REPORT

Ecology Assessment Report

Q-4300-15-RP-299

Australia Pacific LNG Project

This report provides an overview of the environmental and ecological values for the Site contained within Lot 15 on Plan SP193253 associated with DA1931.

Revision	Date	Description	Originator	Checked	QA/Eng	Approved
0	07/02/2016	Issued for Use	T Collins	A Schimpf	A Schimpf	T Williams

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- **Should** indicates a recommended course of action
- **May** or **can** indicate a possible course of action.

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1. Introduction

This report provides a description of the ecological values found within Lot 15 Plan SP193253 herein referred to as 'the Site'. The results are based on an initial desktop assessment followed by a field survey to confirm the vegetation communities, flora and fauna species, habitat values and areas of disturbance.

This report has been compiled by Tim Collins, Senior Environmental Advisor for Origin Energy Pty Ltd. The field surveys were conducted by a team of ecologists including Anjeanette Schimpf Senior Field Environmental Advisor, Origin Energy Pty Ltd & Claud Zappone Field Environmental Advisor, Origin Energy Pty Ltd, led by Tim Collins.

Anjeanette Schimpf and Tim Collins are approved to undertake ecological surveys by Commonwealth Department of Environment (formerly the Department of Sustainability, Environment, Water, Population and Communities) in writing on 13th September, 2012 and 17th December, 2012 respectively.

1.1. Scope of Works

An ecological survey was required to be carried out on Lot 15 Plan SP193253 in anticipation of proposed development of the Site. The Survey Area is defined as the area contained within the boundaries of the above listed lot/plan as well as adjacent road and water reserves. Refer to Appendix A: Site Location and Survey Points for an overview of the Site and Survey Area.

1.2. Definitions & Abbreviations

1.2.1. Definitions

Table 1: Definitions

Term	Definition
Likely (with regard to likelihood of occurrence assessment)	Species, population or ecological community could occur and study area is likely to provide suitable habitat. Previous records in the locality and/or suitable potential habitat in the study area.
Present (with regard to likelihood of occurrence assessment)	Species, population or ecological community was recorded during the field investigations.
Project	Australia Pacific LNG Project
Ramsar	Convention on Wetlands of International Importance (the Ramsar Convention) was signed in Ramsar, Iran on 2 February 1971. The Ramsar Convention aims to halt the worldwide loss of wetlands and to conserve, through wise use and management, those that remain. The Convention encourages member countries to nominate sites containing representative, rare or unique wetlands, or that are important for conserving biological diversity, to the List of Wetlands of International Importance (Ramsar sites).
Survey Area	The area encompassed by the cadastral boundaries of Lot 15 Plan SP193253 as well as the adjacent road and water reserves.
The Site	The area encompassed by the cadastral boundaries of Lot 15 Plan SP193253 as well as the adjacent road and water reserves.
Trimble	Trimble integrates positioning technologies such as GPS, laser and optical with application software, wireless communications and services to provide innovative positioning solutions for applications such as surveying, construction and engineering.
Unlikely (with regard to likelihood of occurrence assessment)	Species, population or ecological community is not likely to occur. Lack of previous recent (<25 years) records and suitable potential habitat limited or not available in the study area.

1.2.2. Abbreviations

The following abbreviates are found throughout this report. *[populate/cull as required]*

Table 2: Abbreviations

Abbreviation	Description
oC	Degrees centigrade
BoM	Bureau of Meteorology
DEHP	Department of Environment and Heritage Protection (Qld)
DNRM	Department of Natural Resources and Mines (Qld)
DoTE	Department of the Environment (Cth)
EPBC, EPBC Act	*Environmental Protection Biodiversity and Conservation Act 1999* (C'th)
ESA	Environmentally Sensitive Area
GPS	Global positioning system
km	Kilometre
LNG	Liquefied Natural Gas
LP, LP Act	*Land Protection (Pest and Stock Route Management) Act 200* (Qld).
m	Metres
mm	Millimetre
MNES	Matters of National Environmental Significance
N/A	Not applicable
NC, NC Act	*Nature Conservation Act 1992* (Qld)
RE, REs	Regional Ecosystem(s)
TEC, TECs	Threatened Ecological Community(ies)

1.2.3. Document Revision Table

Table 3: Revision History

Revision	Date	Description

1.2.4. Document References

The following documents are referred to throughout this report.

Table 4: Associated Document References

Document Number	Title
Q-LNG01-15-MP-0109	Australian Pacific LNG (2011) *Environmental Constraints Planning and Field Development Protocol*.
Q-4300-15-RP-314	Ecology Assessment report for Lot 16 on SP193253
Q-4300-15-RP-289	Ecology Assessment report for Lot 95 on L34249
Q-4000-15-RP-1015	Ecology Assessment report for Lot 12 on RG129 and Lot 56 on LY1
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	Tarburton, M.K. (1993). Radiotracking a White-throated Needletail to roost. Emu. 93:121--124.
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	Wieneke, J. (1989). Birds of Townsville and Where to Find Them. Townsville: Wildlife Preservation Society of Queensland.
	Wilson, S.K. & D.G. Knowles (1988). Australia's Reptiles: A Photographic Reference to the

Document Number	Title
	Terrestrial Reptiles of Australia. Australia: Collins Publishers.

2. Site Context

Table 5: Site Context

Bioregion	The Site is located in the Eastern Darling Downs Province (sub-region 11.31) within the Brigalow Belt south bioregion. The Eastern Darling Downs Province comprises spurs and foothills of Main Range along the eastern boundary of the bioregion, low hills in the south and the Condamine River plain in the central and western parts. Substrates include Tertiary basalt in the extreme east, Jurassic sediments in the south-east, Triassic-Jurassic sediments in the north-east and alluvial soils of varying age along the Condamine River plain. The basalt vegetation communities are predominantly woodlands of *Eucalyptus crebra* (narrow-leaved ironbark), *E. melliodora* (yellow box), *E. tereticornis* (forest red gum), *E. albens* (white box) or *E. orgadophila* (mountain coolibah). The sandstone hills support *E. crebra* woodland with *E. moluccana/microcarpa* (gum-topped box) and *E. populnea* (poplar box) woodland on lower slopes and valleys. There are also some areas of semi-evergreen vine thicket/araucarian microphyll rainforest, particularly in the south-east, and *Acacia harpophylla* (brigalow) open forest and vine thicket in the north-east. Prior to clearing, the heavy cracking clays and black earths of the Condamine River plain supported *Dichanthium sericeum* (bluegrass) grassland and grassy woodlands of *E. populnea*, with *E. tereticornis-camaldulensis* (forest red gum-river red gum) and *Angophora floribunda* (rough-barked apple) adjacent to drainage lines. In the eastern part of the Condamine River plain, the black earths appear to have supported a grassy woodland of *E. tereticornis*, *A. floribunda* rather than the *Dichanthium* grasslands and E. populnea woodlands of the central and western parts (Sattler and Williams 1999).
Current land use	The Site is predominantly cleared and currently utilised for agricultural cropping purposes. A narrow tract of riparian vegetation remains along the Condamine River which borders the northern boundary of the Site.
Soils and geology	The Site comprises a river channel to the north (Condamine River) and associated alluvial plains which appear to be subject to periodic inundation. Soil types include deep alluvial sands at the northern extent associated with riverine features and cracking clays in the southern portion of the Site. In terms of geological mapping units the Site is divided almost in half with the northern extent mapped as Qa-quaternary aged alluvium comprising clay, silt, sand, gravel as a conglomerant of floodplain alluvium. The southern extent of the site is mapped as Qs/JKk – Quaternary aged sand beds with some alluvium and gravel / Kumbarilla beds – Sandstone, siltstone and mudstone; some conglomerate.
Climate	The nearest weather station to the Site is located at the Miles Post Office (Bureau of Meteorology (BoM) station ID 042023) located approximately 45km to the west of the Site. The Miles Post Office has a mean annual rainfall of 652 mm, with most rain falling between December and February, with August being the driest month. The average annual maximum temperature at Miles is 27.1oC (BoM, 2015).

3. Methodology

The methodology employed in compilation of this Ecology Assessment Report consisted of:

- A desktop and literature review of ecological databases and literature sources as direct references for the survey undertaken
- A field survey of the Site

An explanation of these activities is outlined in this section.

3.1. Desktop and Literature Review

Sources utilised in the desktop and literature review are listed in Table 6 below.

Table 6: Desktop and Literature Review Sources

Database	Co-ordinates or search area	Date of search	Appendix
Environmental Protection Biodiversity and Conservation Act 1999 (*EPBC Act*) Protected Matters Search Tool	Lat: -26.8099 Long: 150.5245	10 Jul 2015	Appendix B: Results of EPBC Protected Matters Search Tool
Nature Conservation Act 1992 (*NC Act)* Protected Species Lists Wildlife Online Database	Lat: -26.8099 Long: 150.5245	10 Jul 2015	Appendix C: Wildlife Online Database Search Results
Department of Natural Resources and Mines (DNRM) Regional Ecosystem and Remnant Map—version 9.0	Lot/Plan: 15/SP193253	10 Jul 2015	Appendix D: DNRM Mapped Regional Ecosystems
EHP Map of Environmentally Sensitive Areas	Lat: -26.8099 Long: 150.5245	10 Jul 2015	Appendix E: EHP Environmental Values Mapping on Site (ESAs, Protected Plants)
EHP Protected Plants Flora Survey Trigger Map	Lot/Plan: 15/SP193253	09 Jul 2015	Appendix E: EHP Environmental Values Mapping on Site (ESAs, Protected Plants)
EHP Map of Referable Wetlands and Wetland Protection Areas	Lot/Plan: 15/SP193253	12 Jul 2015	Appendix K: EHP Map of Referable Wetlands and Wetland Protection Areas.
Queensland Geological Mapping, Chinchilla Map SHEET SG56-09 and 1:250,000 Geological series (1971).	Lot/Plan: 15/SP193253	10 Jul 2015	N/A

Data searches were conducted using a 10 km buffer around the coordinate Lat/Long: -26.8099, 150.5245 which corresponds to the approximate centre point of the property/properties.

3.2. Field Survey

Ecological surveys were conducted in accordance with:

- The *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland* (Neldner et al. 2005)
- In line with the methodology described in the *Environmental Constraints Planning and Field Development Protocol* (Q-LNG01-15-MP-0109, Australia Pacific LNG 2011).

Field surveys were undertaken between the 14/07/2015 and the 15/07/2015.

3.2.1. Vegetation Community Survey

Baseline botanical surveys were undertaken to describe dominant flora and vegetation community structure throughout the survey site. Botanical surveys were consistent with the tertiary level of data collection as described in Neldner et al. (2012).

The vegetation community surveys were undertaken within 50m x 10m plots for the purpose of typifying the vegetation community under assessment. Vegetation community data was entered into the data fields provided by the Trimble data capture system. A total of seven (7) formal vegetation community surveys were undertaken within the Site. Ground-truthing of the DNRM RE designation (DNRM 2014) at and surrounding the Site was undertaken via quaternary level and random meanders transect assessments, as defined by Neldner et al. (2012).

The locations of the vegetation community survey sites are presented in Appendix A: Site Location and Survey Points.

Relative abundance data was collected for each stratum within the community as per the methodology described in the *Environmental Constraints Planning and Field Development Protocol* (Q-LNG01-15-MP-0109 Australia Pacific LNG (2011)), as presented by the vegetation structure point data sheet of the Trimble unit. Representative photo(s) were taken of the subject vegetation community via the Trimble unit or camera. Photo aspect data was recorded as required.

Vegetation community polygons were verified in accordance with Queensland regional ecosystem (biodiversity status) (DNRM 2015) and EPBC threatened ecological community (TEC) criteria (DoTE 2015a).

3.2.2. Habitat Surveys

Habitat surveys were undertaken in conjunction with the vegetation community surveys within the 50m x 10m quadrant. A total of four (4) formal habitat surveys were undertaken across the Site (Appendix A: Site Location and Survey Points).

Within each habitat survey, a range of habitat features were recorded on the relevant Trimble data sheet. Where deemed appropriate, representative photo(s) were taken of the given habitat patch via the Trimble unit. Photo aspect data is entered into the relevant data sheet.

3.2.3. Threatened Flora and Fauna Survey

Threat-listed species are those listed under the EPBC Act 1999 and the *Nature Conservation (Wildlife) Regulation 2006*.

Targeted threat-listed flora searches were undertaken for species highlighted by the database and literature review. Searches were undertaken based on incidental field observations of high quality habitat, the identification of distinct ecological features through the preliminary desktop and literature review, or within the vicinity of a vegetation community survey/habitat feature plots where field ecologists deemed the given area to be of sufficient potential value to a threatened species to warrant such a search.

Fauna species were recorded opportunistically throughout the survey area.

Any observations of threatened species (whether within search areas or opportunistically) were recorded using the Trimble data capture system. Where practicable, photo(s) were taken of the subject

threatened species. Any flora specimens deemed as potential threatened species and not conclusively identified by the ecologists were forwarded to the Queensland Herbarium for verification.

3.2.4. Exotic Fauna Survey

Presence and abundance of declared fauna as defined by the *Land Protection (Pest and Stock Route Management) Act 2002 (LP Act)*, were recorded at the time of the survey both within survey plots and opportunistically while traversing the Site. Exotic fauna species were entered into the Trimble data capture system when encountered.

3.2.5. Disturbance Survey

Evidence of disturbance at survey sites was recorded for type, severity and estimated time of most recent occurrence. The recording of disturbance was also conducted at opportunistic levels where appropriate.

3.2.6. Watercourse/wetland Survey

All mapped ordered streams within the property were assessed, across their full length, to determine if these mapped features were watercourses or drainage features as defined by the *Water Act 2000*. Ordered stream assessments included assessment of the presence/absence of a defined channel with bed and banks, riparian vegetation and hydrophytes. The extent of streams assessed as watercourses was mapped using imagery and/or a GPS-derived track log. Mapping of the extent of streams assessed as drainage features was not required under the scope of works. If potential wetlands were encountered they were assessed against the hydrological and biotic criteria of the Queensland Wetland Program wetland definition (DERM 2011).

3.2.7. Survey Limitations

A number of factors are considered likely to influence survey results for particular species or species groups. These factors are:

- Timing (seasons) and duration of the survey period
- Weather conditions in the preceding seasons and immediately prior to the survey
- Restricted spatial area of the habitats within the Site

Due to the above-listed items, the surveys undertaken may not provide a true indication of seasonal habitat utilisation by fauna species within the Site. Some cryptic flora species may only be detected during particular flowering periods. The field investigations undertaken were limited to passive techniques (e.g. no live trapping) and were limited to the winter season. Additional survey effort would be required to provide a more comprehensive inventory of species, both threatened and common.

4. Results and Discussions

This section includes the results of the database and literature review. Some information is contained in the appendices and is referenced below.

4.1. Desktop and Literature Review

Results of the desktop and literature review can be found in Appendices C-F & L, as listed in Table 6. Table 7 provides a summary of the Commonwealth environment matters which have been recorded as a result of previous field surveys on allotments adjacent to the site. Document reference numbers for these field survey reports are provided in Table 4.

Table 7: Commonwealth Environmental Matters – Field Survey Results for Adjacent Allotments

Commonwealth environmental matters	Present (Y/N)	Location	Description	EPBC Act Status	Comments
TECs	Yes	Lot 16 on SP193253, Lot 95 on L34249, Lot, Lot 12 on RG129 & Lot 56 on LY1.	Coolibah-Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Present as remnant RE11.3.3 fringing the Condamine River. Recorded in association with other riverine vegetation communities including RE11.3.1 and 11.3.4.
EPBC threat-listed flora	--	--	--	--	--
EPBC threat-listed fauna	--	--	--	--	--
Migratory species	Yes	Lot 95 L34249, Lot 12 RG129 & Lot 56 LY1	*Ardea ibis* (cattle egret)	Migratory wetland species	Recorded in cleared grazing paddocks, associated with grazing livestock on Lot 95 L34249.
Marine species	Yes	Lot 16 SP193253 & Lot 95 L34249	*Falco cenchroides* (nankeen kestrel)	Listed Marine Species	Recorded in-flight above cleared grazing Paddocks
	Yes	Lot 16 SP193253, Lot 95 on L34249, Lot 12 RG129 & Lot 56 LY1	*Grallina cyanoleuca* (magpielark)	Listed Marine Species	Recorded at numerous locations in cleared grazing paddocks and riparian vegetation
	Yes	Lot 16 SP193253, Lot 95 L34249, Lot 12 RG129 & Lot 56 LY1	*Haliastur sphenurus* (whistling kite)	Listed Marine Species	Recorded at numerous locations in cleared grazing paddocks and riparian vegetation
	Yes	Lot 16 SP193253 & Lot 95 on L34249	*Pelecanus conspicillatus* (Australia pelican)	Listed Marine Species	Recorded at numerous locations in cleared grazing paddocks and riparian vegetation
	Yes	Lot 16 SP193253, Lot 12 RG129 & Lot 56 LY1	*Todiramphus sanctus* (sacred kingfisher)	Listed Marine Species	Recorded at numerous locations in cleared grazing paddocks and riparian vegetation

Commonwealth environmental matters	Present (Y/N)	Location	Description	EPBC Act Status	Comments
	Yes	Lot 95 L34249, Lot 12 RG129 & Lot 56 LY1	*Ardea alba* (white egret)	Listed Marine Species	Recorded in riverine environment (Condamine River) and wetland areas to north of Lot 95 L34249.
	Yes	Lot 95 L34249, Lot 12 RG129 & Lot 56 LY1	*Ardea ibis* (cattle egret)	Listed Marine Species	As above
	Yes	Lot 12 RG129 & Lot 56 LY1	*Ardea intermedia* (Intermediate egret)	Listed Marine Species	This species is regionally common in Queensland and has the potential to occur in woodland habitats across the state.
	Yes	Lot 95 L34249	*Coracina novaehollandiae* (black-faced cuckoo-shrike)	Listed Marine Species	Recorded sitting on barbed-wire fence of cleared grazing paddock on Lot 95 L34249.
	Yes	Lot 95 L34249, Lot 12 RG129 & Lot 56 LY1	*Threshkiornis mulucca* (Asutralian white ibis)	Listed Marine Species	Recorded at numerous locations in cleared grazing paddocks
	Yes	Lot 95 L34249, Lot 12 RG129 & Lot 56 LY1	*Threshkiornis spinicollis* (straw-necked ibis)	Listed Marine Species	Recorded at numerous locations in cleared grazing paddocks
	Yes	Lot 12 RG129 & Lot 56 LY1	*Eurystomus orientalis* (dollarbird)	Listed Marine Species	This species is regionally common in Queensland and has the potential to occur in woodland habitats across the state.
	Yes	Lot 12 RG129 & Lot 56 LY1	*Ninox boobook* (southern boobook)	Listed Marine Species	This species is regionally common in Queensland and has the potential to occur in woodland habitats across the state.

4.2. Field Survey

Results of field surveys are detailed in the following sections. A comprehensive list of flora and fauna species identified during the field survey is included in Appendix F: List of Flora and Fauna Species Identified on Site.

4.2.1. Commonwealth Environmental Matters

Field survey results for Commonwealth environmental matters (Matters of National Environmental Significance (MNES), TECs, threat-listed species) are outlined in Table 8.

Table 8: Commonwealth Environmental Matters – Field Survey Results

Commonwealth environmental matters	Present (Y/N)	Location	Description	Status	Condition	Comments
TECs	Y	Lot 15 on SP193253	Brigalow - (*Acacia harpophylla* dominant and co-dominant)	Endangered	Community was observed as a fairly thin tract of vegetation associated with the heavy clays present on the Site in close proximity to the Condamine River. A large number of declared weeds & WoNS were observed within the community.	Present as remnant RE 11.3.1 that extended approximately half the lenth of the boundary bordering the Condamine River.
			Coolibah-Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	A small patch of the community observed to the west was seen to be fragmented and exhibited a high density of declared weeds & WoNS. A larger contiguous patch of this community was also observed to the eastern extent of the Site in generally good condition with low weed incursion.	Present as remnant RE11.3.3 fringing the Condamine River. Recorded in association with 11.3.25, another riverine vegetation community observed on-site. It should be noted that this TEC was declared on 1st March 2011, after EPBC Act approval for the Australia Pacific LNG Project was received on 21st February, 2011. As such, the Coolibah-Black Box Woodland TEC does not constitute a constraint to the Project.
EPBC threat-listed flora	N	--	--	--	--	--
EPBC threat-listed fauna	N	--	--	--	--	--
Migratory species	N	--	--	--	--	--

Commonwealth environmental matters	Present (Y/N)	Location	Description	Status	Condition	Comments
Marine species	Y	Lot 15 on SP193253	*Grallina cyanoleuca* (magpie-lark)	Listed Marine Species	N/A	Recorded at numerous locations in cleared grazing paddocks and riparian vegetation

4.2.1.1. Ground-truthed Threatened Ecological Communities

As identified in Table 7, two (2) TECs were observed during field investigations. The Brigalow - *Acacia harpophylla* (dominant and co-dominant) ecological community was recorded along the north-western extent of the Site bordering the Condamine River. The Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions ecological community was recorded in the north-eastern extent of the Site bordering the Condamine River. It should be noted that this TEC was declared on 1st March 2011, after EPBC Act approval for the Australia Pacific LNG Project was received on 21st February, 2011. As such, the Coolibah-Black Box Woodland TEC does not constitute a constraint to the Project.

All ground truthed TECs are represented schematically in Appendix H: Ground Truthed Regional Ecosystems.

4.2.1.2. Threatened Flora

No EPBC Act listed threatened flora were recorded during the field survey at the Site.

Based on field inspection results, an assessment of the likelihood of occurrence of *EPBC Act* listed threatened flora identified within the desktop searches (Table 6) is summarised in Table 9.

Table 9: Field survey results for EPBC Act threatened flora with potentially suitable RE and likelihood of occurrence.

Family	Scientific/ Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
Surianaceae	*Cadellia pentastylis* (ooline)	Vulnerable	Ooline occurs in a range of vegetation types including semi-evergreen vine thicket, brigalow-belah, poplar box and bendee communities. Ooline often occurs on the edges of sandstone and basalt escarpments, 200 to 500 m above sea level. In most areas of its range, ooline grows on the moderately fertile soils preferred for agriculture and pasture development. (Pollock 1999; DoTE 2015b)	No	Unlikely – appropriate habitat for this species is absent from The Site.
Celastraceae	*Denhamia parvifolia* (small-leaved Denhamia)	Vulnerable	*Denhamia parviflora* is found in vine forests and semi-evergreen vine thickets (softwood and brigalow scrub),	No	Unlikely – appropriate habitat for this species is absent from The Site.

			commonly on basalt-derived, brown or red soils above 300 m altitude. It is occasionally found in ecotone areas with open forest. Associated species include: *Cadellia pentastylis*, *Acacia harpophylla*, *Backhousia angustifolia*, *Geijera salicifolia*, *Flindersia xanthoxyla*, *F. australis* and *Cupaniopsis parvifolia* (Queensland Herbarium, 2012a).		
Poaceae	*Homopholis belsonii* (Belson's panic)	Vulnerable	*Homopholis belsonii* is generally found among fallen timber at the base of trees or shrubs, among branches and leaves of trees hanging to ground level or along the bottom of netting fences. It may also be associated with shadier areas of brigalow (*Acacia harpophylla*), myall (*A. melvillei*), and weeping myall (*A. pendula*) communities; in mountain coolibah (*Eucalyptus orgadophila*) communities; and on roadsides (DoTE, 2015c; Queensland Herbarium, 2012b).	Yes – RE11.3.1, 11.3.3	Unlikely – suitable habitat is present at The Site however, the ground storey has been significantly disturbed as a result of historical grazing activities. There are no recent records of this species within close proximity to The Site.

4.2.1.3. Threatened Fauna

As described in Table 8, no *EPBC Act* listed threatened fauna were recorded during the field survey. An assessment of the likelihood of occurrence of EPBC Act listed threatened fauna, based on field results, is summarised within Table 10.

Table 10: Field survey results for EPBC Act threatened fauna with potentially suitable RE and likelihood of occurrence.

Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence

Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
Birds	Australiasian bittern - (*Botaurus poiciloptilus*)	Endangered	The Australasian bittern inhabits shallow (less than 30cm deep), permanent freshwater and brackish swamps or lagoons that are densely vegetated (e.g. tall reeds, sedges, lignum). They also inhabit bore drains with tussocky vegetation and occasionally saltmarsh. They use temporary pools when population densities are high and deep swamps when breeding. (Storr 1984a; Pringle 1985; Marchant & Higgins 1990; Garnett 1992; Pizzey & Knight 1997).	No – no shallow freshwater wetland areas are present on the allotment or in the immediate vicinity to the north of Lot 15 on SP193253.	Unlikely – appropriate habitat for this species was not observed on the Site or proximal to the Site.
	red goshawk - (*Erythrotriorchis radiatus*)	Vulnerable	The red goshawk occurs in coastal and sub-coastal areas in wooded and forested lands of tropical and warm-temperate Australia (Marchant & Higgins 1993). Riverine forests are also used frequently (Debus 1991, 1993). Such habitats typically support high bird numbers and biodiversity, especially medium to large species which the goshawk requires for prey. The red goshawk nests in large trees, frequently the tallest and most massive in a tall stand, and nest trees are invariably within one km of permanent water (Aumann & Baker-Gabb 1991; Debus & Czechura 1988).	Yes – riverine vegetation on the Site supports large, old growth trees which may serve as appropriate nesting habitat in close proximity to permanent water	Likely – suitable nesting habitat for this species occurs within the Site and nearby cleared cropping & grazing paddocks may be utilised for hunting. However, there are no previous records of this species within the search area.
	squatter pigeon (southern) – (*Geophaps scripta scripta*)	Vulnerable	Squatter pigeon (southern) habitat is generally defined as open-forests to sparse, open-woodlands and scrub areas that are mostly dominated in the overstorey by Eucalyptus, Corymbia, Acacia or Callitris species; remnant, regrowth or partly modified vegetation communities, and within 3 km of water bodies or courses (Baldwin 1975; Beruldsen 1972; Cooper et al. 2014; Frith 1982; Leach 1988; North 1913-14; Squatter Pigeon Workshop 2011).	Yes – 11.3.1 is present on the Site, however the small patch size observed on the Site may not be sufficient to provide foraging habitat for this species.	Unlikely – sufficient habitat for this species was not observed on the Site or proximal to the Site. There are no previous records of this species within the search area.

Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
	swift parrot – (*Lathamus discolor*)	Endangered	The swift parrot inhabits dry sclerophyll eucalypt forests and woodlands. It occasionally occurs in wet sclerophyll forests (Higgins 1999; Swift Parrot Recovery Team 2001). Saunders and Heinsohn (2008) observed that the swift parrot predominantly forages within habitats that have been so significantly cleared that they are classified as endangered ecological communities.	No – vegetation communities preferred by this species are absent from the Site	Unlikely – appropriate habitat for this species was not observed on the Site or proximal to the Site. There are no previous records of this species within the search area.
	black-throated finch (southern) – (*Poephila cincta cincta*)	Endangered	The black-throated finch (southern) occurs mainly in grassy, open woodlands and forests, typically dominated by Eucalyptus, Corymbia and Melaleuca and occasionally in tussock grasslands or other habitats (for example freshwater wetlands), often along or near watercourses, or in the vicinity of water (Baldwin 1976; Britton & Britton 2000; BTF Recovery Team 2004; Ley & Cook 2001; NRA 2005; Wieneke 1989). Almost all recent records of the finch from south of the tropics have been in riparian habitat (Baldwin 1976; BTF Recovery Team 2004; Ley & Cook 2001). The subspecies is thought to require a mosaic of different habitats in which it can find seed during the wet season (Mitchell 1996).	Yes – riparian open woodlands are present at the Site. It is also noted that shallow, freshwater wetland areas are present on allotments to the north of the Site.	Unlikely – there are no previous records of this species within the search area and more preferable habitat is located on allotments to the north of the Site.

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Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
	Australian painted snipe – (*Rostratula australis*)	Endangered	The Australian painted snipe generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains. Typical sites include those with rank emergent tussocks of grass, sedges, rushes or reeds, or samphire; often with scattered clumps of lignum (Muehlenbecki) or canegrass or sometimes tea-tree (Melaleuca). The Australian painted snipe sometimes utilises areas that are lined with trees, or that have some scattered fallen or washed-up timber (Marchant & Higgins 1993).	No – shallow, freshwater wetland areas are not present on the Site. However, it is noted that such features are present on allotments to the north of the Site.	Unlikely – appropriate habitat for this species was not observed on or proximal to the Site.
Mammals	large-eared pied bat (*Chalinolobus dwyeri*)	Vulnerable	This species requires a combination of sandstone cliff/escarpment to provide roosting habitat that is adjacent to higher fertility sites, particularly box gum woodlands or river/rainforest corridors which are used for foraging (Pennay 2010 pers. comm. cited in TSSC 2010). Almost all records have been found within several kilometres of cliff lines or rocky terrain (DERM 2011). Roosting has also been observed in disused mine shafts, caves, overhangs and disused Fairy Martin (*Hirundo ariel*) nests (Hoye & Dwyer 1995; Schulz 1998). It also possibly roosts in the hollows of trees (Duncan et al. 1999).	No – vegetation communities and roosting features preferred by this species are absent from the Site.	Unlikely – appropriate habitat for this species was not observed on or proximal to the Site. There are no previous records of this species within the search area.

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Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
	south-eastern long-eared bat (*Nyctophilus corbeni*)	Vulnerable	The south-eastern long-eared bat occurs in a range of inland woodland vegetation types, including box, ironbark and cypress pine woodlands. The species also occurs in bull oak woodland, brigalow woodland, belah woodland, smooth-barked apple, *Angophora leiocarpa* woodland; river red gum, *Eucalyptus camaldulensis*, forests lining watercourses and lakes, black box, *Eucalyptus largiflorens* woodland, dry sclerophyll forest. Throughout inland Queensland the species habitat is dominated by various eucalypt and bloodwood species and various types of tree mallee with it being most abundant in vegetation with a distinct canopy and a dense cluttered shrub layer (Dominelli 2000; Ellis et al. 1999; Koehler 2006; Lumsden 1994; McFarland et al. 1999; Parnaby 1995; Turbill & Ellis 2006).	Yes – riparian vegetation along the Condamine River supports large, old growth trees which may serve as appropriate roosting habitat.	Likely – suitable roosting and foraging habitat for this species occurs within the Site.
	koala (*Phascolarctos cinereus*)	Vulnerable	Koala habitat can be broadly defined as any forest or woodland containing species that are known koala food trees, or shrubland with emergent food trees. The distribution of this habitat is largely influenced by land elevation , annual temperature and rainfall patterns, soil types and the resultant soil moisture availability and fertility. Preferred food and shelter trees are naturally abundant on fertile clay soils. On the western slopes of the Great Dividing Range, tablelands and plains in Queensland and New South Wales, koalas are found in sub-humid Eucalyptus-dominated forests and woodlands in riparian and non-riparian environments, and some Acacia-dominated forests and woodlands in non-riparian environments (Melzer et al. 2000).	Yes – preferred food trees are present within riparian vegetation communities along the Condamine River.	Likely – suitable foraging habitat for this species occurs within the Site. There are previous records for this species within the search area.

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Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
Reptiles	five-clawed worm-skink (*Anomalopus mackayi*)	Vulnerable	The five-clawed worm-skink occurs in bluegrass and/or mitchell grass dominated grassland (RE 11.3.21); coolibah - bimble/poplar box and weeping myall grassy woodlands; white box grassy woodland; myall woodland and brigalow vegetation communities (Brigalow Belt Reptiles Workshop 2010). The species is not likely to be found in soils in which deep cracks do not form, such as hard-setting brown clays or sandy soils types (Spark 2010).	Yes – Coolibah and Brigalow woodlands are present at the Site, together with black-brown cracking clays.	Unlikely – suitable habitat is present at the Site however, the ground storey has been significantly disturbed as a result of historical clearing and grazing activities. Additionally, no deep cracks were observed within the vegetated areas.There are no previous records of this species within or proximal to the Site.
	collared delma (*Delma torquata*)	Vulnerable	The collared delma normally inhabits eucalypt-dominated woodlands and open-forests in the following regional ecosystems: RE 11.9.10 - poplar box/brigalow (*Acacia harpophylla*) open-forest on fine-grained sedimentary rocks; RE 11.10.1 - lemon-scented gum (*Corymbia citriodora*) open forest on coarse-grained sedimentary rocks; RE 11.10.4 - gum-topped ironbark (*Eucalyptus decorticans*), budgeroo/brown hazelwood (*Lysicarpus angustifolius*) with Eucalyptus species, Corymbia species, Acacia species woodland on coarse-grained sedimentary rocks (Brigalow Belt Reptiles Workshop 2010).	No – vegetation communities preferred by this species are not present on or proximal to the Site.	Unlikely – appropriate habitat for this species is absent from the Site. There are no previous records of this species within the search area.

Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
	yakka skink (*Egernia rugosa*)	Vulnerable	The yakka skink is known to occur in open dry sclerophyll forest, woodland and scrub (Brigalow Belt Reptiles Workshop 2010; Cogger 2000; Wilson & Knowles 1988). It occurs in a wide variety of vegetation types within alluvium, clay plains, old loamy and sandy plains, ironstone jump ups, undulating country on fine-grained sedimentary rocks and sandstone ridges (Brigalow Belt Reptiles Workshop 2010).	Yes – open woodlands are present at the Site, together with alluvium and clay plains.	Unlikely – suitable habitat is present at the Site however, the ground storey has been significantly disturbed as a result of historical agricultural activities. There are no previous records of this species within close proximity to the Site.
	Dunmall's snake (*Furina dunmalli*)	Vulnerable	Dunmall's snake has been found in a broad range of habitats, including forests and woodlands on black alluvial cracking clay and clay loams dominated by brigalow (*Acacia harpophylla*), other wattles (*A. burowii*, *A. deanii*, *A. leioclyx*), native cypress (*Callitris* spp.) or bull-oak (*Allocasuarina luehmannii*) as well as various *Corymbia citriodora*, ironbark (*Eucalyptus crebra* and *E. melanophloia*), white cypress pine (*Callitris glaucophylla*) and bulloak open forest and woodland associations on sandstone derived soils (Brigalow Belt Reptiles Workshop 2010; Stephenson & Schmida 2007, Threatened Species Network 2008, Covacevich et al. 1988).	Yes – open woodlands are present at the Site, together with alluvial cracking clays.	Unlikely – suitable habitat is present at the Site however, the ground storey has been significantly disturbed as a result of historical agricultural activities. There are no previous records of this species within close proximity to the Site.

Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
	grassland earless dragon (*Tympanocryptis pinguicolla*)	Endangered	The grassland earless dragon is found in naturally treeless native tussock grassland on black clay, brown clay loams and podzolic soils (Cogger et al. 1993). It prefers ungrazed or lightly grazed temperate grasslands on gentle slopes dominated by wallaby grasses (*Danthonia*), spear grasses (*Stipa*), tussock grasses (*Poa*), and kangaroo grass (*Themeda triandra*) (Brereton & Backhouse 2003; Langston 1996; Osborne et al. 1993; Robertson & Evans 2009). Within grasslands it uses a mix of predominantly shorter grasses and taller tussocks (Osborne et al. 1993; Smith 1994). Stevens and colleagues (2010) indicate that the species use a broad range of grassland structure as habitat.	No – vegetation communities preferred by this species are absent from the Site	Unlikely – appropriate habitat for this species was not observed on or proximal to the Site. Additionally, there are no previous records of this species within the search area.

4.2.1.4. Migratory Fauna

As described in Table 8, no EPBC Act migratory fauna were recorded during the field survey at the Site . An assessment of the likelihood of occurrence of EPBC Act listed migratory fauna, based on field results, is summarised within Table 11.

Table 11: Field survey results for EPBC Act migratory fauna with potentially suitable RE and likelihood of occurrence

Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
Birds	fork-tailed swift – (*Apus pacificus*)	Migratory Marine	This species often occurs over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh. They are also found at treeless grassland and sandplains covered with spinifex, open farmland and inland and coastal sand-dunes. The sometimes occur above rainforests, wet sclerophyll forest or open forest or plantations of pines. They forage aerially, up to hundreds of metres above ground, but also less than 1 m above open areas or over water (Higgins 1999).	Yes – open woodland and plains habitat exists across the site and aerial foraging opportunity exists over the Site	Likely – appropriate habitat for this species is present over the Site and there are previous records of this species within the search area.
	white-bellied sea-eagle – (*Haliaeetus leucogaster*)	Migratory Terrestrial	This species is found in coastal habitats (especially those close to the sea-shore) and around terrestrial wetlands in tropical and temperate regions of mainland Australia and its offshore islands. The habitats occupied by the sea-eagle are characterised by the presence of large areas of open water (larger rivers, swamps, lakes, the sea). Birds have been recorded in (or flying over) a variety of terrestrial habitats (Marchant & Higgins 1993). Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, forest (including rainforest) and even urban areas (Bell 1984; Czechura 1984; Harris 1980; Johnson & Hooper 1973; Longmore 1978; Quinn 1969; Roberts & Ingram 1976; Smith 1984).	Yes – riverine vegetation within the Site supports large, old growth trees which may serve as appropriate nesting habitat in close proximity to permanent water.	Likely – suitable nesting habitat for this species occurs within the Site and cleared grazing paddocks may be utilised for hunting. There are previous records of this species within the search area.

Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
	white-throated needletail – (*Hirundapus caudacutus*)	Migratory Terrestrial	This species occurs over most types of habitat and are probably recorded most often above wooded areas, including open forest and rainforest and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland (Higgins 1999). They also commonly occur over heathland (Cooper 1971; Learmonth 1951; McFarland 1988), but less often over treeless areas, such as grassland or swamps (Cooper 1971; Gosper 1981; Learmonth 1951). When flying above farmland, they are more often recorded above partly cleared pasture, plantations or remnant vegetation at the edge of paddocks (Emison & Porter 1978; Friend 1982; Tarburton 1993).	Yes – open woodland and plains habitat exists across The Site and aerial foraging opportunity exists over the Site.	Likely – appropriate habitat for this species is present over the Site and there are previous records of this species within the search area.
	rainbow bee-eater – (*Merops ornatus*)	Migratory Terrestrial	The rainbow bee-eater occurs mainly in open forests and woodlands, shrublands, and in various cleared or semi-cleared habitats, including farmland and areas of human habitation (Higgins 1999). It usually occurs in open, cleared or lightly-timbered areas that are often, but not always, located in close proximity to permanent water (Badman 1979; Boekel 1976; Fry 1984; Roberts 1979; Storr 1984b, 1985). It also occurs in inland and coastal sand dune systems, and in mangroves in northern Australia, and has been recorded in various other habitat types including heathland, sedgeland, vine forest and vine thicket, and on beaches (Higgins 1999).	Yes – open woodland and cleared farmland exists on the Site	Likely – appropriate habitat for this species is present within the Site and there are previous records of this species within the search area.
	satin flycatcher – (*Myiagra cyanoleuca*)	Migratory Terrestrial	Satin flycatchers mainly inhabit eucalypt forests, often near wetlands or watercourses. They generally occur in moister, taller forests than the leaden flycatcher, (*Myiagra rebecula*), often occurring in gullies (Blakers et al. 1984; Emison et al. 1987; Officer 1969). They also occur in eucalypt woodlands with open understorey and grass ground cover, and are generally absent from rainforest (Emison et al. 1987; Officer 1969).	Yes – open woodland near permanent water is present at the Site	Unlikely – suitable habitat is present at the Site however, there are no previous records of this species within or proximal to the Site.

Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
	fufous fantail – (*Rhipidura rufifrons*)	Migratory Terrestrial	The rufous fantail mainly inhabits wet sclerophyll forests, often in gullies dominated by eucalypts such as tallow-wood (*Eucalyptus microcorys*), mountain grey gum (*E. cypellocarpa*), narrow-leaved peppermint (*E. radiata*), mountain ash (*E. regnans*), alpine ash (*E. delegatensis*), blackbutt (*E. pilularis*) or red mahogany (*E. resinifera*); usually with a dense shrubby understorey often including ferns. They also occur in subtropical and temperate rainforests. They occasionally occur in secondary regrowth, following logging or disturbance in forests or rainforests (Higgins et al 2006).	No – vegetation communities and habitat features preferred by this species were not observed in or proximal to the Site.	Unlikely – appropriate habitat for this species was not observed in or proximal to the Site. There are no previous records of this species within the search area.
	great egret – (*Ardea alba*)	Migratory Wetland	The white egret has been reported in a wide range of wetland habitats (for example inland and coastal, freshwater and saline, permanent and ephemeral, open and vegetated, large and small, natural and artificial). These include swamps and marshes; margins of rivers and lakes; damp or flooded grasslands, pastures or agricultural lands; reservoirs; sewage treatment ponds; drainage channels; salt pans and salt lakes; salt marshes; estuarine mudflats, tidal streams; mangrove swamps; coastal lagoons; and offshore reefs (Kushlan & Hancock 2005; Marchant & Higgins 1990; Martínez-Vilalta & Motis 1992). The species usually frequents shallow waters.	Yes – freshwater riverine habitat is present at the Site.	Likely - recorded in close proximity to the Site in riverine environment (Condamine River) and wetland areas to north of Lot 95 L34249 (recent ecology survey).

Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
	cattle egret – (*Ardea ibis*)	Migratory Wetland	The cattle egret occurs in tropical and temperate grasslands, wooded lands and terrestrial wetlands. It has occasionally been seen in arid and semi-arid regions. High numbers have been observed in moist, low-lying poorly drained pastures with an abundance of high grass; it avoids low grass pastures. It has been recorded on earthen dam walls and ploughed fields. It is commonly associated with the habitats of farm animals, particularly cattle, but also pigs, sheep, horses and deer. It uses predominately shallow, open and fresh wetlands including meadows and swamps with low emergent vegetation and abundant aquatic flora. They have sometimes been observed in swamps with tall emergent vegetation (Marchant & Higgins 1990; Morton et al. 1989).	Yes – freshwater riverine habitat and cleared grazing land is present at the Site.	Likely - recorded in close proximity to the Site in riverine environment (Condamine River) and wetland areas to north of Lot 95 L34249 (recent ecology survey).
	Latham's snipe – (*Gallinago hardwickii*)	Migratory Wetland	Latham's snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level (Chapman 1969; Naarding 1981). They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies) (Frith et. al. 1977; Naarding 1983). However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity (Frith et al. 1977; Naarding 1983).	No – shallow freshwater wetland areas are present on the allotments to the north of the Site.	Unlikely – appropriate habitat for this species was not observed in or proximal to the Site.
	painted snipe – (*Rostratula benghalensis*)	Migratory Wetland	Refer to Table 10: Field survey results for EPBC Act threatened fauna with potentially suitable RE and likelihood of occurrence.	Refer to Table 10	Refer to Table 10

4.2.1.5. Marine Fauna

As described in Table 8, one (1) EPBC Act Listed Marine Species was recorded during the field survey at the Site. An assessment of the likelihood of occurrence of other EPBC Act listed marine fauna, based on field results, is summarised within Table 12.

Table 12: Field survey results for EPBC Act marine fauna with potentially suitable RE and likelihood of occurrence.

Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
Birds	magpie goose – (*Anseranas semipalmata*)	Listed Marine Species	Magpie geese are mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. Equally at home in aquatic or terrestrial habitats; often seen walking and grazing on land; feeds on grasses, bulbs and rhizomes. Activities are centred on wetlands, mainly those on floodplains of rivers and large shallow wetlands formed by run-off. Often seen in trios or flocks on shallow wetlands, dry ephemeral swamps, wet grasslands and floodplains; roosts in tall vegetation (New South Wales Department of Environment, Climate Change and Water 2005)	No – shallow freshwater wetland areas are present with the Site. However the allotment to the north of Lot 95 L34249	Unlikely – appropriate habitat for this species is absent from The Site, however previous records for this species exist within the search area
	fork-tailed swift – (*Apus pacificus*)	Listed Marine Species	Refer Table 10 above	Refer Table 10 above	Refer Table 10 above
	great Egret – (*Ardea alba*)	Listed Marine Species	Refer Table 10 above	Refer Table 10 above	Refer Table 10 above
	cattle egret – (*Ardea ibis*)	Listed Marine Species	Refer Table 10 above	Refer Table 10 above	Refer Table 10 above
	Latham's snipe – (*Gallinago hardwickii*)	Listed Marine Species	Refer Table 10 above	Refer Table 10 above	Refer Table 10 above
	white-bellied sea-eagle – (*Haliaeetus leucogaster*)	Listed Marine Species	Refer Table 10 above	Refer Table 10 above	Refer Table 10 above

Class	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE at Site	Likelihood of Occurrence
	white-throated needletail – (*Hirundapus caudacutus*)	Listed Marine Species	Refer Table 10 above	Refer Table 10 above	Refer Table 10 above
	swift parrot – (*Lathamus discolor*)	Listed Marine Species	Refer Table 10 above	Refer Table 10 above	Refer Table 10 above
	rainbow bee-eater – (*Merops ornatus*)	Listed Marine Species	Refer Table 10 above	Refer Table 10 above	Refer Table 10 above
	satin flycatcher – (*Myiagra cyanoleuca*)	Listed Marine Species	Refer Table 10 above	Refer Table 10 above	Refer Table 10 above
	rufous fantail – (*Rhipidura rufifrons*)	Listed Marine Species	Refer Table 10 above	Refer Table 10 above	Refer Table 10 above
	painted snipe – (*Rostratula benghalensis* [*sensu lato*])	Listed Marine Species	Refer Table 10 above	Refer Table 10 above	Refer Table 10 above

4.2.2. Queensland Environmental Matters

4.2.2.1. Field survey results

Field survey results for State environmental matters (EVNT etc) is outlined in Table 13.

Table 13: State environmental matters - field survey results

State environmental matters	Present (Y/N)	Location	Description	Status	Comments
Endangered regional ecosystems	Y	Lot 15 on SP193253	RE 11.3.1 – *Acacia harpophyyla* and/or *Casuarina cristata* open forest on alluvial plains.	N/A	Observed above the watercourse high bank fringing the Condamine River, for approximately half the length of the boundary bordering the Condamine River. A significant density of declared weed species were observed in this community.
Of concern regional ecosystems	Y	Lot 15 on SP193253	RE 11.3.3 - *Eucalyptus coolabah* woodland on alluvial plains	N/A	Fringing the Condamine River and Charley Creek. Distribution generally restricted to above watercourse high bank in areas which are irregularly flooded. Community generally in good condition with limited weed incursion.
			RE11.3.25 - *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines	N/A	Fringing the Condamine River and Charley Creek. Distribution generally restricted to at and below watercourse high bank. Community generally in good condition with limited incursion.
NC Act listed flora (EVNT)	N	--	--	--	--
NC Act listed fauna	N	--	--	--	--

State environmental matters	Present (Y/N)	Location	Description	Status	Comments
(EVNT)					
Special Least Concern plants (SLC)	Y	15SP193253	*Cymbidium canaliculatum* (black-orchid)	SLC	Observed occasionally in the vegetation fringing the Condamine river.

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4.2.2.2. Ground Truthed Regional Ecosystems

DNRM mapping identified three (3) REs to be present on site. In-fact, three REs were ground truthed in the field but the classification of these differed somewhat from DNRM. Field verified results are presented in Table 12.

All ground truthed REs are represented schematically in Appendix H: Ground Truthed Regional Ecosystems.

4.2.2.3. Threatened Flora

No NC Act listed flora species were recorded during the field survey at the Site.

An assessment of the likelihood of occurrence, based on field inspection results, of *NC Act* listed threatened flora species potentially present at the Site is summarised in Table 14.

Table 14: Field survey results for NC Act EVNT flora with potentially suitable RE and likelihood of occurrence.

Family	Scientific / Common Name	Status	General Habitat Requirements/ Notes	Potentially Suitable RE	Likelihood of Occurrence
Surianaceae	*Cadellia pentastylis* (ooline)	Vulnerable	Refer to Table 9 above	Refer to Table 9 above	Refer to Table 9 above
Celastraceae	*Denhamia parvifolia* (small-leaved Denhamia)	Vulnerable	Refer to Table 9 above	Refer to Table 9 above	Refer to Table 9 above
Poaceae	*Homopholis belsonii* (Belson's panic)	Endangered	Refer to Table 9 above	Refer to Table 9 above	Refer to Table 9 above

4.2.2.1. Threatened Fauna

No NC Act listed fauna species were detected druing the field survey.

No NC Act listed fauna species were identified in the database search results as having been previously recorded within in 10km of the survey area and are therefore are considered unlikely to occur within the Site.

4.2.2.2. Special Least Concern Species

One (1) listed Special Least Concern flora species was detected during the field survey, *Cymbidium canaliculatum* (black-orchid).

4.2.2.3. Pest Fauna

Distribution of pest fauna on site has been mapped based on field survey results (Appendix I: Ground Truthed Pest Fauna Present on Site). Pest fauna encountered during the field survey are listed in Table 15.

Table 15: Pest Fauna Recorded on Site

Scientific Name	Common Name	Status	Area of Occurrence
Sus scrofa	wild pig	Class 2 (LP Act)	Tracks & traces of approximately 10 – 15 individuals observed in close proximity of the Condamine river.

4.2.3. Disturbance

The majority of the site has been cleared and is currently subject to agricultural activities including, cattle grazing and cropping. No major areas of erosion were observed on the property during the field investigation.

4.2.4. Watercourses and Wetlands

Two (2) stream orders mapped across the Site were inspected as part of the field surveys. These consisted of:

- A mapped stream oder 1 within the northern portion of the lot, that intersects with the western boundary of the Site (unnamed); and
- A mapped stream order 8 along the northern boundary of the Site (Condamine River).

The Condamine River was confirmed to constitue a watercourse as defined under the *Water Act 2000*.

Water feature assessment locations can be found within Table 16: Ground-truthed watercourses and drainage features.

Table 16: Ground-truthed watercourses and drainage features

Feature ID	Mapped Stream Order	Watercourse status	Description and justification
2EA32B942551BC6	1	No	Drainage feature. No defined bed/banks, no riverine or riparian vegetation, no extended flow evident. Feature not visible in cultivated area.
27243CA73BE5964	8	Yes	Condamine River. Defined bed and banks, riparian and in-stream vegetation present, aquatic habitat present, water present and flowing at time of inspection.

5. Conclusions

An ecological survey was required to be carried out on Lot 15 on SP193253 in anticipation of proposed development of the Site. Field surveys were undertaken between the 14 & 15 July, 2015 by a team of ecologists led by Origin Energy Senior Field Environmental Advisor Tim Collins.

Tim Collins was approved to undertake ecological surveys by Commonwealth Department of Environment (formerly the Department of Sustainability, Environment, Water, Poplation and Communities) in writing on 17 December, 2012.

The following is a summary of ecological and environmental values that were recorded on Lot 15 on SP193253 during the field surveys:

- Brigalow (*Acacia harpophylla dominant and co-dominant*) TEC. This TEC was present as remnant RE11.3.1 fringing the Condamine River. It has been recorded in association with other riverine vegetation communities including RE 11.3.3 and 11.3.25. Impact to this TEC would require drawdown on the Australia Pacific LNG Project allocation for the Brigalow TEC.
- Coolibah-Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions TEC. This TEC was present as remnant RE11.3.3 fringing the Condamine River. It was recorded in association with other riverine vegetation communities including RE11.3.25 and 11.3.1. It should be noted that this TEC was declared on 1st March 2011, after EPBC Act approval for the Australia Pacific LNG Project was received on 21st February, 2011. As such, the Coolibah-Black Box Woodland TEC does not constitute a constraint to the Australia Pacific LNG Project.
- No EPBC Act listed threatened flora were recorded during the field survey at the Site. Additionally, based on an assessment of the likelihood of occurrence and habitat features present at the Site, no *EPBC Act* listed threatened flora are expected to occur at the Site.
- One (1) EPBC Act Migratory Species was recorded as a result of the field surveys. Additionally, based on an assessment of the likelihood of occurrence and habitat features present at the Site, five (5) Endangered, nine (9) Vulnerable, one (1) Migratory Marine, three (3) Migratory Terrestrial, two (2) Migratory Wetland species are considered likely to occur at the Site.
- DNRM mapping identified three (3) regional ecosystems to be present on site. Three REs were ground truthed in the field but the classification of these differed somewhat from DNRM. The ground-truthed REs included:
    - RE 11.3.1 (Endangered) - *Acacia harpophylla* and/or *Casuarina cristata* open forest on alluvial plains. Observed above the watercourse high bank fringing the Condamine River.
    - RE 11.3.3 (Of concern) - *Eucalyptus coolabah* woodland on alluvial plains. Fringing the Condamine River and Charley Creek. Distribution generally restricted to above watercourse high bank in areas which are irregularly flooded.
    - RE 11.3.25 (Of concern) - *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines. Fringing the Condamine River and Charley Creek. Distribution generally restricted to at and below watercourse high bank.
- No NC Act listed flora species were recorded during the field survey at the Site. Additionally, no species were identified as being likely to occur within the area. One (1) SLC flora species was identified within the Site.
- No NC Act threat-listed fauna species were detected during the field survey at the Site. Additionally, based on an assessment of the likelihood of occurrence no threat listed species were considered likely to occur within the Site.
- One (1) species of declared pest fauna were detected during the field survey, being *Sus scrofa* (pig).
- Two (2) stream orders mapped across the Site were inspected as part of the field surveys. One (1) of these, the Condamine River, was ground-truthed to constitute a watercourse as defined by the *Water Act 2000*. The second un-named mapped stream order was field verified to constitute a drainage feature as defined by the *Water Act 2000.*

It is recommended that the findings in this report are considered during detailed development planning such that disturbance to the ecological values of the site and locality may be avoided wherever practical. Where disturbance is unavoidable, impact mitigation measures are to be implemented in accordance with the approved site environmental management plan and regulatory approval conditions.

Appendix A: Site Location and Survey Points

Legend

Survey Location

- Vegetation Community Survey Point
- Habitat Survey Point

Queensland Waterways Zoning

Risk of Impact

- 1 - Low
- 4 - Major

Boundary

- Surveyed Cadastral
- Survey Area

Source Information:
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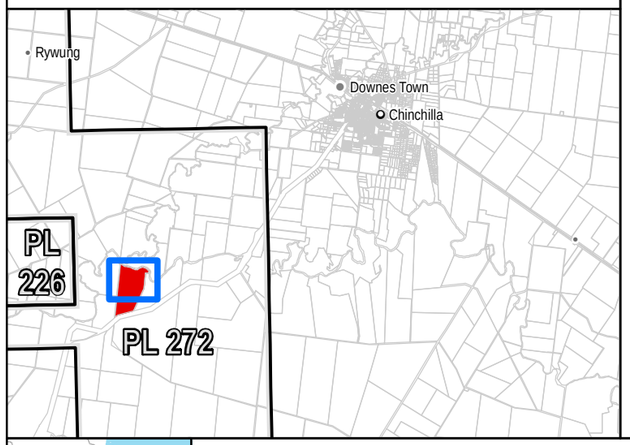

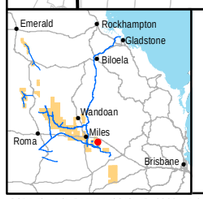

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Scale 1:7,000 (at A3)

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Metres

Coordinate System: GDA 1994 MGA Zone 56

Rev	Description	Drawn	Check	QA	Approved	Date
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A	Issued For Review	ALM	TC	PR	AS	21/07/2015

origin

Appendix A :
Site Location and Survey Points
Date: 7 September 2015

Map Number	Doc No	Rev
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	Map ID GISWR_28481	

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Appendix B: Results of EPBC Protected Matters Search Tool

Australian Government

Department of the Environment

EPBC Act Protected Matters Report

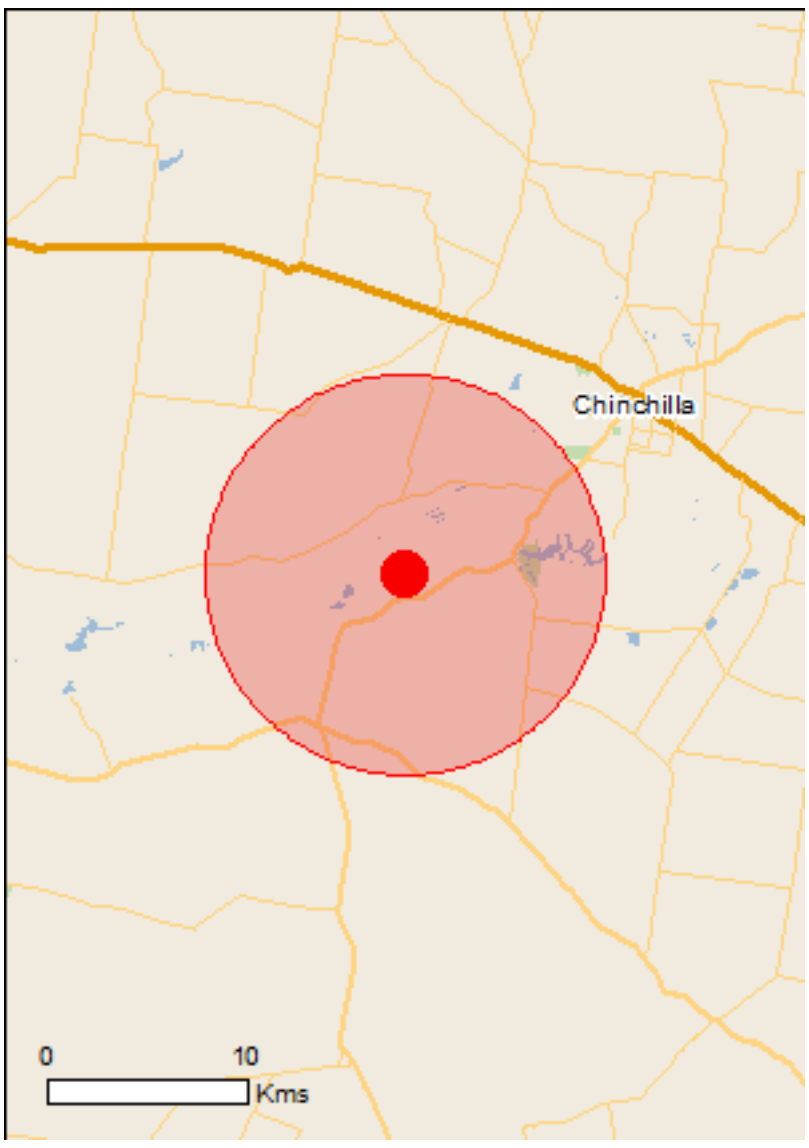
This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

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

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

Report created: 09/07/15 15:28:08

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



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Coordinates

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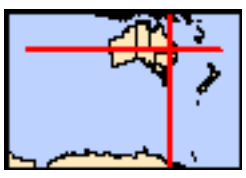

Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	18
Listed Migratory Species:	10

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	12
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	23
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar) [Resource Information]

Name	Proximity
Narran lake nature reserve	Upstream from Ramsar

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
Brigalow (Acacia harpophylla dominant and co-dominant)	Endangered	Community known to occur within area
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community likely to occur within area
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Community likely to 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

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat known to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat may occur within area
Poephila cincta cincta Black-throated Finch (southern) [64447]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Fish		
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area
Mammals		

Name	Status	Type of Presence
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Nyctophilus corbeni		
South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Plants		
Cadellia pentastylis		
Ooline [9828]	Vulnerable	Species or species habitat likely to occur within area
Denhamia parvifolia		
Small-leaved Denhamia [18106]	Vulnerable	Species or species habitat likely to occur within area
Homopholis belsonii		
Belson's Panic [2406]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Anomalopus mackayi		
Five-clawed Worm-skink, Long-legged Worm-skink [25934]	Vulnerable	Species or species habitat may occur within area
Delma torquata		
Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Egernia rugosa		
Yakka Skink [1420]	Vulnerable	Species or species habitat known to occur within area
Furina dunmalli		
Dunmall's Snake [59254]	Vulnerable	Species or species habitat known to occur within area
Tympanocryptis pinguicolla		
Grassland Earless Dragon [66727]	Endangered	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat known 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
Myiagra cyanoleuca		
Satin Flycatcher [612]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat may occur within area
Migratory Wetlands Species		
Ardea alba		
Great Egret, White Egret [59541]		Breeding known to 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
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Anseranas semipalmata		
Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba		
Great Egret, White Egret [59541]		Breeding known to 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 known to occur within area
Hirundapus caudacutus		
White-throated Needletail [682]		Species or species habitat may occur within area
Lathamus discolor		
Swift Parrot [744]	Endangered	Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Species or species habitat likely to occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Extra Information

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis		
Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Columba livia		
Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata		
Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus		
House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis		
Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris		
Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina		
Cane Toad [83218]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris		
Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus		
Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis		
Brown Hare [127]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [31754]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		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
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area

Caveat

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

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

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

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

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.

Coordinates

-26.80993 150.52457

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
-Geoscience Australia
-CSIRO
-Other groups and individuals

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

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

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Department of the Environment
GPO Box 787
Canberra ACT 2601 Australia
+61 2 6274 1111

Appendix C: Wildlife Online Database Search Results

Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: All
Type: Native
Status: Rare and threatened species
Records: Confirmed
Date: Since 1980
Latitude: -26.8099
Longitude: 150.5245
Distance: 10
Email: tim.collins@originenergy.com.au
Date submitted: Thursday 09 Jul 2015 15:28:45
Date extracted: Thursday 09 Jul 2015 15:30:03

There were no records retrieved for your selection

Disclaimer

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

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

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

Appendix D: DNRM Mapped Regional Ecosystems

Legend

DNRM Stream Order

Remnant Regional Ecosystems (RE) - v9 (2013) Biodiversity Status

- Endangered - Dominant
- Of Concern - Dominant

Boundary

- Surveyed Cadastral
- Survey Area

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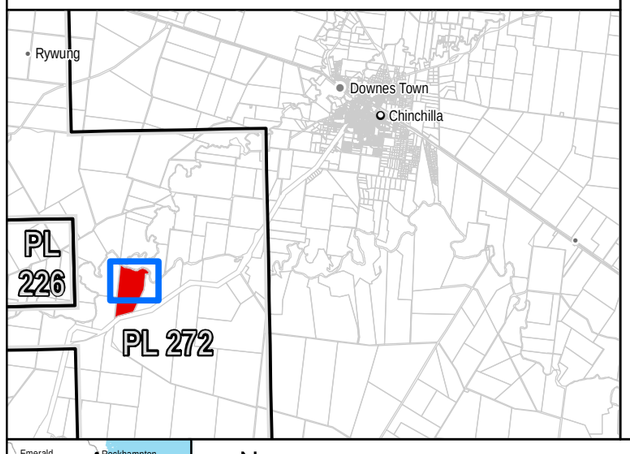

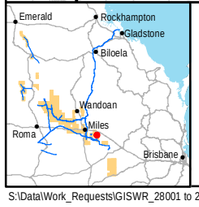

N

Scale 1:7,000 (at A3)

0 100 200 400

Metres

Coordinate System: GDA 1994 MGA Zone 56

Rev	Description	Drawn	Check	QA	Approved	Date
0	Issued For Use	ALM	TC	PR	AS	07/09/2015
A	Issued For Review	ALM	TC	PR	AS	21/07/2015

Appendix D :
DNRM Mapped Regional Ecosystems
Date: 7 September 2015

Map Number	Doc No	Rev
1 of 1	Q-4300-15-RP-299	0
	Map ID GISWR_28481	

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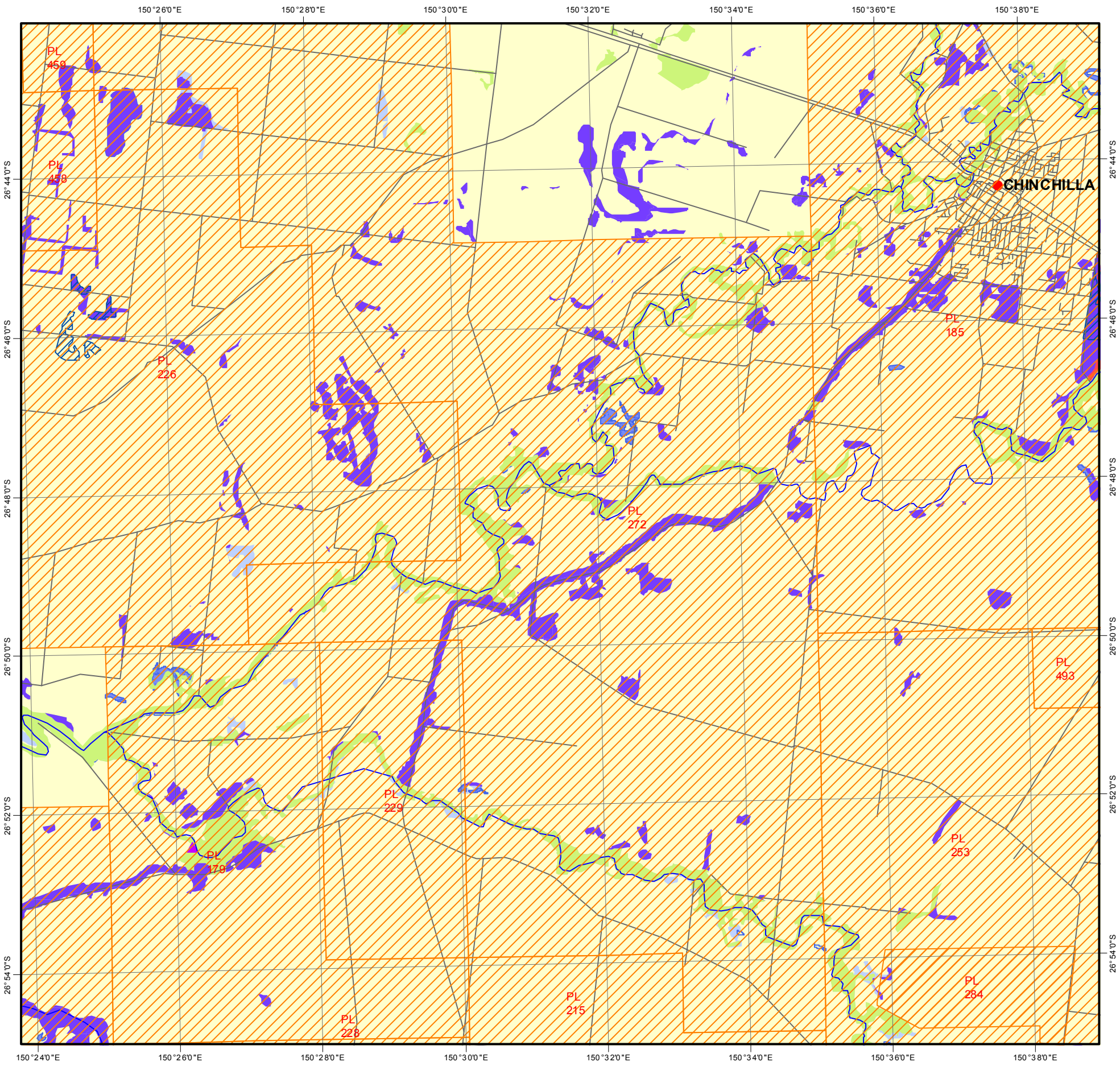
Appendix E: EHP Environmental Values Mapping on Site (ESAs, Protected Plants)



ENVIRONMENTALLY SENSITIVE AREAS - non-mining resource activities (EP Act)

Requested By: TIM.COLLINS@ORIGINENERGY.COM.AU
Date: 09 Jul 15 Time: 15.37.22

Centred on point position:
Latitude: -26.8099 Longitude: 150.5245
(decimal degrees)

- Petroleum Leases

CATEGORY A
- National Parks
- Regional Parks (general)
- Forest Reserves
- Wet Tropics World Heritage Area
- Great Barrier Reef Marine Park Area
- Marine Parks other than General Use Zones

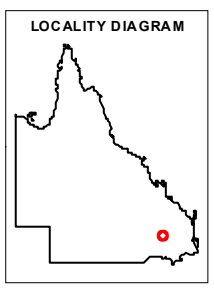
CATEGORY B
- World Heritage Areas
- Queensland Heritage Register Places
- Ramsar Sites
- Cultural Heritage Registered Areas and DLA's other than Stanbroke
- Special Forestry Areas
- Fish Habitat Areas
- Koala Plan
- Coordinated Conservation Areas
- Endangered Regional Ecosystems (remnant and mature regrowth (biodiversity status))
- Marine Parks other than General Use Zones
- Marine Plants

CATEGORY C
- Essential Habitat
- Nature Refuges
- Regional Parks (resource use area)
- State Forests
- Timber Reserves
- Of Concern Regional Ecosystems (remnant biodiversity status)

OTHERS
- Towns
- Roads
- Rivers
- Springs
- Referable Wetlands
- Dominant Wetlands (51-100%)
- Subdominant Wetlands (0-50%)
- Queensland

Queensland Government

LOCALITY DIAGRAM



N

0 1300 2600 3900 5200 6500 m

This product is projected into GDA 1994 MGA Zone 56

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External contributors (non-government parties) of the data for this product are: Great Barrier Reef Marine Park Authority

Regional ecosystem mapping (remnant biodiversity status) may incorporate amendments, resulting from property level assessments, to the release version of the mapping available on QGIS.

NOTE TO USER: Themes presented in this map are indicative only. Field survey may be required to verify the 'true' spatial extent and value. Not all environmentally sensitive areas are presented in this map. A user should refer to the particular circumstances relevant to their situation to assess the 'completeness' of themes provided.

The user should note that some boundaries and indicated values are ambient or subject to change over time (e.g. regional ecosystem boundaries and conservation status, watercourse mapping etc).

The user should be aware that due to multiple overlapping themes present, some themes/layers may be obscured by others. Ordering in the Legend does not accurately reflect the order by which themes are displayed.

Mature Regrowth vegetation, depicting endangered regional ecosystems, was incorporated as of 24/07/2012.

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Appendix F: List of Flora and Fauna Species Identified on Site

This Appendix provides a full list of all flora and fauna species recorded during the field surveys.

Family	Scientific name	Common name	Legislative status (*NC Act, LP Act*)°	Legislative status (*EPBC Act*)^
Flora				
Asteraceae	* *Bidens pilosa*	cobbler's pegs	LC	
Poaceae	* *Chloris gayana*	rhode's grass	LC	
Asteraceae	* *Cirsium vulgare*	spear thistle	LC	
Poaceae	**Cenchrus ciliaris*	buffel grass	LC	
Verbenaceae	**Glandularia aristigera*	mayne's pest	LC	
Poaceae	**Melinis repens*	red natal grass	LC	
Cactaceae	***Opuntia aurantica*	tiger pear	Class 2 (*LP Act*)	
Cactaceae	***Opuntia stricta*	prickly pear	Class 2 (*LP Act*)	
Cactaceae	***Opuntia tomentosa*	velvety-tree pear	Class 2 (*LP Act*)	
Poaceae	**Panicum coloratum*	bambatsi grass	LC	
Brassicaceae	**Rapistrum rugosum*	turnip weed	LC	
Asteraceae	**Xanthium pungens*	Noogoora burr	LC	
Mimosaceae	*Acacia harpophylla*	brigalow	LC	
Mimosaceae	*Acacia pendula*	weeping myall	LC	
Mimosaceae	*Acacia semirigida*	stony ridge wattle	LC	
Sapindaceae	*Alectryon diversifolius*	scrub boonaree	LC	
Sapindaceae	*Alectryon oleifolius*	boonaree	LC	
Apocynaceae	*Alstonia constricta*	bitterbush	LC	
Loranthaceae	*Amyema sp.*	a mistletoe	LC	
Capparaceae	*Apophyllum anomalum*	broom bush	LC	
Sapindaceae	*Atalaya hemiglauca*	whitewood	LC	
Chenopodiaceae	*Atriplex muelleri*	Mueller's saltbush	LC	
Poaceae	*Bothriochloa decipiens*	pitted blue grass	LC	
Capparaceae	*Capparis lasiantha*	nipan	LC	
Capparaceae	*Capparis mitchellii*	wild orange	LC	
Casuarinaceae	*Casuarina cristata*	belah	LC	
Rutaceae	*Citrus glauca*	native lime	LC	
Orchidaceae	*Cymbidium canaliculatum*	black orchid	SLC	
Scrophulariaceae	*Eremophila mitchellii*	false sandalwood	LC	
Myrtaceae	*Eucalyptus camaldulensis*	river red gum	LC	
Myrtaceae	*Eucalyptus coolabah*	coolibah	LC	
Myrtaceae	*Eucalyptus populnea*	poplar box	LC	
Rutaceae	*Geijera parviflora*	wilga	LC	
Proteaceae	*Hakea lorea*	bootlace oak	LC	

Family	Scientific name	Common name	Legislative status (*NC Act, LP Act*)°	Legislative status (*EPBC Act*)^
Malvaceae	*Malva parviflora*	small-flowered mallow	LC	
Apocynanceae	*Parsonsia sp.*	a vine	LC	
Portulacaceae	*Portulaca oleracea*	common purslane	LC	
Chenopodaceae	*Sclerolaena muricata*	black roly poly	LC	
Malvaceae	*Sida cordifolia*	flannel weed	LC	
Poaceae	*Sporobolus caroli*	fairy grass	LC	
Azoaceae	*Tetragonia tetragonioides*	Warrigal greens	LC	
Zygophyllaceae	*Zygophylla apiculatum*	common twin-leaf	LC	

Fauna				
Birds				
Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo	LC	
Anatidae	*Chenonetta jubata*	Australian wood duck	LC	
Corvidae	*Corvus orru*	torresian crow	LC	
Artamidae	*Cracticus tibicen*	Australian magpie	LC	
Artamidae	*Cracticus torquatus*	grey butcherbird	LC	
Halcyonidae	*Dacelo novaeguineae*	laughing kookaburra	LC	
Cacatuidae	*Eolophus roseicapillus*	galah	LC	
Falconidae	*Falco cenchroides*	nankeen kestrel	LC	
Dicruriadae	*Grallina cyanoleuca*	magpie lark	LC	Ma
Meliphagidae	*Manorina melanocephala*	noisy miner	LC	
Psittaculidae	*Platycercus adscitus*	pale headed rosella	LC	

Mammals				
Suidae	**Sus scrofa*	wild pig	Class 2 (LP Act)	
Macropodidae	*Wallabia bicolor*	swamp wallaby	LC	

Reptiles				
Pythonidae	*Morelia spilota*	carpet python	LC	

*Status taken from EHP (2014) and DoE 2014

Appendix G: Ground Truthed Threatened Ecological Communities

Legend

Ground Truthed Ecological Community

- Brigalow (11.3.1)
- Coolibah (11.3.3)

Boundary

- Surveyed Cadastral
- Survey Area

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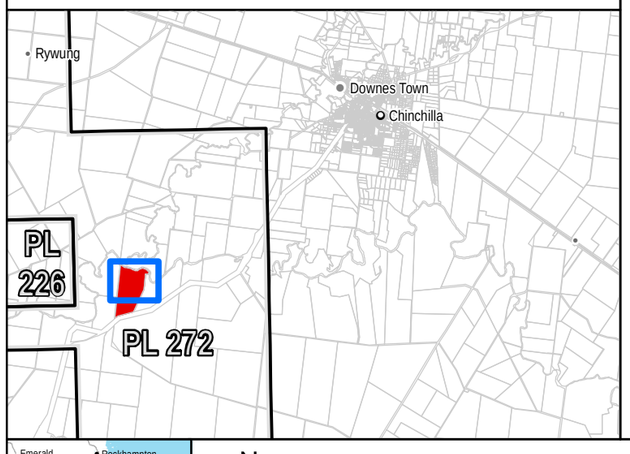

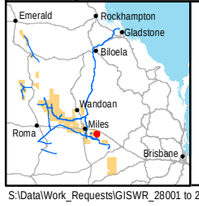

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Scale 1:7,000 (at A3)

0 100 200 400

Metres

Coordinate System: GDA 1994 MGA Zone 56

Rev	Description	Drawn	Check	QA	Approved	Date
0	Issued For Use	ALM	TC	PR	AS	07/09/2015
A	Issued For Review	ALM	TC	PR	AS	21/07/2015

origin

Appendix G :
Ground Truthed Threatened Ecological Communities
Date: 7 September 2015

Map Number	Doc No	Rev
1 of 1	Q-4300-15-RP-299	0
	Map ID GISWR_28481	

S:\Data\Work_Requests\GISWR_28001 to 28500\GISWR_28481\Rev0\GISWR_28481_H_Rev0.mxd

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Appendix H: Ground Truthed Regional Ecosystems

Legend

Ground Truthed Waterfeature

- Drainage Feature
- Watercourse

Ground Truthed Regional Ecosystems (RE) Biodiversity Status

Remnant Vegetation

- Endangered RE
- Of Concern RE

Boundary

- Surveyed Cadastral
- Survey Area

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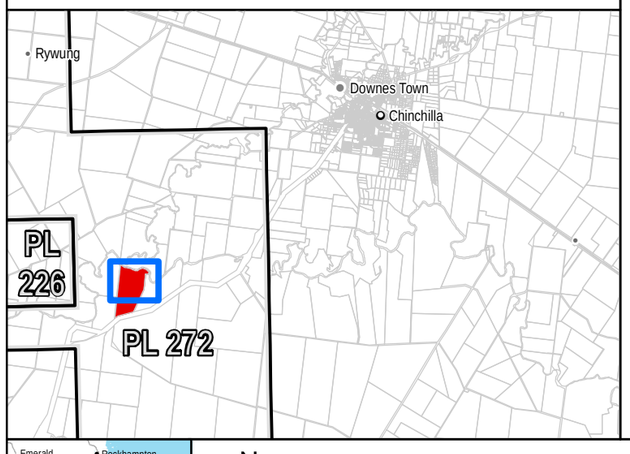

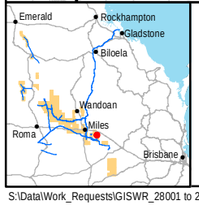

N

Scale 1:7,000 (at A3)

0 100 200 400

Metres

Coordinate System: GDA 1994 MGA Zone 56

Rev	Description	Drawn	Check	QA	Approved	Date
0	Issued For Use	ALM	TC	PR	AS	07/09/2015
A	Issued For Review	ALM	TC	PR	AS	21/07/2015

Appendix H :
Ground Truthed Regional Ecosystems
Date: 7 September 2015

Map Number	Doc No	Rev
1 of 1	Q-4300-15-RP-299	0
	Map ID GISWR_28481	

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Appendix I: Ground Truthed Pest Fauna Present on Site

Legend

Pest Fauna

- Pig (*Sus scrofa*)

Boundary

- Surveyed Cadastral
- Survey Area

Source Information:
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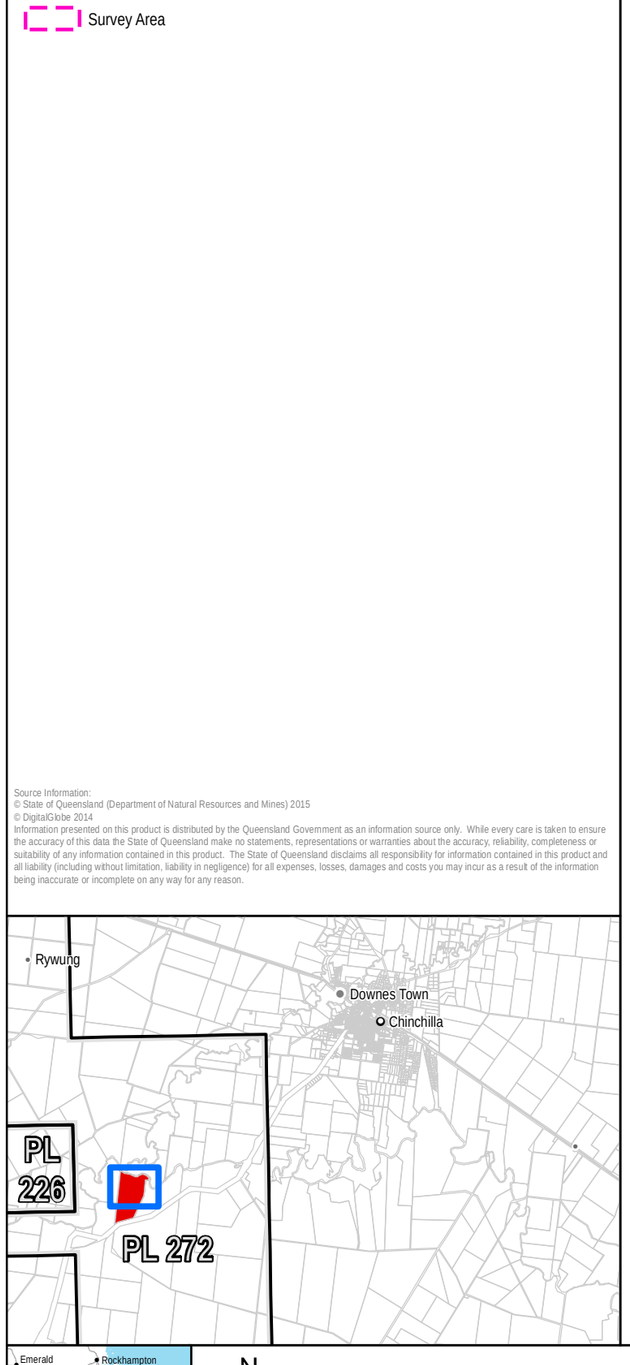

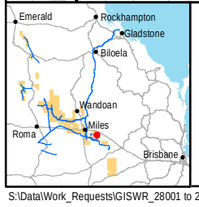

N

Scale 1:7,000 (at A3)

0 100 200 400

Metres

Coordinate System: GDA 1994 MGA Zone 56

Rev	Description	Drawn	Check	QA	Approved	Date
0	Issued For Use	ALM	TC	PR	AS	07/09/2015
A	Issued For Review	ALM	TC	PR	AS	21/07/2015

origin

Appendix I :
Ground Truthed Pest Fauna Present on Site
Date: 7 September 2015

Map Number	Doc No	Rev
1 of 1	Q-4300-15-RP-299	0
	Map ID GISWR_28481	

S:\Data\Work_Requests\GISWR_28001 to 28500\GISWR_28481\Rev0\GISWR_28481_J_Rev0.mxd

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Appendix J: Ground Truthed Drainage Features, Watercourses and Wetlands Present on Site.

Legend

- Water Feature Survey Point
- DNRM Stream Order

Ground Truthed Water Feature

- Drainage Feature
- Watercourse

Boundary

- Surveyed Cadastral
- Survey Area

Source Information:
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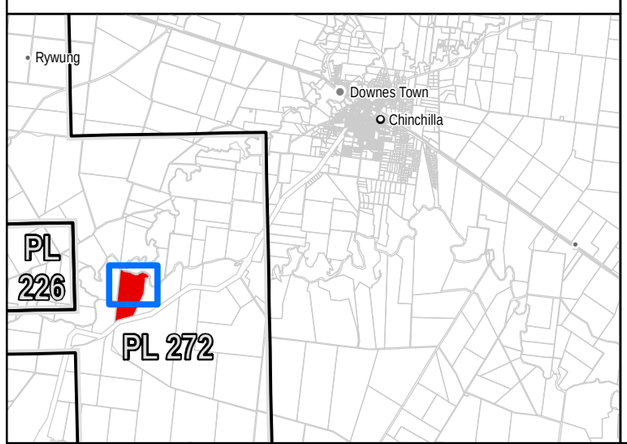

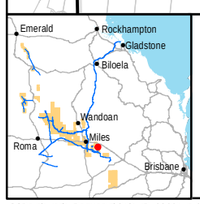

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Metres

Coordinate System: GDA 1994 MGA Zone 56

Rev	Description	Drawn	Check	QA	Approved	Date
0	Issued For Use	ALM	TC	PR	AS	07/09/2015
A	Issued For Review	ALM	TC	PR	AS	21/07/2015

origin

Appendix J :
Ground Truthed Drainage Features and Watercourses Present on Site
Date: 7 September 2015

Map Number	Doc No	Rev
1 of 1	Q-4300-15-RP-299	0
	Map ID GISWR_28481	

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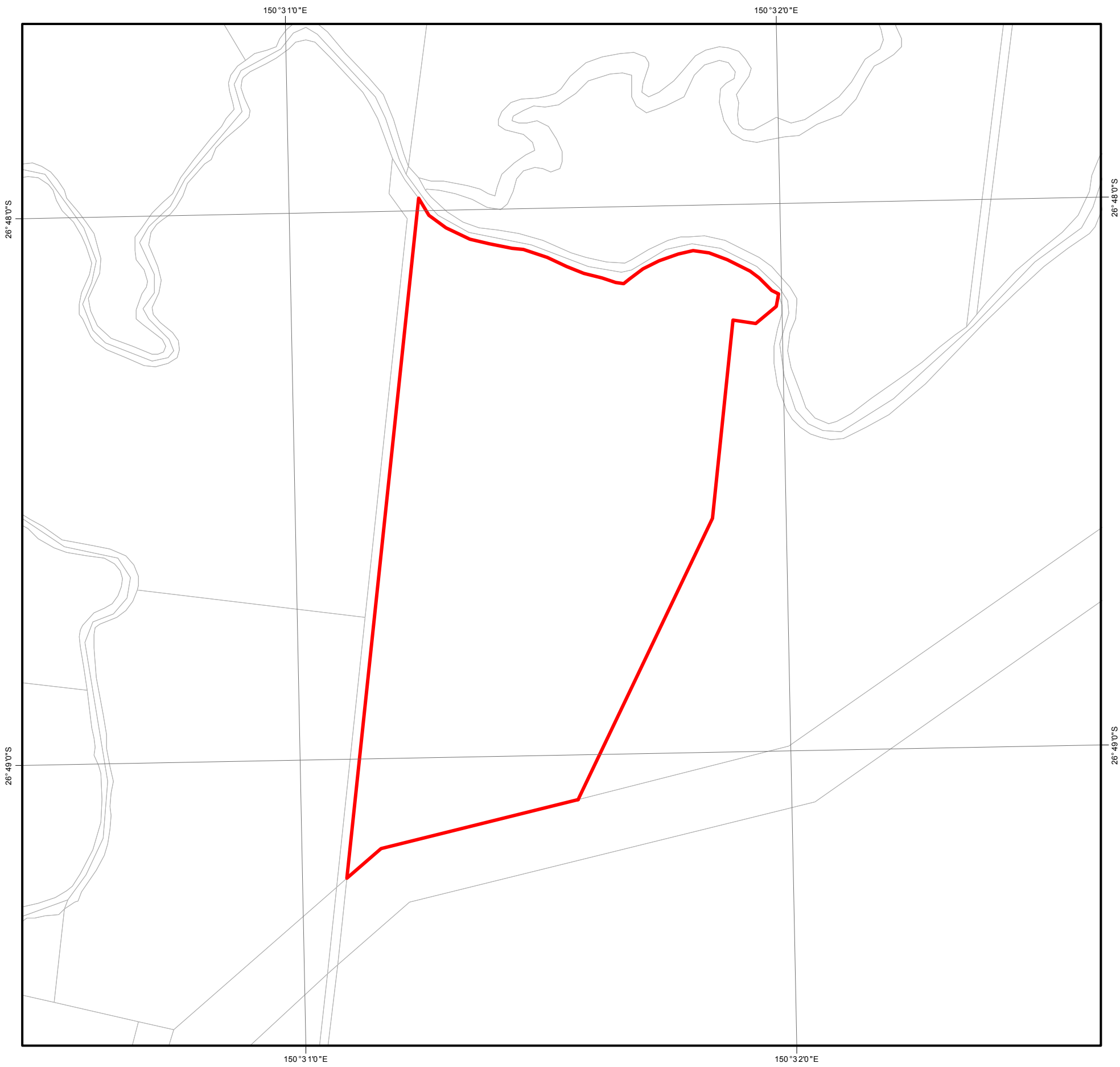
Appendix K: EHP Map of Referable Wetlands and Wetland Protection Areas.



Map of Referable Wetlands
Wetland Protection Areas

Requested By: TIM.COLLINS@ORIGINENERGY.COM.AU
Date: 12 Jul 15 Time: 14.57.50

Centred on Lot on Plan:
15 SP193253

Selected Land Parcel

Cadastral Boundary

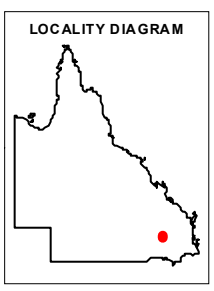
Wetland Protection Areas

HES Wetland

Trigger Area

Queensland Government

LOCALITY DIAGRAM



N

0 200 400 600 800 1000 m

This product is projected into GDA 1994 MGA Zone 56

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

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

The policy outcome and assessment criteria for assessing these applications are described in the State Development Assessment Provisions (SDAP) *Module 11: Wetlands and wild rivers.*

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

For further information or assistance with interpretation of this product, please contact the Department of Environment and Heritage Protection at www.ehp.qld.gov.au or email planning.support@ehp.qld.gov.au.

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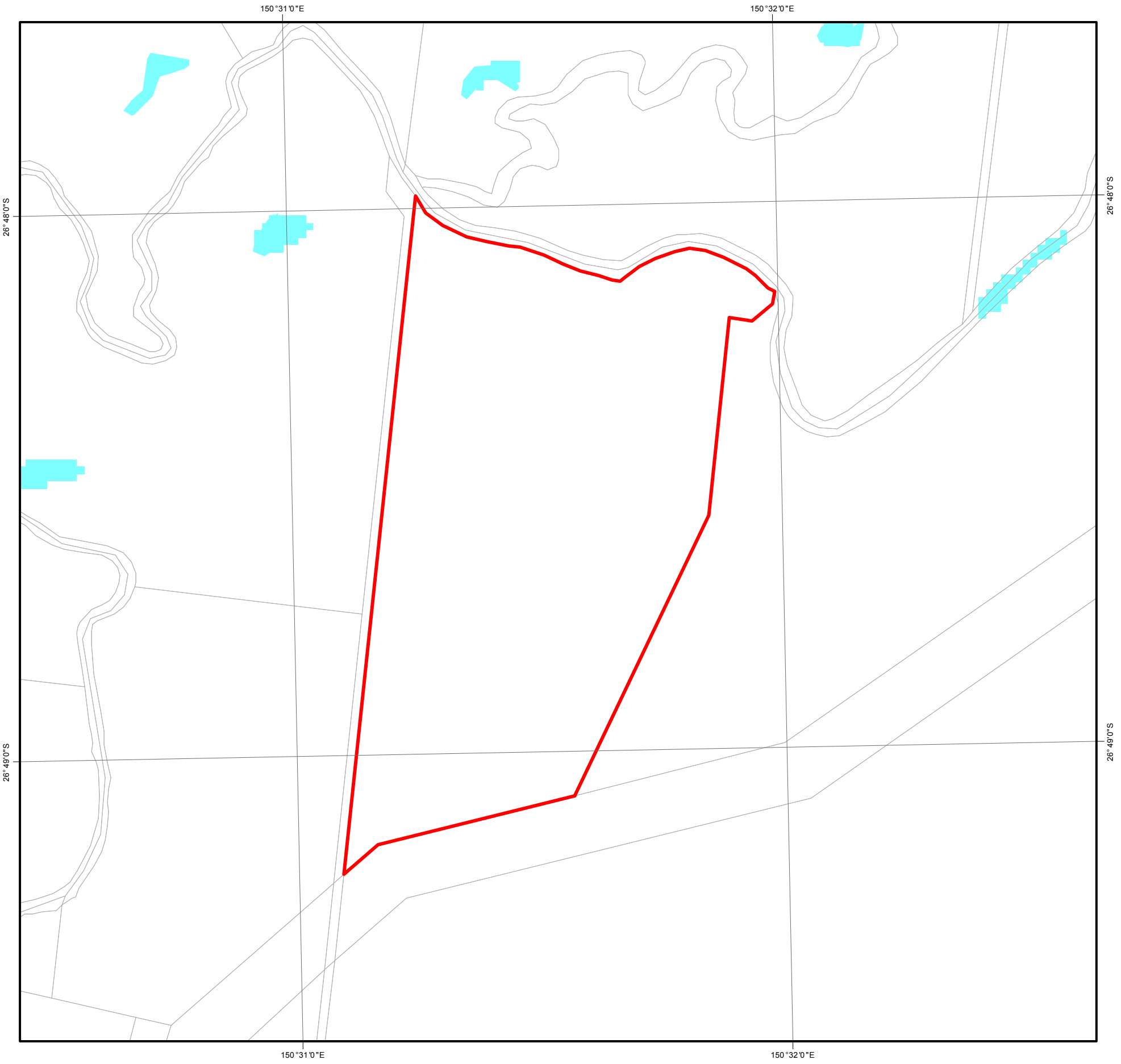


Map of Referable Wetlands for the Environmental Protection Act 1994

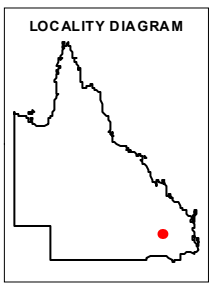
Requested By: TIM.COLLINS@ORIGINENERGY.COM.AU
Date: 12 Jul 15 Time: 14.57.53

Centred on Lot on Plan:
15 SP193253

- **Selected Land Parcel**
- **Cadastral Boundary**
- **HES Wetland GBR Catchments**
- **HES Wetland**
- **GES Wetland**

Queensland Government

LOCALITY DIAGRAM



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0 200 400 600 800 1000 m

This product is projected into GDA 1994 MGA Zone 56

Note:
This map shows the location of wetlands on the Map of Referable Wetlands which are defined under the Environmental Protection Regulation 2008.

Wetlands are assessed for ecological significance using the environmental values for wetlands in section 81A of the Environmental Protection Regulation 2008. Wetlands are considered either High Ecological Significance (HES) or of General Ecological Significance (GES) for the purposes of the environmental values.

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