Coachtrail Investments Pty Ltd

Proposed Extractive Industry, Clarkes Road, Gin Gin

Matters of National Environmental Significance Assessment

December 2016

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1. Introduction

1.1 Introduction

GHD Pty Ltd (GHD) has been commissioned by Coachtrail Investments Pty Ltd to determine if any matters of national environmental significance (MNES) are likely to be present at the site of the proposed extension to Clarkes Road quarry located at Gin Gin, Queensland. This assessment has been prepared in response to a letter received from the Department of the Environment (now DEE) on 22 January 2016, informing Coachtrail Investments Pty Ltd of their responsibilities under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) with regard to potential impacts from the project on MNES.

1.2 Project location and description

The project area is located within Lot 104 on RP21941 on Clarkes Road, approximately 6 km south east of the township of Gin Gin. The proposed development footprint covers an area of approximately 49 ha and consists of an operations area (4.5 ha), staged extraction area (44 ha) and haul road (0.5 ha). The site is dominated by a moderately inclined low hill (local relief of approximately 60 m) with a ridge extending downwards from the hillcrest in the north eastern portion of the site towards the operations area in the south west corner. An ephemeral drainage line traverses the southern boundary of the property. The development footprint has been mapped by WBB Environmental (2015) as principally comprising the least concern regional ecosystem (RE) 12.9-10.2 which is described as a *Corymbia citriodora* subsp. *variegata* open forest or woodland with *Eucalyptus crebra*.

The extraction area is proposed to be progressively developed over a life exceeding 20 years and will include a number of quarry products, including hard rock gravel, lighter ridge gravels and masonry stone. A site layout plan showing the proposed stages of development is provided in Figure 1.

1.3 Regulatory requirements under the EPBC Act

Under the EPBC Act, an action will require approval from the minister administering the EPBC Act if the action will have, or is likely to have, a significant impact on a MNES. MNES include the following:

- World heritage properties.
- National heritage places.
- Wetlands of international importance (under the Ramsar convention).
- Commonwealth marine areas.
- The Great Barrier Reef Marine Park.
- Nuclear actions (including uranium mining).
- A water resource, in relation to coal seam gas development and large coal mining development.
- Listed threatened ecological communities and threatened species.
- Listed migratory species.

1.4 Purpose of the report

The purpose of this report is to identify if any matters of national environmental significance (MNES) are likely to be present at the site of the proposed extension to Clarkes Road quarry.

1.5 Limitations

This report has been prepared by GHD for Coachtrail Investments Pty Ltd and may only be used and relied on by Coachtrail Investments Pty Ltd for the purpose agreed between GHD and Coachtrail Investments Pty Ltd as set out in this report.

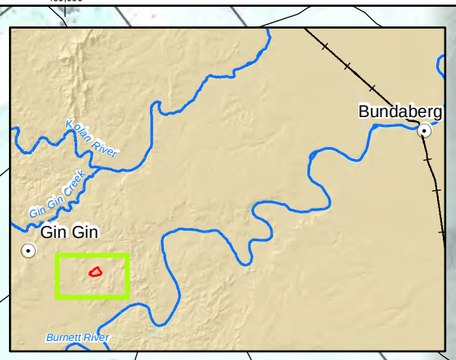
GHD otherwise disclaims responsibility to any person other than Coachtrail Investments Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Coachtrail Investments Pty Ltd and others who provided information to GHD (including government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.



Quarry Operations Area
(Product stockpile
crusher
site office
weigh bridge)

Operations Area

Existing Operations Area

Existing SD1

SD2

SD3

SD4

SD5

SD6

SD7

SD8

Stage 1A
RL 90

Stage 1
RL 110

Stage 2
RL 110

Stage 3
RL 110

Stage 4
RL 95

Stage 5
RL 70

Stage 6
RL 70

Stage 7
RL 90

Stage 8
RL 85

Initial Crusher Site

Existing Dam

400,000 400,400 400,800 401,200 401,600 402,000

7,234,000 7,233,600 7,233,200

Paper Size A3

0 25 50 100 150 200

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

LEGEND

- Sediment Dam
- Blasting Direction
- Direction Drainage Runoff
- Existing Track
- Haul Road (10m wide)
- 5m Contours
- General extraction area boundary
- Existing Dam
- Existing Operations Area
- General Quarrying Areas Stage 1, 1A, 2, 3, 4, 5, 6, 7, 8
- Initial Crusher Site
- Operations Area
- Protected Vegetation
- Cadastre

GHD

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Job Number	41-29519
Revision	0
Date	16 Aug 2016

Site Plan

Figure 1

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Data source: GHD, Existing Track (2016), Quarry Detail (2016), DNRM, Cadstre (2016), 5m Contours (2015), Watercourse (2014), Railways (2014), Highways (2015), Regional Ecosystems (2015), hillshade (2012), Towns (2015), GA, mainlands (2008), Google Imagery Extracted 11/05/2016. Created by: AJ

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2. MNES assessment methods

2.1 General

The potential for MNES to be present within the project footprint was assessed based on a desktop assessment and field survey.

2.2 Desktop assessment

In order to develop an understanding of the existing environment, including the potential for MNES to be present within the project footprint, background information was reviewed from the following sources:

- DEE Protected Matters Search Tool database, which lists MNES predicted to potentially occur within proximity to the project based on bioclimatic information.
- Department of Science, Information Technology and Innovation (DSITI) Wildlife Online database, which lists previously recorded species including those listed as endangered, vulnerable or near threatened (EVNT) under the Queensland *Nature Conservation Act 1992* (*NC Act*) and the EPBC Act.
- Department of Natural Resources and Mines (DNRM) Regulated Vegetation Management Mapping Version 8.0, which depicts mapped remnant vegetation communities within the project footprint.
- DNRM's Essential Habitat Map (version 4.31) was viewed to determine the extent of recognised habitat for protected species within or in close proximity to the site
- Australia's Virtual Herbarium to search for specimen records of target species to gain an understanding of the location and collection date of any threatened flora records in proximity to the site.
- Existing technical reports prepared for the project including:
  - *Application to Clear Regulated Vegetation for Extractive Industry Lot 104 on RP21941* (WBB Environmental 2015).

2.3 Field surveys

Two field surveys were undertaken within the project footprint:

- A preliminary one-day field survey was conducted by a suitably qualified ecologist on 28 April 2016 to verify the results of the desktop assessment and assess general habitat values for flora and fauna species listed under the EPBC Act
- Based on the presence of suitable habitat, a two-day targeted survey was then undertaken by two ecologists on 31 August and 1 September 2016 to search for individuals or signs of the collared delma (*Delma torquata*) and koala (*Phascolarctos cinereus*).

2.3.1 Preliminary field survey

The preliminary field survey involved habitat assessments undertaken at representative locations across the project footprint. Habitat features assessed included the structural complexity and diversity of vegetation and substrates present as well as other features such as the presence of hollow-bearing trees, rocks, overhangs and caves, fallen logs, woody debris and leaf litter and ephemeral or permanent water bodies. No targeted surveys were conducted during the field survey.

2.3.2 Targeted survey for collared delma and koala

Koala

Targeted koala surveys were undertaken at 14 sites across the project footprint (Figure 2) using the Spot Assessment Technique (SAT) devised by Phillips and Callaghan (1995). This involves searching the base of 30 koala food trees for koala faecal pellets within an area surrounding a central koala food tree. A total of 2 minutes was spent searching each tree. Faecal pellets demonstrate recent utilisation by koalas. Incidental searches were also undertaken for characteristic koala scratch marks.

Collared delma

Targeted surveys for the collared delma were undertaken at 14 sites across the project footprint (Figure 2). The following activities were undertaken at each site:

- Targeted habitat assessment – this involved assessing the values of habitat for the collared delma based on:
  - the density and species composition of canopy tree species
  - the species composition of native grass and ground covering vegetation
  - presence of suitable exposed rocky microhabitat
  - presence and depth of leaf litter matts
  - soil type
- Active searches for collared delma, involving searching beneath rocks and logs.
- Active searches for collared delma involving raking of leaf litter with hand held rakes.

Cumulative survey effort amounted to searching beneath approximately 4200 rocks and 2 hrs of raking leaf litter.

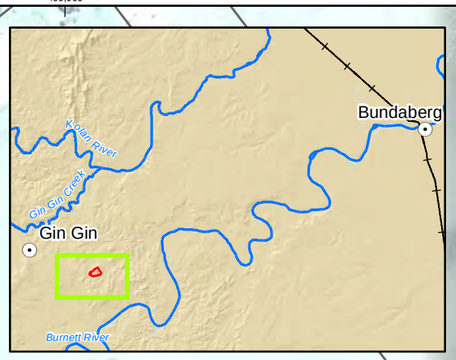
These methods are in accordance with those detailed for the collared delma in the EPBC survey guidelines for Australia's threatened reptiles (DSEWPaC 2011) and those recommended by the Brigalow Belt Reptiles Workshop (BBRW 2010). These suggest that active searching beneath rocks in suitable habitat is the most effective method of detecting the species. Within suitable habitat, the species has been detected at a rate of one individual for every 150 – 200 rocks searched (Porter, 1998). In line with DEE recommendations, given the similarities with other species that co-occur within its range, notably the excitable delma (*Delma tincta*), quality colour photographs of any delmas captured were sent as voucher specimens to the Queensland Museum for independent confirmation.

2.4 Likelihood of occurrence assessment

The potential for species of conservation significance (listed as critically endangered, endangered or vulnerable under the EPBC Act) to be present within the project footprint was initially determined based on a likelihood of occurrence assessment. Conservation significant species identified during the desktop assessment were assessed using the following categories:

- *Unlikely to occur*: species has not been recorded in the desktop search extent and/or current known distribution does not encompass the project footprint and/or suitable habitat is generally lacking from the project footprint.
- *May occur*: species has not been recorded in the desktop search extent although species' distribution incorporates the project area and potentially suitable habitat occurs in the project footprint (but may not be particularly abundant or optimal habitat).

- *Likely to occur*: species has been recorded in the desktop search extent and suitable habitat is present in the project footprint (species determined to be 'likely to occur' are otherwise known to occur within the project area or surrounding landscape, and has suitable habitat present; however, were not recorded during field surveys).
- *Confirmed present*: species recorded during field surveys in the project footprint.



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Paper Size A3

0 25 50 100 150 200

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

LEGEND

- Survey Sites
- General extraction area boundary
- Cadastre

Coachtrail Investments Pty Ltd
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Job Number 41-29519
Revision A
Date 20 Sep 2016

Distribution of survey sites for koala and collard delma

Figure 2

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Data source: GHD, Survey Sites (2016), DNRM, Cadstre (2016), Watercourse (2014), Railways (2014), Highways (2015), hillshade (2012), Towns (2015), GA, mainlands (2008), Google Imagery Extracted 11/05/2016. Created by: AJ

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3. MNES assessment results

3.1 World Heritage properties

A search undertaken using the EPBC Act Protected Matters Search Tool for a 5 km radius surrounding a central point within the project footprint (-25.01005, 152.02261) did not identify any World Heritage Properties in proximity to the project footprint (refer Appendix A).

3.2 National Heritage places

A search undertaken using the EPBC Act Protected Matters Search Tool for a 5 km radius surrounding a central point within the project footprint (-25.01005, 152.02261) did not identify any National Heritage Places in proximity to the project footprint (refer Appendix A).

3.3 Wetlands of International Importance

A search undertaken using the EPBC Act Protected Matters Search Tool for a 5 km radius surrounding a central point within the project footprint (-25.01005, 152.02261) did not identify any Wetland of International Importance in proximity to the project footprint (refer Appendix A).

3.4 Commonwealth marine area

No Commonwealth marine areas are present within a 5 km radius of the project footprint. No direct or indirect impacts will occur to Commonwealth marine areas as a result of the project.

3.5 Commonwealth land

No Commonwealth land is present within the 5 km of the project footprint. No direct or indirect impacts will occur to Commonwealth land as a result of the project.

3.6 The Great Barrier Reef Marine Park

The project is not in the vicinity of the Great Barrier Reef Marine Park. No direct or indirect impacts will occur to the Great Barrier Reef Marine Park as a result of the project.

3.7 A water resource, in relation to coal seam gas development and large coal mining development

The project does not involve coal seam gas development or large scale mining development.

3.8 Threatened ecological communities

A search undertaken using the EPBC Act Protected Matters Search for a 5 km radius surrounding a central point within the project footprint (-25.01005, 152.02261) identified one threatened ecological community (TEC) that may occur in proximity the project footprint, namely the Lowland Rainforest of Subtropical Australia (TSSC 2015) (refer Appendix A). RE mapping prepared by DNRM did not identify the presence of any REs analogous to this or any other Commonwealth listed TEC within the project footprint. Furthermore, vegetation communities verified as present within the project footprint by WBB Environmental (2015) do not conform to the key diagnostic characteristics and condition thresholds of any Commonwealth listed TEC (refer Appendix B).

The closest patch of vegetation mapped as an RE analogous to the Lowland Rainforest of Subtropical Australia TEC (i.e. RE 12.5.13) is located approximately 450 m south of the project footprint. This RE will not be impacted by the proposed activity.

3.9 Threatened flora species

A likelihood of occurrence assessment was undertaken for those flora species identified in the EPBC Act Protected Matters Report as having the potential to occur within 5 km of the project footprint and having confirmed records on the Wildlife Online database within 10 km of the site (DISTI 2016). Desktop search results are provided in Appendix A and likelihood of occurrence assessment results are provided in Table 1.

Results of the assessment indicate that no listed threatened flora species are *likely to occur* within the project footprint. One listed species *may occur* due to marginal habitat being present and two species are considered *unlikely to occur*.

No threatened flora species were *confirmed present* within the project footprint by WBB or GHD during respective field surveys.

3.10 Threatened fauna species

A likelihood of occurrence assessment was undertaken for those fauna species identified in the EPBC Act Protected Matters Report as having the potential to occur within 5 km of the project footprint and having confirmed records on the Wildlife Online database within 10 km of the site (DISTI 2016). Desktop search results are provided in Appendix A and likelihood of occurrence assessment results are provided in Table 2.

Results of the likelihood of occurrence assessment indicate that one listed threatened fauna species is likely to occur, four listed species may occur and two species are considered unlikely to occur within the project footprint. No threatened fauna species were observed within the project footprint during the preliminary GHD field survey; however, suitable habitat was identified for the collared delma and koala.

3.10.1 Collared delma assessment results

Collared delma desktop assessment results

The collared delma (*Delma torquata*) was the only threatened fauna species considered *likely to occur* within the project footprint. It was considered *likely to occur* due to its modelled distribution (SEWPaC 2011), nearby confirmed records (DSITI 2016) and the presence of suitable habitat on site. The modelled distribution for the collared delma is shown in Plate 1. The closest confirmed record cited in the Atlas of Living Australia database relates to a specimen collected by the Queensland Museum in 1997, approximately 5 km from the project footprint (Occurrence record: 26f867ec-e898-4cb4-9496-d1dca60815e0).

Given the high likelihood of occurrence rating (i.e. *likely to occur*), a targeted field survey was conducted for collared delma to allow a more informed determination of its potential presence within the project footprint.

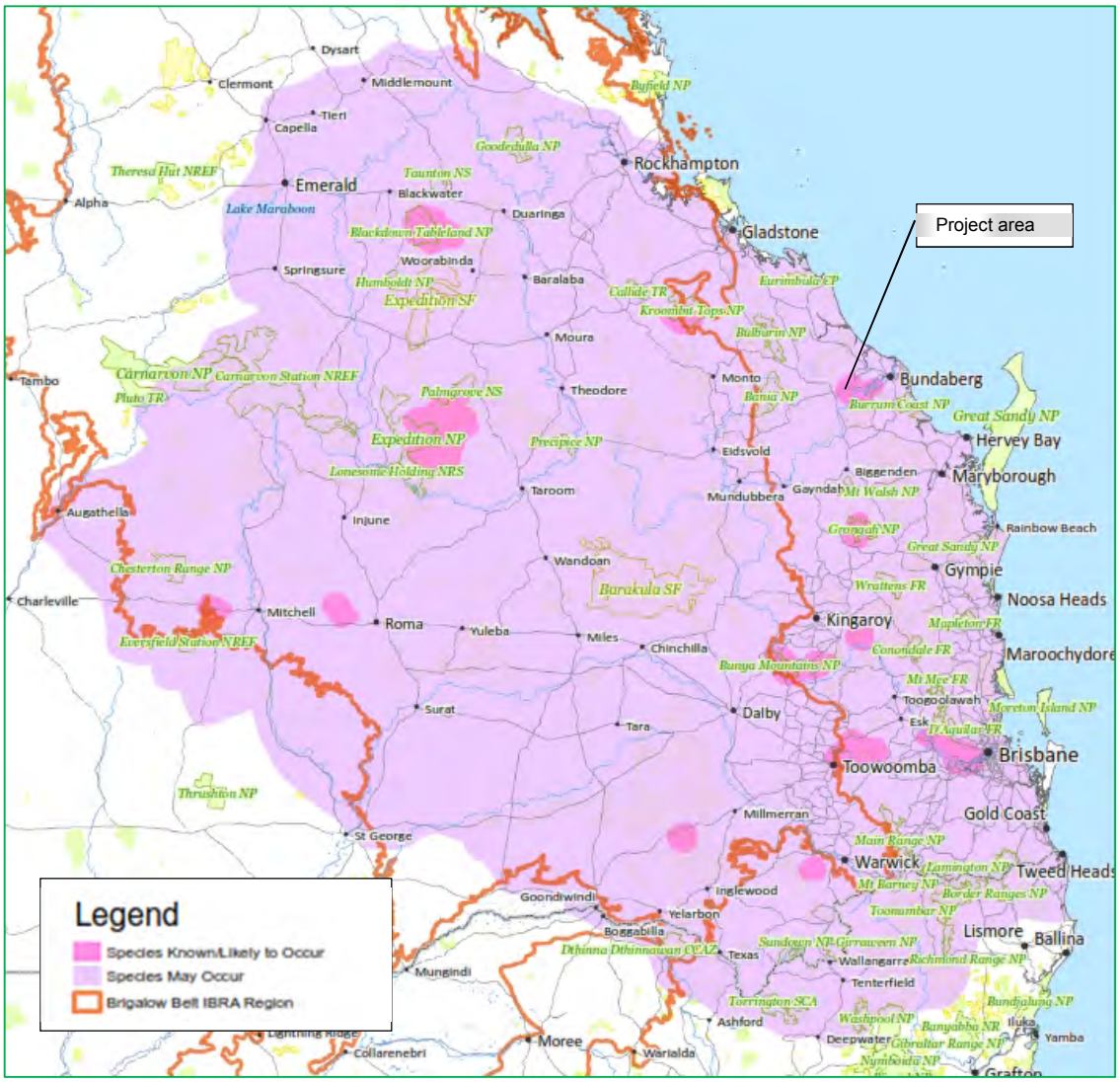


Plate 1 Modelled distribution of the collared delma (Source: SEWPAC 2011)

Collared delma habitat assessment results

The collared delma is known to have relatively specific habitat and microhabitat requirements, typically found in Eucalypt-dominated woodland and open forests on alluvial flats, undulating country on fine-grained sedimentary rocks and sandstone ranges. Within those habitats, the species is dependent on specific microhabitats, only occurring where rocks, logs, bark and other coarse woody debris, and mats of leaf litter (typically 30–100 mm thick) are present (BBRW, 2010). The species is typically found associated with native grassy understorey dominated by species such as kangaroo grass (*Themeda triandra*), barbed-wire grass (*Cymbopogon refractus*), wiregrass (*Aristida* spp.) and Lomandras (*Lomandra* spp.) (BBRW, 2010).

Habitats across the project footprint were consistent with those typically recorded for the collared delma. In general, Eucalypt woodland was uniformly present across the project footprint with a canopy dominated by *Corymbia citriodora, Eucalyptus acmenoides* and *Lophostemon confertus* in varying densities. A regenerating sub-canopy tree layer was present in higher densities in localised areas. The shrub layer was generally absent, with occasional Acacias and patches of *Lantana camara*. Native grasses including *Themeda triandra*, *Cymbopogon refractus* and wiry panic grass (*Entolasia stricta*) were present in the ground layer. Most areas had a rocky substrate with an abundance of exposed loose sedimentary rocks ranging between 5 cm and 30 cm. Leaf litter mats were ubiquitous but generally relatively thin, ranging between 2 and 5 cm in depth. Terrain was gently to moderately inclined and soil was generally grey sandy

loam. Exposed rock was present in highest densities along slopes and ridgelines at elevations between 80 and 145 m. Typical habitats are shown in Plate 2. The distribution of areas of characteristic rocky habitat for the collared delma is mapped in Figure 3.

Plate 2 Typical habitat for the collared delma within the project footprint

Collared delma targeted survey results

Nine collared delma individuals were observed during the survey, captured from six locations across the project footprint (Figure 3). Photo vouchers sent to the Queensland Museum were confirmed to be the collared delma (Plate 3 and Plate 4). All individuals had the diagnostic features of the species, with two pre-anal scales, snout-vent length half the total body length and characteristic marbling on the throat (Plate 4). All individuals were found on undulating terrain, generally on slopes with both easterly or westerly aspect, in areas with exposed rocky substrate. All individuals were found beneath mid-sized rocks, 15 – 20 cm in diameter. Eight individuals were found in areas with sedimentary rocky substrate. One individual was found in an area with an igneous rocky substrate. The species is considered likely to occur wherever surface rock is exposed. Anecdotal records of the species are also reported to have been found within the project footprint along creek flats at lower elevations.

Plate 3 Photo vouchers of individuals captured on the project footprint

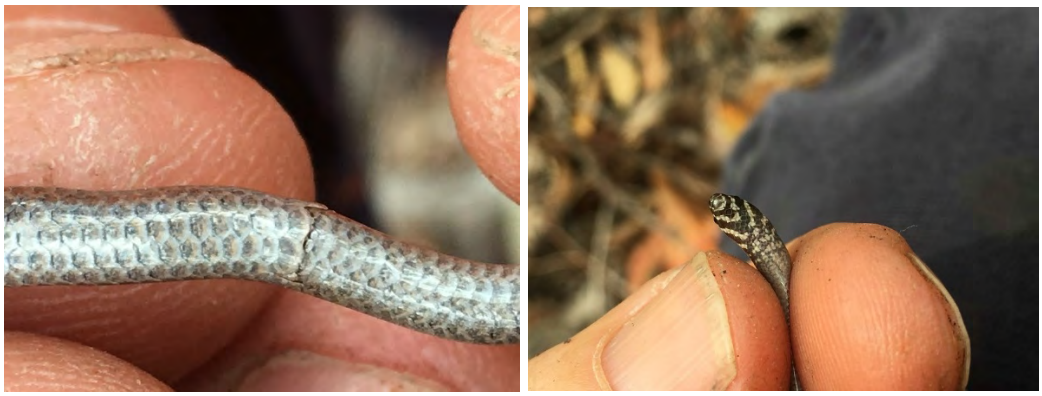
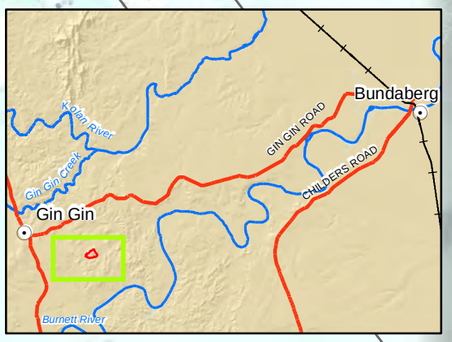


Plate 4 Diagnostic features of the collared delma from photo vouchers - two preanal scales (left) and marbling beneath the throat (right)



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1 1 3 2 1 1

Google earth

Image © 2016 CNES / Astrium

Image © 2016 DigitalGlobe

Paper Size A3

0 25 50 100 150 200

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

LEGEND

- Collared delma records
- Rocky microhabitats
- General extraction area boundary
- Cadastre

Coachtrail Investments Pty Ltd
SARA Information Request

Job Number 41-29519
Revision A
Date 22 Sep 2016

Distribution of collared delma records and rocky habitats within the project footprint

Figure 3

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Data source: GHD, Collared delma records, rocky microhabitat (2016), DNRM, Cadstre (2016), Watercourse (2014), Railways (2014), Highways (2015), hillshade (2012), Towns (2015), GA, mainlands (2008), Google Imagery Extracted 11/05/2016. Created by: AJ

3.10.2 Koala assessment results

Koala habitat assessment results

An assessment of habitat values for the koala (*Phascolarctos cinereus*) was undertaken using the koala habitat assessment toolkit in the *EPBC Referral guidelines for the vulnerable koala* (DotE 2014). The results of this assessment indicate that the habitat present within the project footprint is not critical to the survival of the koala (refer Table 3).

Table 1 Assessment of koala habitat using the habitat assessment tool

Attribute	Score	Project habitat appraisal
Koala occurrence	0 Low	No records of koalas within 5 km of the project footprint according to the Wildlife Online database (DISTI 2016). No koalas or evidence were detected during the field survey.
Vegetation composition	+2 High	RE mapping shows the development footprint contains suitable REs - 12.9-10.2 (*Corymbia citriodora* subsp. *variegata* open forest or woodland usually with *Eucalyptus crebra*. Other species such as *Eucalyptus tereticornis, E. moluccana, E. acmenoides* and *E. siderophloia* may be present in scattered patches or in low densities). Field surveys confirmed the presence of two or more koala food trees.
Habitat connectivity	0 Low	Review of aerial imagery and RE mapping shows that the project footprint is part of a patch of native vegetation less than < 300 ha.
Key existing threats	+1 Medium	Compared with urban koala populations, local threats are likely to be relatively low. Threats from roadkill are expected to be infrequent.
Recovery value	1 Medium	Review of Biodiversity Planning Assessment mapping shows the vegetation within the project footprint is not part of a significant ecological corridor (State, regional or local). The habitats in the project footprint are unlikely to contribute to the interim recovery objectives by maintaining corridors and connective habitat between areas of suitable koala habitat.
Total score[1]	**4**	**Habitat not critical to the survival of the koala**

Koala targeted survey results

No koala faecal pellets or signs (i.e. scratches) were observed during SAT searches undertaken across the project footprint. Despite this, suitable koala habitat is present across the project footprint with a mix of koala preferred food trees including *Corymbia citriodora, Eucalyptus acmenoides* and occasional *Lophostemon confertus*. The absence of faecal pellets or koala scratches suggest that koalas only occur in very low densities within the project footprint, if at all. This is likely to be attributed to the isolated nature of the project footprint, which is surrounded by cleared agricultural land.

[1] A threshold score of 5 or more indicates that the habitat is considered as 'critical to the survival of the koala'

Table 2 Threatened flora species likelihood of occurrence assessment

Species	EPBC Act status	Distribution	Seasonality	Habitat requirements	Likelihood of occurrence
Bosistoa transversa	Vulnerable	Found from the Nightcap Range north of Lismore in north-east NSW to Mount Larcom (near Gladstone) in south-east Queensland (DotE 2016)	Long-lived shrub/small tree. Flowering occurs from January to May and ripe fruits are present from May to November (DotE 2016)	Vine forest and lowland subtropical rainforest up to 300 m in altitude (DotE 2016).	***Unlikely to occur*** No suitable habitat present
Cupaniopsis shirleyana Wedge-leaf tuckeroo	Vulnerable	Found from Mt Larcom to Brisbane and west to Mt Perry (DotE 2016).	Long-lived shrub/small tree. This species flowers from April to June (DotE 2016).	Occurs in dry rainforest vegetation types, including vine thicket communities on hillsides, stream beds and along riverbanks. Predominately found on dark brown sandy loams and sandy clay loams (pH 5-7.5) and rocky scree slopes (DotE 2016).	***Unlikely to occur*** No suitable habitat present.
Eucalyptus hallii	Vulnerable	Goodwood Gum is known from the coastal lowlands between Bundaberg and Maryborough, Queensland (DotE 2016) .	Long-lived small to medium sized tree. Flowers from December to February, however trees have been found with flower buds or fruits on them throughout the year	Occurs on flat to gently undulating terrain up to 70 m above sea level. It is found in eucalypt or dry sclerophyll forest and woodland dominated by *Eucalyptus* species (DotE 2016).	***May occur*** Known records within 2 km of the project footprint but only marginal habitat present (i.e. eucalypt woodland present but development footprint greater than recorded altitude range for the species).

Table 3 Threatened fauna species likelihood of occurrence assessment

Species	EPBC Act Status	Habitat requirements	Likelihood of occurrence
Birds			
Erythrotriorchis radiatus Red goshawk	Vulnerable	Prefers mosaic of vegetation types of wooded and forested areas. Areas close to permanent water also preferred. Variation in structures provides cover for ambush of prey with areas open enough for fast attack and flight. Nesting occurs in tall trees within 1 km of permanent water (Marchant & Higgins 1993).	***May occur*** Suitable woodland habitat within the project footprint. Small isolated dams holding permanent water within 200 m of the development footprint. No previous records within 5 km of the project construction footprint.
Turnix melanogaster Black-breasted button-quail	Vulnerable	Rainforest and forests experiencing 770-1200 mm rainfall per annum. Prefers low closed forest in particular semi-evergreen vine thicket and other vine forest complexes. Required deep leaf litter. Nests within rainforest or under lantana thicket (Marchant and Higgins 1993).	***May occur*** Marginal habitat occurs within the riparian vegetation south of the development footprint but minimal habitat occurs within the actual development footprint. No previous records within 5 km of the project construction footprint.
Mammals			
Phascolarctos cinereus Koala	Vulnerable	Inhabit a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by Eucalyptus species. In Queensland, Koalas are also found in vegetation communities dominated by Melaleuca or Casuarina species (DotE 2016)	***May occur*** Suitable habitat occurs within the development footprint but habitat is not considered critical to the survival of the koala (refer Table 3). No evidence of kolas within the project construction footprint and no previous records within 5 km of the project construction footprint.
Pteropus poliocephalus Grey-headed flying-fox	Vulnerable	The species is organised around roost sites commonly formed in gullies, typically not far from water and usually in vegetation with a dense canopy. Bats commute daily to foraging areas, typically within 15 km of the day roost where they feed on a wide variety of flowering and fruiting plants including the blossoms of eucalypts (Strahan 2008).	***May occur*** Foraging habitat present within the project footprint but no evidence of roosting. No previous records within 5 km of the project footprint.
Fish			
Neoceratodus forsteri Australian lungfish	Vulnerable	Prefers slow flowing rivers and still water and most common in deep pools (3-10 m). Found over mud, sand and gravelly substrates. In the Mary River is associated with instream woody debris, overhanging vegetation and dense macrophyte beds. Spawning occurs in shallow free flowing reaches, usually with macrophytes (Pusey et al. 2004).	***Unlikely to occur*** No suitable habitat occurs within the project footprint. No suitable breeding habitat observed. No previous records within 5 km of the project footprint.

Species	EPBC Act Status	Habitat requirements	Likelihood of occurrence
Reptiles			
Delma torquata Collared delma	Vulnerable	Normally inhabits eucalypt-dominated woodlands and open-forests in Alluvium (river and creek flats), undulating country on fine-grained sedimentary rocks, and sandstone ranges. Regional ecosystems 11.3.2; 11.9.10; 11.10.1; and 11.10.4. Requires rocks, logs, bark and other coarse woody debris, and mats of leaf litter (DotE 2016)	***Confirmed present*** Nine individuals found across the project footprint. Suitable habitat occurs within project footprint and the site occurs within the modelled distribution for the species (SEWPaC 2011). Previous records within 5 km of the project footprint.
Elseya albagula White-throated snapping turtle	Critically endangered	Endemic to the Mary, Burnett and Fitzroy River catchments. Prefers clear, flowing, well-oxygenated waters. Requires shelter such as submerged logs and undercut banks (TSSC 2014). Nesting occurs on sandy loam banks in traditional areas.	***Unlikely to occur*** No suitable habitat occurs within the project footprint. No suitable breeding habitat observed. No previous records within 5 km of the project footprint.

3.11 Listed migratory species

The project footprint is not considered to comprise important habitat for any of the migratory listed species likely to utilise the project footprint.

4. Conclusion

Collared delma

This assessment has determined that the collared delma is present in low densities within the project area, with a total of nine individuals recorded within the development footprint at a capture rate of one individual for every 910 rocks searched, substantially lower than the capture-rate recorded by Porter (1998) of one individual for every 150 – 200 rocks searched within suitable habitat.

Koala

The results of the desktop and targeted koala survey indicate the project footprint does not support habitat critical to the survival of the koala. The absence of faecal pellets or koala scratches in targeted assessments of the project footprint indicate that the species is likely to occur in very low abundance if at all. The project footprint is surrounded by cleared agricultural land and is therefore functionally disconnected from other areas of potentially suitable koala habitat.

Other MNES

Based on the results of the desktop and field assessment, no other MNES are considered likely to occur within the project footprint.

5. References

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Appendix A – Desktop search reports

Australian Government

Department of the Environment

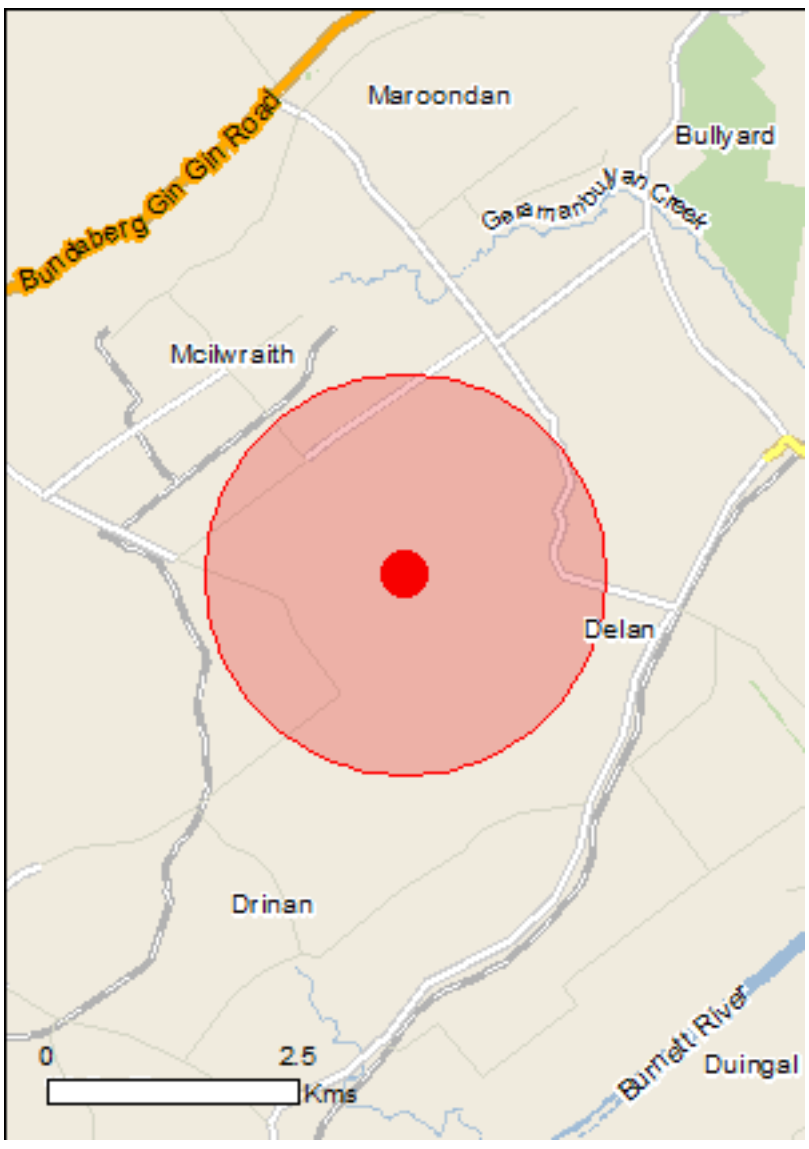
EPBC Act Protected Matters Report

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.

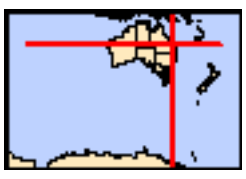
Report created: 20/04/16 11:35:53



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates

Buffer: 2.0Km



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:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	23
Listed Migratory Species:	13

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

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:	17
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:	29
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	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 may occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area
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 may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
Dasyurus hallucatus Northern Quoll [331]	Endangered	Species or species habitat likely to occur within area

Name	Status	Type of Presence
[Nyctophilus corbeni](#)		
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may 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 likely to occur within area
[Pteropus poliocephalus](#)		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Other		
[Cycas megacarpa](#)		
[55794]	Endangered	Species or species habitat likely to occur within area
[Cycas ophiolitica](#)		
[55797]	Endangered	Species or species habitat may occur within area
Plants		
[Bosistoa transversa](#)		
Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area
[Cupaniopsis shirleyana](#)		
Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat likely to occur within area
[Eucalyptus hallii](#)		
Goodwood Gum [20433]	Vulnerable	Species or species habitat may occur within area
[Phaius australis](#)		
Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area
[Phebalium distans](#)		
Mt Berryman Phebalium [81869]	Critically Endangered	Species or species habitat may occur within area
Reptiles		
[Delma torquata](#)		
Collared Delma [1656]	Vulnerable	Species or species habitat known to occur within area
[Egernia rugosa](#)		
Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area
[Furina dunmalli](#)		
Dunmall's Snake [59254]	Vulnerable	Species or species habitat likely to 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		
[Cuculus optatus](#)		
Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
[Hirundapus caudacutus](#)		
White-throated Needletail [682]		Species or species habitat likely to occur

Name	Threatened	Type of Presence
		within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely 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
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		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]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Cuculus saturatus Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat may occur within

Name	Threatened	Type of Presence
		area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		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

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		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		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
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 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		

Name	Status	Type of Presence
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913]		Species or species habitat likely to occur within area
Dolichandra unguis-cati Cat's Claw Vine, Yellow Trumpet Vine, Cat's Claw Creeper, Funnel Creeper [85119]		Species or species habitat likely to occur within area
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [31754]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
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
Protasparagus plumosus Climbing Asparagus-fern, Ferny Asparagus [11747]		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
Vachellia nilotica Prickly Acacia, Blackthorn, Prickly Mimosa, Black Piquant, Babul [84351]		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

-25.00949 152.02195

Acknowledgements

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

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Parks and Wildlife Commission NT, Northern Territory Government
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Atherton and Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, 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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Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Status: All
Records: All
Date: All
Latitude: -25.0095
Longitude: 152.0212
Distance: 10
Email: mithrasen.ramdhayan@ghd.com
Date submitted: Wednesday 20 Apr 2016 11:38:53
Date extracted: Wednesday 20 Apr 2016 11:40:21

The number of records retrieved = 667

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	*Rhinella marina*	cane toad	Y			23/1
animals	amphibians	Hylidae	*Litoria nasuta*	striped rocketfrog		C		2
animals	amphibians	Hylidae	*Litoria rothii*	northern laughing treefrog		C		2
animals	amphibians	Hylidae	*Litoria rubella*	ruddy treefrog		C		3
animals	amphibians	Hylidae	*Litoria wilcoxii*	eastern stony creek frog		C		2
animals	amphibians	Hylidae	*Cyclorana brevipes*	superb collared frog		C		2/1
animals	amphibians	Hylidae	*Litoria latopalmata*	broad palmed rocketfrog		C		6
animals	amphibians	Hylidae	*Litoria fallax*	eastern sedgefrog		C		3
animals	amphibians	Hylidae	*Litoria caerulea*	common green treefrog		C		1/1
animals	amphibians	Limnodynastidae	*Limnodynastes tasmaniensis*	spotted grassfrog		C		2
animals	amphibians	Limnodynastidae	*Limnodynastes terraereginae*	scarlet sided pobblebonk		C		6
animals	amphibians	Limnodynastidae	*Platyplectrum ornatum*	ornate burrowing frog		C		2
animals	amphibians	Limnodynastidae	*Limnodynastes salmini*	salmon striped frog		C		1
animals	amphibians	Limnodynastidae	*Limnodynastes peronii*	striped marshfrog		C		2
animals	amphibians	Limnodynastidae	*Adelotus brevis*	tusked frog		V		1
animals	amphibians	Myobatrachidae	*Mixophyes fasciolatus*	great barred frog		C		1
animals	amphibians	Myobatrachidae	*Uperoleia laevigata*	eastern gungan		C		1
animals	amphibians	Myobatrachidae	*Pseudophryne raveni*	copper backed broodfrog		C		14
animals	amphibians	Myobatrachidae	*Pseudophryne major*	great brown broodfrog		C		2/1
animals	amphibians	Myobatrachidae	*Uperoleia rugosa*	chubby gungan		C		1
animals	amphibians	Myobatrachidae	*Uperoleia fusca*	dusky gungan		C		2
animals	amphibians	Myobatrachidae	*Uperoleia sp.*					1
animals	birds	Acanthizidae	*Gerygone palpebrosa*	fairy gerygone		C		2
animals	birds	Acanthizidae	*Sericornis frontalis*	white-browed scrubwren		C		6
animals	birds	Acanthizidae	*Gerygone olivacea*	white-throated gerygone		C		6
animals	birds	Acanthizidae	*Acanthiza pusilla*	brown thornbill		C		2
animals	birds	Acanthizidae	*Smicrornis brevirostris*	weebill		C		3
animals	birds	Acanthizidae	*Sericornis magnirostra*	large-billed scrubwren		C		1
animals	birds	Acanthizidae	*Chthonicola sagittata*	speckled warbler		C		1
animals	birds	Accipitridae	*Haliastur indus*	brahminy kite		C		1
animals	birds	Accipitridae	*Circus assimilis*	spotted harrier		C		1
animals	birds	Accipitridae	*Milvus migrans*	black kite		C		1
animals	birds	Accipitridae	*Aquila audax*	wedge-tailed eagle		C		3
animals	birds	Accipitridae	*Elanus axillaris*	black-shouldered kite		C		4
animals	birds	Accipitridae	*Pandion cristatus*	eastern osprey		SL		1
animals	birds	Accipitridae	*Circus approximans*	swamp harrier		C		1
animals	birds	Accipitridae	*Lophoictinia isura*	square-tailed kite		C		5
animals	birds	Accipitridae	*Accipiter fasciatus*	brown goshawk		C		2
animals	birds	Accipitridae	*Aviceda subcristata*	Pacific baza		C		6
animals	birds	Accipitridae	*Haliastur sphenurus*	whistling kite		C		3
animals	birds	Accipitridae	*Haliaeetus leucogaster*	white-bellied sea-eagle		C		2
animals	birds	Accipitridae	*Hieraaetus morphnoides*	little eagle		C		1
animals	birds	Accipitridae	*Accipiter cirrocephalus*	collared sparrowhawk		C		2
animals	birds	Accipitridae	*Accipiter novaehollandiae*	grey goshawk		C		1
animals	birds	Accipitridae	*Erythrotriorchis radiatus*	red goshawk		E	V	1
animals	birds	Aegothelidae	*Aegotheles cristatus*	Australian owlet-nightjar		C		7

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Alaudidae	*Mirafra javanica*	Horsfield's bushlark		C		1
animals	birds	Alcedinidae	*Ceyx azureus*	azure kingfisher		C		6
animals	birds	Anatidae	*Anas superciliosa*	Pacific black duck		C		16
animals	birds	Anatidae	*Nettapus coromandelianus*	cotton pygmy-goose		C		1
animals	birds	Anatidae	*Dendrocygna arcuata*	wandering whistling-duck		C		1
animals	birds	Anatidae	*Dendrocygna eytoni*	plumed whistling-duck		C		1
animals	birds	Anatidae	*Chenonetta jubata*	Australian wood duck		C		8
animals	birds	Anatidae	*Aythya australis*	hardhead		C		6
animals	birds	Anatidae	*Cygnus atratus*	black swan		C		7
animals	birds	Anatidae	*Anas gracilis*	grey teal		C		6
animals	birds	Anhingidae	*Anhinga novaehollandiae*	Australasian darter		C		8
animals	birds	Anseranatidae	*Anseranas semipalmata*	magpie goose		C		1
animals	birds	Apodidae	*Hirundapus caudacutus*	white-throated needletail		SL		2
animals	birds	Apodidae	*Apus pacificus*	fork-tailed swift		SL		1
animals	birds	Ardeidae	*Ardea alba modesta*	eastern great egret		SL		4
animals	birds	Ardeidae	*Ixobrychus flavicollis*	black bittern		C		1
animals	birds	Ardeidae	*Ardea ibis*	cattle egret		SL		11
animals	birds	Ardeidae	*Ardea pacifica*	white-necked heron		C		1
animals	birds	Ardeidae	*Ardea intermedia*	intermediate egret		C		3
animals	birds	Ardeidae	*Egretta garzetta*	little egret		C		2
animals	birds	Ardeidae	*Egretta novaehollandiae*	white-faced heron		C		7
animals	birds	Ardeidae	*Nycticorax caledonicus*	nankeen night-heron		C		2
animals	birds	Artamidae	*Cracticus torquatus*	grey butcherbird		C		14
animals	birds	Artamidae	*Artamus leucorynchus*	white-breasted woodswallow		C		2
animals	birds	Artamidae	*Cracticus nigrogularis*	pied butcherbird		C		24
animals	birds	Artamidae	*Strepera graculina*	pied currawong		C		11
animals	birds	Artamidae	*Artamus cyanopterus*	dusky woodswallow		C		3
animals	birds	Artamidae	*Artamus personatus*	masked woodswallow		C		1
animals	birds	Artamidae	*Cracticus tibicen*	Australian magpie		C		35
animals	birds	Artamidae	*Artamus minor*	little woodswallow		C		1
animals	birds	Burhinidae	*Burhinus grallarius*	bush stone-curlew		C		2
animals	birds	Cacatuidae	*Nymphicus hollandicus*	cockatiel		C		1
animals	birds	Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo		C		4
animals	birds	Cacatuidae	*Calyptorhynchus banksii*	red-tailed black-cockatoo		C		3
animals	birds	Cacatuidae	*Calyptorhynchus funereus*	yellow-tailed black-cockatoo		C		5
animals	birds	Cacatuidae	*Eolophus roseicapillus*	galah		C		9
animals	birds	Campephagidae	*Coracina lineata*	barred cuckoo-shrike		C		1
animals	birds	Campephagidae	*Lalage leucomela*	varied triller		C		7
animals	birds	Campephagidae	*Coracina papuensis*	white-bellied cuckoo-shrike		C		7
animals	birds	Campephagidae	*Coracina tenuirostris*	cicadabird		SL		12
animals	birds	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike		C		22
animals	birds	Caprimulgidae	*Caprimulgus macrurus*	large-tailed nightjar		C		3
animals	birds	Charadriidae	*Charadrius mongolus*	lesser sand plover		SL		2
animals	birds	Charadriidae	*Vanellus miles novaehollandiae*	masked lapwing (southern subspecies)		C		14
animals	birds	Charadriidae	*Charadrius ruficapillus*	red-capped plover		C		1
animals	birds	Charadriidae	*Erythrogonys cinctus*	red-kneed dotterel		C		1

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animals	birds	Charadriidae	*Vanellus miles*	masked lapwing		C		3
animals	birds	Charadriidae	*Vanellus tricolor*	banded lapwing		C		1
animals	birds	Charadriidae	*Elseyornis melanops*	black-fronted dotterel		C		3
animals	birds	Ciconiidae	*Ephippiorhynchus asiaticus*	black-necked stork		C		2
animals	birds	Cisticolidae	*Cisticola exilis*	golden-headed cisticola		C		8
animals	birds	Climacteridae	*Cormobates leucophaea metastasis*	white-throated treecreeper (southern)		C		2
animals	birds	Climacteridae	*Climacteris picumnus*	brown treecreeper		C		5
animals	birds	Columbidae	*Chalcophaps indica*	emerald dove		C		1
animals	birds	Columbidae	*Lopholaimus antarcticus*	topknot pigeon		C		1
animals	birds	Columbidae	*Leucosarcia melanoleuca*	wonga pigeon		C		4
animals	birds	Columbidae	*Streptopelia chinensis*	spotted dove	Y			2
animals	birds	Columbidae	*Macropygia amboinensis*	brown cuckoo-dove		C		1
animals	birds	Columbidae	*Geopelia humeralis*	bar-shouldered dove		C		26
animals	birds	Columbidae	*Ptilinopus regina*	rose-crowned fruit-dove		C		1
animals	birds	Columbidae	*Phaps chalcoptera*	common bronzewing		C		5
animals	birds	Columbidae	*Ocyphaps lophotes*	crested pigeon		C		19
animals	birds	Columbidae	*Geopelia striata*	peaceful dove		C		21
animals	birds	Coraciidae	*Eurystomus orientalis*	dollarbird		C		7
animals	birds	Corcoracidae	*Struthidea cinerea*	apostlebird		C		7
animals	birds	Corcoracidae	*Corcorax melanorhamphos*	white-winged chough		C		3
animals	birds	Corvidae	*Corvus orru*	Torresian crow		C		24
animals	birds	Corvidae	*Corvus sp.*					1
animals	birds	Cuculidae	*Cacomantis pallidus*	pallid cuckoo		C		2
animals	birds	Cuculidae	*Chalcites lucidus*	shining bronze-cuckoo		C		1
animals	birds	Cuculidae	*Chalcites basalis*	Horsfield's bronze-cuckoo		C		1
animals	birds	Cuculidae	*Cuculus optatus*	oriental cuckoo		SL		4
animals	birds	Cuculidae	*Chalcites minutillus barnardi*	little bronze-cuckoo		C		1
animals	birds	Cuculidae	*Eudynamys orientalis*	eastern koel		C		11
animals	birds	Cuculidae	*Cacomantis variolosus*	brush cuckoo		C		3
animals	birds	Cuculidae	*Centropus phasianinus*	pheasant coucal		C		7
animals	birds	Cuculidae	*Cacomantis flabelliformis*	fan-tailed cuckoo		C		7
animals	birds	Cuculidae	*Scythrops novaehollandiae*	channel-billed cuckoo		C		9
animals	birds	Dicruridae	*Dicrurus bracteatus*	spangled drongo		C		23
animals	birds	Estrildidae	*Neochmia temporalis*	red-browed finch		C		6
animals	birds	Estrildidae	*Lonchura castaneothorax*	chestnut-breasted mannikin		C		5
animals	birds	Estrildidae	*Taeniopygia bichenovii*	double-barred finch		C		18
animals	birds	Eurostopodidae	*Eurostopodus mystacalis*	white-throated nightjar		C		3
animals	birds	Falconidae	*Falco berigora*	brown falcon		C		2
animals	birds	Falconidae	*Falco subniger*	black falcon		C		1
animals	birds	Falconidae	*Falco longipennis*	Australian hobby		C		2
animals	birds	Falconidae	*Falco cenchroides*	nankeen kestrel		C		4
animals	birds	Falconidae	*Falco peregrinus*	peregrine falcon		C		1
animals	birds	Gruidae	*Grus rubicunda*	brolga		C		1
animals	birds	Halcyonidae	*Dacelo leachii*	blue-winged kookaburra		C		2
animals	birds	Halcyonidae	*Todiramphus macleayii*	forest kingfisher		C		10
animals	birds	Halcyonidae	*Todiramphus sanctus*	sacred kingfisher		C		5

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animals	birds	Halcyonidae	*Todiramphus pyrrhopygius*	red-backed kingfisher		C		1
animals	birds	Halcyonidae	*Dacelo novaeguineae*	laughing kookaburra		C		33
animals	birds	Hirundinidae	*Petrochelidon nigricans*	tree martin		C		1
animals	birds	Hirundinidae	*Petrochelidon ariel*	fairy martin		C		126
animals	birds	Hirundinidae	*Hirundo neoxena*	welcome swallow		C		21
animals	birds	Jacanidae	*Irediparra gallinacea*	comb-crested jacana		C		7
animals	birds	Laridae	*Chlidonias hybrida*	whiskered tern		C		1
animals	birds	Laridae	*Chroicocephalus novaehollandiae*	silver gull		C		1
animals	birds	Laridae	*Gelochelidon nilotica*	gull-billed tern		SL		1
animals	birds	Laridae	*Hydroprogne caspia*	Caspian tern		SL		1
animals	birds	Maluridae	*Malurus lamberti*	variegated fairy-wren		C		7
animals	birds	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren		C		13
animals	birds	Megaluridae	*Cincloramphus mathewsi*	rufous songlark		C		1
animals	birds	Megaluridae	*Cincloramphus cruralis*	brown songlark		C		1
animals	birds	Megaluridae	*Megalurus timoriensis*	tawny grassbird		C		1
animals	birds	Megaluridae	*Megalurus gramineus*	little grassbird		C		2
animals	birds	Megapodiidae	*Alectura lathami*	Australian brush-turkey		C		11
animals	birds	Meliphagidae	*Lichenostomus melanops*	yellow-tufted honeyeater		C		2
animals	birds	Meliphagidae	*Manorina melanocephala*	noisy miner		C		21
animals	birds	Meliphagidae	*Myzomela sanguinolenta*	scarlet honeyeater		C		11
animals	birds	Meliphagidae	*Philemon citreogularis*	little friarbird		C		13
animals	birds	Meliphagidae	*Conopophila rufogularis*	rufous-throated honeyeater		C		3
animals	birds	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater		C		18
animals	birds	Meliphagidae	*Plectorhyncha lanceolata*	striped honeyeater		C		2
animals	birds	Meliphagidae	*Acanthorhynchus tenuirostris*	eastern spinebill		C		1
animals	birds	Meliphagidae	*Philemon corniculatus*	noisy friarbird		C		16
animals	birds	Meliphagidae	*Melithreptus lunatus*	white-naped honeyeater		C		1
animals	birds	Meliphagidae	*Melithreptus gularis*	black-chinned honeyeater		C		1
animals	birds	Meliphagidae	*Lichmera indistincta*	brown honeyeater		C		22
animals	birds	Meliphagidae	*Entomyzon cyanotis*	blue-faced honeyeater		C		20
animals	birds	Meliphagidae	*Meliphaga lewinii*	Lewin's honeyeater		C		29
animals	birds	Meliphagidae	*Myzomela obscura*	dusky honeyeater		C		1
animals	birds	Meliphagidae	*Ptilotula fusca*	fuscous honeyeater		C		1
animals	birds	Meropidae	*Merops ornatus*	rainbow bee-eater		SL		13
animals	birds	Monarchidae	*Myiagra rubecula*	leaden flycatcher		C		9
animals	birds	Monarchidae	*Myiagra cyanoleuca*	satin flycatcher		SL		3
animals	birds	Monarchidae	*Grallina cyanoleuca*	magpie-lark		C		28
animals	birds	Monarchidae	*Monarcha melanopsis*	black-faced monarch		SL		2
animals	birds	Monarchidae	*Symposiachrus trivirgatus*	spectacled monarch		SL		1
animals	birds	Monarchidae	*Myiagra inquieta*	restless flycatcher		C		1
animals	birds	Motacillidae	*Anthus novaeseelandiae*	Australasian pipit		C		4
animals	birds	Nectariniidae	*Dicaeum hirundinaceum*	mistletoebird		C		3
animals	birds	Neosittidae	*Daphoenositta chrysoptera*	varied sittella		C		3
animals	birds	Oriolidae	*Sphecotheres vieilloti*	Australasian figbird		C		16
animals	birds	Oriolidae	*Oriolus sagittatus*	olive-backed oriole		C		6
animals	birds	Pachycephalidae	*Colluricincla megarhyncha*	little shrike-thrush		C		2

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animals	birds	Pachycephalidae	*Pachycephala rufiventris*	rufous whistler		C		23
animals	birds	Pachycephalidae	*Pachycephala pectoralis*	golden whistler		C		3
animals	birds	Pachycephalidae	*Colluricincla harmonica*	grey shrike-thrush		C		21
animals	birds	Pardalotidae	*Pardalotus striatus*	striated pardalote		C		20
animals	birds	Passeridae	*Passer domesticus*	house sparrow	Y			3
animals	birds	Pelecanidae	*Pelecanus conspicillatus*	Australian pelican		C		9
animals	birds	Petroicidae	*Eopsaltria australis*	eastern yellow robin		C		6
animals	birds	Petroicidae	*Petroica rosea*	rose robin		C		3
animals	birds	Petroicidae	*Petroica goodenovii*	red-capped robin		C		1
animals	birds	Petroicidae	*Microeca fascinans*	jacky winter		C		1
animals	birds	Phalacrocoracidae	*Phalacrocorax sulcirostris*	little black cormorant		C		11
animals	birds	Phalacrocoracidae	*Microcarbo melanoleucos*	little pied cormorant		C		9
animals	birds	Phalacrocoracidae	*Phalacrocorax carbo*	great cormorant		C		1
animals	birds	Phasianidae	*Coturnix pectoralis*	stubble quail		C		2
animals	birds	Phasianidae	*Coturnix ypsilophora*	brown quail		C		5
animals	birds	Pittidae	*Pitta versicolor*	noisy pitta		C		1
animals	birds	Podargidae	*Podargus strigoides*	tawny frogmouth		C		8
animals	birds	Podargidae	*Podargus ocellatus plumiferus*	plumed frogmouth		V		1
animals	birds	Podicipedidae	*Tachybaptus novaehollandiae*	Australasian grebe		C		8
animals	birds	Pomatostomidae	*Pomatostomus temporalis*	grey-crowned babbler		C		16
animals	birds	Psittacidae	*Parvipsitta pusilla*	little lorikeet		C		4
animals	birds	Psittacidae	*Alisterus scapularis*	Australian king-parrot		C		8
animals	birds	Psittacidae	*Platycercus adscitus*	pale-headed rosella		C		17
animals	birds	Psittacidae	*Aprosmictus erythropterus*	red-winged parrot		C		2
animals	birds	Psittacidae	*Trichoglossus chlorolepidotus*	scaly-breasted lorikeet		C		16
animals	birds	Psittacidae	*Trichoglossus haematodus moluccanus*	rainbow lorikeet		C		35
animals	birds	Psophodidae	*Psophodes olivaceus*	eastern whipbird		C		14
animals	birds	Ptilonorhynchidae	*Sericulus chrysocephalus*	regent bowerbird		C		1
animals	birds	Rallidae	*Amaurornis moluccana*	pale-vented bush-hen		C		2
animals	birds	Rallidae	*Porphyrio melanotus*	purple swamphen		C		8
animals	birds	Rallidae	*Gallirallus philippensis*	buff-banded rail		C		1
animals	birds	Rallidae	*Fulica atra*	Eurasian coot		C		2
animals	birds	Rallidae	*Gallinula tenebrosa*	dusky moorhen		C		13
animals	birds	Recurvirostridae	*Himantopus himantopus*	black-winged stilt		C		1
animals	birds	Recurvirostridae	*Recurvirostra novaehollandiae*	red-necked avocet		C		1
animals	birds	Rhipiduridae	*Rhipidura rufifrons*	rufous fantail		SL		1
animals	birds	Rhipiduridae	*Rhipidura albiscapa*	grey fantail		C		12
animals	birds	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail		C		24
animals	birds	Scolopacidae	*Tringa nebularia*	common greenshank		SL		1
animals	birds	Scolopacidae	*Actitis hypoleucos*	common sandpiper		SL		1
animals	birds	Scolopacidae	*Arenaria interpres*	ruddy turnstone		SL		1
animals	birds	Scolopacidae	*Calidris acuminata*	sharp-tailed sandpiper		SL		1
animals	birds	Scolopacidae	*Tringa stagnatilis*	marsh sandpiper		SL		1
animals	birds	Scolopacidae	*Gallinago hardwickii*	Latham's snipe		SL		1
animals	birds	Strigidae	*Ninox boobook*	southern boobook		C		4
animals	birds	Strigidae	*Ninox strenua*	powerful owl		V		1

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animals	birds	Strigidae	*Ninox connivens*	barking owl		C		2
animals	birds	Threskiornithidae	*Platalea regia*	royal spoonbill		C		2
animals	birds	Threskiornithidae	*Platalea flavipes*	yellow-billed spoonbill		C		1
animals	birds	Threskiornithidae	*Plegadis falcinellus*	glossy ibis		SL		1
animals	birds	Threskiornithidae	*Threskiornis molucca*	Australian white ibis		C		6
animals	birds	Threskiornithidae	*Threskiornis spinicollis*	straw-necked ibis		C		8
animals	birds	Timaliidae	*Zosterops lateralis*	silvereye		C		5
animals	birds	Turnicidae	*Turnix varius*	painted button-quail		C		3
animals	birds	Turnicidae	*Turnix melanogaster*	black-breasted button-quail		V	V	4
animals	birds	Tytonidae	*Tyto delicatula*	eastern barn owl		C		2
animals	birds	Tytonidae	*Tyto longimembris*	eastern grass owl		C		2
animals	insects	Hesperiidae	*Telicota ancilla ancilla*	green darter				1
animals	insects	Nymphalidae	*Polyura sempronius sempronius*	tailed emperor				1
animals	insects	Papilionidae	*Papilio anactus*	dingy swallowtail				1
animals	lobe-finned fishes	Ceratodontidae	*Neoceratodus forsteri*	Australian lungfish			V	148
animals	mammals	Acrobatidae	*Acrobates pygmaeus*	feathertail glider		C		1
animals	mammals	Bovidae	*Bos taurus*	European cattle	Y			6
animals	mammals	Canidae	*Canis lupus dingo*	dingo				2
animals	mammals	Canidae	*Canis lupus familiaris*	dog	Y			1
animals	mammals	Dasyuridae	*Sminthopsis murina*	common dunnart		C		1
animals	mammals	Dasyuridae	*Planigale maculata*	common planigale		C		2
animals	mammals	Equidae	*Equus caballus*	horse	Y			5
animals	mammals	Felidae	*Felis catus*	cat	Y			2
animals	mammals	Leporidae	*Oryctolagus cuniculus*	rabbit	Y			1
animals	mammals	Leporidae	*Lepus europaeus*	European brown hare	Y			6
animals	mammals	Macropodidae	*Macropus giganteus*	eastern grey kangaroo		C		3
animals	mammals	Macropodidae	*Macropus dorsalis*	black-striped wallaby		C		2
animals	mammals	Macropodidae	*Thylogale stigmatica*	red-legged pademelon		C		1
animals	mammals	Macropodidae	*Macropus rufogriseus*	red-necked wallaby		C		2
animals	mammals	Macropodidae	*Macropus parryi*	whiptail wallaby		C		4
animals	mammals	Macropodidae	*Wallabia bicolor*	swamp wallaby		C		3
animals	mammals	Miniopteridae	*Miniopterus schreibersii oceanensis*	eastern bent-wing bat		C		7/6
animals	mammals	Muridae	*Hydromys chrysogaster*	water rat		C		8
animals	mammals	Muridae	*Melomys cervinipes*	fawn-footed melomys		C		1
animals	mammals	Muridae	*Rattus tunneyi*	pale field-rat		C		1
animals	mammals	Muridae	*Rattus sordidus*	canefield rat		C		1
animals	mammals	Muridae	*Mus musculus*	house mouse	Y			1
animals	mammals	Ornithorhynchidae	*Ornithorhynchus anatinus*	platypus		SL		4
animals	mammals	Peramelidae	*Isoodon macrourus*	northern brown bandicoot		C		1
animals	mammals	Petauridae	*Petaurus australis australis*	yellow-bellied glider (southern subspecies)		C		1
animals	mammals	Petauridae	*Petaurus breviceps*	sugar glider		C		1
animals	mammals	Phalangeridae	*Trichosurus vulpecula*	common brushtail possum		C		7
animals	mammals	Phascolarctidae	*Phascolarctos cinereus*	koala		V	V	4
animals	mammals	Potoroidae	*Aepyprymnus rufescens*	rufous bettong		C		1
animals	mammals	Pseudocheiridae	*Petauroides volans*	greater glider		C		1

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animals	mammals	Pteropodidae	*Pteropus scapulatus*	little red flying-fox		C		1
animals	mammals	Pteropodidae	*Pteropus poliocephalus*	grey-headed flying-fox		C	V	1
animals	mammals	Tachyglossidae	*Tachyglossus aculeatus*	short-beaked echidna		SL		4
animals	mammals	Vespertilionidae	*Vespadelus troughtoni*	eastern cave bat		C		2/2
animals	ray-finned fishes	Ambassidae	*Ambassis agassizii*	Agassiz's glassfish				2/1
animals	ray-finned fishes	Anguillidae	*Anguilla reinhardtii*	longfin eel				50
animals	ray-finned fishes	Apogonidae	*Glossamia aprion*	mouth almighty				6/1
animals	ray-finned fishes	Atherinidae	*Craterocephalus stercusmuscarum*	flyspecked hardyhead				14/1
animals	ray-finned fishes	Clupeidae	*Nematalosa erebi*	bony bream				52
animals	ray-finned fishes	Eleotridae	*Hypseleotris klunzingeri*	western carp gudgeon				6
animals	ray-finned fishes	Eleotridae	*Hypseleotris galii*	firetail gudgeon				1
animals	ray-finned fishes	Eleotridae	*Oxyeleotris lineolata*	sleepy cod				2
animals	ray-finned fishes	Hemiramphidae	*Arrhamphus sclerolepis*	snubnose garfish				6
animals	ray-finned fishes	Megalopidae	*Megalops cyprinoides*	oxeye herring				2
animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia duboulayi*	crimsonspotted rainbowfish				10/1
animals	ray-finned fishes	Mugilidae	*Mugil cephalus*	sea mullet				38
animals	ray-finned fishes	Percichthyidae	*Macquaria ambigua*	golden perch				22
animals	ray-finned fishes	Percichthyidae	*Macquaria novemaculeata*	Australian bass				8
animals	ray-finned fishes	Plotosidae	*Tandanus tandanus*	freshwater catfish				36
animals	ray-finned fishes	Pseudomugilidae	*Pseudomugil signifer*	Pacific blue eye				1/1
animals	ray-finned fishes	Scorpaenidae	*Notesthes robusta*	bullrout				4
animals	ray-finned fishes	Terapontidae	*Amniataba percoides*	barred grunter				21
animals	ray-finned fishes	Terapontidae	*Leiopotherapon unicolor*	spangled perch				6/2
animals	reptiles	Agamidae	*Intellagama lesueurii*	eastern water dragon		C		8/1
animals	reptiles	Agamidae	*Diporiphora australis*			C		2
animals	reptiles	Agamidae	*Chlamydosaurus kingii*	frilled lizard		C		1
animals	reptiles	Agamidae	*Pogona barbata*	bearded dragon		C		2
animals	reptiles	Boidae	*Morelia spilota*	carpet python		C		2
animals	reptiles	Carphodactylidae	*Saltuarius salebrosus*	rough-throated leaf-tailed gecko		C		1
animals	reptiles	Chelidae	*Chelodina expansa*	broad-shelled river turtle		C		3
animals	reptiles	Chelidae	*Elseya albagula*	southern snapping turtle		E	CE	6
animals	reptiles	Chelidae	*Chelodina longicollis*	eastern snake-necked turtle		C		1
animals	reptiles	Chelidae	*Wollumbinia latisternum*	saw-shelled turtle		C		5
animals	reptiles	Chelidae	*Emydura macquarii krefftii*	Krefft's river turtle		C		9
animals	reptiles	Colubridae	*Dendrelaphis punctulatus*	green tree snake		C		2
animals	reptiles	Colubridae	*Tropidonophis mairii*	freshwater snake		C		1
animals	reptiles	Colubridae	*Boiga irregularis*	brown tree snake		C		2/1
animals	reptiles	Diplodactylidae	*Oedura tryoni*	southern spotted velvet gecko		C		1
animals	reptiles	Diplodactylidae	*Diplodactylus vittatus*	wood gecko		C		1
animals	reptiles	Elapidae	*Furina diadema*	red-naped snake		C		1
animals	reptiles	Elapidae	*Demansia psammophis*	yellow-faced whipsnake		C		1
animals	reptiles	Elapidae	*Demansia vestigiata*	lesser black whipsnake		C		2
animals	reptiles	Elapidae	*Pseudonaja textilis*	eastern brown snake		C		4
animals	reptiles	Elapidae	*Vermicella annulata*	bandy-bandy		C		1
animals	reptiles	Elapidae	*Pseudechis porphyriacus*	red-bellied black snake		C		6
animals	reptiles	Elapidae	*Hoplocephalus bitorquatus*	pale-headed snake		C		1

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animals	reptiles	Elapidae	*Cryptophis nigrescens*	eastern small-eyed snake		C		1
animals	reptiles	Gekkonidae	*Gehyra versicolor*			C		1
animals	reptiles	Gekkonidae	*Heteronotia binoei*	Bynoe's gecko		C		1
animals	reptiles	Pygopodidae	*Lialis burtonis*	Burton's legless lizard		C		1
animals	reptiles	Pygopodidae	*Delma torquata*	collared delma		V	V	1/1
animals	reptiles	Scincidae	*Carlia amax*			C		1
animals	reptiles	Scincidae	*Carlia vivax*			C		2
animals	reptiles	Scincidae	*Concinnia tenuis*	bar-sided skink		C		2
animals	reptiles	Scincidae	*Eulamprus quoyii*	eastern water skink		C		6
animals	reptiles	Scincidae	*Carlia schmeltzii*			C		3/1
animals	reptiles	Scincidae	*Ctenotus spaldingi*			C		1
animals	reptiles	Scincidae	*Tiliqua scincoides*	eastern blue-tongued lizard		C		2
animals	reptiles	Scincidae	*Lampropholis adonis*			C		1
animals	reptiles	Scincidae	*Lygisaurus foliorum*			C		2
animals	reptiles	Scincidae	*Ctenotus taeniolatus*	copper-tailed skink		C		3
animals	reptiles	Scincidae	*Anomalopus verreauxii*			C		2
animals	reptiles	Scincidae	*Lampropholis delicata*			C		2
animals	reptiles	Scincidae	*Morethia taeniopleura*	fire-tailed skink		C		2
animals	reptiles	Scincidae	*Calyptotis scutirostrum*			C		1
animals	reptiles	Scincidae	*Cyclodomorphus gerrardii*	pink-tongued lizard		C		1
animals	reptiles	Scincidae	*Ophioscincus ophioscincus*			C		1
animals	reptiles	Scincidae	*Eremiascincus richardsonii*	broad-banded sand swimmer		C		1
animals	reptiles	Scincidae	*Carlia pectoralis sensu lato*			C		11
animals	reptiles	Scincidae	*Cryptoblepharus pulcher pulcher*	elegant snake-eyed skink		C		6
animals	reptiles	Typhlopidae	*Anilios ligatus*	robust blind snake		C		1
animals	reptiles	Varanidae	*Varanus tristis*	black-tailed monitor		C		1
animals	reptiles	Varanidae	*Varanus varius*	lace monitor		C		2
animals	reptiles	Varanidae	*Varanus gouldii*	sand monitor		C		4
plants	conifers	Araucariaceae	*Araucaria cunninghamii*	hoop pine		C		2
plants	conifers	Pinaceae	*Pinus elliottii*	slash pine	Y			1
plants	ferns	Adiantaceae	*Cheilanthes sieberi subsp. sieberi*			C		1/1
plants	ferns	Adiantaceae	*Adiantum hispidulum var. minus*			C		1/1
plants	ferns	Adiantaceae	*Cheilanthes tenuifolia*	rock fern		C		1/1
plants	ferns	Adiantaceae	*Adiantum aethiopicum*			C		1
plants	ferns	Adiantaceae	*Adiantum hispidulum*			C		1
plants	ferns	Adiantaceae	*Adiantum*			C		3
plants	ferns	Aspleniaceae	*Asplenium attenuatum var. attenuatum*			C		1/1
plants	ferns	Azollaceae	*Azolla pinnata*	ferny azolla		C		1
plants	ferns	Blechnaceae	*Doodia caudata*			C		1
plants	ferns	Dennstaedtiaceae	*Pteridium esculentum*	common bracken		C		1
plants	ferns	Lindsaeaceae	*Lindsaea ensifolia*			C		1
plants	ferns	Schizaeaceae	*Lygodium microphyllum*	snake fern		C		1
plants	ferns	Thelypteridaceae	*Christella dentata*	creek fern		C		1
plants	higher dicots	Amaranthaceae	*Achyranthes aspera*			C		2/1
plants	higher dicots	Anacardiaceae	*Mangifera indica*	mango	Y			1
plants	higher dicots	Anacardiaceae	*Pleiogynium timorense*	Burdekin plum		C		1/1

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plants	higher dicots	Apiaceae	*Platysace linearifolia*			C		1/1
plants	higher dicots	Apiaceae	*Cyclospermum leptophyllum*		Y			1/1
plants	higher dicots	Apocynaceae	*Gymnanthera oblonga*			C		1/1
plants	higher dicots	Apocynaceae	*Asclepias curassavica*	red-head cottonbush	Y			1
plants	higher dicots	Apocynaceae	*Gomphocarpus physocarpus*	balloon cottonbush	Y			1
plants	higher dicots	Apocynaceae	*Parsonsia eucalyptophylla*	gargaloo		C		1/1
plants	higher dicots	Apocynaceae	*Catharanthus roseus*	pink periwinkle	Y			1
plants	higher dicots	Apocynaceae	*Alstonia constricta*	bitterbark		C		1
plants	higher dicots	Apocynaceae	*Tabernaemontana pandacaqui*	banana bush		C		1
plants	higher dicots	Apocynaceae	*Carissa ovata*	currantbush		C		3
plants	higher dicots	Apocynaceae	*Parsonsia*			C		1
plants	higher dicots	Apocynaceae	*Alyxia ruscifolia*			C		3
plants	higher dicots	Araliaceae	*Polyscias elegans*	celery wood		C		3
plants	higher dicots	Araliaceae	*Hydrocotyle peduncularis*			C		1/1
plants	higher dicots	Asteraceae	*Sphaeromorphaea subintegra*			C		1/1
plants	higher dicots	Asteraceae	*Calotis dentex*	white burr daisy		C		1/1
plants	higher dicots	Asteraceae	*Aster subulatus*	wild aster	Y			1
plants	higher dicots	Asteraceae	*Calotis cuneata*			C		1/1
plants	higher dicots	Asteraceae	*Bidens pilosa*		Y			1
plants	higher dicots	Asteraceae	*Emilia sonchifolia*		Y			1/1
plants	higher dicots	Asteraceae	*Ageratum houstonianum*	blue billygoat weed	Y			1
plants	higher dicots	Asteraceae	*Verbesina encelioides*	crownbeard	Y			2/2
plants	higher dicots	Asteraceae	*Chrysocephalum apiculatum*	yellow buttons		C		1/1
plants	higher dicots	Asteraceae	*Cirsium vulgare*	spear thistle	Y			1
plants	higher dicots	Bignoniaceae	*Pandorea pandorana*	wonga vine		C		1
plants	higher dicots	Bignoniaceae	*Dolichandra unguis-cati*	cat's claw creeper	Y			3/1
plants	higher dicots	Boraginaceae	*Heliotropium amplexicaule*	blue heliotrope	Y			1/1
plants	higher dicots	Brassicaceae	*Lepidium didymum*		Y			1/1
plants	higher dicots	Brassicaceae	*Capsella bursapastoris*	shepherd's purse	Y			1/1
plants	higher dicots	Caesalpiniaceae	*Senna*			C		1
plants	higher dicots	Caesalpiniaceae	*Senna gaudichaudii*			C		1/1
plants	higher dicots	Capparaceae	*Capparis arborea*	brush caper berry		C		2/1
plants	higher dicots	Casuarinaceae	*Allocasuarina littoralis*			C		4/2
plants	higher dicots	Casuarinaceae	*Casuarina cunninghamiana*			C		1
plants	higher dicots	Casuarinaceae	*Allocasuarina torulosa*			C		1
plants	higher dicots	Casuarinaceae	*Casuarina cristata*	belah		C		1
plants	higher dicots	Casuarinaceae	*Casuarina glauca*	swamp she-oak		C		1
plants	higher dicots	Celastraceae	*Siphonodon australis*	ivorywood		C		1
plants	higher dicots	Chenopodiaceae	*Suaeda australis*			C		1/1
plants	higher dicots	Chenopodiaceae	*Chenopodium album*	fat-hen	Y			2/2
plants	higher dicots	Combretaceae	*Lumnitzera racemosa*			C		1
plants	higher dicots	Convolvulaceae	*Cuscuta campestris*	dodder	Y			2/2
plants	higher dicots	Convolvulaceae	*Ipomoea purpurea*	common morning glory	Y			1/1
plants	higher dicots	Cornaceae	*Alangium villosum subsp. polyosmoides*			C		1
plants	higher dicots	Cucurbitaceae	*Cucumis metuliferus*	prickly cucumber	Y			1
plants	higher dicots	Dilleniaceae	*Hibbertia*			C		2

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plants	higher dicots	Dilleniaceae	*Hibbertia linearis var. obtusifolia*			C		1
plants	higher dicots	Droseraceae	*Drosera spatulata*			C		1
plants	higher dicots	Ebenaceae	*Diospyros pentamera*	myrtle ebony		C		1
plants	higher dicots	Ebenaceae	*Diospyros australis*	black plum		C		1
plants	higher dicots	Ebenaceae	*Diospyros fasciculosa*	grey ebony		C		1
plants	higher dicots	Ebenaceae	*Diospyros geminata*	scaly ebony		C		1
plants	higher dicots	Elaeocarpaceae	*Elaeocarpus obovatus*	blueberry ash		C		1
plants	higher dicots	Ericaceae	*Acrotriche aggregata*	red cluster heath		C		1
plants	higher dicots	Ericaceae	*Melichrus adpressus*			C		1/1
plants	higher dicots	Ericaceae	*Monotoca scoparia*	prickly broom heath		C		3/1
plants	higher dicots	Ericaceae	*Melichrus urceolatus*	honey gorse		C		5/1
plants	higher dicots	Euphorbiaceae	*Croton stigmatosus*	white croton		C		1
plants	higher dicots	Euphorbiaceae	*Alchornea ilicifolia*	native holly		C		1
plants	higher dicots	Euphorbiaceae	*Excoecaria agallocha*	milky mangrove		C		1
plants	higher dicots	Euphorbiaceae	*Mallotus claoxyloides*	green kamala		C		1
plants	higher dicots	Euphorbiaceae	*Mallotus philippensis*	red kamala		C		2
plants	higher dicots	Euphorbiaceae	*Bertya cunninghamii subsp. rupicola*			C		7/7
plants	higher dicots	Euphorbiaceae	*Ricinus communis*	castor oil bush	Y			1
plants	higher dicots	Fabaceae	*Hovea*			C		1
plants	higher dicots	Fabaceae	*Cullen tenax*	emu-foot		C		1
plants	higher dicots	Fabaceae	*Daviesia filipes*			C		1/1
plants	higher dicots	Fabaceae	*Pultenaea euchila*	orange pultenaea		C		1/1
plants	higher dicots	Fabaceae	*Jacksonia scoparia*			C		6
plants	higher dicots	Fabaceae	*Pultenaea petiolaris*			C		1/1
plants	higher dicots	Fabaceae	*Hardenbergia violacea*			C		1/1
plants	higher dicots	Fabaceae	*Pultenaea cunninghamii*	prickly pea		C		1/1
plants	higher dicots	Fabaceae	*Austrosteenisia blackii*	bloodvine		C		1
plants	higher dicots	Fabaceae	*Castanospermum australe*	black bean		C		3/2
plants	higher dicots	Fabaceae	*Indigofera suffruticosa*		Y			1/1
plants	higher dicots	Fabaceae	*Macroptilium lathyroides*		Y			1/1
plants	higher dicots	Flacourtiaceae	*Scolopia braunii*	flintwood		C		1
plants	higher dicots	Haloragaceae	*Myriophyllum*			C		1
plants	higher dicots	Haloragaceae	*Gonocarpus chinensis subsp. verrucosus*			C		1/1
plants	higher dicots	Haloragaceae	*Myriophyllum verrucosum*	water milfoil		C		1/1
plants	higher dicots	Lamiaceae	*Stachys arvensis*	stagger weed	Y			1/1
plants	higher dicots	Lamiaceae	*Vitex lignum-vitae*			C		1/1
plants	higher dicots	Lamiaceae	*Lamium amplexicaule*	deadnettle	Y			1/1
plants	higher dicots	Lamiaceae	*Clerodendrum longiflorum var. glabrum*			C		1/1
plants	higher dicots	Lamiaceae	*Pityrodia salviifolia*	pityrodia		C		2/2
plants	higher dicots	Lamiaceae	*Clerodendrum tomentosum*			C		1
plants	higher dicots	Lamiaceae	*Leucas martinicensis*		Y			1/1
plants	higher dicots	Malvaceae	*Sida cordifolia*		Y			1
plants	higher dicots	Malvaceae	*Hibiscus splendens*	pink hibiscus		C		1
plants	higher dicots	Malvaceae	*Hibiscus divaricatus*			C		1
plants	higher dicots	Malvaceae	*Abutilon grandifolium*		Y			1
plants	higher dicots	Malvaceae	*Malvastrum coromandelianum subsp. coromandelianum*		Y			1/1

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plants	higher dicots	Meliaceae	*Dysoxylum gaudichaudianum*	ivory mahogany		C		1/1
plants	higher dicots	Menyanthaceae	*Nymphoides indica*	water snowflake		C		2/1
plants	higher dicots	Mimosaceae	*Acacia harpophylla*	brigalow		C		1
plants	higher dicots	Mimosaceae	*Acacia leptostachya*	Townsville wattle		C		1
plants	higher dicots	Mimosaceae	*Vachellia bidwillii*			C		2/1
plants	higher dicots	Mimosaceae	*Pararchidendron pruinosum*			C		1
plants	higher dicots	Mimosaceae	*Acacia julifera subsp. julifera*			C		1/1
plants	higher dicots	Mimosaceae	*Acacia disparrima subsp. disparrima*			C		2/2
plants	higher dicots	Mimosaceae	*Acacia implexa*	lightwood		C		1/1
plants	higher dicots	Mimosaceae	*Acacia conferta*			C		8/1
plants	higher dicots	Mimosaceae	*Acacia julifera*			C		7
plants	higher dicots	Mimosaceae	*Acacia maidenii*	Maiden's wattle		C		3
plants	higher dicots	Mimosaceae	*Acacia fimbriata*	Brisbane golden wattle		C		5
plants	higher dicots	Mimosaceae	*Acacia leiocalyx*			C		1
plants	higher dicots	Mimosaceae	*Acacia complanata*	flatstem wattle		C		7
plants	higher dicots	Mimosaceae	*Acacia leptocarpa*	north coast wattle		C		2
plants	higher dicots	Mimosaceae	*Acacia aulacocarpa*			C		3
plants	higher dicots	Moraceae	*Ficus macrophylla forma macrophylla*	Moreton Bay fig		C		1
plants	higher dicots	Moraceae	*Trophis scandens subsp. scandens*			C		3/1
plants	higher dicots	Moraceae	*Ficus racemosa var. racemosa*			C		3
plants	higher dicots	Moraceae	*Maclura cochinchinensis*	cockspur thorn		C		1
plants	higher dicots	Moraceae	*Streblus brunonianus*	whalebone tree		C		3
plants	higher dicots	Moraceae	*Ficus opposita*			C		2
plants	higher dicots	Moraceae	*Ficus fraseri*	white sandpaper fig		C		1
plants	higher dicots	Myrsinaceae	*Aegiceras corniculatum*	river mangrove		C		1/1
plants	higher dicots	Myrtaceae	*Eucalyptus fibrosa subsp. fibrosa*			C		2
plants	higher dicots	Myrtaceae	*Leptospermum polygalifolium*	tantoon		C		3/1
plants	higher dicots	Myrtaceae	*Eucalyptus drepanophylla*			C		1
plants	higher dicots	Myrtaceae	*Melaleuca trichostachya*			C		2
plants	higher dicots	Myrtaceae	*Melaleuca quinquenervia*	swamp paperbark		C		1/1
plants	higher dicots	Myrtaceae	*Eucalyptus melanophloia*			C		1
plants	higher dicots	Myrtaceae	*Eucalyptus tereticornis*			C		4
plants	higher dicots	Myrtaceae	*Waterhousea floribunda*	weeping lilly pilly		C		3/1
plants	higher dicots	Myrtaceae	*Leptospermum neglectum*			C		1/1
plants	higher dicots	Myrtaceae	*Corymbia erythrophloia*	variable-barked bloodwood		C		2/2
plants	higher dicots	Myrtaceae	*Lophostemon confertus*	brush box		C		13/1
plants	higher dicots	Myrtaceae	*Eucalyptus acmenoides*			C		11
plants	higher dicots	Myrtaceae	*Corymbia trachyphloia*			C		12
plants	higher dicots	Myrtaceae	*Angophora subvelutina*			C		1
plants	higher dicots	Myrtaceae	*Corymbia tessellaris*	Moreton Bay ash		C		1
plants	higher dicots	Myrtaceae	*Melaleuca viminalis*			C		2
plants	higher dicots	Myrtaceae	*Melaleuca bracteata*			C		1
plants	higher dicots	Myrtaceae	*Corymbia intermedia*	pink bloodwood		C		2
plants	higher dicots	Myrtaceae	*Psidium guajava*	guava	Y			1/1
plants	higher dicots	Myrtaceae	*Gossia bidwillii*			C		1
plants	higher dicots	Myrtaceae	*Angophora costata*			C		3

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plants	higher dicots	Myrtaceae	*Eucalyptus crebra*	narrow-leaved red ironbark		C		2
plants	higher dicots	Myrtaceae	*Eucalyptus hallii*	Goodwood gum		V	V	1
plants	higher dicots	Myrtaceae	*Melaleuca cheelii*			NT		1
plants	higher dicots	Myrtaceae	*Syzygium australe*	scrub cherry		C		2
plants	higher dicots	Myrtaceae	*Eucalyptus exserta*	Queensland peppermint		C		3
plants	higher dicots	Myrtaceae	*Syzygium francisii*	giant watergum		C		1
plants	higher dicots	Myrtaceae	*Corymbia citriodora*	spotted gum		C		6
plants	higher dicots	Oleaceae	*Jasminum simplicifolium subsp. australiense*			C		1/1
plants	higher dicots	Onagraceae	*Ludwigia peploides subsp. montevidensis*			C		1
plants	higher dicots	Oxalidaceae	*Oxalis corniculata*		Y			1
plants	higher dicots	Passifloraceae	*Passiflora suberosa*	corky passion flower	Y			1
plants	higher dicots	Passifloraceae	*Passiflora subpeltata*	white passion flower	Y			1
plants	higher dicots	Passifloraceae	*Passiflora*			C		1
plants	higher dicots	Petiveriaceae	*Rivina humilis*		Y			1
plants	higher dicots	Phyllanthaceae	*Phyllanthus subcrenulatus*			C		1/1
plants	higher dicots	Phyllanthaceae	*Breynia oblongifolia*			C		1/1
plants	higher dicots	Phyllanthaceae	*Glochidion sumatranum*	umbrella cheese tree		C		1
plants	higher dicots	Phyllanthaceae	*Cleistanthus cunninghamii*	omega		C		1
plants	higher dicots	Phyllanthaceae	*Phyllanthus virgatus*			C		1
plants	higher dicots	Pittosporaceae	*Bursaria incana*			C		1
plants	higher dicots	Pittosporaceae	*Pittosporum viscidum*	black-fruited thornbush		C		1
plants	higher dicots	Pittosporaceae	*Pittosporum spinescens*			C		1
plants	higher dicots	Plantaginaceae	*Bacopa monnieri*			C		1
plants	higher dicots	Polygonaceae	*Persicaria prostrata*	creeping knotweed		C		1/1
plants	higher dicots	Polygonaceae	*Persicaria lapathifolia*	pale knotweed		C		1/1
plants	higher dicots	Polygonaceae	*Rumex*			C		1
plants	higher dicots	Proteaceae	*Xylomelum benthamii*			C		1/1
plants	higher dicots	Putranjivaceae	*Drypetes deplanchei*	grey boxwood		C		2
plants	higher dicots	Rhamnaceae	*Alphitonia excelsa*	soap tree		C		4
plants	higher dicots	Rubiaceae	*Pavetta australiensis*			C		1
plants	higher dicots	Rubiaceae	*Atractocarpus chartaceus*			C		1
plants	higher dicots	Rubiaceae	*Ixora beckleri*	brown coffeewood		C		1
plants	higher dicots	Rubiaceae	*Cyclophyllum coprosmoides*			C		2
plants	higher dicots	Rubiaceae	*Psychotria daphnoides*			C		1
plants	higher dicots	Rutaceae	*Citrus x limon*		Y			1
plants	higher dicots	Rutaceae	*Zieria smithii*			C		1
plants	higher dicots	Rutaceae	*Acronychia laevis*	glossy acronychia		C		2
plants	higher dicots	Rutaceae	*Murraya paniculata*			C		1
plants	higher dicots	Rutaceae	*Micromelum minutum*	clusterberry		C		1
plants	higher dicots	Rutaceae	*Flindersia schottiana*	bumpy ash		C		2
plants	higher dicots	Rutaceae	*Geijera salicifolia*	brush wilga		C		1
plants	higher dicots	Rutaceae	*Bosistoa transversa*	three-leaved bosistoa		C	V	1
plants	higher dicots	Santalaceae	*Exocarpos latifolius*			C		1
plants	higher dicots	Sapindaceae	*Cupaniopsis sp. (Watalgan A.R.Bean 8611)*			C		2/2
plants	higher dicots	Sapindaceae	*Cardiospermum halicacabum var. halicacabum*		Y			1/1
plants	higher dicots	Sapindaceae	*Cardiospermum grandiflorum*	heart seed vine	Y			2

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plants	higher dicots	Sapindaceae	*Cupaniopsis anacardioides*	tuckeroo		C		3
plants	higher dicots	Sapindaceae	*Elattostachys xylocarpa*	white tamarind		C		1
plants	higher dicots	Sapindaceae	*Cupaniopsis shirleyana*	wedge-leaf tuckeroo		V	V	2
plants	higher dicots	Sapindaceae	*Dodonaea triangularis*			C		1/1
plants	higher dicots	Sapindaceae	*Alectryon tomentosus*			C		1
plants	higher dicots	Sapindaceae	*Sarcopteryx stipata*	steelwood		C		1
plants	higher dicots	Sapindaceae	*Dodonaea tenuifolia*			C		1/1
plants	higher dicots	Sapindaceae	*Atalaya salicifolia*			C		1
plants	higher dicots	Sapindaceae	*Arytera microphylla*			C		2/1
plants	higher dicots	Sapindaceae	*Dodonaea triquetra*	large-leaved hop bush		C		2
plants	higher dicots	Sapindaceae	*Arytera divaricata*	coogera		C		1
plants	higher dicots	Sapindaceae	*Jagera pseudorhus*			C		1
plants	higher dicots	Sapindaceae	*Harpullia pendula*			C		1/1
plants	higher dicots	Sapotaceae	*Planchonella pohlmaniana*			C		1
plants	higher dicots	Solanaceae	*Cestrum parqui*	green cestrum	Y			1
plants	higher dicots	Solanaceae	*Solanum seaforthianum*	Brazilian nightshade	Y			2
plants	higher dicots	Solanaceae	*Solanum stelligerum*	devil's needles		C		1
plants	higher dicots	Solanaceae	*Capsicum frutescens*		Y			1/1
plants	higher dicots	Solanaceae	*Solanum erianthum*	potato tree	Y			2/2
plants	higher dicots	Solanaceae	*Solanum torvum*	devil's fig	Y			1
plants	higher dicots	Solanaceae	*Capsicum annuum var. glabriusculum*		Y			1/1
plants	higher dicots	Sparrmanniaceae	*Triumfetta rhomboidea*	chinese burr	Y			1/1
plants	higher dicots	Sparrmanniaceae	*Grewia latifolia*	dysentery plant		C		1
plants	higher dicots	Stylidiaceae	*Stylidium graminifolium*	grassy-leaved trigger-flower		C		1/1
plants	higher dicots	Stylidiaceae	*Stylidium tenerum*			C		1/1
plants	higher dicots	Ulmaceae	*Aphananthe philippinensis*			C		3
plants	higher dicots	Verbenaceae	*Verbena*			C		1
plants	higher dicots	Verbenaceae	*Lantana camara*	lantana	Y			6/1
plants	higher dicots	Vitaceae	*Clematicissus opaca*			C		2
plants	liverworts	Frullaniaceae	*Frullania rubella*			C		4/4
plants	lower dicots	Annonaceae	*Melodorum leichhardtii*			C		2
plants	lower dicots	Annonaceae	*Fitzalania bidwillii*			C		2/2
plants	lower dicots	Aristolochiaceae	*Aristolochia elegans*	calico-flower	Y			2/1
plants	lower dicots	Avicenniaceae	*Avicennia marina*			C		1
plants	lower dicots	Lauraceae	*Cryptocarya triplinervis*			C		2
plants	lower dicots	Lauraceae	*Cryptocarya microneura*	murrogun		C		1
plants	lower dicots	Lauraceae	*Cassytha filiformis*	dodder laurel		C		1/1
plants	lower dicots	Lauraceae	*Endiandra muelleri*			C		1
plants	lower dicots	Lauraceae	*Cassytha*			C		4
plants	lower dicots	Linderniaceae	*Artanema fimbriatum*			C		1/1
plants	lower dicots	Menispermaceae	*Legnephora moorei*			C		1
plants	lower dicots	Menispermaceae	*Hypserpa decumbens*			C		1
plants	lower dicots	Menispermaceae	*Pleogyne australis*	wiry grape		C		1
plants	lower dicots	Papaveraceae	*Argemone ochroleuca subsp. ochroleuca*	Mexican poppy	Y			1
plants	monocots	Asparagaceae	*Asparagus plumosus*	feathered asparagus fern	Y			1
plants	monocots	Commelinaceae	*Murdannia graminea*	murdannia		C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	monocots	Cyperaceae	*Cyperus aquatilis*			C		1/1
plants	monocots	Cyperaceae	*Cyperus exaltatus*	tall flatsedge		C		1
plants	monocots	Cyperaceae	*Gahnia sieberiana*	sword grass		C		1
plants	monocots	Cyperaceae	*Cyperus polystachyos*			C		1
plants	monocots	Cyperaceae	*Schoenus brevifolius*			C		1
plants	monocots	Cyperaceae	*Lepidosperma laterale*			C		2
plants	monocots	Cyperaceae	*Lepidosperma longitudinale*	pithy swordsedge		C		1
plants	monocots	Cyperaceae	*Fimbristylis polytrichoides*			C		1/1
plants	monocots	Cyperaceae	*Schoenoplectus tabernaemontani*			C		2/1
plants	monocots	Cyperaceae	*Lepidosperma laterale var. laterale*			C		1/1
plants	monocots	Cyperaceae	*Cyperus*			C		1
plants	monocots	Cyperaceae	*Gahnia aspera*			C		2/1
plants	monocots	Cyperaceae	*Cyperus distans*			C		1/1
plants	monocots	Hemerocallidaceae	*Dianella caerulea*			C		1
plants	monocots	Hemerocallidaceae	*Dianella revoluta*			C		2
plants	monocots	Hemerocallidaceae	*Dianella*			C		2
plants	monocots	Hemerocallidaceae	*Geitonoplesium cymosum*	scrambling lily		C		2
plants	monocots	Hydrocharitaceae	*Egeria densa*	dense waterweed	Y			1
plants	monocots	Hydrocharitaceae	*Vallisneria annua*			C		2/2
plants	monocots	Hydrocharitaceae	*Ottelia ovalifolia subsp. ovalifolia*			C		1/1
plants	monocots	Iridaceae	*Patersonia*			C		5
plants	monocots	Iridaceae	*Patersonia glabrata*			C		1/1
plants	monocots	Iridaceae	*Sisyrinchium iridifolium*	blue pigroot	Y			1/1
plants	monocots	Johnsoniaceae	*Caesia parviflora var. parviflora*			C		1/1
plants	monocots	Juncaceae	*Juncus continuus*			C		1
plants	monocots	Laxmanniaceae	*Eustrephus latifolius*	wombat berry		C		4
plants	monocots	Laxmanniaceae	*Lomandra longifolia*			C		2
plants	monocots	Laxmanniaceae	*Laxmannia gracilis*	slender wire lily		C		4
plants	monocots	Laxmanniaceae	*Lomandra*			C		3
plants	monocots	Laxmanniaceae	*Lomandra confertifolia*			C		3
plants	monocots	Orchidaceae	*Geodorum densiflorum*	pink nodding orchid		C		1
plants	monocots	Poaceae	*Aristida personata*			C		1/1
plants	monocots	Poaceae	*Aristida queenslandica var. queenslandica*			C		1/1
plants	monocots	Poaceae	*Eriachne pallescens var. pallescens*			C		1/1
plants	monocots	Poaceae	*Hemarthria uncinata var. spathacea*			C		2/2
plants	monocots	Poaceae	*Ischaemum australe var. villosum*			C		1/1
plants	monocots	Poaceae	*Sorghum nitidum forma aristatum*			C		1/1
plants	monocots	Poaceae	*Cynodon dactylon var. dactylon*		Y			1
plants	monocots	Poaceae	*Dactyloctenium aegyptium*	coast button grass	Y			1/1
plants	monocots	Poaceae	*Themeda*					1
plants	monocots	Poaceae	*Aristida*			C		3
plants	monocots	Poaceae	*Eriachne*			C		2
plants	monocots	Poaceae	*Panicum effusum*			C		2/1
plants	monocots	Poaceae	*Themeda triandra*	kangaroo grass		C		4/1
plants	monocots	Poaceae	*Urochloa foliosa*			C		1/1
plants	monocots	Poaceae	*Entolasia stricta*	wiry panic		C		11

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	monocots	Poaceae	*Digitaria diminuta*			C		2/2
plants	monocots	Poaceae	*Entolasia whiteana*			C		1/1
plants	monocots	Poaceae	*Oplismenus aemulus*	creeping shade grass		C		3/1
plants	monocots	Poaceae	*Paspalum distichum*	water couch		C		1/1
plants	monocots	Poaceae	*Setaria incrassata*		Y			1/1
plants	monocots	Poaceae	*Chrysopogon filipes*			C		1
plants	monocots	Poaceae	*Imperata cylindrica*	blady grass		C		2
plants	monocots	Poaceae	*Paspalidium distans*	shotgrass		C		1/1
plants	monocots	Poaceae	*Cymbopogon refractus*	barbed-wire grass		C		1/1
plants	monocots	Poaceae	*Digitaria longiflora*			C		1/1
plants	monocots	Poaceae	*Themeda quadrivalvis*	grader grass	Y			1/1
plants	monocots	Poaceae	*Sporobolus virginicus*	sand couch		C		1
plants	monocots	Poaceae	*Arundinella nepalensis*	reedgrass		C		1/1
plants	monocots	Poaceae	*Chrysopogon sylvaticus*			C		1/1
plants	monocots	Poaceae	*Eragrostis leptostachya*			C		1/1
plants	monocots	Poaceae	*Eragrostis spartinoides*			C		1/1
plants	monocots	Restionaceae	*Baloskion pallens*			C		1
plants	monocots	Restionaceae	*Dapsilanthus elatior*			C		1
plants	monocots	Smilacaceae	*Smilax australis*	barbed-wire vine		C		2
plants	monocots	Typhaceae	*Typha*			C		1
plants	monocots	Xanthorrhoeaceae	*Xanthorrhoea johnsonii*			C		1/1
plants	monocots	Xanthorrhoeaceae	*Xanthorrhoea latifolia subsp. latifolia*			C		9
plants	mosses	Erpodiaceae	*Erpodium solmsiellaceum*			C		1/1
plants	mosses	Sematophyllaceae	*Sematophyllum subpinnatum*			C		1/1

CODES

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

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.* The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ( ).

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

Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).
This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Status: Rare and threatened species
Records: All
Date: All
Latitude: -25.0095
Longitude: 152.0212
Distance: 5
Email: peter.moonie@ghd.com
Date submitted: Friday 01 Jul 2016 09:40:41
Date extracted: Friday 01 Jul 2016 09:50:06

The number of records retrieved = 4

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	reptiles	Pygopodidae	*Delma torquata*	collared delma		V	V	1/1
plants	higher dicots	Myrtaceae	*Melaleuca cheelii*			NT		1
plants	higher dicots	Myrtaceae	*Eucalyptus hallii*	Goodwood gum		V	V	1
plants	higher dicots	Sapindaceae	*Cupaniopsis shirleyana*	wedge-leaf tuckeroo		V	V	2

CODES

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

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.* The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ( ).

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

Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).
This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Appendix B – Application to Clear Regulated Vegetation for Extractive Industry Lot 104 on RP21941

Application for extractive industry on Lot 104 on RP21941

Prepared for:

Honor

Date:

15 July 2015

Wide Bay Burnett Environmental Consulting Services

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WBB ENVIRONMENTAL
VEGETATION MANAGEMENT SPECIALISTS

File Number: 2015_0026

Project Title: Application to clear regulated vegetation under the Vegetation Management Act 1999 for extractive industry on Lot 104 on RP21941, McIllwraithe Road, Gin Gin.

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TABLE OF CONTENTS

1. Introduction

This application seeks to clear regulated vegetation under the *Vegetation Management Act 1999* for extractive industry – quarry to produce material suitable for road base, ballast and concrete aggregate on freehold Lot 104 on RP21941 (hereafter referred to as the subject lot). The areas proposed to clear for extraction and associated activities is shown in Figure 1.

PMAV 2015/002421 maps the subject lot as containing Category X and Category B Vegetation. The Category B vegetation consists of endangered regional ecosystem 12.3.3, of concern regional ecosystem 12.9-10.3 and least concern regional ecosystem 12.9-10.2 (Figure 2).

Projection: UTM (MGA Zone 56) Datum: GDA94

0 62.5 125 250
Meters

Scale: 1:8,000

Legend

- 104RP21941
- Proposed Application Area
- Cadastral_data

Figure 1
Proposed Application Area

Local Government:Bundaberg
Job No.:2015_0026
Date:20/06/2015
Drawn by:Jane Barratt
Source: Qld Govt 2014, 2010

N

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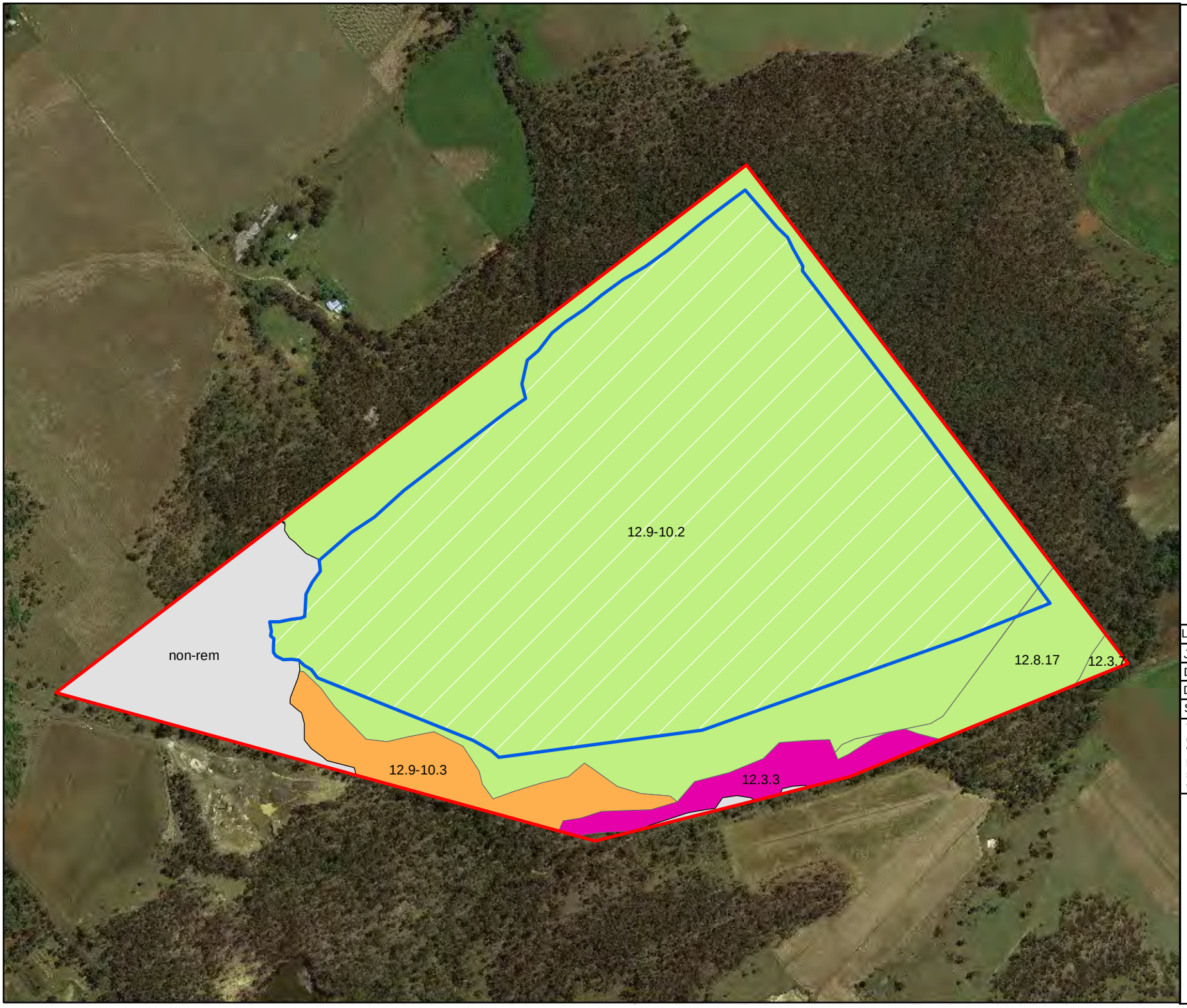
Vegetation Management Consulting Services and GIS Specialists



Projection: UTM (MGA Zone 56) Datum: GDA94

0 62.5 125 250
Meters

Scale: 1:8,000

Legend

- 104RP21941
- Proposed Application Area

PMAV 2015_002421

- Category X
- Category B Endangered Dominant
- Category B Of Concern Dominant
- Category B Least Concern
- Cadastral_data

Figure 2
PMAV 2015/002421

Local Government:Bundaberg
Job No.:2015_0026
Date:20/06/2015
Drawn by:Jane Barratt
Source: Qld Govt 2014, 2010

The data and information used to produce this drawing was current at the date of the drawing. WBB Environmental does not accept liability for any errors conatined with the data supplied on this map and any changes made after the date of the drawing.

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2. Response to SDAP Module 8 – Native Vegetation Clearing

8.1 Queensland vegetation management state code

Table 8.1.3: General

Performance outcomes	Acceptable outcomes	Response	Comment
Clearing to avoid and minimise impacts			
PO1 Clearing only occurs where the applicant has demonstrated that the development has first avoided, and then minimised the impacts of development.	No acceptable outcome is prescribed.	Meets PO1	Clearing will be undertaken for quarrying activities and associated processes only. A geological study has been undertaken which has identified the location and approximate extent of the resource which was used to determine the proposed application area (Appendix 1). . The proposed application area is shown in Figure 3. It is important to note that clearing will be staged as outlined in the Site Plan prepared by Insite SJC (Appendix 2). The staging will be based on tonnage output and clearing will only occur as needed to access the quarry material. Once the resource has been exhausted at a particular area concluding a stage, rehabilitation will occur which utilises species that naturally occur within the subject lot. A vegetative buffer will be retained around the property lot boundary. This will, provide a noise and aesthetic barrier for neighbouring properties.

Performance outcomes	Acceptable outcomes	Response	Comment
			The applicant recognises that exemptions apply for clearing necessary fire management lines which are often located on the property boundary. This essential management exemption allows for clearing of up to 10m either side of a fenceline. The applicant is willing to reduce this clearing width to 5m on their side which will facilitate maintaining the fences and include this as a condition. This will assist in ensuring clearing is minimising.
Clearing on land in particular circumstances			
PO2 Clearing in an area must not be inconsistent with or impact on any of the following unless a better environmental outcome can be achieved: (1) a declared area, or (2) an exchange area, or (3) unlawfully cleared area, or (4) a restoration notice, or	No acceptable outcome is prescribed.	Meets PO2	Clearing will not occur in any areas listed in Column 1.

Performance outcomes	Acceptable outcomes	Response	Comment
(5) an enforcement notice under the *Sustainable Planning Act 2009* issued for a vegetation clearing offence, or (6) a compliance notice containing conditions about the restoration of vegetation, or (7) a Land Act notice, or (8) a trespass notice if the trespass related act under the *Land Act 1994* for the notice is the clearing of vegetation on the relevant land, or an area on a PMAV shown to be category A where the chief executive of the VMA reasonably believes that a vegetation clearing offence is being, or has been, committed in relation to the area.			

Performance outcomes	Acceptable outcomes	Response	Comment
Clearing on land that is an environmental offset area			
PO3 Clearing on land that contains an existing environmental offset is consistent with the delivery plan or agreement for the environmental offset area.	AO3.1 Clearing is consistent with the offset delivery plan or agreement for the environmental offset area. OR	Meets PO3	Clearing will not occur within the areas listed in column 1 for PO3.
	AO3.2 An additional environmental offset is provided that is consistent with the relevant Queensland Environmental Offsets Policy.		

Table 8.1.5: Extractive industry

Performance outcomes	Acceptable outcomes	Response	Comment
Limits to clearing for an extractive industry			
Clearing is staged			
PO2 Clearing: (1) is staged in line with operational needs that restrict clearing to the current operational area (2) is limited to the area from which material will be extracted, and any reasonably associated infrastructure, within the term of the development approval (3) cannot occur until all required permits are obtained.	No acceptable outcome is prescribed.	Meets PO2	Clearing will be staged in line with operational needs. Staging will be based on tonnage output as outlined in the Site Plan prepared by Insite SJC (Appendix 2). Clearing will be limited to the area from which material will be extracted and any reasonable associated infrastructure within the term of the development approval and will only occur once all permits are obtained.

Performance outcomes	Acceptable outcomes	Response	Comment
Wetlands			
PO3 Maintain the current extent of vegetation associated with any natural wetland to protect: (1) water quality by filtering sediments, nutrients and other pollutants (2) aquatic habitat (3) terrestrial habitat.	AO3.1 Clearing does not occur in, or within 100 metres of, any natural wetland. OR	Meets PO3	No natural wetland is located within the subject lot or within 100m of the subject lot. Clearing will not occur in or within 100m of any natural wetland.
	AO3.2 Clearing only occurs within 100 metres of any natural wetland where: (1) the clearing does not occur within 50 metres of the of the natural wetland, or (2) the widths stipulated by Table 1 are not exceeded. OR		
	AO3.3 Where it can be demonstrated that clearing cannot be avoided, and the extent of clearing has been minimised, an environmental offset is provided for any significant residual impact from clearing of vegetation associated with a natural wetland. Editor's note: Applications for development should identify whether there is likely to be a significant residual impact and a need for an environmental offset having regard to the relevant Queensland Environmental Offsets Policy.		

Performance outcomes	Acceptable outcomes	Response	Comment
Watercourses			
PO4 Maintain the current extent of vegetation associated with any watercourse to protect: (1) bank stability by protecting against bank erosion (2) water quality by filtering sediments, nutrients and other pollutants (3) aquatic habitat (4) terrestrial habitat.	AO4.1 Clearing does not occur: (1) in any watercourse (2) within the relevant distance stipulated in Table 2 of the defining bank of any watercourse. OR	Meets PO4	Watercourses as defined under the VMA are not mapped within the subject lot. Clearing will not occur within any watercourse or within the relevant distance stipulated in Table 2 of the defining bank of any watercourse.
	AO4.2 Clearing only occurs within any watercourse or within the relevant distance stipulated by Table 2 of the defining bank of any watercourse where: (1) the clearing does not occur within 5 metres of the defining bank, or (2) the widths stipulated by Table 1 is not exceeded. OR		
	AO4.3 Where it can be demonstrated that clearing cannot be avoided, and the extent of clearing has been minimised, an environmental offset is provided for any significant residual impacts from clearing of vegetation associated with any watercourse.		

Performance outcomes	Acceptable outcomes	Response	Comment
Connectivity			
PO5 In consideration of vegetation on the subject lot(s) and in the landscape adjacent to the subject lot(s), vegetation is retained that: (1) is of sufficient size and configured in a way that maintains ecosystem functioning (2) remains in the landscape despite threatening processes.	AO5.1 Clearing occurs in accordance with Table 3.	Meets PO5	The total area of regulated vegetation currently mapped within the subject lot is 90.17ha. The total application area is approximately 63ha in size and comprises of least concern regional ecosystem 12.9-10.2 (63.54ha) and 0.09ha of least concern regional ecosystem 12.8.17. The total application area is identified in Figure 3. Although the total application area is 63.63 ha, clearing will occur in stages based on tonnage output and rehabilitation will occur once all extractable material has been exhausted within a particular stage as outlined in the Site Plan prepared by Insite SJC (Appendix 2). This will assist in connectivity being retained to a greater extent than if the entire application area was cleared in one hit. Notwithstanding this, the connectivity PO will be addressed based on the entire application area being cleared. The location and extent of the proposed application area ensures that the remnant vegetation retained within the subject lot includes all regional ecosystems currently present on the subject lot thereby retaining diversity of regional ecosystems within the subject lot. The configuration of vegetation retained on the subject lot enables corridors of movement for

Performance outcomes	Acceptable outcomes	Response	Comment
			fauna and plant genetics around the entire site and remnant vegetation within adjacent lots (Figure 4). Vegetation associated with of concern regional ecosystem 12.9-10.3 and 12.3.3 will not be cleared and this vegetation is buffered by at least 10m to ensure the 'of concern' and 'endangered' regional ecosystems are not cleared. A Wildlife online search was executed for 1km radius around the central point of the application area. This search yielded 11 plant species (Appendix 3). None of these species were identified by WBB Environmental whilst out on site. This response demonstrates that connectivity will be retained to ensure diversity of species is retained and maintained, the movement of fauna and plant genetics can continue to occur and the vegetation that is retained is of sufficient size and configuration to remain in the landscape despite threatening processes.

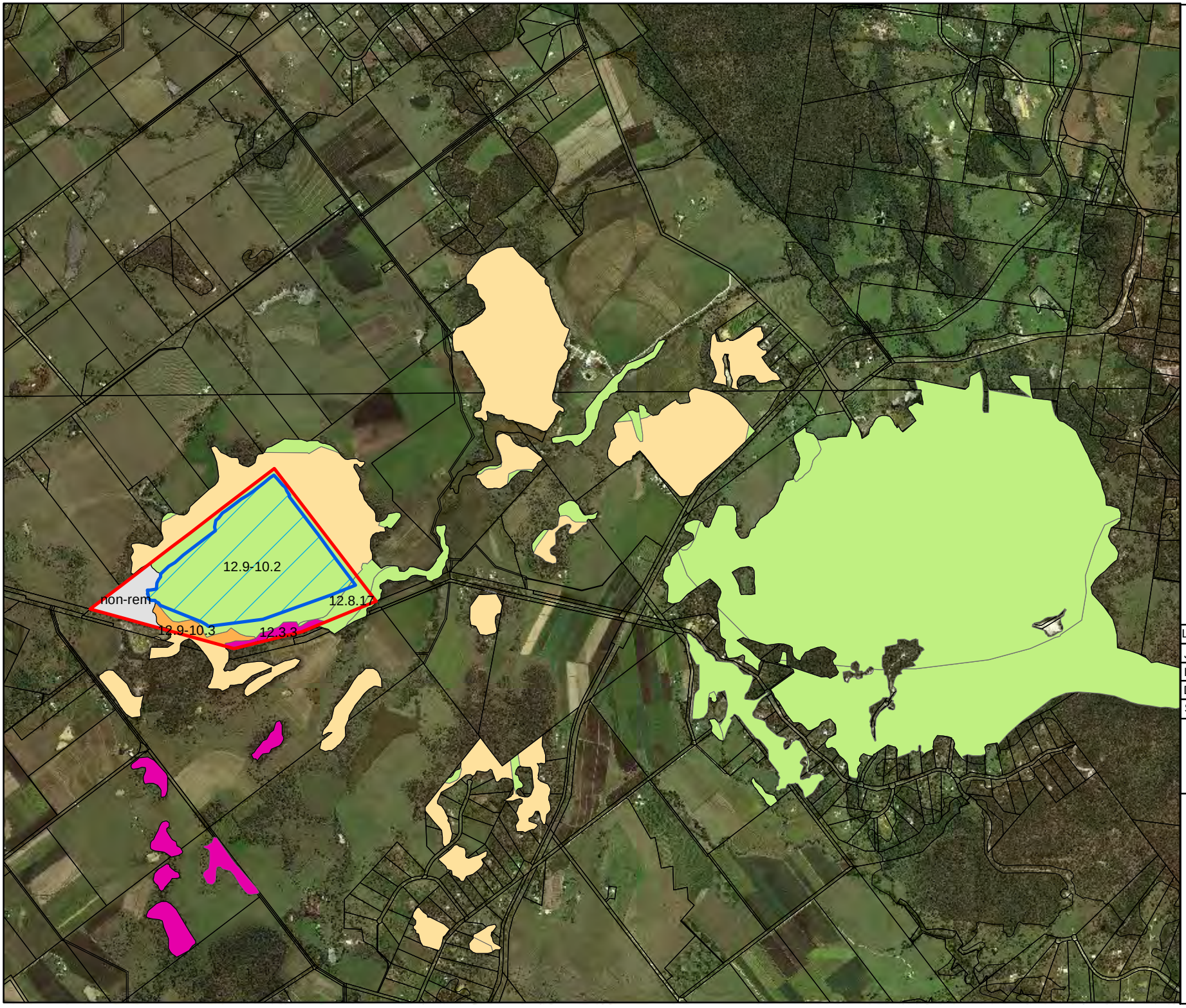
Performance outcomes	Acceptable outcomes	Response	Comment
Salinity			
PO6 Clearing does not contribute to land degradation through: (1) waterlogging, or (2) the salinisation of groundwater, surface water or soil.	AO6.1 Clearing does not occur in or within 200 metres of a discharge area or recharge area. OR	Meets PO6	Pre-lodgement advice from DNRM advised that Departmental discharge and recharge mapping indicates that an area on the southern boundary of the site, associated with the mapped stream order 1 watercourse, may potentially be a discharge area. Clearing will occur within 200 m of the mapped stream order 1 watercourse (Figure 4). However a buffer of at least 100m at the narrowest point will be retained. The alluvial regional ecosystems within the subject lot are not going to be cleared as a result of this application and the vegetation on the lower slopes within the subject lot immediately adjacent to the watercourse will also be retained. Clearing will occur as a staged process, based on the volume of material extracted. This will result in significant tree cover being retained across the subject lot. Furthermore rehabilitation will occur as each stage of extraction is completed which will aid in ensuring land degradation through waterlogging and salinisation of groundwater, surface water or soil does not occur. The application meets PO6.

Performance outcomes	Acceptable outcomes	Response	Comment
	AO6.2 Clearing is less than: (1) 2 hectares, or (2) 10 metres wide.		
Conserving endangered and of concern regional ecosystems			
PO7 Maintain the current extent of endangered regional ecosystems and of concern regional ecosystems.	AO7.1 Clearing does not occur in (1) an endangered regional ecosystem, or (2) an of concern regional ecosystem. OR	Meets A07.1	No of concern or endangered regional ecosystems will be cleared as a result of this application.
	AO7.2 Clearing in an endangered regional ecosystem or an of concern regional ecosystem does not exceed the width or area prescribed in Table 1. OR		
	AO7.3 Where it can be demonstrated that clearing cannot be avoided, and the extent of clearing has been minimised, an environmental offset is provided for any significant residual impact from the clearing of endangered regional ecosystems and of concern regional		

Performance outcomes	Acceptable outcomes	Response	Comment
	ecosystems. Editor's note: Applications for development should identify whether there is likely to be a significant residual impact and a need for an environmental offset having regard to the relevant Queensland Environmental Offsets Policy.		
Essential habitat			
PO8 Maintain the current extent of essential habitat.	AO8.1 Clearing does not occur in an area of essential habitat. OR	Meets PO8	No essential habitat is mapped within the subject lot.
	AO8.2 Clearing in essential habitat does not exceed the width or area prescribed in Table 1. OR		
	AO8.3 Clearing only occurs where an area of essential habitat is isolated and small in size and at risk from threatening processes, for the prescribed species. OR		
	AO8.4 Where it can be demonstrated that		

Performance outcomes	Acceptable outcomes	Response	Comment
	clearing cannot be avoided, and the extent of clearing has been minimised, an environmental offset is provided for any significant residual impact from the clearing of essential habitat. Editor's note: Applications for development should identify whether there is likely to be a significant residual impact and a need for an environmental offset having regard to the relevant Queensland Environmental Offsets Policy.		
Acid sulfate soils			
PO9 Clearing activities do not result in the disturbance of acid sulfate soils or changes to the hydrology of the location that will either: (1) aerate horizons containing iron sulfides, or (2) mobilise acid or metals.	AO9.1 Clearing does not occur in land zone 1, land zone 2 or land zone 3. OR	Meets PO9	Clearing will not occur in land zone 1, 2 or 3.
	AO9.2 Clearing in land zone 1, land zone 2 or land zone 3 in areas below the 5 metre Australian Height Datum only occurs where: (1) it does not involve mechanical clearing (2) the acid sulfate soils are managed consistent with the *State Planning Policy*, and with the *Soil Management Guidelines*		

Performance outcomes	Acceptable outcomes	Response	Comment
	in the Queensland Acid Sulfate Soil Technical Manual, Department of Science, Information Technology, Innovation and the Arts, 2014. OR		
	AO9.3 The application is a development application where a local government is the assessment manager.		



Projection: UTM (MGA Zone 56) Datum: GDA94

0 237.5 475 950
Meters

Scale: 1:30,000

Legend

104RP21941

Proposed Application Area

PMAV 2015_002421

Category X

Category B Endangered Dominant

Category B Of Concern Dominant

Category B Least Concern

Regional Ecosystem Mapping V8

Non-remnant

Remnant Endangered dominant

Remnant Of concern subdominant

Remnant Least Concern

DCDB

Figure 4
Retained Connectivity

Local Government:Bundaberg
Job No.:2015_0026
Date:20/06/2015
Drawn by:Jane Barratt
Source: Qld Govt 2014, 2010

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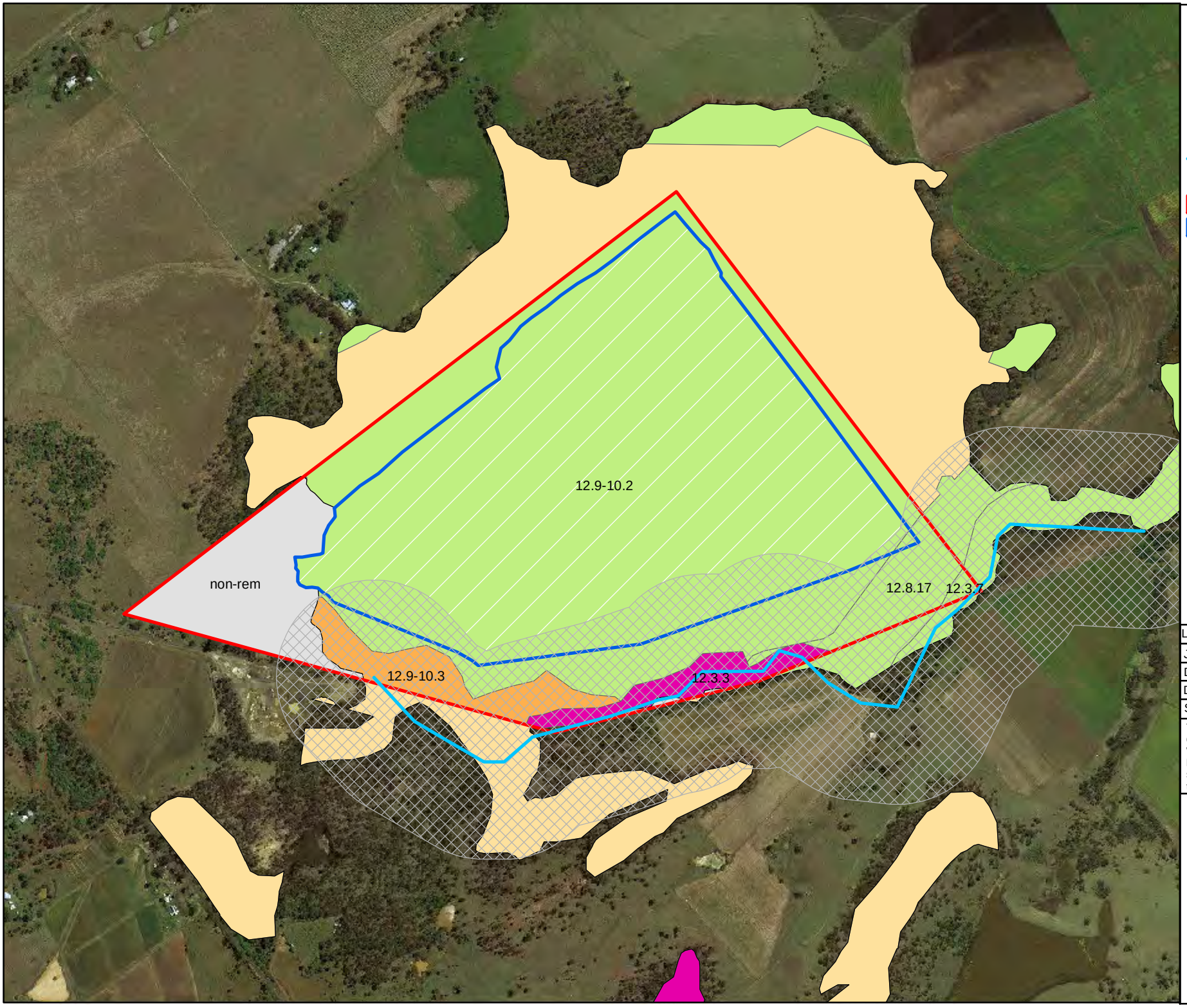

Projection: UTM (MGA Zone 56) Datum: GDA94

0 75 150 300
Meters

Scale: 1:10,000

Legend

- VMA_Watercourses
- 200m_Buffer
- 104RP21941
- Proposed Application Area

PMAV 2015_002421

- Category X
- Category B Endangered Dominant
- Category B Of Concern Dominant
- Category B Least Concern

Regional Ecosystem Mapping V8

- Non-remnant
- Endangered Dominant
- Endangered Subdominant
- Least Concern
- Of Concern Subdominant
- Cadastral_data

Figure 5
Location of Potential Discharge Area (Watercourse) and 200m Buffer

Local Government:Bundaberg
Job No.:2015_0026
Date:20/06/2015
Drawn by:Jane Barratt
Source: Qld Govt 2014, 2010

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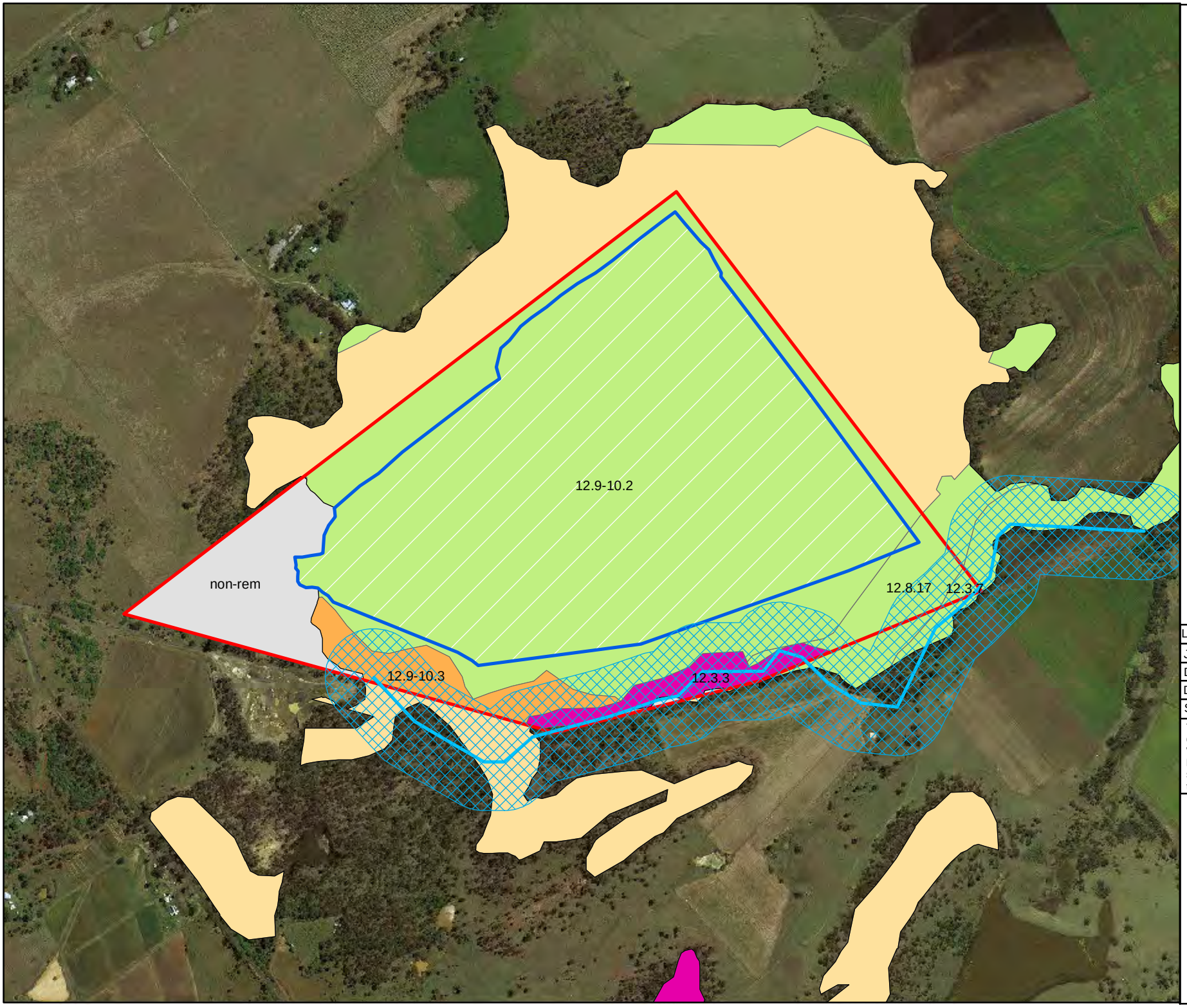

Projection: UTM (MGA Zone 56) Datum: GDA94

0 75 150 300
Meters

Scale: 1:10,000

Legend

- 100m_Buffer
- VMA_Watercourses
- 104RP21941
- Proposed Application Area

PMAV 2015_002421

- Category X
- Category B Endangered Dominant
- Category B Of Concern Dominant
- Category B Least Concern

Regional Ecosystem Mapping V8

- Non-remnant
- Endangered Dominant
- Endangered Subdominant
- Least Concern
- Of Concern Subdominant
- Cadastral_data

Figure 6
Location of Potential Discharge Area (Watercourse) and 100m Buffer

Local Government:Bundaberg
Job No.:2015_0026
Date:20/06/2015
Drawn by:Jane Barratt
Source: Qld Govt 2014, 2010

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Appendix 1 – Summary of Geological Report of the Site

SUMMARY REPORT ON GEOLOGICAL INVESTIGATIONS

W HONOR, McILWRAITH via GINGIN

INTRODUCTION

This is the summary of a report covering field investigations on Lot 104 RP21941, McIlwraith Road, McIlwraith via GinGin, carried out in May 2015.

The investigation was commissioned to identify if there was sufficient product on the block to commence a quarry to produce material suitable for road base, ballast and concrete aggregate.

TOPOGRAPHY

The property is dominated by a high ridge running north-east>south-west through the north-western section of the block and parallel to the north-western property boundary. Steep slopes and gullies run off this ridge. Towards the south-east and south-west sections of the block, the topography flattens to moderate slopes, with a very flat section adjacent to a creek near the south-east boundary.

GEOLOGY

Three rock types have been identified:
Meta-Sandstone: This is a sandstone that has been subjected to low-grade metamorphic processes. It is the dominant rock type across the block. Initial laboratory testing indicates it would be a suitable product for road base, ballast, and concrete aggregate.

Single outcrops were noted of

(a) Hornfels, a moderate-grade metamorphic rock that has undergone low-moderate thermal alteration. It has been assessed as suitable for road base, ballast, and concrete aggregate; and

(b) Conglomeratic arkosic sandstone. This is a sedimentary rock that contains acid volcanic/tuffaceous inclusions. It appears to have been subjected to only minor metamorphic alteration.

STRUCTURE

Direct evidence of structure/faulting was not located. However, evidence of folding was noted in grey and brown fine-grained meta-sandstone in a gully on the lower slopes towards the south-east property boundary.

Indications of probable faulting were noted in a gully close to the flank of the high ridge where different rock types were noted in close outcrop.

JOINTING

Across the area rock outcrop shows well developed jointing patterns with similar trends, indicating widespread stresses have applied regionally across the area; this pressure may have contributed to the metamorphic processes.

An anomalous set of joints was noted at one location only. This indicates localised stress from a different direction, probably a nearby fault.

INTERPRETATION - Structure

On the satellite image of the property two sets of linear features can be seen:
Should the lineaments indeed be faults, there is the potential for higher grade metamorphic alteration of nearby rocks and thus, a different rock product may be available for quarrying.

CALCULATIONS

Approximate calculations have been carried out on the quantity of rock that would be available for quarrying, based on extraction centred initially on the high ridge and later on the lower ridge in the west-south-west, all down to an elevation of 80m AHD.

The quantity of product available for quarrying would be:

a) Fine-to-medium-grained meta-sandstone only: 8,469,700 m^3;
b) If the very fine grained meta-sandstone near the south-west end of the high ridge is included, the quantity will be increased to 8,515,800 m^3;
c) If the brown conglomeratic arkosic meta-sandstone is assessed as suitable product, the total quantity would be increased further to 8,562,000 m^3.

The calculations are based on the assumptions that the rock type and quality, as observed in surface outcrop, is consistent down to a depth of 80m AHD, and 80% recovery.

Similar meta-sandstone rock was located in gullies on the lower slopes towards the south-east boundary of the property at elevations down to 65m AHD. Depending on the quality of the rock in this area, there is potential to increase the total available resource further.

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Appendix 2- Site Plan Prepared by Insite SJC

Appendix 3 - Wildlife Online Search

Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Status: All
Records: All
Date: All
Latitude: -25.0097
Longitude: 152.023
Distance: 1
Email: Jane@wbbe.com.au
Date submitted: Saturday 20 Jun 2015 10:37:41
Date extracted: Saturday 20 Jun 2015 10:40:15

The number of records retrieved = 11

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	ferns	Lindsaeaceae	*Lindsaea ensifolia*			C		1
plants	ferns	Schizaeaceae	*Lygodium microphyllum*	snake fern		C		1
plants	higher dicots	Droseraceae	*Drosera spatulata*			C		1
plants	higher dicots	Myrtaceae	*Eucalyptus hallii*	Goodwood gum		V	V	1
plants	higher dicots	Myrtaceae	*Melaleuca cheelii*			NT		1
plants	higher dicots	Sapindaceae	*Dodonaea triquetra*	large-leaved hop bush		C		1
plants	monocots	Cyperaceae	*Schoenus brevifolius*			C		1
plants	monocots	Cyperaceae	*Gahnia sieberiana*	sword grass		C		1
plants	monocots	Cyperaceae	*Lepidosperma longitudinale*	pithy swordsedge		C		1
plants	monocots	Poaceae	*Imperata cylindrica*	blady grass		C		1
plants	monocots	Restionaceae	*Baloskion pallens*			C		1

CODES

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

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.* The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ( ).

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

Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).
This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

GHD

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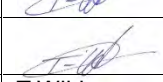
Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	P Moonie	D Willis		T Wilde		26/7/2016
1	M. Ramdhayan	D Willis		T Wilde		16/08/2016
2A	S Hodgkison	P Moonie	P Moonie	T Wilde	T Wilde	22/09/2016

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