	Taroom, Moorabundah Stn	-25.93	149.2	25-Sep-79
Vespertilionidae	Scotorepens	greyii		Little broad-nosed bat	Taroom, Moorabundah Stn	-25.93	149.2	26-Sep-79
Molossidae	Mormopterus	beccarii		Beccaris mastiff-bat	Yebna Stn	-25.68	149.18	3-Nov-79
Molossidae	Mormopterus	beccarii		Beccaris mastiff-bat	Yebna Stn	-25.68	149.18	4-Nov-79
Molossidae	Mormopterus	planiceps		Little mastiff-bat	Taroom, Glenhaughton Rd	-25.63	149.78	17-Mar-77
Molossidae	Tadarida	australis			Moorabinda Stn	-25.88	149.33	25-Sep-79
Muridae	Hydromys	chrysogaster		Water rat	Dawson R, Yebna, via Taroom	-25.68	149.18	27-Sep-68
Muridae	Hydromys	chrysogaster		Water rat	Barroonda-Dawson R Crossing	-25.72	149.35	3-Nov-79
Muridae	Mus	musculus		House mouse	Yebna Hsd, nr Taroom	-25.68	149.18	24-May-68
Muridae	Mus	musculus		House mouse	Yebna Stn, 80km W Taroom	-25.68	149.18	25-Jul-68
Muridae	Mus	musculus		House mouse	Yebna Hsd, nr Taroom	-25.68	149.18	10-Sep-68
Muridae	Mus	musculus		House mouse	Yebna Hsd, nr Taroom	-25.68	149.18	25-Sep-68
Muridae	Mus	musculus		House mouse	Baroondah - Dawson R Crossing	-25.7	149.2	Nov-79
Muridae	Rattus	tunneyi		Pale field rat	Dawson R bank, Yebna, 80km E Taroom	-25.68	149.18	25-Sep-68

SPECIES RECORDS DATA FROM THE NEW ATLAS OF AUSTRALIAN BIRDS

Common Name	Scientific Name	Breeding	Counts	Location	Lat	Lon	Start date	Finish Date
Emu	<i>Dromaius novaehollandiae</i>		1	Jackson - Wandoan Road	-26.3089	149.8136	3/08/2000	3/08/2000
Stubble Quail	<i>Coturnix pectoralis</i>		6	Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Brown Quail	<i>Coturnix ypsilophora</i>			Taroom Caravan Park	-25.6403	149.7894	19/10/2000	20/10/2000
Magpie Goose	<i>Anseranas semipalmata</i>		10	Kangaroo Creek	-26.0086	149.3456	13/04/2006	13/04/2006
Plumed Whistling-Duck	<i>Dendrocygna eytoni</i>	1	8	Kangaroo Creek	-26.0086	149.3456	30/04/2010	30/04/2010
Wandering Whistling-Duck	<i>Dendrocygna arcuata</i>			Waterloo Plain Env Park	-26.117	149.96	14/09/2007	14/09/2007
Black Swan	<i>Cygnus atratus</i>		2	Kangaroo Creek	-26.0086	149.3456	30/04/2010	30/04/2010
Australian Wood Duck	<i>Chenonetta jubata</i>		24	Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Pink-eared Duck	<i>Malacorhynchus membranaceus</i>			Devils Pulpit	-26.0333	149.5	27/12/2004	1/01/2005
Cotton Pygmy-goose	<i>Nettapus coromandelianus</i>		1	Kangaroo Creek	-26.0086	149.3456	13/04/2006	13/04/2006
Australasian Shoveler	<i>Anas rhynchos</i>		1	Kangaroo Creek	-26.0086	149.3456	30/04/2010	30/04/2010
Grey Teal	<i>Anas gracilis</i>		1	Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Pacific Black Duck	<i>Anas superciliosa</i>		7	Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Hardhead	<i>Aythya australis</i>			Waterloo Plain Env Park	-26.117	149.96	14/09/2007	14/09/2007
Australasian Grebe	<i>Tachybaptus novaehollandiae</i>		1	Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Rock Dove	<i>Columba livia</i>			Taroom	-25.6333	149.7833	26/10/2000	26/10/2000
Common Bronzewing	<i>Phaps chalcoptera</i>			Wandoan District Site PG44	-26.3453	149.7519	30/04/2009	30/04/2009
Crested Pigeon	<i>Ocyphaps lophotes</i>			Horse Creek area #1	-26.2528	149.4967	24/05/2010	24/05/2010
Squatter Pigeon	<i>Geophaps scripta</i>			Taroom - Injune Road	-25.6244	149.2961	30/08/2008	30/08/2008
Diamond Dove	<i>Geopelia cuneata</i>			Wandoan Environmental Pk	-26.117	149.9589	26/08/2006	26/08/2006
Peaceful Dove	<i>Geopelia striata</i>			Horse Creek area #5	-26.25	149.4786	24/05/2010	24/05/2010
Bar-shouldered Dove	<i>Geopelia humeralis</i>			Horse Creek area #1	-26.2528	149.4967	24/05/2010	24/05/2010
Tawny Frogmouth	<i>Podargus strigoides</i>			Waikola	-26.0333	149.25	25/12/2004	1/01/2005
Spotted Nightjar	<i>Eurostopodus argus</i>			Devils Pulpit	-26.0333	149.5	27/12/2004	1/01/2005
Australian Owlet-nightjar	<i>Aegotheles cristatus</i>			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Australasian Darter	<i>Anhinga novaehollandiae</i>		2	Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Little Pied Cormorant	<i>Microcarbo melanoleucos</i>			Cattle Creek Cattle Creek Road	-26.3264	149.2922	23/05/2010	23/05/2010
Great Cormorant	<i>Phalacrocorax carbo</i>			Waterloo Plain Env Park	-26.117	149.96	14/09/2007	14/09/2007

Common Name	Scientific Name	Breeding	Counts	Location	Lat	Lon	Start date	Finish Date
Little Black Cormorant	Phalacrocorax sulcirostris			Waterloo Plain Env Park	-26.117	149.96	14/09/2007	14/09/2007
Pied Cormorant	Phalacrocorax varius		4	Waikola	-26.0333	149.25	25/12/2004	1/01/2005
Australian Pelican	Pelecanus conspicillatus			Dawson River	-25.6	149.9108	26/07/2003	26/07/2003
Black-necked Stork	Ephippiorhynchus asiaticus			Taroom	-25.6378	149.7897	14/08/2004	16/08/2004
Black Bittern	Ixobrychus flavicollis			Tarrom	-25.6333	149.7833	26/10/2000	26/10/2000
White-necked Heron	Ardea pacifica		2	Kangaroo Creek	-26.0086	149.3456	30/04/2010	30/04/2010
Eastern Great Egret	Ardea modesta			Waterloo Plain Env Park	-26.117	149.96	14/09/2007	14/09/2007
Intermediate Egret	Ardea intermedia		16	Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
White-faced Heron	Egretta novaehollandiae		2	Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Little Egret	Egretta garzetta		2	Waikola	-26.0333	149.25	25/12/2004	1/01/2005
Nankeen Night-Heron	Nycticorax caledonicus			Yuleba Creek	-26.3072	149.3128	14/04/2001	14/04/2001
Glossy Ibis	Plegadis falcinellus		4	Waikola	-26.0333	149.25	25/12/2004	1/01/2005
Australian White Ibis	Threskiornis molucca		5	Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Straw-necked Ibis	Threskiornis spinicollis		3	Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Royal Spoonbill	Platalea regia		5	Waikola	-26.0333	149.25	25/12/2004	1/01/2005
Yellow-billed Spoonbill	Platalea flavipes			Waterloo Plain Env Park	-26.117	149.96	14/09/2007	14/09/2007
Black-shouldered Kite	Elanus axillaris			Roadstop	-25.9947	149.9108	9/05/2011	9/05/2011
Square-tailed Kite	Lophoictinia isura			Cracow - Bundilla Road	-25.6342	149.8794	31/12/2000	31/12/2000
Whistling Kite	Haliastur sphenurus		2	Kangaroo Creek	-26.0086	149.3456	30/04/2010	30/04/2010
Black Kite	Milvus migrans			Taroom	-25.6386	149.7894	22/08/2007	22/08/2007
Brown Goshawk	Accipiter fasciatus			Waikola	-26.0333	149.25	25/12/2004	1/01/2005
Spotted Harrier	Circus assimilis		1	Dingo Creek nr Wattle Park	-26.3233	149.4047	22/05/2010	22/05/2010
Wedge-tailed Eagle	Aquila audax			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Little Eagle	Hieraaetus morphnoides			Cherwondah	-26.2	149.9344	8/07/1999	8/07/1999
Nankeen Kestrel	Falco cenchroides			Taroom - Roma Road	-25.7614	149.7206	31/08/2008	31/08/2008
Brown Falcon	Falco berigora			Horse Creek area #6	-26.2453	149.4706	24/05/2010	24/05/2010
Australian Hobby	Falco longipennis			Waikola	-26.0333	149.25	25/12/2004	1/01/2005
Black Falcon	Falco subniger		1	Taroom-Roma Rd 10km SW Taroom	-25.7267	149.7736	19/02/2007	19/02/2007
Peregrine Falcon	Falco peregrinus			Taroom - Injune Road	-25.6722	149.3589	30/04/2001	30/04/2001
Brolga	Grus rubicunda			Wandoan Area	-26.1108	149.9508	14/08/2008	14/08/2008
Purple Swamphen	Porphyrio porphyrio	1	7	Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011

Common Name	Scientific Name	Breeding	Counts	Location	Lat	Lon	Start date	Finish Date
Buff-banded Rail	Gallirallus philippensis			Taroom Caravan Park	-25.6403	149.7894	19/10/2000	20/10/2000
Spotless Crake	Porzana tabuensis			Taroom Caravan Park	-25.6403	149.7894	12/10/2000	13/10/2000
Dusky Moorhen	Gallinula tenebrosa	1	2	Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Eurasian Coot	Fulica atra		1	Kangaroo Creek	-26.0086	149.3456	30/04/2010	30/04/2010
Australian Bustard	Ardeotis australis		3	carrabah station 95k n miles	-25.7767	149.8697	31/10/2009	31/10/2009
Black-winged Stilt	Himantopus himantopus			Kangaroo Creek	-26.0086	149.3456	9/04/2009	9/04/2009
Black-fronted Dotterel	Elsayornis melanops			Kangaroo Creek	-26.0086	149.3456	9/04/2009	9/04/2009
Banded Lapwing	Vanellus tricolor		3	Woleebee Str. grazing paddock	-26.3967	149.8461	28/08/2009	28/08/2009
Masked Lapwing	Vanellus miles		1	Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Comb-crested Jacana	Irediparra gallinacea		3	Kangaroo Creek	-26.0086	149.3456	13/04/2006	13/04/2006
Sharp-tailed Sandpiper	Calidris acuminata		4	Belah Water Hole	-26.266	150	1/08/1994	1/08/1994
Painted Button-quail	Turnix varius			Horse Creek area #1	-26.2528	149.4967	24/05/2010	24/05/2010
Yellow-tailed Black-Cockatoo	Calyptorhynchus funereus			Wandoan District Site PG 27	-26.3828	149.8803	28/04/2009	28/04/2009
Galah	Eolophus roseicapillus			Dingo Crk Combabula area #3	-26.3428	149.4103	22/05/2010	22/05/2010
Sulphur-crested Cockatoo	Cacatua galerita			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Cockatiel	Nymphicus hollandicus			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Rainbow Lorikeet	Trichoglossus haematodus			Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Scaly-breasted Lorikeet	Trichoglossus chlorolepidotus			Wandoan District Site PG44	-26.3453	149.7519	30/04/2009	30/04/2009
Red-winged Parrot	Aprosmictus erythropterus			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Pale-headed Rosella	Platycercus adscitus			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Blue Bonnet	Northiella haematogaster			Leichhardt Hwy	-25.7	149.8333	29/12/2000	29/12/2000
Red-rumped Parrot	Psephotus haematonotus			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Pheasant Coucal	Centropus phasianinus			Wandoan District Site PG 24	-26.3997	149.8403	28/08/2009	28/08/2009
Eastern Koel	Eudynamys orientalis			Waikola	-26.0333	149.25	25/12/2004	1/01/2005
Channel-billed Cuckoo	Scythrops novaehollandiae		2	Waikola	-26.0333	149.25	25/12/2004	1/01/2005
Horsfield's Bronze-Cuckoo	Chalcites basalus			Carrabah Cons Park	-25.7886	149.6889	16/09/2007	16/09/2007
Shining Bronze-Cuckoo	Chalcites lucidus			Taroom/A & D Clarke	-25.6453	149.805	27/09/2004	27/09/2004
Pallid Cuckoo	Cacomantis pallidus			sawpit lane s taroom	-25.6767	149.8122	31/10/2009	1/11/2009
Southern Boobook	Ninox novaeseelandiae			Taroom	-25.6378	149.7897	14/08/2004	16/08/2004
Azure Kingfisher	Ceyx azureus			Tarrom	-25.6333	149.7833	26/10/2000	26/10/2000

Common Name	Scientific Name	Breeding	Counts	Location	Lat	Lon	Start date	Finish Date
Laughing Kookaburra	Dacelo novaeguineae			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Blue-winged Kookaburra	Dacelo leachii			sawpit lane s taroom	-25.6767	149.8122	31/10/2009	1/11/2009
Sacred Kingfisher	Todiramphus sanctus			Kangaroo Creek	-26.0086	149.3456	30/04/2010	30/04/2010
Rainbow Bee-eater	Merops ornatus			Devils Pulpit	-26.0333	149.5	27/12/2004	1/01/2005
Dollarbird	Eurystomus orientalis			Devils Pulpit	-26.0333	149.5	27/12/2004	1/01/2005
White-throated Treecreeper	Cormobates leucophaea			Taroom	-25.6378	149.7897	14/08/2004	16/08/2004
Spotted Bowerbird	Ptilonorhynchus maculatus			Cattle Creek Cattle Creek Road	-26.3264	149.2922	23/05/2010	23/05/2010
Superb Fairy-wren	Malurus cyaneus			Cattle Creek Cattle Creek Road	-26.3264	149.2922	23/05/2010	23/05/2010
Red-backed Fairy-wren	Malurus melanocephalus			Yuleba Creek	-26.3072	149.3128	14/04/2001	14/04/2001
Variegated Fairy-wren	Malurus lamberti			Horse Creek area #2	-26.2581	149.4953	24/05/2010	24/05/2010
White-browed Scrubwren	Sericornis frontalis			Wandoan District Site PG 25	-26.3722	149.8569	28/04/2009	28/04/2009
Speckled Warbler	Chthonicola sagittata			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Weebill	Smicromis brevirostris			Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Western Gerygone	Gerygone fusca			sawpit lane s taroom	-25.6767	149.8122	31/10/2009	1/11/2009
White-throated Gerygone	Gerygone albogularis			Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Yellow Thornbill	Acanthiza nana			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Yellow-rumped Thornbill	Acanthiza chrysorrhoa			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Chestnut-rumped Thornbill	Acanthiza uropygialis			Splitters Creek	-26.2014	149.8158	23/04/2000	23/04/2000
Buff-rumped Thornbill	Acanthiza reguloides			Horse Creek area #4	-26.25	149.4769	24/05/2010	24/05/2010
Inland Thornbill	Acanthiza apicalis			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Brown Thornbill	Acanthiza pusilla			Taroom - Roma Road	-25.7958	149.6058	3/09/2003	3/09/2003
Spotted Pardalote	Pardalotus punctatus			Wandoan District Site PG 24	-26.3997	149.8403	28/08/2009	28/08/2009
Striated Pardalote	Pardalotus striatus			Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Lewin's Honeyeater	Meliphaga lewinii			Woleebee Station property	-26.395	149.8542	28/08/2009	28/08/2009
Yellow-faced Honeyeater	Lichenostomus chrysops			Combabula District Site PG39	-26.3447	149.4781	30/04/2009	30/04/2009
Singing Honeyeater	Lichenostomus virescens			Taroom - Roma Road	-25.7614	149.7206	31/08/2008	31/08/2008
White-eared Honeyeater	Lichenostomus leucotis			Horse Creek area #2	-26.2581	149.4953	24/05/2010	24/05/2010
White-plumed Honeyeater	Lichenostomus penicillatus			Taroom	-25.6386	149.7894	22/08/2007	22/08/2007
Noisy Miner	Manorina melanocephala			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Yellow-throated Miner	Manorina flavigula			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Spiny-cheeked Honeyeater	Acanthagenys rufogularis			Horse Creek area #1	-26.2528	149.4967	24/05/2010	24/05/2010

Common Name	Scientific Name	Breeding	Counts	Location	Lat	Lon	Start date	Finish Date
Brown Honeyeater	Lichmera indistincta			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Black-chinned Honeyeater	Melithreptus gularis			Caravan Park	-25.6383	149.7894	25/09/2004	26/09/2004
Brown-headed Honeyeater	Melithreptus brevirostris			Cattle Creek Cattle Creek Road	-26.3264	149.2922	23/05/2010	23/05/2010
White-throated Honeyeater	Melithreptus albogularis			Combabula area #1	-26.3608	149.3978	22/05/2010	22/05/2010
Blue-faced Honeyeater	Entomyzon cyanotis			Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Noisy Friarbird	Philemon corniculatus			Horse Creek area #1	-26.2528	149.4967	24/05/2010	24/05/2010
Little Friarbird	Philemon citreogularis			sawpit lane s taroom	-25.6767	149.8122	31/10/2009	1/11/2009
Striped Honeyeater	Plectorhyncha lanceolata			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Grey-crowned Babbler	Pomatostomus temporalis			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Varied Sittella	Daphoenositta chrysoptera			Cattle Creek Cattle Creek Road	-26.3264	149.2922	23/05/2010	23/05/2010
Ground Cuckoo-shrike	Coracina maxima		3	Dingo Crk Combabula area #5	-26.3397	149.385	22/05/2010	22/05/2010
Black-faced Cuckoo-shrike	Coracina novaehollandiae			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
White-bellied Cuckoo-shrike	Coracina papuensis			Kangaroo Creek	-26.0086	149.3456	30/04/2010	30/04/2010
White-winged Triller	Lalage sueurii			sawpit lane s taroom	-25.6767	149.8122	31/10/2009	1/11/2009
Varied Triller	Lalage leucomela			Wandoan District Site PG 24	-26.3997	149.8403	28/08/2009	28/08/2009
Golden Whistler	Pachycephala pectoralis			Wandoan District Site PG 22	-26.3953	149.8544	28/04/2009	28/04/2009
Rufous Whistler	Pachycephala rufiventris			Horse Creek area #4	-26.25	149.4769	24/05/2010	24/05/2010
Grey Shrike-thrush	Colluricincla harmonica			Combabula area #1	-26.3608	149.3978	22/05/2010	22/05/2010
Australasian Figbird	Sphecotheres vieilloti			Taroom Centre	-25.6389	149.8025	14/08/2008	14/08/2008
Olive-backed Oriole	Oriolus sagittatus			Kangaroo Creek	-26.0086	149.3456	30/04/2010	30/04/2010
White-breasted Woodswallow	Artamus leucorhynchus	1	6	Waikola	-26.0333	149.25	25/12/2004	1/01/2005
Grey Butcherbird	Cracticus torquatus			Horse Creek area #6	-26.2453	149.4706	24/05/2010	24/05/2010
Pied Butcherbird	Cracticus nigrogularis			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Australian Magpie	Cracticus tibicen			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Pied Currawong	Strepera graculina			Horse Creek area #5	-26.25	149.4786	24/05/2010	24/05/2010
Grey Fantail	Rhipidura albiscapa			Horse Creek area #2	-26.2581	149.4953	24/05/2010	24/05/2010
Willie Wagtail	Rhipidura leucophrys			Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Australian Raven	Corvus coronoides			Horse Creek area #6	-26.2453	149.4706	24/05/2010	24/05/2010
Torresian Crow	Corvus orru			Kangaroo Creek	-26.0086	149.3456	10/03/2011	10/03/2011
Leaden Flycatcher	Myiagra rubecula			Carrabah Cons Park	-25.7886	149.6889	16/09/2007	16/09/2007

Common Name	Scientific Name	Breeding	Counts	Location	Lat	Lon	Start date	Finish Date
Restless Flycatcher	Myiagra inquieta		3	Cattle Creek Cattle Creek Road	-26.3264	149.2922	23/05/2010	23/05/2010
Magpie-lark	Grallina cyanoleuca			Roadstop	-25.9947	149.9108	9/05/2011	9/05/2011
Apostlebird	Struthidea cinerea			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Jacky Winter	Microeca fascians			Cnr Horse Crk & Bundi Roads	-26.1039	149.5717	24/05/2010	24/05/2010
Red-capped Robin	Petroica goodenovii			Taroom - Cracow Road	-25.6339	149.9039	22/09/2000	22/09/2000
Rose Robin	Petroica rosea			Wandoan District Site PG 27	-26.3828	149.8803	28/04/2009	28/04/2009
Eastern Yellow Robin	Eopsaltria australis			Horse Creek area #6	-26.2453	149.4706	24/05/2010	24/05/2010
Horsfield's Bushlark	Mirafra javanica		6	Waikola	-26.0333	149.25	25/12/2004	1/01/2005
Australian Reed-Warbler	Acrocephalus australis			Waterloo Plain Env Park	-26.117	149.96	14/09/2007	14/09/2007
Rufous Songlark	Cincloramphus mathewsi			Taroom Park	-25.6386	149.8033	15/09/2007	15/09/2007
Brown Songlark	Cincloramphus cruralis			Waikola	-26.0333	149.25	25/12/2004	1/01/2005
Silveryeye	Zosterops lateralis			Barton Springs area	-26.2731	149.2725	23/05/2010	23/05/2010
Welcome Swallow	Hirundo neoxena			Taroom Centre	-25.6389	149.8025	14/08/2008	14/08/2008
Fairy Martin	Petrochelidon ariel			Taroom Park	-25.6444	149.7914	17/10/2007	17/10/2007
Tree Martin	Petrochelidon nigricans			Taroom - Roma Road	-25.7239	149.7756	1/05/2001	1/05/2001
Common Starling	Sturnus vulgaris		1	Waikola	-26.0333	149.25	25/12/2004	1/01/2005
Mistletoebird	Dicaeum hirundinaceum			Horse Creek area #5	-26.25	149.4786	24/05/2010	24/05/2010
Zebra Finch	Taeniopygia guttata			Taroom/A & D Clarke	-25.6453	149.805	27/09/2004	27/09/2004
Double-barred Finch	Taeniopygia bichenovii			Horse Creek area #4	-26.25	149.4769	24/05/2010	24/05/2010
Plum-headed Finch	Neochmia modesta			Cattle Creek Cattle Creek Road	-26.3264	149.2922	23/05/2010	23/05/2010
House Sparrow	Passer domesticus			Taroom	-25.6453	149.7936	8/07/2009	9/07/2009
Australasian Pipit	Anthus novaeseelandiae			Dingo Crk Combabula area #5	-26.3397	149.385	22/05/2010	22/05/2010
Crow & Raven species				Taroom - Roma Road	-25.7614	149.7206	31/08/2008	31/08/2008

APPENDIX D
KNOWN OR PREDICTED OCCURRENCE OF
TERRESTRIAL FLORA AND FAUNA SPECIES OF
SPECIAL CONSERVATION SIGNIFICANCE WITHIN THE
STUDY AREA

APPENDIX D

KNOWN OR PREDICTED OCCURRENCE OF TERRESTRIAL FLORA AND FAUNA SPECIES OF SPECIAL CONSERVATION SIGNIFICANCE WITHIN THE STUDY AREA

TERRESTRIAL ECOLOGY ASSESSMENT PROPOSED SURAT NORTH DEVELOPMENT

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Table D.1	Likelihood of Occurrence of Terrestrial Flora Species of Special Conservation Significance within the study area
Table D.2	Likelihood of Occurrence of Terrestrial Fauna Species of Special Conservation Significance within the study area

Table D.1. Known or predicted occurrence of terrestrial flora species of special conservation significance within the study area

Family	Species Name	Common Name	Source ¹			Management Status ^{2,3,4}				Habitat Preference ⁵	Known Distribution ³ and Likelihood of Occurrence
			DERM	EPBC	HERB RECS	EPBC Act	NC Act	BAMM	BoT		
Acanthaceae	<i>Xerothamnella herbacea</i>	Herbaceous Xerothamnella				E	E			Found in Brigalow dominated communities in shaded situations, often in leaf litter and in association with gilgais, on heavy, grey to dark brown clay soils.	Recorded near Theodore and Chinchilla to the north and south of the study area respectively. Suitable habitat present. Potentially occurs within the study area.
Apocynaceae	<i>Tylophora linearis</i>	Slender Tylophora		X		E	E			Found in dry scrublands, open forests and woodlands in association with Broombush <i>Melaleuca uncinata</i> , Broad-leaved Ironbark, Red Ironbark <i>Eucalyptus sideroxylon</i> , White Box <i>E. albens</i> , Black Cypress Pine <i>Callitris endlicheri</i> , White Cypress Pine, Bulloak <i>Allocasuarina luehmannii</i> , Hakea Wattle <i>Acacia hakeoides</i> , Striped Wattle <i>A. lineata</i> , Myoporums (<i>Myoporum</i> spp.) and She-oaks (<i>Casuarina</i> spp.) at low altitudes and on sedimentary flats.	Restricted to northern and central western slopes of New South Wales and near Glenmorgan in the western Darling Downs district in Queensland. Potentially occurs within the study area.
Asteraceae	<i>Picris barbarorum</i>	Plains Picris			X		V	X		Occurs on river banks and floodplains – alluvial soils.	Uncommon in New South Wales, Victoria and Queensland. Potentially occurs within the study area.
Celastraceae	<i>Denhamia parvifolia</i>	Small-leaved Denhamia				V	V				Restricted to Queensland, from Yarraman west to Chinchilla. No records in the vicinity of the study area; not expected to occur.
Cyperaceae	<i>Eleocharis blakeana</i>	Blake's Spikerush					NT		Medium	Found in ephemerally wet habitats in melon hole country in Brigalow and Belah scrub communities on plains and low undulating country, and in small depressions along drainage lines in Poplar Box and Moreton Bay Ash <i>Corymbia tessellaris</i> open forests and woodlands. Also recorded along roadside channels and in paddocks.	Restricted to southern Queensland and northern New South Wales. Potentially occurs within the study area.
Cyperaceae	<i>Fimbristylis vagans</i>	Wandering Fringe-rush					NT			Swamps, wetlands and areas of poor drainage.	Rare in the Western Darling Downs. Potentially occurs within the study area.
Eriocaulaceae	<i>Eriocaulon carsonii</i> subsp. <i>orientale</i>	Salt Pipewort			X	E	E		High	Found in active or flowing artesian mound springs or the margins of the Great Artesian Basin and on fen soils.	Restricted to Queensland, north-western New South Wales and north-eastern South Australia. May occur in association with springs to the west of the study area. Not expected to occur within the study area.
Mimosaceae	<i>Acacia melvillei</i>	Yarran					C	X		The community occurs patchily on red-brown, sandy loam and heavy clay soils. A poorly conserved species and RE 11.9.6 in which it occurs has an Endangered status. Yarran also occurs in poplar box shrubby woodland, Myall <i>Acacia pendula</i> woodlands and Brigalow/Belah REs. Very little in large remnants. Habitat for Painted Honeyeater.	Occurs around Wandoan and Jondaryan. Frequent in Taroom Shire. Known to occur within the study area.
Myrtaceae	<i>Eucalyptus beaniana</i>	Bean's Ironbark			X	V	V			Found in woodlands in association with Lemon-scented Spotted Gum, Gympie Messmate <i>Eucalyptus cloeziana</i> , the Ironbark <i>E. suffulgens</i> , Large-fruited Yellow Jacket, Brown Bloodwood and Narrow-leaved White Mahogany, in shallow, sandy soils on quartzose sandstone ridges.	Occurs in the broader region; however, it is not expected to occur within the study area due to lack of suitable habitat.
Myrtaceae	<i>Eucalyptus curtisii</i>	Plunkett Mallee					NT			Found in monoculture stands of mallee growth in shrublands dominated by banksias and sometimes in association with Swamp Stringybark <i>Eucalyptus conglomerata</i> , in poorly drained lowland areas, and in scattered distribution in more open parts of mixed eucalypt forests dominated by Lemon-scented Spotted Gum, Brown Bloodwood and Black Cypress Pine or Dusky-leaved Ironbark, Needlebark <i>E. planchoniana</i> and Yellow Stringybark <i>E. acmenoides</i> , in better drained soils. Found in sandy podosols with impeded drainage, shallow stony soils, clay loams and stony clays with a surface layer of loose stones, on low ridges and up to 457m altitude.	Restricted to south-eastern Queensland, from Plunkett south of Beenleigh, west to Inglewood and north to the Glasshouse Mountains. Records from the Gurulmundi area – possibly occurs in Stones County Resource Reserve in Woleebee gas field. Low potential to occur within the study area.
Myrtaceae	<i>Micromyrtus carinata</i>	Gurulmundi Heath-myrtle			X		E			Found in heathlands and woodlands in association with Narrow-leaved White Mahogany, Brown Bloodwood, Catkin Wattle, the Grevillea <i>Grevillea longistyla</i> , and Gurulmundi Fringe Myrtle and <i>Acacia triptera</i> , Tumble-down Ironbark in shallow sandy soils on crests of mountain ranges.	Restricted to a small area NW of Gurulmundi, in southern Queensland. Also known from 10km NW of Miles and an outlying population near westmar (Craig Eddie pers. comm.). Potentially occurs within the study area.
Poaceae	<i>Digitaria porrecta</i>	Finger Panic Grass				E	NT	X		Occurs in temperate grasslands on basaltic soils. Populations may occur in road verges.	This study documents the first record of this species from the Wandoan region. Known to occur within the study area.
Poaceae	<i>Homopholis belsonii</i>	Belson's Panic Grass	X		X	V	E			Found in White box communities and Wilga woodlands on rocky hills; Belah forests in alluvial soils on flat to undulating lands; Poplar Box	Restricted to Darling Downs region in southern Queensland to north-west slopes of northern New

Family	Species Name	Common Name	Source ¹			Management Status ^{2,3,4}				Habitat Preference ⁵	Known Distribution ³ and Likelihood of Occurrence
			DERM	EPBC	HERB RECS	EPBC Act	NC Act	BAMM	BoT		
										woodlands; and dry woodlands on poor soils derived from basalt at 200 – 520m altitude. Also recorded in Brigalow, Myall and Weeping Myall communities; Mountain Coolibah communities; and on roadsides.	South Wales. Known to occur within the study area.
Poaceae	<i>Sporobolus partimpatens</i>	Smooth Dropseed			X		NT			Found in open grasslands and chenopod forblands associated with artesian mound springs of the Great Artesian Basin.	Known from artesian springs to the west of the study area. Not expected to occur within study area.
Solanaceae	<i>Solanum stenopterum</i>	Winged Nightshade					V			Found in Brigalow–Belah woodlands, Poplar Box woodland and sometimes grasslands on cracking clays.	Restricted to the Darling Downs and Burnett regions of southern Queensland and northwestern slopes region of New South Wales. Potentially occurs within the study area.
Sterculiaceae	<i>Commersonia argentea</i>	Silver Commersonia		X		V	C			Found in woodland on sedimentary soils.	Potentially suitable habitats present (woodland) and the species has been recorded in the general area. Potentially occurs within the study area.
Surianaceae	<i>Cadellia pentastylis</i>	Ooline	X	X	X	V	V		Critical	Found in semi-evergreen vine thickets in association with Native Quinine, Hard Alectryon <i>Alectryon subdentatus</i> , Leopard Ash <i>Flindersia collina</i> , Wilga and Narrow-leaved Bottle Tree <i>Brachychiton rupestris</i> on sandstone and basalt slopes and Currawong, Brigalow and Belah communities on undulating clay plains and low hills at altitudes 200 – 500m.	Known to occur within Woleebee tenement, between Jackson-Wandoan Road and Gurulmundi State Forest. Potentially occurs within the study area.

¹ Source abbreviations as follows: **DEHP** = Queensland's WildNet database and ; **EPBC** = EPBC Online Protected Matters Search Tool; **HERB RECS** = Queensland Herbarium database.

² Status abbreviations are as follows: **E** = Endangered, **V** = Vulnerable, **NT** = Near Threatened, **C** = Least Concern Wildlife, **X** = Priority species for the BBS bioregion.

³ **BAMM** = Biodiversity Assessment Mapping Methodology, see http://www.derm.qld.gov.au/wildlife-ecosystems/biodiversity/biodiversity_assessment_and_mapping_methodology_bamm.html.

⁴ **BoT** = 'Back on Track' species priority status, see http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/back_on_track_species_prioritisation_framework/.

⁵ Detailed profiles for species of special conservation significance known or considered possible occurrences are provided in **Appendix F**.

Table D.2. Known or predicted occurrence of terrestrial fauna species of special conservation significance within the study area

Class/Family	Species Name	Common Name	Source ¹					Management Status ^{2,3,4}				Key RE/Habitat Preference ⁵ (for species known or considered possible occurrences within the study area)	Likelihood of Occurrence/ Relevant study area Component(s) ⁶
			DERM	QM	BA	EPBC	BAAM	EPBC Act	NC Act	BAMM	BoT		
Insecta Lycaenidae	<i>Jalmenus eubulus</i>	Pale Imperial Hairstreak	x						V			Mature stands of Brigalow. Larvae are variously reported as specialised to feeding on small understorey Brigalow or including other <i>Acacia</i> species in their diet (Braby 2000, 2004; Eastwood <i>et al.</i> 2008). Most likely in REs 11.3.1, 11.4.3, 11.5.16, 11.9.5 and 11.9.6.	Three WildNet records. Likely to occur within the study area.
Amphibia Hylidae	<i>Cyclorana verrucosa</i>	Rough Frog							NT			The species is found mostly in woodlands but also in open grassland. Mostly found on black-soil plains but also sandy loams (Cogger 2000; It is usually found near temporary ponds, drainage lines, claypans and creeks (McFarland <i>et al.</i> 1999a,b; EPA 2008).	No records within the local region despite the presence of suitable habitat. The lack of records from the Fitzroy catchment suggests that this species is unlikely to occur in the study area.
Amphibia Myobatrachidae	<i>Limnodynastes salmini</i>	Salmon-striped Frog	x	x					C	X		Variety of habitats on lowland alluvial flats with black clay soils (McFarland <i>et al.</i> 1999a, b). Most likely in REs 11.3.2, 11.3.3, 11.3.17, 11.3.25, 11.3.27, 11.4.3 and 11.9.5.	Three WildNet records. Likely to occur in the study area and may be common where there is suitable habitat.
Reptilia Chelidae	<i>Macrochelodina expansa</i>	Broad-shelled River Turtle	x						C	X		Vegetated deep permanent waterbodies, primarily in rivers (McFarland <i>et al.</i> 1999a, b; Cogger 2000) in REs 11.3.25 and 11.3.27.	Two WildNet records. Potential to occur along watercourses in the study area.
Reptilia Chelidae	<i>Rheodytes leukops</i>	Fitzroy River Turtle ³	x			x		V	V		High	Associated with the Fitzroy River system. Occurs in clear, fast-flowing water.	A single WildNet record. Potential to occur along watercourses in the study area.
Reptilia Gekkonidae	<i>Strophurus taenicauda</i>	Golden-tailed Gecko	x	x					NT			Acacia scrubs including Brigalow, eucalypt and <i>Callitris</i> woodland, and dry sclerophyll forest (McFarland <i>et al.</i> 1999a, b; Cogger 2000; Wilson 2005). Many different REs on land zones 3, 4, 5, 7, 9 and 10. Most important habitat includes REs 11.3.14, 11.4.3, 11.4.3a, 11.5.1, 11.5.1a, 11.5.4, 11.5.4a, 11.7.2, 11.7.4, 11.7.6, 11.7.7, 11.9.5, 11.10.1, 11.10.1d, 11.10.9 and 11.10.11.	Six WildNet records. Likely to occur within the study area , with records to the west and east of the study area (PB 2008a,b) and one other record during a recent survey conducted by BAAM staff of 40 individuals in Kathleen block to the south (G. Jones pers. comm.).
Reptilia Pygopodidae	<i>Delma torquata</i>	Collared Delma ³				x		V	V		High	Open eucalypt forest with a shrub and tussock grass understorey. Soil type is usually shallow and deep-cracking or stony (Ehmann 1992; Wilson and Swan 2008). RE 11.3.2 could be an important habitat for the species but most typical habitat is Land Zone 10 in REs 11.10.1 and 11.10.1d.	No database records from the vicinity of the study area. Cryptic species that has potential to occur in study area in suitable habitat.
Reptilia Pygopodidae	<i>Paradelma orientalis</i>	Brigalow Scaly-foot		x		x		V	V			Brigalow and other <i>Acacia</i> species woodlands, sparse tussock grass vegetation on grey cracking soils, Poplar Box open woodland, sandstone rises in dry sclerophyll forests, Ironbark dominated forest and mixed open woodland with Spinifex (Shea 1987; Schulz and Eyre 1997; Kutt <i>et al.</i> 2003). Many different REs on Land Zones 3, 4, 5, 7, 9 and 10. Most important habitats are REs 11.9.5, 11.10.1, 11.10.1d and 11.10.4.	No database records. Potential to occur in the study area where there is appropriate habitat structure. Some recent records to the east and west of the tenement (PB 2008a,b).
Reptilia Scincidae	<i>Ctenotus ingrami</i>	Unspotted Yellow-sided Ctenotus		x					C	X		Woodland, including Brigalow and Belah, on heavy to stony soils (Wilson and Swan 2008) in Land Zones 3, 4, 7, 9 and 10.	Likely to occur in the study area in suitable habitat.
Reptilia Scincidae	<i>Cyclodomorphus gerrardii</i>	Pink-tongued Lizard	x	x					C	X		Moist timbered habitats (Wilson 2005). Most likely in REs 11.3.4, 11.3.25 and 11.3.27b.	One WildNet record. Potentially occurs in the study area and likely to be restricted to riverine areas.
Reptilia Scincidae	<i>Egernia rugosa</i>	Yakka Skink	x	x		x		V	V		Medium	Variety of drier forests and woodlands (usually on well drained, coarse gritty soils) including Poplar Box on alluvial soils, low ridges, <i>Callitris</i> on sands, Belah (Ehmann 1992; Cogger 2000; Drury 2001; Wilson 2005). Also occur in highly degraded sites and where there are log piles and rabbit warrens (EPA 2003). Important habitat for the species includes RE 11.3.2, 11.3.3, 11.3.14, 11.4.4 and 11.9.3. Also occurs in Land Zone 5.	One WildNet record. Likely to occur in the study area given generalist habitat preferences, though difficult to detect.
Reptilia Scincidae	<i>Tiliqua rugosa</i>	Shingle-back Skink	x						C	X		Occurs in wide variety of habitats, from open forest to grassland and pasture (Ehmann 1992).	One WildNet record. Widespread and possible within the study area.
Reptilia Agamidae	<i>Amphibolurus muricatus</i>	Jacky Lizard	x						C	X		Occurs in woodlands and dry sclerophyll forest (Wilson 2005).	One WildNet record. Possible within the study area.
Reptilia Agamidae	<i>Physignathus lesueurii</i>	Eastern Water Dragon	x	x					C	X		Tree- and bush-lined watercourses (Ehmann 1992). Likely only in RE 11.3.25.	Three WildNet records. Likely to occur in the study area in association with watercourses.
Reptilia Varanidae	<i>Varanus panoptes</i>	Yellow-spotted Monitor	x						C	X		Woodland, billabongs, flood plains and black soil plains (Ehmann 1992), mainly on hard soils and heavy loams (Wilson 2005). The most important habitats are REs 11.3.14, 11.3.39, 11.5.1 and 11.5.4, 11.10.1, 11.10.4, 11.10.7 and 11.10.13.	One WildNet record. Likely to occur in the study area.
Reptilia	<i>Acanthophis antarcticus</i>	Common Death Adder		x					NT		High	Occurs in a wide range of habitats, particularly with deep leaf litter, but	Formerly abundant in parts of the Brigalow

Class/Family	Species Name	Common Name	Source ¹					Management Status ^{2,3,4}				Key RE/Habitat Preference ⁵ (for species known or considered possible occurrences within the study area)	Likelihood of Occurrence/ Relevant study area Component(s) ⁶
			DERM	QM	BA	EPBC	BAAM	EPBC Act	NC Act	BAMM	BoT		
Elapidae												severely impacted by presence of Cane Toads and livestock (Ehmann 1992). Important REs include 11.4.3, 11.4.3a, 11.7.1, 11.9.4a, 11.9.4b and 11.9.5. RE 11.7.5 may prove to be important but requires survey effort.	Belt but has undergone severe declines (Wilson 2005). Potential to occur within the study area at very low densities.
Reptilia Elapidae	<i>Denisonia maculata</i>	Ornamental Snake				x		V	V		Medium		No database records, EPBC search only. Known to the north of the study area (McFarland <i>et al.</i> 1999a, b). Not expected to occur.
Reptilia Elapidae	<i>Furina dunmalli</i>	Dunmall's Snake				x		V	V			Poorly known but most records appear in open forests and woodlands, particularly Brigalow and woodlands growing on cracking black clay and clay loams (Cogger <i>et al.</i> 1993). Also recorded from dry eucalypt forests and may occur in vine thickets. Occurs in Land Zones 3, 4, 5, 7, 9 and 10 but insufficiently known to identify most important REs.	No database records, EPBC search only. Little known species whose habitats requirements and distribution are poorly understood. Species is highly cryptic and has potential to occur in the study area.
Reptilia Elapidae	<i>Hoplocephalus bitorquatus</i>	Pale-headed Snake	x	x					C	X		Dry sclerophyll forests and woodlands on floodplains or near watercourses (Wilson and Swan 2008). Most common in REs 11.3.25 and 11.3.27b but also in Land Zones 4, 5, 7, 9 and 10.	Four WildNet records. Likely to occur in the study area.
Aves Anatidae	<i>Stictonetta naevosa</i>	Freckled Duck	x						NT			Terrestrial wetlands, with a preference for large, well-vegetated swamps and creeks, but moving to open water after breeding or in dry periods (Marchant and Higgins 1990).	Two WildNet records. Likely to occur as an occasional visitor to the study area due to the prevalence of wetlands.
Aves Anatidae	<i>Nettapus coromandelianus</i>	Cotton Pygmy-goose	x		x	x	x	M	NT			Terrestrial wetlands, preferring freshwater with abundant floating and submerged aquatic vegetation, interspersed with patches of open water (Marchant and Higgins 1990).	Six WildNet records. Known to occur in the study area.
Aves Turnicidae	<i>Turnix melanogaster</i>	Black-breasted Button-Quail						V	V		Critical		No database records, EPBC search only. Habitat fragments within study area are small and highly degraded. Not expected to occur.
Aves Columbidae	<i>Geophaps scripta scripta</i>	Squatter Pigeon (southern subspecies)			x	x		V	V				Species has largely disappeared from local region. Unlikely to occur in the study area.
Aves Apodidae	<i>Hirundapus caudacutus</i>	White-throated Needletail	x	x	x	x		M	S			An aerial species, may occur over any habitat type, including cleared land and infrastructure.	Three WildNet records. Likely to occur over the study area , however likely to rely only on aerial food resources and not interact with the terrestrial environment in any way.
Aves Apodidae	<i>Apus pacificus</i>	Fork-tailed Swift	x		x		x	M	S			An aerial species, may occur over any habitat type, including cleared land and infrastructure.	Three WildNet records. Known to occur as an occasional visitor to the study area, however likely to rely only on aerial food resources and not interact with the terrestrial environment in any way.
Aves Ciconiidae	<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	x		x				NT			Most frequently recorded in open fresh waters such as shallow swamps, billabongs and pools on floodplains (Pringle 1985; Marchant and Higgins 1990).	Four WildNet records. Likely to occur in the study area in association with wetlands.
Aves Ardeidae	<i>Ardea modesta</i>	Eastern Great Egret	x		x	x	x	M	S			Shallow wetland habitats, including man-made dams and ponds and moist grasslands (Marchant and Higgins 1990).	14 WildNet records. Common and widespread species that is known to occur throughout the study area.
Aves Ardeidae	<i>Ardea ibis</i>	Cattle Egret	x			x		M	S			Grasslands, wetlands, pasture and crops. Strongly associated with grazing animals (Pringle 1985; Marchant and Higgins 1990).	One WildNet record. Potential to occur in any open habitats within the study area , particularly with livestock.
Aves Threskiornithidae	<i>Plegadis falcinellus</i>	Glossy Ibis	x		x			M	S			Terrestrial wetlands, preferring inland freshwater wetlands with abundant aquatic flora (Pringle 1985; Marchant and Higgins 1990).	Two WildNet records. Likely to occur on any suitable waterbody throughout the study area.
Aves Accipitridae	<i>Lophoictinia isura</i>	Square-tailed Kite	x		x				NT			Wide variety of habitat types but most records are from woodlands and forests, particularly those on fertile soils (Marchant and Higgins 1993). Most important RE is 11.3.25.	One WildNet record. Potential to occur in wooded areas in the study area.
Aves Accipitridae	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	x		x	x		M	S			Terrestrial wetlands, including large rivers, freshwater swamps, lakes, reservoirs and billabongs (Marchant and Higgins 1993).	One WildNet record. Potential to occur , given the prevalence of wetlands across the study area.
Aves Accipitridae	<i>Erythroriorchis radiatus</i>	Red Goshawk ³				x		V	E		High	Woodlands and forests, ideally with a mosaic of vegetation types and permanent water, particularly riverine forests. The species avoids both	No database records, EPBC search only. Low potential to occur in the study

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			DERM	QM	BA	EPBC	BAAM	EPBC Act	NC Act	BAMM	BoT		
												very dense and very open habitats (Marchant and Higgins 1993).	area, with limited access to complex intact habitats.
Aves Burhinidae	<i>Burhinus grallarius</i>	Bush Stone-curlew	x						C	X		Sparsely timbered woodland with fallen leaves and branches but few shrubs. Also found in pasture, golf courses and parklands (Pizzey and Knight 2007). Occurs in Land Zones 3, 4, 9 and 10.	One WildNet record. Potential to occur in the study area.
Aves Rostratulidae	<i>Rostratula australis</i>	Australian Painted Snipe ⁷				x		V, M	V			Terrestrial shallow wetlands, ephemeral and permanent, usually freshwater but occasionally brackish. They also use inundated grasslands, saltmarsh, dams, rice crops, sewage farms and bore drains (Marchant and Higgins 1993). Most likely in REs 11.3.2, 11.3.25 and 11.3.27b but could also occur in gilgaied areas.	No database records, EPBC search only. Likely to occur in the study area in association with permanent and ephemeral wetland areas.
Aves Scolopacidae	<i>Gallinago hardwickii</i>	Latham's Snipe	x			x		M	S			Swamp and marsh margins and in wet pasture (Pringle 1987).	Two WildNet records. Likely to occur as a visitor to wetlands in the study area.
Aves Scolopacidae	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper			x	x		M	S			Coastal and inland areas, preferring non-tidal fresh or brackish wetlands (Geering <i>et al.</i> 2007).	Most commonly recorded sandpiper in inland wetlands. Likely to visit the study area.
Aves Cacatuidae	<i>Calyptorhynchus lathamii</i>	Glossy Black-Cockatoo ³	x						V			Forests and woodlands, preferring habitats dominated by she-oaks in the canopy or middle stratum due to their dependence on she-oaks for food. The species is also reliant on suitable large hollows for nesting (Higgins 1999). Important REs include 11.3.1, 11.4.3, 11.4.7, 11.4.10, 11.7.1, and 11.9.5.	Four WildNet records. Likely to occur in the study area.
Aves Strigidae	<i>Ninox connivens</i>	Barking Owl							C	X		Dry sclerophyll forests and woodlands, often dominated by eucalypts and containing large trees for roosting or breeding. Nest in hollows in large trees, usually near watercourses or wetlands (Higgins 1999). Occurs in Land Zones 3, 4, 5, 7 and 10 but most likely in REs 11.3.25 and 11.3.27b.	No database records. Nevertheless, this species is likely to occur in the study area.
Aves Meropidae	<i>Merops ornatus</i>	Rainbow Bee-eater	x		x		x	M	S			Open or lightly timbered areas, shrublands, farmland, cleared land, mangroves and rainforest edges. Also disturbed areas that have exposed bare soil in bank for breeding (Higgins 1999).	24 WildNet records. Known to occur in the study area.
Aves Climacteridae	<i>Climacteris picumnus</i>	Brown Treecreeper	x						C	X		Woodlands dominated by eucalypts, especially stringybark or other rough-barked eucalypts, usually with grassy understorey and abundant dead trees and/or fallen timber (Higgins <i>et al.</i> 2001). In the study area most likely in riverine forests in Land Zone 3.	Three WildNet records. Likely to occur in the study area.
Aves Acanthizidae	<i>Chthonicola sagittata</i>	Speckled Warbler	x	x	x		x		C	X		Dry sclerophyll forests and woodlands with scattered shrubs and a grassy ground layer (Higgins and Peter 2002). Occurs in all Land Zones in areas with suitable understorey.	Eight WildNet records. Known to occur in the study area.
Aves Meliphagidae	<i>Melithreptus gularis</i>	Black-chinned Honeyeater	x		x				NT			Dry eucalypt woodland and forests, particularly those containing ironbark and box species (Higgins <i>et al.</i> 2001). Very poorly known in study area but could occur in all Land Zones.	Three WildNet records. Likely to occur in the study area.
Aves Meliphagidae	<i>Grantiella picta</i>	Painted Honeyeater ³							NT			Dry open woodlands and forests (including Brigalow) with a strong association with mistletoe. Also riparian forest, on plains with scattered eucalypts and in remnant trees on farmland. Diet consists primarily of mistletoe fruit, mostly <i>Amyema</i> species (Higgins <i>et al.</i> 2001, Oliver <i>et al.</i> 2003). Important REs include 11.4.3, 11.4.3a, 11.9.5 and 11.9.6 but often in non-remnant vegetation, especially on roadsides.	No database records. Nevertheless, this species is likely to occur in the study area.
Aves Pomatostomidae	<i>Pomatostomus temporalis</i>	Grey-crowned Babbler	x		x		x		C	X		Open forests and woodlands with open shrub layer, a sparse ground cover and fallen timber (Higgins and Peter 2002). Occurs in nearly all the REs found in the study area.	39 WildNet records. Common and known to occur in the study area.
Aves Rhipiduridae	<i>Rhipidura rufifrons</i>	Rufous Fantail	x	x		x		M	S			Moist habitats, including closed forests, coastal scrubs, mangroves and along watercourses and gullies, and urban/rural areas during mid-year migration (Pizzey and Knight 2007; Higgins <i>et al.</i> 2006a). Most likely in REs 11.8.3, 11.9.4a and 11.9.4b.	Two WildNet records. Potential to occur as a visitor to the study area.
Aves Monarchidae	<i>Myiagra cyanoleuca</i>	Satin Flycatcher	x			x		M	S			Eucalypt forest, especially wet sclerophyll. Often in gullies and along watercourses (Higgins <i>et al.</i> 2006a).	One WildNet record. Potential to occur as a rare visitor to the study area.
Aves Acrocephalidae	<i>Acrocephalus australis</i>	Australian Reed-Warbler	x		x		x	M	S			Reeds, rushes, sedges and similar vegetation in and adjacent to most wetland types (Higgins <i>et al.</i> 2006b). Other than around artificial waterbodies is most likely in RE 11.3.27b.	Four WildNet records. Known to occur in the study area.
Aves Estrilidae	<i>Neochmia ruficauda ruficauda</i>	Star Finch (eastern subspecies)	x			x		E	E		High		One WildNet record (pre 1980). Not expected to occur.
Aves Estrilidae	<i>Stagonopleura guttata</i>	Diamond Firetail ³	x						C	X		Eucalypt woodlands, open forests and other lightly timbered areas, including some farmland. They prefer areas with an open or sparse	1 WildNet record. Not expected to occur in study area.

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			DERM	QM	BA	EPBC	BAAM	EPBC Act	NC Act	BAMM	BoT		
												understorey of shrubs, small trees and grass groundcover, and are often found in riparian vegetation (Higgins <i>et al.</i> 2006b). May persist in Land Zone 3.	
Mammalia Ornithorhynchidae	<i>Ornithorhynchus anatinus</i>	Platypus	x						S	X		Freshwater streams, rivers, lakes and dams with a preference for steep, well vegetated banks for burrowing (Low 1995; Menkhorst and Knight 2004).	Two WildNet records. Not expected to occur in the study area.
Mammalia Ornithorhynchidae	<i>Tachyglossus aculeatus</i>	Short-beaked Echidna	x				x		S			Widespread throughout timbered areas.	Nine WildNet records. Known to occur in the study area.
Mammalia Dasyuridae	<i>Dasyurus hallucatus</i>	Northern Quoll				x		E	C			A range of habitats but prefer rocky areas and eucalypt forests.	No database records, EPBC search only. Low potential to occur in the southern part of the study area.
Mammalia Peramelidae	<i>Isodon macrourus</i>	Northern Brown Bandicoot		x			x		C	X		Open forest, woodland and grassland with tall grass and dense shrub layer (Gordon 2008). In the study area it is most likely in riverine habitats such as RE 11.3.25.	Known to occur in forested parts of the study area.
Mammalia Phascolarctidae	<i>Phascolarctos cinereus</i>	Koala	x	x				V	S	X		Feed almost entirely on eucalypts (Martin <i>et al.</i> 2008). In the study area most likely in REs 11.3.4, 11.3.25, 11.3.27b and 11.4.10 feeding on Forest Red Gum and River Red Gum.	10 WildNet records. Also, a recent record of a skull was obtained in Kathleen block to the south of the study area during a BAAM survey for an independent project. Likely to occur in forested parts of the study area.
Mammalia Petauridae	<i>Petaurus australis</i>	Yellow-bellied Glider ³	x						C	X	High	Tall dry open eucalypt forest with large and numerous tree hollows (McFarland <i>et al.</i> 1999a, b). Most common in RE 11.10.1 but also occurs in REs 11.5.1, 11.5.4, 11.7.6 and 11.7.7 which contain Lemon-scented Spotted Gum, ironbark and <i>Angophora</i> species and in alluvial areas.	Six WildNet records. Likely to occur in the study area.
Mammalia Petauridae	<i>Petaurus australis</i>	Squirrel Glider					x		C	X		Open eucalypt forest with tree hollows (Sharpe and Godingay 2007). On the western edge of its range, occurs predominantly in REs associated with land zone 5.	Known to occur in the study area.
Mammalia Pseudocheiridae	<i>Petauroides volans</i>	Greater Glider	x	x					C	X		A variety of eucalypt-dominated habitats, including tall forests and low woodlands with hollow-bearing trees (McKay 2008). In the study area most common in REs 11.3.3, 11.3.25 and 11.3.27b but may also occur in Land Zones 4, 5, 7, 9 and 10.	Two WildNet records. Likely to occur in the study area.
Mammalia Phalangeridae	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	x	x			x		C	X		Variety of habitats, but prefers dry eucalypt forests and woodlands (Kerle and How 2008).	10 WildNet records. Known to occur in the study area.
Mammalia Potoroidae	<i>Aepyprymnus rufescens</i>	Rufous Bettong	x				x		C	X		Areas of sparse or grassy understorey in a variety of habitats, including eucalypt forests and low woodlands (Johnson 2003).	Six WildNet records. Known to occur in the study area.
Mammalia Macropodidae	<i>Macropus dorsalis</i>	Black-striped Wallaby	x	x					C	X		Forested areas with a dense shrub layer including rainforest margins, regrowth Brigalow scrub and Lantana thickets (Johnson 2008). Occurs in Land Zones 3, 4, 7, 9 and 10 but most frequently in REs 11.3.1, 11.4.3, 11.9.1, 11.9.4a, 11.9.4b, 11.9.5 and 11.9.10.	Seven WildNet records. Likely to occur in the study area.
Mammalia Vespertilionidae	<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat				x		V	V			Little known, but may depend heavily on sandstone outcrops. It has been found roosting in disused mine shafts, caves, overhangs and disused Fairy Martin <i>Petrochelidon ariel</i> nests (Hoye and Schulz 2008). It also possibly roosts in the hollows of trees (Duncan <i>et al.</i> 1999). Possibly occurs in REs on sandstone, such as 11.10.1 and in areas of <i>Callitris</i> such as REs 11.3.14 and 11.3.18.	No database records, EPBC search only. Generally considered low potential to occur in the study area , although a sandstone rise that could harbour this species does occur in the south of the study area.
Mammalia Vespertilionidae	<i>Chalinolobus picatus</i>	Little Pied Bat	x	x			x		NT			Dry habitats including open forests, woodland, mulga woodlands, chenopod scrublands, <i>Callitris</i> forest, mallee and notophyll vine forest gullies (Eyre <i>et al.</i> 1997; Churchill 2008). Occurs in all Land Zones.	Three WildNet records. Known to occur in the study area.
Mammalia Vespertilionidae	<i>Nyctophilus corbeni</i> (formerly <i>timoriensis</i>)	South-eastern Long-eared Bat		x		x		V	V		Medium	Dry forest habitats including River Red Gum, open woodland, mallee, Brigalow and other arid and semi-arid habitats. It appears to be more common in box, ironbark and cypress-pine forests on sandy soils in southern Queensland (Churchill 2008; Turbill <i>et al.</i> 2008). May occur in all Land Zones, but principally in association with Land Zone 10.	Likely to occur in the study area. A <i>Nyctophilus</i> species was

¹ Source abbreviations as follows: **DERM** = Queensland's WildNet database; **QM** = Queensland Museum database; **BA** = Birds Australia database; **EPBC** = EPBC Online Protected Matters Search Tool; **BAAM** = BAAM field survey and assessment. A single database record may be included in multiple sources. Each record may be of multiple individuals.

² Status abbreviations are as follows: **CE** = Critically Endangered, **E** = Endangered, **V** = Vulnerable, **R** = Rare, **NT** = Near Threatened, **M** = Migratory, **S** = Special Least Concern, **C** = Least Concern Wildlife, **X** = Priority species for the BBS bioregion.

³ **BAMM** = Biodiversity Assessment Mapping Methodology, see http://www.derm.qld.gov.au/wildlife-ecosystems/biodiversity/biodiversity_assessment_and_mapping_methodology_bamm.html.

⁴ **BoT** = 'Back on Track' species priority status, see http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/back_on_track_species_prioritisation_framework/.

⁵ Detailed profiles for species of special conservation significance known or considered possible occurrences are provided in **Appendix G**.
⁶ Based on cross referencing habitat/RE preference with refined mapping (**Appendix L**) and accounting for species' known distribution within study area as well as consideration of detectability on the number of previous records of each species.
⁷ Listed as Migratory under the EPBC Act 1999 as Painted Snipe *Rostratula benghalensis s. lat.*

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