PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL
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Date: 17 May 2022
Queensland Government

Fauna Management Plan

Undullah Property
Tranche 1A

Prepared for Pioneer Fortune Pty Ltd C/ - Haricot Development Management
5 May 2022

Job No. 8045

saunders havill group

Document Control

Document: Fauna Management Plan for Undullah Property – Tranche 1A (Issue B, dated 5 May 2022), prepared by Saunders Havill Group for Pioneer Fortune Pty Ltd C/ - Haricot Development Management.

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Acronyms

CEMP	Construction Environmental Management Plan
DAF	Department of Agriculture and Fisheries (Qld)
DES	Department of Environment and Science (Qld)
EDQ	Economic Development Queensland (Qld)
EHP	Department of Environment and Heritage Protection (Qld) (former, now DES)
EPBC	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
EVNT	Endangered, Vulnerable and Near Threatened (as listed in the NCPR & NCAR)
FTMP	Fauna Translocation Management Plan
NCA	*Nature Conservation Act 1992* (Qld)
NCAR	Nature Conservation (Animals) Regulation 2020 (Qld)
NCPR	Nature Conservation (Plants) Regulation 2020 (Qld)
NESS	Natural Environment Overarching Site Strategy
PDA	Priority Development Area
PMST	Protected Matters Search Tool
PTRP	Pre-clearing Trapping and Release Plan
SHG	Saunders Havill Group
WHIMP	Wildlife and Habitat Impact Mitigation Plan
WPMP	Wildlife Protection and Management Plan
WWBW	Waterway Barrier Works

Reference Documents

ADR	*Acceptable Development Requirements for operational work that is constructing of raising waterway barrier works,* prepared by Queensland Government (dated 3 July 2017)
FSRDM	*Fauna Sensitive Road Design Manual: Volume 2- Preferred Practices*, prepared by the Department of Transport and Main Roads (dated June 2010).
The Code	*Code of Practice for Welfare of Wild Animals Affected by Land Clearing and Other Habitat Impacts and Wildlife Spotter /Catchers (Draft)*, prepared by Wildlife Warriors and Voiceless.
VMP	*Vegetation Management Plan (8045 E 01-18 Tranche 1A VMP B),* prepared by SHG (dated Dec 2020).

1. Introduction

Saunders Havill Group (SHG) was engaged by Pioneer Fortune Pty Ltd C/ - Haricot Development Management to prepare a Fauna Management Plan (FMP) for the proposed Tranche 1A area of the Undullah Property (hereafter referred to as 'the site'). The site is located within the Greater Flagstone Priority Development Area (PDA). This FMP has been prepared to manage impacts and protect native animals during clearing and construction.

Condition 25 of the PDA Development Approval dated 29th October 2012 (DEV2012/248) required a Natural Environment Overarching Site Strategy to be prepared for the Undullah Property Development on Wyatt Road to provide for the strategic management of environmental features. The Wyatt Road Undullah *Natural Environment Overarching Site Strategy (NESS)*, version 3.0, prepared by SHG (dated June 9 2017), and endorsed by Economic Development Queensland (EDQ) (dated 20 June 2017) (DEV2012/248). The NESS dictates subsequent environmental plans and strategies to be prepared as part of operational works applications. The NESS requires an FMP to be prepared for each stage of development involving vegetation clearing.

This FMP has been prepared for clearing for the Tranche 1A area of the Undullah Property. Refer to Figure 1 for Site Context and Figure 2 for Site Aerial.

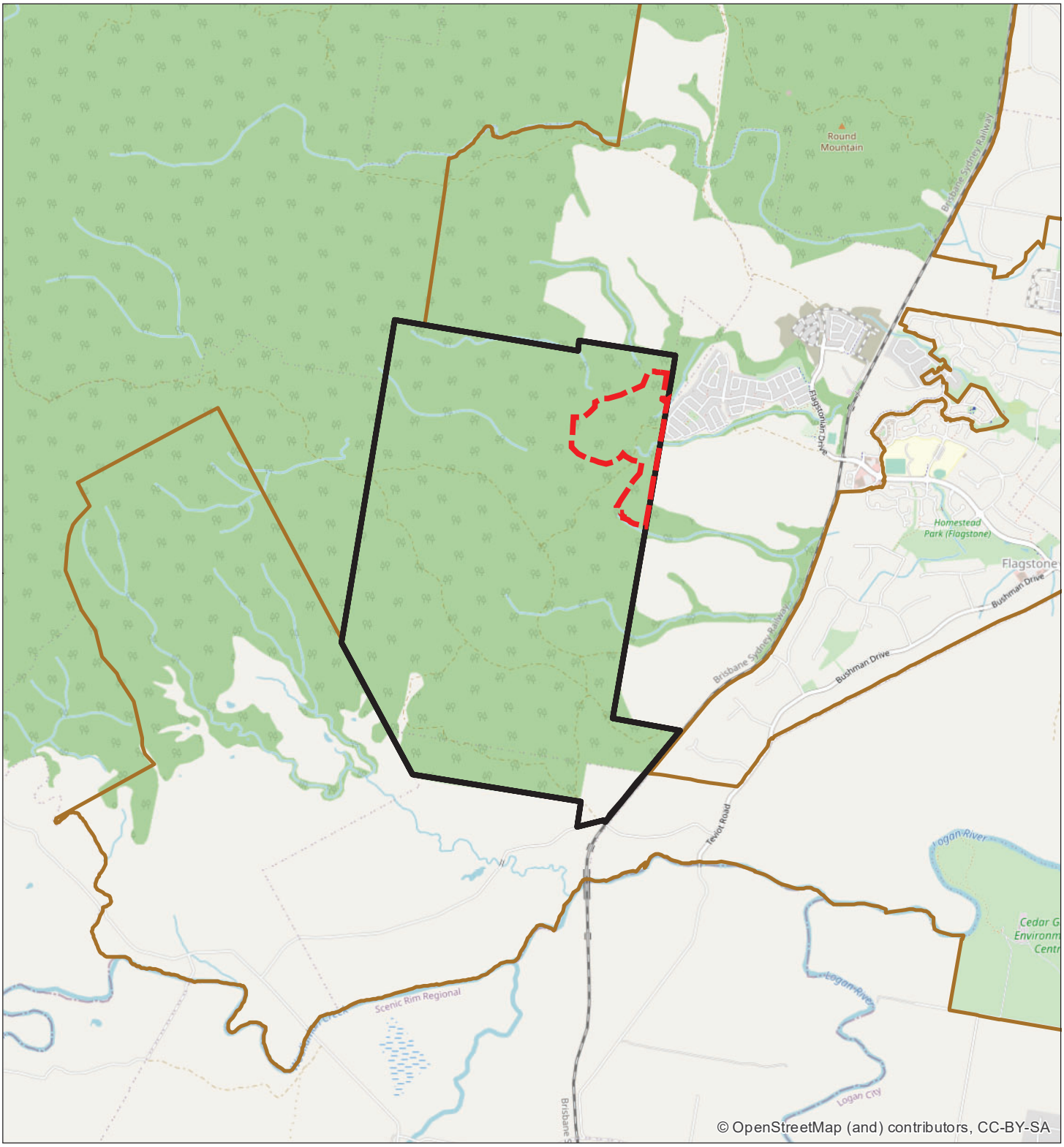
This FMP includes step by step procedures for the management of fauna prior to, during and post-vegetation clearing and construction activities to reduce potential impacts. Fauna management specifications and principles incorporated into this FMP apply generally to all native animals and focus on incorporating measures to minimise disturbance and avoid conflicts. Compliance with this FMP is compulsory and incorporates the use of expert consultants, including a registered and Department of Environment and Science (DES) approved Fauna Spotter Catcher. **Section 3** outlines the methodology and content for this FMP. In accordance with the stretch target espoused within the NESS, this FMP adopts aspects of the *Code of Practice for Welfare of Wild Animals Affected by Land Clearing and Other Habitat Impacts and Wildlife Spotter /Catchers (Draft)* (the Code).

1.1. Property Summary

Key site details are provided in Table 1 below.

Table 1: Property Summary

Address	Wyatt Road, Undullah, Greater Flagstone
RPD	Lot 3 on RP45236, Lot 28 on CP S311174 and Lot 3 on RP 49296
Local Government Area	Logan City Council
Administering Authority	Economic Development Queensland
Priority Development Area	Greater Flagstone PDA
Planning Scheme	Greater Flagstone Urban Development Area Development Scheme
Area Classification / Zone	Urban Living
Existing Land Use	Vacant



Legend

- Site Boundary
- Tranche 1A clearing extent
- Greater Flagstone PDA

Figure 1

Site Context

File ref. 8045 E Figure 1 Site Context - tranche 1a B
Date *4/05/2022*
Project *Rice Road, Undullah*

0 0.5 1 2 *km*

N

Scale (A4): 1:50,000 [GDA 1994 MGA Z56]

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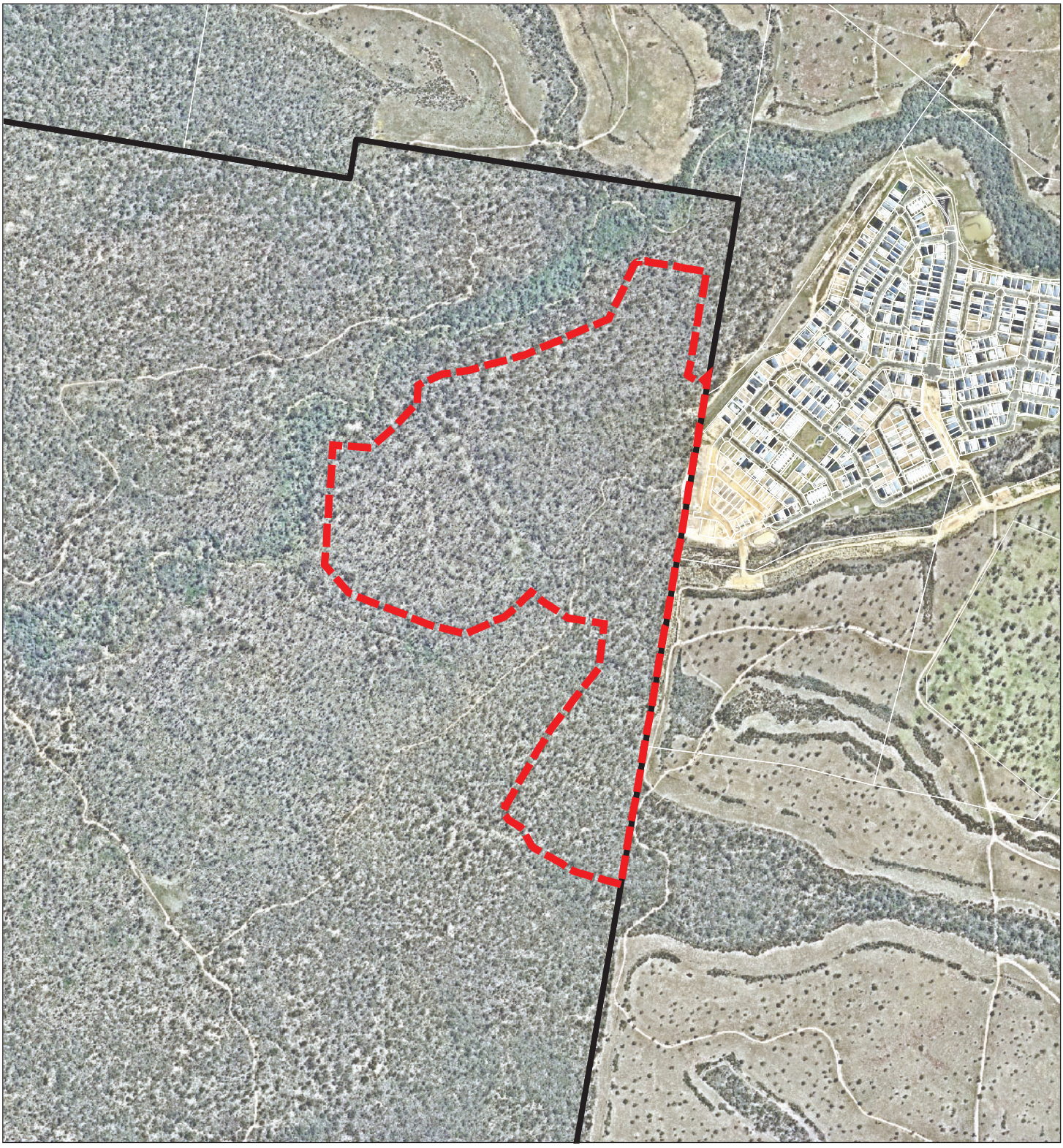

Legend

- Site Boundary
- Tranche 1A clearing extent
- Qld DCDB

Figure 2

Site Aerial

File ref. 8045 E Figure 2 Site Aerial - tranche 1a B
Date *4/05/2022*
Project *Rice Road, Undullah*

0 50 100 200 300 400 500 *m*

N

Scale (A4): 1:12,500 [GDA 1994 MGA Z56]

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Layer Source: © State of Queensland (Department of Natural Resources, Mines and Energy) 2020, Aerial (Nearmap 2020)

2. Legislative Context

2.1. Environment Protection and Biodiversity Conservation Act 1999

The Australian Government's key piece of environmental legislation is the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The EPBC Act aims to protect and manage matters of environmental significance which include nationally and internationally important flora, fauna, ecological communities and heritage places.

A Protected Matters Search for the allotment was undertaken through the EPBC Act's online Protected Matters Search Tool (PMST). The search provides a list of wetlands of international significance, threatened ecological communities and threatened species which have the potential to be temporarily or permanently located within a 5 kilometre (km) radius of the development site. **Table 2** lists a summary of these results relevant to site fauna. The complete results of this search are included in **Appendix A**. The Undullah Property retains a full approval achieved under the EPBC Act (2015/7530). Mandatory aspects of this approval are included in this FMP.

Table 2: EPBC Act Protected Matters Search Tool Results (Fauna)

Wetlands of International Importance (RAMSAR)		
Moreton Bay		
Threatened Ecological Communities		
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community - Endangered		
Lowland Rainforest of Subtropical Australia - Critically Endangered		
Poplar Box Grassy Woodland on Alluvial Plains - Endangered		
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland – Critically Endangered		
Threatened Species		
Scientific Name	**Common Name**	**Status**
Birds		
Anthochaera phrygia	Regent Honeyeater	Critically Endangered
Botaurus poiciloptilus	Australasian Bittern	Endangered
Calidris ferruginea	Curlew Sandpiper	Critically Endangered
Erythrotriorchis radiatus	Red Goshawk	Vulnerable
Falco hypoleucos	Grey Falcon	Vulnerable
Geophaps scripta scripta	Squatter Pigeon (southern)	Vulnerable
Grantiella picta	Painted Honeyeater	Vulnerable
Hirundapus caudacutus	White-throated Needletail	Vulnerable
Lathamus discolor	Swift Parrot	Critically Endangered
Numenius madagascariensis	Eastern Curlew	Critically Endangered
Rostratula australis	Australian Painted Snipe	Endangered
Turnix melanogaster	Black-breasted Button-quail	Vulnerable

Scientific Name	Common Name	Status
Fish		
Maccullochella mariensis	Mary River Cod	Endangered
Insects		
Argynnis hyperbius inconstans	Australian Fritillary	Critically Endangered
Mammals		
Chalinolobus dwyeri	Large-eared Pied Bat, Large Pied Bat	Vulnerable
Dasyurus maculatus maculatus (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	Endangered
Petauroides volans	Greater Glider	Vulnerable
Petrogale penicillata	Brush-tailed Rock-wallaby	Vulnerable
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)	Vulnerable
Potorous tridactylus tridactylus	Long-nosed Potoroo (SE mainland)	Vulnerable
Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable
Reptiles		
Delma torquata	Collared Delma	Vulnerable
Furina dunmalli	Dunmall's Snake	Vulnerable

2.2. Nature Conservation Act 1992

The *Nature Conservation Act 1992* (NCA) classifies and protects significant areas (protected areas) and protects threatened plant and animal species. The Nature Conservation (Plants) Regulation 2020 (NCPR) and Nature Conservation (Animals) Regulation 2020 (NCAR) lists plant and animal species respectively, presumed extinct, critically endangered, endangered, vulnerable, near threatened, least concern, international or prohibited. The schedules of this regulation were considered in this FMP using DES's Wildlife Online database search for a 5 km radius of the site. Fauna species listed under the NCAR with the potential to occur around the subject site are shown in **Table 3**. The complete results of this search are included **Appendix B**.

Table 3: NCA Wildlife Online Search Results (fauna)

Scientific Name	Common Name	Status
Birds		
Calyptorhynchus lathami	Glossy Black-cockatoo	Vulnerable
Ninox strenua	Powerful Owl	Vulnerable
Hirundapus caudacutus	white-throated needletail	Vulnerable
Mammals		
Phascolarctos cinereus (Southeast Queensland bioregion)	Koala (Southeast Queensland bioregion)	Vulnerable

3. Methodology

This FMP forms the stage specific strategy for fauna management inclusive of the Tranche 1A area. It has been developed in response to Condition 25 of the PDA Development Approval (DEV2012/248) and specifications within the NESS. **Figure 3** illustrates the context in which this FMP sits as the overarching plan for native fauna management on the site. Separate FMPs will be prepared for each stage of the development.

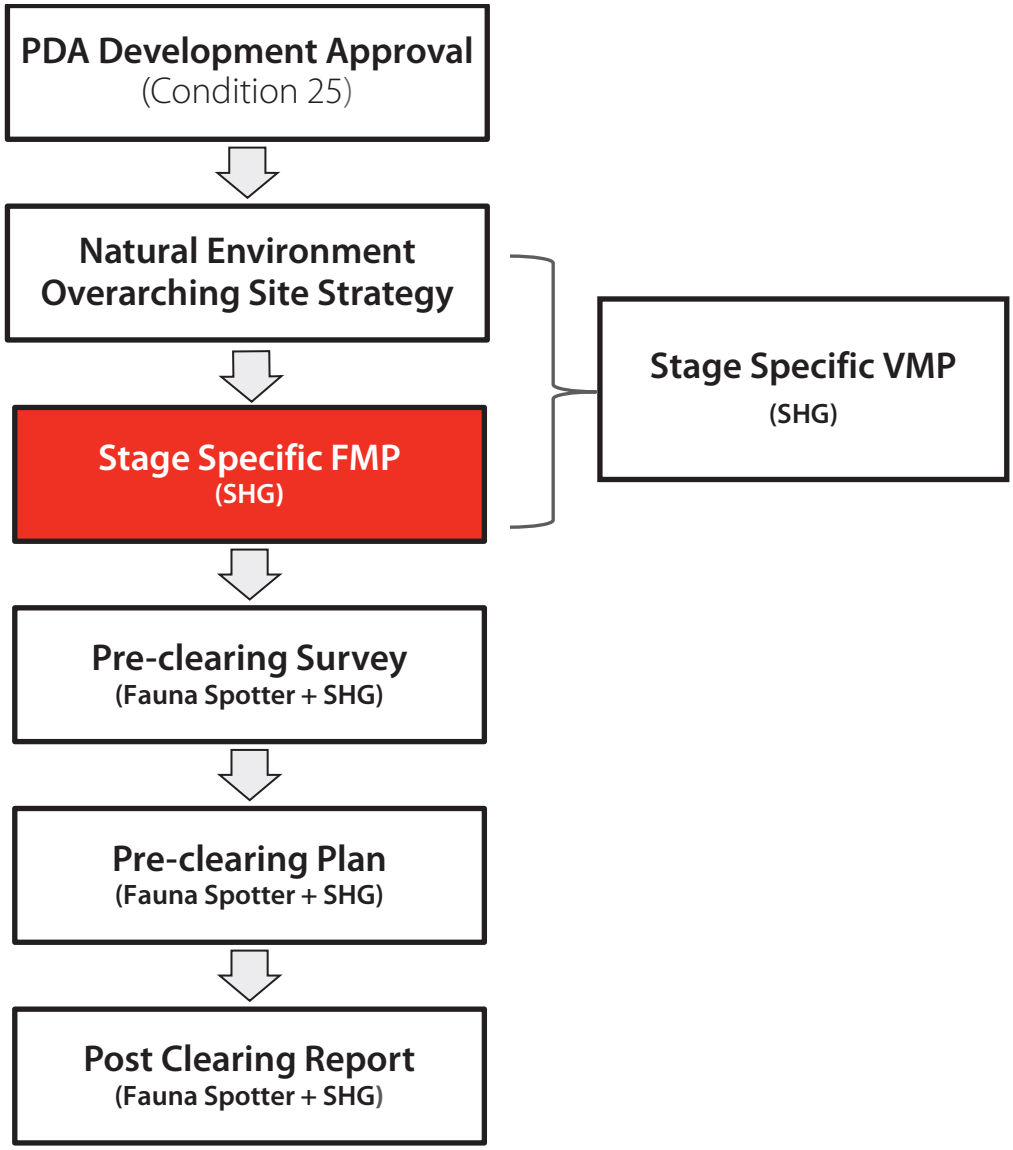


Figure 3: **FMP Context and Framework**

3.1. FMP Framework

This FMP provides a framework for fauna management within the site. This FMP should form part of the Construction Environmental Management Plan (CEMP) for this stage of works. To assist in achieving a leading practice model for fauna management prior to, during and post the completion of the construction works for the site, all land clearing will be managed generally in accordance with the *Code of Practice for Welfare of Animals effected by Land Clearing and Other Habitat Impacts and Wildlife Spotter/Catchers (Draft)*, as prepared by the Wildlife Warriors and Voiceless. Under the Code, the procedural guide detailed in Sections 3.1.1 – 3.1.3 will been used to inform the framework for clearing works. Consideration should be given to the survey for and management of permit requirements for tampering with animal breeding places under the Nature Conservation Act.

This FMP should be read in conjunction with approved Tranche 1A environmental management plans (to be lodged separately), including the Tranche 1A specific Vegetation Management Plan (VMP).

Fauna management and mitigation strategies are discussed in further detail in **Section 5** – Fauna Management Plan Specifications.

3.1.1 Pre-Clearing Survey

Action 1 – Developer to Engage a Fauna Spotter Catcher
Action 1 requires that the developer engage a Fauna Spotter Catcher with full registrations and licences issued by the former Department of Environment and Heritage Protection (EHP), now Department of Environment and Science (DES).

Action 2 – Developer to Undertake Pre-Clearing Survey
A pre-clearing survey will be undertaken by a DES approved Fauna Spotter Catcher prior to the commencement of clearing activities at each stage. This survey must include a fauna assessment of the site, particularly for Koalas and animals using hollows, including bats. This survey will inform the Wildlife Protection Management Plan (WPMP) and Wildlife and Habitat Impact Mitigation Plan (WHIMP), as detailed in Action 3.

The final pre-clearing survey is to occur no more than two (2) weeks prior to clearing commences. Results from the pre-clearance surveys will be made available to DES and will form part of the Post-clearing report.

3.1.2 Pre-clearing Trapping and Release Plan

Action 3 – Fauna Spotter to Prepare a Pre-Clearing Trapping and Release Plan
Informed by the pre-clearing surveys, a WPMP and WHIMP will be prepared by a DES permitted Fauna Spotter Catcher. These reports will provide extensive detail of the fauna likely to be impacted by the clearing works. The WPMP and WHIMP are prepared using both desktop analysis and field work (i.e. pre-clearing surveys).

The WHIMP will include a Pre-clearing Trapping and Release Plan (PTRP) outlining the methodology for the identification, trapping and relocation of native fauna to be implemented if necessary. Any trappings and releases are to be conducted immediately following identification of fauna requiring relocation. A PTRP should include the following information:

- a description of the project with reference to impacts on wildlife and/or wildlife habitat;
- a pre-development plan of the site showing habitat areas including nests and hollows, features, corridors, riparian habitats and adjacent areas;
- results of any fauna surveys;
- contact details of the nearest veterinarian and agencies to be notified of injured wildlife;
- a wildlife and habitat impact assessment based on the proposed development works; and
- confirmation of the release area.

Action 4 – Fauna Spotter Role at Pre-Start Meeting

Prior to the commencement of any construction works, a pre-start meeting is to be held between the Proponent, Site Supervisor, Environmental Coordinator, Fauna Spotter Catcher and other key project personnel. At the pre-start meeting, the Fauna Spotter Catcher is to outline the clearing process and the requirements of the PTRP.

Action 5 – During Construction

The Fauna Spotter Catcher is to be on-site during all phases of construction which involve potential impacts on wildlife or habitat. This will enable to the Fauna Spotter Catcher to make any necessary adjustments to the approved VMP and the WPMP to cater for any specific issues encountered during the clearing works. Should a Koala be encountered during vegetation clearing, clearing will cease immediately within a prescribed perimeter until the animal moves away of its own accord. All other animals that do not move away of their own accord may be relocated by a Fauna Spotter Catcher under the VMP or any operational Fauna Management Program for tampering with animal breeding places.

3.1.3 Post-clearing Wildlife Management Report

Action 6 – Post Works Reporting

During the course of all site works, including the pre-clearance surveys, the Fauna Spotter Catcher is to keep an accurate record of all animals encountered and/or captured, and all incidents and disposals for each stage of the project. The records should form part of the Post-Clearing Wildlife Management Report to be issued under licence requirements to DES. The Post-Clearing Wildlife Management Report should consist of the following three sections:

1. PTRP – Aspects of the planning, design, construction and ongoing operation of the project in which risks to wildlife have been identified. This plan should also include recommendations and outline the type, frequency and timeframes for monitoring, as well as updates to describe measures taken to address an incident.

2. Wildlife Capture and Disposal Plan – Should contain details of any animal/s that were caught and/or sighted and released, and the placement of any release/s as well as details of any animals that were destroyed due to injury, given to wildlife rescue groups etc. The following details for each captured animal should be included in the Wildlife Capture and Disposal Plan:

    a. Species.
    b. Identification name or number.
    c. Sex (M, F or unknown).
    d. Approximate Age or Age Class (neonate, juvenile, sub-adult, adult).
    e. Time and date of capture.
    f. Method of capture.
    g. Exact point of capture (GPS coordinates).
    h. State of health.
    i. Incidents associated with capture likely to affect health.
    j. Veterinary intervention or treatments.
    k. Time held in captivity.
    l. Disposal method (euthanasia, translocation, re-release).
    m. Date and time of disposal.
    n. Details of disposal (GPS points of release).
    o. For released animals, location relative to point of capture.

3. Animal Injury and Euthanasia Report – similar details for the Wildlife Capture and Disposal Plan should be included in this report.

The Post-Clearing Wildlife Management Report will be provided to the Proponent, Environmental Coordinator and EDQ no more than two (2) weeks after clearing activities have ceased

3.2. Roles and Responsibilities

This section details the key roles and responsibilities for the works.

3.2.1 Proponent

Pioneer Fortune Pty Ltd is the Proponent for the works.

3.2.2 Environmental Coordinator

Saunders Havill Group (SHG) is the Environmental Coordinator for the project and is responsible for the development of this overarching FMP and documentation for overarching environmental management. SHG will be responsible for managing non-compliance by appointed contractors and sub-contractors, including establishing additional management procedures and determining if EDQ notification should be made

3.2.3 Administering Authority

Economic Development Queensland (EDQ) is the government approval authority for this project.

3.2.4 Site Coordinator

The Site Coordinator is a representative of the project team (typically the project engineer) and is responsible for coordinating the project consultants and construction contractor.

3.2.5 Site Supervisor

The Site Supervisor is a representative of the Construction Contractor (to be appointed) and responsible for overseeing all pre-clearing, clearing and construction activities are undertaken in accordance with the approved FMP, PTRP and subsequent environmental management documentation. The Site Contractor will be responsible for engaging and the commission of the DES approved Fauna Spotter Catcher.

3.2.6 Fauna Spotter Catcher

A DES approved Fauna Spotter Catcher is a person who holds a rehabilitation permit with an extended authority issued by the former Department of Environment and Heritage Protection specifying the holder may take, keep or use an animal whose habitat is about to be destroyed by a human activity. A DES approved Fauna Spotter Catcher will be engaged by the proponent for pre-construction and construction stages of the project. It is noted that the Fauna Spotter Catcher must hold a Rehabilitation Permit and a copy of this permit along with their contact details will be passed on to EDQ and the Environmental Coordinator. The engaged Fauna Spotter Catcher will be responsible for undertaking pre-clearing surveys of the site and developing the PTRP. The Fauna Spotter Catcher must be present on site during all clearing activities and is responsible for the relocation of native fauna. A list of key contacts for the project is contained in **Section 8**.

4. Fauna Summary

4.1. Fauna Habitat Areas and Opportunities

The purpose of this FMP is to control the impacts of clearing activities on-site and to the surrounding area's fauna communities. The 'Greater Flagstone Context Plan' endorsed by EDQ on the 12 January 2018, identified the presence of suitable habitat observed along waterways to be retained by the development as endorsed in the NESS (Refer to **Plan 1 –** Habitat Values). This FMP will outline the process for tree removal and the strategy for installation of nest boxes to replace removed hollows.

This FMP should be read in conjunction with the following documents, to be lodged separately:

- Approved Vegetation Management Plan

Ecological features identified for protection within Greater Flagstone PDA include biodiversity corridors along Flagstone Creek and Sandy Creek and biodiversity values associated with the Flinders-Karawatha Bioregional Corridor. The site is bordered by Sandy Creek to the north and west and cleared land to the east. The area to the south is remnant vegetation proposed to be retained as an environmental corridor. The site is predominately vegetated with remnant vegetation. (**Figure 2**).

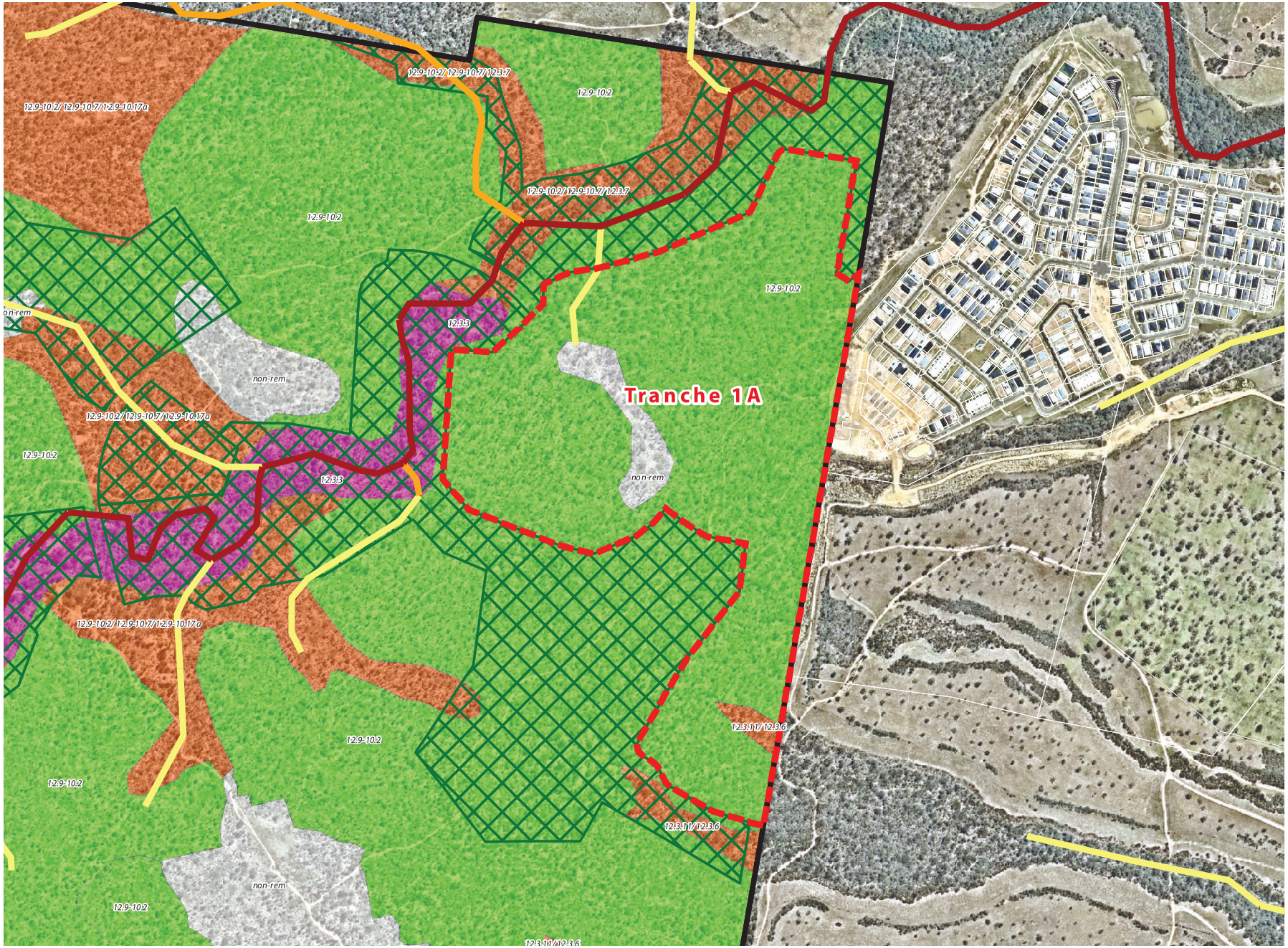
Significant biodiversity values around watercourses, including Sandy Creek have been retained except where only for essential works to be rehabilitated afterwards, and have informed development layouts.

Broadly, the areas to be cleared and thus the subsequent habitat features affected are described as the following:

1. Category B vegetation of the Least Concern regional ecosystem 12.9-10.2
2. Category B vegetation of the Of Concern composite regional ecosystem 12.3.11/12.3.6
3. Category X vegetation

(refer to **Plan 1** - Summary of NESS Habitats).

1. NESS Habitats



NOTES
This plan was prepared as a desktop assessment tool. The information on this plan is not suitable for any other purpose. Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

Layer Sources
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Legend

- Site Boundary
- Qld DCDB
- Tranche 1A clearing extent
- Context plan greenspace

Waterways

- 1 - Low
- 2 - Moderate
- 3 - High
- 4 - Major

PMAV Regional Ecosystems

- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Categor X non-remnant

Issue	Date	Description	Drawn	Checked
B	4/05/2022	Preliminary	TC	AR

0 100 200 300 m

Transverse Mercator | GDA 2020 | Zone 56 | 1:8,000 @ A3

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Rice Road, Undullah

ADDRESS/RPD: Rice Road, Undullah

4/05/2022 | 8045 EPlan 1 NESS Habitats B

The following strategies have been developed as part of this FMP to mitigate the adverse impacts of development on native fauna and provide habitat enhancement and informed the VMP (to be lodged under a separate cover):

1. **Direction of Clearing Plan (Plan 2)** – to direct clearing activities from open areas to fewer open areas allowing fauna to naturally seek shelter in the adjacent habitat;
2. **Fencing Management Strategy** – for the provision of permanent and temporary fencing around roads and construction areas, and
3. **Nest Box/Hollow Strategy** (**Plan 3** and **Plan 4**)– for the installation of nest boxes in mature native trees in retained environmental corridors and the provision of hollow logs and branches to temporarily house translocated animals and provide permanent nesting sites. Habitat features are to be determined by the Environmental Coordinator as part of the VMP and Rehabilitation Plans prepared for the environmental corridor.

4.2. Nest Box and Hollow Strategy

A specific survey of the clearing area was undertaken during November and December 2020 to locate and identify trees retaining hollows. A handheld GPS device (Trimble) is used to record sub metre accurate locations.

The field assessment recorded 101 hollows across 59 hollow bearing trees within Tranche 1A clearing extent (**Plan 3**). The hollow bearing trees are distributed across the clearing area of Tranche 1A and numerous trees retained more than one hollow.

A plan of indicative locations for the nest box to replace the lost hollows is provided as **Plan 4**. The nest boxes are proposed to be located within the greenspace corridor network and will be positioned at least 5 m from the edge of development.

Nest box design determines the type of fauna that can/will use a nest box. Factors such as entrance size and shape, depth, degree of insulation, and location greatly affect the nest box occupancy. For example, nest boxes with small entrance holes (20-30mm diameter) are used by Micro-bats and small Gliders, whereas larger entrance holes (100-200mm diameter) are required by Brushtail Possums, larger Parrots and Owls.

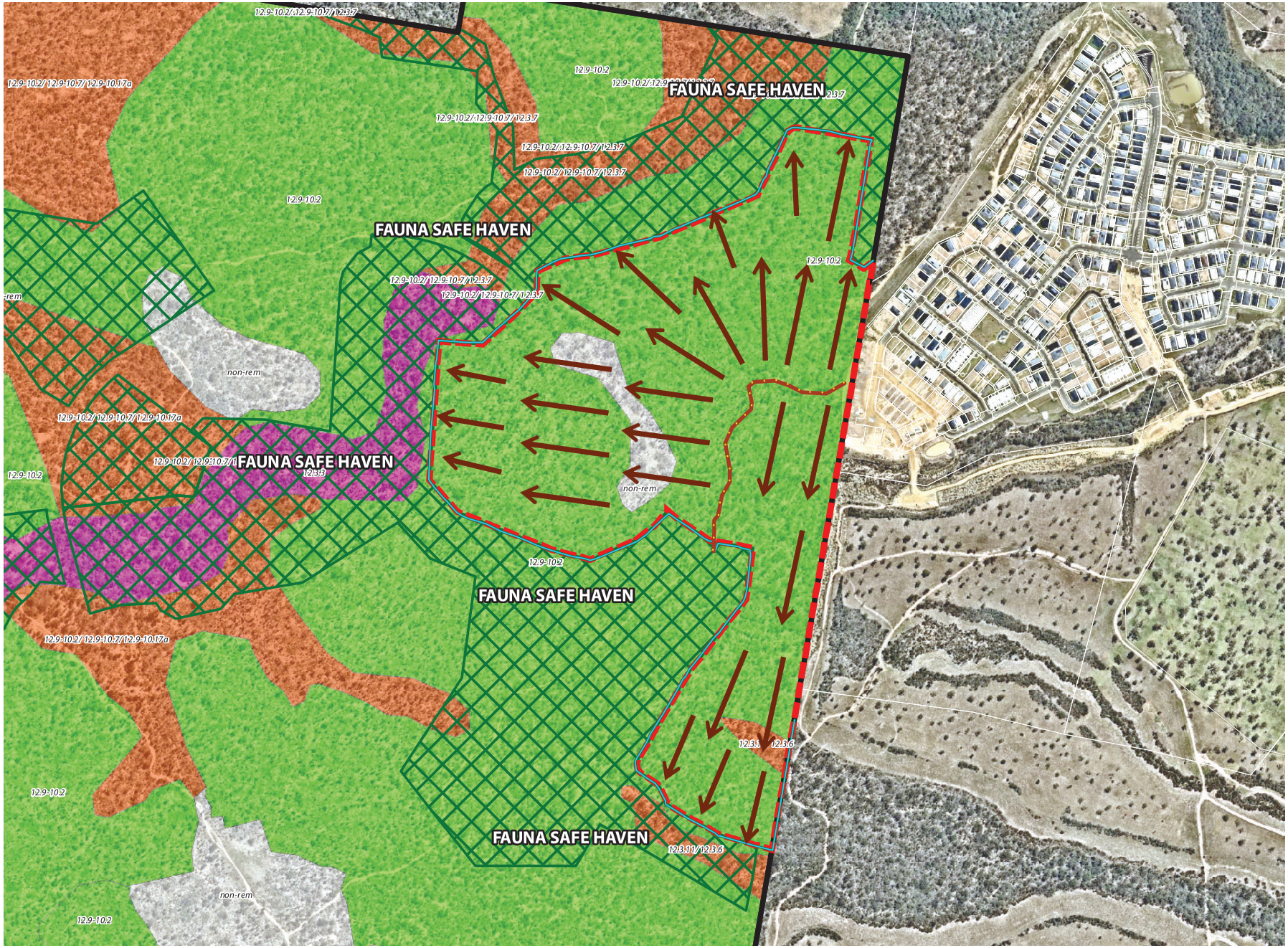
A range of nest box types should be installed within the nest box receiving area, keeping in mind that most species utilise more than one hollow across their home range. For example, Squirrel Gliders require a minimum of five (5) hollows per colony (2-9 individuals). Many species will also change residence according to season therefore it is important to provide boxes for winter and summer.

Nest boxes should be installed in suitable nest box trees, which are defined as *Eucalyptus*, *Corymbia*, *Angophora* and *Lophostemon* species possessing the following attributes:

a) greater than 200mm-400mm in diameter at breast height (1.3m) and
b) in a healthy condition;
c) do not possess existing hollows, or
d) are unlikely to develop hollows in the near future (i.e. larger trees)

(Franks, A 2017, pers.comm. 24 October).

2. Summary of Tree Clearing



NOTES
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Legend

- Site Boundary
- Qld DCDB
- Tranche 1A clearing extent
- Context plan greenspace
- Tree Protection fencing location (fauna friendly design)
- Vegetation clearing direction
- Existing site track (access to site)

PMAV Regional Ecosystems

- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Categor X non-remnant

Issue	Date	Description	Drawn	Checked
B	4/05/2022	Preliminary	TC	AR

0 100 200 300 m

Transverse Mercator | GDA 2020 | Zone 56 | 1:7,500 @ A3

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PIONEER FORTUNE PTY LTD

Rice Road, Undullah

ADDRESS/RPD: Rice Road, Undullah

4/05/2022 | 8045 EPlan 2 Summary of Tree Clearing B

3. Locations of Habitat Trees to Remove

NOTES

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Legend

- Site Boundary
- Qld DCDB
- Tranche 1A clearing extent
- Context plan greenspace
- Tree Protection fencing location (fauna friendly design)
- Hollow bearing trees to remove 59 trees containing 101 hollows

Issue	Date	Description	Drawn	Checked
B	5/05/2022	Lodgement	TC	AR

0 100 200 300 m

Transverse Mercator | GDA 2020 | Zone 56 | 1:7,500 @ A3

saunders havill group

PIONEER FORTUNE PTY LTD

Rice Road, Undullah

ADDRESS/RPD: Rice Road, Undullah

5/05/2022 | 8045 EPlan 3 Locations of Habitat Trees to Remove B

4. Indicative Nest Box Locations

NOTES
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Legend

- Site Boundary
- Qld DCDB
- Tranche 1A clearing extent
- Context plan greenspace
- Proposed location for 108 nestboxes of varying sizes within the greenspace corridor network. Proposed locations to be at least 5m from edge of development

Issue	Date	Description	Drawn	Checked
B	5/05/2022	Preliminary	TC	MS

0 100 200 300 m

Transverse Mercator | GDA 2020 | Zone 56 | 1:8,000 @ A3

saunders havill group

PIONEER FORTUNE PTY LTD

Rice Road, Undullah

ADDRESS/RPD: Rice Road, Undullah

5/05/2022 | 8045 EPlan 4 Indicative Nest Box Locations B

4.3. Observed Fauna Across the Undullah Property

A detailed fauna survey was undertaken by BAAM Pty Ltd and SHG in 2007 and 2009 and 2014 over the entire Undullah property and augmented during vegetation surveys in 2020 on Tranche 1a clearing area to identify significant biodiversity values, specifically the survey of hollow bearing trees to inform the FMP.

The site is identified under the NESS as containing vegetated areas of Koala Habitat within the subject area for which offsets under the federal government approval EPBC 2015/7530.

Three separate surveys have taken place over the broader project area to identify the fauna utilising the site (refer **Appendix C** and references therein for the specific reports). Of the one hundred and fifty-five (155) fauna species recorded on-site (**Table 4**), the Koala was the only EPBC Act listed threatened species observed. The Koala is also listed as Vulnerable under the NCA (**Table 2**). The baseline fauna survey conducted by BAAM (refer **Appendix D within the SHG EAR (Appendix C**)) recorded an active *Ninox strenua* (Powerful Owl) nest in the north-western portion of the project site, and this species is likewise listed as Vulnerable under the NCA.

Overall, fourteen (14) amphibians, ninety-four (94) birds, twenty-five (25) mammals, nineteen (19) reptiles and three (3) fish species were recorded (**Table 4**). Mammal observations included seven (7) bat species recorded using ANABAT ultrasonic call playback (**Table 4**). One listed migratory species, *Merops ornatus* (Rainbow bee-eater) was recorded on-site (**Table 4**), although ideal habitat for this species was lacking. The vast majority of fauna species recorded on-site are considered common to the local area.

Feral mammal species, such as *Canis lupus familiaris* (Dog), *Lupus capensis* (Brown Hare), *Oryctolagus cuniculus* (Rabbit), *Sus scrofa* (Wild Pig) and *Vulpes* (Red Fox) were also recorded on-site (**Table 4**). Both Dogs and Foxes are considered threats to the Koala and other native species. Further, the noxious amphibian *Rhinella marina* (Cane Toad) was very common on-site (**Table 4**), and is considered a significant threat to Spot-tailed Quoll survival as they prey on the poisonous species.

Table 4: Observed Fauna Species on Whole of Project Site

Scientific Name	Common Name	Saunders Havill Group (2014)	BAAM Pty Ltd (2009)	BAAM Pty Ltd (2007)
AMPHIBIANS				
Crinia parinsignifera	Beeping Froglet	✓		✓
Cyclorana alboguttata	Striped Burrowing Frog		✓	
Limnodynastes ornatus	Ornate Burrowing Frog		✓	
Limnodynastes peronii	Brown Striped Frog	✓	✓	
Limnodynastes tasmaniensis	Spotted Grass Frog		✓	
Litoria dentata	Bleating Tree Frog			✓
Litoria fallax	Eastern Dwarf Tree Frog		✓	
Litoria gracilenta	Dainty Green Tree Frog		✓	
Litoria latopalmata	Broad Palmed Frog		✓	✓
Litoria peronii	Person's Tree Frog		✓	
Litoria rubella	Desert Tree Frog		✓	
Litoria wilcoxii	Stony Creek Frog		✓	
Litoria caerulea	Green Tree Frog		✓	
Rhinella marina	Cane Toad	✓	✓	✓
BIRDS				
Acanthiza chrysorrhoa	Yellow-rumped Thornbill		✓	✓

Scientific Name	Common Name	Saunders Havill Group (2014)	BAAM Pty Ltd (2009)	BAAM Pty Ltd (2007)
Acanthiza reguloides	Buff-rumped Thornbill		✓	✓
Acanthorhynchus tenuirostris	Eastern Spinebill			✓
Accipiter fasciatus	Brown Goshawk		✓	
Alectura lathami	Australian Brush-turkey	✓	✓	
Alisterus scapularis	Australian King-Parrot		✓	
Anas superciliosa	Pacific Black Duck	✓		
Anthus australis	Australian Pipit		✓	
Aquila audax	Wedge-tailed Eagle	✓	✓	
Ardea ibis	Cattle Egret	✓		
Burhinus grallarius	Bush Stone-curlew	✓	✓	
Cacatua galerita	Sulphur-crested Cockatoo	✓	✓	✓
Cacomantis flabelliformis	Fan-tailed Cuckoo		✓	
Centropus phasianinus	Pheasant Coucal	✓	✓	
Chalcites lucidus	Shining Bronze-cuckoo		✓	
Chenonetta jubata	Australian Wood Duck	✓	✓	
Colluricincla harmonica	Grey Shrike-thrush		✓	
Coracina novaehollandiae	Black-faced Cuckoo-shrike	✓	✓	✓
Coracina tenuirostris	Cicadabird		✓	
Cormobates leucophaea	White-throated Treecreeper	✓	✓	✓
Corvus orru	Torresian Crow	✓	✓	✓
Coturnix ypsilophora	Brown Quail	✓	✓	
Cracticus nigrogularis	Pied Butcherbird	✓	✓	✓
Cracticus tibicen	Australian Magpie	✓	✓	✓
Cracticus torquatus	Grey Butcherbird	✓	✓	✓
Dacelo novaeguineae	Laughing Kookaburra	✓	✓	✓
Daphoenositta chrysoptera	Varied Sittella		✓	✓
Dicaeum hirundinaceum	Mistletoebird		✓	
Dicrurus bracteatus	Spangled Drongo	✓	✓	
Egretta novaehollandiae	White-faced Heron	✓		
Entomyzon cyanotis	Blue-faced Honeyeater	✓	✓	✓
Eolophus roseicapillus	Galah	✓	✓	✓
Eopsaltria australis	Eastern Yellow Robin		✓	
Eudynamys orientalis	Pacific Koel		✓	
Eurostopodus mystacalis	White-throated Nightjar		✓	
Eurystomus orientalis	Dollarbird	✓	✓	
Falco berigora	Brown Falcon	✓		
Falco longipennis	Australian Hobby			✓
Gallinula tenebrosa	Dusky Moorhen	✓	✓	
Geopelia humeralis	Bar-shouldered Dove	✓	✓	✓
Geopelia striata	Peaceful Dove	✓	✓	✓
Gerygone olivacea	White-throated Gerygone		✓	✓
Glossopsitta pusilla	Little Lorikeet	✓	✓	✓
Grallina cyanoleuca	Magpie Lark	✓		
Hirundo neoxena	Welcome Swallow	✓		
Lichenostomus chrysops	Yellow-faced Honeyeater		✓	✓
Lichenostomus fuscus	Fuscous Honeyeater		✓	✓
Lichmera indistincta	Brown Honey-eater	✓	✓	✓
Lopholaimus antarcticus	Topknot Pigeon	✓	✓	
Malurus cyaneus	Superb Fairy-wren	✓	✓	✓
Malurus lamberti	Variegated Fairy-wren	✓	✓	✓
Malurus melanocephalus	Red-backed Fairy-wren	✓	✓	✓
Manorina melanocephala	Noisy Minor	✓	✓	

Scientific Name	Common Name	Saunders Havill Group (2014)	BAAM Pty Ltd (2009)	BAAM Pty Ltd (2007)
Meliphaga lewinii	Lewin's Honeyeater	✓	✓	✓
Melithreptus albogularis	White-throated Honeyeater		✓	✓
Merops ornatus	Rainbow Bee-eater	✓		✓
Microeca fascinans	Jacky Winter		✓	✓
Myiagra rubecula	Leaden Flycatcher		✓	
Myzomela sanguinolenta	Scarlet Honeyeater		✓	
Neochmia temporalis	Red-browed Finch		✓	✓
Ninox boobook	Southern Boobook		✓	
Ninox strenua	Powerful Owl		✓	
Ocyphaps lophotes	Crested Pigeon	✓	✓	
Oriolus sagittatus	Olive-backed Oriole		✓	
Pachycephala pectoralis	Golden Whistler			✓
Pachycephala rufiventris	Rufous Whistler		✓	✓
Pardalotus punctatus	Spotted Pardalote			✓
Pardalotus striatus	Striated Pardalote	✓	✓	✓
Petroica rosea	Rose Robin	✓		✓
Phalacrocorax melanoleucos	Little Pied Cormorant		✓	
Phaps chalcoptera	Common Bronzewing	✓	✓	
Philemon corniculatus	Noisy Friarbird	✓	✓	✓
Platycercus adscitus palliceps	Pale-headed Rosella	✓	✓	
Plectorhyncha lanceolata	Striped Honeyeater		✓	✓
Podargus strigoides	Tawny Frogmouth	✓	✓	
Pomatostomus temporalis	Grey-crowned babbler		✓	✓
Porphyrio	Purple Swamphen		✓	
Psophodes olivaceus	Eastern Whipbird	✓	✓	
Pyrrholaemus sagittatus	Speckled Warbler		✓	✓
Rhipidura albiscapa	Grey Fantail	✓	✓	✓
Rhipidura leucophrys	Willie Wagtail	✓	✓	✓
Scythrops novaehollandiae	Channel-billed Cuckoo	✓	✓	
Sericornis frontalis	White-browed Scrubwren		✓	✓
Smicrornis brevirostris	Weebill		✓	✓
Sphecotheres vieilloti	Australasian Figbird		✓	
Strepera graculina	Pied Currawong	✓	✓	✓
Taeniopygia bichenovii	Double-barred Finch	✓	✓	✓
Threskiornis molucca	Australian White Ibis	✓		
Threskiornis spinicollis	Straw-necked Ibis		✓	
Todiramphus sanctus	Sacred Kingfisher	✓	✓	
Trichoglossus chlorolepidotus	Scaly-breasted Lorikeet	✓	✓	✓
Trichoglossus haematodus moluccanus	Rainbow Lorikeet	✓	✓	✓
Vanellus miles	Masked Lapwing	✓	✓	
Zosterops lateralis	Silvereye	✓	✓	✓
MAMMALS				
Aepyprymnus rufescens	Rufous Bettong		✓	
Antechinus flavipes	Yellow-footed Antechinus		✓	✓
Canis lupus familiaris	Dog	✓	✓	✓
Chalinolobus gouldii	Gould's Wattled Bat		✓	
Isoodon macrourus	Northern Brown Bandicoot		✓	✓
Lepus capensis	Brown Hare	✓	✓	
Macropus giganteus	Eastern Grey Kangaroo	✓	✓	✓
Macropus rufogriseus	Red -necked Wallaby		✓	✓
Miniopterus australis	Little Bent-wing Bat		✓	

Scientific Name	Common Name	Saunders Havill Group (2014)	BAAM Pty Ltd (2009)	BAAM Pty Ltd (2007)
Mormopterus beccarii	Beccari's Free-tailed Bat		✓	
Nyctophilus sp.	Unidentified Large-eared Bat		✓	
Oryctolagus cuniculus	Rabbit	✓	✓	
Petaurus australis	Yellow-bellied Glider		✓	
Petaurus norfolcensis	Squirrel Glider		✓	
Phascogale tapoatafa	Brush-tailed Phascogale		✓	
Phascolarctos cinereus	Koala	✓	✓	
Saccolaimus flaviventris	Yellow-bellied Sheath-tailed Bat		✓	
Scotorepens orion	Eastern Broad-nosed Bat		✓	
Sminthopsis murina	Common Dunnart		✓	
Sus scrofa	Pig	✓		
Tachyglossus aculeatus	Short-beaked Echidna			✓
Trichosurus vulpecula	Common Brushtail Possum	✓	✓	✓
Vespadelus darlingtoni	Large Forest Bat		✓	
Vulpes	Red Fox	✓		
Wallabia bicolor	Swamp Wallaby	✓	✓	
REPTILES				
Anomalopus verreauxii	Three-clawed Worm-Skink		✓	
Carlia munda	Shaded-Litter Rainbow-skink			✓
Carlia vivax	Tussock Rainbow-skink		✓	✓
Cryptoblepharus virgatus	Wall Skink	✓	✓	✓
Ctenotus taeniolatus	Copper-tailed Skink		✓	✓
Dendrelaphis punctulatus	Common Tree Snake		✓	
Diporiphora australis	Tommy Roundhead Dragon	✓	✓	
Elseya latisternum	Saw-shelled Turtle		✓	
Eulamprus martini	Dark Barsided Skink	✓	✓	✓
Gehyra dubia	Dubious Dtella		✓	
Lampropholis delicata	Dark-flecked Garden Sunskink		✓	
Lygisaurus foliorum	Tree-based Litter Skink		✓	
Morelia spilota	Carpet Python	✓		
Morethia taeniopleura	Fire Tailed Skink		✓	
Physignathus lesueurii	Eastern Water Dragon	✓	✓	
Pogona barbata	Bearded Dragon	✓	✓	
Pseudechis guttatus	Spotted Black Snake		✓	
Pseudechis porphyriacus	Red-bellied Black Snake	✓	✓	
Varanus varius	Lace Monitor	✓	✓	
FISH				
Hypseleotris galii	Firetail Gudgeon		✓	
Melanotaenia duboulayi	Crimson-spotted Rainbow Fish		✓	
Mogurnda adspersa	Purple-spotted Gudgeon		✓	

4.4. Potential Fauna Species (Threatened)

Table 2 and **Table 3** (refer to Appendices A & B for full search results) list critically endangered, endangered, vulnerable and near threatened species which may occur within the general proximity (5 km) of the development site. These species have been identified through the EPBC Act's online PMST and the NCA Wildlife Online database search (discussed in **Section 2**).

A habitat suitability and risk assessment for significant fauna was undertaken by SHG in conjunction with the ecological surveys. The assessment focused on identifying habitat features typically associated with threatened species and native fauna groups. Five (5) significant fauna species were considered as possible occurrences on the site (refer to **Table 5**). Two (1) migratory species were considered known or possible occurrences within the site (refer to **Table 6**). The full assessment is contained in **Appendix D** – Habitat Suitability and Risk Assessment.

Table 5: Threatened Species with possible suitable habitat on site.

Scientific Name	Common Name	Habitat	EPBC Status	NCA Status
Calyptorhynchus lathami	Glossy Black-cockatoo	The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW. The Glossy Black-Cockatoo is highly dependent on the distribution of Allocasuarina species and is found in open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (Allocasuarina littoralis) and Forest Sheoak (A. torulosa) are important foods. Requires tree hollows for breeding.	-	Vulnerable
Dasyurus maculatus maculatus	Spot-tailed Quoll	The Spot-tailed Quoll has a preference for mature wet forest habitat. Unlogged forest or forest that has been less disturbed by timber harvesting is also preferable. Habitat requirements include suitable den sites such as hollow logs, tree hollows, rock outcrops or caves. Individuals require an abundance of food such as birds and small mammals, and large areas of relatively intact vegetation through which to forage.	Endangered	Vulnerable
Ninox strenua	Powerful Owl	The Powerful Owl inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest.	-	Vulnerable
Phascolarctos cinereus	Koala	Koalas are found in a range of habitats, from coastal islands and tall eucalypt forests to low woodlands inland. The species is known from the surrounding area and evidence has been recorded on-site.	Vulnerable	Vulnerable
Pteropus poliocephalus	Grey-headed Flying Fox	Species generally roosts in camps in trees adjacent to larger permanent watercourse. The Grey-headed flying fox requires foraging resources and roosting sites. It is a canopy-feeding frugivore and nectarivore, which utilises vegetation communities including rainforests, open forests, closed and open woodlands, Melaleuca swamps and Banksia woodlands. It also feed son commercial fruit crops.	Vulnerable	-

Table 6: Migratory Species with possible suitable habitat on site

Scientific Name	Common Name	Habitat	Status*
Merops ornatus	Rainbow Bee-eater	The rainbow bee-eater occurs mainly in open forests and woodlands, shrublands, and in various cleared or semi-cleared habitats, including farmland and areas of human habitation.	M

*M: Migratory species are those species that are listed under an international agreement such as *JAMBA, CAMBA* and *Bonn Convention*.

4.5. Potential Impacts

Impacts of the proposed development can generally be summarised as the following:

CONSTRUCTION IMPACTS	OPERATIONAL IMPACTS
- Direct removal of site vegetation - Loss of habitat - Loss of food sources - Excavation / compaction/ changes in existing ground levels - Altering of hydrological flows - Noise, vibration and dust - Fragmentation of habitat - Erosion and sedimentation - Threats associated with open cuts etc. and fauna entrapment	- Weed introduction (garden escapees) - Increased hydrology with increased hardstand - Altering of run-off chemical and nutrient components (quality) - Barriers to fauna movement - Vehicle and pedestrian movement and trespass - Introduction of domestic and predatory species

Generally, most impacts for developments are associated directly with vegetation clearing. The VMP will provide provisions for wildlife management to mitigate potential impacts during vegetation clearing and comply with legislative requirements and approval conditions. These will include:

- The Fauna Spotter Catcher (DES approved) must remain on site during all clearing works to undertake pre-clearing inspection, direct clearing activities and relocate fauna.
- Immediately prior to the commencement of clearing of native vegetation, a daily visual inspection of the area must be carried out by a qualified Fauna Spotter Catcher.
- In the event of an animal being located an area of 5 m radius should be established around the tree excluding machinery from the area until the animal has relocated (usually overnight) or, if an animal requires relocating this must be undertaken by a suitably qualified and permitted fauna expert recognised by DES.
- Any native fauna orphaned or injured by the development process must be reported to DES.
- The site supervisor is responsible for the safe management of site fauna and implementation of these specific fauna requirements.
- Dogs will be restricted on-site during construction activities to encourage fauna movement outside construction hours. Dogs brought onto the premises for security must be controlled and contained.

5. Fauna Management Plan Specifications

5.1. Pre-Construction+

Management Item	Responsibility	Timing	Reporting
5.1.1 Temporary Fencing			
Prior to the commencement of clearing activities, the applicant must fence the limits of vegetation strips and install fauna fencing. This fencing shall be inspected by the Environmental Coordinator. Fencing shall be in accordance with the specifications shown in the approved VMP and if modified by the WPMP. • Fencing shall be fauna friendly and erected to direct fauna towards vegetation associated with Sandy Creek to the north west and the environmental corridor area to the south west. • Fencing shall be erected prior to the commencement of clearing activities and shall be removed in accordance with the WPMP to enable animals to safely move to refuge areas. • Within the tree protection zone, the following activities are not permitted: storage and mixing of materials, vehicle parking, liquid disposal, machinery repairs and/or refuelling, construction of site office or shed, combustion of any material, stockpiling of soil, rubble or debris, any filling or excavation including trenching, topsoil skimming and/or surface excavation, unless otherwise approved. • Only approved weed management, landscape and revegetation works are to occur beyond the temporary protection fencing. • Fencing shall be reinstated immediately if damaged or knocked down. • Fencing shall remain until the completion of all bulk earthworks and removed just prior to practical completion.	Site Supervisor	No more than two weeks prior to clearing works commencing on-site.	Inspected by Proponent, the Environmental Coordinator, or Site Supervisor.

Management Item	Responsibility	Timing	Reporting
5.1.2 Contractor Education and Awareness			
All site contractors and sub-contractors will be made aware of their responsibilities to protect native fauna. The Construction Contractor will be responsible for the commissioning of the PTRP. This FMP is provided as a working document to assist on-site management and protection of native animals. This FMP will generally form part of education and training in a broader Construction Environmental Management Plan but as a minimum will include: • A copy of this FMP kept on site (Site Office). • General education and awareness notification of contractors and sub-contractors involved in activities potentially impacting native animals as part of site induction – contractors must know the location of the FMP, key phone numbers including the nominated Fauna Spotter Catcher and DES, and who to report to if potential breaches of the FMP occur. • A list of relevant contact numbers as listed in **Section 8** kept in a visible and accessible location in the site office.	Site Supervisor / Proponent.	Prior to the commencement of construction and as part of the site induction for new staff and sub-contractors.	Site Supervisor
5.1.3 Fauna Spotter and Catcher			
A DES approved Fauna Spotter Catcher shall inspect the site no more than two (2) weeks prior to clearing works commencing on-site and prepare a PTRP. The report must include a full list of fauna species encountered during the site survey, as well as the marking and identification of significant habitat trees. The report shall be sent to the Environmental Coordinator and Proponent prior to the pre-start meeting, for approval and inspection by the Environmental Coordinator. In addition, the DES approved Fauna Spotter Catcher must assess the site for: • The presence of native fauna and/or supporting habitat on-site. • Available habitat suitable for likely fauna species.	Site Supervisor / Proponent.	No more than two weeks prior to clearing works commencing on site.	Site Supervisor / Environmental Coordinator

Management Item	Responsibility	Timing	Reporting
• The presence of any fauna that is 'protected wildlife' as defined under the *Nature Conservation Act 1992* (protected wildlife). • The presence of any species that is a 'listed threatened species' under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (listed threatened species). **Section 6** details the documentation and actions to be taken if the assessment finds suitable habitat present adjacent to the site or protected/listed species present and/or if the relocation of fauna is required. The DES approved Fauna Spotter Catcher must be present during the pre-start meeting to identify all fauna habitat trees prior to the commencement of works to ensure wildlife is unharmed at the time of tree clearing operations Note. The DES approved Fauna Spotter Catcher is a person who holds a rehabilitation permit with an extended authority issued by the Department of Environment and Science specifying the holder may take, keep or use an animal whose habitat is about to be destroyed by a human activity.'			

5.2. Vegetation Clearing

Management Item	Responsibility	Timing	Reporting
5.2.1 Fauna Spotter Catcher			
For all vegetation clearing: • Immediately prior to the commencement of clearing of native vegetation a daily visual inspection of the area must be carried out. • In the event of a koala being located, an area of 5 m radius should be established excluding machinery from the area until the animal has relocated (usually overnight). • If any used hollows or nests are identified from inspection by the Fauna Spotter Catcher, the hollows and nest must be removed by an experienced machinery operator and carefully lowered for inspection and fauna removal by the Fauna Spotter. • The relocating of fauna is only permitted where necessary as per the Rehabilitation Permit held by the Fauna Spotter. There is no approval to relocate fauna as part of operational works onsite, refer to **Section 6** of this document for further details. • Any native fauna orphaned or injured by the development process must be immediately reported to the Queensland Parks and Wildlife Service (1300 130 372), DES, RSPCA and the Environmental Coordinator and Proponent. • The Site Supervisor is responsible for the safe management of site fauna and implementation of these specific requirements. • All personnel on-site must undertake all works in accordance with all direction/s given by the DES approved fauna spotter catcher. SPECIFIC KOALA MANAGEMENT NOTES A DES approved Koala Spotter is a person who holds a tertiary qualification in Biology or Zoology, or who is demonstrably experienced in the identification and location of Koalas in their natural habitat, and has an authorisation from DES to conduct such activities. For example, demonstrably	DES permitted Fauna Spotter Catcher with significant Koala Spotting experience	Must be present for pre-start meeting, during clearing, construction and continue during the site clearing operations.	Proponent / Site Supervisor / Environmental Coordinator

Management Item	Responsibility	Timing	Reporting
experienced may include a Koala keeper employed by a licenced Wildlife exhibitor (i.e. a zoo) may be capable of demonstrating competence in location Koalas. Prior to the commencement and during felling operations, it is the responsibility of the DES approved Fauna Spotter to: 1. Be present at the site of felling operations; 2. Identify any tree at the site which a Koala is present, as well as any tree that has a crown which is intermeshed or overlapping with such tree; and 3. Advise the person who is authorised to conduct the felling operation, or that person's representative, of the precise location of each such tree.			
5.2.2 Direction of Clearing			
Vegetation clearing activities must be in accordance with the Direction of Clearing Plan (as shown in the approved VMP or corrected by the WPMP) which directs clearing towards vegetation to be retained.	Site Supervisor / Earthworks Contractor / Sub Contractor.	As part of clearing earthworks operations.	Site Supervisor / Proponent / Environmental Coordinator
5.2.3 Monitoring of Clearing/Earthworks			
Works are to be monitored to ensure on-site success of Direction of Clearing Plan (as shown in the approved VMP or corrected by the WPMP) and for immediate reporting of orphaned, injured, distressed, or killed native animals to DES, RSPCA, Environmental Coordinator and Proponent.	DES Fauna Spotter Catcher as employed by the Construction Contractor.	As part of clearing/ earthworks operations.	Site Supervisor / Proponent/ Environmental Coordinator
5.2.4 Timing of Clearing			
No machinery use for vegetation clearing or damage of any kind shall occur on-site between 6 pm and 6 am.	Site Supervisor / Earthworks Contractor / Sub Contractor .	As part of clearing earthworks operations.	Site Supervisor / Proponent / Environmental Coordinator

Management Item	Responsibility	Timing	Reporting
5.2.4 Relocation / Translocation			
Where works will result in unacceptable risks to health and safety of fauna, a range of measures may be used by the approved Fauna Spotted Catcher to minimise risks, including the temporary removal of animals from the site with the aim or returning animals back to habitat on site at the completion of risk associated works or to suitable habitat adjacent to the site. Appropriate measures are to be determined by the approved Fauna Spotter Catcher. Note: Appropriate wildlife-proof barriers must be used between adjacent habitat and risk associated structures (i.e. roads) where translocation occurs.	DES Fauna Spotter Catcher as employed by the Construction Contractor.	As part of clearing/ earthworks operations.	Site Supervisor / Proponent/ Environmental Coordinator / EDQ

5.3. Excavation, Earthworks and Access

Management Item	Responsibility	Timing	Reporting
5.3.1 Minimise Entrapment			
Trenches, manholes, excavation for footings, etc. pose threats to native animal entrapment when left open and should be backfilled as soon as possible. In some locations barriers may be required overnight to eliminate the accidental capture of animals moving through the site.	Site Supervisor / Earthworks Contractor / Sub Contractor.	As part of site earthworks.	Site Supervisor / Proponent / Environmental Coordinator
When trenches are not backfilled they are to be inspected at the commencement of each day for trapped or injured wildlife. Note: If during the inspection injured wildlife or entrapped native fauna is observed the Site Supervisor is to contact the Fauna Spotter Catcher immediately.	Site Supervisor	On-going	Site Supervisor / Proponent / Environmental Coordinator
5.3.2 Regular and Defined Access			
To minimise impacts and conflicts between native animals, vehicular movement and access during construction and site access should be controlled via minimal entry and exit points.	Site Supervisor	On-going	Site Supervisor / Proponent / Environmental Coordinator / EDQ.
5.3.3 Stockpile and Rubbish Locations			
Stockpiled vegetation, topsoil and other materials can quickly become temporary habitat for animals displaced during the actual clearing and earthworks. Rubbish, waste and litter provides opportunistic food source for native and exotic animals alike and often encourages predatory and feral species. Locations for stockpiles, designated rubbish points etc. should occur in cleared sections of the site, away from retained areas, limiting interaction between these areas and core retention areas. Fauna Spotter to inspect stockpiled vegetation prior to its removal if the stockpiled vegetation has been in place for more than one week.	Site Supervisor	On-going	Site Supervisor / Proponent / Environmental Coordinator

5.4. Nest Box / Hollow Maintenance and Monitoring

Management Item	Responsibility	Timing	Reporting
5.4.1 Installation			
As part of the VMP, the Environmental Coordinator will determine the number of lost habitat values (hollows) that will require replacement. The specific location of nest boxes to be in installed in retained vegetation bordering along the waterways and will be directed in the Rehabilitation Plan prepared by the Environmental Coordinator. The Nest Box Management Plan will require that all nest box locations are to be GPS recorded and coordinates provided to the Environmental Coordinator, Proponent and EDQ.	Environmental Coordinator	As per the approval conditions and Nest Box Offset Strategy	Site Supervisor / Proponent / Environmental Coordinator / EDQ
5.4.2 Maintenance and Monitoring			
Nest boxes are to be monitored and maintained for 12 months. Maintenance activities include, but are not limited to, the following: • The replacement of failed or damaged next boxes • The removal of invasive species • The removal of invasive species will be determined by the engaged DES Fauna Spotter Catcher or suitably qualified person.	Nest Box Contractor	12 months	Site Supervisor / Proponent / Environmental Coordinator / EDQ
5.4.3 Reporting Schedule and Pro forma			
A reporting schedule and pro forma must be completed to report all nest box maintenance and monitoring activities throughout the construction period of the development. A copy of the reporting schedule and pro forma must be provided to the Environmental Coordinator and Proponent.	Nest Box Contractor	Throughout the construction period of the development.	Site Supervisor / Proponent / Environmental Coordinator / EDQ

5.5. Non-compliance, Monitoring and Reporting

Management Item	Responsibility	Timing	Reporting
5.5.1 Non-Compliance			
Despite the provisions in this FMP, in the unlikely event of a non-compliance or breach, where a contractor or sub-contractor witnesses or is involved in activities which do not comply with this FMP the following procedure shall be followed: • All breaches of the FMP must immediately be reported to the Proponent. • If possible, prior approval / or communication on the breach should be discussed with the Environmental Coordinator. The Environmental Coordinator is responsible for establishing additional management procedures or determining if EDQ notification should be made. • Non-compliance activities should be halted immediately and impacts rectified (fencing reinstalled, stock piling relocated, etc.). • Site staff should notify the site supervisor who is responsible for either rectifying actions or contacting the Environmental Coordinator. • All major breaches which fundamentally do not achieve the overall outcomes of the FMP and result in lost habitat or distress to native animals must be reported to the Environmental Coordinator, Proponent and applicable regulatory authorities.	Site Supervisor	On-going	Site Supervisor / Proponent / Environmental Coordinator / EDQ
5.5.2 Monitoring and Reporting			
The site shall be monitored at all times. This should include: • Daily inspections by the Site Supervisor. • Weekly/fortnightly inspections by the Environmental Coordinator. • Random and periodical inspections by the Proponent. The Fauna Spotter Catcher employed during pre-construction and on-site works shall provide a Post-clearing Report, to be given to the Environmental Coordinator, Proponent and Environmental Coordinator no more than two (2) weeks after clearing has finished, specifying the following:	All Site Staff	On-going	EDQ / Environmental Coordinator / Proponent

Management Item	Responsibility	Timing	Reporting
• Length and time of clearing; • Details of any fauna that were caught and/or released and the placement of any release/s; • Inventory of species encountered during tree removal; • Brief summary of any fauna handling, mortalities or other relevant fauna related incidents that may have occurring during tree removal; and The Fauna Spotter Catcher Post-clearing Report is to be submitted to the Environmental Coordinator, Proponent and EDQ following the completion of tree clearing activities and prior to commencement of the use of the premises.			
5.5.3 Orphaned or Injured Fauna			
All native animal fatalities must be reported immediately to the Environmental Coordinator, the Proponent and DES. Where any site staff (contractors or sub-contractors) witnesses or locates distressed, injured or orphaned animals they should immediately contact the Environmental Coordinator. The Environmental Coordinator will notify the proponent and authorities. Works within the area of the animal must cease until further instruction is provided. Refer to **Section 8** for a list of key contacts.	All Site Staff	On-going	EDQ / DES / Environmental Coordinator / Proponent

Refer to Section 8 for the contact details of responsible entities. The Environmental Coordinator's role has been to prepare this FMP and liaise with EDQ, Pioneer Fortune and the approved Fauna Spotter Catcher (to be appointed) and the Construction Contractor (to be appointed) to achieve the outcomes of this plan.

6. Fauna Spotter Catcher Assessment

The Fauna Spotter Catcher assessment as part of the pre-clearing surveys and PTRP may reveal suitable fauna habitat adjacent on land within the Flinders-Karawatha Bioregional Corridor for protected/listed species present on the site and/or the requirement for relocation of fauna. The following table details the actions to be taken in these events.

Fauna Spotter Catcher required – suitable habitat present adjacent to the site	If the engaged Fauna Spotter Catcher's assessment determines that no protected wildlife or listed species are present but such threatened fauna may be present within suitable habitat existing adjacent to the site, the following must be included in the PTRP: • Fauna Spotter Catcher credentials and for handling of anticipated protected species • A list of anticipated species; and • A Wildlife Protection Management Plan (WPMP) and Wildlife Habitat Impact Mitigation Plan (WHIMP)
Fauna Spotter Catcher required – protected / listed species present and/or relocation of fauna required	If the Fauna Spotter Catcher's Assessment determines that any protected wildlife or listed species are present, and/or threatened fauna are to be systematically relocated, a Fauna Translocation Management Plan (FTMP) must be prepared in accordance with the PTRP. The FTMP must be submitted to DES for endorsement. The following must then by submitted to EDQ with a development application for operational works (vegetation clearing): • Fauna Spotter Catcher credentials and for handling of anticipated protected species • A list of anticipated species; and • DES endorsement of the proposed FTMP; and • A copy of the DES endorsed FTMP.

7. Koala Habitat

The site is not identified as within a State mapped assessable Koala habitat area, however, does include Koala habitat mapped under State Planning Policy and the following should be complied with as part of this FMP to ensure safe removal should any Koalas be encountered on site:

- During construction phases measures are taken in construction practices to not increase the risk of death or injuries to Koalas as specified within this FMP.
- Native vegetation clearing is undertaken as sequential clearing under the guidance of a DES permitted Fauna Spotter Catcher with significant Koala Spotting experience where the native vegetation is a non-juvenile Koala habitat tree.
- Landscape activities provide food, shelter and movement opportunities for Koala consistent with the site design.

8. Site Contacts

Role	Contact Details
Proponent	Darren Jonsson Haricot Development Management Ph. 0411 235 003
Site Supervisor	*To be appointed.*
Environmental Coordinator	Andrew Ridley Saunders Havill Group Ph. (07) 3251 9446
Administering Authority	Brandon Bouda Economic Development Queensland Ph. (07) 3452 7422
Council	Adam Avalos Logan City Council Ph. (07) 3412 4874
Construction Contractor	*To be appointed.*
Fauna Spotter and Catcher	*To be appointed.*
Veterinarian (in closest proximity to application site)	VetLove Flagstone Veterinary Clinic Shop 7, Corner of Hollows and Wild Mint Dr, Jimboomba QLD 4280 Mon-Fri: 8:00am – 6:00pm, Sat: 8:00am – 12:00pm, Sun: Closed Ph. (07) 5546 0315
Department of Environmental and Heritage Protection	For wildlife incidents and licensing and permits: Ph. 1300 130 372
RSPCA Queensland	For reporting injured, sick or orphaned wildlife: Ph. 1300 ANIMAL (1300 264 625)

9. Appendices

Appendix A

Protected Matters Search Tool

Environment Protection and Biodiversity Conservation Act 1999

Appendix B

Wildlife Online Search

Nature Conservation Act 1992

Appendix C

Ecological Assessment Report EPBC Act Referral

Appendix D

Habitat Suitability Assessment

Appendix A

Protected Matters Search Tool

Environment Protection and Biodiversity Conservation Act 1999

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.

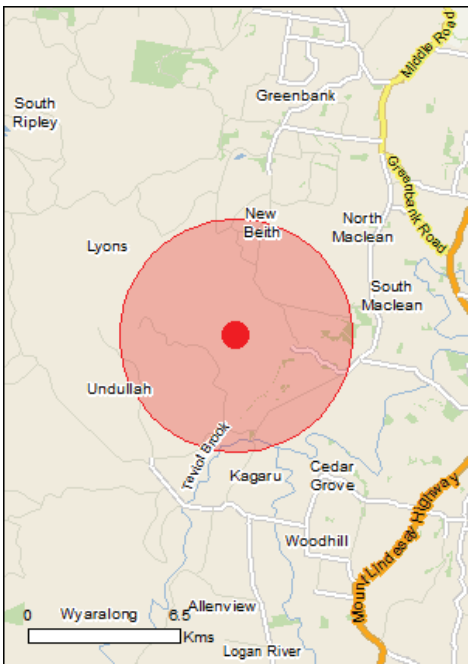
Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

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

Report created: 30/11/20 17:23:08

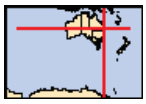
Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2015

Coordinates
Buffer: 5.0Km



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:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	39
Listed Migratory Species:	16

Other Matters Protected by the EPBC Act

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

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at 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:	22
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	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:	34
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar) [Resource Information]

Name	Proximity
Moreton bay	30 - 40km upstream

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
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area
Fish		
Maccullochella mariensis Mary River Cod [83806]	Endangered	Translocated population known to occur within area
Insects		
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE Mainland) [66645]	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Plants		
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
Cupaniopsis shirleyana Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat may occur within area
Cupaniopsis tomentella Boonah Tuckeroo [3322]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Cycas ophiolitica [55797]	Endangered	Species or species habitat likely to occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Fontainea venosa [24040]	Vulnerable	Species or species habitat may occur within area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat likely to occur within area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat may occur within area
Notelaea ipsviciensis Cooneana Olive [81858]	Critically Endangered	Species or species habitat may occur within area
Notelaea lloydii Lloyd's Olive [15002]	Vulnerable	Species or species habitat likely to occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area
Plectranthus habrophyllus [64589]	Endangered	Species or species habitat likely to occur within area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

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

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
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
Motacilla flava Yellow Wagtail [644]		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		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	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		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
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
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically 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
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may 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

Name	Threatened	Type of Presence
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat likely to 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
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
Carduelis carduelis		
European Goldfinch [403]		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 known to occur within area
Mammals		
Bos taurus		
Domestic Cattle [16]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		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 norvegicus Brown Rat, Norway Rat [83]		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		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		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
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		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.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

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

-27.80455 152.92893

Acknowledgements

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

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

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

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

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Appendix B

Wildlife Online Search

Nature Conservation Act 1992

Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: All
Type: Native
Status: Rare and threatened species
Records: All
Date: All
Latitude: -27.8082
Longitude: 152.9281
Distance: 5
Email: andrewridley@saundershavill.com
Date submitted: Monday 30 Nov 2020 16:27:58
Date extracted: Monday 30 Nov 2020 16:30:04

The number of records retrieved = 5

Disclaimer

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

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

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

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Apodidae	*Hirundapus caudacutus*	white-throated needletail		V	V	1
animals	birds	Cacatuidae	*Calyptorhynchus lathami lathami*	glossy black-cockatoo (eastern)		V		1
animals	birds	Strigidae	*Ninox strenua*	powerful owl		V		1
animals	mammals	Phascolarctidae	*Phascolarctos cinereus*	koala		V	V	17
plants	land plants	Myrtaceae	*Melaleuca irbyana*			E		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.

Queensland Government Wildlife Online - Extract Date 30/11/2020 at 16:30:04

Appendix C

Ecological Assessment Report EPBC Act Referral

environmental management

saunders havill group

Ecological Assessment Report
EPBC Act Referral

Lots 3 on RP45236, 3 on RP49296 and 28 on CP S311174 in the Greater Flagstone Priority Development Area

Pioneer Fortune Pty Ltd
15 July 2015
7391

Document Control

Title	Ecological Assessment Report EPBC Act Referral
Address	Wayatt Road, Undullah, Queensland
Job Number	**7391**
Client	Pioneer Fortune Pty Ltd

Document Issue

Issue	Date	Prepared By	Checked By
Draft	11.11.2014	Dr Andrew Davies	Murray Saunders
Draft 2	19.12.2014	Dr Andrew Davies	Murray Saunders
Final	06.07.2015	Dr Andrew Davies	Murray Saunders
DoE Submission	15.07.2015	Dr Andrew Davies	Murray Saunders

Disclaimer

This report has been prepared for **Pioneer Fortune Pty Ltd**. **Saunders Havill Group** cannot accept responsibility for any use of or reliance upon the contents of this report by any third party.

Reports and/or Plans by Others

Reports and/or plans by others may be included within this Environmental Management report to support the document.

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I. Introduction

The *Environmental Management Division* of **Saunders Havill Group** was engaged by **Pioneer Fortune Pty Ltd** to prepare an Ecological Assessment Report for Lots 3 on RP45236, 3 on RP49296 and 28 on CP S311174 (refer **Appendix A** for preliminary Land Use plan) located within the *Greater Flagstone Priority Development Area* (PDA). This report is intended to support a referral under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and provides a review of the site's ecological values in accordance with Commonwealth and State Government legislation.

The proposed residential development area covers approximately 520 hectares of the 1,024 hectare site and is located approximately 25 kilometres south-east of Ipswich City and 27 kilometres south-west of Logan City. The surrounding landscape contains a mixture of cleared agricultural land and vacant bushland, however, the majority of adjoining allotments, including those to the north, east, south and south-west are included within the PDA and are either earmarked for or under development. The south-east boundary adjoins the Sydney-Brisbane railway line and rural residential allotments contained within the existing Flagstone East residential community. The Flinders-Karawatha Bioregional Corridor flanks the property's western boundary. The site context is displayed in **Figure 1** and site aerial in **Figure 2**.

The proposed residential development footprint occurs within mapped remnant vegetation. Smaller patches scattered throughout the site have been identified as non-remnant vegetation, while a relatively substantial watercourse known as Sandy Creek traverses the northern portion of the site and is adjoined by various tributaries. The site has been subject to several flora and fauna assessments to address various approval requirements including targeted surveys carried out specifically for referral under the EPBC Act. The results of these assessments are summarised and presented in this report.

Overall, the site was found to be relatively disturbed by historical clearing and pastoral practices, extractive industry activities, ongoing logging, rubbish dumping and an abundance of weeds and feral animals. The Koala (*Phascolarctos cinereus)* and its habitat were the only listed threatened Matters of National Environmental Significance (MNES) recorded on-site, with the most suitable Koala habitat concentrated within the Sandy Creek riparian corridor. The vast majority of the site contained less suitable Koala habitat. The EPBC Act listed Migratory species, *Merops ornatus* (Rainbow Bee-eater) was recorded on-site but ideal habitat for this species was lacking. Although the Grey-headed Flying Fox (*Pteropus poliocephalus*) was not located on-site, the abundance of suitable *Eucalyptus* food trees would provide foraging habitat for this species.

At the State level, the Powerful Owl (*Ninox strenua*) and Swamp Tea-tree (*Melaleuca irbyana*) are listed as Vulnerable and Endangered, respectively, under the *Nature Conservation Wildlife Regulation, 2009* and were recorded on-site. Swamp Tea-tree occurred only as individual specimens or isolated small stands and did not constitute the critically endangered Threatened Ecological Community, Swamp Tea-tree (*Melaleuca irbyana*) Forest of South-east Queensland, listed under the EPBC Act as a MNES.

The proposal includes the important Sandy Creek as well as other corridors and a substantial buffer along the Flinders-Karawatha Bioregional Corridor for conservation to ensure continued habitat connectivity across the site and to minimise potential edge effects of the development on neighbouring habitat values to the west. Significantly, more land is being retained for environmental outcomes than the extent zoned within the *Greater*

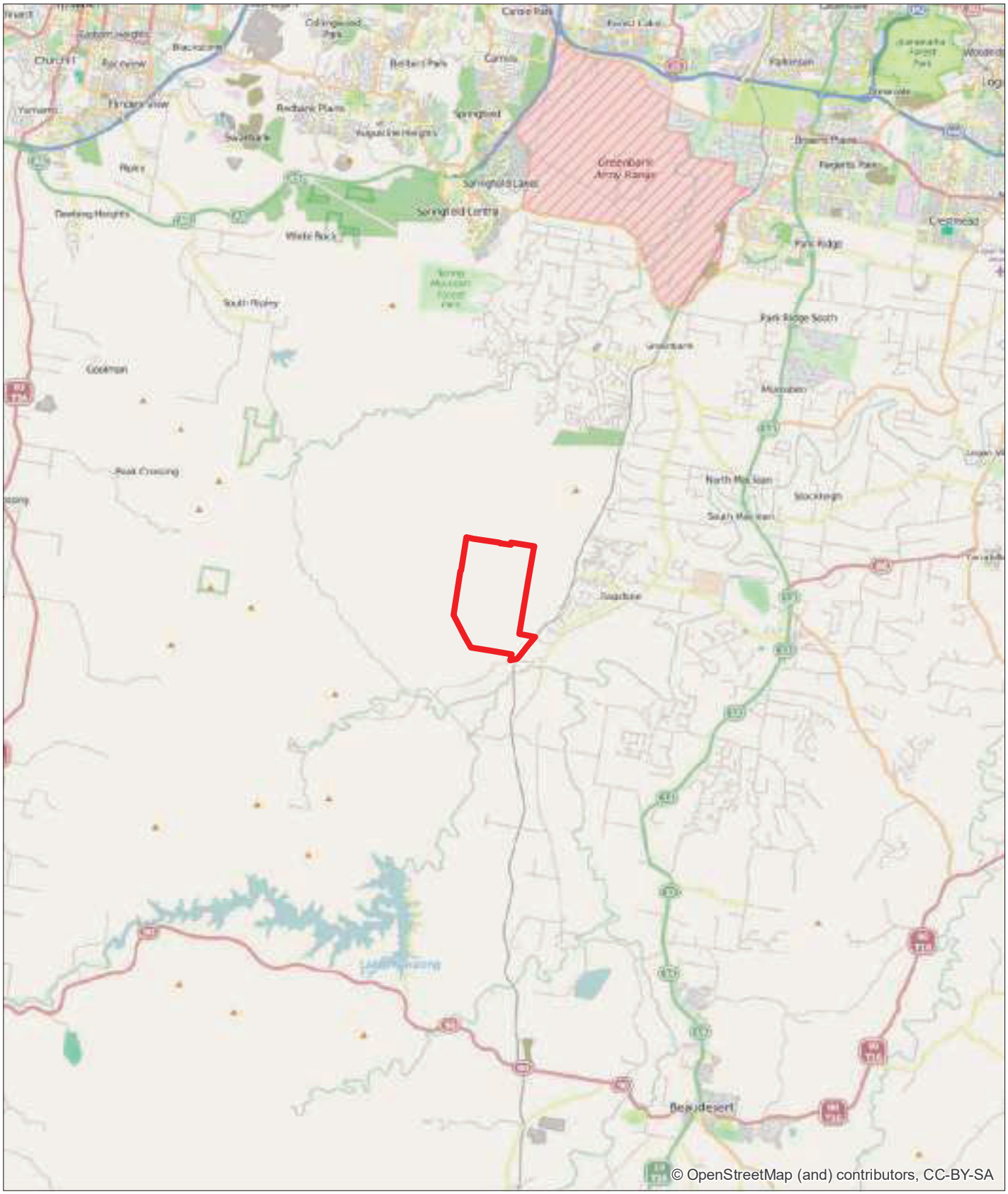
Flagstone Priority Development Area Development Scheme. The dedication of these areas has been defined by site survey and occurs equally on land designated for residential development and land zoned for environmental protection. These conservation areas encapsulate the most suitable Koala habitat on-site as well as the Powerful Owl nest in the north-west portion of the property. This is a significantly larger conservation outcome than that approved under a recent Material Change of Use application for the site (DEV2012/248). For these reasons, the land use proposal is considered to minimise impacts on listed threatened species with potential to utilise the site.

1.1. Key Site Details

Address	Wayatt Road, Undullah
RPD	Lot 3 on RP45236, Lot 3 on RP 49296, Lot 28 on CP S311174
Area	1,024 hectares
VMA 1999	Category B remnant vegetation, made up of Least Concern, Of Concern and Endangered Regional Ecosystems. Smaller portions of Category X non-remnant vegetation.
Koala SPRP	Outside of SPRP Trigger Area - mixture of Medium and Low Value Bushland and Medium and Low Value Rehabilitation Habitat Areas
SPP & SARA	- Protected Plants Trigger Area - Waterways for Waterway Barrier Works - MSES Wildlife Habitat, Regulated Vegetation, Regulated Vegetation intersecting a Watercourse - SPP Class A and B Agricultural Land - SPP Natural Hazards

1.2. Purpose of the Report

The purpose of this Ecological Assessment Report (EAR) is to present and comment on the outcomes of field surveys undertaken to assess potential environmental impacts of the proposed master planned multi-use development on any MNES.



Legend

Project area

Figure 1 *Site Context*

File ref. 7391 E Figure 1 Site Context A
Date *15/07/2015*
Project *Rice Road, Undullah - EAR*

0 1 2 4 *Kilometers*

Scale (A4): 1:200,000 [GDA 1994 MGA Z56]

N

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2014),

Legend

Project area

DCDB - Logan

Figure 2 *Site Aerial*

File ref. 7391 E Figure 2 Site Aerial A
Date *7/11/2014*
Project *Rice Road, Undullah - EAR*

0 200 400 800 *m*

N

Scale (A4): 1:22,500 [GDA 1994 MGA Z56]

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2014), Aerial (Qld Globe 2013)

2. Ecological Assessment Methodology and Process

The following steps were undertaken in the preparation of this assessment:

1. Desktop Analysis
2. Legislation and Policy Review
3. Review of previous ecological assessments
4. Field Survey
5. Analysis and Recommendations

2.1. Desktop Analysis

Prior to the commencement of field surveys, a desktop analysis was conducted to identify relevant information for the site. The following information was reviewed:

- Search of the Commonwealths EPBC Protected Matters Search Tool
- Search of EHP's Wildlife Online Database for the study area and surrounds
- Commonwealth and State Government Environmental Databases
- State Government Environmental Overlay Mapping (i.e. SARA and SPP Mapping)
- Existing ecological reports and plans for the subject site

A review of aerial photography history was undertaken to assist with the broad delineation of vegetation communities and determine historical disturbance patterns to local vegetation communities.

2.2. Field Survey

A number of detailed flora and fauna surveys have been undertaken over the application site. These have been carried out using various survey methods to describe on-site habitat and vegetation characteristics. Survey activities undertaken on-site have included:

- General Searches & Species Identification – The site was walked to ensure all vegetation communities and species were recorded and identified. Particular attention was paid to any threatened species that were listed as possibly occurring on or within the vicinity of the application site and specific micro assemblages which may support these threatened species.

- Observational Survey – Detailed observational surveys of the vertebrate fauna present on or that may utilise the study area, including faunal lists and significance status of species under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) that includes the Japan – Australia Migratory Bird Agreement and the Bonn Convention; and Queensland's *Nature Conservation Act 1992* (NCA). Methods included:
    - Infra-red camera surveys
    - Diurnal and crepuscular bird surveys

- Nocturnal spotlight surveys

- Surveys targeting Koala were conducted, including:
  - Direct observational surveys
  - SAT – The Spot Assessment Technique
  - Koala Food Tree habitat assessments as per **Australian Koala Foundation** guidelines

- Identification – Identification of habitat values within the area relevant to terrestrial vertebrate fauna, including ecological corridors; and

- Description – A description of the major fauna habitats present

Previous surveys undertaken have included:

- An assessment of remnant vegetation and Regional Ecosystem status resulting in the submission of a Property Map of Assessable Vegetation

- An assessment of the extent of *Lantana* spp. infestation on-site

- Baseline Terrestrial and Aquatic Vertebrate Assessment (June 2007 & January 2009)
  - Elliot, cage and pitfall trapping
  - Cage trapping of aquatic fauna
  - Infra-red camera surveys
  - Bird surveys and general observations of fauna and fauna habitat
  - Nocturnal ultrasonic call playback bat surveys

- Koala Habitat Assessment and Mapping (2009)
  - Searches for Koala and evidence of usage (scats)
  - Koala Habitat transects

3. Legislation, Policy and Planning Instruments

3.1. Environment Protection and Biodiversity Conservation Act 1999

The Australian Government's key piece of environmental legislation is the *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act). The EPBC Act aims to protect and manage matters of environmental significance which include nationally and internationally important flora, fauna, ecological communities and heritage places.

A Protected Matters Search for the allotment was undertaken through the Environment Protection and Biodiversity Conservation Online Protected Matters Search Tool (PMST). The search provides a list of wetlands of international significance, threatened ecological communities and threatened species which have the potential to be temporarily or permanently located within a ten (10) kilometre radius of the development site. **Table 1** lists a summary of the search results relevant to the site. The complete results of this search are included in **Appendix B**.

Table 1: EPBC Act 1999 Protected Matters Search Results

Wetlands of International Importance (RAMSAR)		
Moreton Bay		
Listed Threatened Ecological Communities		
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area
Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland	Critically Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area
Listed Threatened Species		
Scientific Name	**Common Name**	**Status**
Birds		
Anthochaera phrygia	Regent Honeyeater [82338]	Endangered
Botaurus poiciloptilus	Australasian Bittern [1001]	Endangered
Cyclopsitta diophthalma coxeni	Coxen's Fig-Parrot [59714]	Endangered
Dasyornis brachypterus	Eastern Bristlebird [533]	Endangered
Erythrotriorchis radiatus	Red Goshawk [942]	Vulnerable
Geophaps scripta scripta	Squatter Pigeon (southern) [64440]	Vulnerable

Scientific Name	Common Name	Status
Lathamus discolor	Swift Parrot [744]	Endangered
Poephila cincta cincta	Black-throated Finch (southern) [64447]	Endangered
Rostratula australis	Australian Painted Snipe [77037]	Endangered
Turnix melanogaster	Black-breasted Button-quail [923]	Vulnerable
Fish		
Maccullochella mariensis	Mary River Cod [83806]	Endangered
Insects		
Phyllodes imperialis smithersi	Pink Underwing Moth [86084]	Endangered
Mammals		
Chalinolobus dwyeri	Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable
Dasyurus hallucatus	Northern Quoll [331]	Endangered
Dasyurus maculatus maculatus (SE mainland population)	Spot-tailed Qoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	Endangered
Petrogale penicillata	Brush-tailed Rock-wallaby [225]	Vulnerable
Phascolarctos cinereus	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable
Potorous tridactylus tridactylus	Long-nosed Potoroo (SE mainland) [66645]	Vulnerable
Pteropus poliocephalus	Grey-headed Flying-fox [186]	Vulnerable
Other		
Cycas ophiolitica	[55797]	Endangered
Plants		
Arthraxon hispidus	Hairy-joint Grass [9338]	Vulnerable
Bosistoa selwynii	Heart-leaved Bosistoa [13702]	Vulnerable
Bosistoa transversa	Three-leaved Bosistoa [16091]	Vulnerable
Bulbophyllum globuliforme	Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable
Cupaniopsis tomentella	Boonah Tuckeroo [3322]	Vulnerable
Lepidium peregrinum	Wandering Pepper-cress [14035]	Endangered
Notelaea ipsviciensis	Cooneana Olive [81858]	Critically Endangered
Notelaea lloydii	Lloyd's Olive [15002]	Vulnerable

Scientific Name	Common Name	Status
Phaius australis	Lesser Swamp-orchid [5872]	Endangered
Phebalium distans	Mt Berryman Phebalium [81869]	Critically Endangered
Planchonella eerwah	Shiny-leaved Condoo, Black Plum, Wild Apple [17340]	Endangered
Plectranthus habrophyllus	[64589]	Endangered
Thesium australe	Austral Toadflax, Toadflax [15202]	Vulnerable
Reptiles		
Coeranoscincus reticulatus	Three-toed Snake-tooth Skink [59628]	Vulnerable
Delma torquata	Collared Delma [1656]	Vulnerable
Furina dunmalli	Dunmall's Snake [59254]	Vulnerable

3.2. Nature Conservation Act 1992

The *Nature Conservation Act, 1992* (NCA) classifies and protects significant areas (Protected Areas) and protects threatened plant and animal species. The *Nature Conservation (Wildlife) Regulation, 1994* (NCWR) lists plant and animal species presumed extinct, endangered, vulnerable, near threatened, least concern, international or prohibited. The schedules of this regulation were considered in this report using a Wildlife Online Database Search with a five (5) kilometre radius from the site. Species listed under the NCWR with the potential to occur around the subject site are shown in

Table 2. Refer to **Appendix C** for full search results.

Table 2: NCA Wildlife Online Search Results

Scientific Name	Common Name	Status
Amphibians		
Litoria brevipalmata	green thighed frog	Near Threatened
Adelotus brevis	tusked frog	Vulnerable
Birds		
Accipiter novaehollandiae	grey goshawk	Near Threatened
Stictonetta naevosa	freckled duck	Near Threatened
Nettapus coromandelianus	cotton pygmy-goose	Near Threatened
Calyptorhynchus lathami	glossy black-cockatoo	Vulnerable
Ephippiorhynchus asiaticus	black-necked stork	Near Threatened
Stipiturus malachurus	southern emu-wren	Vulnerable
Melithreptus gularis	black-chinned honeyeater	Near Threatened
Lewinia pectoralis	Lewin's rail	Near Threatened
Rostratula australis	Australian painted snipe	Vulnerable
Ninox strenua	powerful owl	Vulnerable

Scientific Name	Common Name	Status
Turnix melanogaster	black-breasted button-quail	Vulnerable
Mammals		
Dasyurus maculatus maculatus	spotted-tailed quoll (southern subspecies)	Vulnerable
Petrogale penicillata	brush-tailed rock-wallaby	Vulnerable
Phascolarctos cinereus (southeast Queensland bioregion)	koala (southeast Queensland bioregion)	Vulnerable
Plants		
Marsdenia coronata	slender milkvine	Vulnerable
Plectranthus habrophyllus	-	Endangered
Melaleuca irbyana	-	Endangered
Cupaniopsis tomentella	Boonah tuckeroo	Vulnerable
Planchonella eerwah	-	Endangered

Amendments to the 'protected plants' regulatory framework under the NCA commenced on 31 March 2014, establishing new approval triggers and processes for clearing protected plants. A protected plant is defined as all Extinct, Endangered, Vulnerable and/or Near Threatened (EVNT) plant species listed by name in Schedules 1-5 of the NCWR and Least Concern wildlife, not listed by name but identified as a plant indigenous to Australia in Schedule 6.

A search of the Flora Survey Trigger Map identifies that the site is partially located within a 'High Risk' Area (**Figure 3**). If a protected plant is identified on the subject site, under the amended NCA, a protected plant that is in the wild must not be 'taken', which includes being cleared, unless taking is under:

- A conservation plan applicable to the plant;
- A license, permit or other authority under a regulation.; or
- An exemption under a regulation.

3.3. Vegetation Management Act 1999

The *Vegetation Management Act, 1999* (VMA) is the key mechanism by which the Queensland Government protects the state's environmental resources pertaining to vegetation. Under the VMA, a series of maps delineate vegetation features across the landscape which are each assigned a conservation value directly related to the remaining extent of these features in the landscape. The VMA also protects 'essential habitat' vegetation where listed threatened species have been known to occur.

Under the *Vegetation Management Framework Amendment Act 2013* (VMFAA), regulated Vegetation Management Mapping shows vegetation categories used to determine clearing requirements. While areas shown on the map as Category X are not regulated under the VMA, those shown as a Category A, B, C or R are subject to clearing requirements. The latter vegetation categories can only be cleared in accordance with an exemption, self-assessable vegetation clearing code, area management plan or development approval. A supporting map defining Regional Ecosystems, wetlands, watercourses and essential habitat is provided with

the Regulated Vegetation Management Map. Approval for clearing of native vegetation is required under the *Sustainable Planning Act 2009* (SPA); specifically assessment is required against *Module 8: Native Vegetation Clearing* of the State Development Assessment Provisions (SDAP).

A property search of the Regulated Vegetation Management Map identifies that the site contains Category B Regulated Vegetation which is protected under the VMA (**Figure 4**). The Vegetation Management Support Map in **Figure 5** indicates the site is mapped with the following Regional Ecosystems:

- RE 12.3.3 (Endangered)
- RE 12.3.7 (Least Concern)
- RE 12.3.11 (Of Concern)
- RE 12.9-10.2 (Least Concern)
- RE 12.9-10.3 (Of Concern)
- RE 12.9-10.7 (Of Concern)
- RE 12.9-10.17 (Least Concern)

Table 3 provides the Regional Ecosystem descriptions applicable to the mapping:

Table 3: Regional Ecosystem Descriptions

Regional Ecosystem	Status	Description
RE 12.3.3	Endangered	*Eucalyptus tereticornis* woodland. *Eucalyptus crebra* and *E. moluccana* are sometimes present and may be relatively abundant in places, especially on edges of plains and higher level alluvium. Other species that may be present as scattered individuals or clumps include *Angophora subvelutina* or A. *floribunda, Corymbia clarksoniana, C. intermedia, C. tessellaris, Lophostemon suaveolens* and *E. melanophloia*. Occurs on Quaternary alluvial plains, terraces and fans where rainfall is usually less than 1000mm/y. (BVG1M: 16c). Vegetation communities in this regional ecosystem include: 12.3.3a: Floodplain (other than floodplain wetlands). *Eucalyptus crebra, C. tessellaris* woodland to open forest. Other species that may be present as scattered individuals or clumps include *Corymbia clarksoniana*, *Eucalyptus melanophloia, E. tereticornis* and *C. citriodora* subsp. variegata. Occurs on high level alluvial plains, terraces and fans where rainfall is usually less than 1000mm/y. (BVG1M: 18b). 12.3.3b: Floodplain (other than floodplain wetlands). Open forest to woodland of *Eucalyptus moluccana* and/or *Eucalyptus tereticornis* and *E. crebra,* with a sparse to mid-dense understorey of *Melaleuca irbyana*. Occurs on margins of Quaternary alluvial plains. (BVG1M: 13d). 12.3.3c: Floodplain (other than floodplain wetlands). *Melaleuca irbyana* low open forest or thicket. Emergent *Eucalyptus moluccana, E. crebra, E. tereticornis* or *Corymbia citriodora* may be present. Occurs on Quaternary alluvial plains where drainage of soils is impeded. (BVG1M: 21b). 12.3.3d: Floodplain (other than floodplain wetlands). *Eucalyptus moluccana* woodland. Other frequently occurring species include *Eucalyptus tereticornis, E. crebra, E. siderophloia* and *Corymbia*

Regional Ecosystem	Status	Description
		intermedia. Occurs on margins of Quaternary alluvial plains usually adjacent sedimentary geologies. (BVG1M: 13d).
RE 12.3.7	Least Concern	Narrow fringing woodland of *Eucalyptus tereticornis*, *Casuarina cunninghamiana* subsp. *cunninghamiana* +/- *Melaleuca viminalis, Waterhousea floribunda*. Other species associated with this RE include *Melaleuca bracteata, M. trichostachya, M. linariifolia* and *M. fluviatilis* in north of bioregion. *Lomandra hystrix* often present in stream beds. Occurs on fringing levees and banks of rivers and drainage lines of alluvial plains throughout the region. (BVG1M: 16a). Vegetation communities in this regional ecosystem include: 12.3.7a: Riverine wetland or fringing riverine wetland. *Melaleuca bracteata* open forest. Occurs in drainage depressions on Quaternary alluvial plains. (BVG1M: 22c). 12.3.7b: Riverine wetland or fringing riverine wetland. Naturally occurring waterholes and lagoons, both permanent and intermittent. Includes exposed stream bed and bars. Occurs in the bed of active (may be intermittent) river channels. (BVG1M: 16d). 12.3.7c: Palustrine wetland (e.g. vegetated swamp). Billabongs and ox-bow lakes containing either permanent or periodic water bodies. Old river beds now cut off from regular flow. (BVG1M: 34d). 12.3.7d: Palustrine wetland (e.g. vegetated swamp). Aquatic vegetation usually fringed with *Eucalyptus tereticornis*. Closed depressions on alluvial plains. (BVG1M: 34d).
RE 12.3.11	Of Concern	*Eucalyptus tereticornis* +/- *E. siderophloia* and *Corymbia intermedia* open forest to woodland. *Corymbia tessellaris, Lophostemon suaveolens* and *Melaleuca quinquenervia* frequently occur and often form a low tree layer. Other species present in scattered patches or low densities include *Angophora leiocarpa, E. exserta, E. grandis, C. trachyphloia, C. citriodora* subsp. variegata, E. *latisinensis, E. tindaliae, E. racemosa* and *Melaleuca sieberi. E. seeana* may be present south of Landsborough. Occurs on Quaternary alluvial plains and drainage lines along coastal lowlands. Rainfall usually exceeds 1000mm/y. (BVG1M: 16c). Vegetation communities in this regional ecosystem include: 12.3.11a: Open forest of *Eucalyptus tereticornis* and/or *E. siderophloia* with vine forest understorey. Other canopy species include *Corymbia intermedia, Araucaria cunninghamii* and *Agathis robusta*. Frequently occurring understorey species include *Flindersia spp., Lophostemon suaveolens, L. confertus, Cupaniopsis parvifolia, Acronychia* spp., *Alphitonia excelsa* and *Acacia disparrima* subsp. *disparrima*. Occurs on sub-coastal Quaternary alluvial plains. Rainfall usually exceeds 1000mm/y. (BVG1M: 16c).
RE 12.9-10.2	Least Concern	*Corymbia citriodora* subsp. variegata open forest or woodland usually with *Eucalyptus crebra*. Other species such as *Eucalyptus tereticornis* and *Corymbia intermedia* may be present in scattered patches or in low densities. Understorey can be grassy or shrubby. Shrubby understorey of *Lophostemon confertus* (whipstick form) often present in northern parts of bioregion. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 10b).

Regional Ecosystem	Status	Description
RE 12.9-10.3	Of Concern	*Eucalyptus moluccana* +/- *Corymbia citriodora* subsp. variegata open forest. Other species include *Eucalyptus siderophloia or E. crebra, E. tereticornis*. Understorey generally sparse but can become shrubby in absence of fire. Occurs on Cainozoic and Mesozoic sediments, especially shales. Prefers lower slopes. (BVG1M: 13d).
RE 12.9-10.7	Of Concern	*Eucalyptus crebra* +/- *E. tereticornis, Corymbia tessellaris, Angophora leiocarpa, E. melanophloia* woodland. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 13c). Vegetation communities in this regional ecosystem include: 12.9-10.7a: *Eucalyptus siderophloia, Corymbia intermedia* +/- *E. tereticornis* and *Lophostemon confertus* open forest. Occurs on Cainozoic and Mesozoic sediments in near coastal areas. (BVG1M: 12a).
RE 12.9-10.17	Least Concern	Open forest to woodland complex generally with a variety of stringybarks, grey gums, ironbarks and in some areas spotted gum. Canopy trees include Eu*calyptus siderophloia, E. propinqua* or *E. major, E. acmenoides or E. portuensis, E. carnea* and/or *E. microcorys* and/or *Corymbia citriodora* subsp. *variegata*. Other species that may be present locally include *Corymbia intermedia, C. trachyphloia, Eucalyptus tereticornis, E. biturbinata, E. moluccana, E. longirostrata, E. fibrosa* subsp. *fibrosa* and *Angophora leiocarpa*. *Lophostemon confertus* or Whipstick *Lophostemon confertus* often present in gullies and as a sub canopy or understorey tree. Mixed understorey of grasses, shrubs and ferns. Hills and ranges of Cainozoic and Mesozoic sediments. (BVG1M: 9a). Vegetation communities in this regional ecosystem include: 12.9-10.17a: *Lophostemon confertus* dominated open forest. Occurs in gullies and southern slopes on Cainozoic and Mesozoic sediments. (BVG1M: 28e). 12.9-10.17b: *Corymbia citriodora* subsp. *variegata* open forest to woodland. Other canopy trees include *Eucalyptus acmenoides, Angophora leiocarpa, E. siderophloia, E. carnea, E. propinqua* and *C. intermedia.* Other species that may be present locally include *Corymbia trachyphloia*, *Eucalyptus tereticornis, E. longirostrata, E. fibrosa* subsp. *fibrosa* and *Angophora leiocarpa. Lophostemon confertus* (tree form and whipstick form) often present in gullies and as a sub canopy or understorey tree. Mixed understorey of grasses and shrubs. Hills and ranges on Cainozoic and Mesozoic sediments. (BVG1M: 10b). 12.9-10.17c: Open forest of *Eucalyptus carnea* and/or *Eucalyptus tindaliae* +/- *Corymbia citriodora* subsp. *variegata, Eucalyptus crebra, Eucalyptus major, Corymbia henryi, Angophora woodsiana, C. trachyphloia, E. siderophloia, E. microcorys, E. resinifera* and *E. propinqua. Lophostemon confertus* often present in gullies and as a sub canopy or understorey tree. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 9a). 12.9-10.17d: Open forest generally containing *Eucalyptus siderophloia, E. propinqua, Corymbia intermedia*. Other characteristic species include *Lophostemon confertus, Eucalyptus microcorys* and *E. acmenoides* or *E. portuensis*. Other species that may be present locally include *Corymbia trachyphloia* subsp. *trachyphloia, C. citriodora* subsp. *variegata, E. longirostrata, E. carnea, E. moluccana* and occasional vine forest species. Hills and ranges on Cainozoic and Mesozoic sediments. (BVG1M: 9a). 12.9-10.17e:

Regional Ecosystem	Status	Description
		Eucalyptus acmenoides, E. propinqua, Corymbia intermedia +/- *E. microcorys, Lophostemon confertus* open forest. Mixed understorey of grasses, shrubs and ferns. Hills and ranges of Cainozoic and Mesozoic sediments. (BVG1M: 9a).

The clearing of Category B Regulated Vegetation is exempt under the VMA in a Priority Development Area (see **Section 3.7**).

Sandy Creek is mapped traversing the northern portion of the site, while a number of associated tributaries are also mapped across the site extent (**Figure 5**). In addition, the majority of site vegetation is mapped as essential habitat for the Koala (*Phascolarctos cinereus*) (**Figure 5**).

3.3.1 PMAV

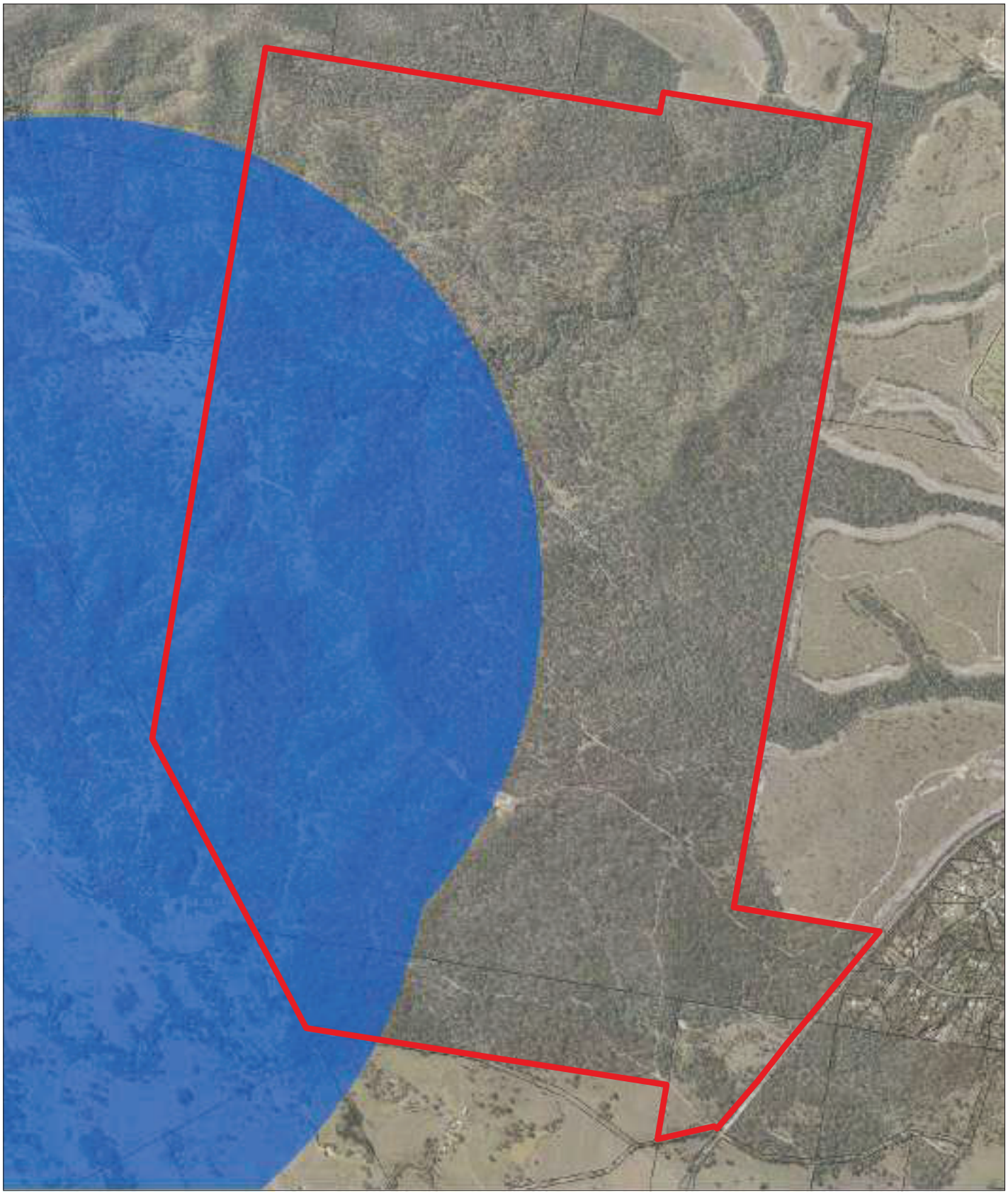
A Property Map of Assessable Vegetation exists for the site (**Figure 6**). The following Regional Ecosystems have been confirmed on-ground:

- Endangered RE 12.3.3
- Composite Of Concern RE 12.3.11/12.3.7
- Composite Least Concern RE 12.9-10.2/12.9-10.17
- Composite Of Concern RE 12.9-10.2/12.9-10.7/12.9-10.17
- Composite Of Concern RE 12.9-10.2/12.9-10.3/12.9-10.7/12.9-10.17
- Composite Of Concern RE 12.3.11/12.3.6
- Least Conner RE 12.9-10.2 (Majority of site)

Least Concern RE 12.3.6 was not originally mapped for the site.

RE 12.3.6 – Least Concern

Description	*Melaleuca quinquenervia* +/- *Eucalyptus tereticornis, Lophostemon suaveolens, Corymbia intermedia* open forest to woodland with a grassy ground layer dominated by species such as *Imperata cylindrica. Eucalyptus tereticornis* may be present as an emergent layer. Occurs on Quaternary floodplains and fringing drainage lines in coastal areas. (BVG1M: 22a).



Legend

- Project area
- DCDB - Logan
- High Risk Area

Figure 3 *NCA - Protected Plants Flora Survey Trigger*

File ref. 7391 E Figure 3 NCA flora A
Date *7/11/2014*
Project *Rice Road, Undullah - EAR*

0 200 400 800 *Meters*

N

Scale (A4): 1:22,500 [GDA 1994 MGA Z56]

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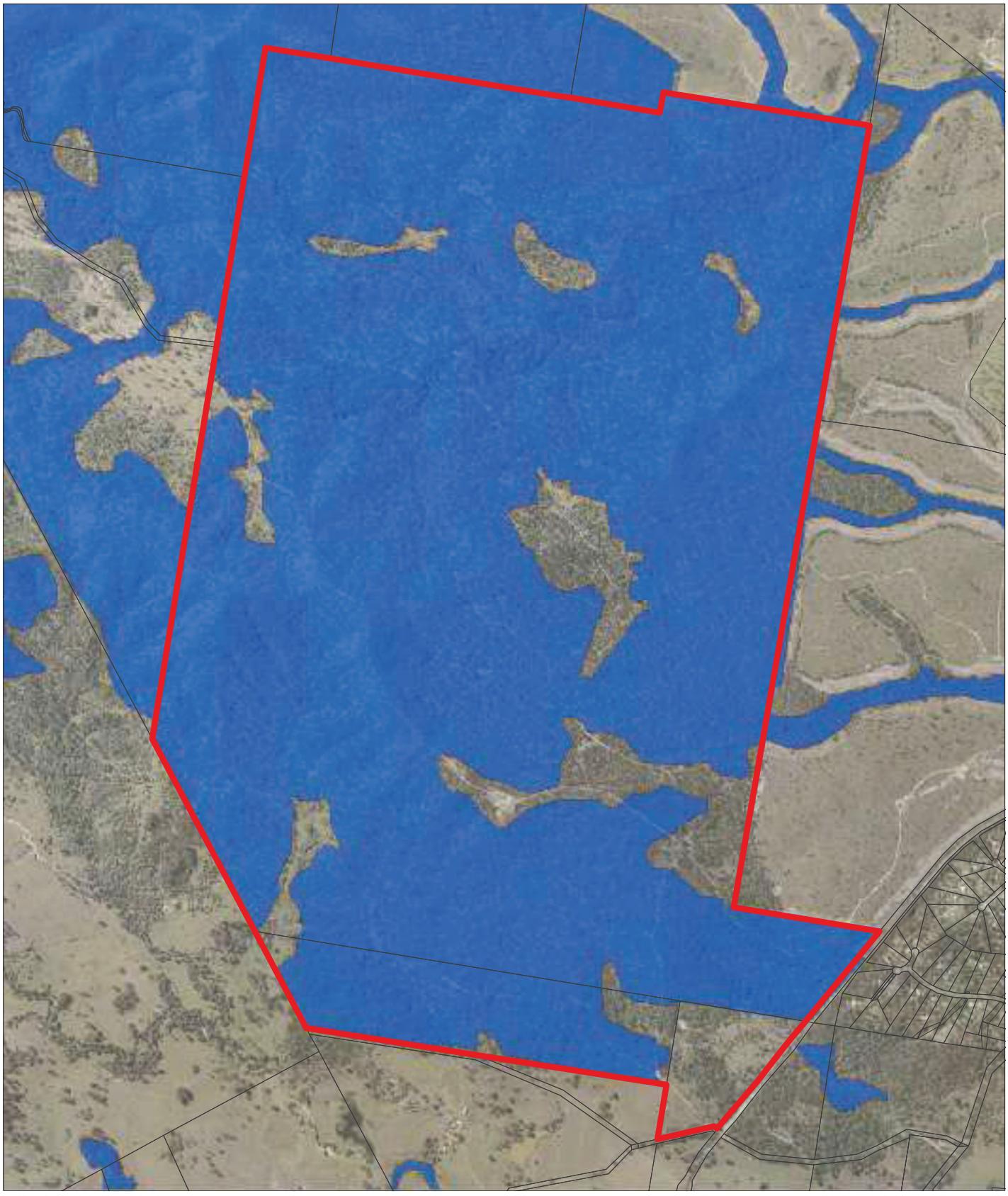
Layer Sources QLD GIS Layers (QLD Gov. Information Service 2014), Aerial (Qld Globe 2013)



Legend

- Project area
- DCDB - Logan

VM Regulated Vegetation v1.7

- *Category A area - Vegetation Offset/Compliance notices/VDecs*
- *Category B area - Remnant vegetation*
- *Category C area - High value regrowth vegetation*
- *Category R area - Reef regrowth watercourse vegetation*
- *Category X area - Vegetation not regulated under the VMA*
- *Water*
- *Area not categorised*

Figure 4 *VM Regulated Vegetation*

File ref. 7391 E Figure 4 Regulated Veg A
Date *7/11/2014*
Project *Rice Road, Undullah - EAR*

0 200 400 800 *Meters*

N

Scale (A4): 1:22,500 [GDA 1994 MGA Z56]

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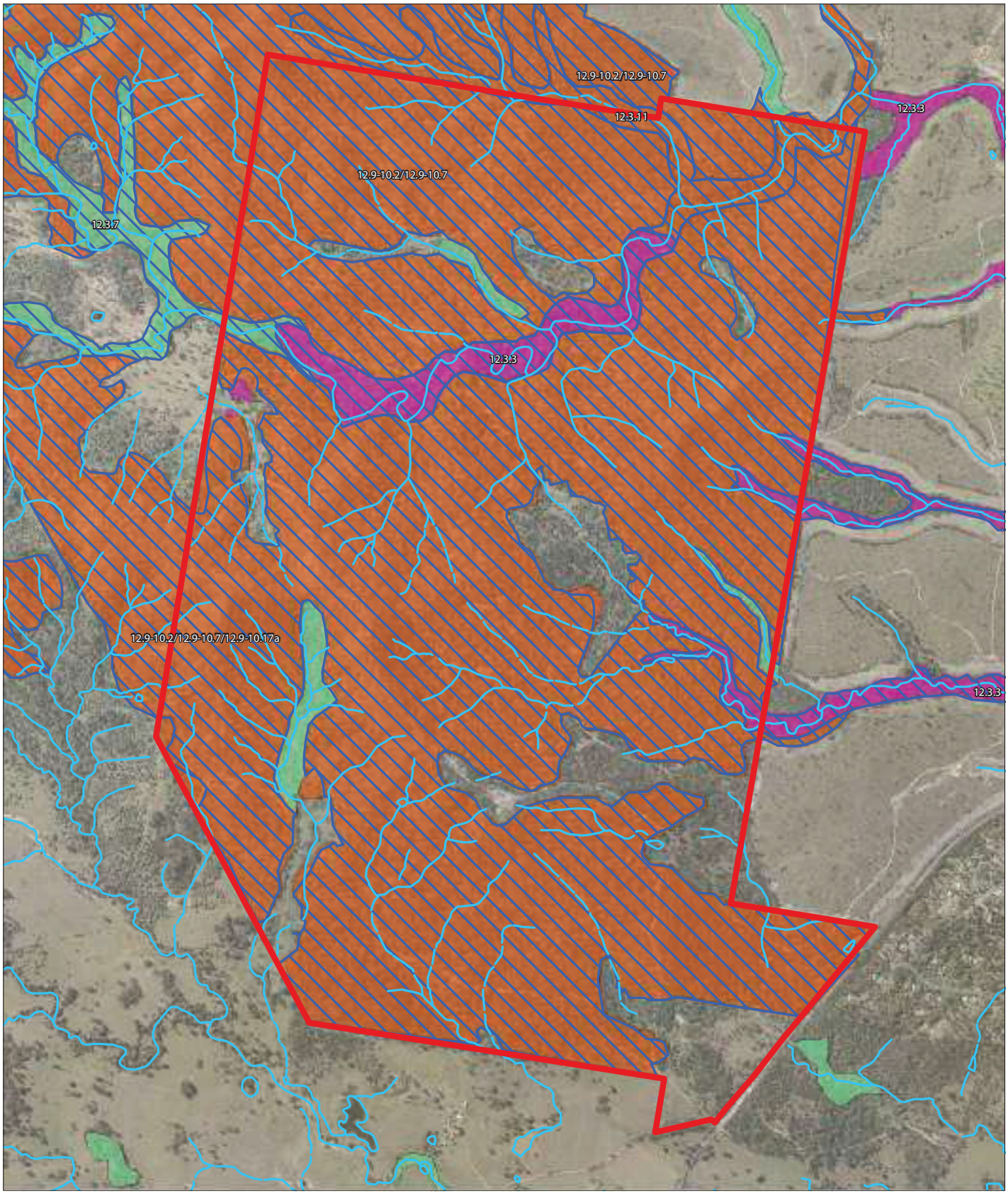

Legend

- Project area
- VM Watercourse 25K v1.3
- VM Essential Habitat v4.10

VM Regional Ecosystems v8

- *Category A or B area containing endangered regional ecosystems*
- *Category A or B area containing of concern regional ecosystems*
- *Category A or B area that is a least concern regional ecosystem*

Figure 5 *VM Supporting Map*

File ref. 7391 E Figure 5 Supporting Map A
Date *7/11/2014*
Project *Rice Road, Undullah - EAR*

0 200 400 800 *Meters*

N

Scale (A4): 1:22,782 [GDA 1994 MGA Z56]

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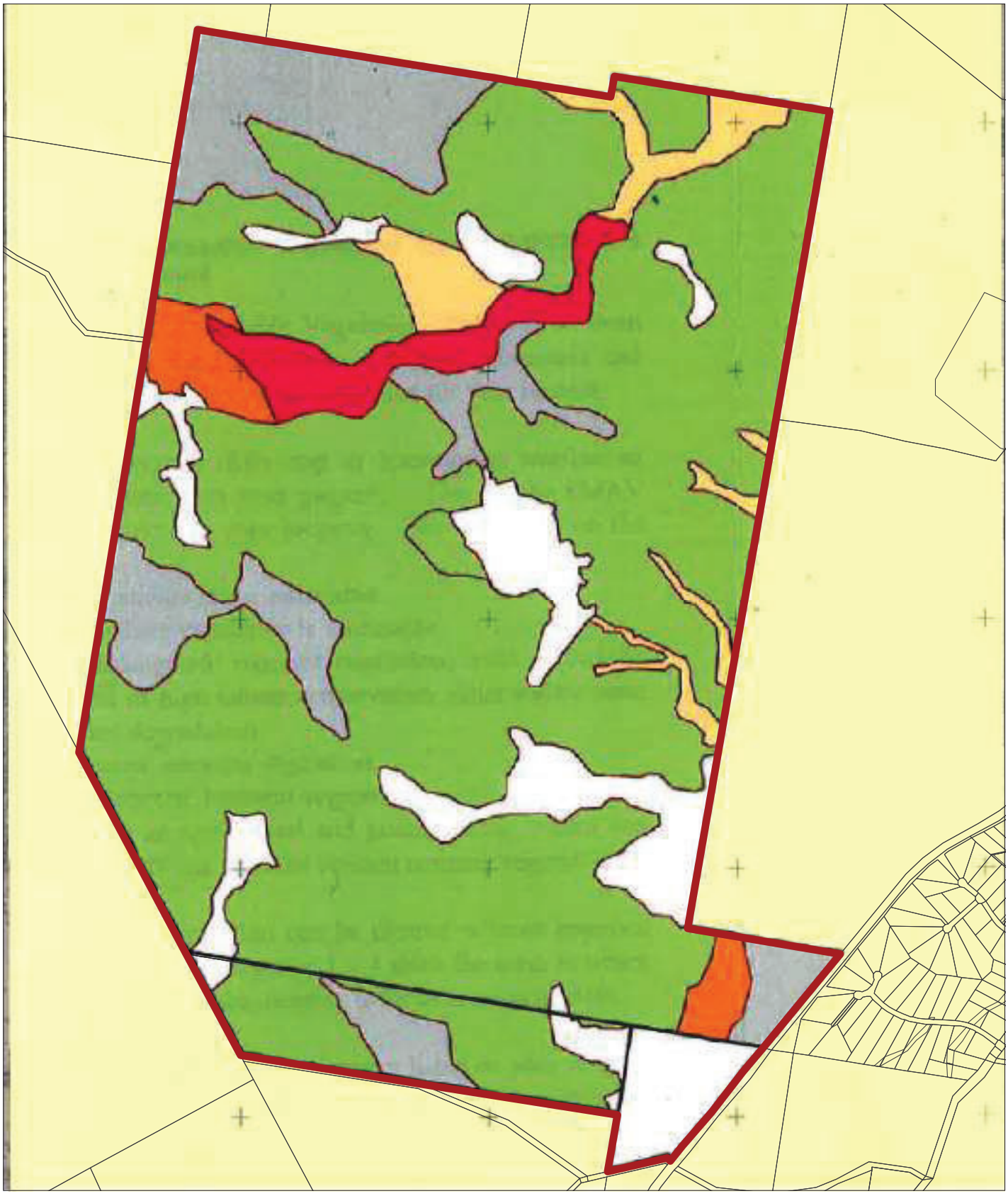
Layer Sources QLD GIS Layers (QLD Gov. Information Service 2014), Aerial (Qld Globe 2013)



Legend

- Project site
- Logan City DCDB
- Category 1 dominant
- Category 2 dominant
- Category 2 sub-dominant
- Category 3 area
- Category X area
- Area not part of this application

Figure 6 *Certified Property Map of assessable vegetation (2007/007509)*

File ref. 7391 E Figure 6 PMAV A
Date *21/11/2014*
Project *Rice Road, Undullah - EAR*

0 200 400 800 *m*

Scale (A4): 1:21,500 [GDA 1994 MGA Z56]

N

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2014), Aerial (Qld Globe 2013)

3.4. South East Queensland Koala Conservation State Planning Regulatory Provisions

The *South East Queensland Koala Conservation State Planning Regulatory* Provisions (SEQ Koala Conservation SPRP) came into effect in May 2010, aiming to protect areas of highest priority for Koala conservation action by regulating new development at the assessment stage. It therefore targets areas of the Koala Coast and Pine Rivers (Priority Koala Assessable Development Areas) and prohibits clearing bushland habitat in these areas, as well as areas outside the urban footprint. It also covers Koala Assessable Development Areas which are areas managed under previous state koala conservation initiatives.

The site is not constrained under the SEQ Koala Conservation State Planning Regulatory Provisions (SPRP) (**Figure 7**). The State Planning Policy for Koala Conservation in South East Queensland (SPP 2/10) Koala habitat values mapping identifies the site as containing Medium and Low Value Bushland Habitat and Medium and Low Value Rehabilitation Habitat (**Figure 8**).

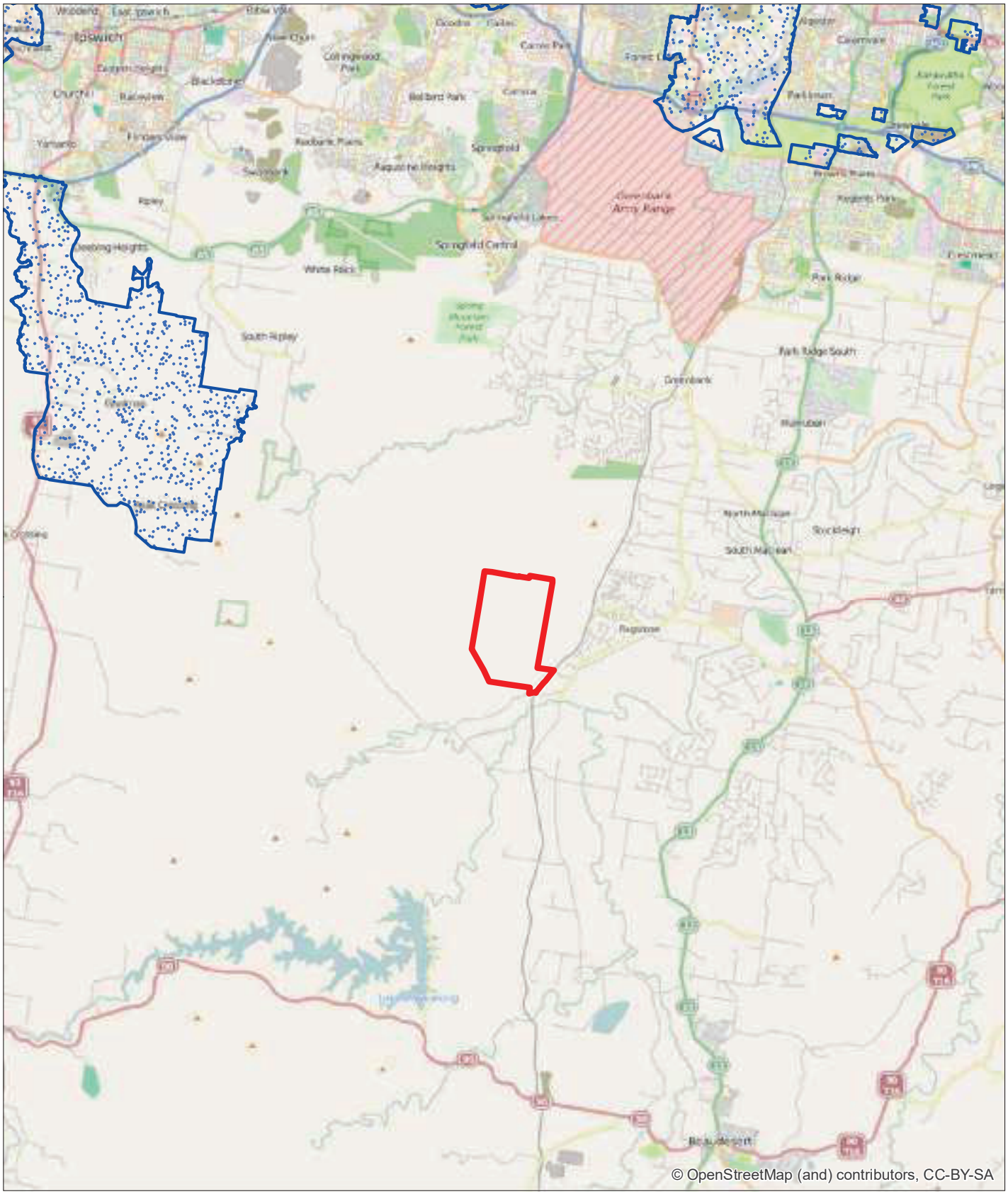
3.5. Fisheries Act 1994

The *Fisheries Act 1994* deals with the use, conservation and improvement of Queensland's fisheries resources and fish habitats. The Fisheries Act seeks to ensure adequate provision for fish movement and habitat access during development processes that include:

- Building work in or adjacent to a declared Fish Habitat Area (FHA);
- Carrying out operational work completely or partly within a declared fish habitat area;
- Carrying out operational work that is the removal, destruction or damage of marine plants; and
- Carrying out Waterway Barrier Works.

Developments that involve any of these above activities require assessment against *Module 5: Fisheries Resources* of the SDAP.

The proposed residential development does not occur within a FHA or within tidal waterways. The site does contain Fisheries mapped waterways. One High (Red) watercourse known as Sandy Creek traverses the northern portion of the site, while various Low (Green) to Moderate (Amber) tributaries are mapped across the site (**Figure 9**). The proposed works will therefore require assessment against *Module 5: Fisheries Resources* of the SDAP.



Legend

- Project area
- DCDB - Logan
- Koala Assessable Development Area (KADA)

Figure 7 *SEQ Koala SPRP Map*

File ref. 7391 E Figure 7 SPRP koala A
Date *15/07/2015*
Project *Rice Road, Undullah - EAR*

0 1 2 4 *km*

Scale (A4): 1:200,000 [GDA 1994 MGA Z56]

N

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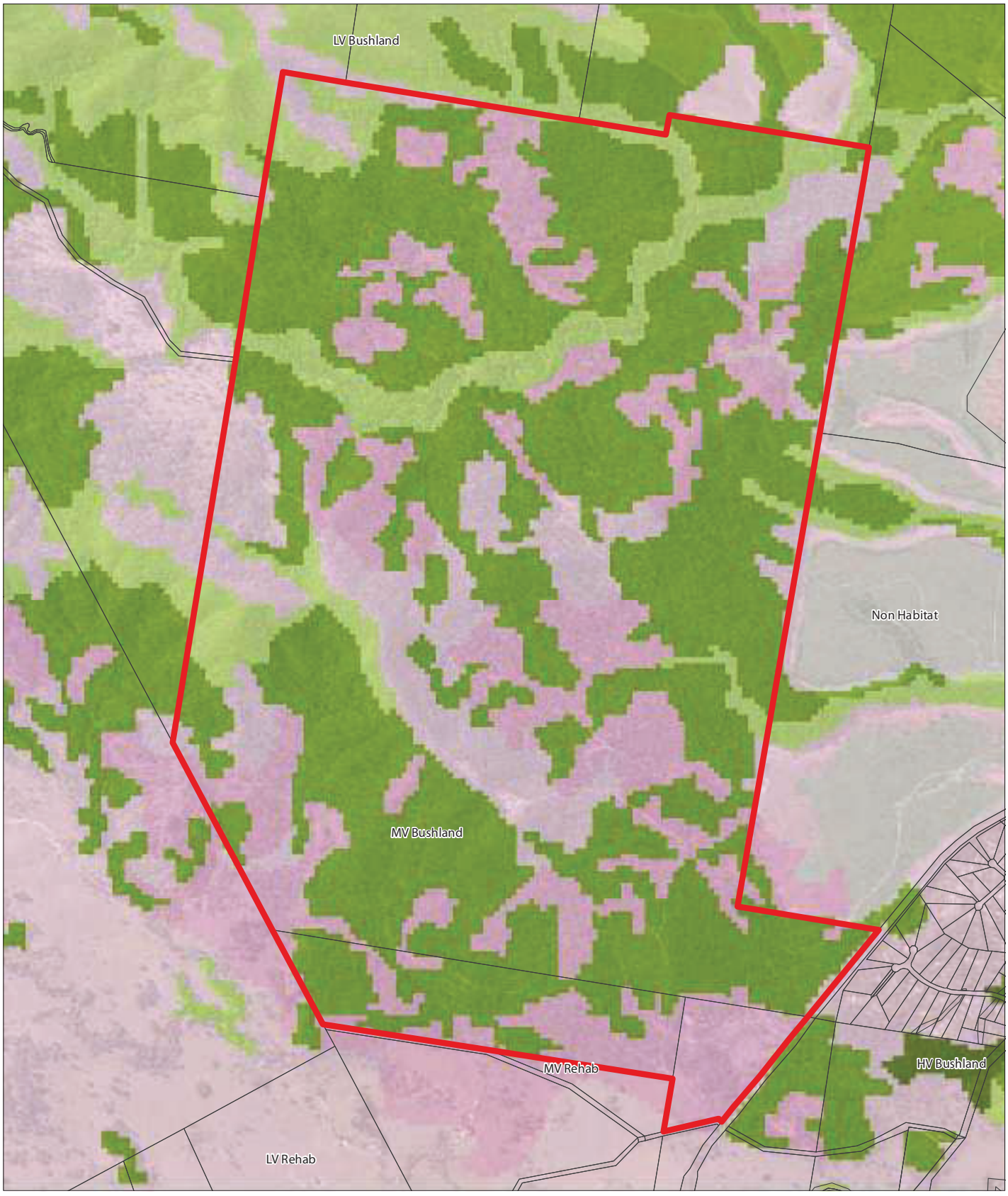
Layer Sources QLD GIS Layers (QLD Gov. Information Service 2014), Aerial (Qld Globe 2013)



Legend

- Project area
- DCDB - Logan

SPP Koala Bushland Habitat Values

Bushland Habitat
- High Value Bushland
- Medium Value Bushland
- Low Value Bushland

Suitable for Rehabilitation
- High Value Rehabilitation
- Medium Value Rehabilitation
- Low Value Rehabilitation

Other Areas of Value
- High Value Other
- Medium Value Other
- Low Value Other
- Generally not suitable
- Water

Figure 8 *Koala SPP Bushland Habitat Values Map*

File ref. 7391 E Figure 8 Koala Bushland A
Date *7/11/2014*
Project *Rice Road, Undullah - EAR*

0 200 400 800 *m*

N

Scale (A4): 1:23,170 [GDA 1994 MGA Z56]

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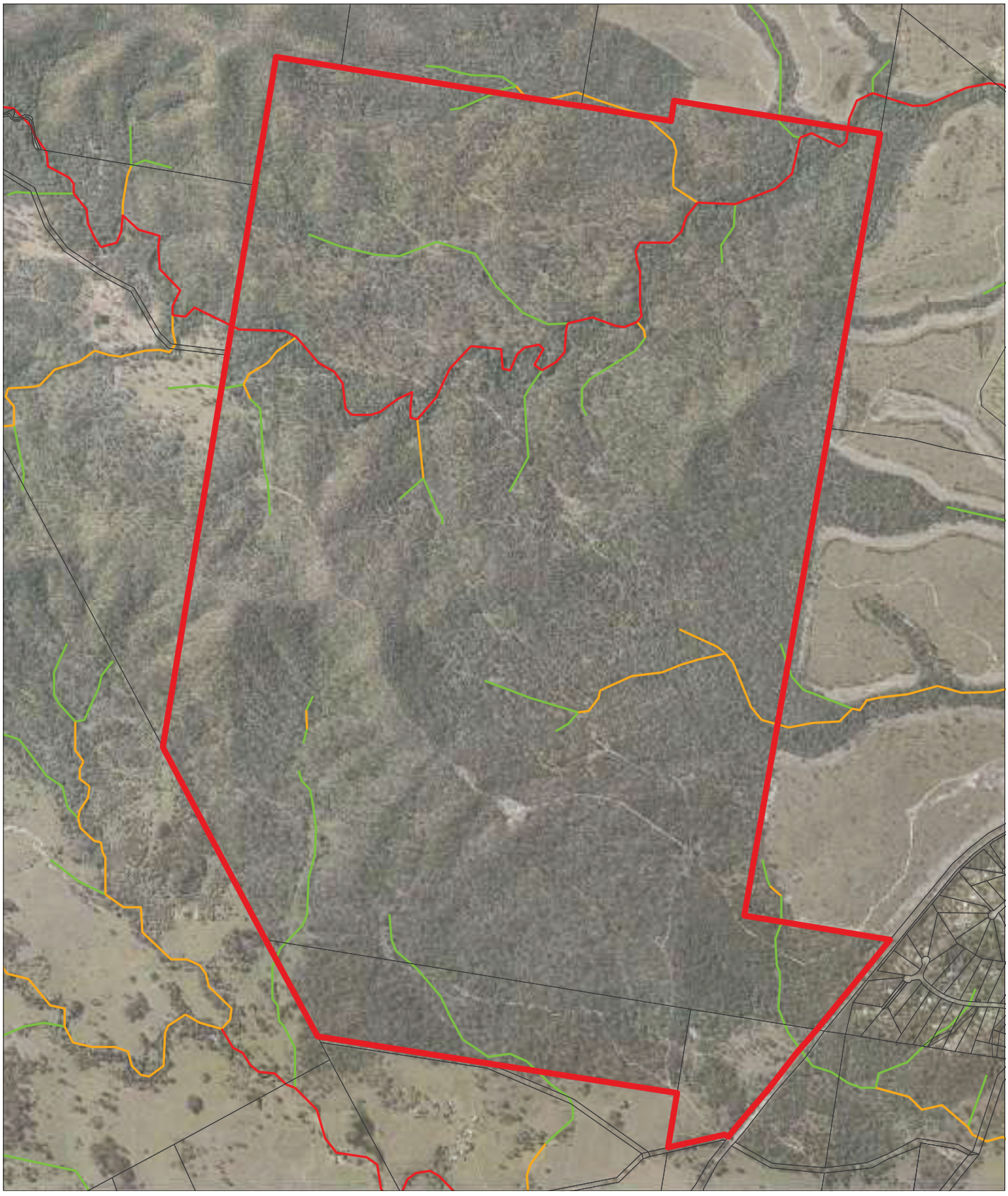
Layer Sources QLD GIS Layers (QLD Gov. Information Service 2014), Aerial (Qld Globe 2013)



Legend

- Project area
- DCDB - Logan

Qld WWBW (streams)

Risk of Impact

- 1 - Low
- 2 - Moderate
- 3 - High
- 4 - Major

Figure 9 *Fisheries - Waterways for Waterway Barrier Works*

File ref. 7391 E Figure 9 Fisheries A
Date *7/11/2014*
Project *Rice Road, Undullah - EAR*

0 200 400 800 *m*

N

Scale (A4): 1:22,500 [GDA 1994 MGA Z56]

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2014), Aerial (Qld Globe 2013)

3.6. Australian Soil Resource Information System

The Australian Soil Resource Information System (ASRIS) collates and maintains the best available, nationally consistent soil and land resource information for Australia. It provides a scientific information infrastructure for assessing and monitoring the condition of Australia's soil and land resources and contains a set of spatial and temporal databases that maintain national soil and land information in a consistent and usable format.

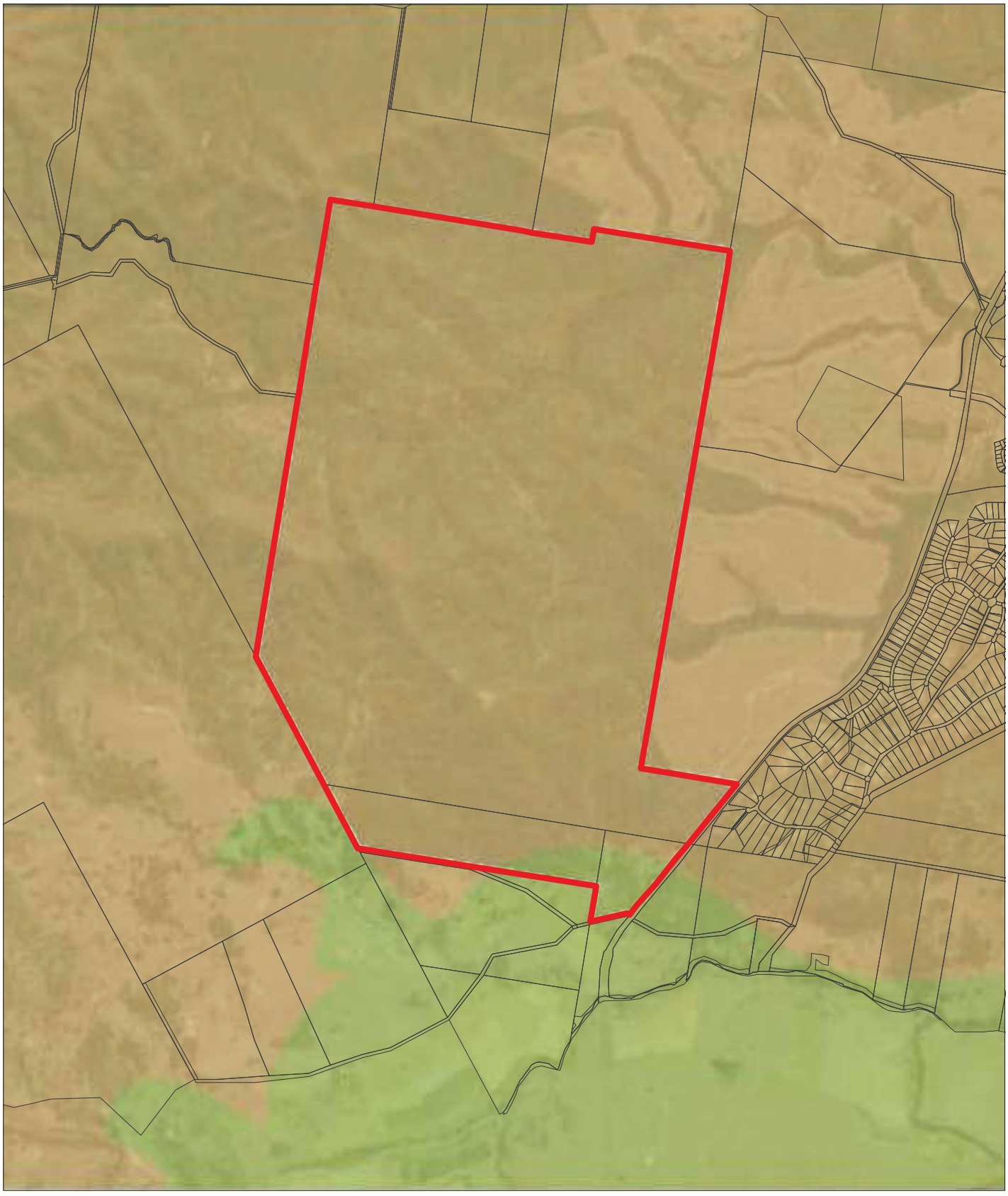
The ASRIS maps the site as containing mostly Chromosols with small areas of Dermosols to the south (**Figure 10**). In addition, Chromosols are considered a component of Land Zone 9-10 Regional Ecosystems as mapped for the site (**Section 3.3**). The pH is estimated to be about 4.8-5.5, indicating acidic soils, while the texture has been mapped as mostly loam, sandy or silty loam or sandy clay loam with a clay content of 20-30%.

Chromosols

Description	Chromosols have a strong contrasting texture. They are not strongly acidic or sodic in the upper B horizon. The parent material of Chromosols ranges from highly siliceous, siliceous to intermediate in composition. These soils are found in imperfectly drained and well-drained sites. These soils have moderate agricultural potential with moderate chemical fertility and water-holding capacity. They can be susceptible to soil acidification and soil structure decline.

Dermosols

Description	Dermosols do not have strong texture contrast. They have a well-structured B2 horizon containing low levels of free iron. The parent materials of dermosols range from siliceous, intermediate to mafic in composition. The soils are found in imperfectly drained and well-drained sites. Dermosols generally have high agricultural potential with good structure and moderate to high chemical fertility and water-holding capacity.



Legend

- Project area
- DCDB - Logan
- Chromosols
- Dermosols

Figure 10 *ASRIS Soils Map*

File ref. 7391 E Figure 10 Soils A
Date *10/11/2014*
Project *Rice Road, Undullah - EAR*

0 200 400 800 *m*

N

Scale (A4): 1:34,000 [GDA 1994 MGA Z56]

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2014), Aerial (Qld Globe 2013)

3.7. State Planning Policy

On 2 December 2013, the Queensland Government's single State Planning Policy (SPP) came into effect replacing the previous ten (10) State Planning Policies. **Part A** of the SPP confirms the hierarchical order of the State planning instruments, with the SPP placed third below the SPA and State Planning Regulatory Provisions (SPRPs), but above Regional Plans, Standard Planning Scheme Provisions and Local Planning Instruments. **Part B** confirms the application of the SPP to:

1. The making or amending of a planning scheme,
2. Designation of land for community infrastructure by a Minister,
3. Making or amending a regional plan,
4. Assessment of a development application mentioned in **Part E**, to the extent that the SPP has not been identified in the planning scheme as being appropriately integrated in the planning scheme, and
5. Carrying out of self-assessable development mentioned in **Part F**.

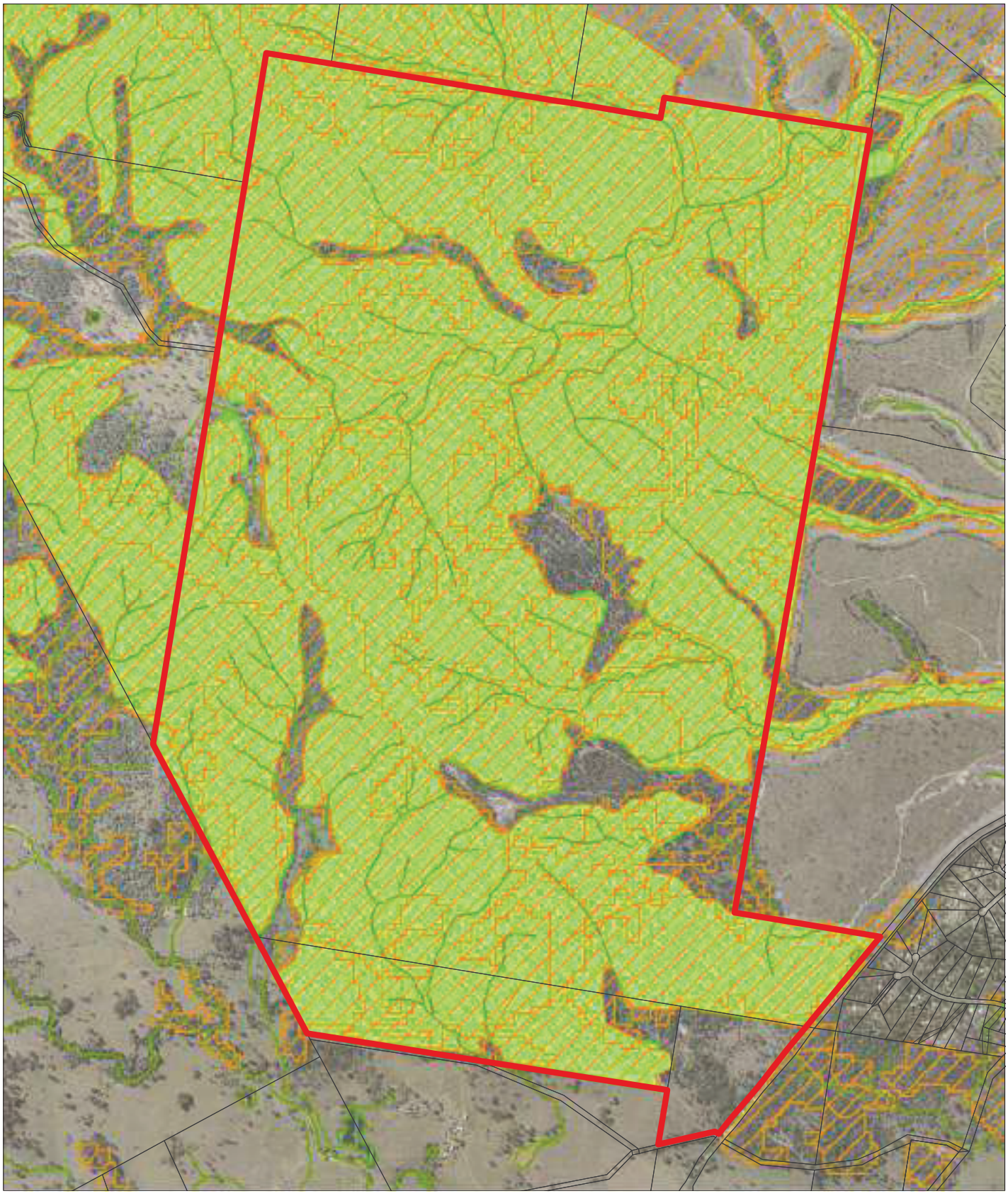
The core of the SPP is contained in **Part D**, where is identifies sixteen (16) Matters of State Environmental Significance (MSES) in land use planning and development, arranged into five (5) broad categories. These State interests will be consequently integrated into Local Government Planning Schemes across Queensland. Four (4) State interests are included within the category of Environment and Heritage, which are:

1. Biodiversity
2. Coastal Environment
3. Cultural Heritage
4. Water Quality

Importantly, **Part E** of the SPP provides interim development assessment requirements which ensures that State interests are considered by local government when assessing development applications where the local government planning scheme does not yet integrate the State interests in the SPP. Interim development assessment requirements have been prepared for eight (8) of the sixteen (16) State interests, including Biodiversity, Coastal Environment and Water Quality. In essence, any development application across a site containing a State interest identified in **Part E** will need to demonstrate compliance with the interim development assessment requirements.

The subject site is mapped as containing Matters of State Environmental Significance (Wildlife Habitat, Regulated Vegetation and Regulated Vegetation intersecting a watercourse) (**Figure 11**).

Greater Flagstone has been designated by **Economic Development Queensland** as a *Priority Development Area*, which are parcels of land within Queensland identified for specific accelerated development with a focus on economic growth. State Government works with Local Councils to streamline the planning, approval and development processes for PDAs to get results. This intention is reflected under SARA mapping, which designates the investigation area as within the Regional Plan Urban Footprint.



Legend

- Project area
- DCDB - Logan
- MSES - Regulated vegetation (intersecting a watercourse)
- MSES - Wildlife habitat
- MSES - Regulated vegetation

Figure 11 *Matters of State Environmental Significance*

File ref. 7391 E Figure 11 MSES A
Date *10/11/2014*
Project *Rice Road, Undullah - EAR*

0 200 400 800 *m*

N

Scale (A4): 1:22,500 [GDA 1994 MGA Z56]

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2014), Aerial (Qld Globe 2013)

4. Ecological Assessment

4.1. Introduction

The application site has been subject to numerous on-ground ecological surveys to identify existing ecological values. Specific studies have been conducted by **Saunders Havill Group** and **Biodiversity Assessment and Management Pty Ltd** (BAAM), two leading environmental consultancy firms with extensive knowledge of the local area.

The results presented within this report are based on the following surveys conducted throughout the assessment area;

Saunders Havill Group

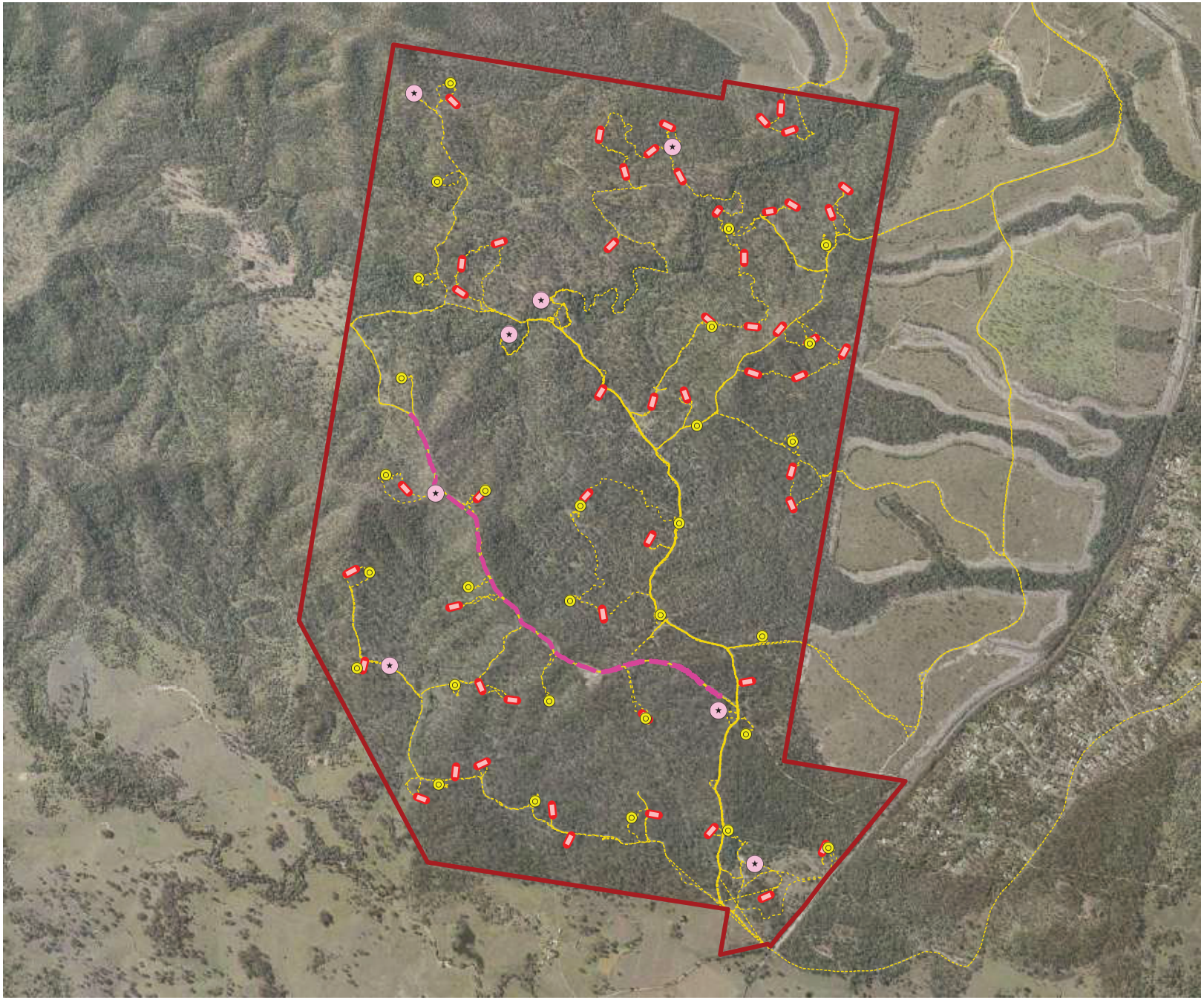
- An assessment of remnant vegetation and Regional Ecosystem status resulting in the submission of a Property Map of Assessable Vegetation (Certified 24.04.2008 – **Section 3.3.1**)
- An assessment of the extent of *Lantana* spp. infestation on-site (2007 and amended in 2014)
- Koala Spot Assessment Techniques (SAT) surveys to determine Koala habitat use throughout the property (2014 – **Plan 1**, next page)
- Koala Habitat assessment based on the Australian Koala foundation's species selection of Primary and Secondary Koala Food Trees (2014 – **Plan 1**)
- Spot lighting, bird surveys and general observations for fauna and fauna habitat (2014 – **Plan 1**)
- Baited infra-red camera surveys (2014 – **Plan 1**)
- Assessment of vegetation communities and searches for all listed species (2007 & 2014 – **Plan 1**)

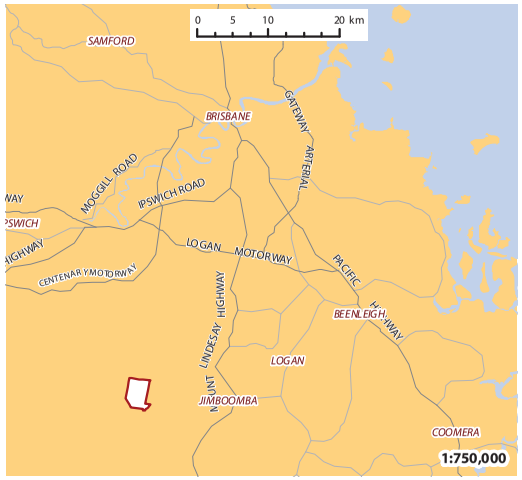
Biodiversity Assessment and Management Pty Ltd

- Baseline Terrestrial and Aquatic Vertebrate Assessment (June 2007 & January 2009 – **Appendix D)**
    - Elliot, cage and pitfall trapping
    - Infra-red camera surveys
    - Bird surveys and general observations of fauna and fauna habitat
- Koala Habitat Assessment and Mapping (2009 – **Appendix E**)
    - Searches for Koala and evidence of usage (scats)
    - Koala Habitat transects

Two Senior Ecologists from **Saunders Havill Group** carried out extensive flora and fauna assessments focussing on MNES most recently over five days in August and another five days in October 2014. The survey encompassed the entire site including all vegetation communities comprising the Sandy Creek buffer area, mapped drainage lines, the peaks and ridges within the highest portions of the site and the remaining balance area over lower slopes (the most dominant vegetation community) and constructed dams.

The site was accessed by vehicle due to the size of the property, however, this was restricted to the dirt tracks. The majority was also traversed by foot to record ecological values and evaluate the composition of tree species and habitat values. Attention was paid to all threatened species that were listed as possibly occurring on or within the vicinity of the application site and any vegetation communities that may support these listed threatened species.





Legend

- Project area
- Fauna camera location
- Spotlighting tracklog
- Spot Assessment Technique (Koala)
- Habitat Assessments (Koala)
- Survey tracklogs

N

0 100 200 400 600 800 1,000 m

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ISSUES:

Issue	Date	Description	Drawn	Checked
A	15/07/2015	Preliminary Draft	TC	RM

Undullah

Field Survey Effort

Date 15/07/2015
Scale 1:20,000 @ A3
Data Information:
Universal Transverse Mercator
GDA 1994 MGA Zone 56
Client Jotown International Pty Ltd
Project Undullah masterplan community
Address/RPD Undullah, Logan City Council
Source DCBD (DNRM, 2013), Aerial (QLD Globe, 2013) RE & HVR (EHP 2013)

Plan 1

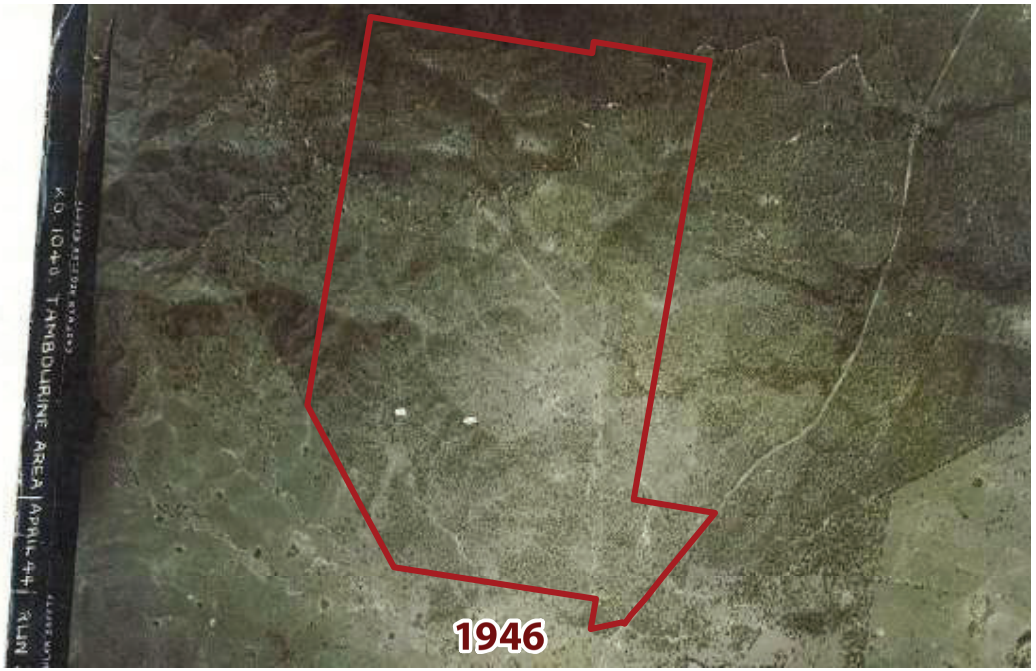
SHG File
7391 E 01 EAR Field Survey B

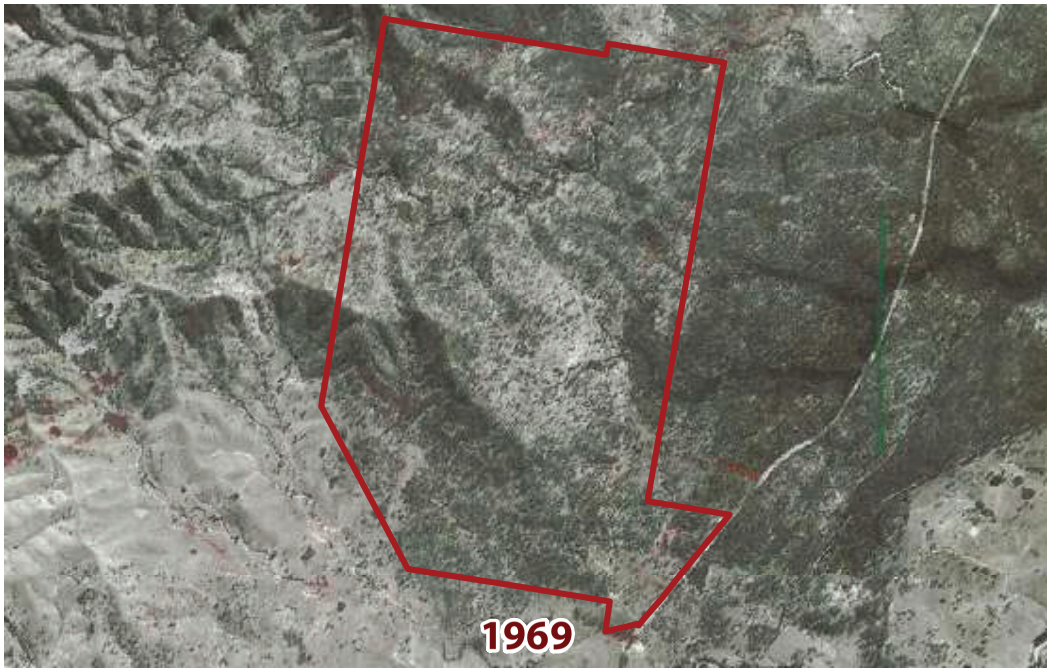
4.2. General Flora Observations

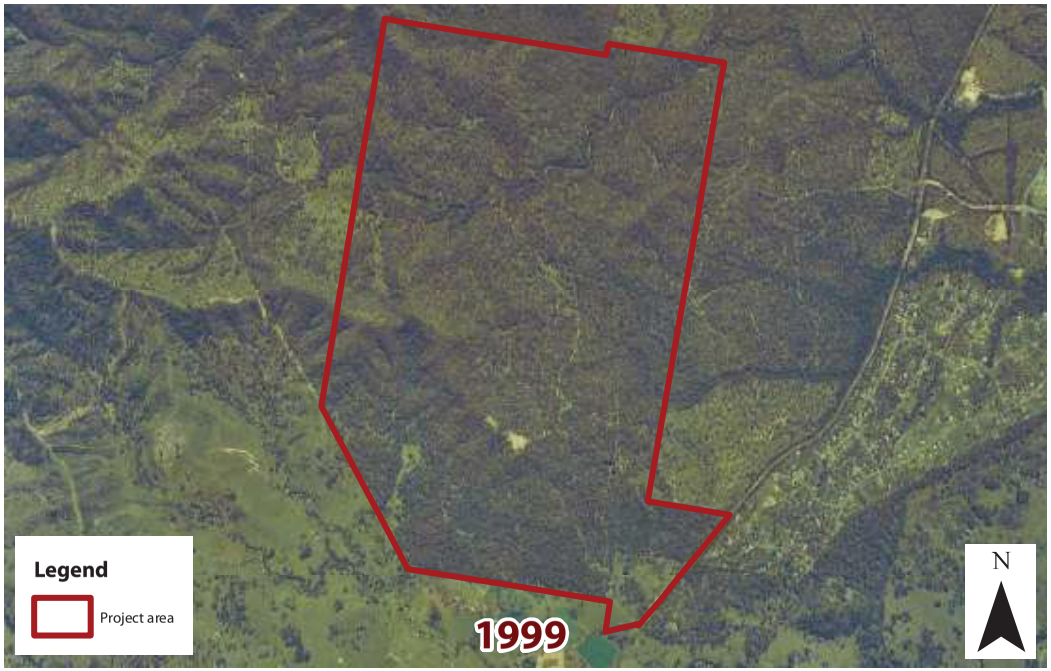
The following general flora observations have been made based on all field surveys and reports conducted throughout the assessment area:

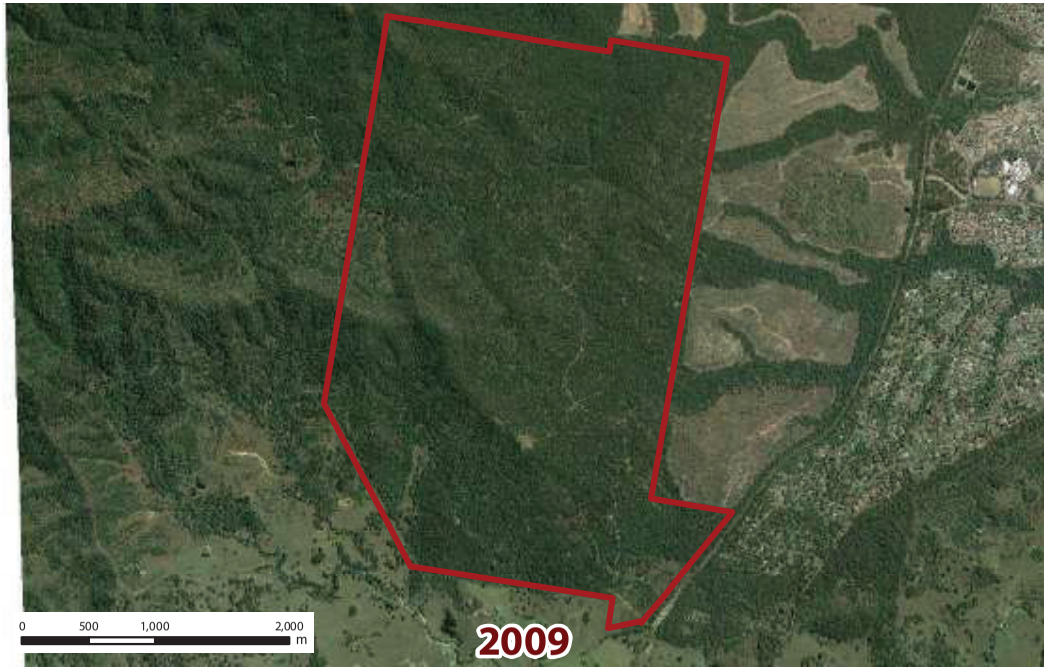
- A Protected Mattes Search generated under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) identified 3 listed Threatened Ecological Communities (TEC) that may occur in the area - *Lowland Rainforest of Subtropical Australia, White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* and *Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland*. **No TECs were recorded on the application site**, but individual specimens and isolated stands of *Melaleuca irbyana* (Swamp Tea-tree) were recorded throughout the assessment area. None of these specimens were recorded within the mapped Regional Ecosystem 12.3.3 along Sandy Creek (Endangered RE 12.3.3a *M. irbyana* forest is a component of *Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland* TEC). Other flora species or elements of these TECS were not observed across the site.
- Fifteen (15) plant species, including a *Cycas ophiolitica*, have been listed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) as potentially occurring on the application site. No listed species were observed throughout field surveys, but potential habitat to support two (2) species, *Plectranthus habrophyllus* (Plectranthus) and *Thesium australe* (Austral Toadflax), is considered present on-site.
- Five (5) threatened plant species are listed under Queensland's *Nature Conservation Act* as possibly occurring on site. Only one species, *Melaleuca irbyana* (Swamp Tea-tree), was recorded throughout the assessment site as individuals or isolated stands.
- As per the certified PMAV, almost 70% of the site is mapped as containing Least Concern Regional Ecosystem 12.9-10.2, described as *Corymbia citriodora +/- Eucalyptus crebra open forest on sedimentary rocks*.
- Approximately 17% of the site contains Of Concern Regional Ecosystem communities. These polygons are comprised of four (4) composite communities containing both Least Concern and Of Concern Regional Ecosystems which occur across two Land Zones. They generally have a relatively high proportion of eucalypt species, including *Eucalyptus crebra* (Narrow Leaf Ironbark), and *Eucalyptus tereticornis* (Forest Red Gum) and are generally associated with the peaks and ridgelines mapped towards the site's western and north-western boundaries. The remaining two (2) remnant Of Concern polygons contain singular Of Concern Regional Ecosystem communities identified as RE 12.3.11 and RE 12.9-10.3. These Of Concern communities are associated with a number of drainage lines, including Sandy Creek and a low lying area dominated by *Eucalyptus moluccana* (Gum Topped Box) located towards the south-east property boundary.
- Approximately 32 hectares, or just over 3%, of the site is mapped as containing the Endangered Regional Ecosystem 12.3.3 described as *Eucalyptus tereticornis* (Forest Red Gum) *woodland on quaternary alluvium*. This polygon is associated with vegetation along Sandy Creek.
- Approximately 10% of the site is mapped as Category X and comprises non-remnant vegetation.
- Ninety-seven (97) flora species have been identified throughout the site. Of the species recorded, thirty-seven (37) are introduced.
- The site has a history of disturbance, including logging, vegetation clearing, grazing and extractive industries, the signs of which are evident in historical aerial history (**Plan 2**) and in current floristic assemblages.
- Access to the site is from the south eastern corner along Wyatt Road and it is only accessible by 4wd.

- A significant number of illegal rubbish dumping sites containing household rubbish and garden waste, household goods, building waste, tyres and car bodies, chemical drums and paint tins and the occasional pile of old fibrous cement sheets were observed throughout the site, especially towards the south-east corner of the application site.
- The property has a long history of logging with almost all of the site having undergone some tree removal seen through evidence of old stumps. Although logging has occurred throughout the whole application site, it appeared that the majority of the logging occurred south of Sandy Creek with a small number of canopy trees retaining a trunk DBH greater than 500 mm. It was also noted that the site contained very few trees with hollows for local fauna.
- Apart from the highest peaks and ridges throughout the property, *Lantana* has severely affected the understorey of the application site (**Plan 3**). The infestation has worsened considerably since initial mapping conducted in 2007. The infestations in most areas was so thick that without a brush hook, penetration through the site was almost impossible. This weed infestation is not confined to gully lines but has also affected the lower slopes and almost all mapped drainage lines throughout the property. In some cases the *Lantana* had infested the canopy of the T2 layer.
- A small disused quarry (extraction area) less than 2 ha in size was observed towards the middle of the southern portion of the site.
- Remnants from when the property was historically used for cattle were observed along the southern embankment of Sandy Creek where the access track intersects with the riparian zone. The old cattle yards and what appears to be a cattle dip, as well as an old partly demolished hut are located amongst tall *Eucalyptus moluccana* (Gum Topped Box) specimens in an area mapped as containing a composite Regional Ecosystem community 12.9-10.2 / 12.9-10.7 / 12.9-10.17.









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ISSUES:

Issue	Date	Description	Drawn	Checked
A	26/11/2014	Preliminary Draft	TC	RM

APPROVED COMPANY

APPROVED COMPANY

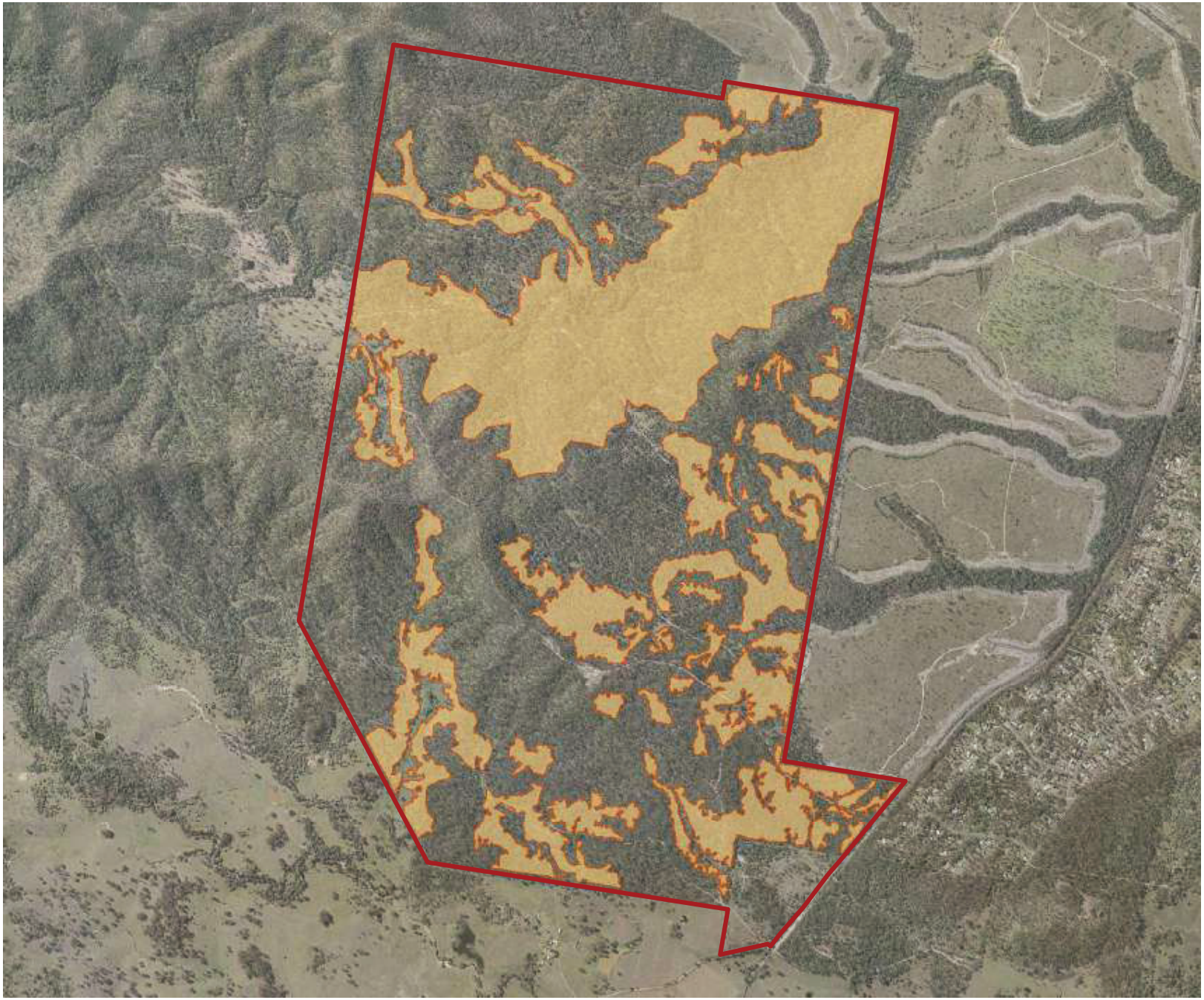
Undullah

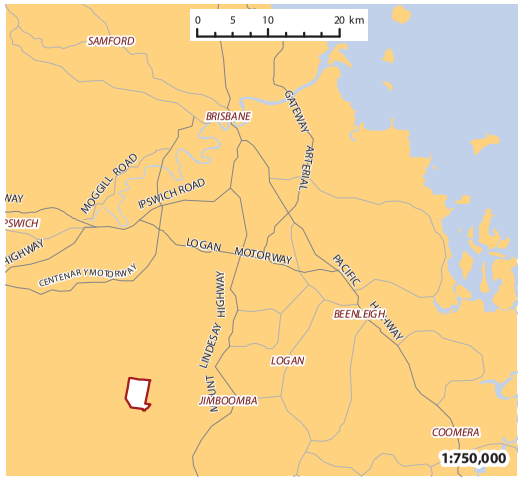
Historical Aerial Imagery

Date | 26/11/2014
Scale | 1:40,000 @ A3
Data Information:
Universal Transverse Mercator
GDA 1994 MGA Zone 56
Client | Jotown International Pty Ltd
Project | Undullah masterplan community
Address/RPD | Undullah, Logan City Council
Source | DCBD (DNRM, 2013), Aerial (Google, 2004 / QLD Gov 2014)

Plan 2

SHG File
7391 E 02 EAR Aerial History A





Legend

- Project area
- Major Lantana camara (Lantana) infestation

N

0 100 200 400 600 800 1,000 m

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ISSUES:

Issue	Date	Description	Drawn	Checked
A	26/11/2014	Preliminary Draft	TC	RM

APPROVED COMPANY QMS

APPROVED COMPANY QMS

Undullah

Major Lantana Infestations

Date 26/11/2014
Scale 1:20,000 @ A3
Data Information:
Universal Transverse Mercator
GDA 1994 MGA Zone 56
Client Jotown International Pty Ltd
Project Undullah masterplan community
Address/RPD Undullah, Logan City Council
Source DCBD (DNRM, 2013), Aerial (QLD Globe, 2013) RE & HVR (EHR 2013)

Plan 3

SHG File
7391 E 03 EAR Lantana Extents A

4.3. Broad Vegetation Communities

For the purpose of the EPBC Act field surveys in 2014, the site was separated into five (5) Broad Vegetation Communities (BVCs) (**Plan 4**) based on the results of previous surveys, including the Property Map of Assessable Vegetation, habitat assessments and ecological features. The characteristics of each BVC survey zone are summarised in **Table 4**, below.

Table 4: Broad Vegetation Communities

Broad Vegetation Communities	Total Area (ha)	Percentage of Site (%)
Sandy Creek Buffer Area	143	14.0
Other Drainage Lines	68	6.6
Peaks and Ridge Tops	171	16.7
Lower Slopes	534	52.1
Non-remnant / Category X Areas	108	10.6
Total Area	**1024**	**100.00**

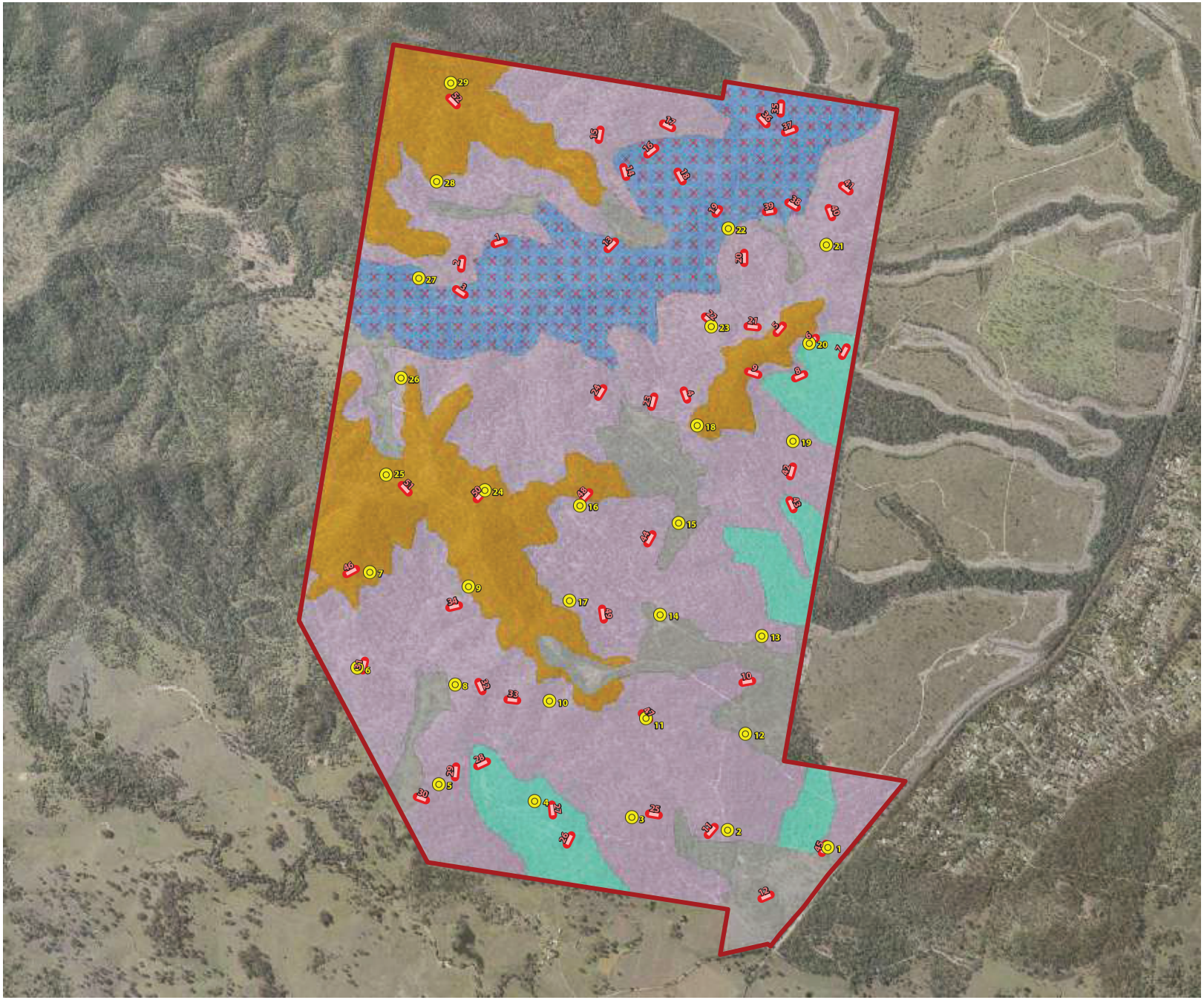
4.3.1 Sandy Creek Buffer Area

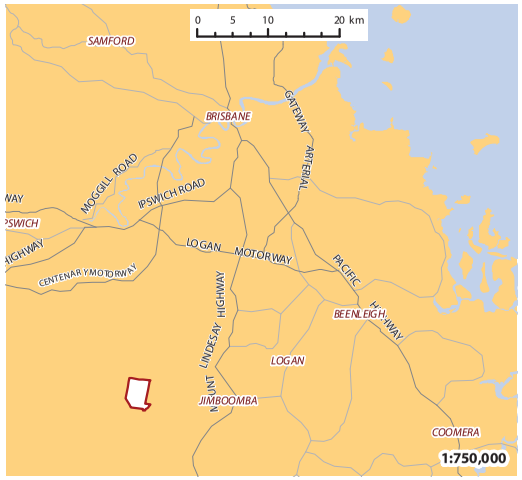
For the purpose of this report, the Sandy Creek Buffer Area refers to the portion of the site containing Sandy Creek and immediate tributaries and surrounding low lying areas and includes a variety of mapped remnant Regional Ecosystem communities, the most significant being Endangered Regional Ecosystem 12.3.3 (**Plan 4**). The total area of this BVC is 143 ha and it comprises approximately 14% of the site (**Table 4**). This BVC contains the following Regional Ecosystem communities;

- Endangered RE 12.3.3
- Of Concern RE 12.3.11
- Composite Of Concern RE 12.9-10.2 / 12.9-10.7 / 12.3.7 (70/20/10)
- Composite Of Concern RE 12.9-10.2 / 12.9-10.7 / 12.9-10.17a (70/20/10)
- Least Concern RE 12.9-10.2.

Although this BVC is comprised of a number of Regional Ecosystems across two Land Zones, the area generally consists of vegetation associated with Sandy Creek and low lying areas adjacent to this alluvial system. The following observations have been made throughout this assessment zone;

- Eighty-two (82) flora species were recorded throughout this zone (**Tables 5 & 6**). The dominant species are consistent with mapped Regional Ecosystem polygons, with *Eucalyptus tereticornis* (Forest Red Gum) and *Eucalyptus moluccana* (Gum Topped Box) dominating the T1 layer adjacent to the banks of Sandy Creek and specifically throughout the mapped Endangered polygon (RE 12.3.3).
- Almost 60% of the species recorded are native to the local area (**Table 5**) with the remaining introduced species containing approximately 10% listed under the *Land Protection (Pest and Stock Route Management) Act 2002* as either Class 2 or Class 3 pest species (**Table 6**).





Legend

- Project area

Broad vegetation communities

- Sandy Creek buffer area
- Other drainage lines
- Peaks and ridge tops
- Lower slopes
- Non-remnant
- Koala SAT survey
- Koala Habitat Assessment Transect

N

0 100 200 400 600 800 1,000 m

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ISSUES:

Issue	Date	Description	Drawn	Checked
A	26/11/2014	Preliminary Draft	TC	RM

APPROVED COMPANY QMS

APPROVED COMPANY QMS

Undullah

Broad Vegetation Communities & Koala Survey Locations

Date 26/11/2014
Scale 1:20,000 @ A3
Data Information:
Universal Transverse Mercator
GDA 1994 MGA Zone 56
Client Jotown International Pty Ltd
Project Undullah masterplan community
Address/RPD Undullah, Logan City Council
Source DCBD (DNRM, 2013), Aerial (QLD Globe, 2013)

Plan 4

SHG File
7391 E 04 EAR Field zones A

- The T2 layer contains a number of native species typical to this environment. The banks of Sandy Creek are dominated by *Casuarina cunninghamii* (River She Oak), *Lophostemon suaveolens* (Swamp Box), and as a result of disturbances, a number of common *Acacia* species. The edge of the lower bank is dominated by *Melaleuca viminalis* (Weeping Bottlebrush).
- Although the shrub layer contains a number of native species, *Lantana camara* (Lantana) is the dominant species throughout this creek and closely associated drainage lines.

Photo: Sandy Creek

Photo: Sandy Creek

Photo: Sandy Creek

Table 5: Sandy Creek Buffer Area Native Flora Species List

Species Name	Common Name
Acacia concurrens	Black Wattle
Acacia disparrima	Hickory Wattle
Acacia fimbriata	Fringed Wattle
Acacia leiocalyx	Early Black Wattle
Acacia maidenii	Maiden's Wattle
Allocasuarina littoralis	Black She Oak
Alphitonia excelsa	Soap Tree
Angophora leiocarpa	Smooth Bark Apple
Angophora subvelutina	Broad-leaved Apple
Banksia integrifolia	Coastal Banksia
Breynia oblongifolia	Coffee Bush
Cassytha glabella	Dodder Laurel
Casuarina cunninghamiana	River She Oak
Cheilanthes distans	Bristle Cloak Fern
Corymbia citriodora	Spotted Gum
Corymbia intermedia	Pink Bloodwood
Corymbia tessellaris	Moreton Bay Ash
Cymbopogon refractus	Barbed Wire Grass
Cyperus difformis	Dirty Dora
Dianella caerulea	Blueberry Lilly
Dianella longifolia	Lilly
Eucalyptus siderophloia	Grey Ironbark
Eucalyptus crebra	Narrow Leaf Ironbark
Eucalyptus moluccana	Gum Topped Box
Eucalyptus seeana	Narrow Leaf Red Gum
Eucalyptus tereticornis	Forest Red Gum
Eustrephus latifolius	Wombat Berry
Exocarpos cupressiformis	Native Cherry
Ficus coronata	Creek Sandpaper Fig
Geitonoplesium cymosum	Scrambling Lilly
Glochidion sumatranum	Large-leaved Cheese Tree
Goodenia rotundifolia	Goodenia
Grevillea robusta	Silky Oak
Hardenbergia violacea	Native Sarsaparilla
Imperata cylindrica	Blady Grass
Juncus usitatus	Common Rush
Lomandra hystrix	Creek Mat Rush
Lomandra longifolia	Mat Rush
Lophostemon confertus	Brush Box

Species Name	Common Name
Lophostemon suaveolens	Swamp Box
Ludwigia octovalvis	Native Willow Primrose
Lygodium microphyllum	Climbing Maidenhair Fern
Melaleuca quinquenervia	Broad Leaf Paperbark
Melaleuca viminalis	Weeping Bottlebrush
Muellerina eucalyptoides	Gum-leaved Mistletoe
Parsonsia straminea	Monkey Rope Vine
Pteridium esculentum	Bracken
Themeda triandra	Kangaroo Grass
Trema tomentosa	Poison Peach

Table 6: Sandy Creek Buffer Area Introduced Flora Species List

Species Name	Common Name	LPA
Ageratina riparia	Mistflower	
Ageratum houstonianum	Blue Billygoat Weed	
Asparagus plumosus	Climbing Asparagus	
Baccharis halimifolia	Groundsel Bush	Class 2
Bidens pilosa	Cobbler's Pegs	
Celtis sinensis	Chinese Elm	Class 3
Chloris gayana	Rhodes Grass	
Cinnamomum camphora	Camphora Laurel	Class 3
Cirsium vulgare	Spear Thistle	
Commelina diffusa	Wandering Jew	
Corymbia torelliana	Cadaghi	
Desmodium uncinatum	Silver-leaved Desmodium	
Gomphocarpus physocarpus	Balloon Cotton Bush	
Hypochaeris radicata	Flat Weed	
Ipomoea cairica	Mile-a-minute	
Lantana camara	Lantana	Class 3
Lantana montevidensis	Creeping Lantana	Class 3
Leucaena leucocephala	Leucaena	
Nephrolepis cordifolia	Fishbone Fern	
Ochna serrulata	Ochna	
Opuntia tomentosa	Velvet Tree Pear	Class 2
Passiflora suberosa	Corky Passionfruit	
Psidium guajava	Guava	
Schefflera actinophylla	Umbrella Tree	
Senecio madagascariensis	Fireweed	Class 2
Senna pendula	Easter Cassia	
Sida cordifolia	Flannel Weed	

Species Name	Common Name	LPA
Solanum mauritianum	Wild Tobacco Tree	
Solanum seaforthianum	Brazilian Nightshade	
Swainsona galegifolia	Darling Pea	
Tecoma stans	Yellow Bells	Class 3
Thunbergia alata	Black-eyed Susan	
Verbena bonariensis	Purpletop Verbena	

4.3.2 Other Drainage Lines

This BVC refers to the mapped drainage lines not linked to Sandy Creek with associated vegetation that retains a high diversity of flora species relative to slopes and ridges (**Plan 4**), including drainage lines mapped as containing composite Regional Ecosystem community 80% Of Concern RE12.3.11 and 20% Least Concern RE12.3.6. This BVC also includes areas towards the southern portion of the site mapped as Of Concern RE 12.9-10.3 and portions mapped as Least Concern RE12.9-10.2. The following ecological features were observed throughout this BVC:

- This portion of the site refers to approximately 68 ha or 6.6% of the total site area (**Table 4**).
- Sixty-seven (67) flora species were recorded throughout this zone (**Tables 7 & 8**). The canopy layer contains a mix of *Eucalyptus* and *Corymbia* species, including *Eucalyptus tereticornis* (Forest Red Gum), *Eucalyptus siderophloia* (Grey Ironbark), *Corymbia intermedia* (Pink Bloodwood) and *Eucalyptus moluccana* (Gum Topped Box).
- The T2 layer includes *Melaleuca quinquenervia* (Broad Leaf Paperbark), *Lophostemon suaveolens* (Swamp Box), and a number of *Acacia* species including *Acacia leiocalyx* (Early Flowering Black Wattle), *Acacia concurrens* (Black Wattle) and *Acacia disparrima* (Hickory Wattle).
- The shrub layer was dominated by *Lantana*.
- Forty-three (43) flora species were native (**Table 7**) and there were twenty-four (24) introduced species (**Table 8**) within this BVC.
- The portion of this zone mapped as containing Land Zone 3 is located along the site's eastern property boundary. These drainage features form the upper reaches of drainage lines which extend further east into the adjacent property where vegetation clearing for residential purposes has occurred outside of linear vegetation retention areas along flow paths.

Photo: Other Drainage Lines

Photo: Other Drainage Lines

Table 7: Other Drainage Lines Native Flora Species List

Species Name	Common Name
Acacia concurrens	Black Wattle
Acacia disparrima	Hickory Wattle
Acacia fimbriata	Fringed Wattle
Acacia leiocalyx	Early Black Wattle
Acacia maidenii	Maiden's Wattle
Allocasuarina littoralis	Black She Oak
Alphitonia excelsa	Soap Tree
Angophora leiocarpa	Smooth Bark Apple
Breynia oblongifolia	Coffee Bush
Cheilanthes distans	Bristle Cloak Fern
Corymbia citriodora	Spotted Gum
Corymbia intermedia	Pink Bloodwood
Corymbia tessellaris	Moreton Bay Ash
Cymbopogon refractus	Barbed Wire Grass
Dianella caerulea	Blueberry Lilly
Dianella longifolia	Lilly
Eucalyptus siderophloia	Grey Ironbark
Eucalyptus crebra	Narrow Leaf Ironbark
Eucalyptus moluccana	Gum Topped Box
Eucalyptus seeana	Narrow Leaf Red Gum
Eucalyptus tereticornis	Forest Red Gum
Eustrephus latifolius	Wombat Berry
Ficus coronata	Creek Sandpaper Fig
Gahnia aspera	Sawsedge
Glochidion sumatranum	Large-leaved Cheese Tree
Geitonoplesium cymosum	Scrambling Lilly
Goodenia rotundifolia	Goodenia
Hardenbergia violacea	Native Sarsaparilla
Imperata cylindrica	Blady Grass
Juncus usitatus	Common Rush
Lomandra hystrix	Creek Mat Rush
Lomandra longifolia	Mat Rush
Lophostemon confertus	Brush Box
Lophostemon suaveolens	Swamp Box
Lygodium microphyllum	Climbing Maidenhair Fern
Melaleuca irbyana	Swamp Tea-tree
Melaleuca quinquenervia	Broad Leaf Paperbark

Species Name	Common Name
Muellerina eucalyptoides	Gum-leaved Mistletoe
Parsonsia straminea	Monkey Rope Vine
Petalostigma pubescens	Quinine Bush
Pteridium esculentum	Bracken
Themeda triandra	Kangaroo Grass
Trema tomentosa	Poison Peach

Table 8: Other Drainage Lines Introduced Flora Species List

Species Name	Common Name	LPA
Ageratina riparia	Mistflower	
Ageratum houstonianum	Blue Billygoat Weed	
Asparagus plumosus	Climbing Asparagus	
Baccharis halimifolia	Groundsel Bush	Class2
Bidens pilosa	Cobbler's Pegs	
Chloris gayana	Rhodes Grass	
Cirsium vulgare	Spear Thistle	
Corymbia torelliana	Cadaghi	
Desmodium uncinatum	Silver-leaved Desmodium	
Eragrostis curvula	African Lovegrass	
Gomphocarpus physocarpus	Balloon Cotton Bush	
Hydrocotyle tripartita	Small-leaved Pennywort	
Hypochaeris radicata	Flat Weed	
Lantana camara	Lantana	Class 3
Lantana montevidensis	Creeping Lantana	Class 3
Ochna serrulata	Ochna	
Passiflora suberosa	Corky Passionfruit	
Schefflera actinophylla	Umbrella Tree	
Senecio madagascariensis	Fireweed	Class 2
Senna pendula	Easter Cassia	
Sida cordifolia	Flannel Weed	
Solanum mauritianum	Wild Tobacco Tree	
Solanum seaforthianum	Brazilian Nightshade	
Swainsona galegifolia	Darling Pea	

4.3.3 Peaks and Ridge Tops

This BVC refers to the highest peaks on the application site, including three polygons both north and south of Sandy Creek linked to the site's western property boundary and a smaller patch located towards the sites north-east corner (**Plan 4**). These vegetation patches reach higher than ninety-five (95) metres above sea level and generally incorporate very steep slopes. This vegetation category refers to approximately 171 ha of the site or 16.7% (**Table 4**). The following observations have been made across this BVC:

- Forty-two (42) flora species were recorded throughout this zone (**Tables 9 & 10**). Generally, a higher portion of *Eucalyptus crebra* (Narrow Leaf ironbark) was recorded within a large portion of this zone. Other species observed within the T1 layer were identified as *Eucalyptus tereticornis* (Forest Red Gum), *Corymbia tessellaris* (Morton Bay Ash), *Angophora leiocarpa* (Smooth Bark Apple), and the occasional *Lophostemon confertus* (Brush Box).
- The T2 layer is typical of forests and woodlands dominated by *Eucalyptus* species. Species identified include *Alphitonia excelsa* (Soap Tree), *Acacia leiocalyx* (Early Flowering Black Wattle), *Acacia disparrima* (Hickory Wattle), and *Acacia concurrens* (Black Wattle).
- Twenty-eight (28) flora species were native (**Table 9**) and fourteen (14) were introduced species (**Table 10**) within this BVC.
- A relatively low level of weed infestation occurred throughout this zone with very few patches of *Lantana camara* (Lantana) recorded. However, *Lantana montevidensis* (Creeping Lantana) is more prolific throughout the ground layer.
- The site contained small exposed rocky outcrops which were not large enough to support dens or caves for significant fauna habitation.

Photo: Peaks and Ridge Tops

Photo: Peaks and Ridge Tops

Photo: Peaks and Ridge Top

Table 9: Peaks and Ridge Tops Native Flora Species List

Species Name	Common Name
Acacia concurrens	Black Wattle
Acacia disparrima	Hickory Wattle
Acacia fimbriata	Fringed Wattle
Acacia leiocalyx	Early Black Wattle
Allocasuarina littoralis	Black She Oak
Allocasuarina torulosa	Forest Oak
Alphitonia excelsa	Soap Tree
Brachychiton populneus	Kurrajong
Breynia oblongifolia	Coffee Bush
Cheilanthes distans	Bristle Cloak Fern
Chrysocephalum apiculatum	Yellow Buttons
Corymbia citriodora	Spotted Gum
Cymbopogon refractus	Barbed Wire Grass
Dianella caerulea	Blueberry Lilly
Eucalyptus siderophloia	Grey Ironbark
Eucalyptus crebra	Narrow Leaf Ironbark
Eucalyptus melanophloia	Silver-leaved Ironbark
Eustrephus latifolius	Wombat Berry
Gahnia aspera	Sawsedge
Geitonoplesium cymosum	Scrambling Lilly
Hardenbergia violacea	Native Sarsaparilla
Imperata cylindrica	Blady Grass
Lomandra multiflora	Many-flowered Mat Rush
Melaleuca irbyana	Swamp Tea-tree
Muellerina eucalyptoides	Gum-leaved Mistletoe
Petalostigma pubescens	Quinine Bush
Themeda triandra	Kangaroo Grass
Xanthorrhoea johnsonii	Forest Grass Tree

Table 10: Peaks and Ridge Tops Introduced Flora Species List

Species Name	Common Name	LPA
Chloris gayana	Rhodes Grass	
Eragrostis curvula	African Lovegrass	
Ipomoea cairica	Mile-a-minute	
Lantana camara	Lantana	Class 3
Lantana montevidensis	Creeping Lantana	Class 3
Opuntia tomentosa	Velvet Tree Pear	Class 2
Passiflora suberosa	Corky Passionfruit	
Senecio madagascariensis	Fireweed	Class 2

Species Name	Common Name	LPA
Senna pendula	Easter Cassia	
Sida cordifolia	Flannel Weed	
Solanum mauritianum	Wild Tobacco Tree	
Solanum seaforthianum	Brazilian Nightshade	
Swainsona galegifolia	Darling Pea	
Tecoma stans	Yellow Bells	Class 3

4.3.4 Lower Slopes

This BVC refers to the balance of the vegetation on-site and is the largest zone referred to throughout this report (**Plan 4**). It comprises approximately 534 ha or 52.1% of the site (**Table 4**). The dominant vegetation includes Least Concern Regional Ecosystem 12.9-10.2 described as *Corymbia citriodora* (Spotted Gum) +/- *Eucalyptus crebra* (Narrow Leaf Ironbark) open forest on sedimentary rocks. The following observations have been made throughout this BVC zone:

- Sixty (60) flora species were recorded throughout this BVC (**Tables 11 & 12**).
- The dominant species recorded throughout this BVC were identified as *Corymbia citriodora* (Spotted Gum). Other species recorded in relatively low densities included *Eucalyptus crebra* (Narrow Leaf Ironbark), *Eucalyptus tereticornis* (Forest Red Gum), and *Corymbia intermedia* (Pink Bloodwood).
- The understorey or T2 layer was dominated by *Acacia leiocalyx* (Early Flowering Black Wattle), *Acacia concurrens* (Black Wattle) and *Acacia disparrima* (Hickory Wattle).
- Thirty-eight (38) flora species were native (**Table 11**) and twenty-two (22) were introduced species (**Table 12**) within this BVC.
- The majority of this zone has experienced high levels of logging disturbance as well as evidence of fire. *Lantana camara* (Lantana) dominates the shrub layer.

Photo: Lower Slopes

Photo: Lower Slopes

Photo: Lower Slopes

Table 11: Lower Slopes Native Flora Species List

Species	Common Name
Acacia concurrens	Black Wattle
Acacia disparrima	Hickory Wattle
Acacia fimbriata	Fringed Wattle
Acacia leiocalyx	Early Black Wattle
Allocasuarina littoralis	Black She Oak
Alphitonia excelsa	Soap Tree
Angophora leiocarpa	Smooth Bark Apple
Breynia oblongifolia	Coffee Bush
Cassytha glabella	Dodder Laurel
Chrysocephalum apiculatum	Yellow Buttons
Corymbia citriodora	Spotted Gum
Corymbia intermedia	Pink Bloodwood
Corymbia tessellaris	Moreton Bay Ash
Cymbopogon refractus	Barbed Wire Grass
Cyperus difformis	Dirty Dora
Dianella caerulea	Blueberry Lilly
Dianella longifolia	Lilly
Eucalyptus siderophloia	Grey Ironbark
Eucalyptus crebra	Narrow Leaf Ironbark
Eucalyptus moluccana	Gum Topped Box
Eucalyptus seeana	Narrow Leaf Red Gum
Eucalyptus tereticornis	Forest Red Gum
Eustrephus latifolius	Wombat Berry
Gahnia aspera	Sawsedge
Geitonoplesium cymosum	Scrambling Lilly
Glochidion sumatranum	Large-leaved Cheese Tree
Goodenia rotundifolia	Goodenia
Hardenbergia violacea	Native Sarsaparilla
Imperata cylindrica	Blady Grass
Lomandra multiflora	Many-flowered Mat Rush
Lophostemon confertus	Brush Box
Lophostemon suaveolens	Swamp Box
Melaleuca irbyana	Swamp Tea-tree
Parsonsia straminea	Monkey Rope Vine
Petalostigma pubescens	Quinine Bush
Themeda triandra	Kangaroo Grass
Trema tomentosa	Poison Peach
Xanthorrhoea johnsonii	Forest Grass Tree

Table 12: Lower Slopes Introduced Flora Species List

Species Name	Common Name	LPA
Ageratum houstonianum	Blue Billygoat Weed	
Bidens pilosa	Cobbler's Pegs	
Bryophyllum delagoense	Mother Of Millions	
Chloris gayana	Rhodes Grass	
Cirsium vulgare	Spear Thistle	
Corymbia torelliana	Cadaghi	
Desmodium uncinatum	Silver-leaved Desmodium	
Eragrostis curvula	African Lovegrass	
Gomphocarpus physocarpus	Balloon Cotton Bush	
Harrisia martinii	Harrisia Cactus	Class 2
Hydrocotyle tripartita	Small-leaved Pennywort	
Hypochaeris radicata	Flat Weed	
Lantana camara	Lantana	Class 3
Lantana montevidensis	Creeping Lantana	Class 3
Leucaena leucocephala	Leucaena	
Opuntia tomentosa	Velvet Tree Pear	Class 2
Passiflora suberosa	Corky Passionfruit	
Senecio madagascariensis	Fireweed	Class 2
Senna pendula	Easter Cassia	
Sida cordifolia	Flannel Weed	
Solanum mauritianum	Wild Tobacco Tree	
Solanum seaforthianum	Brazilian Nightshade	

4.3.5 Non-remnant Areas

This BVC refers to areas previously cleared of vegetation values and mapped as Category X on the PMAV (**Section 3.3.1**). These non-remnant or cleared polygons total 108 ha or 10.6% of the site and occur at eight (8) locations, including the entrance towards the south-east property corner, areas associated with minor ridgelines towards the centre portion and eastern property boundary including an area that has been used for extraction purposes, and fertile areas associated with a number of flood plains and gully line features adjacent to the Sandy Creek corridor and also along the sites southern property boundary (**Plan 4**).

The following observations have been made across this vegetation category;

- Each of these polygons are mapped as Category X and contain non-remnant vegetation that lacks the structure and canopy cover to reach minimum remnant status.
- There is evidence that these cleared areas have been used for cattle grazing as well as timber logging. Only the one central patch retained evidence of past extraction industry at a relatively small scale.
- Floodplains and drainage lines within Category X areas contained some smaller regrowth *Eucalyptus tereticornis* (Forest Red Gum) and *Eucalyptus moluccana* (Gum Topped Box). Some small patches of regrowth sub-canopy species were also recorded throughout these polygons, dominated by *Alphitonia*

excelsa (Soap Tree), *Acacia leiocalyx* (Early Flowering Black Wattle), *Acacia disparrima* (Hickory Wattle), and *Acacia concurrens* (Black Wattle).

- A reduced level of weed infestation occurred throughout these Category X polygons, with very few patches of *Lantana* recorded in comparison to the Lower Slopes that are adjacent to most of these polygons.
- The Category X polygons associated with the minor ridgelines are located towards the central portion and eastern property boundaries. These polygons contain greater densities of regrowth sub-canopy species including *Acacia leiocalyx* (Early Flowering Black Wattle) and *Acacia disparrima* (Hickory Wattle) and greater infestations of *Lantana*. Some patches of smaller *Corymbia citriodora* (Spotted Gum) regrowth were also observed within these polygons.

Overall, these non-remnant areas were extremely disturbed and are considered unlikely to provide habitat for species other than those adapted to highly disturbed landscapes.

4.4. General Fauna Observations

The following is a summary of fauna observations conducted across the site (refer **Appendices D & E** for specific BAAM Reports). Of the one hundred and fifty-five (155) fauna species recorded on-site (**Table 13**), the Koala was the only EPBC Act listed threatened species observed. The Koala is also listed as Vulnerable under the NCA (**Table 2**). The baseline fauna survey conducted by BAAM (**Appendix D**) recorded an active *Ninox strenua* (Powerful Owl) nest in the north-western portion of the site, and this species is likewise listed as Vulnerable under the NCA.

Overall, fourteen (14) amphibians, ninety-four (94) birds, twenty-five (25) mammals, nineteen (19) reptiles and three (3) fish species were recorded (**Table 13**). Mammal observations included seven (7) bat species recorded using ANABAT ultrasonic call playback (**Table 13**). One listed migratory species, *Merops ornatus* (Rainbow bee-eater) was recorded on-site (**Table 13**), although ideal habitat for this species was lacking. The vast majority of fauna species recorded on-site are considered common to the local area.

Feral mammal species, such as *Canis lupus familiaris* (Dog), *Lupus capensis* (Brown Hare), *Oryctolagus cuniculus* (Rabbit), *Sus scrofa* (Wild Pig) and *Vulpes* (Red Fox) were also recorded on-site (**Table 13**). Both Dogs and Foxes are considered threats to the Koala and other native species. Further, the noxious amphibian *Rhinella marina* (Cane Toad) was very common on-site (**Table 13**), and is considered a significant threat to Spot-tailed Quoll survival as they prey on the poisonous species.

Photo: Common Bronzewings

Photo: Lace Monitor

Photo: Feral Pig droppings

Photo: Brushtail Possum tracks

Photo: Red Fox

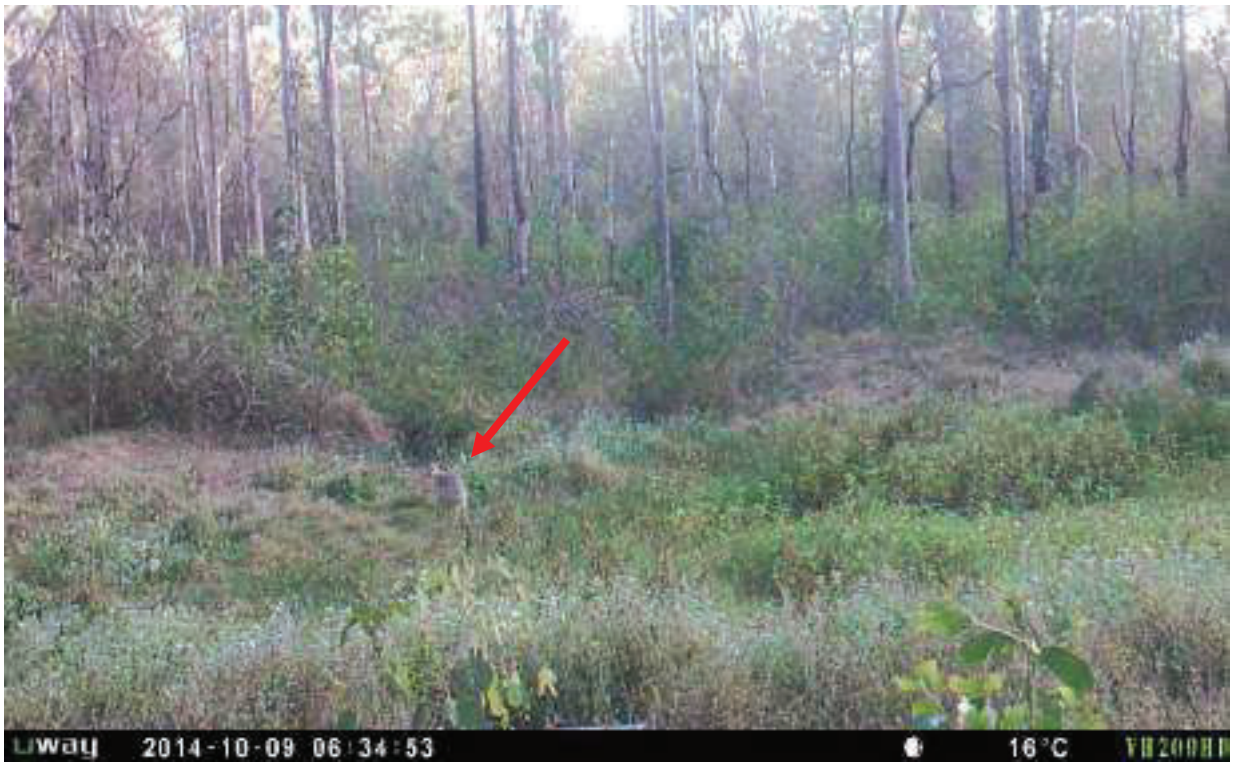


Photo: Camera trap record of Swamp Wallaby

Table 13: Site Fauna Species List

Scientific Name	Common Name	Saunders Havill Group (2014)	BAAM Pty Ltd (2009)	BAAM Pty Ltd (2007)
AMPHIBIANS				
Crinia parinsignifera	Beeping Froglet	✓		✓
Cyclorana alboguttata	Striped Burrowing Frog		✓	
Limnodynastes ornatus	Ornate Burrowing Frog		✓	
Limnodynastes peronii	Brown Striped Frog	✓	✓	
Limnodynastes tasmaniensis	Spotted Grass Frog		✓	
Litoria dentata	Bleating Tree Frog			✓
Litoria fallax	Eastern Dwarf Tree Frog		✓	
Litoria gracilenta	Dainty Green Tree Frog		✓	
Litoria latopalmata	Broad Palmed Frog		✓	✓
Litoria peronii	Person's Tree Frog		✓	
Litoria rubella	Desert Tree Frog		✓	
Litoria wilcoxii	Stony Creek Frog		✓	
Litoria caerulea	Green Tree Frog		✓	
Rhinella marina	Cane Toad	✓	✓	✓
BIRDS				
Acanthiza chrysorrhoa	Yellow-rumped Thornbill		✓	✓
Acanthiza reguloides	Buff-rumped Thornbill		✓	✓
Acanthorhynchus tenuirostris	Eastern Spinebill			✓
Accipiter fasciatus	Brown Goshawk		✓	
Alectura lathami	Australian Brush-turkey	✓	✓	
Alisterus scapularis	Australian King-Parrot		✓	
Anas superciliosa	Pacific Black Duck	✓		
Anthus australis	Australian Pipit		✓	
Aquila audax	Wedge-tailed Eagle	✓	✓	
Ardea ibis	Cattle Egret	✓		
Burhinus grallarius	Bush Stone-curlew	✓	✓	
Cacatua galerita	Sulphur-crested Cockatoo	✓	✓	✓
Cacomantis flabelliformis	Fan-tailed Cuckoo		✓	
Centropus phasianinus	Pheasant Coucal	✓	✓	
Chalcites lucidus	Shining Bronze-cuckoo		✓	
Chenonetta jubata	Australian Wood Duck	✓	✓	
Colluricincla harmonica	Grey Shrike-thrush		✓	
Coracina novaehollandiae	Black-faced Cuckoo-shrike	✓	✓	✓
Coracina tenuirostris	Cicadabird		✓	
Cormobates leucophaea	White-throated Treecreeper	✓	✓	✓
Corvus orru	Torresian Crow	✓	✓	✓
Coturnix ypsilophora	Brown Quail	✓	✓	
Cracticus nigrogularis	Pied Butcherbird	✓	✓	✓
Cracticus tibicen	Australian Magpie	✓	✓	✓
Cracticus torquatus	Grey Butcherbird	✓	✓	✓
Dacelo novaeguineae	Laughing Kookaburra	✓	✓	✓
Daphoenositta chrysoptera	Varied Sittella		✓	✓
Dicaeum hirundinaceum	Mistletoebird		✓	
Dicrurus bracteatus	Spangled Drongo	✓	✓	
Egretta novaehollandiae	White-faced Heron	✓		
Entomyzon cyanotis	Blue-faced Honeyeater	✓	✓	✓

Scientific Name	Common Name	Saunders Havill Group (2014)	BAAM Pty Ltd (2009)	BAAM Pty Ltd (2007)
Eolophus roseicapillus	Galah	✓	✓	✓
Eopsaltria australis	Eastern Yellow Robin		✓	
Eudynamys orientalis	Pacific Koel		✓	
Eurostopodus mystacalis	White-throated Nightjar		✓	
Eurystomus orientalis	Dollarbird	✓	✓	
Falco berigora	Brown Falcon	✓		
Falco longipennis	Australian Hobby			✓
Gallinula tenebrosa	Dusky Morehen	✓	✓	
Geopelia humeralis	Bar-shouldered Dove	✓	✓	✓
Geopelia striata	Peaceful Dove	✓	✓	✓
Gerygone olivacea	White-throated Gerygone		✓	✓
Glossopsitta pusilla	Little Lorikeet	✓	✓	✓
Grallina cyanoleuca	Magpie Lark	✓		
Hirundo neoxena	Welcome Swallow	✓		
Lichenostomus chrysops	Yellow-faced Honeyeater		✓	✓
Lichenostomus fuscus	Fuscous Honeyeater		✓	✓
Lichmera indistincta	Brown Honey-eater	✓	✓	✓
Lopholaimus antarcticus	Topknot Pigeon	✓	✓	
Malurus cyaneus	Superb Fairy-wren	✓	✓	✓
Malurus lamberti	Variegated Fairy-wren	✓	✓	✓
Malurus melanocephalus	Red-backed Fairy-wren	✓	✓	✓
Manorina melanocephala	Noisy Minor	✓	✓	
Meliphaga lewinii	Lewin's Honeyeater	✓	✓	✓
Melithreptus albogularis	White-throated Honeyeater		✓	✓
Merops ornatus	Rainbow Bee-eater	✓		✓
Microeca fascinans	Jacky Winter		✓	✓
Myiagra rubecula	Leaden Flycatcher		✓	
Myzomela sanguinolenta	Scarlet Honeyeater		✓	
Neochmia temporalis	Red-browed Finch		✓	✓
Ninox boobook	Southern Boobook		✓	
Ninox strenua	Powerful Owl		✓	
Ocyphaps lophotes	Crested Pigeon	✓	✓	
Oriolus sagittatus	Olive-backed Oriole		✓	
Pachycephala pectoralis	Golden Whistler			✓
Pachycephala rufiventris	Rufous Whistler		✓	✓
Pardalotus punctatus	Spotted Pardalote			✓
Pardalotus striatus	Striated Pardalote	✓	✓	✓
Petroica rosea	Rose Robin	✓		✓
Phalacrocorax melanoleucos	Little Pied Cormorant		✓	
Phaps chalcoptera	Common Bronzewing	✓	✓	
Philemon corniculatus	Noisy Friarbird	✓	✓	✓
Platycercus adscitus palliceps	Pale-headed Rosella	✓	✓	
Plectorhyncha lanceolata	Striped Honeyeater		✓	✓
Podargus strigoides	Tawny Frogmouth	✓	✓	
Pomatostomus temporalis	Grey-crowned babbler		✓	✓
Porphyrio	Purple Swamphen		✓	
Psophodes olivaceus	Eastern Whipbird	✓	✓	
Pyrrholaemus sagittatus	Speckled Warbler		✓	✓

Scientific Name	Common Name	Saunders Havill Group (2014)	BAAM Pty Ltd (2009)	BAAM Pty Ltd (2007)
Rhipidura albiscapa	Grey Fantail	✓	✓	✓
Rhipidura leucophrys	Willie Wagtail	✓	✓	✓
Scythrops novaehollandiae	Channel-billed Cuckoo	✓	✓	
Sericornis frontalis	White-browed Scrubwren		✓	✓
Smicrornis brevirostris	Weebill		✓	✓
Sphecotheres vieilloti	Australasian Figbird		✓	
Strepera graculina	Pied Currawong	✓	✓	✓
Taeniopygia bichenovii	Double-barred Finch	✓	✓	✓
Threskiornis molucca	Australian White Ibis	✓		
Threskiornis spinicollis	Straw-necked Ibis		✓	
Todiramphus sanctus	Sacred Kingfisher	✓	✓	
Trichoglossus chlorolepidotus	Scaly-breasted Lorikeet	✓	✓	✓
Trichoglossus haematodus moluccanus	Rainbow Lorikeet	✓	✓	✓
Vanellus miles	Masked Lapwing	✓	✓	
Zosterops lateralis	Silvereye	✓	✓	✓
MAMMALS				
Aepyprymnus rufescens	Rufous Bettong		✓	
Antechinus flavipes	Yellow-footed Antechinus		✓	✓
Canis lupus familiaris	Dog	✓	✓	✓
Chalinolobus gouldii	Gould's Wattled Bat		✓	
Isoodon macrourus	Northern Brown Bandicoot		✓	✓
Lepus capensis	Brown Hare	✓	✓	
Macropus giganteus	Eastern Grey Kangaroo	✓	✓	✓
Macropus rufogriseus	Red -necked Wallaby		✓	✓
Miniopterus australis	Little Bent-wing Bat		✓	
Mormopterus beccarii	Beccari's Free-tailed Bat		✓	
Nyctophilus sp.	Unidentified Large-eared Bat		✓	
Oryctolagus cuniculus	Rabbit	✓	✓	
Petaurus australis	Yellow-bellied Glider		✓	
Petaurus norfolcensis	Squirrel Glider		✓	
Phascogale tapoatafa	Brush-tailed Phascogale		✓	
Phascolarctos cinereus	Koala	✓	✓	
Saccolaimus flaviventris	Yellow-bellied Sheath-tailed Bat		✓	
Scotorepens orion	Eastern Broad-nosed Bat		✓	
Sminthopsis murina	Common Dunnart		✓	
Sus scrofa	Pig	✓		
Tachyglossus aculeatus	Short-beaked Echidna			✓
Trichosurus vulpecula	Common Brushtail Possum	✓	✓	✓
Vespadelus darlingtoni	Large Forest Bat		✓	
Vulpes	Red Fox	✓		
Wallabia bicolor	Swamp Wallaby	✓	✓	
REPTILES				
Anomalopus verreauxii	Three-dawed Worm-Skink		✓	
Carlia munda	Shaded-Litter Rainbow-skink			✓
Carlia vivax	Tussock Rainbow-skink		✓	✓
Cryptoblepharus virgatus	Wall Skink	✓	✓	✓
Ctenotus taeniolatus	Copper-tailed Skink		✓	✓

Scientific Name	Common Name	Saunders Havill Group (2014)	BAAM Pty Ltd (2009)	BAAM Pty Ltd (2007)
Dendrelaphis punctulatus	Common Tree Snake		✓	
Diporiphora australis	Tommy Roundhead Dragon	✓	✓	
Elseya latisternum	Saw-shelled Turtle		✓	
Eulamprus martini	Dark Barsided Skink	✓	✓	✓
Gehyra dubia	Dubious Dtella		✓	
Lampropholis delicata	Dark-flecked Garden Sunskink		✓	
Lygisaurus foliorum	Tree-based Litter Skink		✓	
Morelia spilota	Carpet Python	✓		
Morethia taeniopleura	Fire Tailed Skink		✓	
Physignathus lesueurii	Eastern Water Dragon	✓	✓	
Pogona barbata	Bearded Dragon	✓	✓	
Pseudechis guttatus	Spotted Black Snake		✓	
Pseudechis porphyriacus	Red-bellied Black Snake	✓	✓	
Varanus varius	Lace Monitor	✓	✓	
FISH				
Hypseleotris galii	Firetail Gudgeon		✓	
Melanotaenia duboulayi	Crimson-spotted Rainbow Fish		✓	
Mogurnda adspersa	Purple-spotted Gudgeon		✓	

4.5. EPBC Act listed Species

A likelihood of occurrence schedule for EPBC Act listed species is presented in **Appendix F**. Neither of the listed plant species considered to have potential to occur on-site, *Plectranthus habrophyllus* (Plectranthus) and *Thesium australe* (Austral Toadflax), were encountered despite targeted searches. Of the fauna species considered to have potential to occur, *Delma torquata* (Collared Delma) is considered highly unlikely and *Pteropus poliocephalus* (Grey-headed Flying-fox) a likely visitor for foraging when *Eucalyptus* are in flower.

Collared Delma (*Delma torquata*)

The Collared Delma is listed as Vulnerable under the EPBC Act. The species prefers open eucalypt and *Acacia* woodland with a sparse understorey of shrubs and tussocks or semi-evergreen vine thicket. The site is covered in relatively disturbed remnant and regrowth vegetation communities dominated by *Eucalyptus* and *Corymbia* species, but no distinct *Acacia* woodland, semi-evergreen vine thicket or tussock understorey occurs. As such, only one of the suite of vegetation components that support the species occurs on-site.

The peaks and ridgelines throughout the site do contain some exposed rocky hillsides where the understorey is sparse, but these areas are isolated and fragmented within the predominant vegetation containing a dense weedy understorey on slopes and flow paths. In addition, the species was not recorded on the subject site during field surveys including pitfall trapping (**Appendix D**). These factors suggest that, although some components of suitable habitat for the Collared Delma occur on-site, their disturbed nature and the absence of other features indicative of suitable habitat would indicate that the species is extremely low risk and unlikely to occur. As such, these areas of the site are considered to constitute marginal habitat for the Collared Delma at best, and are not considered habitat critical to the survival of the species.

Grey-Headed Flying-Fox (*Pteropus poliocephalus*)

The Grey-Headed Flying-Fox is listed as Vulnerable under the EPBC Act. The species was not recorded on the subject site during field surveys, nor were roosting camps observed, however, the availability of eucalypts provides suitable foraging habitat for the species during flowering events. The project area does not currently support a flying-fox roosting camp, and suitable foraging habitat is widespread in the greater Flagstone and Logan region. Overall, this is a common, highly mobile animal that is able to utilise foraging resources over a large area. Given the absence of a roost or roosting habitat on-site, the widespread distribution of the species across Southeast Queensland and the availability of habitat throughout the greater area, the proposal is unlikely to have a significant impact on the Grey-Headed Flying-Fox.

The remaining fauna species with potential to occur on-site, *Dasyurus hallucatus* (Spot-tailed Quoll) and *Phascolarctos cinereus* (Koala), require further consideration.

4.5.1 Spot-tailed Quoll specific surveys

No Spot-tailed Quoll were captured during targeted cage and infra-red camera surveys, and no Quoll latrines were observed on-site. However, the subject site does contain patches of hilly forested habitat potentially suitable for notoriously shy Spot-tailed Quoll. In general, the study area supported only some of the preferred habitat requirements for Spot-tailed Quoll, namely eucalypt woodland and forest providing foraging habitat with good availability of frogs, birds and small to medium-sized mammals that Spot-tailed Quoll prey on. However, the study area generally lacked the following important habitat features for Spot-tailed Quoll:

- Large hollow logs were extremely rare;
- Large, hollow-bearing trees were sparse; extensive historical timber extraction appears to have removed most old-growth trees; and
- Suitable denning habitat in the form of rock caves or boulder piles does not occur; rocky outcrops with small boulders on ridgelines may provide temporary rock crevice refuges but do not provide suitable denning refuges.

Other features that reduce the suitability of the study area for Spot-tailed Quoll include:

- Abundant evidence of dogs (domestic and/or wild) in the form of tracks and scats across the study area, which may prey on Spot-tailed Quolls
- Dense *Lantana* weed infestations (**Plan 3**) across most of the site reduce habitat suitability;
- An abundance of the invasive and poisonous pest Cane Toad *Rhinella marina* in the study area; and
- Proximity of the study area to unsuitable cleared areas, regrowth vegetation and urban development.

Nonetheless, Sandy Creek and the rocky ridgelines do provide connectivity across the study site to much larger areas of more suitable Spot-tailed Quoll habitat to the west, areas that incorporate Spring Mountain Forest Park, White Rock Conservation Park and Flinders Peak Conservation Park. It is possible that Spot-tailed Quoll utilise these connections as infrequent visitors to the site, perhaps as part of larger home ranges or in search of mates during breeding season.

4.5.2 Koala specific surveys

Two adult male Koala were observed on site during targeted surveys by BAAM in 2009 (**Appendix D**). Extensive habitat assessments conducted at the same time utilised survey techniques adapted from Dique et al. (2003) and concluded that Koala food trees were present throughout the site, and that higher value Koala habitat was concentrated along waterways within the study area (**Appendix E**). Evidence of Koala utilisation in the form of scats

was recorded beneath fifty-seven (57) trees, mostly located near sighted Koalas, during transect surveys (**Appendix E**).

In August and October 2014, Senior Ecologists from **Saunders Havill Group** conducted field surveys in accordance with EPBC Draft Guidelines for the Koala across the site with weather conditions fine and sunny. The purpose of the survey was to determine the level of Koala usage across the site and to assess the availability of suitable habitat. The assessment involved the following methods:

- Spot Assessment Technique (SAT) developed by Philips & Callaghan (2011)
- Koala Habitat Assessments
- Opportunistic searches

SAT Surveys

The Regularised-grid SAT method is an assessment of Koala activity involving a search for any Koalas and signs of Koala usage. The SAT involves identifying the non-juvenile Koala habitat tree nearest to a pre-determined grid point and recording any evidence of Koala usage on that tree including presence, identifiable scratches or scats. The nearest tree is then identified and the same data recorded. The next closest tree is then assessed and so on until the 30 trees nearest to the original tree in a radial survey have been recorded. The number of trees showing evidence of Koalas is expressed as a percentage of the total number of trees sampled to indicate the frequency of Koala usage. Assessment of each tree involves a systematic search for Koala scats beneath the tree within 1 m radius of the trunk. After approximately 1 minute of searching for scats, the base of the trunk is observed for scratches.

Overall, evidence of Koala usage in the form of scats was low to non-existent and, despite intensive searches, no Koalas were observed. Twenty-nine (29) SAT surveys were conducted across the site in a regularised grid pattern, as shown in **Plan 4** (refer **Appendix G** for specific SAT results). **Table 14**, below, summarises Koala usage in the form of scats from SAT surveys, with roughly a third of the SATs recording relatively few scats.

Usage estimates were taken from the Australian Koala Foundation Koala activity level classification table (ex Phillips & Callaghan 2011) using the East Coast (med-high) Activity Category, which is applicable in habitats dominated by residual, transferal or alluvial type landscapes considered med-high nutrient soils with good water holding capacity (Steve Phillips, personal communication). Chromosols predominate with patches of Dermosols in the south of the application area (**Section 3.6**) and these soils suit this landscape description.

Table 14: SAT Survey Results Summary

SAT (Spot Assessment Technique) Assessment No.	Evidence of Koala Use (%)	Koala Use (High / Medium / Low)
1	-	-
2	-	-
3	6.66	Low
4	3.33	Low
5	10	Low
6	-	-
7	-	-

SAT (Spot Assessment Technique) Assessment No.	Evidence of Koala Use (%)	Koala Use (High / Medium / Low)
8	3.33	Low
9	-	-
10	-	-
11	6.66	Low
12	-	-
13	-	-
14	3.33	Low
15	-	-
16	-	-
17	-	-
18	-	-
19	6.66	Low
20	-	-
21	-	-
22	-	-
23	6.66	Low
24	6.66	Low
25	-	-
26	-	-
27	6.66	Low
28	6.66	Low
29	-	-

Habitat Assessments

Queensland's Koala Habitat Values Map (**Figure 7**) overlays the site with a mosaic of vegetation classified as Medium and Low Value Rehabilitation with areas of Medium and Low Value Bushland Habitat. Regional Ecosystem Mapping (**Figure 5**) suggests that the majority of the site is mapped as Category B (remnant vegetation) and most of this is considered to provide 'essential habitat' for the Koala. This does not take into account the significant changes to Regional Ecosystem mapping rectified by PMAV (**Section 3.3.1**).

A total of fifty-two (52) habitat assessments were conducted across the site (**Plan 4** – refer to **Appendix H** for specific habitat assessment results). This involved recording the species of significant trees within randomised 50 x 20 metre transects. The purpose of the Habitat Assessment was to assess the species composition of site trees to determine the value of site habitat for Koalas, based on the **Australian Koala Foundation's** (AKF) National Koala Tree Protection List for the Logan City area, extracted below. Species listed in Bold are considered to be primary Koala Food Trees while the other listed species are Secondary Koala Food Trees.

Local Government Area	Elevation*	Scientific Name and/or subspecies	Common Name	Soil and Location
LOGAN CITY	0-800	*E. tindaliae*	Grey Gum	
LOGAN CITY	0-1000	*E. crebra*	Narrow-leaved red ironbark, Ironbark, Narrow-leaved ironbark	
LOGAN CITY	0-1000	*E. granitica*	Flooded Gum, Rose Gum	
LOGAN CITY	0-800	*E. major*	Grey Gum	
LOGAN CITY	0-1200	*E. melliodora*	Yellow box, Honey box, Yellow ironbark	
LOGAN CITY	0-950	***E. moluccana***	**Tallowwood**	
LOGAN CITY	0-1050	*E. resinifera*	Coastal Grey Box, Grey box, Dunn-topped box	
LOGAN CITY	0-1000	*E. planchoniana*	Bastard Tallowwood, Needlebark stringybark	
LOGAN CITY	0-850	*E. propinqua*	Small-fruited Grey Gum	
LOGAN CITY	0-1050	*E. racemosa* ssp. *racemosa*	Scribbly Gum	
LOGAN CITY	0-700	*E. resinifera* ssp. *hemilampra*	Red mahogany	
LOGAN CITY	0-300	***E. robusta***	**Swamp Mahogany**	
LOGAN CITY	0-300	*E. seeana*	Narrow-leaved Red Gum	
LOGAN CITY	0-700	*E. siderophloia*	Ironbark, Broad-leaved Ironbark	
LOGAN CITY	0-800	***E. tereticornis* ssp. *tereticornis***	**Forest red gum, Blue gum, Red irongum**	
LOGAN CITY	0-1100	*E. umbellata*	Bastard Stringybark	

Bolded entries indicate primary tree species

A summary of the habitat assessment results is shown in **Table 15**, however, the full results for each habitat assessment, including species lists, have been included in **Appendix H**.

Table 15: Habitat Assessment Results Summary

Transect	Percentage Primary KFT	Percentage Secondary KFT	Percentage Total KFT
1	31.3%	2.1%	33.3%
2	7.0%	16.3%	23.3%
3	86.4%	0.0%	86.4%
4	2.8%	2.8%	5.6%
5	2.2%	28.9%	31.1%
6	11.5%	50.0%	61.5%
7	5.6%	11.1%	16.7%
8	1.9%	61.1%	63.0%
9	1.7%	20.7%	22.4%
10	5.0%	12.5%	17.5%
11	4.8%	0.0%	4.8%
12	0.0%	8.7%	8.7%
13	56.3%	12.5%	68.8%
14	31.3%	3.1%	34.4%
15	19.6%	2.2%	21.7%
16	20.4%	4.1%	24.5%
17	10.8%	0.0%	10.8%
18	23.3%	2.3%	25.6%

Transect	Percentage Primary KFT	Percentage Secondary KFT	Percentage Total KFT
19	16.7%	2.8%	19.4%
20	6.9%	17.2%	24.1%
21	5.7%	8.6%	14.3%
22	9.1%	29.5%	38.6%
23	18.4%	13.2%	31.6%
24	26.1%	2.2%	28.3%
25	3.0%	15.2%	18.2%
26	9.1%	54.5%	63.6%
27	16.1%	3.2%	19.3%
28	6.5%	67.7%	74.2%
29	0.0%	3.7%	3.7%
30	4.8%	9.5%	14.3%
31	0.0%	26.9%	26.9%
32	2.3%	18.6%	20.9%
33	4.3%	19.6%	23.9%
34	0.0%	26.3%	26.3%
35	14.0%	0.0%	14.0%
36	32.3%	6.5%	38.7%
37	35.6%	6.7%	42.2%
38	2.7%	5.4%	8.1%
39	31.4%	0.0%	31.4%
40	19.2%	3.8%	23.1%
41	6.7%	6.7%	13.3%
42	16.7%	0.0%	16.7%
43	2.9%	5.7%	8.6%
44	2.0%	2.0%	4.0%
45	8.3%	16.7%	25.0%
46	13.3%	11.7%	25.0%
47	3.9%	23.5%	27.5%
48	8.3%	18.3%	26.7%
49	26.4%	17.0%	43.4%
50	0.0%	19.1%	19.1%
51	3.6%	8.9%	12.5%
52	12.9%	8.1%	21.0%

The site was primarily dominated by *Eucalyptus citriodora* (Spotted Gum) along ridgelines and slopes with the addition of *Eucalyptus tereticornis* (Forest Red Gum) and *Eucalyptus moluccana* (Gum-topped Box) along drainage

lines and Sandy Creek. Of the dominant canopy species, *Eucalyptus tereticornis* is classified as a Primary Koala Food Tree by the AKF in the Logan City area.

Table 16, below, categorises Koala habitat assessments as per site Broad Vegetation Communities (BVCs -discussed earlier) and outlined in **Plan 4**. In summary, noteworthy Koala habitat was located in the Sandy Creek Buffer Area and Other Drainage Lines. Remaining BVCs contained relatively poor quality habitat. Low level Koala activity in the form of scats was recorded within each BVC (**Plan 4**).

Table 16: Koala habitat assessments within Broad Vegetation Communities

BVC	Habitat assessment summary
Sandy Creek Buffer Area	Twelve (12) habitat assessment transects were completed throughout this BVC. The results of these show a higher proportion of primary and secondary Koala Food Trees, based on the AKF preferred food tree list. In the case of Sandy Creek, there were higher densities of *Eucalyptus tereticornis* (Forest Red Gum) and *Eucalyptus moluccana* (Gum Topped Box).
Other Drainage Lines	Eight (8) habitat assessment transects were completed throughout this BVC. The results of these show a higher proportion of primary and secondary Koala Food Trees, based on the AKF preferred food tree list. In other drainage lines, there were higher densities of *Eucalyptus tereticornis* (Forest Red Gum), *Eucalyptus seeana* (Narrow Leaf Red Gum) and *Eucalyptus moluccana* (Gum Topped Box).
Peaks and Ridge Tops	Seven (7) habitat assessment transects were completed throughout this BVC. The results of these show a lower proportion of primary and secondary Koala Food Trees, based on the AKF preferred food tree list. Although some secondary food trees were recorded, including *Eucalyptus crebra* (Narrow Leaf Ironbark), a significant proportion of *Corymbia* species, including *Corymbia tessellaris* (Moreton Bay Ash) and *Corymbia intermedia* (Pink Bloodwood), were recorded within the transects.
Lower Slopes	Twenty-five (25) habitat assessment transects were completed throughout this BVC. The results of these show a high proportion of *Corymbia citriodora* (Spotted Gum) in all transects and very low densities of primary and secondary Koala Food Trees, based on the AKF preferred food tree list.

Due to past logging and pastoral practices, the site contained a fairly high abundance of invasive weeds, including *Harrisia martinii* (Harrisia Cactus), *Opuntia tomentosa* (Velvety Tree Pear), *Senecio madagascariensis* (Fireweed), *Lantana camara* (Lantana), *Lantana montevidensis* (Creeping Lantana), *Tecoma stans* (Yellow Bells), *Celtis sinensis* (Chinese Elm) and *Cinnamomum camphora* (Camphor Laurel). Vast swathes of *Lantana* in particular cover most disturbed areas of the site (**Plan 3** and **Photos** next page). Other disturbances included significant vegetation clearing, creation of vehicle tracks, prevalence of dogs and impacts from surrounding land uses.

Photos: Lantana infestation on-site

Outside of the Sandy Creek riparian corridor, the site was found to contain mostly poorer quality habitat unlikely to provide primary habitat values to Koalas. This is based on the relatively low abundance of Primary Koala Food Trees and the prevalence of weeds within site vegetation.

The key findings from the Koala field assessment are:

- No Koalas were observed on or surrounding the site during contemporary EPBC Act targeted surveys;
- Evidence of Koala suggests Low to No Usage throughout the site;
- The site was dominated by canopy species not listed by the AKF.
- Overall, the site was significantly disturbed as a result of historical vegetation clearing and thinning, invasion of weeds, disturbance from feral animals and impacts from surrounding land uses.

5. Conclusions

This report presents and summarises the results of numerous ecological studies conducted over the Undullah master planned multi-use development site. These studies both examined and rectified vegetation community structure and status and included surveys that focused on listed threatened flora and fauna species. The most recent surveys were designed to assess the likelihood of occurrence and potential impact of the proposed development on Matters of National Environmental Significance.

The following conclusions have been made:

- None of the EPBC Act listed Threatened Ecological Communities (TECs) considered to have potential to occur were recorded on-site. Individual specimens and small isolated stands of *Melaleuca irbyana* (Swamp Tea-tree) were recorded but these examples did not constitute *Swamp Tea-tree Forest of South-east Queensland* TEC. This species is listed as Endangered under the provisions of the *Nature Conservation Act, 1992* (NCA).

- Potential habitat for EPBC Act listed threatened plants, *Plectranthus habrophyllus* (Plectranthus) and *Thesium australe* (Austral Toadflax), is considered to be possibly present on-site, but neither species was recorded despite targeted surveys (**Section 4.5**).

- The EPBC Act listed Migratory species, *Merops ornatus* (Rainbow Bee-eater) was recorded on-site, although ideal habitat for this highly mobile species was lacking (**Section 4.4**).

- Of the threatened fauna species listed under the EPBC Act with the potential to occur on-site, *Pteropus poliocephalus* (Grey-headed Flying-fox) and *Dasyurus maculatus maculatus* (Spot-tailed Quoll) are considered potential infrequent visitors to the site (the former when eucalypts are in flower and the latter potentially when in search of mates) as optimal habitat for these species is present within the broader surrounding landscape. Evidence of each species was not recorded despite targeted surveys, and ideal roosting and denning habitat was not located on-site (**Section 4.5**). While the potential for these species to visit the site is present, it is considered most likely a rare occurrence as the site constitutes relatively degraded habitat.

- Components of potential habitat for EPBC Act listed *Delma torquata* (Collared delma) were present on-site, however, these areas were considered of very low quality and located in isolated patches on peaks and along ridge tops. As such, these areas are considered to constitute marginal rather than critical habitat for the Collared Delma. Further, the species was not recorded on-site. For these reasons, it is considered extremely unlikely this species occurs on-site (**Section 4.5**).

- Of the threatened species listed under the EPBC Act with the potential to occur on-site, only the Koala was recorded (**Section 4.5.2**). Two adult male specimens were observed in 2007 (**Appendix D**), but only low to non-existent usage as evidenced in the form of scats was recorded during recent SAT studies (**Table 14**). When recorded, Koala scats were located at low densities at various locations throughout the site.

- To refine habitat assessments, the site was broken into five Broad Vegetation Communities (BVCs – **Plan 4**), summarised below.

    - The Sandy Creek Buffer Area totalled 143 ha and contained noteworthy habitat according to AKF guidelines. Canopy species were dominated by *Eucalyptus tereticornis* (River Red Gum) and *Eucalyptus moluccana* (Gum-topped Box) indicative of Endangered Regional Ecosystem 12.3.3, however, the understorey was infested with *Lantana*. This BVC was relatively disturbed by ongoing logging and past pastoral practices.

    - Other Drainage Lines totalled 68 ha and also contained noteworthy habitat according to AKF guidelines. The canopy of this BVC was dominated by a mix of *Eucalyptus* and *Corymbia* species and the understorey was infested with *Lantana*. These areas comprise the upper reaches of flow paths extending into neighbouring properties, and are highly disturbed.

    - The Peaks and Ridge Tops of the site constitute 171 ha of sparser vegetation dominated by *Eucalyptus crebra* (Narrow-leaved Ironbark) with a mix of other *Eucalyptus* and *Corymbia* species. This BVC contained relatively poor habitat as per AKF guidelines. Relatively minor rocky outcrops are scattered through this BVC, but none were of sufficient size or structure to constitute habitat for threatened species.

    - Lower Slopes comprised the majority of the site (534 ha or 52%) and were dominated by *Corymbia citriodora* (Spotted Gum). The low proportion of Koala Food Trees in this BVC meant it did not contain suitable habitat as per AKF guidelines. The area is heavily disturbed by past clearing, ongoing logging practices and *Lantana* infestation.

    - Non-remnant areas constitute 108 ha of the site and generally contained very limited habitat values due to reduced or absent vegetative cover.

- Most of the site is mapped as Regulated Vegetation classed as essential habitat for the Koala under the *Vegetation Management Act 1999*. A large proportion of mapped composite Of Concern Regional Ecosystems has been rectified on-ground to mostly Least Concern RE 12.9-10.2. In general, site vegetation was highly disturbed by past clearing for pastoral practices (**Plan 2**), ongoing logging, extractive industry works, vehicular tracks, rubbish dumping and weed infestation.

- The site contained a fairly high abundance of invasive weeds, including *Harrisia martinii* (Harrisia Cactus), *Opuntia tomentosa* (Velvety Tree Pear), *Senecio madagascariensis* (Fireweed), *Lantana camara* (Lantana), *Lantana montevidensis* (Creeping Lantana), *Tecoma stans* (Yellow Bells), *Celtis sinensis* (Chinese Elm) and Cinnamomum camphora (Camphor Laurel). Vast swathes of *Lantana* in particular cover most disturbed areas of the site (**Plan 3**).

- Fauna species recorded on-site included fourteen (14) amphibians, ninety-four (94) birds, twenty-five (25) mammals, nineteen (19) reptiles and three (3) fish (**Table 13**). Almost all were considered common species likely to be encountered in the area.

- The NCA listed threatened species *Ninox strenua* (Powerful Owl) was recorded on-site actively utilising a nest near the western property boundary during baseline terrestrial fauna surveys in 2007 (**Appendix D**). The species was not sighted during contemporary fauna studies.

- Feral mammal species, such as *Canis lupus familiaris* (Dog), *Lupus capensis* (Brown Hare), *Oryctolagus cuniculus* (Rabbit), *Sus scrofa* (Wild Pig) and *Vulpes vulpes* (Red Fox) were also recorded on-site (**Table 13**). Both Dogs and Foxes are considered threats to native species including the Koala. Further, the noxious amphibian *Rhinella marina* (Cane Toad) was very common on-site (**Table 13**), and is considered a significant threat to the survival of predatory species.

The Undullah site forms part of the *Greater Flagstone Priority Development Area* designated by **Economic Development Queensland** and, as such, along with the majority of the surrounding landscape, is slated for urban development. The size and locality of established infrastructure and current state of the environment in the area represents an important opportunity to provide residential development in one of the fastest growing regions of Australia without exacerbating existing environmental impacts. Despite the relatively disturbed nature of the site, there is scope to enhance and maintain areas of higher habitat value on-site and to ensure the ongoing integrity of the Flinders-Karawatha Bioregional Corridor to the west.

As proposed (**Appendix A**), the development includes the important Sandy Creek riparian corridor and a substantial buffer to the west along the Flinders-Karawatha Bioregional Corridor as areas for conservation. Along with a network of interconnected conservation areas, this will help ensure continued habitat connectivity across the site and minimise potential edge effects of the development on neighbouring habitat values. These conservation areas encapsulate the most suitable Koala habitat on-site as well as the Powerful Owl nest in the north-west portion of the property, and constitute a significantly larger conservation outcome than that approved under a recent Material Change of Use application for the site. For these reasons, the land use proposal is considered to largely mitigate impacts on listed threatened species with the potential to utilise the site.

6. Appendices

Appendix A

Preliminary Land Use Plan

Appendix B

Environment Protection and Biodiversity Conservation Act 1999 Protected Matters Database Search

Appendix C

Nature Conservation Act 1992 (Qld) Wildlife Online Database Search Results

Appendix D

BAAM Baseline Terrestrial and Aquatic Vertebrate Assessment

Appendix E

BAAM Koala Habitat Assessment and Mapping

Appendix F

Likelihood of Occurrence Schedule for EPBC Act Listed MNES

Appendix G

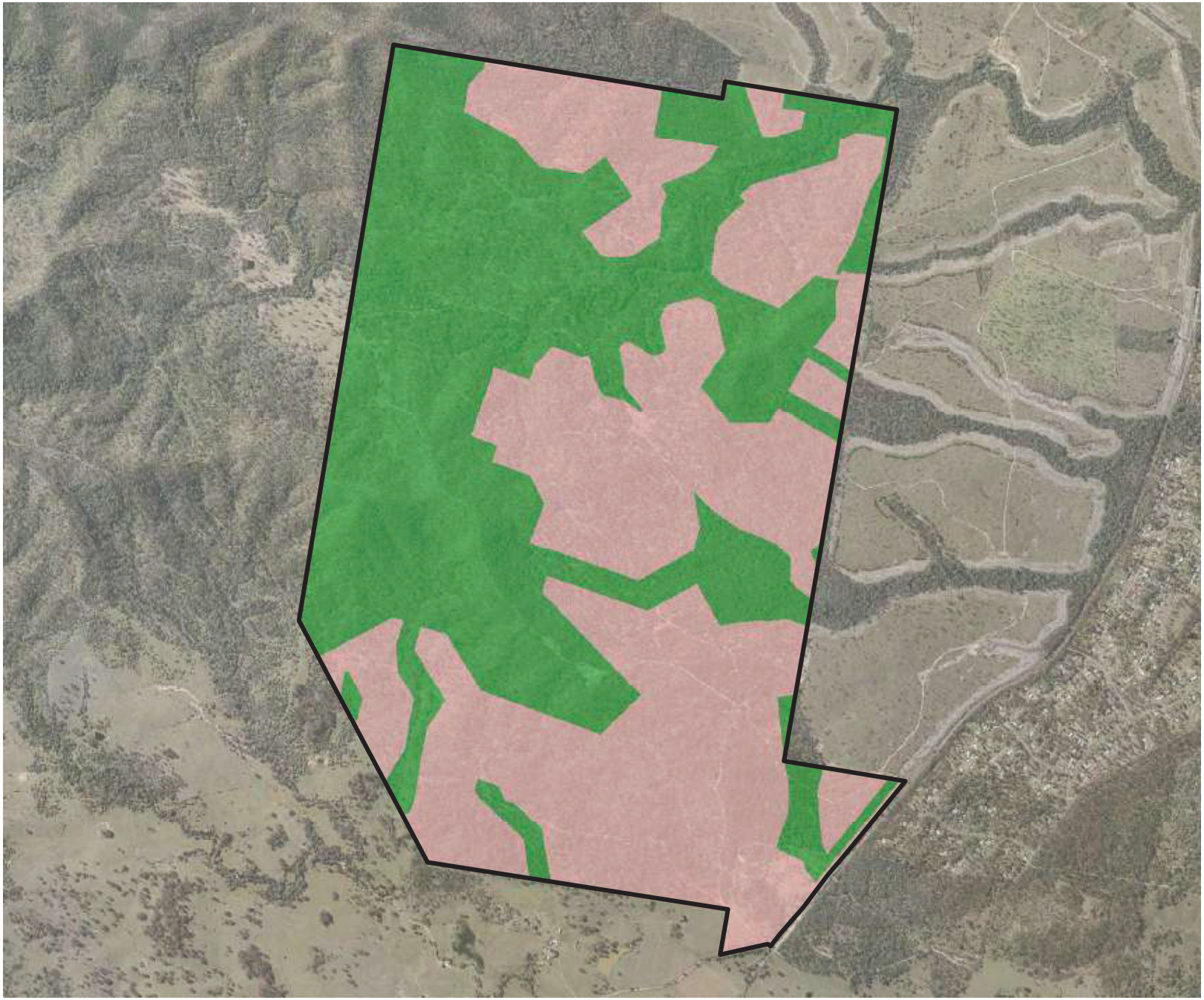
SAT Survey Results

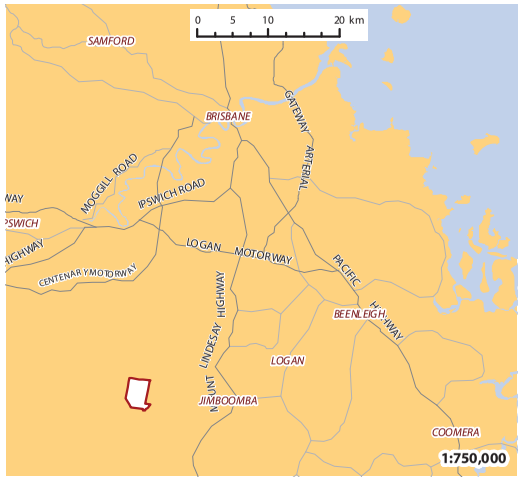
Appendix H

AKF Koala Habitat Assessment Results

Appendix A

Preliminary Land Use Plan





Legend

- Referral area

Structure Plan

- Proposed development land
- Conservation land

0 100 200 400 600 800 1,000 m

N

saunders havill group

Jotown International Pty Ltd

THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT. SAUNDERS HAVILL GROUP CANNOT ACCEPT RESPONSIBILITY FOR ANY USE OF OR RELIANCE UPON THE CONTENTS OF THIS DRAWING BY ANY THIRD PARTY.

CONFIRM ALL DIMENSIONS ON SITE PRIOR TO CONSTRUCTION AND DO NOT SCALE FROM THE DRAWINGS. ALL DIMENSIONS ARE IN MILLIMETRES. ANY DISCREPANCIES SHOULD BE CLARIFIED IN WRITING WITH SAUNDERS HAVILL GROUP PRIOR TO THE COMMENCEMENT OF WORK.

PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.

ISSUES:

Issue	Date	Description	Drawn	Checked
A	21/11/2014	Preliminary Draft	TC	RM
B	3/07/2015	Layout changes	TC	AD

Undullah

Land Use Plan

Date 3/07/2015
Scale 1:20,000 @ A3
Data Information:
Universal Transverse Mercator
GDA 1994 MGA Zone 56
Client Jotown International Pty Ltd
Project Undullah masterplan community
Address/RPD Undullah, Logan City Council
Source DCBD (DNRM 2013), Aerial (QLD Globe 2013) Structure Plan (THG 2015)

Plan 1

SHG File
7290 E 01 Landuse Plan B

Appendix B

Environment Protection and Biodiversity Conservation Act 1999
Protected Matters Database Search

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.

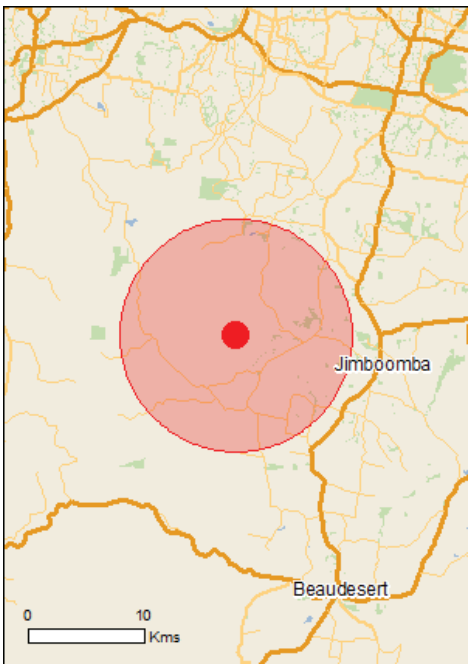
Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

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

Report created: 03/07/15 10:18:44

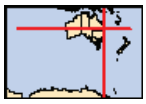
Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements



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

Coordinates
Buffer: 10.0Km



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:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	36
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/index.html

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	15
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:	3
Regional Forest Agreements:	None
Invasive Species:	39
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar) [Resource Information]

Name	Proximity
Moreton bay	Upstream from Ramsar

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area
Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland	Critically Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Endangered	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Cyclopsitta diophthalma_coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta_scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	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 likely to occur within area

Name	Status	Type of Presence
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area
Fish		
Maccullochella mariensis Mary River Cod [83806]	Endangered	Translocated population known to occur within area
Insects		
Phyllodes imperialis smithersi Pink Underwing Moth [86084]	Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll [331]	Endangered	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat known to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Other		
Cycas ophiolitica [55797]	Endangered	Species or species habitat likely to occur within area
Plants		
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area
Bosistoa selwynii Heart-leaved Bosistoa [13702]	Vulnerable	Species or species habitat likely to occur within area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area
Bulbophyllum globuliforme Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat likely to occur within area
Cupaniopsis tomentella Boonah Tuckeroo [3322]	Vulnerable	Species or species habitat likely to occur within area
Lepidium peregrinum Wandering Pepper-cress [14035]	Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Notelaea ipsviciensis Cooneana Olive [81858]	Critically Endangered	Species or species habitat may occur within area
Notelaea lloydii Lloyd's Olive [15002]	Vulnerable	Species or species habitat likely to 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
Planchonella eerwah Shiny-leaved Condoo, Black Plum, Wild Apple [17340]	Endangered	Species or species habitat likely to occur within area
Plectranthus habrophyllus [64589]	Endangered	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat may occur within area
Delma torquata Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

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

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat 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 likely to occur within area

Name	Threatened	Type of Presence
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Pandion cristatus Eastern Osprey [82411]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]

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

Name	Threatened	Type of Presence
Birds		
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area

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

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Henderson Reserve	QLD
Koolena	QLD
Stewartdale	QLD

Invasive Species [Resource Information]

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

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		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

Name	Status	Type of Presence
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
Equus caballus Horse [5]		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 norvegicus Brown Rat, Norway Rat [83]		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		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine,		Species or species

Name	Status	Type of Presence
Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		habitat likely to occur within area
Cabomba caroliniana		
Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera		
Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. rotundata		
Bitou Bush [16332]		Species or species habitat likely to 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
Eichhornia crassipes		
Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista monspessulana		
Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		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
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii		
Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta		
Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis		
Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Solanum elaeagnifolium		
Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus		
Asian House Gecko [1708]		Species or species habitat likely to occur

Name	Status	Type of Presence 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

-27.81264 152.91744

Acknowledgements

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

-Department of Environment, Climate Change and Water, New South Wales
-Department of Sustainability and Environment, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment and Natural Resources, South Australia
-Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts
-Environmental and Resource Management, Queensland
-Department of Environment and Conservation, Western Australia
-Department of the Environment, Climate Change, Energy and Water
-Birds Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-SA Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Atherton and Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
-State Forests of NSW
-Geoscience Australia
-CSIRO
-Other groups and individuals

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

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

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Appendix C

Nature Conservation Act 1992 (Qld)
Wildlife Online Database Search Results

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: -27.8125
Longitude: 152.916
Distance: 10
Email: angelalittle@saundershavill.com
Date submitted: Tuesday 02 Sep 2014 12:12:26
Date extracted: Tuesday 02 Sep 2014 12:20:07

The number of records retrieved = 21

Disclaimer

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

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

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

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Hylidae	*Litoria brevipalmata*	green thighed frog		NT		1
animals	amphibians	Limnodynastidae	*Adelotus brevis*	tusked frog		V		3
animals	birds	Accipitridae	*Accipiter novaehollandiae*	grey goshawk		NT		5
animals	birds	Anatidae	*Nettapus coromandelianus*	cotton pygmy-goose		NT		1
animals	birds	Anatidae	*Stictonetta naevosa*	freckled duck		NT		1
animals	birds	Cacatuidae	*Calyptorhynchus lathami*	glossy black-cockatoo		V		5
animals	birds	Ciconiidae	*Ephippiorhynchus asiaticus*	black-necked stork		NT		11
animals	birds	Maluridae	*Stipiturus malachurus*	southern emu-wren		V		1
animals	birds	Meliphagidae	*Melithreptus gularis*	black-chinned honeyeater		NT		1
animals	birds	Rallidae	*Lewinia pectoralis*	Lewin's rail		NT		1
animals	birds	Rostratulidae	*Rostratula australis*	Australian painted snipe		V	E	1
animals	birds	Strigidae	*Ninox strenua*	powerful owl		V		6
animals	birds	Turnicidae	*Turnix melanogaster*	black-breasted button-quail		V	V	2
animals	mammals	Dasyuridae	*Dasyurus maculatus maculatus*	spotted-tailed quoll (southern subspecies)		V	E	5
animals	mammals	Macropodidae	*Petrogale penicillata*	brush-tailed rock-wallaby		V	V	11
animals	mammals	Phascolarctidae	*Phascolarctos cinereus (southeast Queensland bioregion)*	koala (southeast Queensland bioregion)		V	V	99
plants	higher dicots	Apocynaceae	*Marsdenia coronata*	slender milkvine		V		3/2
plants	higher dicots	Lamiaceae	*Plectranthus habrophyllus*			E	E	1/1
plants	higher dicots	Myrtaceae	*Melaleuca irbyana*			E		4
plants	higher dicots	Sapindaceae	*Cupaniopsis tomentella*	Boonah tuckeroo		V	V	1
plants	higher dicots	Sapotaceae	*Planchonella eerwah*			E	E	2/1

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 Date 02/09/2014 at 12:20:07

Appendix D

BAAM Baseline Terrestrial and Aquatic Vertebrate Assessment

WYATT ROAD, UNDULLAH

BASELINE TERRESTRIAL AND AQUATIC VERTEBRATE ASSESSMENT

Report prepared for TRE Developments

Biodiversity Assessment AND MANAGEMENT PTY LTD

FAUNA AND HABITAT SPECIALISTS

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Purpose of Report

Biodiversity Assessment and Management Pty Ltd has produced this report in its capacity as {consultants} for and on the request of TRE Developments (the "Client") for the sole purpose of conducting a terrestrial and aquatic vertebrate fauna survey at Wyatt Road, Undullah (the "Specified Purpose"). This information and any recommendations in this report are particular to the Specified Purpose and are based on facts, matters and circumstances particular to the subject matter of the report and the Specified Purpose at the time of production. This report is not to be used, nor is it suitable, for any purpose other than the Specified Purpose. Biodiversity Assessment and Management Pty Ltd disclaims all liability for any loss and/or damage whatsoever arising either directly or indirectly as a result of any application, use or reliance upon the report for any purpose other than the Specified Purpose.

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Signed on behalf of Date: 20th March, 2009

Biodiversity Assessment and Management Pty Ltd

Managing Director

EXECUTIVE SUMMARY

INTRODUCTION

This report has been prepared for TRE Developments for the purpose of providing an independent and comprehensive baseline assessment of the terrestrial and aquatic fauna and associated habitat values of the site of the Undullah development area (the 'study site'), located in south-east Queensland.

The study site is located 41 km south of Brisbane city and 10 km west of Jimboomba. The site comprises approximately 1000 hectares and is located within a largely constant vegetation matrix to the north and west. Lands to the south and south-west are cleared for cattle grazing and other land uses.

Much of the project area has historically been used for grazing activity and selective logging. Large areas have suffered lantana infestation. Despite this much of the study site retains vegetation cover in varying stages of maturity.

RESULTS OF THE ASSESSMENT

Examination of state and federal databases for the subject site and surrounds indicated 16 possible fauna species of conservation significance (under the NC Act and/or EPBC Act) identified from the vicinity of the subject site. Analysis of the NRW certified RE mapping for the subject site indicates that the whole of the site is considered 'essential habitat' for the Koala, and there are small areas considered 'essential habitat' for the Wallum Froglet. It is acknowledged that the official RE mapping may not accurately reflect the existing on-ground vegetation communities.

Following field surveys two species of conservation significant fauna were identified – Koala and Powerful Owl. Detailed habitat assessment on the study site indicated the potential occurrence of a further four species of conservation significant fauna protected under the provisions of the NC Act and/or the EPBC Act. A further 13 species recorded during the surveys are considered as regionally significant species under the EPA's BAMM mapping methodology.

An analysis of the faunal assemblage revealed the presence of 142 terrestrial vertebrates (24 mammals, 87 birds, 17 reptiles and 14 amphibians), and three aquatic vertebrates (fish).

HABITAT VALUES OF THE STUDY SITE

Despite disturbance from previous vegetation removal and cattle grazing, the site contains some important vegetation and landscape features that provide habitat for a range of fauna species. This is particularly apparent along Sandy Creek, which, in addition to permanent water in the form of isolated stream pools, provides dense cover, hollows, foraging resources (seeds, fruit, nectar, invertebrate and vertebrate prey for numerous small birds, raptors and mammals) and a high diversity of micro-habitat for ground dwelling mammals, reptiles and amphibians.

Vegetation on the study site is dominated by eucalypt woodlands with some areas of riparian vegetation and artificial dam/wetland areas. Due to historical landuse, eucalypt woodland on the study site often has reduced canopy cover, particularly in the southern half of the site. Woodland to the north of Sandy Creek generally appeared to be substantially less disturbed and more mature than areas to the south. Despite this, habitat values on the site support a diverse range of open forest/woodland fauna including two EVR and several regionally significant species such as Yellow-bellied and Squirrel Gliders.

The site has been subject to weed invasion with extensive Lantana thickets, particularly along drainage lines, however these also provide valuable shelter for native fauna in the absence of native vegetation.

The site is bounded to the north, west and east by largely continuous tracts of vegetation which form part of a bushland corridor linking several EPA estates from Mount Barney in the south to Flinders Peak then east to Karawatha. The status of this corridor is currently being reviewed and areas within this corridor may be elevated to being of state or regional significance in the future (EPA 2006b). This also links a major east-west bushland corridor connecting the McPherson and Main Ranges in the south to four regionally significant corridors in the north (EPA 2006b), including a regionally significant corridor extending from Greenbank-Karawatha to Moreton Bay.

Lands to the south and south-west are largely cleared for pastoral activities and hold reduced potential for fauna movement. The study site itself remains well-vegetated for the most part, providing an important habitat remnant in conjunction with surrounding vegetated properties, as well as contributing to regional fauna movement and dispersal.

The riparian vegetation along Sandy Creek facilitates the movement of species restricted to more dense vegetation types, and connects with riparian vegetation east of Flagstone and along the Logan River.

CONSTRAINTS TO FUTURE DEVELOPMENT

The riparian zone along Sandy Creek and adjoining habitat should be considered as strategically important for fauna movement purposes as well as for providing important habitat for a number of significant species.

The most important habitat value of the site, while providing good quality habitat for a range of species, is its connection with the extensive bushland to the north and north-west. For species such as Powerful Owl and Spotted-tailed Quoll which have large home ranges, their continued presence on the subject site depends on the maintenance of these adjoining habitats. Conversely, habitat within the site contributes to the habitat value of the larger remnant area. Biodiversity Planning Assessment mapping affords this riparian zone and habitats to the north both regional and state significance for their ecosystem value, relative ecosystem size, ecosystem diversity and context and connection. For adjoining habitat south of Sandy Creek, field assessment has shown that the habitat present is suitable for Koalas and Yellow-bellied Gliders in particular.

Taking into account the fauna habitat values and the proximity to adjacent fauna habitats a fauna habitat constraints map was produced for the site (refer to **Figure 5.1)**.

Any future development planning will also need to incorporate fauna management in conservation areas, particularly habitat restoration, weed management, pest animal management and the control of fire.

BASELINE TERRESTRIAL AND AQUATIC VERTEBRATE ASSESSMENT

WYATT ROAD, UNDULLAH

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Table of Abbreviations

BAAM	Biodiversity Assessment and Management Pty Ltd
BAMM	Biodiversity Assessment and Mapping Methodology
BPA	Biodiversity Planning Assessment
BSC	Beaudesert Shire Council
LCC	Logan City Council
DEWHA	Commonwealth Department of Environment, Water, Heritage and the Arts
DPIF	Queensland Department of Primary Industries and Fisheries
EPA	Queensland Environmental Protection Agency
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
EVR	Endangered, Vulnerable or Rare
IP Act	*Integrated Planning Act 1997*
LGA	Local Government Area
LP Act	Queensland *Lands Protection (Pest and Stock Route Management) Act 2002*
NC Act	Queensland *Nature Conservation Act 1992*
NRW	Queensland Department of Natural Resources and Water
RE	Regional Ecosystem
SEQ	South-east Queensland
VM Act	Queensland *Vegetation Management Act 1999*

1.0 INTRODUCTION

This report has been prepared for TRE Developments for the purpose of providing an independent assessment of the terrestrial and aquatic vertebrate fauna habitat values of the property located at Wyatt Road, Undullah.

The specific aims of the report are to provide:

- An assessment of the terrestrial and aquatic vertebrate fauna present on, or that may utilise, the study area, including a list of species and their significance under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (that includes species listed under the Japan-Australia Migratory Bird Agreement, the China-Australia Migratory Bird Agreement and the Bonn Convention), Queensland's *Nature Conservation Act 1992* (NC Act) and the Biodiversity Assessment and Mapping Methodology (BAMM) (EPA 2002).

- An evaluation and comment on the presence or absence of any at-risk, migratory or otherwise significant species of terrestrial and aquatic vertebrate fauna of the area and the implications of such for the proposed development;

- An assessment and comment on any significant terrestrial and aquatic vertebrate faunal habitats within the study area, including their contribution to faunal movement corridors; and

- A preliminary account of potential constraints to the project under relevant legislation based on the survey findings, including any potential need for further, more detailed assessments.

All following observations and recommendations are based on a review of available literature and site investigations undertaken by Adrian Caneris, Brett Taylor and Adam Abbott on 12th to 16th January 2009 (inclusive).

2.0 STUDY AREA DESCRIPTION

2.1 LOCATION

The study site is located 41 km south of Brisbane city and 10 km west of Jimboomba **Figure 2.1**). The site comprises two properties under the jurisdiction of the Logan City Council (formerly under the Beaudesert Shire) described as Lot 3 on RP45236 and Lot 28 on S311174. The properties are located on Wyatt Road, west of the Brisbane-Sydney rail line and adjoin the Flagstone Community. Rice Road traverses the properties, heading north from the south-east corner before leaving through the western boundary, approximately following Sandy Creek.

The site is surrounded by privately owned lands and comprises approximately 1000 hectares. The properties are located within a largely constant vegetation matrix to the north and west. Lands to the south and south-west are cleared for cattle grazing and other land uses.

2.2 LAND USE AND TERRESTRIAL FEATURES

The site is largely occupied by eucalypt forest/woodland in varying stages of maturity with some native riparian vegetation along Sandy Creek. Due to past land uses, weed infestation, dominated by *Lantana camara*, is present throughout the site, particularly along drainage lines.

The site has been subject to cattle grazing and was largely cleared in the past. Related structures in various states of disrepair are distributed throughout the property. There is also a small disused quarry present in the southern portion of the site. Historically, much of the site has been selectively logged, particularly in the less steep and more accessible portions of the study site. This landuse is ongoing and parts of the site were subject to logging as recently as 2008, which has resulted in a much degraded tree canopy in some areas.

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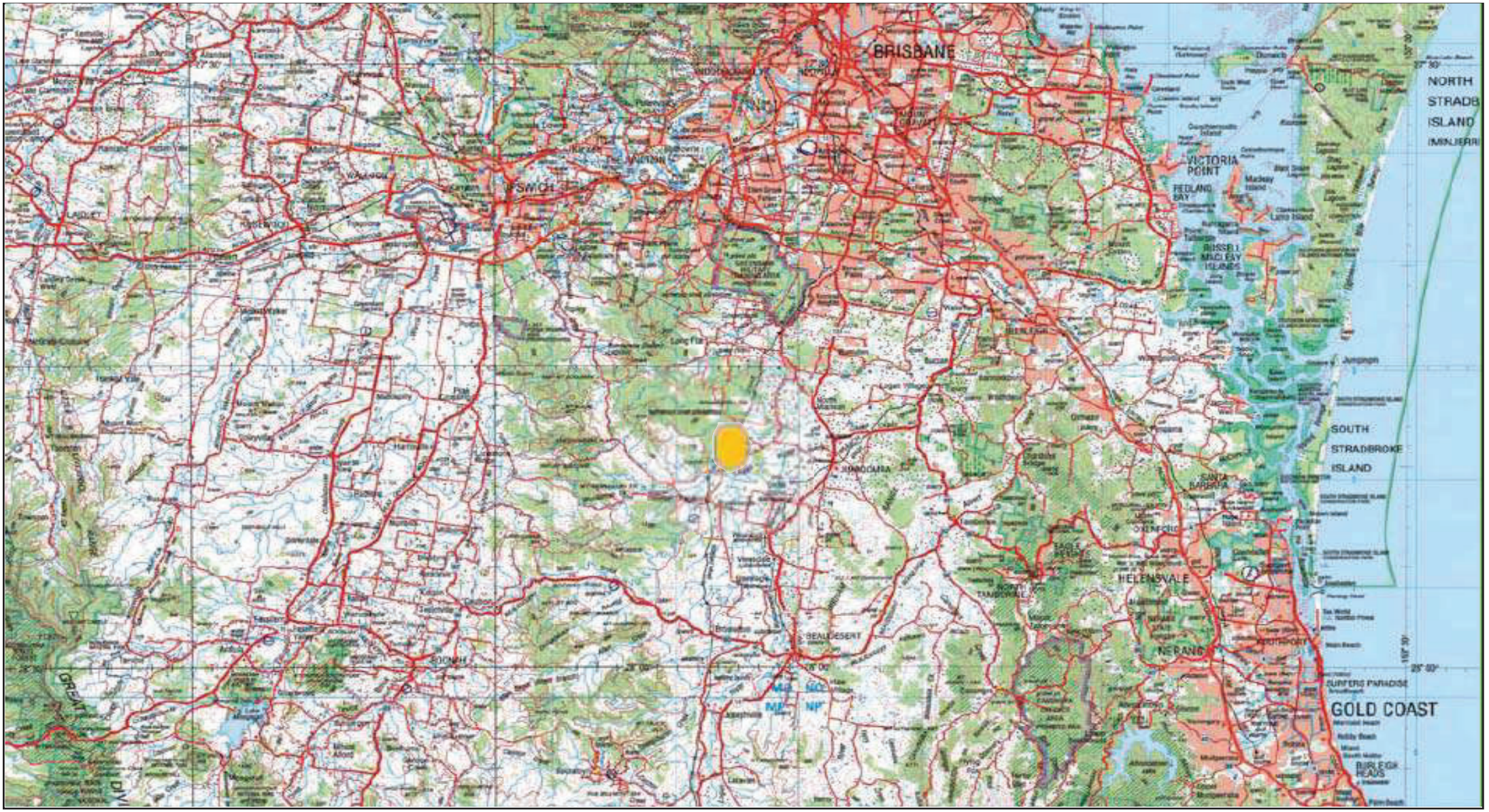


Legend:

Site Location

FIGURE 2.1

STUDY AREA LOCALITY

Baseline Terrestrial and Aquatic Fauna Assessment- Wyatt Road, Undullah

Biodiversity Assessment and Management Pty Ltd

2.3 DRAINAGE FEATURES

The study site is located in undulating sandstone terrain with a maximum elevation of approximately 180 m in the north-west of the site and a minimum of 50 m in the south-east corner. Several ridgelines of varying grades cross the property in the northern and western sections of the study site. Sandy Creek is an ephemeral creekline with several permanent pools, running approximately west to east in the northern section of the site. Several small farm dams/waterbodies are also distributed throughout the property.

3.0 ENVIRONMENTAL PLANNING FRAMEWORK

The environmental planning framework for the study area incorporates legislation at the Commonwealth, State and local levels. In addition, planning for this area should have regard for the intent of regional statutory planning instruments.

3.1 COMMONWEALTH ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The EPBC Act protects the environment, particularly matters of National Environmental Significance (Protected matters). It streamlines national environmental assessment and approvals process, protects Australian biodiversity and integrates management of important natural and cultural places.

The EPBC Act, administered by the Commonwealth Department of the Environment, Water, Heritage and the Arts (DEWHA), is designed to provide for the conservation of biodiversity through the protection of threatened species and ecological communities, migratory, marine and other protected species listed under the Act.

In planning for the study area, there may be a requirement for a referral to DEWHA in accordance with the EPBC Act Policy Statement 1.1: Significant Impact Guidelines, Matters of National Environmental Significance (DEH 2006) for assessment against the EPBC Act. A requirement for Commonwealth referral in relation to terrestrial vertebrates will be dependant on the species of conservation significance and their associated habitats that are recorded in the study area, and the likelihood of those species and habitats being significantly impacted by any future proposed work.

3.2 QUEENSLAND NATURE CONSERVATION ACT 1992

Planning for the study area must address the guidelines and provisions of Queensland's *Nature Conservation Act 1992* (NC Act). The NC Act is the principal legislation for the conservation and management of the State's native flora and fauna and is administered by the Queensland Environmental Protection Agency (EPA). The key goal of the NC Act is the preservation of endangered, vulnerable and rare (EVR) species of flora and fauna as listed under the *Nature Conservation (Wildlife) Regulation 1994*.

The NC Act (Section 68) states that:

'Protected wildlife is to be managed to—

(a) conserve the wildlife and its values and, in particular to—

(i) ensure the survival and natural development of the wildlife in the wild; and

(ii) conserve the biological diversity of the wildlife to the greatest possible extent; and

(iii) identify, and reduce or remove, the effects of threatening processes relating to the wildlife; and

(iv) identify the wildlife's critical habitat and conserve it to the greatest possible extent; and …'.

Protected wildlife is linked to the *Vegetation Management Act 1999* (VMA) through the mapping of Remnant Vegetation and associated Essential Habitat contained therein.

3.3 VEGETATION MANAGEMENT ACT 1999

The purpose of the *Vegetation Management Act 1999* is to regulate the clearing of native vegetation (i.e. Remnant Vegetation mapped as Regional Ecosystems (REs) that are: Endangered, Of Concern and Not of Concern) to maintain ecological processes, ensure there is no loss of biodiversity or increase in land degradation from vegetation clearing and manage the effects of clearing. In addition, some areas of remnant vegetation are further classified as Essential Habitat under the VM Act with specific reference to conservation significant species listed under the NC Act.

The VM Act is administered by the Queensland Department of Natural Resources and Water (NRW) certified mapping of Remnant Vegetation and Essential Habitat. Clearing of native vegetation mapped as RE and/or Essential Habitat is subject to assessment by the NRW against the Regional Vegetation Management Code for the Southeast Queensland Bioregion (NRW 2006).

3.4 QUEENSLAND LANDS PROTECTION (PEST AND STOCK ROUTE MANAGEMENT) ACT 2002

The main purpose of the *Lands Protection (Pest and Stock Route Management) Act 2002* (LP Act) legislation is to provide pest management for agricultural lands. The LP Act lists several species of flora and fauna that are considered Class 1, 2 or 3 pests under the Act.

In addition, there may be environmental weeds that are not listed under the LP Act may be present within the study area.

Future planning in the study area should incorporate appropriate weed and pest management.

3.5 DRAFT SOUTH EAST QUEENSLAND REGIONAL PLAN 2009-2031

The Draft South East Queensland Regional Plan 2009–2031 and associated regulatory provisions refines and modifies the strategic directions, principles and policies of the South East Queensland Regional Plan 2005 to respond to the emerging issues. Population projections have been extended to 2031 and the implications for accommodating growth in South East Queensland (SEQ) have been examined and addressed.

Identified Growth Areas are being considered for future urban development subject to investigation into the land capability, suitability, infrastructure requirements and other relevant investigations.

3.6 QUEENSLAND STATE KOALA MAPPING

The *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006-2016* addresses the key threats facing Koalas and sets out strategies to stop the decline of Koala numbers and set in train the species' recovery. The Koala Plan addresses: habitat protection and vegetation clearing, development; State Government infrastructure; vehicle mortality; dog attacks; translocation; research; zoos; public education and the rehabilitation of sick, injured and orphaned Koalas.

The Koala Plan has replaced the SEQ Regional Plan Interim Guideline — Koalas and Development, which provided assessment criteria applying to proposed development in Koala Habitat Areas.

The *draft South East Queensland Koala State Planning Regulatory Provisions* came into effect on 12 December 2008. The Department of Infrastructure and Planning is now the concurrence agency under the *Integrated Planning Act 1997* for defined development in Urban Koala Areas and in Koala Sustainability Areas that are within the Urban Footprint as defined in the South East Queensland Regional Plan 2005-2026.

3.7 BIODIVERSITY PLANNING ASSESSMENT SOUTH EAST QUEENSLAND BIOREGION

The EPA has prepared Biodiversity Planning Assessments (BPAs) for a number of Queensland Bioregions (as defined under the VM Act) in order to provide broadscale ecological data to advise a range of planning and decision-making processes.

The BPAs are based on the Biodiversity Assessment and Mapping Methodology (BAMM) (EPA 2002) using vegetation mapping data generated by the Queensland Herbarium. The methodology identifies areas with various levels of significance for biodiversity reasons, such as threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetland or other types of habitat important for the maintenance of biodiversity or ecological processes.

The BAMM assigns three levels of Biodiversity Significance:

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

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

3.8 LOGAN CITY COUNCIL (BEAUDESERT SHIRE PLANNING SCHEME 2007)

The study site is located within the boundaries of the Logan City Local Government Area (LGA). This area was previously located within the Beaudesert Shire LGA until March 15, 2008. As such, the study site is subject to the provisions of the Beaudesert Shire Planning Scheme 2007 (BSC Planning Scheme).

4.0 STUDY METHODOLOGY

4.1 DESK TOP

Prior to the field surveys, public databases were searched in order to provide background information regarding terrestrial vertebrates known from the region and local area. This included searches of the Commonwealth's EPBC Online Protected Matters Search Tool, the EPA's WildNet database, Birds Australia's New Atlas database and the Queensland Museum's fauna databases for the study area and surrounds. Information gained from this phase of the study was used to:

- Ensure that survey methods were designed to detect species of significance known from the region; and
- Determine which species were most likely to occur if suitable habitat was located within the study area. Those species known from recent, nearby records are considered more likely to occur if suitable habitat is located.

4.2 FIELD SURVEY

4.2.1 Survey Effort and Site Selection

The terrestrial vertebrate field survey program involved a trap/release program and

passive recording conducted over five days and four nights in January 2009, following the techniques recommended by the EPA's *Guidelines for Flora and Fauna Surveys* (EPA 1999) and in accordance with the EPA's Queensland Parks and Wildlife Service's Scientific Purposes Permit No. WISP02791605 and Queensland Department of Primary Industries' (DPI) Animal Ethics Committee Certification No. CA 2005/10/81.

In order to represent the basic vegetation/habitat types within the study area, a total of five terrestrial trapping sites were established, as follows:

- Site 1: Riparian vegetation along an ephemeral sandy creekline adjacent to open eucalypt forest, open/disturbed canopy with scattered hollows, weedy shrub layer dense adjacent to creek but sparse away from bank, sparse ground layer/litter coverage with few fallen logs;
- Site 2: Riparian vegetation along an ephemeral rocky creekline adjacent to open eucalypt forest, open/disturbed canopy with scattered hollows, weedy shrub layer dense to sparse adjacent to creek but sparse away from bank, dense grassy layer in places, sparse litter coverage with few fallen logs;
- Site 3: Ridgeline open eucalypt woodland with some rocky areas, open/disturbed canopy with scattered hollows, sparse shrub/ground layer with moderate litter coverage and fallen logs;
- Site 4: Hill slope open eucalypt woodland, very open/disturbed canopy with few hollows, weedy shrub layer sparse to dense, ground layer sparse, moderate litter coverage and numerous fallen logs;
- Site 5: Open eucalypt forest adjacent to old dam; canopy layer relatively closed and with more hollows, weedy shrub layer close to water but more scattered in forest, ground layer sparse, moderate litter coverage with numerous fallen logs.

4.2.2 Survey Techniques

Box Traps

At each systematic trapping site, over four nights during the January survey period, 22 Elliot traps (20 type A and two type B) and one cage trap were placed on ground 5-8 m apart using a variety of baits (rolled oats, peanut butter, oil and vanilla +/- salami). Trap placement was influenced by vegetation diversity, the size and shape of the vegetation patches and by naturally occurring features such as logs, rock outcrops, tree bases and clumping vegetation. These traps were cleared early morning and reset in late afternoon in accordance with animal ethics requirements. Additional cage traps were placed where habitat was considered suitable for the EVR species Spotted-tailed Quoll *Dasyurus maculatus maculatus.*

The location of each box trap line is provided in **Table 4.1** and shown on **Figure 4.1**.

Infrared Camera

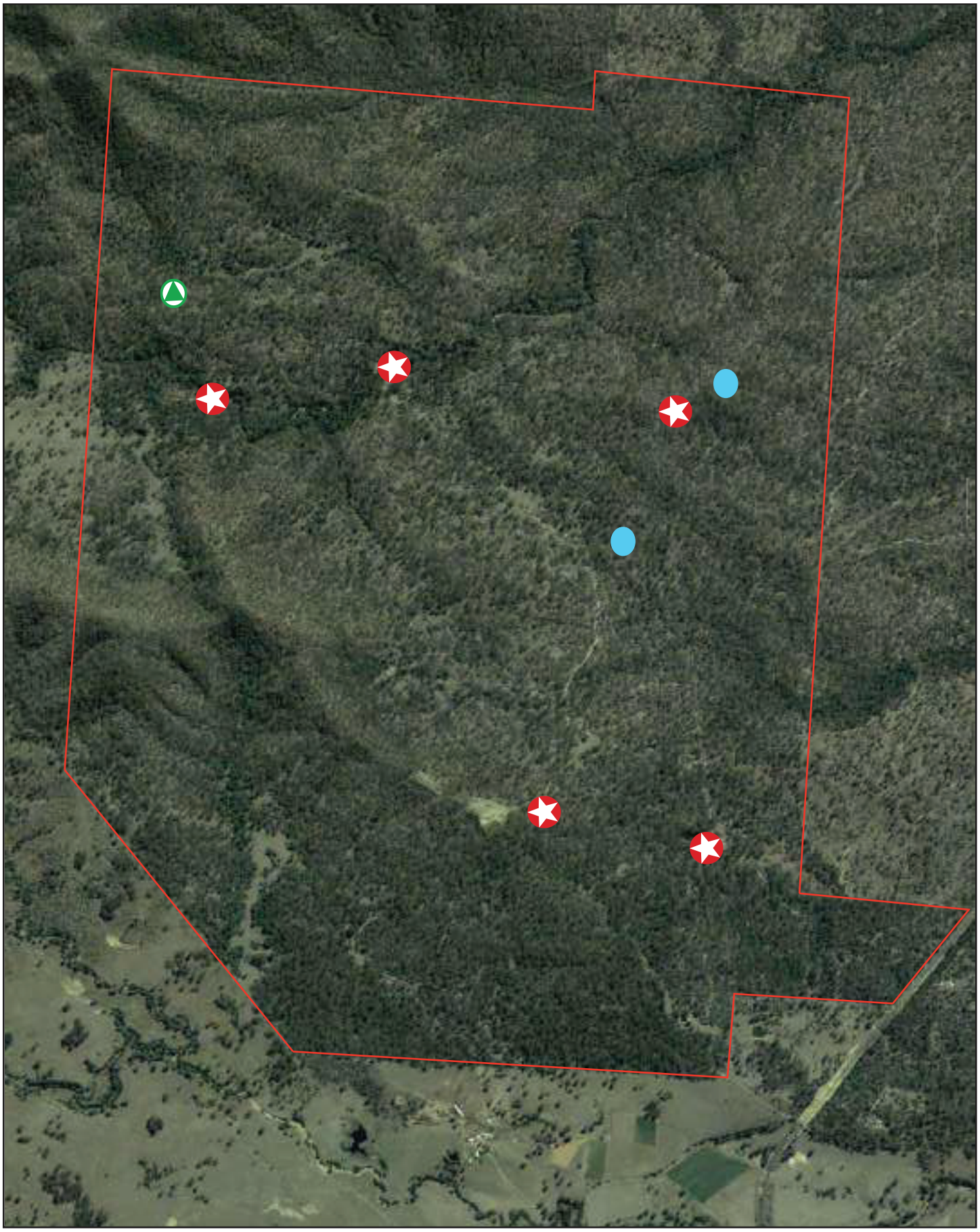
An infrared camera was placed near cage traps targeting Spotted-tail Quoll to capture records of that and other trap-shy species that were attracted to the bait but were unwilling to enter the traps.

Pitfall Traps

Where possible, pitfall lines were established at each systematic trapping site, over four nights during the January survey period. Four pitfall traps (20 or 10 litre containers, depending on substrate) were buried flush to the ground surface and connected by a 20 m drift fence. These traps were cleared early morning and reset in late afternoon in accordance with animal ethics requirements.

The location of each pit trap line is provided in **Table 4.1** and shown on **Figure 4.1**.

Pitfall lines were not established at trapping site S3 due to the nature of the substrate.



Source: Google Earth Pro 2009

Legend:

- Site boundary
- Trapping site
- Powerful Owl - *Ninox strenua*
- Koala - *Phascolarctos cinerus*

N

0 m 500 m

Biodiversity Assessment

FIGURE 4.1

Survey Site Locations and Records of Significant Species

Baseline Terrestrial and Aquatic Fauna Assessment- Wyatt Road, Undullah

Table 4.1. Terrestrial Vertebrate Trapping Site Locations

Trap Site	GPS Location[1]		Habitat Type
	Lat	Long	
1	S27.80826	E152.90880	Riparian vegetation
2	S27.80790	E152.91537	Riparian vegetation
3	S27.81130	E152.92439	Open Woodland
4	S27.82465	E152.91831	Open Woodland
5	S27.82659	E152.92434	Open Woodland

Note: Centre point of site. Map Datum GDA and locations recorded on Garmin GPS.

Harp Traps

Harp traps for trapping micro-bats were not deployed during the January 2009 survey due to the lack of suitable flyways on the study site.

Diurnal Searches

Active diurnal searches were undertaken that involved intensive investigation of ground layer (under logs, rocks and leaf litter), low vegetation (under bark and in tree stumps) and rock crevices for all amphibians, reptiles, bats and animal signs (e.g. scats, owl pellets, orts (bird feeding remnants), remains and tracks). Searches were conducted in conjunction with the morning bird censuses and during the warmer parts of the day when reptile activity was likely to be at its peak.

Turtle/Fish Trapping and Searches

Turtle and fish traps were deployed during the January 2009 survey period. Turtles were also searched for with binoculars in conjunction with the morning bird censuses and during other times throughout each day.

Targeted Searches

During the survey period, special effort was made to detect the presence of species of special conservation significance obtained from the database searches, with particular focus on Koala *Phascolarctos cinereus*, Powerful Owl *Ninox strenua* and Spot-tailed Quolls.

Diurnal Bird Census

Birds were surveyed throughout each habitat type in the morning and afternoon. Birds were identified from either direct observation or their calls.

Nocturnal Surveys

A combination of high-powered spotlights and head torches were used to sample nocturnal mammals (flying, arboreal and terrestrial), birds (owls and nightjars), reptiles and frogs across the study area.

During the spotlighting sessions, species-specific detection was assisted by the use of call playback surveys undertaken for nocturnal birds and nocturnal mammals using the recordings of Stewart (1998a, b)

An ANABAT II ultrasonic bat call detection unit and associated ZCAIM interface module were also used to capture the calls of insectivorous bat species. The use of the ZCAIM unit allows the ANABAT II detector to be left unattended throughout the night, thereby ensuring that peak activity periods for bats are recorded each night.

Incidental (Opportunistic) Records

During the survey period, fauna observations were continuous and species records were obtained outside of the systematic methodology of the survey.

Weather conditions during the January 2009 survey were warm to hot and dry. This may have reduced the frog activity during the

survey leading to an underestimation of the number of frog species on the study site.

5.0 RESULTS

5.1 EXISTING RELEVANT INFORMATION

There is a moderately extensive amount of literature based on the region encompassing the study area and surrounds, however much of this relates to floodplain and catchment management issues with little specific reference to terrestrial or aquatic fauna.

5.2 ESSENTIAL HABITAT MAPPING:

The majority of the study site is mapped as Essential Habitat for Koala. In addition, the areas mapped as Of Concern RE 12.3.11/12.3.6 (80/20) are also mapped as Essential Habitat for the Wallum Froglet *Crinia tinnula*. These species are discussed in further detail below. The Essential Habitat for the study site is shown in **Appendix 6**.

It should be noted that the official RE mapping may not accurately reflect the existing on-ground vegetation communities.

A Property Map of Assessable Vegetation (PMAV) of the study site is being completed through onsite field surveys conducted by the Saunders Havill Group. Currently the entire site is considered as a composite Of Concern RE that is incorporated into the Essential Habitat mapping. Small areas mapped as Not Of Concern (RE 12.9-10.17) are not included as Essential Habitat for Koala. Onsite inspections suggest that much the vegetation on the site should be redefined as the Not Of Concern REs. This may also reduce the amount of Essential Habitat for Koala on the study site.

5.2.1 Koala *Phascolarctos cinereus*

Under the VM Act, Essential Habitat for the Koala is described as:

"Open (structurally complex with mixture young/mature/old growth, especially 30-80cm dbh), mixed (rich in number and species diversity of food trees) eucalypt forest and woodland at lower altitude in undulating country on relatively deep and usually high nutrient soil (main species - *Eucalyptus tereticornis*, *E. fibrosa*, *E. propinqua*; *E. umbra*, *E. grandis*, *E. microcorys*, *E. tindaliae*, *E. resinifera*, *E. populnea*; *E. robusta*, *E. nigra*, *E. signata [racemosa]*."

Essential Habitat for Koala has been mapped under the VM Act in remnant vegetation throughout the entire study site. The Essential Habitat includes: RE 12.3.3, open forest to woodland with *Eucalyptus tereticornis* with other eucalypt species; RE 12.9-10.2, open forest to woodland (*Corymbia citriodora* with *E. crebra* and other eucalypt species); RE 12.9-10.7, open forest to woodland (*E. crebra, E. tereticornis* with other eucalypt species); and RE 12.9-10.17, open forest with a variety of stringybarks, grey gums, ironbarks and spotted gums (including *E. moluccana, C. citriodora, E. siderophloia* and *E. propinqua*).

Koalas have a distinct association with eucalypt woodland and forest habitat types containing suitable food trees. Regional Ecosystems with suitable food trees are mapped throughout the study site. Both Koala and Koala habitat on the site are the subject of a separate report (BAAM 2009).

5.2.2 Wallum Froglet *Crinia tinnula*

Under the VM Act Essential Habitat for the Wallum Froglet is described as:

"Vegetation community is a mandatory essential habitat factor for this species. Permanent to ephemeral acidic (pH 4.3 - 5.2), soft freshwater in Melaleuca (e.g. *M. quinquenervia*) swamps, sedgeland, wet and dry heathland (e.g. *Banksia robur*, *Xanthorrhoea*) and wallum (*Banksia aemula* shrubland/woodland) areas coastal lowlands on sand or sandstone, occasionally in adjacent open forest/woodland (e.g. *Eucalyptus racemosa, Corymbia citriodora*) with healthy understorey; known to persist in small remnants (<10ha); may be found well away from water."

Essential Habitat for Wallum Froglet has been mapped under the VM Act in two small areas along the eastern boundary of the study site. The essential habitat includes:

RE 12.3.6, *Melaleuca quinquinervia, E. tereticornis* and *Lophostemon suaveolens* woodland; and RE 12.3.11, open forest to woodland (*E. tereticornis, E. siderophloia* and *C. intermedia* with other eucalypt species).

The Wallum Froglet is one of the so-called 'acid frogs' (Ingram and Corben 1975) that breed in low pH freshwater swamps on low nutrient soils, usually deep sands. Onsite inspections and the lack of database records for this species indicate it is highly unlikely to occur in the study area. It is also our understanding that if the species does occur, these areas will be protected.

5.3 DRAFT SOUTH EAST QUEENSLAND REGIONAL PLAN 2009-2031

Part of the study site (i.e. Lot 3 on RP45236, also identified as Greater Flagstone in the Draft Plan) is identified in the *Draft South East Queensland Regional Plan 2009-2031* as 'Identified Growth Area'.

Greater Flagstone is expected to support the existing urban areas through the creation of new and varied job opportunities. Additional housing opportunities will also be facilitated. However, given its current isolated location, the provision of road and public transport infrastructure is vital to connect the proposed new community to the urban communities of Gold Coast, Logan and Ipswich.

5.4 NATURE CONSERVATION (KOALA) CONSERVATION PLAN 2006 AND MANAGEMENT PROGRAM 2006-2016

The study site lies within Koala District A under the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006-2016* (EPA 2006a). The study site is not identified as 'Koala Habitat Area' in this management plan, although its inclusion in District A requires consideration of Koala habitat values.

In addition, the study site is not included in the *Draft South East Queensland Koala State Planning Regulatory Provisions Regulatory Maps* mapping of 'Interim Koala Habitat Protection Areas'.

5.5 LOGAN CITY COUNCIL (BEAUDESERT SHIRE PLANNING SCHEME 2007)

The study site is zoned as Mount Lindesay Corridor Future Investigation in the central and northeast of the site and Countryside along the western and southern boundaries, under the Beaudesert Shire Planning Scheme 2007.

The study site is included in several overlays/maps under the planning scheme relevant to this report including but not limited to: Nature Conservation Overlay (OV2.1D: Conservation, OV2.3D: Vegetation Management Area), Development Constraints Overlay (OV3.1D: Bushfire Hazard), Catchment Management, Waterways and Wetlands Overlay (OV6.1D) and Biodiversity Planning Assessment (PM 3.1D). The designations under the abovementioned overlays are listed in **Table 5.1**. It should be noted that the overlay designations are purely desktop based and as a result serve as a trigger for this detailed field assessment.

Table 5.1: Beaudesert Shire Planning Scheme 2007

Overlay/Map	Constraint
Nature Conservation Overlay: Conservation OV2.1D	Regional Nature Conservation Area Local Nature Conservation Area Any proposed development in these areas is subject to compliance with the Nature Conservation Overlay Code (BSC Planning Scheme) Chapter 4, Part 3)
Nature Conservation Overlay: Vegetation Management Area OV2.3D	Vegetation Management Area Any proposed development in these areas is subject to compliance with the Nature Conservation Overlay Code (BSC Planning Scheme, Chapter 4, Part 3)
Development Constraints Overlay: Bushfire Hazard OV3.1D	Medium Bushfire Hazard Any proposed development in these areas is subject to compliance with the Development Constraints Overlay Code (BSC Planning Scheme, Chapter 4, Part 4)
Catchment Management, Waterways and Wetlands Overlay OV6.1D	Pollutant Load Risk – Medium Riparian Habitat Presence Any proposed development in these areas is subject to compliance with the Catchment Management, Waterways and Wetlands Overlay Code (BSC Planning Scheme, Chapter 4, Part 7)
Biodiversity Planning Assessment PM3.1D	State Significance Special Regional Significance Special Local Significance Non Remnant

5.6 PRELIMINARY FAUNA HABITAT ASSESSMENT – UNDULLAH (2007)

A preliminary fauna habitat assessment of the study site was commissioned by Saunders Havill Group and was carried out by BAAM P/L in June 2007. The report (BAAM 2007) aimed to assess the extent and quality of fauna habitat on the study site with a focus on EVR species, particularly Koala and Spotted-tailed Quoll. The methodology used for the assessment was designed to provide a general overview of fauna habitat on the study site and no detailed transect surveys were carried out. Survey methods included limited Elliot and cage trapping, spotlighting and general fauna observations. Records of vertebrate fauna from this assessment are incorporated in this report.

5.7 DATABASE SEARCHES

Species records obtained from the Queensland Museum, EPA WildNet and Birds Australia New Atlas databases are listed in Appendix 2 in their original format. These records are collated in **Appendix 1** which also includes all BAAM survey records (June 2007 and January 2009). Species records obtained from the EPBC Online Protected Matters Search Tool are listed in **Appendix 3**.

These database searches are based on a larger area than the study area to capture as many records as possible for the local area. Given the timeframe of this project, search results for the EPA WildNet database contain records submitted to the EPA (as part of our permit requirements) that were collected during the current surveys. Where relevant, and when possible, such duplication will be identified.

It should be noted that the results from the EPBC Online Protected Matters Search are predictive only and do not necessarily indicate the presence of a species. Hence they are not included in **Appendix 2** which provides a list of species known for the study area and immediate surrounds.

Species of special conservation significance obtained from the database searches (including the EPBC Online Protected Matters Search Tool) but not detected during the surveys are detailed in **Appendix 4**. Database records are not necessarily obtained from the actual study area and, following the field-based site assessment and consideration of the habitats present within the study area and the known ranges of the animals, only some of those species listed are considered likely to occur. These are discussed in further detail in **Section 6.3**.

Database records listed in the appendices are provided using the nomenclature of the source. There is a lack of uniformity in nomenclature across the organisations that maintain the databases. In an effort to simplify nomenclature this report follows the CSIRO List of Australian Vertebrates (Clayton *et al.* 2006) as it provides a single point of reference for all terrestrial vertebrate groups. Fish follow Allen *et al*. (2002).

5.8 RECORDED TERRESTRIAL VERTEBRATE SPECIES

All terrestrial vertebrate species recorded during the BAAM June 2007 and January 2009 surveys, are listed in **Appendix 5** with location details.

In total, 142 vertebrate species have been recorded from the study area during these surveys, including three fish, 14 frog, 17 reptile, 87 bird and 24 mammal species (**Table 5.2**). The majority of the study area's terrestrial vertebrate species are currently listed in Queensland's NC Act as 'Least Concern' wildlife (i.e. native animals that are not currently listed as 'Presumed Extinct, Endangered, Vulnerable or Rare', although are still prescribed as protected wildlife). All of the recorded fish species are also listed as 'least concern' wildlife.

Under the NC Act, Powerful Owl is listed as Vulnerable, Koala as Vulnerable (SEQ Bioregion) and Culturally Significant, and Short-beaked Echidna *Tachyglossus aculeatus* as Culturally Significant (**Table 5.3**). These species are discussed in **Sections 5.9** and **5.10**. One identified species is considered to be Migratory as listed under the EPBC Act and is discussed in **Section 5.11**. In addition to these, a further 13 species are recognised as regionally significant species under BAMM mapping for the SEQ bioregion, and are discussed in **Section 5.12**.

The locations of significant species recorded from the study area and surrounds are shown on **Figure 4.1**.

Table 5.2. Terrestrial Vertebrate Species Totals from Site Assessment (2009 survey only)

Site	Frogs	Reptiles	Birds	Mammals	Total
1	1	5	25	7	38
2	4	7	31	4	46
3		3	12	3	18
4	1	7	24	4	36
5	10	2	24	4	40
Incidental only	1	3	22	5	31

^ Only Elliot trapping was conducted at Trapping Site 3
Trapping sites were subject to varying survey effort.

Table 5.3. EVR and BAMM terrestrial vertebrate species detected within the study area by BAAM surveys

Zoological Name	Common Name	NC Act	EPBC Act	BAMM
FROGS				
Limnodynastes tasmaniensis	Spotted Grass Frog			X
Litoria dentata	Bleating Tree Frog			X
Litoria peronii	Peron's Tree Frog			X

Zoological Name	Common Name	NC Act	EPBC Act	BAMM
REPTILES				
Morethia taeniopleura	Fire-tailed Skink			X
Diporiphora australis	Tommy Roundhead			X
BIRDS				
Burhinus grallarius	Bush Stone-curlew			X
Ninox strenua	Powerful Owl	Vulnerable		
Merops ornatus	Rainbow Bee-eater	Special Least Concern	Migratory	
MAMMALS				
Tachyglossus aculeatus	Short-beaked Echidna	Special Least Concern		
Phascogale tapoatafa	Brush-tailed Phascogale			X
Sminthopsis murina	Common Dunnart			X
Phascolarctos cinereus	Koala (south-east Queensland bioregion)	Vulnerable Special Least Concern		
Petaurus australis australis	Yellow-bellied Glider (southern subspecies)			X
Petaurus norfolcensis	Squirrel Glider			X
Aepyprymnus rufescens	Rufous Bettong			X
Scotorepens orion	Eastern Broad-nosed Bat			X
Vespadelus darlingtoni	Large Forest Bat			X

5.9 EVR TERRESTRIAL VERTEBRATES DETECTED DURING THE SURVEYS

Powerful Owl *Ninox strenua*

Status: NC Act Vulnerable.

Occurrence on the subject site: A single individual was heard responding to call playback at Site 1.

Ecology and Habitat: Pairs of Powerful Owls occupy large, probably permanent, home ranges of about 1,000 ha (Higgins 1999; Garnett and Crowley 2000), although in Victoria ranges larger than 4000 ha have been recorded (Soderquist and Gibbons 2007). Their principle prey is medium-sized mammals, particularly possums and gliders, which often represent more than 50% of their diet, but which also includes other birds, flying-foxes, rats and insects (Higgins 1999; Webster *et al.* 1999).

Adult birds roost in a variety of tree species, including exotics. Commonly, the roost tree has thick vegetation in which the owl can escape from the mobbing activities of smaller avian species. During breeding, adults usually roost in close proximity to the nest tree (Webster *et al.* 1999). The species occurs in mountain rainforests, gullies and forest margins, sparser hilly woodlands, coastal forests, woodlands, scrubs, exotic pine plantations and large trees in private/public gardens (Pizzey and Knight 2003). Powerful Owls are most likely observed at sites with mature dry forest, many live hollow-bearing trees, diverse habitats within two km, and not much pure regrowth within five km (Loyn *et al.* 2001).

Distribution and Breeding: This species is found in south-eastern Australia from Victoria north to Eungella, Queensland, and it is most common on the eastern slopes of the Great Dividing Range (Garnett and Crowley 2000).

Powerful Owls breed once per year from May to August. Nests are located in large tree hollows, usually at a considerable height above the ground (10-40 m) (Beruldsen 2003). Consequently, the presence of large hollow-bearing trees is important for breeding, and smaller hollows are important

for the persistence of prey species. The Powerful Owl has been known to breed successfully in semi-urban areas in Brisbane (Garnett 1993).

Threats: Widespread clearing has reduced the amount of available suitable habitat by almost half. However the species is still persistent and stable in remaining habitats (Garnett and Crowley 2000). Forestry practices have the potential to impact this species through the removal of hollow bearing trees that provide suitable nesting locations or shelter for prey species. However, most logging on mainland Australia now occurs in a mosaic pattern consisting of logged and unlogged areas, and studies have suggested that the Powerful Owl can persist in such mosaics by nesting in unlogged areas and foraging in logged or regrowth areas (Kavanagh *et al.* 1995).

Koala *Phascolarctos cinereus*

Status: NC Act Vulnerable (SEQ Bioregion).

Occurrence on the subject site: Two individuals were observed within the study site during targeted Koala searches (BAAM 2009).

Ecology and Habitat: Throughout SEQ, Koalas have a distinct association with eucalypt woodland and forest habitat types containing suitable food trees (Hume and Esson 1993; Moore and Foley 2000; Martin *et al.* 2008), although they are not necessarily restricted to bushland and remnant areas and are known to exist and breed within farmland and the urban environment (Dique *et al.* 2004). Similarly, movement is not confined to vegetated corridors, as they also move across cleared rural land and through suburbs (Martin *et al.* 2008).

They use a variety of trees, including many non-eucalypts, for feeding, shelter and breeding purposes (Dique *et al.* 2004; Martin *et al.* 2008). They can, however, have distinct, localised preferences throughout their range, selecting some species in preference to others, and are even known to have favourite individual trees due possibly to high leaf moisture content, high leaf nitrogen content (which is often related to low fibre content making leaves more palatable) and low formylated phloroglucinol compounds (FPC), which are produced by eucalypts to resist herbivory (Pahl and Hume 1990; Hume and Esson 1993; Pass *et al.* 1998; Lawler *et al.* 1998, 2000; Moore and Foley 2000).

Individual animals, although solitary, coexist within overlapping home ranges, which contain a finite number of feed trees that are visited repeatedly and often shared with other individuals.

Distribution and Breeding: Koalas occur throughout north-east, central and south-east Queensland, extending south through Victoria into South Australia and Kangaroo Island.

Threats: Current threats to Koalas include habitat destruction and fragmentation, bushfire and disease. Populations around urban areas are also at increased risk of mortality due to dog attack and road strike (Maxwell *et al.* 1996).

5.10 CULTURALLY SIGNIFICANT VERTEBRATES DETECTED DURING THE SURVEYS

Short-beaked Echidna *Tachyglossus aculeatus*

Status: NC Act Special least concern (Culturally Significant).

Occurrence on the subject site: Scats of this species were positively identified within the study site during the June 2007 survey.

The NC ACT lists the Echidna as a 'Special Least Concern' species. This listing recommends that Governments have regard to "the special cultural significance of the animal" and "the need to conserve existing populations of the animal".

The Short-beaked Echidna is, with the Platypus and the Long-beaked Echidna *Zaglossus bruijni* of New Guinea, one the three extant species of monotreme, a group of mammals believed to have diverged early

in the evolution of mammals, possibly about 200 million years ago (Augee *et al*. 2008).

Ecology and Habitat: The Short-beaked Echidna is specialised for feeding on ants, termites and beetle larvae. It occurs in almost all terrestrial habitats except for intensively managed farms. The species is active both by day and night and shelters in logs, crevices, burrows and leaf litter (Menkhorst and Knight 2004; Augee 2008).

Distribution and Breeding: This species occurs throughout Australia and can be expected in all well forested areas and many rural residential properties across Brisbane.

Mating takes place in July and August with juveniles seen from September (Augee 2008).

Threats: Short-beaked Echidnas are killed by dingoes/dogs and motor vehicles.

5.11 MIGRATORY SPECIES

Status: Special Least Concern (NC Act); Migratory (EPBC Act).

One terrestrial migratory species has been recorded to date:

Rainbow Bee-eater *Merops ornatus*

Rainbow Bee-eater is a common, widespread species that occurs in a wide variety of habitats, including highly modified land such as pasture. Although the quantity of suitable foraging or transit habitat for this species will be reduced, any adverse impacts will be minor in terms of this species' overall population. The ability of the species to move across the landscape will not be affected.

5.12 BAMM SPECIES

Status: BAMM Non-EVR Priority Species.

Thirteen vertebrate species observed within the study site are listed as regionally significant in the south-east Queensland bioregion (EPA 2002).

- Spotted Grass Frog *Limnodynastes tasmaniensis*
- Bleating Tree Frog *Litoria dentata*
- Peron's Tree Frog *Litoria peronii*
- Fire-tailed Skink *Morethia taeniopleura*
- Tommy Roundhead *Diporiphora australis*
- Bush Stone-curlew *Burhinus grallarius*
- Brush-tailed Phascogale *Phascogale tapoatafa*
- Common Dunnart *Sminthopsis murina*
- Yellow-bellied Glider (southern subspecies) *Petaurus australis australis*
- Squirrel Glider *Petaurus norfolcensis*
- Rufous Bettong *Aepyprymnus rufescens*
- Eastern Broad-nosed Bat *Scotorepens orion*
- Large Forest Bat *Vespadelus darlingtoni*

Spotted Grass Frog and Peron's Tree Frog are relatively common widespread species in the greater Brisbane region. Bleating Tree Frog is also common, but has a patchier distribution in the region (Czechura 2009). Local populations of these species may be reduced by draining of wetland/dam areas on the study site, but it is unlikely to have a significant impact on overall populations in the region.

The Fire-tailed Skink occurs in a wide variety of coastal and sub-coastal habitats, including open forest, woodland and heathland, and is often associated with rock outcrops, tussock grasses, fallen timber and areas of dense leaf litter (Wilson 2005). Suitable habitat is scarce in mainland Brisbane and the Fire-tailed Skink is a locally rare species (Low 1995). This species was observed/trapped at several locations in the study site. Development activities on the study site may have a negative impact on the local population. However, given the extensive tracts of habitat to the north and west, it is unlikely to significantly impact the species' long-term viability in the local landscape, provided these tracts are retained in the future.

The Tommy Roundhead Dragon prefers a variety of dry timbered habitats. This species does not survive well in highly disturbed and urban environments (Low 1995), most likely due to habitat loss and/or fragmentation, inappropriate fire regimes and road networks (Wilson 2003). Development activities on the study site may impact the local population. However, given the extensive tracts of habitat to the north and west, it is unlikely to significantly impact the species' long-term viability in the local landscape, provided these tracts are retained in the future.

Bush Stone-curlews are a nocturnal species preferring sparsely timbered woodland with few shrubs. The species is widespread but patchily distributed across Australia including the Greater Brisbane area. Habitat modification has led to substantial contractions in the species range in the east, south and southwest of Australia (Marchant and Higgins 1993). The species remains relatively common in built up parts of Brisbane and surrounds and it is considered unlikely that development activities on the study site will have a significant impact on the overall population.

Brush-tailed Phascogales inhabit drier forest and woodlands with hollow-bearing trees and sparse ground cover feeding mainly on invertebrates and nectar. They are highly arboreal and are seldom found on the ground. This species is patchily distributed around the coastal areas of Australia, but is generally rare (Menkhorst and Knight 2004).

The species is threatened by loss and fragmentation of habitat through tree clearing, too-frequent burning that reduces the number of hollows, and predation by cats and foxes (NPWS 2002). The species is considered to be declining and near-threatened in the SEQ bioregion, although the species remains under-surveyed (EPA 2006b). One individual was flushed from a hollow log near Trap Site 5 (**Photo 1**). Retention of tree hollows and/or placement of artificial hollows should be a management consideration for future development plans for the site for this species.

Photo 1: Brush-tailed Phascogale – Undullah 2009

The Common Dunnart is a small nocturnal carnivore with a diet consisting primarily of insects and spiders. It is most often found in open forest, woodlands and heath. The species is distributed from Cooktown, along the east coast south to South Australia. Inappropriate fire regimes, habitat loss and predation by cats are the major threats to the species.

Common Dunnarts are considered to be an indicator species for woodland health and are declining in the south-east Queensland bioregion (EPA 2006b). One individual was trapped at Trap Site 4. Development activities on the study site may have a significant impact on the local population. However, given the extensive tracts of habitat to the north and west, it is unlikely to significantly impact the species' long-term viability in the local landscape, provided these tracts are retained in the future.

Yellow-bellied Gliders occur in tall open eucalypt forests patchily distributed along coastal eastern Australia. Family groups nest communally in tree hollows and maintain a home range of 30-60 hectares. Eucalypt sap maintains a significant portion of their diet and is extracted from characteristic v-shaped incisions made using their lower incisor teeth (Goldingay 2008).

The species is considered to be near-threatened and is an indicator of old-growth forest health due to their dependence on tree hollows (EPA 2006b). The only known

remaining population in the lowland Brisbane region is Greenbank, and as a result has a high conservation priority (Low 1995).

They are threatened by clearing of old-growth forest and habitat fragmentation. At least four individuals were observed feeding near Trap Site 3 and another individual was heard calling near Trap Site 4. Although old-growth trees on the study site are restricted to isolated patches, trees bearing the species distinctive feeding incisions (Spotted Gums) were identified throughout the property (**Photo 2**). Retention of important feed trees, tree hollows and/or placement of artificial hollows should be a management consideration for future development plans for the site for this species.

Photo 2: Yellow-bellied Glider feeding evidence on Spotted Gum – Undullah 2009

Squirrel Gliders are associated with dry sclerophyll forests and woodlands dominated by either winter-flowering eucalypts, with an understorey of gum-producing acacias and/or an understorey of winter and autumn flowering banksias (Smith and Murray 2003). They occur along the east and west slopes of the Great Divide from central Cape York to western Victoria (Menkhorst and Knight 2004).

The species is considered to be declining over its range but remains locally abundant in south-east Queensland (EPA 2006b). One individual was observed foraging near Trap Site 4.

The Rufous Bettong occurs in a variety of habitats, including coastal eucalypt forest, wet sclerophyll forest, and dry open woodland, and prefers areas with a sparse or grassy understorey (Menkhorst and Knight 2004). The species occurs in coastal and sub-coastal eastern Australia from far north Queensland south to Newcastle in New South Wales (Menkhorst and Knight 2004). Low (1995) suggests they are probably locally extinct in Brisbane and they are considered to be declining in south-east Queensland (EPA 2006b). It is susceptible to changes in land use, predation by foxes and competition from rabbits (Dennis and Johnson 2008). One individual was flushed from a daytime roost at Trap Site 4.

The two micro-bat species, Eastern Broad-nosed Bat and Large Forest Bat ,both occur in a variety of habitats including woodlands, wet/dry eucalypt forest and rainforest. Both species require tree hollows for roosting (Churchill 1998) and are threatened by the loss of tree hollows.

5.13 EVR Vertebrates Not Detected During the Survey But Predicted to Occur

In addition to those species discussed in **Section 5.10**, four EVR vertebrates not recorded on the study area or nearby are predicted to occur based on suitable habitat and previous local records. These species are discussed in the following sections.

Tusked Frog *Adelotus brevis*

Status: NC Act Vulnerable.

Occurrence on the subject site: Although this species was not recorded during surveys, the prevailing dry conditions were not ideal for locating this species. Database searches based on a wider area located records of this species in the region. It is considered likely to occur on the study site.

Ecology and Habitat: This species inhabits a variety of habitats including rainforest, wet sclerophyll, dry sclerophyll, woodland and vine forest, and can even be found in low numbers in open grazing country (Eyre *et al.* 1997). They occur in slow moving streams and dams, particularly around accumulated leaves and small woody debris. On land, they can be found under logs and in hollows/rock crevices beside streams and ponds (Meyer *et al.* 2001).

Distribution and Breeding: Tusked Frogs occur on the coast and ranges from the Clarke Range in central Queensland to Moss Vale in New South Wales and as far inland as the Blackdown Tableland and Carnarvon Gorge in Queensland. Historically, the species was common on the western slopes of the Great Dividing Range. However, it has declined in many areas including the New England Tableland, western flowing streams of the Main Range, elevated sites in the Clarke Range and from the Lockyer Valley in SEQ (Ingram and McDonald 1993; Eyre *et al*.1997; Gillespie and Hines 1999).

Males construct nests in concealed sites under leaf litter, vegetation or logs in shallow water at the edge of ponds or stream pools with breeding usually occurring between September and April (Anstis 2002).

Threats: Tusked Frogs occur along streams in suburban parks in Brisbane and are very tolerant of habitat modification (Low 1995). Nonetheless, they are threatened by destruction and disturbance of habitat, reductions in water quality, Chytrid fungal disease, predation of eggs and tadpoles by exotic fish species such as Mosquito Fish *Gambusia holbrooki*, and increased ultraviolet radiation (Gillespie and Hero 1999; NPWS 2003).

Glossy Black-Cockatoo *Calyptorhynchus lathami*

Status: NC Act Vulnerable.

Occurrence on the subject site: This species was not observed during the BAAM surveys, however suitable feed trees (casuarina species) were identified within the study site. Database searches based on a wider area located records of this species in the region. It is considered likely to occur occasionally on the study site.

Ecology and Habitat: The Glossy Black-Cockatoo is an extremely specialist feeder, feeding almost exclusively on the seeds of the cones of she-oaks (Casuarinaceae). Furthermore, although she-oaks are common across the landscape, the birds select and use only a small portion of this resource (Clout 1989; Crowley and Garnett 2001). The species is known to preferentially select she-oak species with greater seed fill and kernel ratio, select trees with greater cone production (usually larger mature trees), and exclusively eat young russet-coloured cones (Cameron and Cunningham 2006).

The birds are usually encountered in small family parties, feeding in groves of she-oaks throughout the day and coming to ground to drink in the early morning or late afternoon. They occur within a range of forests and woodlands, although, due to their dependence on she-oaks, they prefer habitats dominated by this tree type either in the canopy or middle stratum (Higgins 1999). In addition, the species is reliant on suitable large hollows in dead or senescent trees in which they can nest.

Distribution and Breeding: The species has a patchy distribution throughout Eastern Australia south from Eungella to Gippsland and inland to south-central Queensland and the Riverina area of New South Wales. An isolated population is present on Kangaroo Island. They are uncommon and declining, especially in the south-western parts of its range, and are now extinct in mainland South Australia (Garnett and Crowley 2000).

They are winter breeders and breed mainly from March to August, although have been recorded breeding later in Queensland. The female incubates and cares for the young alone within a large hollow tree cavity, but is regularly fed by the male. Only one egg is produced, which hatches in about 30 days. Once hatched the chick fledges in around 60 days, but remains with its parents and is fed for another three months (Garnett *et al.* 1999).

Threats: Clearance of habitat has reduced the species' range in the south and west of the Great Divide (Garnett and Crowley 2000) and remains a serious threat to the species throughout its range. In addition, fire can reduce or remove suitable feed trees from large areas for several years. Once this has occurred, she-oak regeneration can be impeded by grazing.

Fragmentation of habitats may also result in an increase in predation of nestlings and eggs or alternatively result in higher competition for hollows (Downes *et al.* 1997). This threat may be particularly severe where species adapted to altered or open habitats are abundant. These 'edge' species may include species such as Common Brushtail Possum *Trichosurus vulpecula*, Little Corella *Cacatua sanguinea* and Galah *Eolophus roseicapilla*. Without the protection of nest hollows these predators and/or competitors can significantly reduce recruitment (Garnett *et al.* 1999).

Spotted-tailed Quoll *Dasyurus maculatus maculatus*

Status: NC Act Vulnerable; EPBC Act Endangered.

Occurrence on the subject site: No Spotted-tail Quolls were observed/trapped during the BAAM surveys. However, there are several recent confirmed records of the species from the region and quolls living in close proximity to humans may be extremely trap-shy (Burnett and Whyte 2006). Given recent records, the limited nature of the BAAM surveys, and the large tracts of suitable habitat adjacent to the north and west boundaries, it is considered possible that the species occurs within the study site.

Ecology and Habitat: Spotted-tailed Quolls are solitary animals, except during mating, and are predominantly nocturnal and partly arboreal. They shelter in rock caves and hollow logs or trees, with basking sites usually nearby (Menkhorst and Knight 2004). Males occupy overlapping territories while females appear to maintain exclusive territories (Körtner *et al.* 2004). The species feeds on a variety of prey including small and medium-sized mammals, birds, large arthropods, carrion and food scraps. They do, however, seem to have a preference for mammals (Belcher 1995; Jones and Barmuta 1998, 2000). Spotted-tailed Quolls occur in a wide variety of habitats including rainforests, wet and dry sclerophyll forests, coastal heath, scrub and sometimes Red Gum forests along inland rivers. They are found from sea-level to sub-alpine regions (Menkhorst and Knight 2004).

Distribution and Breeding: The south-east mainland sub-species was formerly distributed from Bundaberg in the north and Chinchilla in the west in Queensland and extended south to Victoria, South Australia and Tasmania (Maxwell *et al.* 1996). However, the species has undergone a range contraction in Queensland and is now rare in most areas throughout its range. Remaining populations are concentrated around the Blackall/Conondale Ranges, southern Darling Downs, Main Range, Lamington Plateau and McPherson/Border Ranges. Mating occurs from April to August (Menkhorst and Knight 2004).

Threats: Spotted-tailed Quolls are threatened by habitat loss and fragmentation, which has been particularly severe in south-east Queensland (Maxwell *et al.* 1996). Other threats include competition with foxes and feral cats, predation by foxes and dogs, and death by ingestion of 1080 or strychnine intended for wild dogs and illegal shooting (Maxwell *et al.* 1996; NPWS 2003).

Grey-headed Flying-fox *Pteropus poliocephalus*

Status: NC Act Least Concern; EPBC Act Vulnerable.

Occurrence on the subject site: No Flying-fox species was observed during BAAM surveys. Database searches based on a wider area located records for this species in the region. Suitable vegetation exists within the study site for foraging (eucalypts and melaleucas) and it is considered likely the species occurs on the study site at times.

Ecology and Habitat: Two habitat characteristics are important for Grey-headed Flying-fox - foraging resources and roosting

sites. As the species is a canopy-feeding frugivore and nectarivore, they utilise vegetation including rainforests, open eucalypt forests, woodlands, melaleuca swamps and banksia woodlands.

Roosts are commonly within dense vegetation close to water, primarily rainforest patches, stands of melaleuca, mangroves or riparian vegetation (Nelson 1965), but colonies may use exotic vegetation in urban areas (Birt *et al.* 1998). The species congregates in large camps of up to 200,000 individuals from early until late summer, with the number of bats within a camp being influenced by the availability of blossom in the surrounding area. Adults normally disperse during the winter and can migrate up to 750 km as individuals or small groups, with the young forming winter camps (Churchill 1998).

Distribution and Breeding: Regular or frequently used camps have been located between Rockhampton in Queensland south to around Mallacoota in East Gippsland, Victoria. They are generally recorded between the coast and the western slopes of the Great Dividing Range. Recent surveys have failed to locate camps or regular records of this species from the Rockhampton Area or north of Hervey Bay, Queensland. Furthermore, despite one regular camp in Melbourne (Menkhorst 1995), the southern range of the species has also appeared to have considerably retracted (Duncan *et al.* 1999). Historical records suggest they have also declined in Brisbane, although they remain abundant and widespread, and are regularly recorded from gardens and parks and from numerous camps across the city, particularly during eucalypt flowering (Low 1995).

Breeding occurs during the spring months when food resources are at their most plentiful.

Threats: Grey-headed Flying-foxes are subject to several threatening processes, the most severe being loss of habitat. It has been suggested that this resulted in a 50% decline in the population by the 1930s (Duncan *et al.* 1999). The loss of habitat, particularly important habitat such as reliable winter resources along the east coast, has continued to lead to population decline. The species will also forage within commercial fruit farms, sometimes significantly reducing their yield. This has resulted in direct culling or the destruction of camps by harassment.

Other threatening processes include accumulation of lethal levels of lead in urban areas (Hariono *et al.* 1993), electrocution on overhead powerlines, which kills disproportionately high numbers of lactating females (Duncan *et al.* 1999), and conversion of old-growth forests and woodlands to young, even-aged stands due to too-frequent burning (NPWS 2002).

5.13.1 Feral Terrestrial Vertebrate Species

The feral terrestrial vertebrate species noted during the survey and from database searches are listed in **Table 5.6**. Four of these species are recognised as Class 2 pests under the *Lands Protection (Pest and Stock Route Management) Act 2002* (LP Act).

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

Table 5.6. Feral Terrestrial Vertebrate Species Recorded During Survey

Zoological Name	Common Name	LP Act Status
Bufo marinus	Cane Toad	
Sturnus vulgaris	Common Starling	
Acridotheres tristis	Common Myna	
Mus musculus	House Mouse	
Vulpes vulpes	Red Fox	Class 2
Canis lupus	Dog/Dingo	Class 2
Lepus capensis	Brown Hare	
Oryctolagus cuniculus	Rabbit	Class 2
Sus scrofa	Pig	Class 2

None of these species is unexpected and all are commonly found in south-east Queensland.

5.14 HABITAT VALUES FOR TERRESTRIAL VERTEBRATE SPECIES

Despite disturbance from previous vegetation removal and cattle grazing, the site contains some important vegetation and landscape features that provide habitat for a range of fauna species. This is particularly apparent along Sandy Creek, which, in addition to permanent water in the form of isolated stream pools, provides dense cover, hollows, foraging resources (seeds, fruit, nectar, invertebrate and vertebrate prey for numerous small birds, raptors and mammals) and a high diversity of micro-habitat for ground dwelling mammals, reptiles and amphibians.

The site has been subject to weed invasion with extensive Lantana thickets, particularly along drainage lines, however these also provide valuable shelter for native fauna in the absence of native vegetation.

Vegetation on the study site is dominated by eucalypt woodlands with some areas of riparian vegetation and artificial dam/wetland areas. The habitat values for each of these are discussed in the following sections.

5.14.1 Open eucalypt forest/woodland

Eucalypt forest/woodland maintains a relatively continuous cover over most of the property with some small cleared areas. Much of the slope/ridgelines are dominated by Spotted Gum *Corymbia citriodora* with some ironbark and other eucalypt species (**Photo 3**). Lower lying alluvial areas also feature large *Eucalyptus tereticornis* and *E. moluccana* (**Photo 4**).

Photo 3: Hill slope Spotted Gum woodland at Site 3 – Undullah 2009.

Photo 4: Alluvial *E. tereticornis* forest at Site 2 – Undullah 2009

These mixed eucalypt forests retain isolated patches of locally important old growth trees that provide a variety and abundance of hollows for breeding birds and arboreal fauna and a complex understorey and groundcover in the form of clumping grasses and shrubs, good leaf litter coverage and fallen logs.

Furthermore, although lacking hollows, the large areas of the site dominated by less mature forests and woodlands provide resources in the form of flowering canopy species for birds and flying-foxes, groundcover complexity for ground-dwelling species and supplementary feeding resources for Koalas in the form of young foliage. As trees within these areas continue to grow and age, they will also provide a

range of potential roosting and nesting habitats for insectivorous micro-bats, arboreal mammals and several species of birds.

Historical cattle grazing and logging practices have reduced canopy cover particularly in the southern half of the site and allowed for extensive invasion of Lantana. Woodland to the north of Sandy Creek generally appeared to be substantially less disturbed and more mature than areas to the south. Some areas of severely reduced canopy cover feature a dense sub-canopy of *Acacia* species. Despite this, habitat values on the site support a diverse range of open forest/woodland fauna including two EVR and several regionally significant species.

The ground layer provides shelter for a range of species with abundant fallen timber in some areas and rocky areas along ridgelines. Although woodland is unsuitable for breeding purposes, several frog species will utilise this habitat for foraging and shelter (under logs) including: Bleating Tree Frog; Green Tree Frog *Litoria caerulea*; Ruddy Tree Frog *L. rubella*; Ornate Burrowing Frog *Limnodynastes ornatus*; and Striped Burrowing Frog *Cyclorana australis.*

Many of the reptiles observed during the BAAM surveys, including regionally significant species such as the Fire-tailed Skink and Tommy Roundhead utilise woodland habitat. Other reptile species include: Three-clawed Worm-Skink *Anomalopus verreauxii*; Copper-tailed Skink *Ctenotus taeniolatus*; Bearded Dragon *Pogona barbata* and Lace Monitor *Varanus varius.* Although few snake species were recorded during the surveys, several common and widespread species will utilise this habitat including: Common Tree Snake *Dendrelaphis punctulatus*; Brown Tree Snake *Boiga irregularis*; Carpet Python *Morelia spilota* and Eastern Brown Snake *Pseudonaja textilis.*

Eucalypt woodlands on the site provide habitat for a range of relatively common and widespread birds including pigeon, parrot, cuckoo, honeyeater and butcherbird species. The Vulnerable Powerful Owl mainly feeds on arboreal mammals and was recorded in this habitat during BAAM surveys. Areas with casuarinas may be suitable for the Vulnerable Glossy Black-Cockatoo. Woodland with a suitably dense understorey also provide habitat for a range of smaller species including: Speckled Warbler *Pyrrholaemus sagittatus*; fairy-wren species; Grey Fantail *Rhipidura albiscapa* and Double-barred Finch *Taeniopygia bichenovii.*

Despite the often degraded nature of many of the woodland areas; the site provides habitat values for a number of mammal species including one EVR and several regionally significant mammal species. The canopy vegetation provides resources for Koala and possum species. Woodland habitat provides resources such as tree hollows, eucalypt flowers and gum sap for glider species including the regionally significant Squirrel and Yellow-bellied Gliders. Micro-bat species will also utilise tree hollows as roost sites. Flying-fox species, including the Vulnerable Grey-headed Flying-fox, will also utilise flowering gums. The Brush-tailed Phascogale (also regionally significant) will utilise tree hollows for shelter and the canopy for foraging.

Woodland areas with suitable ground cover (dense shrub layer, fallen timber and/or rocky areas) provide habitat for marsupial carnivores such as Yellow-footed Antechinus *Antechinus flavipes*, Common Planigale *Planigale maculate* and Common Dunnart (regionally significant). Rocky areas along ridgelines may also provide den habitat for Spotted-tail Quoll. A number of common macropod species were observed utilising this habitat as well as the regionally significant Rufous Bettong.

5.14.2 Riparian vegetation

The riparian habitat on the study site is largely restricted to the banks of Sandy Creek and is often subject to severe infestations of Lantana. Nonetheless, native tree species such as *Callistemon viminalis, Glochidion ferdinandi and* casuarinas line the waterway and many of the larger *Eucalyptus tereticornis* remaining on the property are adjacent to these areas. The creek substrate is a combination of coarse sand and rocky areas (**Photo 5**).

Photo 5: Riparian vegetation at Site 2 – Undullah 2009

Permanent water along the creekline is obviously important to the long-term persistence of native fish species. The only permanent pools noted during the survey were adjacent to Trap Site 2, however search effort was necessarily limited. Many frog species are likely to use permanent pools along the creekline for breeding purposes and several are restricted to permanent water including Eastern Dwarf Tree Frog *Litoria fallax* and Eastern Sign-bearing Froglet *Crinia parinsignifera*. *Litoria wilcoxi* (no common name) is generally restricted to creeklines.

Turtle species such as Saw-shelled Turtle *Elseya latisternum* and Macquarie Turtle *Emydura macquarii* are expected to utilise permanent deep pools along the creek. The creekline and adjacent vegetation provide habitat for a number of reptiles including: Eastern Water-Skink *Eulamprus quoyii*; Water Dragon *Physignathus lesueurii* and Lace Monitor. Several common snake species found in adjacent woodlands are likely to forage in these areas. Species such as Red-bellied Black Snake *Pseudechis porphyriacus* and Freshwater Snake *Tropidonophis mairii* specialise in hunting frogs and are associated with freshwater habitats.

Many of the birds associated with adjacent woodlands will utilise these areas for foraging. However some species are largely restricted to these areas and the associated dense vegetation including: White-browed Scrubwren *Sericornis frontalis*; Lewin's Honeyeater *Meliphaga lewinii*; Eastern Yellow Robin *Eopsaltria australis* and Eastern Whipbird *Psophodes olivaceus.* Glossy Black-Cockatoo may utilise casuarinas along the creek for foraging.

The dense understorey, fallen timber and rocky areas may provide habitat for small dasyurids such as Yellow-footed Antechinus, Common Dunnart and Common Planigale, as well as native rodents such as Fawn-footed Melomys *Melomys cervinipes* and Bush Rat *Rattus fuscipes*. Creek habitat featuring large rocky crevices may provide suitable den habitat for Spotted-tail Quoll. These areas will also provide suitable habitat for the Northern Brown Bandicoot *Isoodon macrourus.* Many of the arboreal mammal species associated with woodland habitats are likely to utilise the large eucalypts adjacent to the riparian zone. In particular, Koala is known to forage in *Eucalyptus tereticornis.*

5.14.3 Artificial dam/wetlands

The study site contains several small artificial waterbodies, scattered throughout the site. These areas are variable in the amount of aquatic and surrounding vegetation at each site. Some Lantana infestation has occurred around waterbodies where the vegetation has been previously cleared (**Photo 6**).

Photo 6: Artificial dam/wetland at Site 5 – Undullah 2009

A conspicuous element of the fauna in this habitat is the frog community. Frog activity

was high at Trap Site 5 despite the dry conditions experienced during the January 2009 survey. Many frog species will utilise these areas for breeding including the Vulnerable Tusked Frog and regionally significant species such as Spotted Grass Frog; Peron's Tree Frog and Bleating Tree Frog.

Other common frog species that will utilise this habitat include: Striped Burrowing Frog; Ornate Burrowing Frog; Striped Marsh Frog *Limnodynastes peronii*; Broad-palmed Frog *Litoria latopalmata*; and Eastern Dwarf Tree Frog. The reptile fauna is similar to that found in riparian habitat with turtle species, Water Dragon and certain snake species.

A number of migratory wetland bird species (e.g. Great Egret *Ardea alba*) may utilise these habitats at times. However the close proximity of tall vegetation to waterbodies on the site limits their value to these species. The bird assemblage is mostly restricted to common waterbirds such as Pacific Black Duck *Anas superciliosus*; Australian Wood Duck *Chenonetta jubata*; Purple Swamphen *Porphyrio porphyrio* and Dusky Moorhen *Gallinula tenebrosa* and cormorant species.

Few mammal species are restricted to this habitat. However the Water Rat *Hydromys chrysogaster* is an amphibious species and is likely to utilise waterbodies on the site.

5.15 Movement Opportunities for Terrestrial Vertebrate Species

The site is bounded to the north, west and east by largely continuous tracts of vegetation which form part of a bushland corridor of state significance, linking several EPA estates from Mount Barney in the south to Flinders Peak then east to Karawatha. This also links a major east-west bushland corridor connecting the McPherson and Main Ranges in the south to four regionally significant corridors in the north (EPA 2006b), including a regionally significant corridor extending from Greenbank-Karawatha to Moreton Bay.

The site is located within a regional north-south corridor, considered to be important for latitudinal migrant bird species (EPA 2006b), which move between bioregions and states. Several EPBC Act listed migratory species, such as monarch species, Satin Flycatcher *Myiagra cyanoleuca* and Rufous Fantail *Rhipidura rufifrons* may utilise the riparian corridor along Sandy Creek during seasonal dispersal. Maintenance of these species preferred habitat through their migration path (such as dense riparian vegetation) is therefore important.

Lands to the south and south-west are largely cleared for pastoral activities and hold reduced potential for fauna movement. The study site itself remains well-vegetated for the most part, providing an important habitat remnant in conjunction with surrounding vegetated properties, as well as contributing to regional fauna movement and dispersal.

The riparian vegetation along Sandy Creek facilitates the movement of species restricted to more dense vegetation types, and connects with riparian vegetation east of Flagstone and along the Logan River. The south-east corner of the site also remains linked to bushland patches which form a patchy corridor extending to Teviot Brook-Logan River.

As a whole, the site is used by a wide range of vertebrate species, including at least two EVR species.

It is understood that there will be on-going logging conducted on the subject land under an authorised forestry permit. The ecological impacts of logging have not been addressed in this report, although a reduction in overall fauna habitat and movement values is likely over time. These values can be reinstated following logging through natural regeneration and/or rehabilitation actions.

5.16 Site Constraints

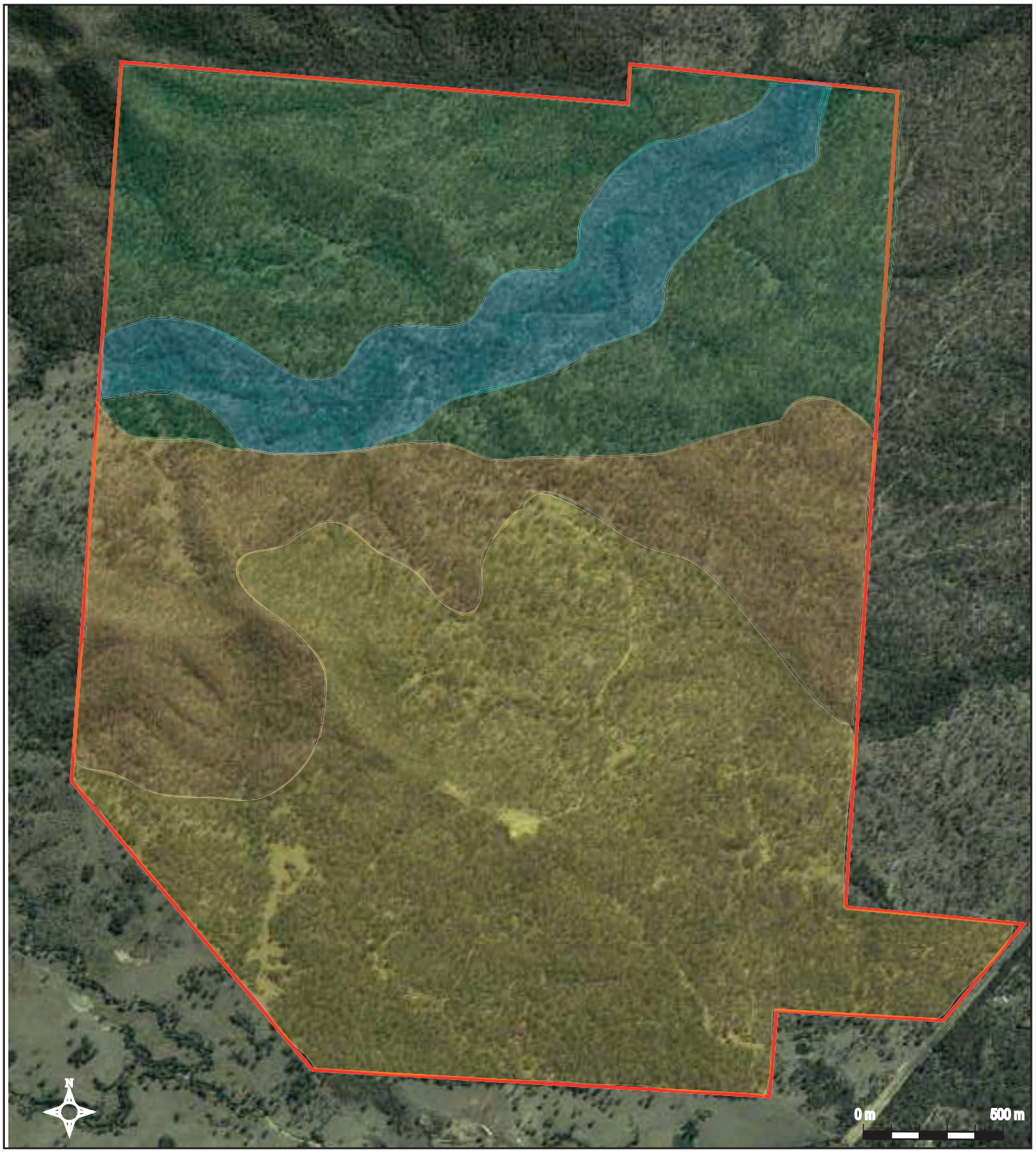
The riparian zone along Sandy Creek and adjoining habitat should be considered as strategically important for fauna movement purposes as well as for providing important habitat for a number of significant species.

The most important habitat value of the site, while providing good quality habitat for a

range of species, is its connection with the extensive bushland to the north and north-west. For species such as Powerful Owl and Spotted-tailed Quoll which have large home ranges, their continued presence on the subject site depends on the maintenance of these adjoining habitats. Conversely, habitat within the site contributes to the habitat value of the larger remnant area. Biodiversity Planning Assessment mapping affords this riparian zone and habitats to the north both regional and state significance for their ecosystem value, relative ecosystem size, ecosystem diversity and context and connection. For adjoining habitat south of Sandy Creek, field assessment has shown that the habitat present has values for Koalas and Yellow-bellied Gliders in particular.

Taking into account these habitat values, together with the location of adjacent habitats, **Figure 5.1** represents fauna habitat constraints for the site.

Any future development planning will also need to incorporate fauna management in conservation areas, particularly habitat restoration, weed management, pest animal management and the control of fire.



Legend:

CONSERVATION. High habitat value. Higher altitude, less-disturbed forest with habitat suitable for EVR species (Powerful Owl, Koala, Gliders, potentially Spotted-tailed Quoll and Brush-tailed Rock Wallaby). Maintain and enhance fauna habitat.

CONSERVATION. High corridor values. Riparian habitat - significant for Koala, Gliders, Frog species, migratory birds and possibly Spotted-tailed Quoll. Maintain and enhance fauna habitat.

FAUNA-SENSITIVE URBAN DESIGN. Medium corridor and habitat values., particularly for Koalas and Gliders. Buffer to conservation area. Rural Residential-type development only, building envelopes confined to currently disturbed areas, fauna-friendly fencing, domestic pet control/covenant. Maintain and enhance fauna habitat .

FAUNA-SENSITIVE URBAN DESIGN. Low corridor and habitat values, particularly for Koalas and Gilders. Subject to detailed design/layout, maintaining fauna corridors. Fauna crossing infrastructure on roads. Domestic pet control/ covenant.

Map Source: Google Earth Pro 2009

FIGURE 5.1

FAUNA HABITAT CONSTRAINTS MAP

Baseline Terrestrial and Aquatic Fauna Assessment- Wyatt Road, Undullah

Biodiversity Assessment AND MANAGEMENT PTY LTD

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APPENDIX 1:

Terrestrial Vertebrate Species List

Undullah Study Area: Species list derived from BAAM fauna surveys and database searches

Abbreviations

Data Source: BAAM = Data collected by BAAM staff in January 2009 (X) and June 2007 (x); **BA** = Birds Australia New Atlas 1998-2006 database; **QM** = Queensland Museum database; **WN** = Environmental Protection Agency Queensland WildNet database.

Status: EPBC: E = Endangered; V = Vulnerable; M = Migratory. **NCA:** E = Endangered; V = Vulnerable; R = Rare; S = Special Least Concern; C = Least Concern; I = Introduced. **BAMM:** X = species of concern for South-East Queensland bioregion.

Unless otherwise noted, this table follows the nomenclature provided by the CSIRO List of Australian Vertebrates (Clayton *et al*. 2006) as it provides a single point of reference for all terrestrial vertebrate groups. Fish follow Allen *et al*. (2002). Any notable variations in common and/or scientific names of conservation significant species are identified in the report text and as footnotes hereunder. With the exception of alterations due to subsequent taxonomic revision, species reported by sources other than BAAM are accepted at face value.

Family Scientific Name	Common Name	BAAM	WN	QM	BA	EPBC Act	NC Act	BAMM
Fish								
ANGUILLIDAE								
Anguilla reinhardtii	Marbled Eel		X					
MELANOTAENIIDAE								
Melanotaenia duboulayi	Crimson-spotted Rainbowfish	X						
MUGILIDAE								
Myxus petardi	Freshwater Mullet		X					
ELEOTRIDAE								
Hypseleoteris galii	Firetail Gudgeon	X	X					
Mogurnda adspersa	Purple-spotted Gudgeon	X						
CYPRINIDAE								
Carassius auratus	Goldfish		X				I	
POECILIIDAE								
Gambusia holbrooki	Mosquitofish		X				I	
AMPHIBIANS								
MYOBATRACHIDAE								
Crinia parinsignifera	Eastern Sign-bearing Froglet	x	X				C	
Limnodynastes ornatus	Ornate Burrowing Frog	X					C	
Limnodynastes peronii	Brown-striped Frog	X	X				C	

Family Scientific Name	Common Name	BAAM	WN	QM	BA	EPBC Act	NC Act	BAMM
Limnodynastes tasmaniensis	Spotted Grass Frog	X					C	X
HYLIDAE								
Cyclorana alboguttata	Striped Burrowing Frog	X					C	
Litoria caerulea	Green Tree Frog	X	X				C	
Litoria dentata	Bleating Tree Frog	x	X				C	X
Litoria fallax	Eastern Dwarf Tree Frog	X	X				C	
Litoria gracilenta	Dainty Green Tree Frog	X					C	
Litoria latopalmata	Broad-palmed Frog	Xx	X				C	
Litoria peronii	Peron's Tree Frog	X					C	X
Litoria rubella	Desert Tree Frog	X					C	
Litoria wilcoxii	No common name	X					C	
BUFONIDAE								
Bufo marinus	Cane Toad	Xx	X				I	
REPTILES								
CHELIDAE								
Elseya latisternum	Saw-shelled Turtle	X					C	
GEKKONIDAE								
Gehyra dubia	Dubious Dtella	X					C	
SCINCIDAE								
Anomalopus verreauxii	Three-clawed Worm-Skink	X					C	
Carlia munda	Shaded-litter Rainbow-Skink	x	X				C	
Carlia vivax	Tussock Rainbow-Skink	Xx	X				C	
Cryptoblepharus virgatus	Cream-striped Shinning-skink	Xx	X				C	
Ctenotus taeniolatus	Copper-tailed Skink	Xx	X				C	
Eulamprus martini	Dark Barsided Skink	X		X			C	
Lampropholis delicata	Dark-flecked Garden Sunskink	X					C	
Lygisaurus foliorum	Tree-base Litter-Skink	X					C	
Morethia taeniopleura	Fire-tailed Skink	X					C	X
AGAMIDAE								
Diporiphora australis	Tommy Roundhead	X					C	X
Physignathus lesueurii	Water Dragon	X	X				C	
Pogona barbata	Bearded Dragon	X	X				C	
VARANIDAE								
Varanus varius	Lace Monitor	X					C	
COLUBRIDAE								
Dendrelaphis punctulatus	Common Tree Snake	X					C	

Family Scientific Name	Common Name	BAAM	WN	QM	BA	EPBC Act	NC Act	BAMM
ELAPIDAE								
Pseudechis guttatus	Spotted Black Snake			X			C	X
Pseudechis porphyriacus	Red-bellied Black Snake	X					C	
BIRDS								
MEGAPODIIDAE								
Alectura lathami	Australian Brush-turkey	X					C	
PHASIANIDAE								
Coturnix ypsilophora	Brown Quail	X	X		X		C	
ANATIDAE								
Chenonetta jubata	Australian Wood Duck	X	X	X			C	
Anas superciliosa	Pacific Black Duck		X	X			C	
Anas gracilis	Grey Teal		X				C	
THRESKIORNITHIDAE								
Threskiornis molucca	Australian White Ibis				X		C	
Threskiornis spinicollis	Straw-necked Ibis	X	X		X		C	
Platalea flavipes	Yellow-billed Spoonbill		X				C	
ARDEIDAE								
Bubulcus ibis	Cattle Egret		X		X	M	S	
Egretta novaehollandiae	White-faced Heron		X		X		C	
PELECANIDAE								
Pelecanus conspicillatus	Australian Pelican		X		X		C	
PHALACROCORACIDAE								
Phalacrocorax melanoleucos	Little Pied Cormorant	X	X		X		C	
FALCONIDAE								
Falco berigora	Brown Falcon				X		C	
Falco cenchroides	Australian Kestrel				X		C	
Falco longipennis	Australian Hobby	x			X		C	
ACCIPITRIDAE								
Aviceda subcristata	Pacific Baza		X				C	
Haliaeetus leucogaster	White-bellied Sea-Eagle		X		X	M	S	
Circus assimilis	Spotted Harrier		X					
Accipiter fasciatus	Brown Goshawk	X	X		X		C	
Aquila audax	Wedge-tailed Eagle	X					C	
RALLIDAE								
Gallirallus philippensis	Buff-banded Rail		X				C	
Porphyrio porphyrio	Purple Swamphen	X					C	
Gallinula tenebrosa	Dusky Moorhen	X	X		X		C	

Family Scientific Name	Common Name	BAAM	WN	QM	BA	EPBC Act	NC Act	BAMM
BURHINIDAE								
Burhinus grallarius	Bush Stone-curlew	X					C	X
CHARADRIIDAE								
Vanellus miles	Masked Lapwing	X	X		X		C	
COLUMBIDAE								
Macropygia amboinensis	Brown Cuckoo-Dove		X				C	
Phaps chalcoptera	Common Bronzewing	X					C	
Ocyphaps lophotes	Crested Pigeon	X	X				C	
Geopelia placida	Peaceful Dove	Xx	X				C	
Geopelia humeralis	Bar-shouldered Dove	Xx	X		X		C	
Lopholaimus antarcticus	Topknot Pigeon	X					C	
CACATUIDAE								
Eolophus roseicapilla	Galah	Xx	X		X		C	
Cacatua tenuirostris	Long-billed Corella		X		X		C	
Cacatua galerita	Sulphur-crested Cockatoo	Xx	X		X		C	
PSITTACIDAE								
Trichoglossus haematodus	Rainbow Lorikeet	Xx	X		X		C	
Trichoglossus chlorolepidotus	Scaly-breasted Lorikeet	Xx	X		X		C	
Glossopsitta pusilla	Little Lorikeet	Xx	X		X		C	
Platycercus adscitus	Pale-headed Rosella	X	X		X		C	
Alisterus scapularis	Australian King-Parrot	X	X		X		C	
CUCULIDAE								
Cacomantis flabelliformis	Fan-tailed Cuckoo	X					C	
Chalcites lucidus	Shining Bronze-Cuckoo	X					C	
Eudynamys orientalis	Pacific Koel	X					C	
Scythrops novaehollandiae	Channel-billed Cuckoo	X	X				C	
CENTROPIDIDAE								
Centropus phasianinus	Pheasant Coucal	X	X		X		C	
STRIGIDAE								
Ninox strenua	Powerful Owl	X					V	
Ninox boobook	Southern Boobook	X					C	
PODARGIDAE								
Podargus strigoides	Tawny Frogmouth	X	X				C	
CAPRIMULGIDAE								
Eurostopodus mystacalis	White-throated Nightjar	X					C	
CORACIIDAE								
Eurystomus orientalis	Dollarbird	X	X	X			C	

Family Scientific Name	Common Name	BAAM	WN	QM	BA	EPBC Act	NC Act	BAMM
HALCYONIDAE								
Dacelo leachii	Blue-winged Kookaburra		X				C	X
Dacelo novaeguineae	Laughing Kookaburra	Xx	X		X		C	
Todiramphus sancta	Sacred Kingfisher	X	X		X		C	
ALCEDINIDAE								
Alcedo azurea	Azure Kingfisher (alt)		X		X		C	
MEROPIDAE								
Merops ornatus	Rainbow Bee-eater	x	X		X	M	S	
CLIMACTERIDAE								
Cormobates leucophaea	White-throated Treecreeper	Xx	X		X		C	
MALURIDAE								
Malurus lamberti	Variegated Fairy-wren	Xx	X				C	
Malurus cyaneus	Superb Fairy-wren	Xx	X		X		C	
Malurus melanocephalus	Red-backed Fairy-wren	Xx	X		X		C	
PARDALOTIDAE								
Pardalotus punctatus	Spotted Pardalote	x	X				C	
Pardalotus striatus	Striated Pardalote	Xx	x		X		C	
ACANTHIZIDAE								
Pyrrholaemus sagittatus	Speckled Warbler	Xx	X				C	
Sericornis frontalis	White-browed Scrubwren	Xx	X				C	
Smicrornis brevirostris	Weebill	Xx	X				C	
Gerygone olivacea	White-throated Gerygone	Xx	X		X		C	
Acanthiza reguloides	Buff-rumped Thornbill	Xx	X					
Acanthiza chrysorrhoa	Yellow-rumped Thornbill		X		X		C	
MELIPHAGIDAE								
Lichenostomus chrysops	Yellow-faced Honeyeater	Xx	X		X		C	
Lichenostomus fuscus	Fuscous Honeyeater	Xx	X				C	
Meliphaga lewinii	Lewin's Honeyeater	Xx	X				C	
Manorina melanocephala	Noisy Miner	X	X		X		C	
Entomyzon cyanotis	Blue-faced Honeyeater	Xx	X		X		C	
Melithreptus albogularis	White-throated Honeyeater	Xx	X		X		C	
Philemon citreogularis	Little Friarbird		X		X		C	
Philemon corniculatus	Noisy Friarbird	Xx	X		X		C	
Plectorhyncha lanceolata	Striped Honeyeater	Xx	X		X		C	
Lichmera indistincta	Brown Honeyeater	Xx	X		X		C	
Acanthorhynchus tenuirostris	Eastern Spinebill	x	X				C	
Myzomela sanguinolenta	Scarlet Honeyeater	X					C	

Family Scientific Name	Common Name	BAAM	WN	QM	BA	EPBC Act	NC Act	BAMM
PETROICIDAE								
Eopsaltria australis	Eastern Yellow Robin	X	X		X		C	
Microeca fascinans	Jacky Winter	Xx	X		X		C	
Petroica rosea	Rose Robin	x	X				C	
POMATOSTOMIDAE								
Pomatostomus temporalis	Grey-crowned Babbler	Xx	X				C	
EUPETIDAE								
Psophodes olivaceus	Eastern Whipbird	X					C	
Cinclosoma punctatum	Spotted Quail-thrush		X				C	
NEOSITTIDAE								
Daphoenositta chrysoptera	Varied Sittella	Xx	X				C	
PACHYCEPHALIDAE								
Pachycephala pectoralis	Golden Whistler	x	X		X		C	
Pachycephala rufiventris	Rufous Whistler	Xx	X		X		C	
Colluricincla harmonica	Grey Shrike-thrush	X	X		X		C	
DICRURIDAE								
Rhipidura albiscapa	Grey Fantail	Xx	X		X		C	
Rhipidura leucophrys	Willie Wagtail	Xx	X		X		C	
Dicrurus bracteatus	Spangled Drongo	X					C	
Grallina cyanoleuca	Magpie-lark		X		X		C	
Myiagra rubecula	Leaden Flycatcher	X					C	
ARTAMIDAE								
Cracticus torquatus	Grey Butcherbird	Xx	X		X		C	
Cracticus nigrogularis	Pied Butcherbird	Xx	X		X		C	
Gymnorhina tibicen	Australian Magpie	Xx	X		X		C	
Strepera graculina	Pied Currawong	Xx	X				C	
CAMPEPHAGIDAE								
Coracina tenuirostris	Cicadabird	X	X		X		C	
Coracina novaehollandiae	Black-faced Cuckoo-shrike	Xx	X		X		C	
ORIOLIDAE								
Sphecotheres vieilloti	Australasian Figbird	X	X		X		C	
Oriolus sagittatus	Olive-backed Oriole	X	X		X		C	
CORVIDAE								
Corvus orru	Torresian Crow	Xx	X		X		C	
STURNIDAE								
Sturnus vulgaris	Common Starling				X		I	
Acridotheres tristis	Common Myna				X		I	

Family Scientific Name	Common Name	BAAM	WN	QM	BA	EPBC Act	NC Act	BAMM
HIRUNDINIDAE								
Hirundo neoxena	Welcome Swallow		X		X		C	
ZOSTEROPIDAE								
Zosterops lateralis	Silvereye	Xx	X		X		C	
SYLVIIDAE								
Megalurus timoriensis	Tawny Grassbird				X		C	
Cisticola exilis	Golden-headed Cisticola				X		C	
ALAUDIDAE								
Mirafra javanica	Horsfield's Bushlark				X		C	
DICAEIDAE								
Dicaeum hirundinaceum	Mistletoebird	X	X		X		C	
MOTACILLIDAE								
Anthus australis	Australian Pipit	X					C	
ESTRILDIDAE								
Neochmia temporalis	Red-browed Finch	Xx	X				C	
Taeniopygia bichenovii	Double-barred Finch	Xx	X		X		C	
Lonchura castaneothorax	Chestnut-breasted Mannikin				X		C	
MAMMALS								
ORNITHORHYNCHIDAE								
Ornithorhynchus anatinus	Platypus		X				S	X
TACHYGLOSSIDAE								
Tachyglossus aculeatus	Short-beaked Echidna	x	X				S	
DASYURIDAE								
Antechinus flavipes	Yellow-footed Antechinus	Xx	X	X			C	
Phascogale tapoatafa	Brush-tailed Phascogale	X					C	X
Sminthopsis murina	Common Dunnart	X	X				C	X
PERAMELIDAE								
Isoodon macrourus	Northern Brown Bandicoot	Xx	X				C	
PHASCOLARCTIDAE								
Phascolarctos cinereus	Koala (SEQ Bioregion)	X	X				V	
PETAURIDAE								
Petaurus australis australis	Yellow-bellied Glider (southern subspecies)	X					C	X
Petaurus norfolcensis	Squirrel Glider	X					C	X
PSEUDOCHEIRIDAE								
Pseudocheirus peregrinus	Common Ringtail Possum		X				C	
PHALANGERIDAE								

Family Scientific Name	Common Name	BAAM	WN	QM	BA	EPBC Act	NC Act	BAMM
Trichosurus vulpecula	Common Brushtail Possum	Xx	X				C	
POTOROIDAE								
Aepyprymnus rufescens	Rufous Bettong	X					C	X
MACROPODIDAE								
Macropus giganteus	Eastern Grey Kangaroo	Xx	X				C	
Macropus rufogriseus	Red-necked Wallaby	Xx	X				C	
Wallabia bicolor	Swamp Wallaby	X	X				C	
EMBALLONURIDAE								
Saccolaimus flaviventris	Yellow-bellied Sheath-tailed Bat	X					C	
MOLOSSIDAE								
Mormopterus beccarii	Beccari's Free-tailed Bat	X					C	
VESPERTILIONIDAE								
Miniopterus australis	Little Bentwing-bat	X					C	
Nyctophilus sp.	Unidentified Large-eared Bat	X					C	
Chalinolobus gouldii	Gould's Wattled Bat	X		X			C	
Scotorepens sp./greyii	Central Eastern/Little Broad-nosed Bat	X					C	
Scotorepens orion	Eastern Broad-nosed Bat	X					C	X
Vespadelus darlingtoni	Large Forest Bat	X		X			C	X
MURIDAE								
Melomys cervinipes	Fawn-footed Melomys			X			C	
Mus musculus	House Mouse		X				I	
Rattus fucipes	Bush Rat		X	X				
Rattus lutreolus	Swamp Rat			X			C	
Rattus tunneyi	Pale Field-Rat		X				C	
CANIDAE								
Vulpes vulpes	Red Fox		X				I	
Canis lupus	Dingo/Dog	Xx	X					
LEPORIDAE								
Lepus capensis	Brown Hare	X					I	
Oryctolagus cuniculus	Rabbit	X					I	
SUIDAE								
Sus scrofa	Pig		X				I	

APPENDIX 2:

Database Search Results

QUEENSLAND MUSEUM DATABASE SEARCH - DECEMBER 2008

	GENUS	SPECIES	COMMON NAME
FROGS			
MYOBATRACHIDAE			
Adelotus	*brevis*	Tusked Frog	3Km E of Flinders Peak
Adelotus	*brevis*	Tusked Frog	Mary Cairncross Park
Crinia	*parinsignifera*	Beeping Froglet	Brisbane Hwy, 16Km N of Beaudesert
Crinia	*parinsignifera*	Beeping Froglet	Brisbane Hwy, 16Km from Beaudesert
Crinia	*parinsignifera*	Beeping Froglet	Brisbane Hwy, 16Km N of Beaudesert
Crinia	*parinsignifera*	Beeping Froglet	8Km from Boonah turnoff, Ipswich Rd
Crinia	*parinsignifera*	Beeping Froglet	Boonah Rd, 16Km from Beaudesert
Crinia	*parinsignifera*	Beeping Froglet	Boonah Rd, 20.8Km from Beaudesert
Crinia	*parinsignifera*	Beeping Froglet	8Km S of Ipswich on Beaudesert Rd
Crinia	*parinsignifera*	Beeping Froglet	16Km N of Beaudesert
Crinia	sp	Froglet	Brisbane, Illaweena Rd
Limnodynastes	*peronii*	Striped Marsh Frog	Brisbane Hwy, 16Km N of Beaudesert
Limnodynastes	*tasmaniensis*	Spotted Marshfrog	Mt Lindesay Hwy, 11km N of Beaudesert
Limnodynastes	*tasmaniensis*	Spotted Marshfrog	Lancewood Hs, Ripley-Brooklands Rd
Limnodynastes	*tasmaniensis*	Spotted Marshfrog	Boonah-Beaudesert Rd, 16km fm Bdesert
Limnodynastes	*tasmaniensis*	Spotted Marshfrog	Mary Caincross Park
Limnodynastes	*tasmaniensis*	Spotted Marshfrog	16Km N of Beaudesert
Mixophyes	*fasciolatus*	Great Barred-frog	Mary Caincross Park
Mixophyes	*fasciolatus*	Great Barred-frog	Mary Cairncross Park
Pseudophryne	*major*	Great Brown Broodfrog	16Km N of Beaudesert?
Pseudophryne	*raveni*	Copper-backed Broodfrog	Brisbane, Illaweena Rd
Uperoleia	*laevigata*	Eastern Gungan	Lancewood Hs, Ripley-Brooklands Rd
Uperoleia	*laevigata*	Eastern Gungan	Brisbane Hwy, 16Km N of Beaudesert
Uperoleia	*laevigata*	Eastern Gungan	16Km N of Beaudesert
Uperoleia	*rugosa*	Chubby Gungan	Causeway, Bdesert Rd, Jbmba-Cedar Gr
HYLIDAE			
Cyclorana	*alboguttata*	Green-stripe Frog	Boonah side of Flinders Peak
Litoria	*fallax*	Eastern Sedgefrog	Brisbane Hwy, 16Km N of Beaudesert
Litoria	*latopalmata*	Broad-palmed Rocketfrog	Boonah side of Flinders Peak
Litoria	*latopalmata*	Broad-palmed Rocketfrog	Flinders Peak, Boonah side
Litoria	*pearsoniana*	Cascade Treefrog	Boonah side of Flinders Peak
Litoria	*rubella*	Naked Treefrog	Boonah side of Flinders Peak
Litoria	*rubella*	Naked Treefrog	Azalea Nursery, Park Ridge, Brisbane
Litoria	*wilcoxii*		Samford Ck, nr Highvale
REPTILES			
CHELUIDAE			
Elseya	*latisternum*	Saw-shelled Turtle	Jimboomba
Emydura	*macquarii*	Murray Short-necked Turtle	Flinders Peak Mt, nr
GEKKONIDAE			
Gehyra	*dubia*	Dubious Dtella	Flinders Peak, 3km E, S of Ipswich
SCINCIDAE			
Anomalopus	*verreauxii*	Verreaux's Skink	Flinders Peak, S of Ipswich
Calyptotis	*scutirostrum*	Scute-snouted Calyptotis	Mt Flinders, nr
Carlia	*foliorum*	Burnett's Skink	Flinders Peak, 3km E, S of Ipswich
Carlia	*pectoralis*	Open-litter Rainbow-skink	Flinders Mountain Rd, via Peaks Xing
Carlia	*vivax*	Lively Skink	Flinders Peak, 3km E, S of Ipswich
Cryptoblepharus	*virgatus*	Wall Skink	Flinders Peak, 3km E, S of Ipswich
Cryptoblepharus	*virgatus*	Wall Skink	Coulson, 11km E
Ctenotus	*robustus*	Eastern Striped Skink	Flinders Peak, 3km E, S of Ipswich
Ctenotus	*robustus*	Eastern Striped Skink	Flinders Peak Rd
Ctenotus	*taeniolatus*	Copper-tailed Skink	Flinders Peak, 3km E, S of Ipswich
Ctenotus	*taeniolatus*	Copper-tailed Skink	Flinders Peak, S of Ipswich
Eulamprus	*martini*	Martin's Skink	Coulson, 11km E

Eulamprus	*martini*	Martin's Skink	Flagstone ck, nr Jimboomba
Lampropholis	*delicata*	Garden Skink	Flinders Peak, S of Ipswich
Morethia	*taeniopleura*	North-eastern Firetail Skink	Coulson, 11km E
AGAMIDAE			
Chlamydosaurus	*kingii*	Frilled Lizard	Brisbane, Logan Motor Way
Chlamydosaurus	*kingii*	Frilled Lizard	Brisbane, Park Ridge
Diporiphora	*australis*	Tommy Round-head	Flinders Peak, 3km E, S of Ipswich
Diporiphora	*australis*	Tommy Round-head	Flinders Peak, S of Ipswich
Physignathus	*lesueurii*	Eastern Water Dragon	Flinders Peak, S of Ipswich
Pogona	*barbata*	Common Bearded Dragon	Greenbank, 36 Thompson Rd
TYPHLOPIDAE			
Ramphotyphlops	*proximus*	Proximus Blind Snake	Jimboomba, Stockleigh Rd
Ramphotyphlops	*wiedii*	Brown-snouted Blind Snake	Jimboomba, via Beaudesert
PYTHONIDAE			
Morelia	*spilota*	Carpet Python	Jimboomba or Greenbank
Morelia	*spilota*	Carpet Python	Greenbank Stn, nr Brisbane
COLUBRIDAE			
Dendrelaphis	*punctulata*	Green Tree Snake	Greenbank
Tropidonophis	*mairii*	Freshwater Snake	Brisbane, Park Ridge
Tropidonophis	*mairii*	Freshwater Snake	Gleneagle, Beaudesert
ELAPIDAE			
Acanthophis	*antarcticus*	Common Death Adder	Highvale, Mt Nebo Rd
Brachyurophis	*australis*	Australian Coral Snake	Greenbank, Brisbane (51 farm Rd.)
Brachyurophis	*australis*	Australian Coral Snake	Ipswich, Farmland, Ripley
Cacophis	*harriettae*	White-crowned Snake	Brisbane, Park Ridge
Cryptophis	*nigrescens*	Small-eyed Snake	Ipswich, 15km SE
Demansia	*psammophis*	Yellow-faced Whip Snake	Greenbank
Hoplocephalus	*bitorquatus*	Pale-headed Snake	Jimboomba, via Beaudesert
Hoplocephalus	*bitorquatus*	Pale-headed Snake	Woodhill, Beaudesert Line
Hoplocephalus	*bitorquatus*	Pale-headed Snake	Woodhill, via Beaudesert
Hoplocephalus	*bitorquatus*	Pale-headed Snake	Greenbank Military Camp, 10km from camp
Pseudechis	*guttatus*	Spotted Black Snake	Coleyville, S of Ipswich
Pseudechis	*guttatus*	Spotted Black Snake	Jimboomba, via Beaudesert
Pseudechis	*guttatus*	Spotted Black Snake	Woodhill, Beaudesert Line
Pseudechis	*guttatus*	Spotted Black Snake	Greenbank, nr Brisbane
Pseudonaja	*textilis*	Eastern Brown Snake	Beaudesert, 30km N
Pseudonaja	*textilis*	Eastern Brown Snake	S MacLean
Pseudonaja	*textilis*	Eastern Brown Snake	Jimbooma, Candlebark Rd
Vermicella	*annulata*	Bandy Bandy	Greenbank, nr Brisbane
Vermicella	*annulata*	Bandy Bandy	Brisbane, Park Ridge
BIRDS			
PHAETHONTIDAE			
Phaethon	*lepturus*	White-tailed Tropicbird	Ripley
ACCIPITRIDAE			
Accipiter	*cirrhocephalus*	Collared Sparrowhawk	Jimboomba
Aquila	*audax*	Wedge-tailed Eagle	Mt Mont, Grandchester, 14km S
Aviceda	*subcristata*	Crested Hawk	Greenbank
Haliaeetus	*leucogaster*	White-breasted Sea-Eagle	Jimboomba
TURNICIDAE			
Turnix	*pyrrhothorax*	Red-chested Button-Quail	Maclean
ROSTRATULIDAE			
Rostratula	*benghalensis*	Painted Snipe	Greenbank, near Oxley, Brisbane
COLUMBIDAE			
Phaps	*chalcoptera*	Common Bronzewing	Jimboomba
LORIIDAE			
Glossopsitta	*pusilla*	Little Lorikeet	Gbank State School,Gbank Rd.Gbank
Trichoglossus	*chlorolepidotis*	Scaly-breasted Lorikeet	Jimboomba
Trichoglossus	*haematodus*	Rainbow Lorikeet	Thompson Rd, Greenbank
Trichoglossus	*haematodus*	Rainbow Lorikeet	Veresdale

Trichoglossus	*haematodus*	Rainbow Lorikeet	Jimboomba
Trichoglossus	*haematodus*	Rainbow Lorikeet	Stony Camp Rd, Park Ridge
Trichoglossus	*haematodus*	Rainbow Lorikeet	Jimboomba
PSITTACIDAE			
Barnardius	*barnardi*	Mallee Ringneck	Jimboomba, near Beaudesert
CUCULIDAE			
Cacomantis	*flabelliformis*	Fantail Cuckoo	Greenbank, Brisbane
CENTROPODIDAE			
Chrysococcyx	*lucidus*	Shining Bronze-Cuckoo	Dundee Rd, North MacLean
Centropus	*phasianinus*	Pheasant Coucal	Wyaralong
Centropus	*phasianinus*	Pheasant Coucal	Highvale, foot of Mt. Glorious
AEGOTHELIDAE			
Aegotheles	*cristatus*	Australian Owlet Nightjar	Greenbank, near Brisbane
Aegotheles	*cristatus*	Australian Owlet Nightjar	Jimboomba
ALCEDINIDAE			
Dacelo	*novaeguineae*	Laughing Kookaburra	Jimboomba
MALURIDAE			
Malurus	*cyanocephala*	Emperor Wren	Hubner Rd, Park Ridge, Brisbane
ACANTHIZIDAE			
Smicrornis	*brevirostris*	Weebill	Veresdale
MONARCHIDAE			
Myiagra	*rubecula*	Leaden Flycatcher	Jimboomba
Rhipidura	*leucophrys*	Willie Wagtail	Jimboomba
Rhipidura	*rufifrons*	Rufous Fantail	Jimboomba, Hives Rd
PACHYCEPHALIDAE			
Pachycephala	*rufiventris*	Rufous Whistler	Veresdale
PARDALOTIDAE			
Pardalotus	*striatus*	Striated Pardalote	Jimboomba
MELIPHAGIDAE			
Melithreptus	*albogularis*	White-throated Honeyeater	Veresdale
Myzomela	*sanguinolenta*	Scarlet Honeyeater	White Rock Mtn, S of Redbank Plains
ORIOLIDAE			
Oriolus	*sagittatus*	Olive-backed Oriole	Jimboomba
CRACTICIDAE			
Gymnorhina	*tibicen*	Australian Magpie	Jimboomba
Gymnorhina	*tibicen*	Australian Magpie	Woodhill, Beaudesert
MAMMALS			
DASYURIDAE			
Antechinus	*flavipes*	Yellow-footed antechinus	Teviot Brook, Head Rd, nr Killarney
Antechinus	*flavipes*	Yellow-footed antechinus	Teviot Brook, Head Rd, nr Killarney
Antechinus	*flavipes*	Yellow-footed antechinus	Brisbane, Jbmba, Mt Alford-Mt French area
Sminthopsis	*murina*	Common dunnart	Beaudesert ca., Birnum Ra
Sminthopsis	*murina*	Common dunnart	Brisbane, Greenbank
Sminthopsis	*murina*	Common dunnart	Brisbane, Greenbank, 36 Stoney Camp Rd
PERAMELIDAE			
Isoodon	*macrourus*	Northern brown bandicoot	Teviot Brook, base of range
PHASCOLARCTIDAE			
Phascolarctos	*cinereus*	Koala	Jimboomba, Logan City, Lot 28 Koolena rd
PETAURIDAE			
Petaurus	*australis*	Yellow-bellied glider	Brisbane, Park Ridge, 4 Stony Camp Rd
Petaurus	*australis*	Yellow-bellied glider	Brisbane, Greenbank
Petaurus	*breviceps*	Sugar glider	Jimboomba
Petaurus	*norfolcensis*	Squirrel glider	Brisbane, Jimboomba
Petaurus	*norfolcensis*	Squirrel glider	Brisbane, Park Ridge
Petaurus	*norfolcensis*	Squirrel glider	Brisbane, Jimboomba, 38 Mary St
Petaurus	*norfolcensis*	Squirrel glider	Nth Maclean, Chadwich Drive
Petaurus	*norfolcensis*	Squirrel glider	Jimboomba, Roberta Crt
Petaurus	*norfolcensis*	Squirrel glider	Brisbane, Greenbank, 18 Lennons Rd
PSEUDOCHEIRIDAE			

Petauroides	*volans*	Greater glider	Logan, Park Ridge, Chambers Flat Rd
Petauroides	*volans*	Greater glider	Greenbank, Stoney Camp Rd
ACROBATIDAE			
Acrobates	*pygmaeus*	Feathertail glider	Brisbane, Greenbank
Acrobates	*pygmaeus*	Feathertail glider	Brisbane, Greenbank
Acrobates	*pygmaeus*	Feathertail glider	Brisbane, Jimboomba, 28 Klotz Rd
MACROPODIDAE			
Macropus	*dorsalis*	Black-striped wallaby	Brisbane, Greenbank
Macropus	*giganteus*	Grey Kangaroo	Greenbank
Macropus	*rufogriseus*	Red-necked wallaby	Brisbane, Park Ridge
Macropus	*rufogriseus*	Red-necked wallaby	Brisbane, Park Ridge
Macropus	*rufogriseus*	Red-necked wallaby	Woogaroo Ck
Wallabia	*bicolor*	Swamp wallaby	Woogaroo Ck
VESPERTILIONIDAE			
Chalinolobus	*gouldii*	Goulds wattled bat	Teviot Brook, nr Killarney
Vespadelus	*pumilus*	Little cave eptesicus	Teviot Brook, nr Killarney
CANIDAE			
Vulpes	*vulpes*	Fox	Gbank, cnr Old Goodna Rd/Thompson Rd
MURIDAE			
Melomys	*cervinipes*	Fawn-footed melomys	Teviot Brook, nr Killarney
Melomys	*cervinipes*	Fawn-footed melomys	Teviot Brook, nr Killarney
Mus	*musculus*	House mouse	Brisbane, Greenbank
Rattus	*fuscipes*	Bush rat	Teviot Brook, nr Killarney
Rattus	*fuscipes*	Bush rat	Teviot Brook, Head Rd, nr Killarney
Rattus	*fuscipes*	Bush rat	Teviot Brook, Head Rd, nr Killarney
Rattus	*fuscipes*	Bush rat	Teviot Brook, Head Rd, nr Killarney
Rattus	*fuscipes*	Bush rat	Teviot Brook, Head Rd, nr Killarney
Rattus	*fuscipes*	Bush rat	Teviot Brook, nr Killarney
Rattus	*fuscipes*	Bush rat	Teviot Brook, nr Killarney
Rattus	*fuscipes*	Bush rat	Teviot Brook, nr Killarney
Rattus	*fuscipes*	Bush rat	Teviot Ck, nr Killarney
Rattus	*lutreolus*	Swamp rat	Teviot Brook, Head Rd, nr Killarney
Rattus	*lutreolus*	Swamp rat	Teviot Brook, Head Rd, nr Killarney
Rattus	*lutreolus*	Swamp rat	Teviot Brook, Head Rd, nr Killarney
Rattus	*lutreolus*	Swamp rat	Jimboomba, Duncan Rd
Rattus	*lutreolus*	Swamp rat	Jimboomba
Rattus	*tunneyi*	Pale field rat	Amamoor, Cedar Grove Campsite

Queensland Government
Environmental Protection Agency
Queensland Parks and Wildlife Service

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: Animals
Type: All
Status: All
Records: All
Date: All
Latitude: 27.816379
Longitude: 152.919210
Distance: 5
Email: brett@biodiversity.tv
Date submitted: Thursday 08 Jan 2009 13:02:03
Date extracted: Thursday 08 Jan 2009 13:08:02

The number of records retrieved = 132

Disclaimer

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

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

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Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	*Rhinella marina*	cane toad	Y			3
animals	amphibians	Hylidae	*Litoria fallax*	eastern sedgefrog		C		1
animals	amphibians	Hylidae	*Litoria dentata*	bleating treefrog		C		2
animals	amphibians	Hylidae	*Litoria caerulea*	common green treefrog		C		1
animals	amphibians	Hylidae	*Litoria latopalmata*	broad palmed rocketfrog		C		2
animals	amphibians	Limnodynastidae	*Limnodynastes peronii*	striped marshfrog		C		1
animals	amphibians	Myobatrachidae	*Crinia parinsignifera*	beeping froglet		C		5
animals	birds	Acanthizidae	*Acanthiza reguloides*	buff-rumped thornbill		C		11
animals	birds	Acanthizidae	*Sericornis frontalis*	white-browed scrubwren		C		3
animals	birds	Acanthizidae	*Chthonicola sagittata*	speckled warbler		C		9
animals	birds	Acanthizidae	*Smicrornis brevirostris*	weebill		C		7
animals	birds	Acanthizidae	*Acanthiza chrysorrhoa*	yellow-rumped thornbill		C		2
animals	birds	Acanthizidae	*Gerygone albogularis*	white-throated gerygone		C		6
animals	birds	Accipitridae	*Circus assimilis*	spotted harrier		C		1
animals	birds	Accipitridae	*Aviceda subcristata*	Pacific baza		C		1
animals	birds	Accipitridae	*Haliaeetus leucogaster*	white-bellied sea-eagle		C		1
animals	birds	Accipitridae	*Accipiter fasciatus*	brown goshawk		C		1
animals	birds	Alcedinidae	*Ceyx azureus*	azure kingfisher		C		2
animals	birds	Anatidae	*Anas gracilis*	grey teal		C		1
animals	birds	Anatidae	*Anas superciliosa*	Pacific black duck		C		4
animals	birds	Anatidae	*Chenonetta jubata*	Australian wood duck		C		4
animals	birds	Ardeidae	*Ardea ibis*	cattle egret		C		3
animals	birds	Ardeidae	*Egretta novaehollandiae*	white-faced heron		C		4
animals	birds	Artamidae	*Cracticus tibicen*	Australian magpie		C		23
animals	birds	Artamidae	*Cracticus torquatus*	grey butcherbird		C		10
animals	birds	Artamidae	*Cracticus nigrogularis*	pied butcherbird		C		8
animals	birds	Artamidae	*Strepera graculina*	pied currawong		C		2
animals	birds	Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo		C		14
animals	birds	Cacatuidae	*Cacatua tenuirostris*	long-billed corella	Y	C		3
animals	birds	Cacatuidae	*Eolophus roseicapillus*	galah		C		11
animals	birds	Campephagidae	*Coracina tenuirostris*	cicadabird		C		1
animals	birds	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike		C		9
animals	birds	Charadriidae	*Vanellus miles*	masked lapwing		C		1
animals	birds	Charadriidae	*Vanellus miles novaehollandiae*	masked lapwing (southern subspecies)		C		1
animals	birds	Climacteridae	*Cormobates leucophaea*	white-throated treecreeper		C		1
animals	birds	Climacteridae	*Cormobates leucophaea metastasis*	white-throated treecreeper (southern)		C		1
animals	birds	Columbidae	*Geopelia striata*	peaceful dove		C		2
animals	birds	Columbidae	*Geopelia humeralis*	bar-shouldered dove		C		10
animals	birds	Columbidae	*Macropygia amboinensis*	brown cuckoo-dove		C		1
animals	birds	Columbidae	*Ocyphaps lophotes*	crested pigeon		C		1
animals	birds	Coraciidae	*Eurystomus orientalis*	dollarbird		C		5
animals	birds	Corvidae	*Corvus orru*	Torresian crow		C		19
animals	birds	Cuculidae	*Centropus phasianinus*	pheasant coucal		C		1
animals	birds	Cuculidae	*Scythrops novaehollandiae*	channel-billed cuckoo		C		1
animals	birds	Estrildidae	*Neochmia temporalis*	red-browed finch		C		4
animals	birds	Estrildidae	*Taeniopygia bichenovii*	double-barred finch		C		3

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Falconidae	*Falco berigora*	brown falcon		C		1
animals	birds	Falconidae	*Falco cenchroides*	nankeen kestrel		C		3
animals	birds	Falconidae	*Falco longipennis*	Australian hobby		C		3
animals	birds	Halcyonidae	*Dacelo leachii*	blue-winged kookaburra		C		2
animals	birds	Halcyonidae	*Dacelo novaeguineae*	laughing kookaburra		C		8
animals	birds	Halcyonidae	*Todiramphus sanctus*	sacred kingfisher		C		6
animals	birds	Hirundinidae	*Hirundo neoxena*	welcome swallow		C		3
animals	birds	Maluridae	*Malurus cyaneus*	superb fairy-wren		C		3
animals	birds	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren		C		13
animals	birds	Maluridae	*Malurus lamberti*	variegated fairy-wren		C		4
animals	birds	Meliphagidae	*Meliphaga lewinii*	Lewin's honeyeater		C		5
animals	birds	Meliphagidae	*Philemon corniculatus*	noisy friarbird		C		3
animals	birds	Meliphagidae	*Acanthorhynchus tenuirostris*	eastern spinebill		C		2
animals	birds	Meliphagidae	*Plectorhyncha lanceolata*	striped honeyeater		C		7
animals	birds	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater		C		17
animals	birds	Meliphagidae	*Philemon citreogularis*	little friarbird		C		1
animals	birds	Meliphagidae	*Myzomela sanguinolenta*	scarlet honeyeater		C		2
animals	birds	Meliphagidae	*Manorina melanocephala*	noisy miner		C		11
animals	birds	Meliphagidae	*Lichenostomus chrysops*	yellow-faced honeyeater		C		18
animals	birds	Meliphagidae	*Lichmera indistincta*	brown honeyeater		C		5
animals	birds	Meliphagidae	*Entomyzon cyanotis*	blue-faced honeyeater		C		7
animals	birds	Meliphagidae	*Lichenostomus fuscus*	fuscous honeyeater		C		6
animals	birds	Meropidae	*Merops ornatus*	rainbow bee-eater		C		16
animals	birds	Monarchidae	*Grallina cyanoleuca*	magpie-lark		C		7
animals	birds	Nectariniidae	*Dicaeum hirundinaceum*	mistletoebird		C		1
animals	birds	Neosittidae	*Daphoenositta chrysoptera*	varied sittella		C		4
animals	birds	Oriolidae	*Oriolus sagittatus*	olive-backed oriole		C		1
animals	birds	Oriolidae	*Sphecotheres vieilloti*	Australasian figbird		C		3
animals	birds	Pachycephalidae	*Colluricincla harmonica*	grey shrike-thrush		C		1
animals	birds	Pachycephalidae	*Pachycephala pectoralis*	golden whistler		C		9
animals	birds	Pachycephalidae	*Pachycephala rufiventris*	rufous whistler		C		13
animals	birds	Pardalotidae	*Pardalotus striatus*	striated pardalote		C		25
animals	birds	Pardalotidae	*Pardalotus punctatus*	spotted pardalote		C		3
animals	birds	Pelecanidae	*Pelecanus conspicillatus*	Australian pelican		C		1
animals	birds	Petroicidae	*Petroica rosea*	rose robin		C		8
animals	birds	Petroicidae	*Eopsaltria australis*	eastern yellow robin		C		1
animals	birds	Petroicidae	*Microeca fascinans*	jacky winter		C		4
animals	birds	Phalacrocoracidae	*Microcarbo melanoleucos*	little pied cormorant		C		2
animals	birds	Phasianidae	*Coturnix ypsilophora*	brown quail		C		1
animals	birds	Podargidae	*Podargus strigoides*	tawny frogmouth		C		1
animals	birds	Pomatostomidae	*Pomatostomus temporalis*	grey-crowned babbler		C		1
animals	birds	Psittacidae	*Alisterus scapularis*	Australian king-parrot		C		3
animals	birds	Psittacidae	*Glossopsitta pusilla*	little lorikeet		C		4
animals	birds	Psittacidae	*Platycercus adscitus*	pale-headed rosella		C		10
animals	birds	Psittacidae	*Trichoglossus haematodus moluccanus*	rainbow lorikeet		C		5
animals	birds	Psittacidae	*Trichoglossus chlorolepidotus*	scaly-breasted lorikeet		C		17

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Psophodidae	*Cinclosoma punctatum*	spotted quail-thrush		C		2
animals	birds	Rallidae	*Gallinula tenebrosa*	dusky moorhen		C		1
animals	birds	Rallidae	*Gallirallus philippensis*	buff-banded rail		C		1
animals	birds	Rhipiduridae	*Rhipidura albiscapa*	grey fantail		C		19
animals	birds	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail		C		14
animals	birds	Threskiornithidae	*Platalea flavipes*	yellow-billed spoonbill		C		1
animals	birds	Threskiornithidae	*Threskiornis spinicollis*	straw-necked ibis		C		3
animals	birds	Timaliidae	*Zosterops lateralis*	silvereye		C		9
animals	bony fish	Anguillidae	*Anguilla reinhardtii*	longfin eel				1
animals	bony fish	Cyprinidae	*Carassius auratus*	goldfish	Y			1
animals	bony fish	Eleotridae	*Hypseleotris galii*	firetail gudgeon				1
animals	bony fish	Mugilidae	*Myxus petardi*	pinkeye mullet				2
animals	bony fish	Poeciliidae	*Gambusia holbrooki*	mosquitofish	Y			1
animals	mammals	Canidae	*Vulpes vulpes*	red fox	Y			1
animals	mammals	Canidae	*Canis familiaris*	dog	Y			1
animals	mammals	Dasyuridae	*Sminthopsis murina*	common dunnart		C		10
animals	mammals	Dasyuridae	*Antechinus flavipes*	yellow-footed antechinus		C		24
animals	mammals	Leporidae	*Lepus capensis*	brown hare	Y			1
animals	mammals	Leporidae	*Oryctolagus cuniculus*	rabbit	Y			2
animals	mammals	Macropodidae	*Wallabia bicolor*	swamp wallaby		C		1
animals	mammals	Macropodidae	*Macropus rufogriseus*	red-necked wallaby		C		8
animals	mammals	Macropodidae	*Macropus giganteus*	eastern grey kangaroo		C		7
animals	mammals	Muridae	*Mus musculus*	house mouse	Y			1
animals	mammals	Muridae	*Rattus tunneyi*	pale field-rat		C		2
animals	mammals	Muridae	*Rattus fuscipes*	bush rat		C		2
animals	mammals	Ornithorhynchidae	*Ornithorhynchus anatinus*	platypus		C		1
animals	mammals	Peramelidae	*Isoodon sp.*					1
animals	mammals	Peramelidae	*Isoodon macrourus*	northern brown bandicoot		C		1
animals	mammals	Petauridae	*Petaurus sp.*					1
animals	mammals	Phalangeridae	*Trichosurus vulpecula*	common brushtail possum		C		6
animals	mammals	Phascolarctidae	*Phascolarctos cinereus (southeast Queensland bioregion)*	koala (southeast Queensland bioregion)		V		7
animals	mammals	Pseudocheiridae	*Pseudocheirus peregrinus*	common ringtail possum		C		1
animals	mammals	Suidae	*Sus scrofa*	pig	Y			2
animals	mammals	Tachyglossidae	*Tachyglossus aculeatus*	short-beaked echidna		C		1
animals	reptiles	Agamidae	*Pogona barbata*	bearded dragon		C		1
animals	reptiles	Agamidae	*Physignathus lesueurii*	eastern water dragon		C		1
animals	reptiles	Scincidae	*Carlia munda*			C		2
animals	reptiles	Scincidae	*Carlia vivax*			C		2
animals	reptiles	Scincidae	*Ctenotus taeniolatus*	copper-tailed skink		C		2
animals	reptiles	Scincidae	*Cryptoblepharus pulcher pulcher*	elegant snake-eyed skink		C		3

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 Presumed Extinct (PE), Endangered (E), Vulnerable (V), Rare (R), Common (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.

Data from New Atlas 1998-2009 Species list for the area between 27 46 to 51 and 152 52 to 57

Common Name	Scientific Name	No of sightings (14 surveys)	JAMBA	CAMBA	EPBCmarine
Brown Quail	*Coturnix ypsilophora*	1			
Australian Wood Duck	*Chenonetta jubata*	5			
Pacific Black Duck	*Anas superciliosa*	5			
Bar-shouldered Dove	*Geopelia humeralis*	6			
Little Pied Cormorant	*Microcarbo melanoleucos*	1			
Australian Pelican	*Pelecanus conspicillatus*	1			marine
Cattle Egret	*Ardea ibis*	2	J	C	marine
White-faced Heron	*Egretta novaehollandiae*	3			
Australian White Ibis	*Threskiornis molucca*	1			marine
Straw-necked Ibis	*Threskiornis spinicollis*	4			marine
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	1		C	marine
Brown Goshawk	*Accipiter fasciatus*	1			marine
Nankeen Kestrel	*Falco cenchroides*	3			marine
Brown Falcon	*Falco berigora*	1			
Australian Hobby	*Falco longipennis*	1			
Dusky Moorhen	*Gallinula tenebrosa*	1			
Masked Lapwing	*Vanellus miles*	2			
Galah	*Eolophus roseicapillus*	10			
Long-billed Corella	*Cacatua tenuirostris*	3			
Sulphur-crested Cockatoo	*Cacatua galerita*	11			
Rainbow Lorikeet	*Trichoglossus haematodus*	3			
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	10			
Little Lorikeet	*Glossopsitta pusilla*	1			
Australian King-Parrot	*Alisterus scapularis*	2			
Pale-headed Rosella	*Platycercus adscitus*	10			
Pheasant Coucal	*Centropus phasianinus*	1			
Azure Kingfisher	*Ceyx azureus*	1			
Laughing Kookaburra	*Dacelo novaeguineae*	5			
Sacred Kingfisher	*Todiramphus sanctus*	4			marine
Rainbow Bee-eater	*Merops ornatus*	5			marine
Dollarbird	*Eurystomus orientalis*	5			marine
White-throated Treecreeper	*Cormobates leucophaea*	1			
Superb Fairy-wren	*Malurus cyaneus*	2			
Red-backed Fairy-wren	*Malurus melanocephalus*	10			
White-throated Gerygone	*Gerygone albogularis*	1			
Yellow-rumped Thornbill	*Acanthiza chrysorrhoa*	2			
Striated Pardalote	*Pardalotus striatus*	10			
Yellow-faced Honeyeater	*Lichenostomus chrysops*	1			
Noisy Miner	*Manorina melanocephala*	2			
Brown Honeyeater	*Lichmera indistincta*	1			
White-throated Honeyeater	*Melithreptus albogularis*	5			
Blue-faced Honeyeater	*Entomyzon cyanotis*	2			
Noisy Friarbird	*Philemon corniculatus*	2			
Little Friarbird	*Philemon citreogularis*	1			
Striped Honeyeater	*Plectorhyncha lanceolata*	2			
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	6			marine
Cicadabird	*Coracina tenuirostris*	1			marine
Golden Whistler	*Pachycephala pectoralis*	2			
Rufous Whistler	*Pachycephala rufiventris*	4			
Grey Shrike-thrush	*Colluricincla harmonica*	1			

Australasian Figbird	*Sphecotheres vieilloti*	3			
Olive-backed Oriole	*Oriolus sagittatus*	1			
Grey Butcherbird	*Cracticus torquatus*	2			
Pied Butcherbird	*Cracticus nigrogularis*	2			
Australian Magpie	*Cracticus tibicen*	13			
Grey Fantail	*Rhipidura albiscapa*	4			
Willie Wagtail	*Rhipidura leucophrys*	10			
Torresian Crow	*Corvus orru*	14			
Magpie-lark	*Grallina cyanoleuca*	8			marine
Jacky Winter	*Microeca fascinans*	1			
Eastern Yellow Robin	*Eopsaltria australis*	1			
Horsfield’s Bushlark	*Mirafra javanica*	1			
Golden-headed Cisticola	*Cisticola exilis*	1			
Tawny Grassbird	*Megalurus timoriensis*	1			
Silvereye	*Zosterops lateralis*	4			marine
Welcome Swallow	*Hirundo neoxena*	2			marine
Common Starling	*Sturnus vulgaris*	2			
Common Myna	*Sturnus tristis*	1			
Mistletoebird	*Dicaeum hirundinaceum*	1			
Double-barred Finch	*Taeniopygia bichenovii*	1			
Chestnut-breasted Mannikin	*Lonchura castaneothorax*	1			
Australasian Pipit	*Anthus novaeseelandiae*	1			marine

APPENDIX 3:

Commonwealth EPBC Act Online Protected Matters Search Tool Results

Protected Matters Search Tool

You are here: Environment Home > EPBC Act > Search

17 December 2008 14:45

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.

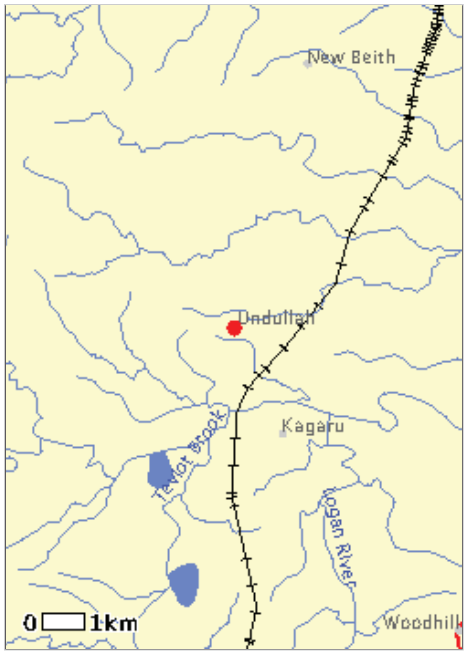
You may wish to print this report for reference before moving to other pages or websites.

The Australian Natural Resources Atlas at http://www.environment.gov.au/atlas may provide further environmental information relevant to your selected area. Information about the EPBC Act including significance guidelines, forms and application process details can be found at http://www.environment.gov.au/epbc/assessmentsapprovals/index.html

Search Type: Point

Buffer: 5 km

Coordinates: -27.82333,152.9236



This map may contain data which are
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Report Contents:

Summary
Details
- Matters of NES
- Other matters protected by the EPBC Act
- Extra Information

Caveat
Acknowledgments

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Significance: (Ramsar Sites)	1

Commonwealth Marine Areas:	None
Threatened Ecological Communities:	1
Threatened Species:	22
Migratory Species:	17

Other Matters Protected by the EPBC Act

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

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

Please note that the current dataset on Commonwealth land is not complete. Further information on Commonwealth land would need to be obtained from relevant sources including Commonwealth agencies, local agencies, and land tenure maps.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at http://www.environment.gov.au/epbc/permits/index.html.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Places on the RNE:	None
Listed Marine Species:	15
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves:	None

Extra Information

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

State and Territory Reserves:	None
Other Commonwealth Reserves:	None
Regional Forest Agreements:	1

Details

Matters of National Environmental Significance

Wetlands of International Significance [Dataset Information] (Ramsar Sites)		
MORETON BAY		Within same catchment as Ramsar site
Threatened Ecological Communities [Dataset Information]	Status	Type of Presence

White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area
Threatened Species [Dataset Information]	Status	Type of Presence
Birds		
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot	Endangered	Species or species habitat likely to occur within area
Erythrotriorchis radiatus Red Goshawk	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern)	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe	Vulnerable	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail	Vulnerable	Species or species habitat likely to occur within area
Xanthomyza phrygia Regent Honeyeater	Endangered	Species or species habitat may occur within area
Frogs		
Mixophyes iteratus Southern Barred Frog, Giant Barred Frog	Endangered	Species or species habitat likely to occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat	Vulnerable	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	Endangered	Species or species habitat may occur within area
Petrogale penicillata Brush-tailed Rock-wallaby	Vulnerable	Species or species habitat may occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE mainland)	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus Grey-headed Flying-fox	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Coeranoscincus reticulatus Three-toed Snake-tooth Skink	Vulnerable	Species or species habitat may occur within area
Delma torquata Collared Delma	Vulnerable	Species or species habitat may occur within area
Plants		
Bosistoa selwynii Heart-leaved Bosistoa	Vulnerable	Species or species habitat likely to occur within area
Bosistoa transversa Three-leaved Bosistoa	Vulnerable	Species or species habitat likely to occur within area
Bulbophyllum globuliforme Miniature Moss-orchid	Vulnerable	Species or species habitat likely to occur within area
Cryptostylis hunteriana Leafless Tongue-orchid	Vulnerable	Species or species habitat may occur within area
Hydrocharis dubia Frogbit	Vulnerable	Species or species habitat likely to occur within area

Notelaea lloydii	Vulnerable	Species or species habitat likely to occur within area
Taeniophyllum muelleri Minute Orchid, Ribbon-root Orchid	Vulnerable	Species or species habitat may occur within area
Migratory Species [Dataset Information]	Status	Type of Presence
Migratory Terrestrial Species		
Birds		
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot	Migratory	Species or species habitat likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle	Migratory	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail	Migratory	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater	Migratory	Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch	Migratory	Breeding may occur within area
Monarcha trivirgatus Spectacled Monarch	Migratory	Breeding likely to occur within area
Myiagra cyanoleuca Satin Flycatcher	Migratory	Breeding likely to occur within area
Rhipidura rufifrons Rufous Fantail	Migratory	Breeding may occur within area
Xanthomyza phrygia Regent Honeyeater	Migratory	Species or species habitat may occur within area
Migratory Wetland Species		
Birds		
Ardea alba Great Egret, White Egret	Migratory	Species or species habitat may occur within area
Ardea ibis Cattle Egret	Migratory	Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe	Migratory	Species or species habitat may occur within area
Nettapus coromandelianus albipennis Australian Cotton Pygmy-goose	Migratory	Species or species habitat may occur within area
Rostratula benghalensis s. lat. Painted Snipe	Migratory	Species or species habitat may occur within area
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift	Migratory	Species or species habitat may occur within area
Ardea alba Great Egret, White Egret	Migratory	Species or species habitat may occur within area
Ardea ibis Cattle Egret	Migratory	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Dataset Information]	Status	Type of Presence
Birds		
Anseranas semipalmata Magpie Goose	Listed - overfly marine	Species or species habitat may occur within area

	area	
Apus pacificus Fork-tailed Swift	Listed - overfly marine area	Species or species habitat may occur within area
Ardea alba Great Egret, White Egret	Listed - overfly marine area	Species or species habitat may occur within area
Ardea ibis Cattle Egret	Listed - overfly marine area	Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe	Listed - overfly marine area	Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle	Listed	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail	Listed - overfly marine area	Species or species habitat may occur within area
Lathamus discolor Swift Parrot	Listed - overfly marine area	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater	Listed - overfly marine area	Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch	Listed - overfly marine area	Breeding may occur within area
Monarcha trivirgatus Spectacled Monarch	Listed - overfly marine area	Breeding likely to occur within area
Myiagra cyanoleuca Satin Flycatcher	Listed - overfly marine area	Breeding likely to occur within area
Nettapus coromandelianus albipennis Australian Cotton Pygmy-goose	Listed - overfly marine area	Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail	Listed - overfly marine area	Breeding may occur within area
Rostratula benghalensis s. lat. Painted Snipe	Listed - overfly marine area	Species or species habitat may occur within area

Extra Information

Regional Forest Agreements [Dataset Information]

Note that all RFA areas including those still under consideration have been included.

South East Queensland RFA, Queensland

Caveat

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

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

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.

Acknowledgments

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

- New South Wales National Parks and Wildlife Service
- Department of Sustainability and Environment, Victoria
- Department of Primary Industries, Water and Environment, Tasmania
- Department of Environment and Heritage, South Australia Planning SA
- Parks and Wildlife Commission of the Northern Territory
- Environmental Protection Agency, Queensland
- Birds Australia
- Australian Bird and Bat Banding Scheme

- Australian National Wildlife Collection
- Natural history museums of Australia
- 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
- Other groups and individuals

ANUCliM Version 1.8, Centre for Resource and Environmental Studies, Australian National University was used extensively for the production of draft maps of species distribution. Environment Australia is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

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APPENDIX 4:

Comments on Terrestrial Vertebrate Species of Special Conservation Significance Obtained from Database Searches but Undetected in the Study Area

The following list is compiled from Appendices 2 and 3.

Special Status abbreviations are as follows:

Queensland's *Nature Conservation Act 1992* (NCA Status): E = Endangered, **V** = Vulnerable, **R** = Rare, **S** = Special Least Concern, **C** = Least Concern wildlife.

Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Status): CE = Critically Endangered, E = Endangered, V = Vulnerable, M = Migratory Species.

Genus Species	Common Name	NCA Status	EPBC Status	Comments
AMPHIBIANS				
Adelotus brevis	Tusked Frog	V		Considered likely to occur. See Section 5.10.1
Mixophyes iteratus	Giant Barred Frog	E	E	Giant Barred Frogs prefer the edges of deep, slow-flowing creeks in riverine rainforest or wet sclerophyll forest (Meyer *et al.* 2001). There are no database records for this species. There is no suitable habitat in the study area and it is considered unlikely to occur
REPTILES				
Delma torquata	Collared Delma	V	V	The Collared Delma is a small legless lizard endemic to south-east Queensland. It can be found in eucalypt/acacia dry woodland on rocky slopes and ridges. While there is suitable habitat in the study area, there are no database records and given the history of disturbance on the site it is considered unlikely to occur.
Coeranoscincus reticulatus	Three-toed Snake-toothed Skink	R	V	This species is mostly found in montane rainforest and adjacent wet sclerophyll forest, although populations can be found in rainforest on Fraser Island and the Cooloola Coast. There are no database records for this species and it is considered unlikely to be present in the study area.
BIRDS				
Erythrotriorchis radiatus	Red Goshawk	E	V	The Red Goshawk occurs in a variety of woodland and forest, preferring a mosaic of vegetation types and permanent water, particularly riverine forests. It avoids very open or dense habitats and has a very large home range (up to 200km^2). There are no database records for this species from the local area. There is little suitable habitat and the species is considered unlikely to occur in the study site.
Rostratula australis	Australian Painted Snipe	V	V, M	This species occurs in a variety of terrestrial shallow wetland habitats, feeding on vegetation, seeds and invertebrates. Their cryptic habits make this species difficult to detect. There is little suitable habitat in the study area and no database records. This species is considered unlikely to occur.

Genus Species	Common Name	NCA Status	EPBC Status	Comments
Turnix melanogaster	Black-breasted Button-quail	V	V	This species is predominantly recorded in dry closed rainforest and vine thickets with abundant leaf litter, although it may be found in dry eucalypt forest with a dense understorey. There are no recent database records and little suitable habitat within the study area. This species is considered unlikely to occur.
Geophaps scripta scripta	Squatter Pigeon (southern subspecies)	V	V	This species occurs in open dry sclerophyll woodland with a grassy understorey and near permanent water. The species has declined significantly in southern Queensland (Higgins and Davies 1996). There are no database records for this species from local area and the species is considered unlikely to occur.
Calyptorhynchus lathami	Glossy Black-Cockatoo	V		Considered likely to occur. See Section 5.10.2
Cyclopsitta diophthalma coxeni	Coxen's Fig-Parrot	E	E	This critically endangered parrot is poorly known but lives in rainforest, riparian corridors and agricultural/urban areas with fig trees (Garnett and Crowley 2000). It has declined due to habitat loss, weed invasion in its' remaining habitat and a lack of natural recruitment of large, isolated fig trees. There are no database records and the species is considered highly unlikely to occur in the study area.
Lathamus discolor	Swift Parrot	E	E	This species breeds in Tasmania during Spring and Summer. In winter it disperses widely across south-eastern Australia and is infrequently, though possibly annually recorded in south-east Queensland. There are no database records and it is considered unlikely the species occurs in the study area.
Xanthomyza phrygia	Regent Honeyeater	E	E,M	The Regent Honeyeater mainly occurs in dry box-ironbark eucalypt woodland and dry sclerophyll forest (Higgins *et al.* 2001). It is found mostly on the inland slopes of the Great Dividing Range and occurs north to Pomona in Queensland. Numbers fluctuate greatly, both spatially and temporally and movement outside the breeding season are little known (Garnett and Crowley 2000). It relies on nectar from eucalypts and mistletoes, which influences breeding movements. There are no database records and it is considered unlikely the species occurs in the study area.
MAMMALS				
Ornithorhynchus anatinus	Platypus	S		The Platypus is a solitary animal that inhabits a variety of freshwater habitats. They are primarily nocturnal and crepuscular and can tolerate a wide range of conditions. Although there are database records from the local area, no suitable habitat was observed on the study site and it is considered unlikely to occur.
Dasyurus maculatus maculatus	Spotted-tail Quoll (south-east mainland population)	V	E	Considered likely to occur. See Section 5.10.3
Potorous tridactylus tridactylus	Long-nosed Potoroo (south-east mainland)	C	V	Although this species can be found in a variety of vegetation types it is reliant on areas with dense undergrowth. In the greater Brisbane region it may be found in the more heavily wooded coastal ranges. There are no database records in the area and the species is considered highly unlikely to occur in the study area.

Genus Species	Common Name	NCA Status	EPBC Status	Comments
Petrogale penicillata	Brush-tailed Rock Wallaby	V	V	Brush-tailed Rock Wallabies inhabit rock piles and cliff lines in vegetation ranging from rainforest to dry sclerophyll forests (Short and Milkovits 1990). The species has been recorded from the area in wider database searches. There is no suitable habitat within the study site. The species is considered unlikely to have a resident population on the study site, although it may occasionally utilise the western area for foraging.
Pteropus poliocephalus	Grey-headed Flying-fox	C	V	Considered likely to occur. See Section 5.10.4
Chalinolobus dwyeri	Large-eared Pied Bat	R	V	The Large-eared Pied Bat has been found roosting in disused mine tunnels, rock overhangs and Fairy Martin nests. In south-east Queensland the species seems associated with montane moist forest and rainforest (Eyre *et al.* 1997). However recent surveys suggest the species is now only found in the sandstone belt (EPA 2003). There are no database records and the species is considered unlikely to occur on the study site.

APPENDIX 5:

BAAM Terrestrial Vertebrate Species List and Locations

Undullah Study Area: Species list derived from BAAM fauna surveys

Abbreviations.

Status: EPBC: E = Endangered; V = Vulnerable; M = Migratory. **NCA:** E = Endangered; V = Vulnerable; R = Rare; S = Special Least Concern; C = Least Concern; I = Introduced. **BAMM:** X = species of concern for South-East Queensland bioregion.

Unless otherwise noted, this table follows the nomenclature provided by the CSIRO List of Australian Vertebrates (Clayton *et al*. 2006) as it provides a single point of reference for all terrestrial vertebrate groups. Any notable variations in common and/or scientific names of conservation significant species are identified in the report text and as footnotes hereunder. With the exception of alterations due to subsequent taxonomic revision, species reported by sources other than BAAM are accepted at face value.

Family Scientific Name	Common Name	Site	EPBC Act	NC Act	BAMM
Fish					
MELANOTAENIIDAE					
Melanotaenia duboulayi	Crimson-spotted Rainbowfish	2			
ELEOTRIDAE					
Hypseleoteris galii	Firetail Gudgeon	2			
Mogurnda adspersa	Purple-spotted Gudgeon	2			
AMPHIBIANS					
MYOBATRACHIDAE					
Crinia parinsignifera	Eastern Sign-bearing Froglet	Inc		C	
Limnodynastes ornatus	Ornate Burrowing Frog	5		C	
Limnodynastes peronii	Brown-striped Frog	5		C	
Limnodynastes tasmaniensis	Spotted Grass Frog	5		C	X
HYLIDAE					
Cyclorana alboguttata	Striped Burrowing Frog	Inc		C	
Litoria caerulea	Green Tree Frog	5,Inc		C	
Litoria dentata	Bleating Tree Frog	Inc		C	X
Litoria fallax	Eastern Dwarf Tree Frog	2,5		C	
Litoria gracilenta	Dainty Green Tree Frog	5		C	
Litoria latopalmata	Broad-palmed Frog	5,Inc		C	
Litoria peronii	Peron's Tree Frog	5		C	X
Litoria rubella	Desert Tree Frog	2,5		C	
Litoria wilcoxii	No common name	2		C	
BUFONIDAE					
Bufo marinus	Cane Toad	1,2,4,5,inc		I	
REPTILES					
CHELIDAE					
Elseya latisternum	Saw-shelled Turtle	5		C	
GEKKONIDAE					
Gehyra dubia	Dubious Dtella	Inc		C	
SCINCIDAE					
Anomalopus verreauxii	Three-clawed Worm-Skink	1,2		C	
Carlia munda	Shaded-litter	Inc		C	

Family Scientific Name	Common Name	Site	EPBC Act	NC Act	BAMM
	Rainbow-Skink				
Carlia vivax	Tussock Rainbow-Skink	2,4		C	
Cryptoblepharus virgatus	Cream-striped Shinning-skink	1,2,3,4		C	
Ctenotus taeniolatus	Copper-tailed Skink	3,4,Inc		C	
Eulamprus martini	Dark Barsided Skink	4		C	
Lampropholis delicata	Dark-flecked Garden Sunskink	3		C	
Lygisaurus foliorum	Tree-base Litter-Skink	1,2,4		C	
Morethia taeniopleura	Fire-tailed Skink	1,4,Inc		C	X
AGAMIDAE					
Diporiphora australis	Tommy Roundhead	4, Inc		C	X
Physignathus lesueurii	Water Dragon	2,5		C	
Pogona barbata	Bearded Dragon	Inc		C	
VARANIDAE					
Varanus varius	Lace Monitor	1,2		C	
COLUBRIDAE					
Dendrelaphus punctulatus	Common Tree Snake	2		C	
ELAPIDAE					
Pseudechis porphyriacus	Red-bellied Black Snake	Inc		C	
BIRDS					
MEGAPODIIDAE					
Alectura lathami	Australian Brush-turkey	2		C	
PHASIANIDAE					
Coturnix ypsilophora	Brown Quail	4,Inc		C	
ANATIDAE					
Chenonetta jubata	Australian Wood Duck	Inc		C	
THRESKIORNITHIDAE					
Threskiornis spinicollis	Straw-necked Ibis	Inc		C	
PHALACROCORACIDAE					
Phalacrocorax melanoleucos	Little Pied Cormorant	5		C	
FALCONIDAE					
Falco longipennis	Australian Hobby	Inc		C	
ACCIPITRIDAE					
Accipiter fasciatus	Brown Goshawk	3, Inc		C	
Aquila audax	Wedge-tailed Eagle	Inc		C	
RALLIDAE					
Porphyrio porphyrio	Purple Swamphen	Inc		C	
Gallinula tenebrosa	Dusky Moorhen	Inc		C	
BURHINIDAE					
Burhinus grallarius	Bush Stone-curlew	3		C	X
CHARADRIIDAE					
Vanellus miles	Masked Lapwing	Inc		C	
COLUMBIDAE					
Phaps chalcoptera	Common Bronzewing	Inc		C	
Ocyphaps lophotes	Crested Pigeon	Inc		C	
Geopelia placida	Peaceful Dove	2,3,5,Inc		C	
Geopelia humeralis	Bar-shouldered Dove	1,2,Inc		C	
Lopholaimus antarcticus	Topknot Pigeon	Inc		C	
CACATUIDAE					
Eolophus roseicapilla	Galah	Inc		C	
Cacatua galerita	Sulphur-crested Cockatoo	2,5		C	

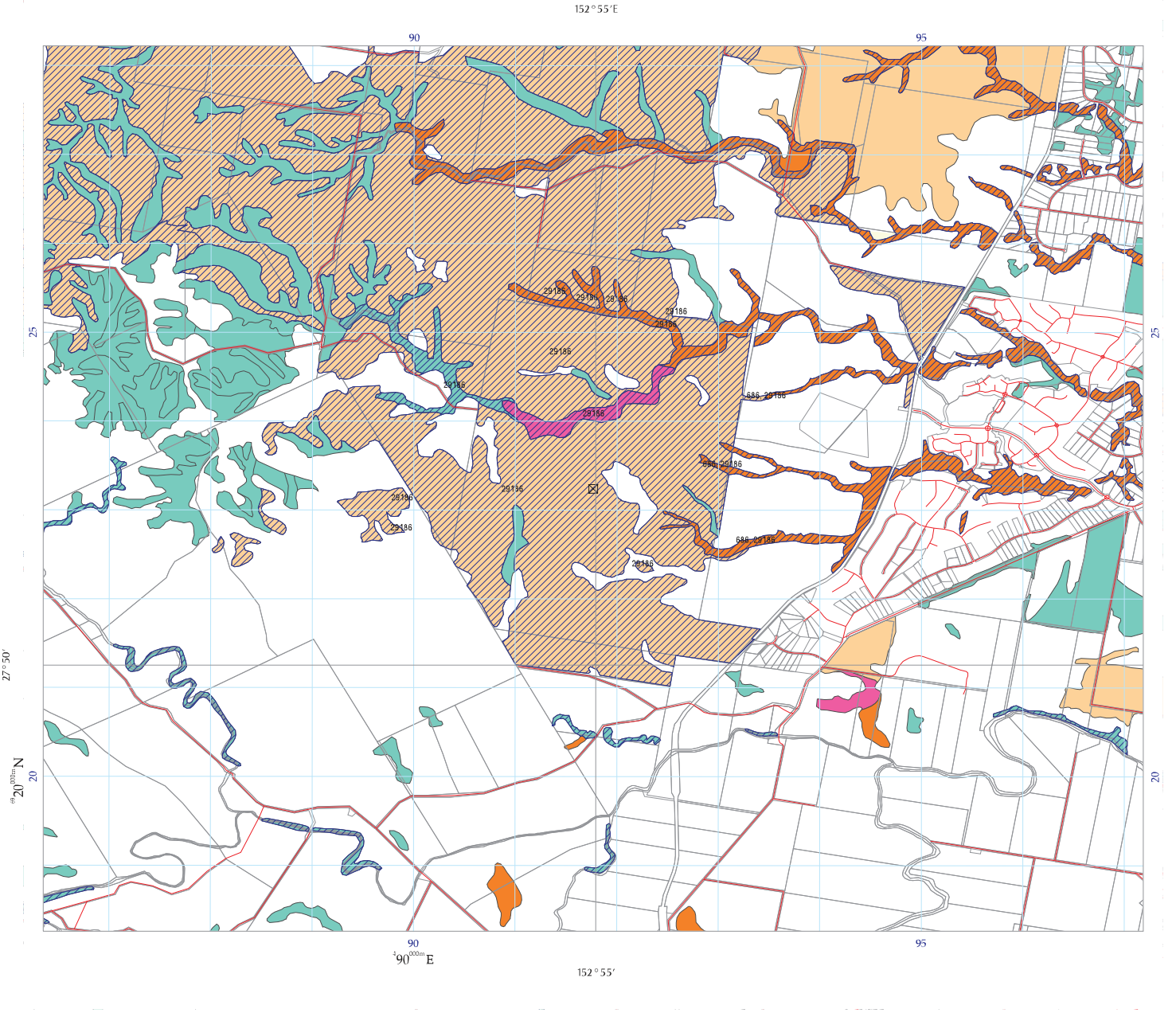
Family Scientific Name	Common Name	Site	EPBC Act	NC Act	BAMM
PSITTACIDAE					
Trichoglossus haematodus	Rainbow Lorikeet	1,4,5		C	
Trichoglossus chlorolepidotus	Scaly-breasted Lorikeet	1,2,4,5		C	
Glossopsitta pusilla	Little Lorikeet	2,Inc		C	
Platycercus adscitus	Pale-headed Rosella	2,Inc		C	
Alisterus scapularis	Australian King-Parrot	1		C	
CUCULIDAE					
Cacomantis flabelliformis	Fan-tailed Cuckoo	Inc		C	
Chalcites lucidus	Shining Bronze-Cuckoo	2,4		C	
Eudnamys orientalis	Pacific Koel	1,Inc		C	
Scythrops novaehollandiae	Channel-billed Cuckoo	2,3,4		C	
CENTROPIDIDAE					
Centropus phasianinus	Pheasant Coucal	1,2,3,5		C	
STRIGIDAE					
Ninox strenua	Powerful Owl	1		V	
Ninox boobook	Southern Boobook	1,3,5		C	
PODARGIDAE					
Podargus strigoides	Tawny Frogmouth	2,5		C	
CAPRIMULGIDAE					
Eurostopodus mystacalis	White-throated Nightjar	1,5		C	
CORACIIDAE					
Eurystomus orientalis	Dollarbird	1,Inc		C	
HALCYONIDAE					
Dacelo novaeguineae	Laughing Kookaburra	1,3,Inc		C	
Todiramphus sancta	Sacred Kingfisher	Inc		C	
MEROPIDAE					
Merops ornatus	Rainbow Bee-eater	Inc	M	S	
CLIMACTERIDAE					
Cormobates leucophaea	White-throated Treecreeper	1,2		C	
MALURIDAE					
Malurus lamberti	Variegated Fairy-wren	2,5		C	
Malurus cyaneus	Superb Fairy-wren	4		C	
Malurus melanocephalus	Red-backed Fairy-wren	4,5,Inc		C	
PARDALOTIDAE					
Pardalotus punctatus	Spotted Pardalote	Inc		C	
Pardalotus striatus	Striated Pardalote	3,5		C	
ACANTHIZIDAE					
Pyrrholaemus sagittatus	Speckled Warbler	5		C	
Sericornis frontalis	White-browed Scrubwren	2,Inc		C	
Smicrornis brevirostris	Weebill	4,Inc		C	
Gerygone olivacea	White-throated Gerygone	4,Inc		C	
Acanthiza reguloides	Buff-rumped Thornbill	4,Inc			
MELIPHAGIDAE					
Lichenostomus chrysops	Yellow-faced Honeyeater	4,5		C	
Lichenostomus fuscus	Fuscous Honeyeater	4		C	
Meliphaga lewinii	Lewin's Honeyeater	1,2		C	
Manorina melanocephala	Noisy Miner	2,5		C	

Family Scientific Name	Common Name	Site	EPBC Act	NC Act	BAMM
Entomyzon cyanotis	Blue-faced Honeyeater	5		C	
Melithreptus albogularis	White-throated Honeyeater	2,3,4,5		C	
Philemon corniculatus	Noisy Friarbird	1,2,4,5		C	
Plectorhyncha lanceolata	Striped Honeyeater	2,5		C	
Lichmera indistincta	Brown Honeyeater	1		C	
Acanthorhynchus tenuirostris	Eastern Spinebill	Inc		C	
Myzomela sanguinolenta	Scarlet Honeyeater	4,Inc		C	
PETROICIDAE					
Eopsaltria australis	Eastern Yellow Robin	1,2		C	
Microeca fascinans	Jacky Winter	Inc		C	
Petroica rosea	Rose Robin	Inc		C	
POMATOSTOMIDAE					
Pomatostomus temporalis	Grey-crowned Babbler	5		C	
EUPETIDAE					
Psophodes olivaceus	Eastern Whipbird	1,2		C	
NEOSITTIDAE					
Daphoenositta chrysoptera	Varied Sittella	4		C	
PACHYCEPHALIDAE					
Pachycephala pectoralis	Golden Whistler	Inc		C	
Pachycephala rufiventris	Rufous Whistler	1,3,4,Inc		C	
Colluricincla harmonica	Grey Shrike-thrush	1,2,3,Inc		C	
DICRURIDAE					
Rhipidura albiscapa	Grey Fantail	4,Inc		C	
Rhipidura leucophrys	Willie Wagtail	4,Inc		C	
Dicrurus bracteatus	Spangled Drongo	2,5		C	
Myiagra rubecula	Leaden Flycatcher	2,Inc		C	
ARTAMIDAE					
Cracticus torquatus	Grey Butcherbird	1,2,5		C	
Cracticus nigrogularis	Pied Butcherbird	2,Inc		C	
Gymnorhina tibicen	Australian Magpie	Inc		C	
Strepera graculina	Pied Currawong	5			
CAMPEPHAGIDAE					
Coracina tenuirostris	Cicadabird	1,2,4		C	
Coracina novaehollandiae	Black-faced Cuckoo-shrike	1,4,Inc		C	
ORIOLIDAE					
Sphecotheres vieilloti	Australasian Figbird	2		C	
Oriolus sagittatus	Olive-backed Oriole	1,2		C	
CORVIDAE					
Corvus orru	Torresian Crow	1,2,3,4,5,Inc		C	
ZOSTEROPIDAE					
Zosterops lateralis	Silvereye	Inc		C	
DICAEIDAE					
Dicaeum hirundinaceum	Mistletoebird	4		C	
MOTACILLIDAE					
Anthus australis	Australian Pipit	Inc		C	
ESTRILDIDAE					
Neochmia temporalis	Red-browed Finch	1,2,Inc		C	
Taeniopygia bichenovii	Double-barred Finch	4,Inc		C	
MAMMALS					
TACHYGLOSSIDAE					
Tachyglossus aculeatus	Short-beaked Echidna	Inc		S	

Family Scientific Name	Common Name	Site	EPBC Act	NC Act	BAMM
DASYURIDAE					
Antechinus flavipes	Yellow-footed Antechinus	1		C	
Phascogale tapoatafa	Brush-tailed Phascogale	Inc		C	X
Sminthopsis murina	Common Dunnart	4		C	X
PERAMELIDAE					
Isoodon macrourus	Northern Brown Bandicoot	Inc		C	
PHASCOLARCTIDAE					
Phascolarctos cinereus	Koala (SEQ Bioregion)	Inc		V	
PETAURIDAE					
Petaurus australis australis	Yellow-bellied Glider (southern subspecies)	3		C	X
Petaurus norfolcensis	Squirrel Glider	Inc		C	X
PHALANGERIDAE					
Trichosurus vulpecula	Common Brushtail Possum	5		C	
POTOROIDAE					
Aepyprymnus rufescens	Rufous Bettong	4		C	X
MACROPODIDAE					
Macropus giganteus	Eastern Grey Kangaroo	5,Inc		C	
Macropus rufogriseus	Red-necked Wallaby	3,5,Inc		C	
Wallabia bicolor	Swamp Wallaby	Inc		C	
EMBALLONURIDAE					
Saccolaimus flaviventris	Yellow-bellied Sheath-tailed Bat	5		C	
MOLOSSIDAE					
Mormopterus beccarii	Beccari's Free-tailed Bat	1		C	
VESPERTILIONIDAE					
Miniopterus australis	Little Bentwinged-Bat	1		C	
Nyctophilus sp.	Unidentified Large-eared Bat	4		C	
Chalinolobus gouldii	Gould's Wattled Bat	1,2,4		C	
Scotorepens sp./greyii	Central Eastern/Little Broad-nosed Bat	1,2,3,4		C	
Scotorepens orion	Eastern Broad-nosed Bat	1		C	X
Vespadelus darlingtoni	Large Forest Bat	2		C	X
CANIDAE					
Canis lupus	Dingo/Dog	1,2			
LEPORIDAE					
Lepus capensis	Brown Hare	Inc		I	
Oryctolagus cuniculus	Rabbit	Inc		I	

APPENDIX 6:

Essential Habitat Mapping



VEGETATION MANAGEMENT ACT
ESSENTIAL HABITAT MAP

Requested By: JO@BIODIVERSITY.TV
Date: 25 Nov 08 Time: 08.43.01

Centered on point position:
Latitude: -27.8154 Longitude: 152.9164 (decimal degrees)

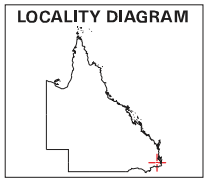
2003 Remnant endangered regional ecosystem
- Dominant
- Sub-dominant

2003 Remnant of concern regional ecosystem
- Dominant
- Sub-dominant

- 2003 Remnant not of concern regional ecosystem
- Non-remnant
- Plantation Forest
- Dam or Reservoir
- 2003 Remnant Vegetation Cover (RVC)
- Vegetation Management Act Essential Habitat
  Area identified as essential habitat by the EPA for a species of wildlife listed as endangered, vulnerable, near threatened or rare under the *Nature Conservation Act 1992*.
- Vegetation Management Act Essential Habitat Species Records
- Roads
  © MapInfo Australia Pty Ltd 2006
- Bioregion boundary
- National Park, Conservation Area State Forest and other reserves
- Cadastre line
  The maximum spatial error of parcels extracted for this map from the Digital Cadastral Data Base(DCDB) range from: 14m to 251m at a 95% confidence level. Property boundaries shown are provided as a locational aid only.
- Towns
- ☒ Coordinate entered

Queensland Government

LOCALITY DIAGRAM



1000 0 1000 m

Horizontal Datum: Geocentric Datum of Australia 1994 (GDA94)

Labels for Vegetation Management Act Essential Habitat are centred on the area of interest (1.1km surrounding and including a Lot on Plan or 2.2km around the selected coordinates). Labels relate to the attached species list.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/-100 metres. The extent of remnant regional ecosystems as of 2003, depicted on this map is based on rectified 2003 Landsat TM imagery (supplied by SLATS, Department of Natural Reources and Water).

Disclaimer:
While every care is taken to ensure the accuracy of this product, the Department of Natural Resources and Water, the Environmental Protection Agency and MapInfo Australia Pty Ltd, makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

All datasets are updated as they become available to provide the most current information as of the date shown on this map.

Additional information is required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.nrw.qld.gov.au/vegetation or contact the Department of Natural Resources and Water.

Digital regional ecosystem data is available in shapefile format, for Lot on Plans from www.epa.qld.gov.au/REDATA or from the Queensland Herbarium for larger areas.
Email: regional.ecosystem@epa.qld.gov.au

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Appendix E

BAAM Koala Habitat Assessment and Mapping

WYATT ROAD, UNDULLAH

KOALA HABITAT ASSESSMENT AND MAPPING

Report prepared for Stockland

Biodiversity Assessment AND MANAGEMENT PTY LTD

FAUNA AND HABITAT SPECIALISTS

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Project Manager: Adrian Caneris

Client: Stockland

Project Title: Koala Habitat Assessment and Mapping – Wyatt RD, Undullah

Project Author/s: Joanne Chambers, Adrian Caneris, Wendy Neilan, Olivia Woosnam

Project Summary: This is a revised report based on an original Koala habitat assessment and mapping conducted by BAAM in early 2009. The revision incorporates changes to statutory considerations since the time of the initial survey and report. These include consideration of the Property Map of Assessable Vegetation and of the recently adopted *State Planning Policy 2/10: Koala Conservation in South East Queensland.* During the field assessment in 2009, the Undullah study area was searched for the presence and/or evidence of utilisation by Koalas and Koala habitats were assessed for their suitability to support Koalas.

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Purpose of Report

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Signed on behalf of Date: 16 February 2011

Biodiversity Assessment and Management Pty Ltd

Managing Director

EXECUTIVE SUMMARY

INTRODUCTION

This report has been prepared at the request of Stockland for issuing to the Urban Land Development Authority (ULDA). The purpose of this report is to review and update a previous Koala study conducted in 2009 by Biodiversity Assessment And Management (BAAM) on the Undullah property. The findings and mapping within this report are based on field assessment conducted in 2009 and are provided to the ULDA to be considered in the ecological constraints mapping for the Undullah property.

The study area is located within the Logan City local government area and is situated approximately 10 km west of Jimboomba, South East Queensland. The site is approximately 1,000 hectares in size and is located within a largely constant vegetation matrix to the north and west. Lands to the south and south-west have been cleared for cattle grazing and other land uses.

The study area has been subjected to various land uses including cattle grazing, logging and quarrying of sandstone. In 2009, large areas had suffered Lantana infestation. Despite this much of the study site retained vegetation cover in varying stages of maturity.

RESULTS OF THE KOALA HABITAT ASSESSMENT

In general terms, at the time of the field assessment the study area held a mix of low and medium Koala habitat values with higher values generally along waterways within the study area. In January 2009, much of the site was dominated by regrowth vegetation comprising young Eucalypts, Acacia, exotic weeds and fodder grasses, with mature Eucalypts restricted mainly to the ridge lines that are less accessible to logging. *Corymbia citriodora* was the most dominant canopy species throughout the study area. Dense stands of *Lantana camara* were present along the drainage lines and adjacent to cleared areas.

Potential Koala food trees were indentified throughout the majority of the site. The majority of the study area was dominated by *Corymbia citriodora*, with some areas supporting a greater abundance of *Eucalyptus tereticornis* and *E. moluccana*.

Two adult male Koalas were observed during the survey period in January 2009. Both individuals appeared in good health.

The Koala habitat values were found to vary throughout the study area, with some areas providing high value whilst others provided low value habitat for Koalas.

Based on the results of the 2009 site investigation and on previous Koala habitat mapping under the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006-2015* (Koala Plan), a Koala Habitat Zones Map has been produced (refer to **Figure 5.2**). This figure shows the study area supports four broad categories of Koala habitats, which range in value from high to low. The designated categories are based on the value of Koala habitat identified within the study area in 2009.

KOALA HABITAT ASSESSING AND MAPPING

WYATT RD, UNDULLA

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Table of Abbreviations

BAAM	Biodiversity Assessment and Management Pty Ltd
EPA	Queensland Environmental Protection Agency
PMAV	Property map of Assessable Vegetation
QPWS	Queensland Parks and Wildlife Services
RE	Regional Ecosystem
ULDA	Urban Land Development Authority
VM Act	*Vegetation Management Act 1999*

1.0 INTRODUCTION

This report has been prepared at the request of Stockland for the purpose of reviewing and updating a previous Koala habitat study conducted in 2009 by Biodiversity Assessment And Management (BAAM) on the Undullah property.

- The findings and details in this report are based on the original study completed in 2009 for the purpose of providing an assessment and mapping of Koala (*Phascolarctos cinereus*) habitat values within an area proposed for residential development known as Lot 3 on RP45236, Lot 3 on RP49296 and Lot 28 on S311174 and located at Wyatt Road, Undullah (study area)

The specific aims of this report are to:

- Determine the extent and quality of the Koala habitat at the time of the initial field assessment in 2009;
- Provide an estimate of the number of Koalas utilising the study area in 2009; and
- Provide recommendations for areas that require further habitat assessment.

All observations and details provided in this report are based on field surveys conducted between 19 January and 23 January 2009 following a desktop review of existing information.

The field assessment was conducted prior to the release of the *State Planning Policy 2/10: Koala Conservation in South East Queensland* (SPP) and is in accordance with the Koala assessment methodology detailed in the *Nature Conservation (Koala) Conservation Plan 2006* (Koala Plan) in force at the time of the survey.

2.0 SITE DESCRIPTION

The study area is located within the Logan City local government area and is situated approximately 20 km north-west of Beaudesert (**Figure 2.1**). The study area is comprised of two properties described as Lot 3 on RP45236 and Lot 28 on S311174. The total surface area of the site is approximately 1,025 hectares.

The study area has been subjected to various land uses, including cattle grazing, logging and quarrying of sandstone. At the time of the survey numerous vehicle tracks traversed the site, many of which appeared to be in regular use by trail bike riders.

Several ridgelines of varying grades cross the property in the northern and western portions of the site, which run down to gently sloping alluvial areas. Sandy Creek crosses the site from the west to the north-east portion of the site. The site also supports some smaller ephemeral creeks. Several small farm dams/water bodies are also distributed throughout the property.

3.0 BACKGROUND

3.1 KOALA (PHASCOLARCTOS CINEREUS)

Status: Vulnerable in South East Queensland - *Nature Conservation Act 1992* (NC Act)

Ecology: Koalas have a distinct association with eucalypt woodland and forest habitat types containing suitable food trees (Hume and Esson 1993; Moore and Foley 2000; Martin *et al.* 2008). They are not necessarily restricted to bushland or remnant areas and are known to exist and breed within farmland and the urban environment (Dique *et al.* 2004). Similarly, movement is not confined to vegetated corridors, as they also move across cleared rural land and through suburbs (Martin *et al.* 2008).

Koalas use a variety of trees, including many non-Eucalypts, for feeding, shelter and breeding purposes (Dique *et al.* 2004; Martin *et al.* 2008). They can, however, have distinct, localised preferences throughout their range, selecting some species in preference to others (Pahl and Hume 1990). They are also known to favour individual trees for which a variety of reasons have been postulated including high leaf moisture content, high leaf nitrogen content (which is often related to low fibre content making leaves more

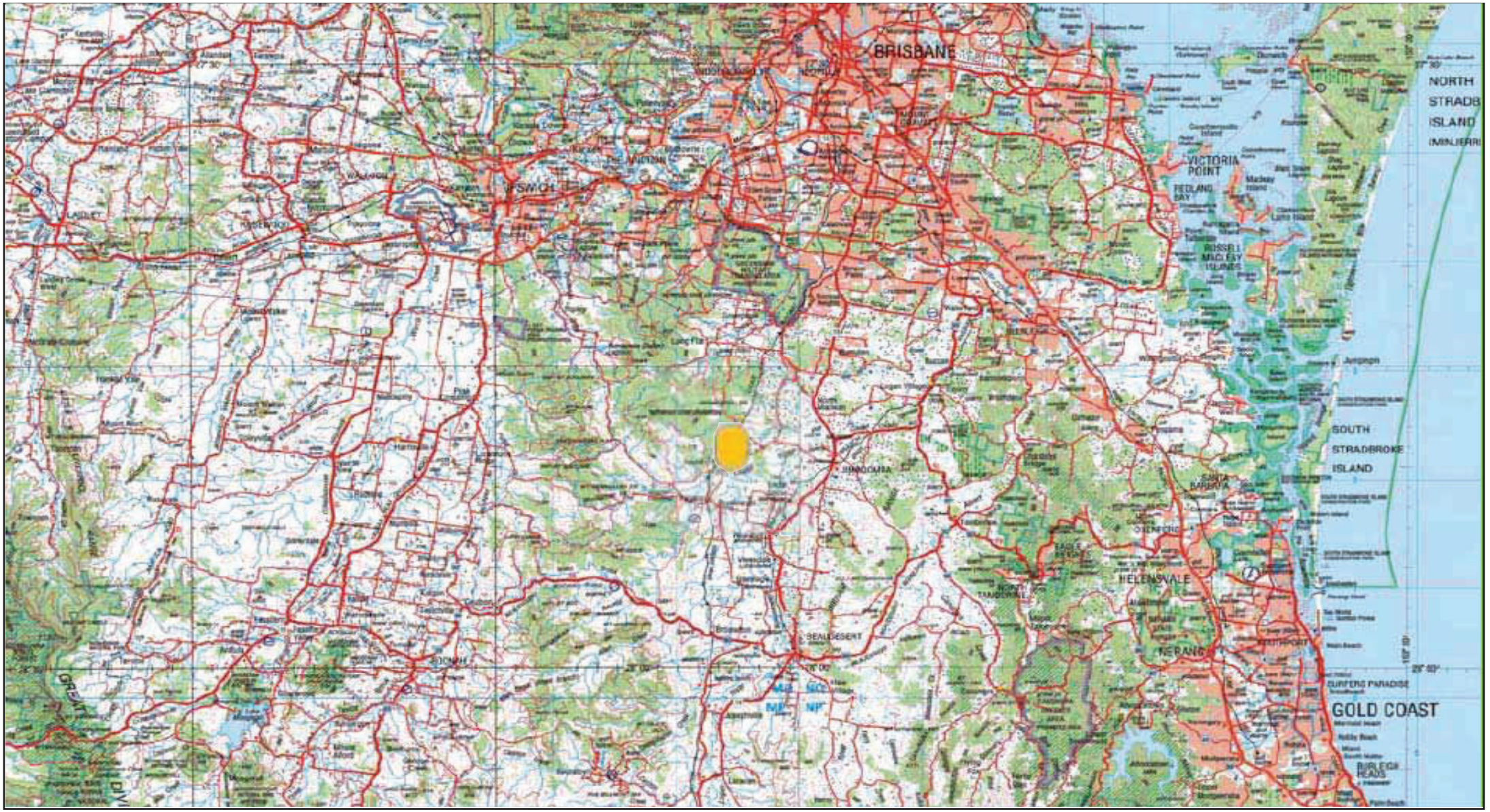
palatable) and low amounts of chemical compounds produced by Eucalypts to resist herbivory (Pahl and Hume 1990; Hume and Esson 1993; Moore and Foley 2000).

Individual animals, although solitary, coexist within overlapping home ranges, which contain a finite number of food trees that are visited repeatedly and often shared with other individuals (Martin *et al.* 2008).

Distribution and Breeding: Koalas occur throughout north-east, central and south-east Queensland, extending south through Victoria into South Australia and Kangaroo Island. In Brisbane, they are renowned throughout the well forested outer suburbs, particularly to the south-east (Low 1995). However, surveys within the 'Koala Coast' region indicate populations have declined by 26 % in recent years (EPA 2007).

Breeding occurs in spring/summer when males become territorial, attacking and fighting rivals and using loud bellows to advertise their presence (Martin *et al*. 2008). Young permanently leave the females pouch after seven months, but continue to ride on the mother's back until 12 months or at the beginning of a new breeding season. After this time adolescent females may remain in the natal habitat, but males generally disperse to new territories between 1-3 years of age (Dique *et al*. 2003; Martin *et al*. 2008).

Threats: Current threats include habitat destruction and fragmentation, bushfire and disease. Populations around urban areas are at increased risk of mortality due to dog attack and road strike (Maxwell *et al*. 1996).



Legend:

Site Location

Biodiversity Assessment and Management Pty Ltd

FIGURE 2.1
Locality Map of the Subject Site

Koala Habitat Assessment and Mapping
Undullah

3.2 STATUTORY FRAMEWORK

3.2.1 State Planning Policy2/10: Koala Conservation in South East Queensland

The SPP was gazetted in February 2010. The policy is primarily directed at Councils requiring the new rules surrounding Koala habitat conservation to be included into planning scheme amendments, structure plans and other planning instruments. Schedule 1 of the SPP includes maps of Koala Habitat Values. Although the SPP does not apply ti U.D.A declared sites, it is likely to form one of the many considerations of the ULDA Development Scheme.

The site is outside of the Urban Footprint of the SEQ regional plan and we note that the SPRP is not applicable to the site. However, the SPP map of Koala Habitat Values for the study area is provided in **Figure 3.1**. It should be understood that the SPP mapping is still in its early days and the accuracy of this mapping is being questioned.

The study undertaken on the Undullah study area as detailed in this report is considered a more reliable measure of Koala habitat values present on the site than the broad-scale SPP mapping.

3.2.2 Vegetation Management Act 1999

The majority of the study area is mapped as Essential Habitat for the Koala under the *Vegetation Management Act 1999* (VM Act) (**Figure 3.2**). However, as per schedule 24 of the *Sustainable Planning Act Regulation 2009*, the VM Act does not apply to declared Urban Development Areas.

Essential Habitat for Koala is described as:

"Open (structurally complex with mixture young/mature/old growth, especially 30-80cm dbh), mixed (rich in number and species diversity of food trees) eucalypt forest and woodland at lower altitude in undulating country on relatively deep and usually high nutrient soil (main species - *Eucalyptus tereticornis, E. fibrosa, E. propinqua; E. umbra, E. grandis, E. microcorys, E. tindaliae, E. resinifera, E. populnea; E. robusta, E. nigra, E. signata [racemosa*])."

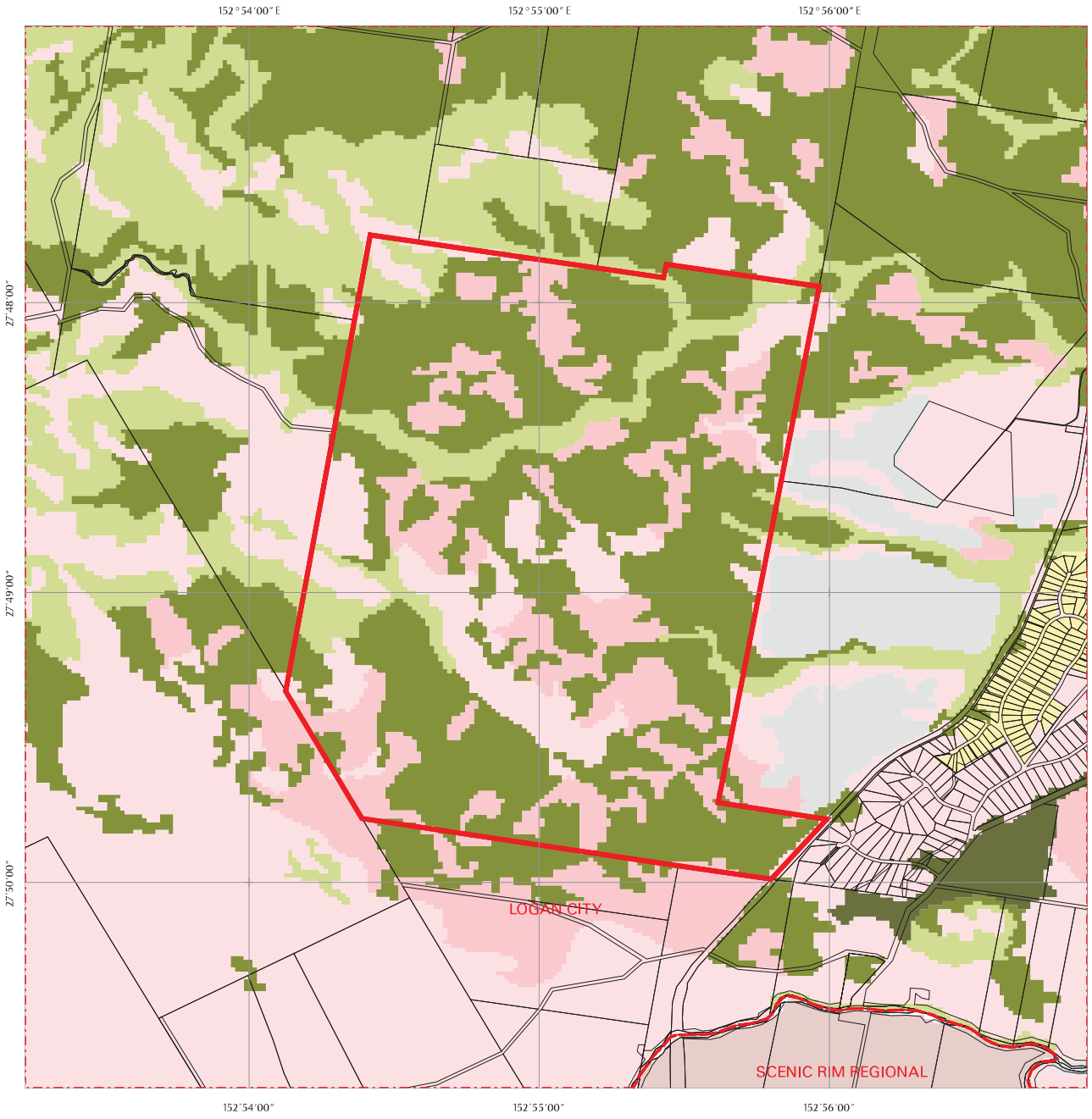
The Essential Habitat within the study area coincides with the following Regional Ecosystem (REs):

- RE 12.3.3: *Eucalyptus tereticornis* open forest to woodland, which can include other Koala food trees of the Eucalypt, Corymbia, Angophora and Lophostemon genera;
- RE 12.9-10.2: open forest to woodland of *Corymbia citriodora* usually with *E. crebra*, and can include other Eucalypt and/or Corymbia species;
- RE 12.9-10.7: *E. crebra* and *E. tereticornis* woodland with a variety of other Eucalyptus, Corymbia, Angophora and/or Lophostemon species; and
- RE 12.9-10.17: open forest with a variety of stringybarks, Grey Gums, Ironbarks and Spotted Gums (including *E. moluccana, C. citriodora, E. siderophloia* and *E. propinqua*).

These REs include a variety of suitable Koala food trees and are mapped throughout the study area.

A Property Map of Assessable Vegetation (PMAV) of the study area was submitted by the Saunders Havill Group. The PMAV was certified on 24 April 2008 and is provided in **Appendix 1**.

Figure 3.1: SPP Map of Koala Habitat Values



Koala Habitat in South East Queensland

Legend

- Area of interest - Road/Lot & Plan

Koala SPP - Habitat Values

Bushland Habitat

- High Value Bushland
- Medium Value Bushland
- Low Value Bushland

Suitable for Rehabilitation

- High Value Rehabilitation
- Medium Value Rehabilitation
- Low Value Rehabilitation

Other Areas of Value

- High Value Other
- Medium Value Other
- Low Value Other
- Generally not suitable
- Water

South East Queensland Koala Habitat Values western SEQ

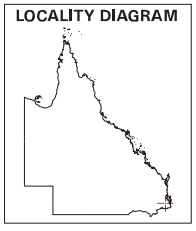
- Bushland habitat
- Suitable for rehabilitation
- Other areas of value
- Generally not suitable
- Water

Requested By: OLIVIA@BIODIVERSITY.TV
Date: 11 Feb 11 Time: 12.41.20

Centered on Lot on Plan:
3 RP45236

Queensland Government

LOCALITY DIAGRAM



This scale bar is approximate only
Horizontal Datum: Geocentric Datum of Australia 1994 (GDA94)
This product is unprojected and is not suitable for measuring distances

While every care is taken to ensure the accuracy of this data, the State of Queensland makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason. Due to varying sources of data, spatial locations may not coincide when overlaid.

In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws.

Based on or contains data provided by the State of Queensland (Department of Environment and Resource Management) 2010.

Note - These maps are not regulatory. Regulatory maps and requirements can be downloaded from the DERM website. Further information in relation to regulatory requirements for development and planning activities should be sought from the relevant Local Government Authority or the Department of Environment and Resource Management.

- Cadastral Boundaries
- Local Government Boundaries

Road Names

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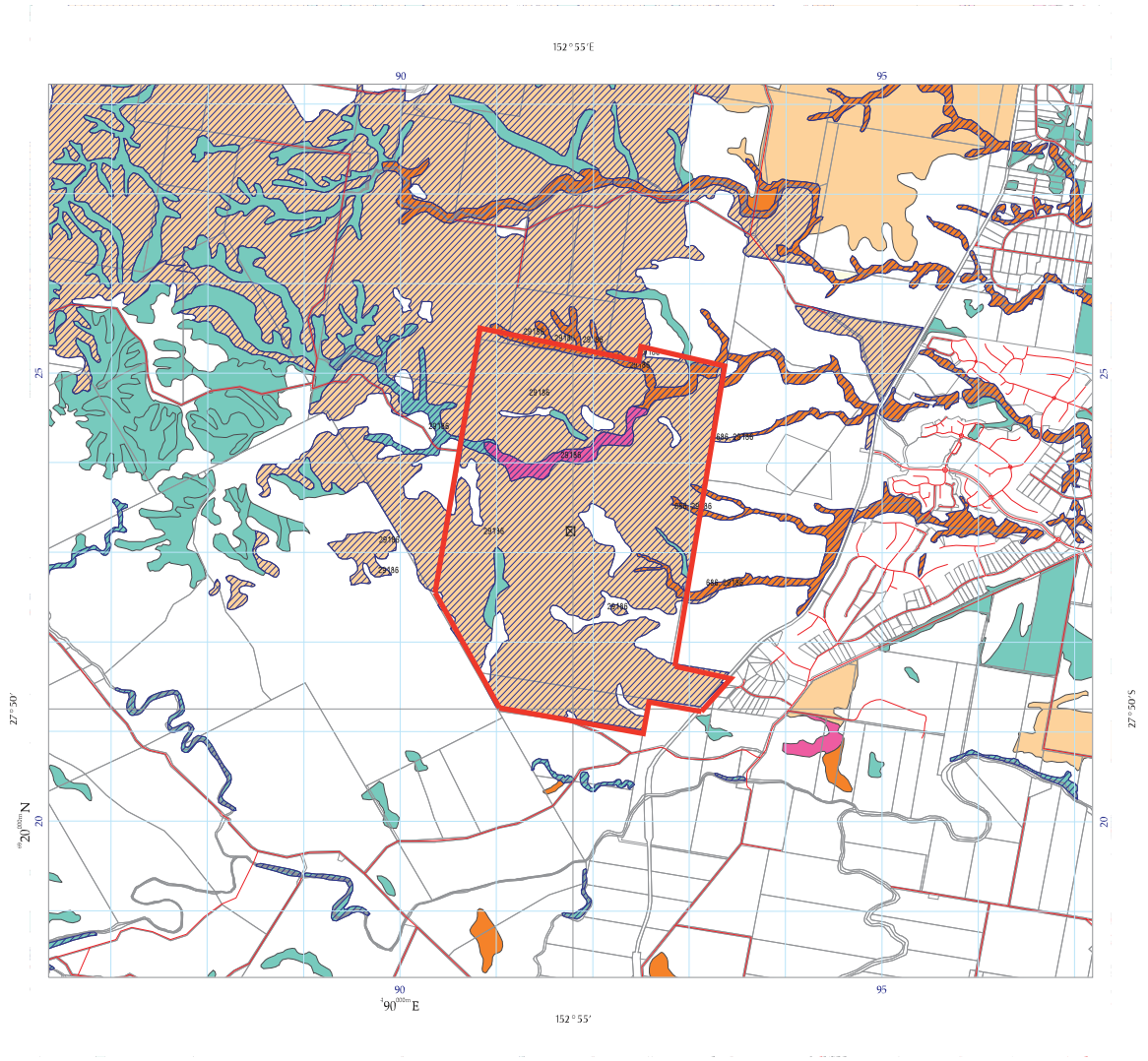
© The State of Queensland, 2011



VEGETATION MANAGEMENT ACT
ESSENTIAL HABITAT MAP

Requested By: JO@BIODIVERSITY.TV
Date: 25 Nov 08 Time: 08.43.01

Centered on point position:
Latitude: -27.8154 Longitude: 152.9164 (decimal degrees)

2003 Remnant endangered regional ecosystem
Dominant
Sub-dominant
2003 Remnant of concern regional ecosystem
Dominant
Sub-dominant
2003 Remnant not of concern regional ecosystem
Non-remnant
Plantation Forest
Dam or Reservoir
2003 Remnant Vegetation Cover (RVC)
Vegetation Management Act Essential Habitat
Area identified as essential habitat by the EPA for a species of wildlife listed as endangered, vulnerable, near threatened or rare under the *Nature Conservation Act 1992*.
Vegetation Management Act Essential Habitat Species Records
Roads
© MapInfo Australia Pty Ltd 2006
Bioregion boundary
National Park, Conservation Area State Forest and other reserves
Cadastre line
The maximum spatial error of parcels extracted for this map from the Digital Cadastral Data Base(DCDB) range from: 14m to 251m at a 95% confidence level. Property boundaries shown are provided as a locational aid only.
Towns
Coordinate entered

Queensland Government

LOCALITY DIAGRAM

1000 0 1000 m

Horizontal Datum: Geocentric Datum of Australia 1994 (GDA94)

Labels for Vegetation Management Act Essential Habitat are centred on the area of interest (1.1km surrounding and including a Lot on Plan or 2.2km around the selected coordinates). Labels relate to the attached species list.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/-100 metres. The extent of remnant regional ecosystems as of 2003, depicted on this map is based on rectified 2003 Landsat TM imagery (supplied by SLATS, Department of Natural Reources and Water).

Disclaimer:
While every care is taken to ensure the accuracy of this product, the Department of Natural Resources and Water, the Environmental Protection Agency and MapInfo Australia Pty Ltd, makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

All datasets are updated as they become available to provide the most current information as of the date shown on this map.

Additional information is required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.nrw.qld.gov.au/vegetation or contact the Department of Natural Resources and Water.

Digital regional ecosystem data is available in shapefile format, for Lot on Plans from www.epa.qld.gov.au/REDATA or from the Queensland Herbarium for larger areas.
Email: regional.ecosystem@epa.qld.gov.au

© The State of Queensland, 2008

Source:EPA 2009

Site Boundary

FIGURE 3.2

Essential Habitat Map

Koala Habitat Assessment and Mapping
Undullah

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4.0 METHODOLOGY

4.1 DESKTOP

A review of relevant information and survey methodologies was carried out prior to conducting the field surveys. Relevant information included reports pertaining to the project site, literature review with regard to Koalas and field methodologies and relevant local and state planning documentation.

This Koala study was completed prior to the SPP taking effect and therefore does not have for purpose to verify the SPP Koala Habitat Values mapping. The purpose of this study was to carry out field assessment in accordance with Koala assessment methodology standards applicable at the time, to identify the different Koala habitat types on the site and provide a groundtruthed ranking of Koala habitat values.

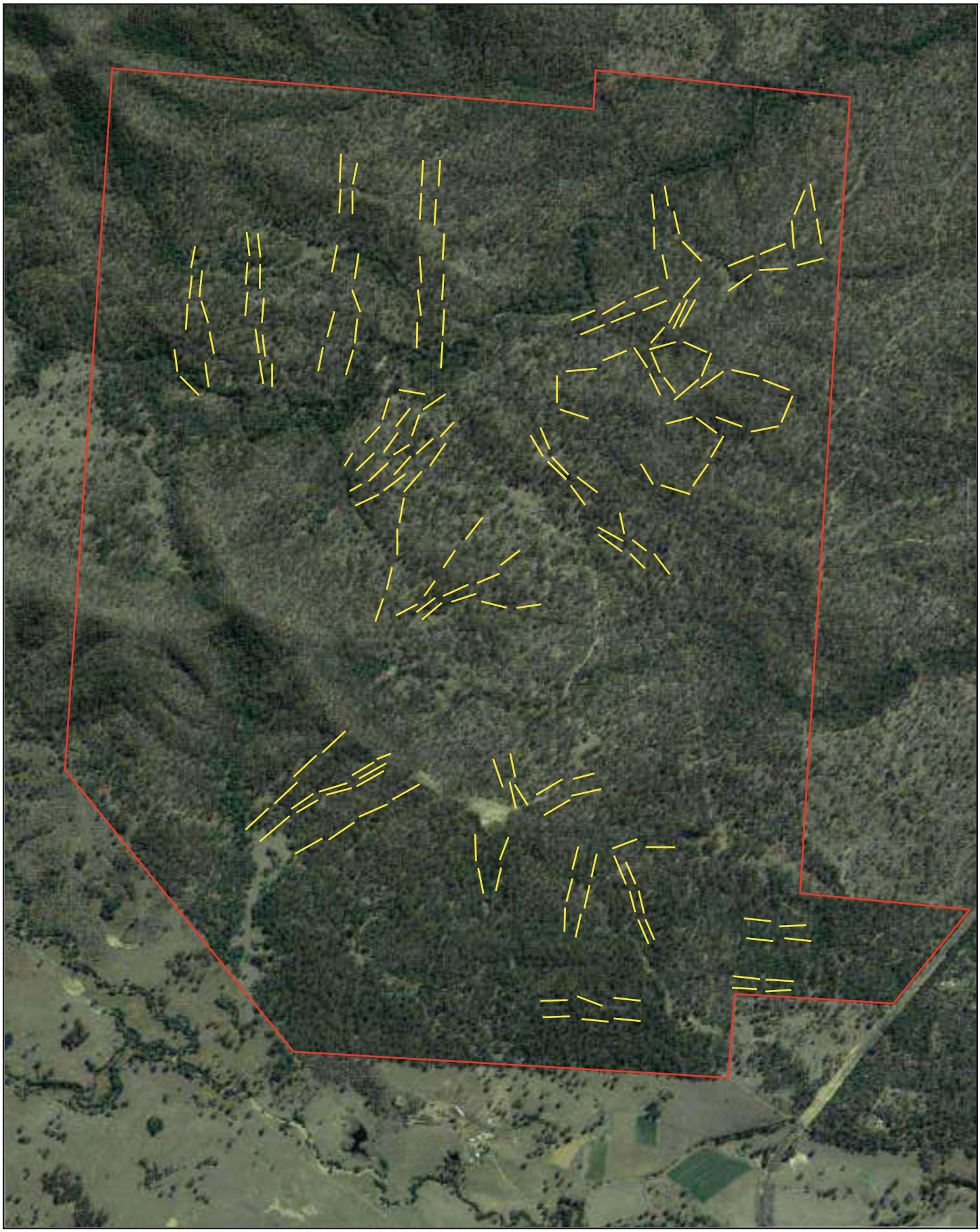
Prior to the field surveys, remnant vegetation maps and aerial photography were viewed to stratify the area into broad vegetation communities to ensure that field assessment sampled all relevant habitat types.

4.2 FIELD SURVEY TECHNIQUES

The field surveys were conducted between 19 and 23 January 2009 using eight experienced field staff.

The systematic survey technique that was used for this Koala assessment followed the recommendations stated in Policy 7 of the Koala Plan. This survey technique was adapted from Dique *et al*. (2003) and involved line-transect sampling. The field staff separated into four pairs of observers to conduct line-transects. In each transect, both field staff were equipped with binoculars and a GPS unit and walked each transect following a set compass bearing. All trees within 10 m either side of the line transects were searched for the presence of Koalas or evidence of their visitation (e.g. scats, skulls). Line-transects were commonly 100m in length and separated by 20 m (see **Figure 4.1**). However, in some areas dense weed infestations (e.g. *Lantana camara*) made movement in a straight line impossible and the field staff kept their bearing as much as practically possible.

The survey was conducted in accordance with BAAM's Environmental Protection Agency (EPA) Queensland Parks and Wildlife Service's Scientific Purposes Permit No. WISP02791605.



Source: Google Earth Pro 2009

Legend:

- Site boundary
- Transect

0 m 500 m

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

FIGURE 4.1

Location of Transects

Koala Habitat Assessment and Mapping Undullah

5.0 RESULTS

5.1 KOALA HABITATS

At the time of field assessment, much of the study area was dominated by regrowth vegetation, comprising young Eucalypt and Acacia species as well as exotic weeds and fodder grasses. Mature Eucalypts were restricted mainly to the ridge lines that are less accessible to logging. Dense stands of *Lantana camara* were present along the drainage lines and adjacent to cleared areas.

Potential Koala food trees were identified throughout the majority of the site, including (but not limited to) the following species:

- *Eucalyptus tereticornis* (Queensland Blue Gum);
- *E. moluccana* (Grey Box);
- *E. fibrosa* (Red Ironbark);
- *E. crebra/E. siderophloia* (Narrow-leaved Ironbark/Grey Ironbark);
- *E. acmenoides* (White Mahogany);
- *Corymbia tesselaris* (Moreton Bay Ash);
- *C. intermedia* (Pink Bloodwood);
- *C. citriodora* (Spotted Gum); and
- *Lophostemon suaveolens* (Swamp Box).

The dominant tree species throughout the study area was the *Corymbia citriodora* (Spotted Gum) which is a known Koala food tree. In regard to Koala Food trees the Queensland Blue Gum**,** Grey Box, and Pink Bloodwood are considered to provide the higher values, where as the Spotted Gum, Moreton Bay Ash and Swamp Box are considered to provide supplementary resources in the local landscape.

5.2 KOALA UTILISATION

A total of 195 line transects were traversed across the study area. The locations of the sampling areas were chosen to enable the maximum amount of representative habitat to be surveyed. The placement of the first transect within each sampling area was randomly chosen. The locations of the survey transects are shown in **Figure 4.1** and GPS coordinates for each transect are provided in **Appendix 2**.

Two adult, male, healthy Koalas were sighted during the systematic surveys (**Figure 5.1**). Evidence of Koala visitation (scats) was observed beneath 57 trees throughout the site. The majority of these trees were *Eucalyptus tereticornis* although visitation was also evident beneath *E. moluccana, E. crebra/siderophloia, E. acmenoides, E. fibrosa, Corymbia intermedia* and *C. citriodora*. The locations of trees that showed evidence of Koala utilisation are shown on **Figure 5.1**. Fresh Koala scats were detected only within the habitats adjoining the north-eastern boundary of the subject site, where the two Koalas were observed.

As the numbers of Koalas sighted in this survey were significantly lower than the 60-80 individuals prescribed by Dique *et al.* (2003) to ensure a reliable estimate of Koala density to be made, it is not possible to provide an estimate of Koala density. However, it is expected that the Koala habitats within the subject site, in conjunction with the large bushland areas adjoining the site to the north and west, would support Koalas and would be used for breeding purposes.

5.3 KOALA HABITATS

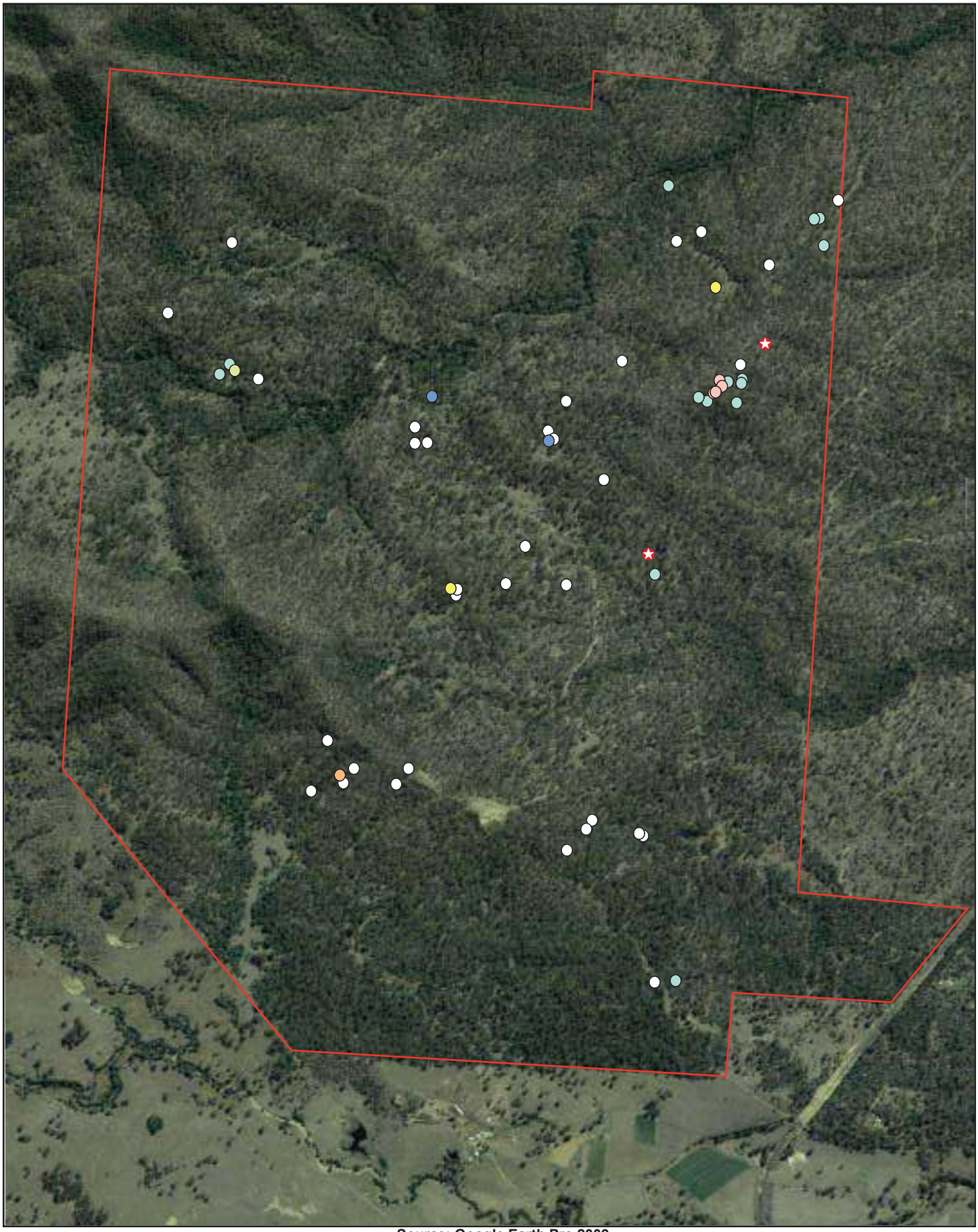
In the original 2009 report, the study area was divided into four Koala Habitat Zones (see **Figure 5.2**) and they have been ranked based on the results of the field investigation and using the Koala habitat assessment matrix provided in the Koala Plan:

A2: **(High Value)** Remnant bushland with highest Koala habitat values and/or Koala densities relative to the study area;

B2: **(Medium- High Value)** Remnant bushland with generally medium-high habitat values and/or Koala densities relative to the study area;

C2: **(Low- Medium Value)** Remnant bushland with generally low-medium Koala habitat values and/or Koala densities relative to the study area; and

D2: **(Low Value)** Remnant bushland with generally lower Koala habitat values and/or Koala densities relative to the study area.



Legend:

- Koala
- Site Boundary
- Blue Gum (*Eucalyptus teretecornis*)
- Grey Box (*Eucalyptus mollucana*)
- Ironbark (*Eucalyptus crebra/siderophloia*)
- White Mahogany (*Eucalyptus acmenoides*)
- Pink Bloodwood *(Corymbia intermedia)*
- Spotted Gum *(Corymbia citriodora)*
- Red Ironbark *(Eucalyptus fibrosa)*

Source: Google Earth Pro 2009

0 m 500 m

N

Biodiversity Assessment AND MANAGEMENT PTY LTD

FIGURE 5.1

Location of Koalas and Trees with Scats

Koala Habitat Assessment and Mapping
Undullah

Source: Google Earth Pro 2009

N

Legend:

- Habitat Zone A2 (High Value)
- Habitat Zone B2 (Medium - High Value)
- Habitat Zone C2 (Low - Medium Value)
- Habitat Zone D2 (Low Value)

(Zoning based the Koala Plan (EPA 2006))

Biodiversity Assessment and Management Pty Ltd

FIGURE 5.

Koala Habitat Zones and Values Map

Koala Habitat Assessment and Mapping
Undullah

6.0 CONCLUSIONS AND GENERAL RECOMMENDATIONS

At the time of field assessment, the value of Koala habitats varied across the study area with some areas supporting high value habitats, whilst past and ongoing land use practices such as logging and grazing, together with dense weed infestations, had greatly reduced the value of Koala habitats in other areas.

The study area and surrounding lands are considered to support Koalas. Recent clearing on the lands immediately adjoining the study area (to the east and north east) have reduced safe movement options and habitats available for Koalas in the local landscape.

Koalas are recognised as being at risk from ongoing habitat loss, particularly from urban development in South East Queensland. Any change in land use on the subject site should incorporate measures to maintain sufficient habitat and ongoing opportunities for Koala movement to and through the subject site. Vegetated buffers, particularly along the waterways, would act as functional corridors for Koalas as well as for other fauna species. To supplement the corridors' habitat values, the retention of higher ground habitats would provide additional habitat values located outside of floodable lands and would ensure the continued presence of Koalas and other local fauna.

Overall, in respect to Koala habitat and long term security of the species in the landscape, habitat retention should focus on retaining habitat zones A2 & B2 (see figure 5.2) with effective linkages retained or created to the broader landscape.

The following general recommendations are made with regard to Koalas and any future development on the subject site:

- Detailed assessment of areas proposed for retention should be undertaken at later stages of planning to confirm the suitability of retained areas;
- A detailed Koala Management Plan should be prepared for the site to ensure the long-term viability of the Koala habitat and the local Koala population on the subject site;
- Ecological corridors should be retained along waterways and should connect to bushland habitats adjoining the subject site in order to provide safe and functional east-west movement corridors for local fauna, including Koalas. Restoration actions, weed management and rehabilitation would contribute to improved overall habitat values and species diversity within those corridors;
- Where possible and compatible with future land use, Koala food trees should be retained and incorporated into any rehabilitation or landscaping works.

7.0 BIBLIOGRAPHY

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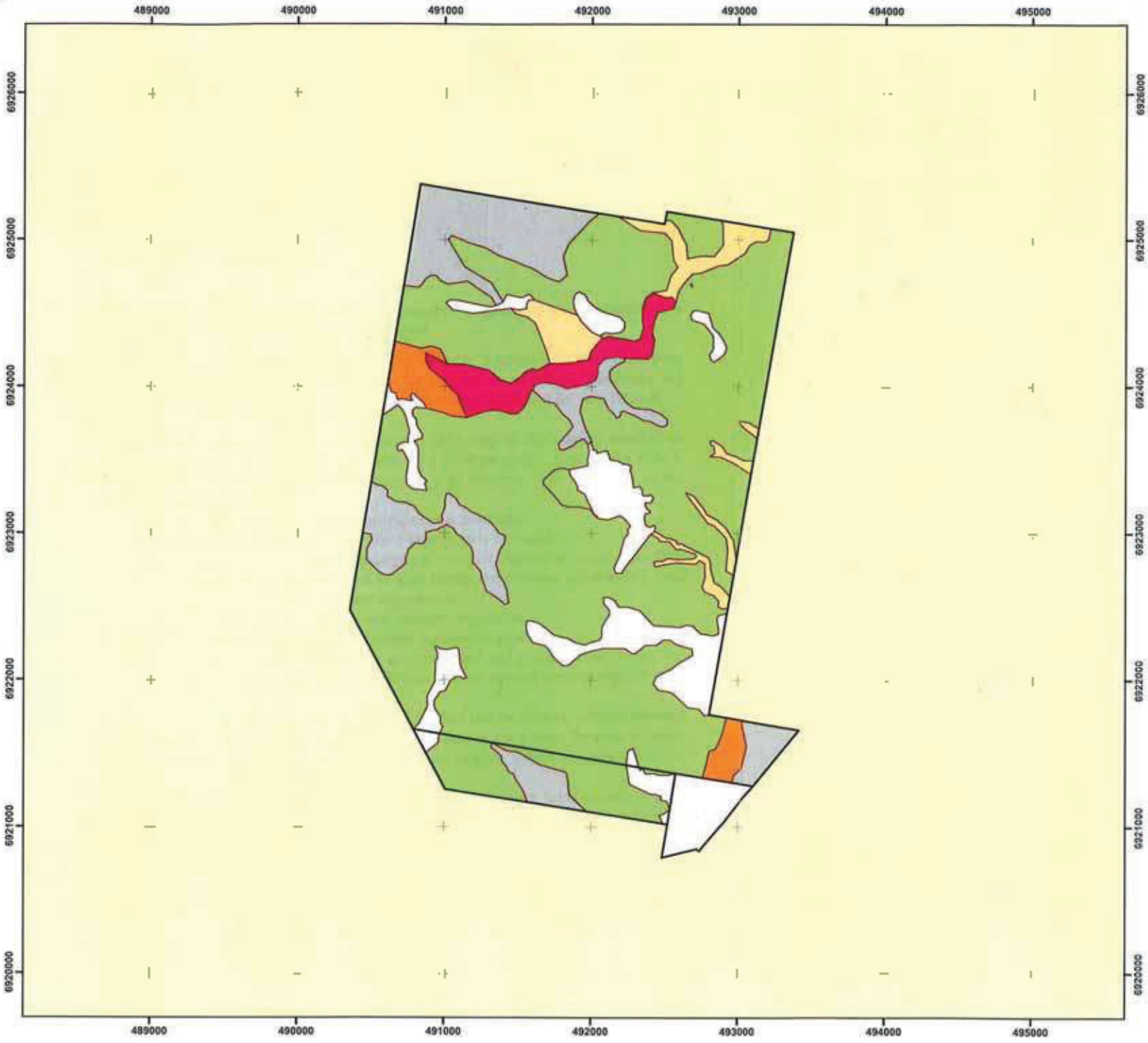
APPENDIX 1
PROPERTY MAP OF ASSESSABLE VEGETATION



Property Map of Assessable Vegetation

PMAV 2007/007509

LOT on PLAN

3RP45236 2RP31174 3RP48208

Sheet 1 of 1

Scale 1:25000 at A3 paper size

0 500 1,000 1,500 2,000 m

N

Legend

Subject Lot(s)

Area to remain (no PMAV shown on map)

PMAV Categories

Category R (Regrowth)

Category R Sub Dominant

Category D (Dominant)

Category D Sub Dominant

Category 3 Area

Category X Area

Area that is subject to Certified Regional Ecosystem Mapping at map Publish

Notes.

Property boundary provided by Department of Natural Resources and Water

The property boundaries shown on this plan are approximate only. They are not to be used for the purposes of the legal boundaries.

Category R sub-divided on Regional Ecosystem Data provided by Environmental Protection Agency (EPA)

The approximate horizontal accuracy of the map is +/- 25m

Map Information

Projection: Universal Transverse Mercator Zone 56

This PMAV has been created under Section 26C(3) of the Vegetation Management Act (1999)

Signed for the Chief Executive of the Department of Natural Resources and Water by

Name: Amber Gordon

Title: A/Senior Vegetation Management Officer

Signature:

Date: 24/04/2008

Map Prepared By: NRW

APPENDIX 2

GPS LOCATIONS OF SURVEY TRANSECTS, SCATS AND KOALAS

GPS Locations of Survey Transects (start and end points)

Start	End	Start	End
56 J 490876 6924064	56 J 490815 6924154	56 J 491482 6924871	56 J 491465 6924773
56 J 490816 6924155	56 J 490807 6924171	56 J 491466 6924766	56 J 491457 6924661
56 J 490803 6924273	56 J 490845 6924354	56 J 491479 6924510	56 J 491463 6924410
56 J 490865 6924461	56 J 490865 6924481	56 J 491450 6924369	56 J 491478 6924273
56 J 490890 6924591	56 J 490886 6924612	56 J 491474 6924254	56 J 491458 6924151
56 J 490915 6924711	56 J 490920 6924645	56 J 491452 6924130	56 J 491420 6924035
56 J 490930 6924595	56 J 490910 6924491	56 J 492917 6924310	56 J 493005 6924370
56 J 490911 6924467	56 J 490935 6924367	56 J 493034 6924379	56 J 493138 6924384
56 J 490939 6924337	56 J 490938 6924232	56 J 493177 6924397	56 J 493278 6924417
56 J 490916 6924196	56 J 490917 6924095	56 J 493259 6924468	56 J 493254 6924569
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56 J 492743 6924504	56 J 492731 6924607	56 J 493210 6924680	56 J 493167 6924585
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56 J 492651 6924553	56 J 492651 6924449	56 J 492566 6923653	56 J 492620 6923567
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56 J 492614 6923824	56 J 492590 6923922	56 J 492769 6923561	56 J 492822 6923648
56 J 492584 6923949	56 J 492536 6924045	56 J 492834 6923663	56 J 492879 6923753
56 J 492506 6924033	56 J 492411 6923998	56 J 492862 6923761	56 J 492785 6923820
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Start	End	Start	End
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56 J 491474 6923644	56 J 491479 6923543	56 J 491833 6923278	56 J 491877 6923345
56 J 491521 6923554	56 J 491524 6923575	56 J 491886 6923369	56 J 491947 6923452
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56 J 491095 6922282	56 J 491028 6922209	56 J 491851 6922432	56 J 491912 6922452

Start	End	Start	End
56 J 490968 6922182	56 J 491101 6922307	56 J 491920 6922352	56 J 491916 6922328
56 J 491187 6922367	56 J 491209 6922374	56 J 492466 6921973	56 J 492474 6921974
56 J 491310 6922394	56 J 491335 6922425	56 J 492371 6921986	56 J 492341 6921991
56 J 491423 6922473	56 J 491433 6922480	56 J 492257 6922054	56 J 492211 6922036
56 J 491480 6922499	56 J 492593 6921384	56 J 492124 6921975	56 J 492086 6921964
56 J 492692 6921370	56 J 492714 6921359	56 J 491997 6921920	56 J 491966 6921896
56 J 492815 6921352	56 J 492827 6921389	56 J 491864 6921876	56 J 491866 6921929
56 J 492728 6921402	56 J 492708 6921412	56 J 491976 6921945	56 J 491995 6921940
56 J 492610 6921438	56 J 491188 6924066	56 J 492003 6921963	56 J 492078 6922036
56 J 491188 6924173	56 J 491187 6924192	56 J 492097 6922054	56 J 492182 6922114
56 J 491185 6924293	56 J 491149 6924356	56 J 491528 6922391	56 J 491488 6922332
56 J 491171 6924452	56 J 491169 6924479	56 J 491454 6922325	56 J 491437 6922298
56 J 491186 6924578	56 J 491194 6924598	56 J 491339 6922258	56 J 491316 6922247
56 J 491195 6924697	56 J 491234 6924683	56 J 491227 6922194	56 J 491193 6922170
56 J 491234 6924583	56 J 491230 6924561	56 J 491094 6922149	56 J 490968 6922259
56 J 491222 6924460	56 J 491227 6924423	56 J 491049 6922348	56 J 491056 6922384
56 J 491210 6924323	56 J 491204 6924271	56 J 491147 6922439	56 J 491163 6922462
56 J 491203 6924172	56 J 491228 6924147	56 J 491241 6922528	56 J 491267 6922542
56 J 491216 6924049	56 J 492810 6924310	56 J 491340 6922620	56 J 492591 6921461
56 J 492736 6924239	56 J 492723 6924228	56 J 492680 6921511	56 J 492716 6921529
56 J 492669 6924141	56 J 492655 6924128	56 J 492817 6921550	56 J 492820 6921592
56 J 492574 6924074	56 J 492603 6924067	56 J 492719 6921618	56 J 492700 6921616
56 J 492688 6924117	56 J 492707 6924129	56 J 492605 6921583	56 J 492369 6921270
56 J 492744 6924234	56 J 492776 6924231	56 J 492265 6921271	56 J 492231 6921258
56 J 492845 6924305	56 J 492655 6923829	56 J 492090 6921265	56 J 492088 6921267
56 J 492626 6923927	56 J 492619 6923942	56 J 492000 6921311	56 J 492013 6921361
56 J 492593 6924039	56 J 492592 6924046	56 J 492110 6921400	56 J 492140 6921409
56 J 492691 6924064	56 J 492713 6924062	56 J 492249 6921405	56 J 492258 6921414
56 J 492796 6924009	56 J 492810 6924005	56 J 492274 6921391	56 J 492374 6921405

Start	End	Start	End
56 J 492763 6923916	56 J 492750 6923905	56 J 491075 6924104	56 J 491095 6924202
56 J 492660 6923856	56 J 491710 6923906	56 J 491094 6924223	56 J 491106 6924301
56 J 491644 6923832	56 J 491637 6923808	56 J 491093 6924403	56 J 491110 6924503
56 J 491604 6923712	56 J 491600 6923688	56 J 491120 6924521	56 J 491143 6924599
56 J 491525 6923621	56 J 491494 6923618	56 J 491148 6924618	56 J 491151 6924711
56 J 491458 6923593	56 J 491464 6923532	56 J 491144 6924719	56 J 491142 6924820
56 J 491564 6923569	56 J 491573 6923581	56 J 491169 6924816	56 J 491145 6924719
56 J 491655 6923641	56 J 491660 6923662	56 J 491155 6924707	56 J 491178 6924610
56 J 491698 6923755	56 J 491699 6923793	56 J 491185 6924589	56 J 491185 6924588
56 J 491743 6923883	56 J 491748 6923894	56 J 491169 6924489	56 J 491161 6924389
56 J 491839 6923947	56 J 491763 6923954	56 J 491161 6924389	56 J 491150 6924290
56 J 491679 6923982	56 J 492292 6923448	56 J 491153 6924267	56 J 491134 6924171
56 J 491124 6924152	56 J 491117 6924150	56 J 492663 6924220	56 J 492686 6924215
56 J 491103 6924096	56 J 492880 6924267	56 J 492803 6924150	56 J 492809 6924181
56 J 492858 6924247	56 J 492858 6924247	56 J 492841 6924219	56 J 492669 6923817
56 J 492911 6924200	56 J 492777 6924184	56 J 492753 6923873	56 J 492776 6923880
56 J 492887 6924268	56 J 492887 6924267	56 J 492829 6923940	56 J 492854 6923924
56 J 492754 6924175	56 J 492776 6924183	56 J 492815 6923870	56 J 492806 6923839
56 J 492681 6924224	56 J 492658 6924229	56 J 492808 6923818	56 J 492801 6923770
56 J 492561 6924233	56 J 492569 6924262		

GPS Locations of Koalas and Scats

Type	Location	Type	Location
Koala	56 J 492858 6923922	Scat	56 J 492258 6921413
Koala	56 J 492428 6923174	Scat	56 J 492333 6921414
Scat	56 J 492959 6924333	Scat	56 J 491735 6923742
Scat	56 J 493154 6924393	Scat	56 J 492280 6922042
Scat	56 J 493261 6924552	Scat	56 J 492443 6923100
Scat	56 J 493147 6924512	Scat	56 J 490926 6924395
Scat	56 J 493149 6924512	Scat	56 J 491173 6924662
Scat	56 J 491768 6923120	Scat	56 J 491117 6924150
Scat	56 J 491759 6923140	Scat	56 J 491122 6924138
Scat	56 J 492024 6923276	Scat	56 J 492710 6923827
Scat	56 J 491765 6923118	Scat	56 J 491074 6924114

Type	Location	Type	Location
Scat	56 J 491943 6923120	Scat	56 J 492720 6923833
Scat	56 J 492141 6923096	Scat	56 J 492749 6923843
Scat	56 J 491345 6922410	Scat	56 J 492752 6923874
Scat	56 J 491774 6923937	Scat	56 J 492765 6923877
Scat	56 J 492153 6923710	Scat	56 J 492818 6923935
Scat	56 J 492148 6923714	Scat	56 J 492817 6923871
Scat	56 J 492148 6923740	Scat	56 J 492809 6923858
Scat	56 J 492314 6923521	Scat	56 J 492786 6923781
Scat	56 J 491306 6922382	Scat	56 J 492692 6923804
Scat	56 J 491308 6922362	Scat	56 J 492672 6923816
Scat	56 J 491195 6922336	Scat	56 J 492744 6924508
Scat	56 J 491203 6924085	Scat	56 J 492025 6921994
Scat	56 J 492771 6924266	Scat	56 J 492103 6922077
Scat	56 J 491702 6923752	Scat	56 J 492658 6924706
Scat	56 J 491700 6923811	Scat	56 J 492120 6922109
Scat	56 J 492225 6923857	Scat	56 J 491530 6922391
Scat	56 J 492286 6922029	Scat	56 J 492665 6924474
Scat	56 J 492428 6924005	Scat	56 J 491488 6922333
Scat	56 J 491271 6922546		

Appendix F

Likelihood of Occurrence Schedule for EPBC Listed MNES

HABITAT ASSESSMENT FOR LISTED EPBC SPECIES (7391) 10km Search

Matters of National Environmental Significance

Name		Status	Type of Presence	Description of Community	Likelihood of Occurrence	Risk
Wetlands of International Importance	Moreton Bay	RAMSAR Listed	Within 10km of Ramsar	The site is located approximately 15 kilometres directly west of Moreton Bay.	There will be no measurable effect on Moreton Bay.	Low

Listed Threatened Ecological Communities

Name	Status	Type of Presence	Description of Community	Likelihood of Occurrence	Risk
Lowland rainforest of Subtropical Australia	Critically Endangered	This Threatened Ecological Community is listed as a community that may occur within the area.	Typically there is a relatively low abundance of species from the genera *Eucalyptus, Melaleuca* and *Casuarina.* Buttresses are common as is an abundance and diversity of vines. This community is usually associated Regional Ecosystems 12.3.1, 12.5.13, 12.8.3, 12.8.4, 12.8.13, 12.11.1, 12.11.10, 12.12.1, and 12.12.16.	No species representing these characteristics or vegetation communities were observed within the assessment area.	No Risk
Swamp Tea Tree (Melaleuca irbyana) forest of South- east Queensland	Critically Endangered	This Threatened Ecological Community is listed as a community likely to occur within the area.	The listed swamp tea-tree forest community is based on two regional ecosystem communities including 12.9-10.11 and 12.3.3c. This community usually comprises low open to closed forest, closed scrub or thickets of Melaleuca irbyana with or without emergent tree layer of scattered Eucalypts.	The Endangered Regional Ecosystem 12.3.3 is mapped along a large portion of sandy creek however does not contain species representative of 12.3.3c. No Melaleuca irbyana specimens were recorded throughout this polygon. Although individual specimens were recorded throughout other regional ecosystem communities throughout the assessment area, no TEC is observed.	No Risk
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	This Threatened Ecological Community is listed as a community likely to occur within the area.	This threatened community is characterised by a species-rich understorey of native tussock grasses, herbs and scattered shrubs and the dominance of White Box, Yellow Box, or Blakely's Red gum trees. This community is usually associated with Regional Ecosystem 11.8.2a, 11.8.8, 11.9.9a, 13.3.1, 13.11.8, and 13.12.9. It can also be a small component of Regional Ecosystem 11.3.23, 12.8.16, 13.3.4, 13.11.3 and 13.11.4.	No species representing these characteristics or vegetation communities were observed within the assessment area.	No Risk

Birds

Species	Common Name	Status	EPBC Code	Description of Community / Habitat	Likelihood of Occurrence	Risk
Anthochaera phrygia	Regent Honeyeater	Endangered	82338	Regent Honeyeaters mostly occur in dry Box-Ironbark Eucalypt woodland and dry sclerophyll forest associations in areas of low to moderate relief, wherein they prefer moister, more fertile sites. These areas are generally associated with creek flats and river valleys and foothills. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. They are a generalist forager, which mainly feed on nectar from a wide range of eucalypts and mistletoes.	The site is covered in both remnant and regrowth vegetation communities dominated by eucalypt and Corymbia species however all riparian areas are highly disturbed. Very few mature large specimens remain throughout the majority of the site as a result of historical logging practices.	No Risk
Botaurus poiciloptilus	Australasian Bittern	Endangered	1001	The Australasian Bittern occurs in terrestrial wetlands and, rarely, estuarine habitats, mainly in the temperate southeast and southwest. It favours wetlands with tall dense vegetation, where it forages in still, shallow water up to 0.3 m deep, often at the edges of pools or waterways, or from platforms or mats of vegetation over deep water. It favours permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and / or reeds or cutting grass growing over muddy or peaty substrate. The Australasian Bittern occurs in the far South-East of Queensland; it has been reported North to Baralaba and West to Wyandra, although in most years it is probably confined to a few coastal swamps. It is rarely recorded in Queensland, and possibly survives only in protected areas such as the Cooloola and Fraser regions.	No suitable habitat was observed throughout the assessment area.	No Risk
Cyclopsitta diophthalmacoxeni	Coxen's Fig Parrot	Endangered	59714	The Coxen's fig Parrot occurs in rainforest habitats including subtropical rainforest, dry rainforest, littoral and developing littoral rainforest, and vine forest. Food is mainly taken from figs however other species fruit have been recorded in their diet including Elaeocarpus grandis, Syzygium corynanthum, Litsea reticulata and Grevillea robusta.	No suitable habitat was observed throughout the assessment area.	No Risk

Dasyornis brachypterus	Eastern Bristlebird	Endangered	533	The Eastern Bristlebird inhabits low dense vegetation in a broad range of habitat types including sedgeland, heathland, swampland, shrubland, sclerophyll forest and woodland, and rainforest. It occurs near the coast, on tablelands and in ranges. The Eastern Bristlebird is found in habitats with a variety of species compositions, but is defined by a similar structure of low, dense, ground or understorey vegetation.	The majority of the investigation area contains severe Lantana camara infestations and historical logging practices. No suitable habitat was observed throughout the assessment area.	No Risk
Erythrotriorchis radiatus	Red Goshawk	Vulnerable	942	A wide ranging and highly mobile species generally observed over eucalypt habitats. This species prefers forest and woodland with a mosaic of vegetation types, large prey populations (birds) and permanent water. The vegetation types include eucalypt woodland, open forest, tall open forest, gallery rainforest, swamp sclerophyll forest and rainforest margins. Habitat has to be open enough for fast attack and manoeuvring in flight, but provide cover for ambushing of prey.	Due to a lack of records within the local area, it is unlikely that this species will occur. However, possible foraging habitat throughout the mapped remnant areas. There is no evidence of permanent residence on site and very few areas containing permanent water.	No Risk
Geophaps scripta scripta	Squatter Pigeon (southern)	Vulnerable	64440	This species inhabits open grasslands and woodlands typically with a native understorey although may occur in artificial pasture.	No confirmed local records. The species is now very rarely observed in southern Queensland. Not expected onsite and no direct impact from proposed actions.	No Risk
Lathamus discolour	Swift Parrot	Endangered	744	Swift Parrots breed in Tasmania during spring to early summer. During autumn and winter the species migrates to the mainland where it follows a nomadic existence linked to the availability and timing of flowering of trees in various locations. While the species is very uncommon in south-east Queensland, its occurrence cannot be completely discounted. There are suitable winter flowing species present on the site which may attract birds during flowing (e.g. E. tereticornis).	Due to a lack of records within the local area and south east Queensland, it is highly unlikely that this species will occur.	No Risk
Peophila cincta cincta	Black-throated Finch (southern)	Endangered	64447	The Black-throated Finch (southern) occurs mainly in grassy, open woodlands and forests, typically dominated by Eucalyptus, Corymbia and Melaleuca, and occasionally in tussock grasslands or other habitats (for example freshwater wetlands), often along or near watercourses, or in the vicinity of water. It occurs at two general locations: in the Townsville region, where it is considered to be locally common at a few sites around Townsville and Charters Towers; and at scattered sites in central-eastern Queensland (between Aramac and Great Basalt Wall National Park). It has been absent from Brisbane and its surrounds since the 1930s.	Due to a lack of records within the local area, it is highly unlikely that this species will occur.	No Risk
Rostratula australis	Australian Painted Snipe	Endangered	77037	The Australian Painted Snipe is usually found in shallow inland wetlands, either freshwater or brackish, that are either permanently or temporarily filled. The species has a scattered distribution throughout many parts of Australia, with a single record from Tasmania.	No suitable habitat was observed throughout the assessment area.	No Risk
Turnix melanogaster	Black-breasted Button-quail	Vulnerable	923	Typical habitat occurs in dry rainforest and vegetation immediately adjacent to rainforest. However the species has also been recorded in a variety of low coastal heathlands around Frazer Island and nearby mainland. Deep leaf litter in which the species can forage appears to be particularly favoured.	Habitats on the site are highly disturbed due to prior logging regimes, weed invasion and prior pastoral/grazing activities. Although this species is known to favour areas with a dense shrub layer, including thick Lantana camara patches, no evidence (i.e.: platelets) has been observed on site.	No Risk
Fish						
Species	**Common Name**	**Status**	**EPBC Code**	**Description of Community / Habitat**	**Likelihood of Occurrence**	**Risk**
Maccullochella mariensis	Mary River Cod	Endangered	83806	The Mary River Cod occurs mainly in pools within relatively undisturbed tributaries. They prefer relatively large and deep shaded pools with abundant, slowly flowing water.	No suitable habitat to support this species was observed throughout the assessment area.	No Risk
Insects						
Species	**Common Name**	**Status**	**EPBC Code**	**Description of Community / Habitat**	**Likelihood of Occurrence**	**Risk**
Phyllodes imperialis smithersi	Pink Underwing Moth	Endangered	86084	The Pink Underwing Moth is found below the altitude of 600m in undisturbed, subtropical rainforest. It occurs in association with the vine Carronia multisepalea.	No suitable habitat to support this species was observed throughout the assessment area.	No Risk
Mammals						
Species	**Common Name**	**Status**	**EPBC Code**	**Description of Community / Habitat**	**Likelihood of Occurrence**	**Risk**
Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	183	The Large-eared Pied Bat roosts on sandstone cliffs and fertile woodland valley habitat within close proximity of each other. However in South-east Queensland habitat includes rainforest and moist eucalypt forest habitats at high elevations.	No confirmed local records of this uncommon species.	No Risk

Dasyurus hallucatus	Northern Quoll	Endangered	331	The Northern Quoll is known to occur as far south as Gracemere and Mt Morgan, south of Rockhampton and as far north as Cooktown. There have also been occasional records as far south as Maleny on the Sunshine coast hinterland. The species occupies rocky areas, eucalypt forest and woodlands, rainforests, sandy lowlands and beaches, shrubland, grassland and desert. Preferred habitat in Queensland suggests the Northern Quoll are more likely to be present in high relief areas that have shallower soils, greater cover of boulders, less fire impact and were close to permanent water.	This species prefers tropical climes and has only occasionaly been recorded in areas to the north of Brisbane. No suitable den sites were observed on site. Sandy Creek may provide suitable foraging habitat but is outside of the known range for the species.	No Risk
Dasyurus maculatus maculatus	Spot-tailed Quoll	Endangered	75184	The Spot-tailed Quoll has a preference for mature wet forest habitat. Unlogged forest or forest that has been less disturbed by timber harvesting is also preferable. This predominantly nocturnal species rests during the day in dens. Habitat requirements include suitable den sites such as hollow logs, tree hollows, rock outcrops or caves. individuals require an abundance of food such as birds and small mammals, and large areas of relatively intact vegetation through which to forage.	Although no suitable den sites were observed on site, it may be possible that the site could be used for foraging purposes, including Sandy Creek which may act as a corridor for species distribution. Lathough no evidence has been found throughout the field assessment, consideration to this species is important.	Low Risk
Petrogale penicillata	Brush-tailed Rock-wallaby	Vulnerable	225	This species prefers rocky habitats, including loose boulder-piles, rocky outcrops, steep rocky slopes, cliffs, gorges and isolated rock stacks. Most populations have been found on north facing slopes but have occurred on south facing slopes. This species browse on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees.	Although some of the peaks and ridges on the site contained exposed rocks, these areas did not include suitable habitat for the rock wallaby.	No Risk
Phascolarctos cinereus	Koala	Vulnerable	85104	They are found in a range of habitats, from coastal islands and tall eucalypt forests to low woodlands inland. The species is known from the surrounding area and evidence has been recorded on-site.	Extensive searches of this species, including SAT surveys and spotlighting did not find any individual specimens. However some old scats were observed throughout the site in various locations. The site is highly disturbed with intensive logging regimes and severe infestations of Lantana camara have also reduced the quality of habitat for this species.	Medium / High Risk
Potorous tridactylus tridactylus	Long-nosed Potoroo	Vulnerable	66645	Species generally prefers rainforest and adjacent to wet sclerophyll forest, coastal heathlands and similar habitats with a dense understorey. Like all Potoroos, fungi are the major component of the diet and is also known to feed on invertebrates.	No suitable habitat was observed throughout the assessment area.	No Risk
Pteropus poliocephalus	Grey-headed Flying Fox	Vulnerable	186	Species generally roosts in camps in trees adjacent to larger permanent watercourse. The Grey-headed flying fox requires foraging resources and roosting sites. It is a canopy-feeding frugivore and nectarivore, which utilises vegetation communities including rainforests, open forests, closed and open woodlands, Melaleuca swamps and Banksia woodlands. It also feed son commercial fruit crops. The primary food source is blossom from Eucalyptus and related genera.	No camps were observed throughout the assessment area however food resources cover the site. This species is highly likely to occur when the Eucalypts are in flower.	Low Risk
Plants						
Species	**Common Name**	**Status**	**EPBC Code**	**Description of Community / Habitat**	**Likelihood of Occurrence**	**Risk**
Arthraxon hispidus	Hairy-joint Grass	Vulnerable	9338	Hairy-joint grass is found in or on the edges of rainforest and in wet eucalypt forest, often near creeks or swamps, as well as woodland.	No suitable habitat was observed throughout the assessment area.	No Risk
Bosistoa selwynii	Heart-leaved Bosistoa	Vulnerable	13702	The Heart-leaved Bosistoa is similar to the Three-leaved Bosistoa and is conserved within Mt Warning National Park, Numbinbah Nature Reserve, Limpinwood Nature Reserve and When Whian State Forest. While population information is unavailable, it is thought to be common in its range. It generally grows in wet sclerophyll forest, dry sclerophyll forest and rainforest up to 3oo meters in altitude. It is commonly associated with Argyrodendron trifoliolatum, Syzygium hodgkinsoniae, Endiandra pubens, Dendrocnide photinophylla, Acmena ingens, Diploglottis australis and Diospyros mabacea.	No suitable habitat was observed throughout the assessment area.	No Risk

Bosistoa transversa	Three-leaved Bosistoa	Vulnerable	16091	The Three-leaved Bosistoa is conserved within Mt Warning National Park, Numbinbah Nature Reserve, Limpinwood Nature Reserve and Whian Whian State Forest. While population information is unavailable, it is thought to be common in its range. It generally grows in wet sclerophyll forest, dry sclerophyll forest and rainforest up to 300 meters in altitude. It is commonly associated with Argyrodendron trifoliolatum, Syzygium hodgkinsoniae, Endiandra pubens, Dendrocnide photinophylla, Acmena ingens, Diploglottis australis and Diospyros mabacea.	No suitable habitat was observed throughout the assessment area.	No Risk
Bulbophyllum globuliforme	Miniature Moss-orchid, Hoop Pine Orchid	Vulnerable	6649	The species is a host specific species only growing on Araucaria cunninghamii (Hoop Pine), colonising the upper branches of mature trees in upland rainforest.	No Araucaria cunninghamii (Hoop Pine) specimens were recorded throughout the assessment area or regional ecosystem communities to support this species.	No Risk
Cupaniopsis tomentella	Boonah Tuckeroo	Vulnerable	3322	Boonah Tuckeroo is known only from an area between Boonah and Ipswich in south-eastern Queensland. It grows in vine thickets on fertile clay soils.	No regional ecosystems representative of vine thickets or suitable habitat was observed throughout the assessment area.	No Risk
Lepidiuim peregrinum	Wandering Pepper-cress	Endangered	14035	The Wandering Pepper-cress occurs in open riparian forests on creek banks, and also in the tussock grassland fringe of the riparian area.	All riparian areas, especially along Sandy Creek contain severe infestations of Lantana camara. No suitable habitat was observed throughout the assessment area.	No Risk
Notelaea ipsviciensis	Cooneana Olive	Critically Endangered	81858	The Cooneana Olive survives as an understorey plant in degraded, eucalypt dominated dry sclerophyll vegetation communities. Soils are of low fertility and sandstone based.	This is regarded as one of the rarest plants in Australia with the only known population occurring within an area of less than 2km2.	No Risk
Notelaea lloydii	Lloyd's Olive	Vulnerable	15002	This species occurs on undulating to hilly terrain either in moist gullies or on gentle to steep dry slopes, but is rarely found on rocky outcrops. It is generally found in the ecotone between eucalypt forests and vine thickets.	No suitable habitat was observed throughout the assessment area.	No Risk
Phaius australis	Lesser Swamp Orchid	Endangered	5872	The Lesser Swamp-orchid is commonly associated with coastal wet heath/sedgeland wetlands, swampy grassland or swampy forest and often where Broad-leaved Paperbark or Swamp Mahogany are found. Typically, the Lesser Swamp-orchid is restricted to the swamp-forest margins, where it occurs in swamp sclerophyll forest (Broad-leaved Paperbark/Swamp Mahogany/Swamp Box (Lophostemon suaveolens), swampy rainforest (often with sclerophyll emergent), or fringing open forest. It is often associated with rainforest elements such as Bangalow Palm (Archontophoenix cunninghamiana) or Cabbage Tree Palm (Livistona australis).	No suitable habitat was observed throughout the assessment area.	No Risk
Phebalium distans	Mt Berryman Phebalium	Critically Endangered	81869	Mt Berryman Phebalium is found in semi-evergreen vine thicket on red volcanic soils, or in communities adjacent to this vegetation type. Geology of the area in which this species occurs is deeply weathered basalt with undulating to hilly terrain. Soils range from red-brown earths to brown clays (derived from siltstone and mudstones), and lithosols to shallow, gravelly krasnozems (very dark brown loam), derived from the Main Range Volcanics of the Tertiary period. Vegetation associations in which Mt Berryman Phebalium occur include microphyll to notophyll vine forest with or without Araucaria cunninghamii and low microphyll vine forest and semi-evergreen vine thicket with or without Araucaria cunninghamii which can be divided further into regional ecosystems depending on substrate, geography and associated vegetation species.	No suitable habitat was observed throughout the assessment area.	No Risk
Planchonella eerwah	Shiny-leaved Condoo	Endangered	17340	Populations within the Ipswich-Beaudesert areas occur in small remnants of notophyll vine forests with emergent on rocky slopes and drainage lines. These forest types are generally dominated by Flindersia species with occasional emergent Hoop Pine and Harpullia pendula (Tulipwood).	No species representing these characteristics or vegetation communities were observed within the assessment area.	No Risk
Plectranthus habrophyllus		Endangered	64589	Plants have been recorded growing on chert or sandstone outcrops, in open woodlands often in shaded situations near vine forests.	This species was considered extinct in Queensland prior to the mid 1980's however collections have since been made, the closest being Glen Rock with recent confirmation at Springfield Lakes area. Although checks have been made for this species, none were observed on site.	Low Risk

Thesium australe	Austral Toadflax	Vulnerable	15202	Austral toadflax is semi-parasitic on roots of a range of grass species, most notably, Themeda triandra (Kangaroo Grass). Previously recorded within open woodland with Eucalyptus tereticornis (Forest Red Gum) and Eucalyptus tindaliae (Tindale's Stringybark).	The site is highly disturbed however some potential habitat is recorded on site along Sandy Creek. Although highly unlikely to occur, this species can not be ruled out from occurring on site.	Low Risk
Other						
Cycas ophiolitica		Endangered	55797	Cycas ophiolitica inhabits open forest and woodland communities with a grassy understorey. It will grow on hills and slopes in sparse, grassy open forest at altitudes ranging from 80-620m above sea level.	No suitable habitat was observed throughout the assessment area.	No Risk
Reptiles						
Species	**Common Name**	**Status**	**EPBC Code**	**Description of Community / Habitat**	**Likelihood of Occurrence**	**Risk**
Coeranoscincus reticulatus	Three-toed Snake-tooth Skink	Vulnerable	59628	Found mostly in closed forest and possibly open layered Eucalyptus forest. Generally recorded in moist layered forest on loamy basaltic soils, but also found in closed forest overlying silica sand dunes at Cooloola. Within forests, this species is found in well-mulched, loose, friable rainforest soil in leaf litter, often immediately adjacent to fallen tree trunks. Much of the lowland closed forest within its range has been cleared for agriculture and grazing, pasture improvement, crop production, tropical fruit production, and native forest logging. Suitable habitat has generally been reduced to patches, especially in lowland areas.	No suitable habitat was observed throughout the assessment area.	No Risk
Delma torquata	Collared Delma	Vulnerable	1656	In general, the species occurs on rocky hillsides on basalt and lateritic soils supporting open eucalypt and Acacia woodland with a sparse understorey of shrubs and tussocks or semi-evergreen vine thicket.	The site is covered in both remnant and regrowth vegetation communities dominated by eucalypt and Corymbia species . The peaks and ridgelines throughout the site contain exposed rocky hillsides where the understorey is sparse, providing for some habitat for this species.	Low Risk
Furina dunmalli	Dunmall's Snake	Vulnerable	59254	Dunmall's Snake has been found in a broad range of habitats, including forests and woodlands on black alluvial cracking clay and clay loams dominated by Brigalow other Wattles, native Cypress or Bull-oak, and various Blue Spotted Gum, Ironbark, White Cypress Pine and Bull oak open forest and woodland associations on sandstone derived soils. Dunmall's Snake occurs primarily in the Brigalow Belt region in the South-eastern interior of Queensland. Records indicate sites at elevations between 200–500 m above sea level. The snake is very rare or secretive with limited records existing. It has been recorded at Archokoora, Oakey, Miles, Glenmorgan, Wallaville, Gladstone, Lake Broadwater, Mount Archer, Exhibition Range National Park, roadside reserves between Inglewood and Texas, Rosedale, Yeppoon and Lake Broadwater Conservation Park.	No suitable habitat was observed throughout the assessment area.	No Risk
Listed Migratory Species						
Migratory Marine Birds						
Species	**Common Name**	**Status**	**EPBC Code**	**Description of Community / Habitat**	**Likelihood of Occurrence**	**Risk**
Apus pacificus	Fork-tailed Swift	Migratory	678	This species is almost exclusively aerial and mostly occur over inland palins but sometimes above foothills or in coastal areas.	Possible as a fly over species however no impact to this species is likely to occur.	No Risk
Migratory Terrestrial Species						
Species	**Common Name**	**Status**	**EPBC Code**	**Description of Community / Habitat**	**Likelihood of Occurrence**	**Risk**
Haliaeetus leucogaster	White-bellied Sea-Eagle	Migratory	943	The White-bellied Sea-eagle is found in coastal habitats and around terrestrial wetlands in tropical and temperate regions of mainland Australia and its offshore islands. The habitats are characterised by the presence of large areas of open water.	Known from the area and regularly recorded. This species would occur over the site but would be unlikely to use the site for feeding due to low value habitats, or nesting due to a lack of suitable trees.	No Risk
Hirundapus caudacutus	White-throated Needle tail	Migratory	682	The White-throated needle tail is almost exclusively aerial. This species has been recorded roosting in trees in forests and woodlands, both among dense foliage in the canopy or in hollows. The species breeds in wooded lowlands and sparsely vegetated hills, as well as mountains covered with coniferous forests.	Low potential to occur on site within roosting periods.	No Risk
Merops ornatus	Rainbow Bee-eater	Migratory	670	The rainbow bee-eater occurs mainly in open forests and woodlands, shrub lands, and in various cleared or semi-cleared habitats, including farmland and areas of human habitation.	Habitat available on site and species recorded throughout field survey.	Low / Medium Risk

Monarcha melanopsis	Black-faced Monarch	Migratory	609	The Black-faced Monarch mainly occurs in rainforest ecosystems, including semi-deciduous vine thickets, complex notophyll vine forests, tropical (mesophyll) rainforest, subtropical (notophyll) rainforest, mesophyll (broadleaf) thicket/shrubland, warm temperate rainforest, dry (monsoon) rainforest and occasionally cool temperate rainforest.	No suitable habitat was observed throughout the assessment area.	No Risk
Monarcha trivirgatus	Spectacled Monarch	Migratory	610	The Spectacled Monarchs natural habitats are subtropical or tropical moist lowland forests, subtropical or tropical mangrove forests, and subtropical or tropical moist montane forests. Its preference is for thick understorey areas.	No suitable habitat was observed throughout the assessment area.	No Risk
Myiagra cyanoleuca	Satin Flycatcher	Migratory	612	Satin Flycatchers inhabit heavily vegetated gullies in eucalypt dominated forests and taller woodlands, and on migration occur in coastal forests, woodlands, mangroves and drier woodlands and open forests.	No suitable habitat was observed throughout the assessment area.	No Risk
Rhipidura rufifrons	Rufous Fantail	Migratory	592	The Rufous fantail mainly inhabits wet sclerophyll forests, often in gullies dominated by Eucalypts such as Eucalyptus microcorys, Eucalyptus pilularis, Eucalyptus resiniferia and a number of other Eucalyptus species.	No suitable habitat was observed throughout the assessment area.	No Risk
Migratory Wetland Species						
Species	**Common Name**	**Status**	**EPBC Code**	**Description of Community / Habitat**	**Likelihood of Occurrence**	**Risk**
Ardea alba	Great Egret	Migratory	59541	The Great Egret has been recorded in a wide range of wetland habitats including inland and coastal, freshwater and saline, permanent and ephemeral, open and vegetated, large and small, natural and artificial.	Although a number of small dams were observed throughout the assessment area, no specimens were recorded at the time of the assessment.	No Risk
Ardea ibis	Cattle Egret	Migratory	59542	The Cattle egret occurs in tropical and temperate grasslands, wooded lands and terrestrial wetlands. It often forages away from water on low lying grasslands, improved pastures and croplands and is commonly found in cattle fields and other farm areas that contain livestock.	Observed towards the west of the site where paddocks contained cattle.	No Risk
Gallinago hardwickii	Latham's Snipe	Migratory	863	Latham's Snipe occurs in permanent and ephemeral wetlands. They usually inhabit open, freshwater wetlands with low, dense vegetation.	No suitable habitat was observed throughout the assessment area.	No Risk
Rostratula benghalensis	Painted Snipe	Endangered/ Migratory	889	The Australian Painted Snipe generally inhabits shallow terrestrial freshwater wetlands, including temporary and permanent lakes, swamps and clay pans. The also utilise inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains.	No suitable habitat was observed throughout the assessment area.	No Risk
Other Matters Protected by the EPBC Act						
Listed Marine Species (others not listed above)						
Species	**Common Name**	**Status**	**EPBC Code**	**Description of Community / Habitat**	**Likelihood of Occurrence**	**Risk**
Anseranas semipalmata	Magpie Goose		978	The magpie goose is mainly found in shallow wetlands with dense growth or rushes or sedges.	No suitable habitat was observed throughout the assessment area.	No Risk
Pandion haliaetus	Osprey		952	Eastern Ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. They are mostly found in coastal areas but occasionally travel inland along major rivers.	No suitable habitat was observed throughout the assessment area.	No Risk

Appendix G

SAT Survey Results

Koala SAT Data Sheet

Location: Undullah **Date:** 8.10.2014

Site Number: 1 **Recorder:** Angela/Dave **Locality:**

Start point: 493029 • 39 **N** 6921329 • 08 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Eucalyptus seeana	Narrow-leaved Red Gum	430	
2	Eucalyptus seeana	Narrow-leaved Red Gum	290	
3	Eucalyptus seeana	Narrow-leaved Red Gum	430	
4	Corymbia citriodora	Spotted Gum	500	
5	Alphitonia excelsa	Red Ash	150	
6	Acacia disparrima	Hickory Wattle	100	
7	Eucalyptus seeana	Narrow-leaved Red Gum	220	
8	Eucalyptus seeana	Narrow-leaved Red Gum	180	
9	Eucalyptus crebra	Narrow-leaved Ironbark	330	
10	Acacia disparrima	Hickory Wattle	200	
11	Acacia disparrima	Hickory Wattle	140	
12	Eucalyptus crebra	Narrow-leaved Ironbark	450	
13	Eucalyptus siderophloia	Grey Ironbark	200	
14	Eucalyptus siderophloia	Grey Ironbark	220	
15	Alphitonia excelsa	Red Ash	130	
16	Acacia disparrima	Hickory Wattle	140	
17	Alphitonia excelsa	Red Ash	100	
18	Eucalyptus tereticornis	Forest Red Gum	230	
19	Eucalyptus siderophloia	Grey Ironbark	300	
20	Alphitonia excelsa	Red Ash	170	
21	Eucalyptus siderophloia	Grey Ironbark	230	
22	Eucalyptus seeana	Narrow-leaved Red Gum	500	
23	Acacia disparrima	Hickory Wattle	120	
24	Acacia disparrima	Hickory Wattle	110	
25	Eucalyptus seeana	Narrow-leaved Red Gum	470	
26	Eucalyptus tereticornis	Forest Red Gum	210	
27	Alphitonia excelsa	Red Ash	150	
28	Eucalyptus tereticornis	Forest Red Gum	250	
29	Corymbia intermedia	Pink Bloodwood	360	
30	Eucalyptus tereticornis	Forest Red Gum	200	

Assessment radius (m): 15 **Percentage trees utilised (%):** 0 **Usage:** -

Notes: Recent fire evidence (burnt understorey), scattered Lantana shrubs, northern end of floodplain

Koala SAT Data Sheet

Location: Undullah **Date:** 8.10.2014

Site Number: 2 **Recorder:** Angela/Dave **Locality:**

Start point: 492524 • 56 **N** 6921417 • 23 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Eucalyptus tereticornis	Forest Red Gum	320	
2	Corymbia citriodora	Spotted Gum	210	
3	Corymbia citriodora	Spotted Gum	110	
4	Corymbia citriodora	Spotted Gum	100	
5	Corymbia intermedia	Pink Bloodwood	140	
6	Corymbia citriodora	Spotted Gum	230	
7	Acacia disparrima	Hickory Wattle	100	
8	Corymbia intermedia	Pink Bloodwood	120	
9	Acacia disparrima	Hickory Wattle	120	
10	Eucalyptus crebra	Narrow-leaved Ironbark	130	
11	Acacia disparrima	Hickory Wattle	120	
12	Corymbia citriodora	Spotted Gum	190	
13	Alphitonia excelsa	Red Ash	150	
14	Corymbia intermedia	Pink Bloodwood	100	
15	Corymbia citriodora	Spotted Gum	120	
16	Corymbia intermedia	Pink Bloodwood	190	
17	Eucalyptus crebra	Narrow-leaved Ironbark	120	
18	Eucalyptus tereticornis	Forest Red Gum	100	
19	Eucalyptus siderophloia	Grey Ironbark	120	
20	Alphitonia excelsa	Red Ash	130	
21	Acacia disparrima	Hickory Wattle	110	
22	Acacia disparrima	Hickory Wattle	190	
23	Eucalyptus siderophloia	Grey Ironbark	210	
24	Corymbia intermedia	Pink Bloodwood	250	
25	Eucalyptus crebra	Narrow-leaved Ironbark	160	
26	Alphitonia excelsa	Red Ash	190	
27	Corymbia citriodora	Spotted Gum	200	
28	Acacia disparrima	Hickory Wattle	100	
29	Acacia disparrima	Hickory Wattle	120	
30	Corymbia intermedia	Pink Bloodwood	180	

Assessment radius (m): 20 **Percentage trees utilised (%):** 0 **Usage:** -

Notes: some fire evidence, greater density of Lantana shrubs

Koala SAT Data Sheet

Location: Undullah **Date:** 8.10.2014

Site Number: 3 **Recorder:** Angela/Dave **Locality:**

Start point: 492037 • 04 **N** 6921480 • 40 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	240	
2	Corymbia citriodora	Spotted Gum	100	
3	Corymbia citriodora	Spotted Gum	110	
4	Corymbia citriodora	Spotted Gum	130	
5	Corymbia citriodora	Spotted Gum	110	Koala scat (old)
6	Corymbia citriodora	Spotted Gum	210	
7	Corymbia citriodora	Spotted Gum	200	
8	Corymbia citriodora	Spotted Gum	100	
9	Corymbia citriodora	Spotted Gum	310	
10	Corymbia citriodora	Spotted Gum	100	
11	Corymbia citriodora	Spotted Gum	300	
12	Corymbia citriodora	Spotted Gum	280	
13	Corymbia intermedia	Pink Bloodwood	100	
14	Corymbia intermedia	Pink Bloodwood	200	
15	Corymbia citriodora	Spotted Gum	100	
16	Corymbia citriodora	Spotted Gum	100	
17	Angophora leiocarpa	Smooth-barked Apple	300	
18	Angophora leiocarpa	Smooth-barked Apple	120	
19	Corymbia intermedia	Pink Bloodwood	150	
20	Corymbia citriodora	Spotted Gum	160	
21	Corymbia intermedia	Pink Bloodwood	120	
22	Corymbia citriodora	Spotted Gum	210	
23	Corymbia citriodora	Spotted Gum	150	
24	Corymbia citriodora	Spotted Gum	100	
25	Corymbia citriodora	Spotted Gum	110	
26	Corymbia citriodora	Spotted Gum	200	
27	Corymbia citriodora	Spotted Gum	120	
28	Corymbia citriodora	Spotted Gum	380	
29	Corymbia citriodora	Spotted Gum	600	Koala scat
30	Corymbia citriodora	Spotted Gum	120	

Assessment radius (m): 25 **Percentage trees utilised (%):** 6.66 **Usage:** Low

Notes: old evidence of fire, thick shrub layer, regrowth C.citriodora dominated, evidence of cattle

Koala SAT Data Sheet

Location: Undullah **Date:** 8.10.2014

Site Number: 4 **Recorder:** Angela/Dave **Locality:**

Start point: 491550 • 99 **N** 6921564 • 08 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia intermedia	Pink Bloodwood	440	
2	Lophostemon sauveolens	Swamp Box	110	
3	Lophostemon sauveolens	Swamp Box	310	
4	Corymbia intermedia	Pink Bloodwood	110	
5	Lophostemon sauveolens	Swamp Box	130	
6	Lophostemon sauveolens	Swamp Box	110	
7	Lophostemon sauveolens	Swamp Box	120	
8	Lophostemon sauveolens	Swamp Box	120	
9	Lophostemon sauveolens	Swamp Box	100	
10	Lophostemon sauveolens	Swamp Box	230	
11	Corymbia intermedia	Pink Bloodwood	200	
12	Corymbia intermedia	Pink Bloodwood	170	
13	Lophostemon sauveolens	Swamp Box	200	
14	Lophostemon sauveolens	Swamp Box	120	
15	Lophostemon sauveolens	Swamp Box	200	
16	Eucalyptus tereticornis	Forest Red Gum	480	Koala scat (old)
17	Lophostemon sauveolens	Swamp Box	120	
18	Lophostemon sauveolens	Swamp Box	140	
19	Eucalyptus tereticornis	Forest Red Gum	300	
20	Corymbia intermedia	Pink Bloodwood	100	
21	Eucalyptus tereticornis	Forest Red Gum	260	
22	Lophostemon sauveolens	Swamp Box	120	
23	Corymbia intermedia	Pink Bloodwood	120	
24	Eucalyptus tereticornis	Forest Red Gum	400	
25	Lophostemon sauveolens	Swamp Box	170	
26	Lophostemon sauveolens	Swamp Box	100	
27	Angophora leiocarpa	Smooth-barked Apple	140	
28	Corymbia intermedia	Pink Bloodwood	370	
29	Corymbia intermedia	Pink Bloodwood	320	
30	Corymbia intermedia	Pink Bloodwood	190	

Assessment radius (m): 17 **Percentage trees utilised (%):** 3.33 **Usage:** Low

Notes: lower slopes, L.sauveolens dominated

Koala SAT Data Sheet

Location: Undullah **Date:** 8.10.2014

Site Number: 5 **Recorder:** Angela/Dave **Locality:**

Start point: 491066 • 03 **N** 6921648 • 48 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Eucalyptus moluccana	Gum-topped Box	440	
2	Corymbia citriodora	Spotted Gum	170	
3	Corymbia citriodora	Spotted Gum	100	
4	Corymbia citriodora	Spotted Gum	400	
5	Eucalyptus moluccana	Gum-topped Box	260	
6	Corymbia citriodora	Spotted Gum	110	
7	Corymbia citriodora	Spotted Gum	400	
8	Corymbia citriodora	Spotted Gum	130	
9	Corymbia citriodora	Spotted Gum	410	
10	Corymbia citriodora	Spotted Gum	160	
11	Corymbia citriodora	Spotted Gum	150	
12	Corymbia citriodora	Spotted Gum	200	
13	Corymbia citriodora	Spotted Gum	130	
14	Corymbia intermedia	Pink Bloodwood	120	
15	Corymbia citriodora	Spotted Gum	140	
16	Corymbia citriodora	Spotted Gum	350	
17	Corymbia citriodora	Spotted Gum	300	Koala scat
18	Corymbia citriodora	Spotted Gum	450	
19	Eucalyptus moluccana	Gum-topped Box	410	Koala scat
20	Corymbia citriodora	Spotted Gum	320	
21	Corymbia citriodora	Spotted Gum	330	
22	Corymbia citriodora	Spotted Gum	450	Koala scat
23	Angophora leiocarpa	Smooth-barked Apple	230	
24	Corymbia citriodora	Spotted Gum	700	
25	Corymbia citriodora	Spotted Gum	270	
26	Corymbia citriodora	Spotted Gum	100	
27	Corymbia citriodora	Spotted Gum	100	
28	Corymbia citriodora	Spotted Gum	410	
29	Corymbia citriodora	Spotted Gum	100	
30	Corymbia citriodora	Spotted Gum	120	

Assessment radius (m): 50 **Percentage trees utilised (%):** 10 **Usage:** **Low**

Notes:

Koala SAT Data Sheet

Location: Undullah **Date:** 8.10.2014

Site Number: 6 **Recorder:** Angela/Dave **Locality:**

Start point: 490653 • 50 **N** 6922234 • 04 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	600	
2	Corymbia citriodora	Spotted Gum	280	
3	Corymbia citriodora	Spotted Gum	220	
4	Corymbia citriodora	Spotted Gum	400	
5	Corymbia citriodora	Spotted Gum	290	
6	Corymbia citriodora	Spotted Gum	150	
7	Corymbia citriodora	Spotted Gum	180	
8	Corymbia citriodora	Spotted Gum	120	
9	Corymbia citriodora	Spotted Gum	480	
10	Eucalyptus tereticornis	Forest Red Gum	320	
11	Corymbia citriodora	Spotted Gum	350	
12	Corymbia citriodora	Spotted Gum	250	
13	Corymbia citriodora	Spotted Gum	100	
14	Corymbia citriodora	Spotted Gum	230	
15	Corymbia citriodora	Spotted Gum	410	
16	Corymbia citriodora	Spotted Gum	420	
17	Corymbia citriodora	Spotted Gum	200	
18	Corymbia citriodora	Spotted Gum	270	
19	Corymbia citriodora	Spotted Gum	220	
20	Corymbia citriodora	Spotted Gum	180	
21	Corymbia citriodora	Spotted Gum	120	
22	Corymbia citriodora	Spotted Gum	260	
23	Corymbia citriodora	Spotted Gum	210	
24	Corymbia citriodora	Spotted Gum	360	
25	Corymbia citriodora	Spotted Gum	200	
26	Corymbia citriodora	Spotted Gum	240	
27	Corymbia citriodora	Spotted Gum	400	
28	Corymbia citriodora	Spotted Gum	300	
29	Corymbia citriodora	Spotted Gum	450	
30	Eucalyptus moluccana	Gum-topped Box	600	

Assessment radius (m): 40 **Percentage trees utilised (%):** 0 **Usage:** -

Notes:

Koala SAT Data Sheet

Location: Undullah **Date:** 8.10.2014

Site Number: 7 **Recorder:** Angela/Dave **Locality:**

Start point: 490717 • 43 **N** 6922718 • 04 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	330	
2	Corymbia citriodora	Spotted Gum	330	
3	Eucalyptus crebra	Narrow-leaved Ironbark	140	
4	Corymbia citriodora	Spotted Gum	230	
5	Corymbia citriodora	Spotted Gum	180	
6	Eucalyptus tereticornis	Forest Red Gum	190	
7	Corymbia citriodora	Spotted Gum	300	
8	Eucalyptus crebra	Narrow-leaved Ironbark	210	
9	Corymbia citriodora	Spotted Gum	170	
10	Corymbia citriodora	Spotted Gum	290	
11	Eucalyptus crebra	Narrow-leaved Ironbark	180	
12	Corymbia citriodora	Spotted Gum	180	
13	Corymbia citriodora	Spotted Gum	340	
14	Eucalyptus crebra	Narrow-leaved Ironbark	220	
15	Allocasurina littoralis	Black She Oak	210	
16	Eucalyptus crebra	Narrow-leaved Ironbark	200	
17	Eucalyptus crebra	Narrow-leaved Ironbark	750	
18	Corymbia citriodora	Spotted Gum	230	
19	Corymbia citriodora	Spotted Gum	180	
20	Eucalyptus moluccana	Gum-topped Box	400	
21	Corymbia citriodora	Spotted Gum	140	
22	Corymbia citriodora	Spotted Gum	350	
23	Corymbia citriodora	Spotted Gum	440	
24	Corymbia citriodora	Spotted Gum	220	
25	Eucalyptus crebra	Narrow-leaved Ironbark	110	
26	Eucalyptus crebra	Narrow-leaved Ironbark	240	
27	Corymbia citriodora	Spotted Gum	290	
28	Corymbia citriodora	Spotted Gum	180	
29	Corymbia citriodora	Spotted Gum	250	
30	Corymbia citriodora	Spotted Gum	410	

Assessment radius (m): 40 **Percentage trees utilised (%):** 0 **Usage:** -

Notes: south facing slope, evidence of logging, scattered Lantana shrubs

Koala SAT Data Sheet

Location: Undullah **Date:** 8.10.2014

Site Number: 8 **Recorder:** Angela/Dave **Locality:**

Start point: 491145 • 21 **N** 6922149 • 94 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	400	
2	Corymbia citriodora	Spotted Gum	100	
3	Corymbia intermedia	Pink Bloodwood	200	
4	Eucalyptus crebra	Narrow-leaved Ironbark	150	
5	Corymbia citriodora	Spotted Gum	220	
6	Eucalyptus tereticornis	Forest Red Gum	230	
7	Corymbia citriodora	Spotted Gum	230	
8	Corymbia citriodora	Spotted Gum	110	
9	Corymbia citriodora	Spotted Gum	320	
10	Corymbia citriodora	Spotted Gum	200	
11	Eucalyptus moluccana	Gum-topped Box	100	
12	Corymbia citriodora	Spotted Gum	300	
13	Corymbia citriodora	Spotted Gum	300	
14	Eucalyptus moluccana	Gum-topped Box	110	
15	Corymbia intermedia	Pink Bloodwood	240	
16	Corymbia intermedia	Pink Bloodwood	230	
17	Corymbia intermedia	Pink Bloodwood	240	
18	Eucalyptus crebra	Narrow-leaved Ironbark	200	
19	Lophostemon sauveolens	Swamp Box	110	
20	Corymbia intermedia	Pink Bloodwood	310	
21	Corymbia citriodora	Spotted Gum	130	
22	Corymbia citriodora	Spotted Gum	410	
23	Corymbia citriodora	Spotted Gum	110	
24	Corymbia citriodora	Spotted Gum	120	Koala scat (old)
25	Corymbia citriodora	Spotted Gum	160	
26	Eucalyptus crebra	Narrow-leaved Ironbark	220	
27	Corymbia citriodora	Spotted Gum	200	
28	Corymbia citriodora	Spotted Gum	200	
29	Corymbia citriodora	Spotted Gum	220	
30	Corymbia citriodora	Spotted Gum	390	

Assessment radius (m): 40 **Percentage trees utilised (%):** 3.33 **Usage:** **Low**

Notes: high numbers of dead trees, thick shrub (Lantana and wattles), evidence of fire and logging

Koala SAT Data Sheet

Location: Undullah **Date:** 8.10.2014

Site Number: 9 **Recorder:** Angela/Dave **Locality:**

Start point: 491213 • 67 **N** 6922643 • 64 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	750	
2	Corymbia citriodora	Spotted Gum	120	
3	Eucalyptus tereticornis	Forest Red Gum	220	
4	Corymbia citriodora	Spotted Gum	420	
5	Corymbia citriodora	Spotted Gum	270	
6	Eucalyptus tereticornis	Forest Red Gum	280	
7	Eucalyptus tereticornis	Forest Red Gum	200	
8	Corymbia citriodora	Spotted Gum	310	
9	Alphitonia excelsa	Red Ash	160	
10	Acacia disparrima	Hickory Wattle	170	
11	Eucalyptus tereticornis	Forest Red Gum	160	
12	Corymbia citriodora	Spotted Gum	320	
13	Eucalyptus tereticornis	Forest Red Gum	300	
14	Corymbia citriodora	Spotted Gum	210	
15	Alphitonia excelsa	Red Ash	110	
16	Eucalyptus crebra	Narrow-leaved Ironbark	300	
17	Eucalyptus crebra	Narrow-leaved Ironbark	250	
18	Eucalyptus moluccana	Gum-topped Box	130	
19	Eucalyptus crebra	Narrow-leaved Ironbark	140	
20	Corymbia citriodora	Spotted Gum	220	
21	Corymbia citriodora	Spotted Gum	330	
22	Corymbia tessellaris	Moreton Bay Ash	120	
23	Allocasuarina torulosa	Forest She-Oak	120	
24	Eucalyptus crebra	Narrow-leaved Ironbark	350	
25	Eucalyptus crebra	Narrow-leaved Ironbark	300	
26	Corymbia citriodora	Spotted Gum	100	
27	Corymbia citriodora	Spotted Gum	290	
28	Eucalyptus crebra	Narrow-leaved Ironbark	200	
29	Corymbia citriodora	Spotted Gum	300	
30	Alphitonia excelsa	Red Ash	130	

Assessment radius (m): 30 **Percentage trees utilised (%):** 0 **Usage:** -

Notes:

Koala SAT Data Sheet

Location: Undullah **Date:** 8.10.2014

Site Number: 10 **Recorder:** Angela/Dave **Locality:**

Start point: 491624 • 24 **N** 6922067 • 46 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	420	
2	Corymbia citriodora	Spotted Gum	200	
3	Corymbia citriodora	Spotted Gum	130	
4	Corymbia citriodora	Spotted Gum	300	
5	Alphitonia excelsa	Red Ash	160	
6	Corymbia tessellaris	Moreton Bay Ash	150	
7	Angophora leiocarpa	Smooth-barked Apple	270	
8	Eucalyptus melanophloia	Silver-leaved Ironbark	320	
9	Acacia disparrima	Hickory Wattle	120	
10	Corymbia citriodora	Spotted Gum	110	
11	Corymbia citriodora	Spotted Gum	110	
12	Corymbia citriodora	Spotted Gum	130	
13	Angophora leiocarpa	Smooth-barked Apple	600	
14	Corymbia citriodora	Spotted Gum	400	
15	Corymbia citriodora	Spotted Gum	410	
16	Corymbia tessellaris	Moreton Bay Ash	110	
17	Corymbia tessellaris	Moreton Bay Ash	110	
18	Corymbia tessellaris	Moreton Bay Ash	130	
19	Corymbia citriodora	Spotted Gum	450	
20	Corymbia citriodora	Spotted Gum	200	
21	Corymbia citriodora	Spotted Gum	160	
22	Eucalyptus moluccana	Gum-topped Box	320	
23	Corymbia citriodora	Spotted Gum	200	
24	Eucalyptus moluccana	Gum-topped Box	130	
25	Eucalyptus moluccana	Gum-topped Box	430	
26	Eucalyptus crebra	Narrow-leaved Ironbark	110	
27	Eucalyptus moluccana	Gum-topped Box	420	
28	Eucalyptus moluccana	Gum-topped Box	180	
29	Eucalyptus moluccana	Gum-topped Box	500	
30	Corymbia citriodora	Spotted Gum	160	

Assessment radius (m): 25 **Percentage trees utilised (%):** 0 **Usage:** -

Notes:

Koala SAT Data Sheet

Location: Undullah **Date:** 8.10.2014

Site Number: 11 **Recorder:** Angela/Dave **Locality:**

Start point: 492110 • 22 **N** 6921979 • 97 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	450	
2	Corymbia citriodora	Spotted Gum	180	
3	Eucalyptus crebra	Narrow-leaved Ironbark	140	
4	Eucalyptus crebra	Narrow-leaved Ironbark	190	
5	Corymbia citriodora	Spotted Gum	150	
6	Corymbia citriodora	Spotted Gum	420	
7	Corymbia citriodora	Spotted Gum	140	Koala scat
8	Corymbia citriodora	Spotted Gum	290	
9	Corymbia citriodora	Spotted Gum	250	
10	Eucalyptus moluccana	Gum-topped Box	220	
11	Corymbia citriodora	Spotted Gum	340	
12	Corymbia citriodora	Spotted Gum	180	
13	Corymbia citriodora	Spotted Gum	200	
14	Corymbia citriodora	Spotted Gum	110	
15	Eucalyptus moluccana	Gum-topped Box	260	
16	Corymbia citriodora	Spotted Gum	450	
17	Eucalyptus moluccana	Gum-topped Box	120	
18	Eucalyptus moluccana	Gum-topped Box	200	Koala scat
19	Corymbia citriodora	Spotted Gum	170	
20	Eucalyptus crebra	Narrow-leaved Ironbark	180	
21	Corymbia citriodora	Spotted Gum	360	
22	Corymbia citriodora	Spotted Gum	380	
23	Corymbia citriodora	Spotted Gum	210	
24	Eucalyptus crebra	Narrow-leaved Ironbark	180	
25	Corymbia tessellaris	Moreton Bay Ash	150	
26	Corymbia intermedia	Pink Bloodwood	210	
27	Eucalyptus siderophloia	Grey Ironbark	180	
28	Eucalyptus moluccana	Gum-topped Box	190	
29	Corymbia citriodora	Spotted Gum	450	
30	Corymbia citriodora	Spotted Gum	100	

Assessment radius (m): 25 **Percentage trees utilised (%):** 6.66 **Usage:** Low

Notes:

Koala SAT Data Sheet

Location: Undullah **Date:** 8.10.2014

Site Number: 12 **Recorder:** Angela/Dave **Locality:**

Start point: 492614 • 17 **N** 6921902 • 49 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	240	
2	Corymbia citriodora	Spotted Gum	400	
3	Corymbia citriodora	Spotted Gum	260	
4	Corymbia citriodora	Spotted Gum	100	
5	Corymbia citriodora	Spotted Gum	1000	
6	Corymbia citriodora	Spotted Gum	180	
7	Corymbia citriodora	Spotted Gum	410	
8	Corymbia citriodora	Spotted Gum	130	
9	Corymbia citriodora	Spotted Gum	150	
10	Corymbia citriodora	Spotted Gum	110	
11	Corymbia citriodora	Spotted Gum	150	
12	Corymbia citriodora	Spotted Gum	120	
13	Corymbia citriodora	Spotted Gum	100	
14	Corymbia citriodora	Spotted Gum	550	
15	Corymbia citriodora	Spotted Gum	100	
16	Corymbia citriodora	Spotted Gum	400	
17	Corymbia citriodora	Spotted Gum	140	
18	Corymbia citriodora	Spotted Gum	130	
19	Corymbia citriodora	Spotted Gum	150	
20	Corymbia citriodora	Spotted Gum	120	
21	Corymbia citriodora	Spotted Gum	200	
22	Corymbia citriodora	Spotted Gum	300	
23	Corymbia citriodora	Spotted Gum	100	
24	Corymbia citriodora	Spotted Gum	180	
25	Corymbia citriodora	Spotted Gum	110	
26	Corymbia citriodora	Spotted Gum	190	
27	Corymbia citriodora	Spotted Gum	100	
28	Corymbia citriodora	Spotted Gum	150	
29	Corymbia citriodora	Spotted Gum	130	
30	Corymbia citriodora	Spotted Gum	220	

Assessment radius (m): 25 **Percentage trees utilised (%):** 0 **Usage:** -

Notes:

Koala SAT Data Sheet

Location: Undullah **Date:** 9.10.2014

Site Number: 13 **Recorder:** Angela/Dave **Locality:**

Start point: 492697 • 15 **N** 6922395 • 02 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Eucalyptus tereticornis	Forest Red Gum	210	
2	Corymbia intermedia	Pink Bloodwood	170	
3	Corymbia intermedia	Pink Bloodwood	100	
4	Corymbia citriodora	Spotted Gum	110	
5	Corymbia intermedia	Pink Bloodwood	190	
6	Corymbia intermedia	Pink Bloodwood	180	
7	Corymbia intermedia	Pink Bloodwood	150	
8	Eucalyptus tereticornis	Forest Red Gum	190	
9	Corymbia intermedia	Pink Bloodwood	190	
10	Eucalyptus tereticornis	Forest Red Gum	260	
11	Corymbia citriodora	Spotted Gum	200	
12	Corymbia citriodora	Spotted Gum	100	
13	Eucalyptus tereticornis	Forest Red Gum	190	
14	Eucalyptus siderophloia	Grey Ironbark	100	
15	Corymbia citriodora	Spotted Gum	290	
16	Corymbia intermedia	Pink Bloodwood	150	
17	Corymbia citriodora	Spotted Gum	400	
18	Corymbia intermedia	Pink Bloodwood	130	
19	Corymbia citriodora	Spotted Gum	300	
20	Acacia disparrima	Hickory Wattle	120	
21	Corymbia citriodora	Spotted Gum	600	
22	Corymbia intermedia	Pink Bloodwood	210	
23	Eucalyptus crebra	Narrow-leaved Ironbark	320	
24	Acacia disparrima	Hickory Wattle	200	
25	Corymbia citriodora	Spotted Gum	280	
26	Corymbia citriodora	Spotted Gum	310	
27	Acacia disparrima	Hickory Wattle	160	
28	Acacia disparrima	Hickory Wattle	200	
29	Allocasuarina littoralis	Black She-Oak	120	
30	Eucalyptus crebra	Narrow-leaved Ironbark	180	

Assessment radius (m): 25 **Percentage trees utilised (%):** 0 **Usage:** -

Notes:

Koala SAT Data Sheet

Location: Undullah **Date:** 9.10.2014

Site Number: 14 **Recorder:** Angela/Dave **Locality:**

Start point: 492182 • 84 **N** 6922502 • 25 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Eucalyptus tereticornis	Forest Red Gum	620	
2	Corymbia citriodora	Spotted Gum	450	
3	Eucalyptus crebra	Narrow-leaved Ironbark	350	
4	Corymbia citriodora	Spotted Gum	120	
5	Corymbia citriodora	Spotted Gum	290	
6	Acacia disparrima	Hickory Wattle	150	
7	Eucalyptus tereticornis	Forest Red Gum	290	
8	Acacia disparrima	Hickory Wattle	100	
9	Alphitonia excelsa	Red Ash	140	
10	Acacia disparrima	Hickory Wattle	190	
11	Eucalyptus siderophloia	Grey Ironbark	200	
12	Corymbia citriodora	Spotted Gum	360	
13	Corymbia citriodora	Spotted Gum	300	
14	Acacia disparrima	Hickory Wattle	120	
15	Corymbia citriodora	Spotted Gum	190	
16	Eucalyptus tereticornis	Forest Red Gum	230	Koala scat
17	Acacia disparrima	Hickory Wattle	110	
18	Acacia disparrima	Hickory Wattle	260	
19	Acacia disparrima	Hickory Wattle	190	
20	Corymbia citriodora	Spotted Gum	600	
21	Corymbia citriodora	Spotted Gum	160	
22	Acacia disparrima	Hickory Wattle	190	
23	Acacia disparrima	Hickory Wattle	200	
24	Acacia disparrima	Hickory Wattle	200	
25	Corymbia citriodora	Spotted Gum	400	
26	Corymbia citriodora	Spotted Gum	200	
27	Corymbia citriodora	Spotted Gum	500	
28	Corymbia citriodora	Spotted Gum	220	
29	Corymbia citriodora	Spotted Gum	140	
30	Corymbia citriodora	Spotted Gum	110	

Assessment radius (m): 40 **Percentage trees utilised (%):** 3.33 **Usage:** **Low**

Notes: moved from open paddock area, Lantana undergrowth

Koala SAT Data Sheet

Location: Undullah **Date:** 9.10.2014

Site Number: 15 **Recorder:** Angela/Dave **Locality:**

Start point: 492275 • 25 **N** 6922965 • 25 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia intermedia	Pink Bloodwood	360	
2	Corymbia citriodora	Spotted Gum	140	
3	Eucalyptus moluccana	Gum-topped Box	110	
4	Acacia disparrima	Hickory Wattle	130	
5	Acacia concurrens	Black Wattle	110	
6	Acacia concurrens	Black Wattle	110	
7	Acacia concurrens	Black Wattle	110	
8	Acacia concurrens	Black Wattle	110	
9	Acacia concurrens	Black Wattle	110	
10	Eucalyptus tereticornis	Forest Red Gum	120	
11	Corymbia intermedia	Pink Bloodwood	110	
12	Acacia disparrima	Hickory Wattle	140	
13	Corymbia citriodora	Spotted Gum	350	
14	Acacia disparrima	Hickory Wattle	100	
15	Alphitonia excelsa	Red Ash	100	
16	Corymbia intermedia	Pink Bloodwood	100	
17	Acacia concurrens	Black Wattle	110	
18	Acacia disparrima	Hickory Wattle	190	
19	Corymbia citriodora	Spotted Gum	100	
20	Corymbia tessellaris	Moreton Bay Ash	140	
21	Alphitonia excelsa	Red Ash	100	
22	Acacia concurrens	Black Wattle	180	
23	Corymbia citriodora	Spotted Gum	230	
24	Corymbia tessellaris	Moreton Bay Ash	240	
25	Corymbia citriodora	Spotted Gum	140	
26	Corymbia citriodora	Spotted Gum	140	
27	Corymbia tessellaris	Moreton Bay Ash	120	
28	Acacia disparrima	Hickory Wattle	110	
29	Acacia disparrima	Hickory Wattle	400	
30	Acacia disparrima	Hickory Wattle	120	

Assessment radius (m): 25 **Percentage trees utilised (%):** 0 **Usage:** -

Notes:

Koala SAT Data Sheet

Location: Undullah **Date:** 9.10.2014

Site Number: 16 **Recorder:** Angela/Dave **Locality:**

Start point: 491777 • 30 **N** 6923053 • 25 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	130	
2	Corymbia citriodora	Spotted Gum	200	
3	Acacia disparrima	Hickory Wattle	130	
4	Acacia concurrens	Black Wattle	130	
5	Corymbia citriodora	Spotted Gum	100	
6	Corymbia citriodora	Spotted Gum	120	
7	Acacia disparrima	Hickory Wattle	230	
8	Acacia disparrima	Hickory Wattle	100	
9	Acacia disparrima	Hickory Wattle	200	
10	Acacia concurrens	Black Wattle	120	
11	Corymbia tessellaris	Moreton Bay Ash	140	
12	Acacia concurrens	Black Wattle	100	
13	Acacia disparrima	Hickory Wattle	160	
14	Corymbia intermedia	Pink Bloodwood	210	
15	Acacia disparrima	Hickory Wattle	180	
16	Corymbia tessellaris	Moreton Bay Ash	150	
17	Corymbia citriodora	Spotted Gum	110	
18	Corymbia citriodora	Spotted Gum	290	
19	Acacia disparrima	Hickory Wattle	130	
20	Acacia concurrens	Black Wattle	180	
21	Eucalyptus crebra	Narrow-leaved Ironbark	130	
22	Acacia concurrens	Black Wattle	260	
23	Corymbia citriodora	Spotted Gum	100	
24	Corymbia intermedia	Pink Bloodwood	230	
25	Corymbia intermedia	Pink Bloodwood	230	
26	Corymbia citriodora	Spotted Gum	270	
27	Corymbia citriodora	Spotted Gum	140	
28	Eucalyptus siderophloia	Grey Ironbark	170	
29	Corymbia citriodora	Spotted Gum	180	
30	Corymbia citriodora	Spotted Gum	160	

Assessment radius (m): 40 **Percentage trees utilised (%):** 0 **Usage:** -

Notes: very dense Lantana

Koala SAT Data Sheet

Location: Undullah **Date:** 9.10.2014

Site Number: 17 **Recorder:** Angela/Dave **Locality:**

Start point: 491725 • 82 **N** 6922574 • 40 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Alphitonia excelsa	Red Ash	120	
2	Corymbia tessellaris	Moreton Bay Ash	100	
3	Corymbia tessellaris	Moreton Bay Ash	170	
4	Alphitonia excelsa	Red Ash	190	
5	Corymbia tessellaris	Moreton Bay Ash	210	
6	Corymbia tessellaris	Moreton Bay Ash	100	
7	Acacia disparrima	Hickory Wattle	190	
8	Corymbia citriodora	Spotted Gum	130	
9	Corymbia tessellaris	Moreton Bay Ash	100	
10	Alphitonia excelsa	Red Ash	110	
11	Acacia disparrima	Hickory Wattle	220	
12	Acacia disparrima	Hickory Wattle	100	
13	Acacia disparrima	Hickory Wattle	170	
14	Corymbia tessellaris	Moreton Bay Ash	220	
15	Corymbia tessellaris	Moreton Bay Ash	180	
16	Corymbia tessellaris	Moreton Bay Ash	300	
17	Acacia disparrima	Hickory Wattle	200	
18	Eucalyptus tereticornis	Forest Red Gum	550	
19	Corymbia tessellaris	Moreton Bay Ash	100	
20	Eucalyptus tereticornis	Forest Red Gum	270	
21	Eucalyptus tereticornis	Forest Red Gum	410	
22	Corymbia tessellaris	Moreton Bay Ash	100	
23	Acacia disparrima	Hickory Wattle	160	
24	Acacia disparrima	Hickory Wattle	140	
25	Alphitonia excelsa	Red Ash	220	
26	Corymbia citriodora	Spotted Gum	130	
27	Corymbia tessellaris	Moreton Bay Ash	110	
28	Acacia concurrens	Black Wattle	140	
29	Acacia disparrima	Hickory Wattle	200	
30	Corymbia tessellaris	Moreton Bay Ash	100	

Assessment radius (m): 30 **Percentage trees utilised (%):** 0 **Usage:** -

Notes: very dense Lantana

Koala SAT Data Sheet

Location: Undullah **Date:** 9.10.2014

Site Number: 18 **Recorder:** Angela/Dave **Locality:**

Start point: 492369 • 16 **N** 6923457 • 40 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	180	
2	Corymbia citriodora	Spotted Gum	200	
3	Corymbia citriodora	Spotted Gum	210	
4	Eucalyptus siderophloia	Grey Ironbark	120	
5	Corymbia citriodora	Spotted Gum	100	
6	Corymbia citriodora	Spotted Gum	160	
7	Corymbia citriodora	Spotted Gum	130	
8	Eucalyptus siderophloia	Grey Ironbark	110	
9	Corymbia citriodora	Spotted Gum	220	
10	Corymbia citriodora	Spotted Gum	200	
11	Eucalyptus siderophloia	Grey Ironbark	220	
12	Corymbia citriodora	Spotted Gum	100	
13	Corymbia citriodora	Spotted Gum	350	
14	Corymbia citriodora	Spotted Gum	200	
15	Eucalyptus crebra	Narrow-leaved Ironbark	220	
16	Corymbia tessellaris	Moreton Bay Ash	190	
17	Corymbia tessellaris	Moreton Bay Ash	220	
18	Corymbia tessellaris	Moreton Bay Ash	170	
19	Eucalyptus tereticornis	Forest Red Gum	210	
20	Corymbia citriodora	Spotted Gum	230	
21	Corymbia citriodora	Spotted Gum	130	
22	Eucalyptus tereticornis	Forest Red Gum	180	
23	Eucalyptus tereticornis	Forest Red Gum	420	
24	Eucalyptus crebra	Narrow-leaved Ironbark	140	
25	Eucalyptus crebra	Narrow-leaved Ironbark	200	
26	Eucalyptus tereticornis	Forest Red Gum	200	
27	Eucalyptus tereticornis	Forest Red Gum	190	
28	Corymbia citriodora	Spotted Gum	140	
29	Corymbia citriodora	Spotted Gum	410	
30	Corymbia citriodora	Spotted Gum	240	

Assessment radius (m): 30 **Percentage trees utilised (%):** 0 **Usage:** -

Notes: dense Lantana, evidence of logging

Koala SAT Data Sheet

Location: Undullah **Date:** 9.10.2014

Site Number: 19 **Recorder:** Angela/Dave **Locality:**

Start point: 492852 • 20 **N** 6923379 • 36 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Eucalyptus siderophloia	Grey Ironbark	140	
2	Alphitonia excelsa	Red Ash	100	
3	Corymbia citriodora	Spotted Gum	120	
4	Corymbia citriodora	Spotted Gum	220	
5	Alphitonia excelsa	Red Ash	100	
6	Corymbia citriodora	Spotted Gum	110	
7	Alphitonia excelsa	Red Ash	110	
8	Corymbia tessellaris	Moreton Bay Ash	200	
9	Eucalyptus tereticornis	Forest Red Gum	310	Koala scat (old)
10	Corymbia tessellaris	Moreton Bay Ash	180	
11	Corymbia citriodora	Spotted Gum	380	
12	Corymbia citriodora	Spotted Gum	210	
13	Eucalyptus tereticornis	Forest Red Gum	220	Koala scat
14	Corymbia citriodora	Spotted Gum	120	
15	Corymbia citriodora	Spotted Gum	300	
16	Eucalyptus tereticornis	Forest Red Gum	200	
17	Corymbia citriodora	Spotted Gum	120	
18	Eucalyptus tereticornis	Forest Red Gum	430	
19	Corymbia citriodora	Spotted Gum	360	
20	Corymbia citriodora	Spotted Gum	100	
21	Eucalyptus tereticornis	Forest Red Gum	290	
22	Corymbia citriodora	Spotted Gum	160	
23	Corymbia citriodora	Spotted Gum	260	
24	Eucalyptus siderophloia	Grey Ironbark	260	
25	Alphitonia excelsa	Red Ash	110	
26	Corymbia citriodora	Spotted Gum	400	
27	Corymbia tessellaris	Moreton Bay Ash	190	
28	Corymbia citriodora	Spotted Gum	110	
29	Corymbia citriodora	Spotted Gum	130	
30	Eucalyptus tereticornis	Forest Red Gum	190	

Assessment radius (m): 25 **Percentage trees utilised (%):** 6.66 **Usage:** Low

Notes: evidence of logging

Koala SAT Data Sheet

Location: Undullah **Date:** 9.10.2014

Site Number: 20 **Recorder:** Angela/Dave **Locality:**

Start point: 492934 • 84 **N** 6923871 • 36 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	200	
2	Eucalyptus moluccana	Gum-topped Box	110	
3	Eucalyptus moluccana	Gum-topped Box	220	
4	Eucalyptus moluccana	Gum-topped Box	0.21	
5	Eucalyptus moluccana	Gum-topped Box	300	
6	Corymbia citriodora	Spotted Gum	230	
7	Corymbia citriodora	Spotted Gum	320	
8	Eucalyptus tereticornis	Forest Red Gum	100	
9	Corymbia citriodora	Spotted Gum	160	
10	Eucalyptus moluccana	Gum-topped Box	250	
11	Eucalyptus moluccana	Gum-topped Box	150	
12	Corymbia citriodora	Spotted Gum	180	
13	Acacia disparrima	Hickory Wattle	150	
14	Eucalyptus moluccana	Gum-topped Box	300	
15	Corymbia citriodora	Spotted Gum	130	
16	Eucalyptus tereticornis	Forest Red Gum	330	
17	Eucalyptus moluccana	Gum-topped Box	490	
18	Eucalyptus crebra	Narrow-leaved Ironbark	100	
19	Eucalyptus moluccana	Gum-topped Box	150	
20	Eucalyptus moluccana	Gum-topped Box	380	
21	Eucalyptus moluccana	Gum-topped Box	290	
22	Acacia disparrima	Hickory Wattle	100	
23	Eucalyptus moluccana	Gum-topped Box	250	
24	Corymbia citriodora	Spotted Gum	320	
25	Eucalyptus moluccana	Gum-topped Box	250	
26	Corymbia citriodora	Spotted Gum	350	
27	Eucalyptus tereticornis	Forest Red Gum	100	
28	Corymbia citriodora	Spotted Gum	280	
29	Acacia disparrima	Hickory Wattle	110	
30	Eucalyptus tereticornis	Forest Red Gum	230	

Assessment radius (m): 25 **Percentage trees utilised (%):** 0 **Usage:** -

Notes: little weed coverage, mid slope, evidence of logging

Koala SAT Data Sheet

Location: Undullah **Date:** 9.10.2014

Site Number: 21 **Recorder:** Angela/Dave **Locality:**

Start point: 493019 • 51 **N** 6924367 • 84 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	190	
2	Corymbia citriodora	Spotted Gum	450	
3	Corymbia citriodora	Spotted Gum	370	
4	Corymbia citriodora	Spotted Gum	230	
5	Corymbia citriodora	Spotted Gum	300	
6	Corymbia citriodora	Spotted Gum	350	
7	Corymbia citriodora	Spotted Gum	100	
8	Corymbia citriodora	Spotted Gum	100	
9	Corymbia citriodora	Spotted Gum	100	
10	Corymbia citriodora	Spotted Gum	160	
11	Corymbia citriodora	Spotted Gum	170	
12	Eucalyptus siderophloia	Grey Ironbark	110	
13	Corymbia citriodora	Spotted Gum	350	
14	Corymbia citriodora	Spotted Gum	420	
15	Eucalyptus crebra	Narrow-leaved Ironbark	110	
16	Eucalyptus crebra	Narrow-leaved Ironbark	300	
17	Corymbia citriodora	Spotted Gum	450	
18	Corymbia citriodora	Spotted Gum	190	
19	Corymbia citriodora	Spotted Gum	200	
20	Corymbia citriodora	Spotted Gum	400	
21	Corymbia citriodora	Spotted Gum	300	
22	Corymbia citriodora	Spotted Gum	200	
23	Corymbia citriodora	Spotted Gum	410	
24	Corymbia citriodora	Spotted Gum	320	
25	Corymbia citriodora	Spotted Gum	220	
26	Corymbia citriodora	Spotted Gum	400	
27	Corymbia citriodora	Spotted Gum	330	
28	Corymbia citriodora	Spotted Gum	490	
29	Corymbia citriodora	Spotted Gum	130	
30	Eucalyptus siderophloia	Grey Ironbark	110	

Assessment radius (m): 30 **Percentage trees utilised (%):** 0 **Usage:** -

Notes: very dense Lantana

Koala SAT Data Sheet

Location: Undullah **Date:** 9.10.2014

Site Number: 22 **Recorder:** Angela/Dave **Locality:**

Start point: 492526 • 30 **N** 6924450 • 76 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia intermedia	Pink Bloodwood	200	
2	Acacia concurrens	Black Wattle	200	
3	Acacia disparrima	Hickory Wattle	150	
4	Corymbia citriodora	Spotted Gum	240	
5	Acacia disparrima	Hickory Wattle	290	
6	Corymbia citriodora	Spotted Gum	110	
7	Eucalyptus crebra	Narrow-leaved Ironbark	480	
8	Acacia disparrima	Hickory Wattle	160	
9	Eucalyptus crebra	Narrow-leaved Ironbark	400	
10	Eucalyptus tereticornis	Forest Red Gum	320	
11	Acacia disparrima	Hickory Wattle	150	
12	Eucalyptus tereticornis	Forest Red Gum	590	
13	Corymbia citriodora	Spotted Gum	100	
14	Corymbia citriodora	Spotted Gum	100	
15	Eucalyptus crebra	Narrow-leaved Ironbark	130	
16	Corymbia tessellaris	Moreton Bay Ash	200	
17	Corymbia intermedia	Pink Bloodwood	330	
18	Corymbia citriodora	Spotted Gum	100	
19	Corymbia citriodora	Spotted Gum	140	
20	Acacia concurrens	Black Wattle	100	
21	Corymbia tessellaris	Moreton Bay Ash	120	
22	Corymbia citriodora	Spotted Gum	170	
23	Corymbia intermedia	Pink Bloodwood	100	
24	Corymbia intermedia	Pink Bloodwood	120	
25	Alphitonia excelsa	Red Ash	100	
26	Corymbia citriodora	Spotted Gum	110	
27	Corymbia citriodora	Spotted Gum	130	
28	Corymbia citriodora	Spotted Gum	130	
29	Acacia disparrima	Hickory Wattle	150	
30	Corymbia citriodora	Spotted Gum	190	

Assessment radius (m): 50 **Percentage trees utilised (%):** 0 **Usage:** -

Notes: very thick regrowth and Lantana

Koala SAT Data Sheet

Location: Undullah **Date:** 9.10.2014

Site Number: 23 **Recorder:** Angela/Dave **Locality:**

Start point: 492440 • 95 **N** 6923957 • 86 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	100	
2	Corymbia citriodora	Spotted Gum	110	
3	Corymbia citriodora	Spotted Gum	130	
4	Corymbia citriodora	Spotted Gum	170	
5	Acacia concurrens	Black Wattle	120	
6	Corymbia citriodora	Spotted Gum	170	
7	Corymbia citriodora	Spotted Gum	200	
8	Corymbia citriodora	Spotted Gum	200	
9	Acacia concurrens	Black Wattle	110	
10	Corymbia citriodora	Spotted Gum	170	
11	Acacia disparrima	Hickory Wattle	300	
12	Eucalyptus siderophloia	Grey Ironbark	200	
13	Eucalyptus siderophloia	Grey Ironbark	200	
14	Corymbia citriodora	Spotted Gum	220	
15	Eucalyptus siderophloia	Grey Ironbark	220	
16	Eucalyptus siderophloia	Grey Ironbark	120	
17	Corymbia citriodora	Spotted Gum	210	
18	Eucalyptus tereticornis	Forest Red Gum	220	
19	Corymbia tessellaris	Moreton Bay Ash	200	
20	Corymbia citriodora	Spotted Gum	130	
21	Eucalyptus tereticornis	Forest Red Gum	130	
22	Corymbia citriodora	Spotted Gum	200	
23	Corymbia citriodora	Spotted Gum	120	
24	Corymbia citriodora	Spotted Gum	370	Koala scat
25	Corymbia citriodora	Spotted Gum	210	
26	Eucalyptus crebra	Narrow-leaved Ironbark	200	Koala scat
27	Corymbia citriodora	Spotted Gum	190	
28	Corymbia citriodora	Spotted Gum	300	
29	Corymbia citriodora	Spotted Gum	120	
30	Eucalyptus tereticornis	Forest Red Gum	200	

Assessment radius (m): 25 **Percentage trees utilised (%):** 6.66 **Usage:** Low

Notes: evidence of logging

Koala SAT Data Sheet

Location: Undullah **Date:** 10.10.2014

Site Number: 24 **Recorder:** Angela/Dave **Locality:**

Start point: 491298 • 86 **N** 6923130 • 42 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia tessellaris	Moreton Bay Ash	140	
2	Corymbia citriodora	Spotted Gum	160	
3	Corymbia citriodora	Spotted Gum	360	
4	Corymbia tessellaris	Moreton Bay Ash	200	
5	Corymbia citriodora	Spotted Gum	320	
6	Corymbia citriodora	Spotted Gum	110	
7	Corymbia tessellaris	Moreton Bay Ash	100	
8	Corymbia citriodora	Spotted Gum	120	
9	Corymbia citriodora	Spotted Gum	400	
10	Eucalyptus tereticornis	Forest Red Gum	170	
11	Corymbia citriodora	Spotted Gum	190	
12	Corymbia citriodora	Spotted Gum	210	
13	Corymbia citriodora	Spotted Gum	100	
14	Corymbia citriodora	Spotted Gum	110	
15	Corymbia citriodora	Spotted Gum	450	Koala scat
16	Corymbia tessellaris	Moreton Bay Ash	100	
17	Corymbia citriodora	Spotted Gum	150	
18	Corymbia citriodora	Spotted Gum	480	Koala scat (old)
19	Eucalyptus tereticornis	Forest Red Gum	190	
20	Corymbia citriodora	Spotted Gum	200	
21	Corymbia tessellaris	Moreton Bay Ash	130	
22	Corymbia citriodora	Spotted Gum	380	
23	Corymbia tessellaris	Moreton Bay Ash	220	
24	Corymbia citriodora	Spotted Gum	100	
25	Acacia concurrens	Black Wattle	100	
26	Corymbia citriodora	Spotted Gum	180	
27	Corymbia citriodora	Spotted Gum	180	
28	Corymbia citriodora	Spotted Gum	150	
29	Corymbia citriodora	Spotted Gum	360	
30	Corymbia citriodora	Spotted Gum	110	

Assessment radius (m): 20 **Percentage trees utilised (%):** 6.66 **Usage:** **Low**

Notes: scattered Lantana with some creeping Lantana in ground layer

Koala SAT Data Sheet

Location: Undullah **Date:** 10.10.2014

Site Number: 25 **Recorder:** Angela/Dave **Locality:**

Start point: 490799 • 92 **N** 6923209 • 85 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Corymbia citriodora	Spotted Gum	380	
2	Corymbia tessellaris	Moreton Bay Ash	180	
3	Corymbia tessellaris	Moreton Bay Ash	100	
4	Corymbia tessellaris	Moreton Bay Ash	190	
5	Corymbia tessellaris	Moreton Bay Ash	100	
6	Corymbia tessellaris	Moreton Bay Ash	220	
7	Corymbia tessellaris	Moreton Bay Ash	200	
8	Corymbia citriodora	Spotted Gum	140	
9	Corymbia tessellaris	Moreton Bay Ash	300	
10	Corymbia citriodora	Spotted Gum	120	
11	Corymbia citriodora	Spotted Gum	120	
12	Eucalyptus siderophloia	Grey Ironbark	300	
13	Corymbia tessellaris	Moreton Bay Ash	410	
14	Corymbia tessellaris	Moreton Bay Ash	170	
15	Corymbia tessellaris	Moreton Bay Ash	130	
16	Corymbia intermedia	Pink Bloodwood	100	
17	Corymbia tessellaris	Moreton Bay Ash	130	
18	Eucalyptus siderophloia	Grey Ironbark	320	
19	Corymbia tessellaris	Moreton Bay Ash	320	
20	Eucalyptus siderophloia	Grey Ironbark	210	
21	Corymbia tessellaris	Moreton Bay Ash	120	
22	Corymbia tessellaris	Moreton Bay Ash	150	
23	Corymbia citriodora	Spotted Gum	110	
24	Eucalyptus crebra	Narrow-leaved Ironbark	210	
25	Corymbia tessellaris	Moreton Bay Ash	120	
26	Eucalyptus tereticornis	Forest Red Gum	400	
27	Corymbia tessellaris	Moreton Bay Ash	100	
28	Eucalyptus tereticornis	Forest Red Gum	330	
29	Corymbia citriodora	Spotted Gum	340	
30	Corymbia tessellaris	Moreton Bay Ash	230	

Assessment radius (m): 25 **Percentage trees utilised (%):** 0 **Usage:** -

Notes: lower-mid slope (steep), scattered Lantana shrubs, evidence of logging and fire

Koala SAT Data Sheet

Location: Undullah **Date:** 10.10.2014

Site Number: 26 **Recorder:** Angela/Dave **Locality:**

Start point: 490874 • 54 **N** 6923698 • 11 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Eucalyptus siderophloia	Grey Ironbark	320	
2	Corymbia citriodora	Spotted Gum	100	
3	Eucalyptus siderophloia	Grey Ironbark	320	
4	Eucalyptus siderophloia	Grey Ironbark	310	
5	Eucalyptus tereticornis	Forest Red Gum	290	
6	Eucalyptus siderophloia	Grey Ironbark	350	
7	Eucalyptus siderophloia	Grey Ironbark	450	
8	Eucalyptus tereticornis	Forest Red Gum	200	
9	Eucalyptus siderophloia	Grey Ironbark	400	
10	Corymbia citriodora	Spotted Gum	370	
11	Corymbia citriodora	Spotted Gum	100	
12	Corymbia tessellaris	Moreton Bay Ash	250	
13	Corymbia citriodora	Spotted Gum	120	
14	Corymbia tessellaris	Moreton Bay Ash	200	
15	Corymbia tessellaris	Moreton Bay Ash	210	
16	Corymbia tessellaris	Moreton Bay Ash	190	
17	Acacia disparrima	Hickory Wattle	100	
18	Alphitonia excelsa	Red Ash	120	
19	Eucalyptus siderophloia	Grey Ironbark	320	
20	Alphitonia excelsa	Red Ash	110	
21	Alphitonia excelsa	Red Ash	100	
22	Acacia disparrima	Hickory Wattle	190	
23	Eucalyptus crebra	Narrow-leaved Ironbark	400	
24	Eucalyptus siderophloia	Grey Ironbark	140	
25	Corymbia tessellaris	Moreton Bay Ash	220	
26	Corymbia tessellaris	Moreton Bay Ash	300	
27	Acacia disparrima	Hickory Wattle	190	
28	Eucalyptus tereticornis	Forest Red Gum	120	
29	Eucalyptus crebra	Narrow-leaved Ironbark	380	
30	Eucalyptus tereticornis	Forest Red Gum	400	

Assessment radius (m): 20 **Percentage trees utilised (%):** 0 **Usage:** -

Notes: scattered Lantana and thick creeping Lantana in ground layer, evidence of logging

Koala SAT Data Sheet

Location: Undullah **Date:** 10.10.2014

Site Number: 27 **Recorder:** Angela/Dave **Locality:**

Start point: 490962 • 33 **N** 6924198 • 87 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Eucalyptus siderophloia	Grey Ironbark	400	
2	Corymbia intermedia	Pink Bloodwood	130	
3	Corymbia tessellaris	Moreton Bay Ash	190	
4	Angophora subvelutina	Broad-leaved Apple	430	
5	Eucalyptus tereticornis	Forest Red Gum	450	
6	Angophora subvelutina	Broad-leaved Apple	170	
7	Corymbia citriodora	Spotted Gum	400	
8	Corymbia intermedia	Pink Bloodwood	100	
9	Eucalyptus tereticornis	Forest Red Gum	280	
10	Angophora subvelutina	Broad-leaved Apple	200	
11	Corymbia citriodora	Spotted Gum	150	
12	Eucalyptus tereticornis	Forest Red Gum	150	
13	Corymbia intermedia	Pink Bloodwood	240	
14	Angophora subvelutina	Broad-leaved Apple	240	
15	Eucalyptus tereticornis	Forest Red Gum	430	Koala scat (old)
16	Corymbia intermedia	Pink Bloodwood	130	
17	Angophora subvelutina	Broad-leaved Apple	330	
18	Acacia disparrima	Hickory Wattle	120	
19	Corymbia intermedia	Pink Bloodwood	100	
20	Eucalyptus tereticornis	Forest Red Gum	380	
21	Eucalyptus crebra	Narrow-leaved Ironbark	290	
22	Acacia concurrens	Black Wattle	120	
23	Eucalyptus tereticornis	Forest Red Gum	320	
24	Corymbia intermedia	Pink Bloodwood	420	
25	Eucalyptus tereticornis	Forest Red Gum	400	
26	Eucalyptus tereticornis	Forest Red Gum	200	
27	Eucalyptus tereticornis	Forest Red Gum	260	
28	Lophostemon sauveolens	Swamp Box	100	
29	Eucalyptus tereticornis	Forest Red Gum	280	Koala scat (old)
30	Eucalyptus crebra	Narrow-leaved Ironbark	130	

Assessment radius (m): 25 **Percentage trees utilised (%):** 6.66 **Usage:** **Low**

Notes: pig damage

Koala SAT Data Sheet

Location: Undullah **Date:** 10.10.2014

Site Number: 28 **Recorder:** Angela/Dave **Locality:**

Start point: 491055 • 62 **N** 6924688 • 16 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Eucalyptus tereticornis	Forest Red Gum	620	
2	Eucalyptus tereticornis	Forest Red Gum	480	
3	Eucalyptus tereticornis	Forest Red Gum	280	
4	Corymbia citriodora	Spotted Gum	140	
5	Corymbia citriodora	Spotted Gum	130	
6	Corymbia intermedia	Pink Bloodwood	260	
7	Eucalyptus tereticornis	Forest Red Gum	380	
8	Eucalyptus tereticornis	Forest Red Gum	300	
9	Corymbia citriodora	Spotted Gum	100	
10	Eucalyptus tereticornis	Forest Red Gum	300	
11	Corymbia intermedia	Pink Bloodwood	340	
12	Eucalyptus tereticornis	Forest Red Gum	290	
13	Eucalyptus tereticornis	Forest Red Gum	260	
14	Eucalyptus tereticornis	Forest Red Gum	400	
15	Corymbia intermedia	Pink Bloodwood	320	
16	Eucalyptus tereticornis	Forest Red Gum	590	
17	Eucalyptus tereticornis	Forest Red Gum	360	Koala scat
18	Eucalyptus tereticornis	Forest Red Gum	600	
19	Eucalyptus tereticornis	Forest Red Gum	300	Koala scat
20	Eucalyptus tereticornis	Forest Red Gum	260	
21	Eucalyptus tereticornis	Forest Red Gum	430	
22	Eucalyptus tereticornis	Forest Red Gum	420	
23	Corymbia intermedia	Pink Bloodwood	260	
24	Corymbia citriodora	Spotted Gum	140	
25	Eucalyptus crebra	Narrow-leaved Ironbark	230	
26	Eucalyptus tereticornis	Forest Red Gum	420	
27	Corymbia intermedia	Pink Bloodwood	200	
28	Eucalyptus tereticornis	Forest Red Gum	360	
29	Corymbia citriodora	Spotted Gum	130	
30	Corymbia intermedia	Pink Bloodwood	600	

Assessment radius (m): 30 **Percentage trees utilised (%):** 6.66 **Usage:** **Low**

Notes: scattered Lantana

Koala SAT Data Sheet

Location: Undullah **Date:** 10.10.2014

Site Number: 29 **Recorder:** Angela/Dave **Locality:**

Start point: 491123 • 84 **N** 6925184 • 35 **E**

No.	Scientific Name	Common Name	DBH	Fauna Evidence
1	Eucalyptus tereticornis	Forest Red Gum	490	
2	Lophostemon sauveolens	Swamp Box	250	
3	Acacia concurrens	Black Wattle	120	
4	Lophostemon sauveolens	Swamp Box	110	
5	Eucalyptus tereticornis	Forest Red Gum	590	
6	Lophostemon sauveolens	Swamp Box	200	
7	Lophostemon sauveolens	Swamp Box	160	
8	Eucalyptus tereticornis	Forest Red Gum	580	
9	Banksia integrifolia	Coast Banksia	130	
10	Eucalyptus tereticornis	Forest Red Gum	400	
11	Alphitonia excelsa	Red Ash	130	
12	Eucalyptus tereticornis	Forest Red Gum	540	
13	Lophostemon sauveolens	Swamp Box	360	
14	Eucalyptus tereticornis	Forest Red Gum	440	
15	Lophostemon sauveolens	Swamp Box	420	
16	Eucalyptus tereticornis	Forest Red Gum	360	
17	Lophostemon sauveolens	Swamp Box	350	
18	Lophostemon sauveolens	Swamp Box	700	
19	Corymbia tessellaris	Moreton Bay Ash	130	
20	Lophostemon sauveolens	Swamp Box	180	
21	Lophostemon sauveolens	Swamp Box	130	
22	Lophostemon sauveolens	Swamp Box	120	
23	Acacia disparrima	Hickory Wattle	230	
24	Eucalyptus tereticornis	Forest Red Gum	410	
25	Acacia disparrima	Hickory Wattle	110	
26	Eucalyptus tereticornis	Forest Red Gum	510	
27	Angophora leiocarpa	Smooth-barked Apple	200	
28	Eucalyptus tereticornis	Forest Red Gum	440	
29	Corymbia tessellaris	Moreton Bay Ash	170	
30	Corymbia intermedia	Pink Bloodwood	230	

Assessment radius (m): 25 **Percentage trees utilised (%):** 0 **Usage:** -

Notes:

Appendix H

AKF Koala Habitat Assessment Results

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 25.08.2014

Site Number: 1 **Recorder:** Angela/Dave **Locality:**

Start Point: 491392 • 98 **N** 6924389 • 21 **E**

End Point: 491346 • 69 **N** 6924374 • 69 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Eucalyptus tereticornis	Forest Red Gum	15	31.3
Corymbia citriodora	Spotted Gum	14	29.2
Acacia disparrima	Hickory Wattle	9	18.8
Acacia concurrens	Black Wattle	8	16.7
Eucalyptus crebra	Narrow-leaved Ironbark	1	2.1
Corymbia intermedia	Pink Bloodwood	1	2.1

Primary Koala Food Trees **No.:** 15 **%** 31.3

Secondary Koala Food Trees **No.:** 1 **%** 2.08

Total Koala Food Trees **No.:** 16 **%** 33.33

Notes:

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 25.08.2014

Site Number: 2 **Recorder:** Angela/Dave **Locality:**

Start Point: 491184 • 13 **N** 6924298 • 06 **E**

End Point: 491176 • 27 **N** 6924251 • 39 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Eucalyptus tereticornis	Forest Red Gum	3	7.0
Corymbia citriodora	Spotted Gum	25	58.1
Allocasurina littoralis	Black She Oak	4	9.3
Eucalyptus siderophloia	Grey Ironbark	7	16.3
Alphitonia excelsa	Red Ash	1	2.3
Corymbia intermedia	Pink Bloodwood	1	2.3
Acacia concurrens	Black Wattle	1	2.3
Acacia disparrima	Hickory Wattle	1	2.3

Primary Koala Food Trees **No.:** 3 **%** 6.98

Secondary Koala Food Trees **No.:** 7 **%** 16.3

Total Koala Food Trees **No.:** 10 **%** 23.26

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	25.08.2014	
Site Number:	3	**Recorder:**	Angela/Dave		**Locality:**			
Start Point:	491151	•	90	**N**	6924147	•	29	**E**
End Point:	491195	•	88	**N**	6924118	•	41	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Eucalyptus tereticornis	Forest Red Gum	38	86.4
Corymbia intermedia	Pink Bloodwood	3	6.8
Lophostemon sauveolens	Swamp Box	2	4.5
Acacia disparrima	Hickory Wattle	1	2.3

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 38	**%** 86.4	**No.:** 0	**%** 0	**No.:** 38	**%** 86.36

Notes: End RE 12.3.3

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	25.08.2014	
Site Number:	4	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492316	•	39	**N**	6923590	•	87	**E**
End Point:	492299	•	59	**N**	6923634	•	32	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	13	36.1
Corymbia tessellaris	Moreton Bay Ash	13	36.1
Acacia disparrima	Hickory Wattle	8	22.2
Eucalyptus tereticornis	Forest Red Gum	1	2.8
Eucalyptus siderophloia	Grey Ironbark	1	2.8

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 1	**%** 2.78	**No.:** 1	**%** 2.78	**No.:** 2	**%** 5.56

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	25.08.2014	
Site Number:	5	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492768	•	74	**N**	6923924	•	80	**E**
End Point:	492800	•	76	**N**	6923962	•	42	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	18	40.0
Eucalyptus siderophloia	Grey Ironbark	10	22.2
Eucalyptus moluccana	Gum-topped Box	2	4.4
Acacia leiocalyx	Black Wattle	4	8.9
Corymbia tessellaris	Moreton Bay Ash	7	15.6
Alphitonia excelsa	Red Ash	2	4.4
Eucalyptus tereticornis	Forest Red Gum	1	2.2
Eucalyptus crebra	Narrow-leaved Ironbark	1	2.2

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 1	**%** 2.22	**No.:** 3	**%** 28.9	**No.:** 13	**%** 31.11

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	25.08.2014	
Site Number:	6	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492925	•	21	**N**	6923874	•	52	**E**
End Point:	492966	•	77	**N**	6923901	•	35	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	17	32.7
Acacia disparrima	Hickory Wattle	3	5.8
Eucalyptus moluccana	Gum-topped Box	25	48.1
Eucalyptus siderophloia	Grey Ironbark	1	1.9
Eucalyptus tereticornis	Forest Red Gum	6	11.5

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 6	**%** 11.5	**No.:** 26	**%** 50	**No.:** 32	**%** 61.54

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	25.08.2014	
Site Number:	7	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	493121	•	18	**N**	6923853	•	71	**E**
End Point:	493098	•	61	**N**	6923810	•	43	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	58	80.6
Eucalyptus moluccana	Gum-topped Box	4	5.6
Corymbia tessellaris	Moreton Bay Ash	1	1.4
Eucalyptus tereticornis	Forest Red Gum	4	5.6
Acacia leiocalyx	Black Wattle	1	1.4
Eucalyptus siderophloia	Grey Ironbark	4	5.6

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 4	**%** 5.56	**No.:** 8	**%** 11.1	**No.:** 12	**%** 16.67

Notes: heavily logged

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	25.08.2014	
Site Number:	8	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492908	•	71	**N**	6923717	•	83	**E**
End Point:	492863	•	60	**N**	6923698	•	51	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Eucalyptus moluccana	Gum-topped Box	29	53.7
Corymbia citriodora	Spotted Gum	18	33.3
Eucalyptus siderophloia	Grey Ironbark	4	7.4
Acacia disparrima	Hickory Wattle	1	1.9
Eucalyptus tereticornis	Forest Red Gum	1	1.9
Acacia concurrens	Black Wattle	1	1.9

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 1	**%** 1.85	**No.:** 33	**%** 61.1	**No.:** 34	**%** 62.96

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	25.08.2014	
Site Number:	9	**Recorder:**	Angela/Dave		**Locality:**			
Start Point:	492676	•	49	**N**	6923714	•	02	**E**
End Point:	492625	•	52	**N**	6923730	•	39	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia tessellaris	Moreton Bay Ash	27	46.6
Eucalyptus siderophloia	Grey Ironbark	6	10.3
Corymbia citriodora	Spotted Gum	15	25.9
Eucalyptus moluccana	Gum-topped Box	6	10.3
Eucalyptus tereticornis	Forest Red Gum	1	1.7
Acacia disparrima	Hickory Wattle	3	5.2

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 1	**%** 1.72	**No.:** 12	**%** 20.7	**No.:** 13	**%** 22.41

Notes:

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 25.08.2014

Site Number: 10 **Recorder:** Angela/Dave **Locality:**

Start Point: 492597 • 79 **N** 6922163 • 22 **E**

End Point: 492644 • 80 **N** 6922170 • 44 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	36	45.0
Acacia disparrima	Hickory Wattle	21	26.3
Eucalyptus tereticornis	Forest Red Gum	4	5.0
Eucalyptus siderophloia	Grey Ironbark	10	12.5
Acacia concurrens	Black Wattle	5	6.3
Corymbia tessellaris	Moreton Bay Ash	1	1.3
Corymbia intermedia	Pink Bloodwood	1	1.3
Alphitonia excelsa	Red Ash	2	2.5

Primary Koala Food Trees **No.:** 4 **%** 5

Secondary Koala Food Trees **No.:** 10 **%** 12.5

Total Koala Food Trees **No.:** 14 **%** 17.5

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	25.08.2014	
Site Number:	11	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492456	•	37	**N**	6921433	**24**	24	**E**
End Point:	492423	•	03	**N**	6921395	•	25	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia intermedia	Pink Bloodwood	13	61.9
Corymbia citriodora	Spotted Gum	6	28.6
Eucalyptus tereticornis	Forest Red Gum	1	4.8
Alphitonia excelsa	Red Ash	1	4.8

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 1	**%** 4.76	**No.:** 0	**%** 0	**No.:** 1	**%** 4.76

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	25.08.2014	
Site Number:	12	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492739	•	27	**N**	6921093	•	24	**E**
End Point:	492693	•	17	**N**	6921073	•	72	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	51	73.9
Eucalyptus siderophloia	Grey Ironbark	6	8.7
Acacia disparrima	Hickory Wattle	10	14.5
Acacia concurrens	Black Wattle	2	2.9

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 0	**%** 0	**No.:** 6	**%** 8.7	**No.:** 6	**%** 8.7

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	26.08.2014	
Site Number:	13	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	491953	•	72	**N**	6924385	•	78	**E**
End Point:	491917	•	71	**N**	6924348	•	80	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	8	25.0
Eucalyptus tereticornis	Forest Red Gum	18	56.3
Eucalyptus siderophloia	Grey Ironbark	4	12.5
Acacia disparrima	Hickory Wattle	2	6.3

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 18	**%** 56.3	**No.:** 4	**%** 12.5	**No.:** 22	**%** 68.75

Notes: dead Acacia (T2), Acacia lantana regrowth (Shrub)

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	26.08.2014	
Site Number:	14	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492009	•	47	**N**	6924712	•	73	**E**
End Point:	491995	•	60	**N**	6924760	•	17	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	18	56.3
Eucalyptus tereticornis	Forest Red Gum	10	31.3
Eucalyptus siderophloia	Grey Ironbark	1	3.1
Acacia disparrima	Hickory Wattle	3	9.4

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 10	**%** 31.3	**No.:** 1	**%** 3.13	**No.:** 11	**%** 34.38

Notes: end of transect near start of waterway (greater no. of E.tereticornis)

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 26.08.2014

Site Number: 15 **Recorder:** Angela/Dave **Locality:**

Start Point: 491872 • 04 **N** 6924898 • 77 **E**

End Point: 491879 • 16 **N** 6924950 • 14 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	26	56.5
Corymbia tessellaris	Moreton Bay Ash	9	19.6
Eucalyptus tereticornis	Forest Red Gum	9	19.6
Eucalyptus siderophloia	Grey Ironbark	1	2.2
Corymbia intermedia	Pink Bloodwood	1	2.2

Primary Koala Food Trees **No.:** 9 **%** 19.6

Secondary Koala Food Trees **No.:** 1 **%** 2.17

Total Koala Food Trees **No.:** 10 **%** 21.74

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	26.08.2014	
Site Number:	16	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492117	•	75	**N**	6924826	•	54	**E**
End Point:	492155	•	81	**N**	6924856	•	73	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Acacia disparrima	Hickory Wattle	8	16.3
Lophostemon sauveolens	Swamp Box	3	6.1
Eucalyptus tereticornis	Forest Red Gum	10	20.4
Corymbia intermedia	Pink Bloodwood	9	18.4
Petalostigma pubesens	Quinine Bush	3	6.1
Corymbia tessellaris	Moreton Bay Ash	1	2.0
Corymbia citriodora	Spotted Gum	2	4.1
Angophora leiocarpa	Smooth-barked Apple	2	4.1
Eucalyptus seeana	Narrow-leaved Red Gum	2	4.1
Alphitonia excelsa	Red Ash	4	8.2
Acacia concurrens	Black Wattle	5	10.2

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 10	**%** 20.4	**No.:** 2	**%** 4.08	**No.:** 12	**%** 24.49

Notes:

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 26.08.2014

Site Number: 17 **Recorder:** Angela/Dave **Locality:**

Start Point: 492240 • 18 **N** 6924958 • 48 **E**

End Point: 492195 • 69 **N** 6924981 • 95 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Eucalyptus tereticornis	Forest Red Gum	4	10.8
Corymbia intermedia	Pink Bloodwood	15	40.5
Alphitonia excelsa	Red Ash	3	8.1
Acacia disparrima	Hickory Wattle	5	13.5
Acacia concurrens	Black Wattle	6	16.2
Lophostemon sauveolens	Swamp Box	4	10.8

Primary Koala Food Trees **No.:** 4 **%** 10.8

Secondary Koala Food Trees **No.:** 0 **%** 0

Total Koala Food Trees **No.:** 4 **%** 10.81

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	26.08.2014	
Site Number:	18	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492268	•	98	**N**	6924737	•	56	**E**
End Point:	492294	•	58	**N**	6924690	•	10	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	15	34.9
Allocasurina littoralis	Black She Oak	6	14.0
Eucalyptus siderophloia	Grey Ironbark	1	2.3
Acacia disparrima	Hickory Wattle	6	14.0
Eucalyptus tereticornis	Forest Red Gum	10	23.3
Corymbia intermedia	Pink Bloodwood	3	7.0
Alphitonia excelsa	Red Ash	1	2.3
Petalostigma pubesens	Quinine Bush	1	2.3

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 10	**%** 23.3	**No.:** 1	**%** 2.33	**No.:** 11	**%** 25.58

Notes:

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 26.08.2014

Site Number: 19 **Recorder:** Angela/Dave **Locality:**

Start Point: 492463 • 11 **N** 6924526 • 26 **E**

End Point: • **N** • **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Acacia disparrima	Hickory Wattle	6	16.7
Corymbia intermedia	Pink Bloodwood	3	8.3
Angophora floribunda	Rough-barked Apple	9	25.0
Corymbia citriodora	Spotted Gum	11	30.6
Eucalyptus tereticornis	Forest Red Gum	6	16.7
Eucalyptus siderophloia	Grey Ironbark	1	2.8

Primary Koala Food Trees **No.:** 6 **%** 16.7

Secondary Koala Food Trees **No.:** 1 **%** 2.78

Total Koala Food Trees **No.:** 7 **%** 19.44

Notes: outside of transect E.tereticornis dominates Sandy Creek, Thick lantana (Shrub)

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 26.08.2014

Site Number: 20 **Recorder:** Angela/Dave **Locality:**

Start Point: 492605 • 07 **N** 6924328 • 20 **E**

End Point: 492605 • 41 **N** 6924277 • 79 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	22	75.9
Eucalyptus siderophloia	Grey Ironbark	5	17.2
Eucalyptus tereticornis	Forest Red Gum	2	6.9

Primary Koala Food Trees **No.:** 2 **%** 6.9

Secondary Koala Food Trees **No.:** 5 **%** 17.2

Total Koala Food Trees **No.:** 7 **%** 24.14

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 26.08.2014

Site Number: 21 **Recorder:** Angela/Dave **Locality:**

Start Point: 492672 • 37 **N** 6923954 • 65 **E**

End Point: 492623 • 37 **N** 6923959 • 94 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	23	65.7
Eucalyptus siderophloia	Grey Ironbark	2	5.7
Corymbia tessellaris	Moreton Bay Ash	2	5.7
Acacia disparrima	Hickory Wattle	2	5.7
Angophora leiocarpa	Smooth-barked Apple	2	5.7
Eucalyptus tereticornis	Forest Red Gum	2	5.7
Corymbia intermedia	Pink Bloodwood	1	2.9
Eucalyptus moluccana	Gum-topped Box	1	2.9

Primary Koala Food Trees **No.:** 2 **%** 5.71

Secondary Koala Food Trees **No.:** 3 **%** 8.57

Total Koala Food Trees **No.:** 5 **%** 14.29

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	26.08.2014	
Site Number:	22	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492441	•	64	**N**	6923978	•	18	**E**
End Point:	492407	•	23	**N**	6924006	•	77	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Eucalyptus crebra	Narrow-leaved Ironbark	13	29.5
Corymbia citriodora	Spotted Gum	24	54.5
Eucalyptus tereticornis	Forest Red Gum	4	9.1
Acacia concurrens	Black Wattle	1	2.3
Acacia disparrima	Hickory Wattle	1	2.3
Petalostigma pubesens	Quinine Bush	1	2.3

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 4	**%** 9.09	**No.:** 13	**%** 29.6	**No.:** 17	**%** 38.64

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	26.08.2014	
Site Number:	23	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492150	•	43	**N**	6923604	•	41	**E**
End Point:	492138	•	30	**N**	6923554	•	31	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Eucalyptus tereticornis	Forest Red Gum	7	18.4
Corymbia citriodora	Spotted Gum	18	47.4
Acacia disparrima	Hickory Wattle	8	21.1
Eucalyptus siderophloia	Grey Ironbark	5	13.2

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 7	**%** 18.4	**No.:** 5	**%** 13.2	**No.:** 12	**%** 31.58

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	26.08.2014	
Site Number:	24	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	491870	•	02	**N**	6923603	•	83	**E**
End Point:	491893	•	17	**N**	6923647	•	46	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	6	13.0
Corymbia tessellaris	Moreton Bay Ash	4	8.7
Eucalyptus tereticornis	Forest Red Gum	12	26.1
Lophostemon sauveolens	Swamp Box	2	4.3
Eucalyptus crebra	Narrow-leaved Ironbark	1	2.2
Alphitonia excelsa	Red Ash	1	2.2
Acacia disparrima	Hickory Wattle	20	43.5

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 12	**%** 26.1	**No.:** 1	**%** 2.17	**No.:** 13	**%** 28.26

Notes: near dam

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	27.08.2014	
Site Number:	25	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492125	•	76	**N**	6921500	•	43	**E**
End Point:	492174	•	77	**N**	6921492	•	35	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	21	63.6
Corymbia intermedia	Pink Bloodwood	6	18.2
Eucalyptus siderophloia	Grey Ironbark	4	12.1
Eucalyptus tereticornis	Forest Red Gum	1	3.0
Eucalyptus crebra	Narrow-leaved Ironbark	1	3.0

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 1	**%** 3.03	**No.:** 5	**%** 15.2	**No.:** 6	**%** 18.18

Notes: heavily logged and fire damage, thick regrowth

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	27.08.2014	
Site Number:	26	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	491732	•	22	**N**	6921390	•	34	**E**
End Point:	491710	•	38	**N**	6921345	•	90	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Eucalyptus moluccana	Gum-topped Box	10	45.5
Eucalyptus tereticornis	Forest Red Gum	2	9.1
Eucalyptus siderophloia	Grey Ironbark	2	9.1
Corymbia intermedia	Pink Bloodwood	1	4.5
Lophostemon sauveolens	Swamp Box	2	9.1
Acacia disparrima	Hickory Wattle	5	22.7

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 2	**%** 9.09	**No.:** 12	**%** 54.6	**No.:** 14	**%** 63.64

Notes: drainage line, T1 dominated by E.tereticornis and E. mollucana

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 27.08.2014

Site Number: 27 **Recorder:** Angela/Dave **Locality:**

Start Point: 491639 • 89 **N** 6921494 • 21 **E**

End Point: 491633 • 62 **N** 6921547 • 30 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Corymbia intermedia	Pink Bloodwood	16	51.6
Lophostemon sauveolens	Swamp Box	2	6.5
Corymbia citriodora	Spotted Gum	2	6.5
Eucalyptus tereticornis	Forest Red Gum	5	16.1
Angophora leiocarpa	Smooth-barked Apple	5	16.1
Eucalyptus seeana	Narrow-leaved Red Gum	1	3.2

Primary Koala Food Trees **No.:** 5 **%** 16.1

Secondary Koala Food Trees **No.:** 1 **%** 3.23

Total Koala Food Trees **No.:** 6 **%** 19.35

Notes:

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 27.08.2014

Site Number: 28 **Recorder:** Angela/Dave **Locality:**

Start Point: 491259 • 95 **N** 6921742 • 34 **E**

End Point: 491307 • 61 **N** 6921764 • 95 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Eucalyptus moluccana	Gum-topped Box	21	67.7
Eucalyptus tereticornis	Forest Red Gum	2	6.5
Corymbia citriodora	Spotted Gum	1	3.2
Corymbia tessellaris	Moreton Bay Ash	2	6.5
Acacia disparrima	Hickory Wattle	2	6.5
Corymbia intermedia	Pink Bloodwood	3	9.7

Primary Koala Food Trees **No.:** 2 **%** 6.45

Secondary Koala Food Trees **No.:** 21 **%** 67.7

Total Koala Food Trees **No.:** 23 **%** 74.19

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	27.08.2014
Site Number:	29	**Recorder:**	Angela/Dave			**Locality:**	
Start Point:	491145	•	86	**N**	6921685	• 96	**E**
End Point:	491153	•	19	**N**	6921738	• 20	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	44	81.5
Corymbia intermedia	Pink Bloodwood	7	13.0
Eucalyptus crebra	Narrow-leaved Ironbark	2	3.7
Corymbia tessellaris	Moreton Bay Ash	1	1.9

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 2	**%** 3.7	**No.:** 21	**%** 38.9	**No.:** 23	**%** 42.59

Notes:

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 27.08.2014

Site Number: 30 **Recorder:** Angela/Dave **Locality:**

Start Point: 490955 • 05 **N** 6921585 • 35 **E**

End Point: 491000 • 78 **N** 6921569 • 37 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	32	76.2
Eucalyptus tereticornis	Forest Red Gum	2	4.8
Acacia concurrens	Black Wattle	4	9.5
Eucalyptus crebra	Narrow-leaved Ironbark	1	2.4
Eucalyptus moluccana	Gum-topped Box	3	7.1

Primary Koala Food Trees **No.:** 2 **%** 4.76

Secondary Koala Food Trees **No.:** 4 **%** 9.52

Total Koala Food Trees **No.:** 6 **%** 14.29

Notes:

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 27.08.2014

Site Number: 31 **Recorder:** Angela/Dave **Locality:**

Start Point: 490691 • 55 **N** 6922273 • 06 **E**

End Point: 490681 • 16 **N** 6922224 • 82 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	19	73.1
Eucalyptus moluccana	Gum-topped Box	5	19.2
Eucalyptus crebra	Narrow-leaved Ironbark	2	7.7

Primary Koala Food Trees **No.:** 0 **%** 0

Secondary Koala Food Trees **No.:** 7 **%** 26.9

Total Koala Food Trees **No.:** 7 **%** 26.92

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	27.08.2014	
Site Number:	32	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	491264	•	67	**N**	6922164	•	41	**E**
End Point:	491283	•	41	**N**	692119	•	01	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	18	41.9
Eucalyptus crebra	Narrow-leaved Ironbark	8	18.6
Corymbia tessellaris	Moreton Bay Ash	16	37.2
Eucalyptus tereticornis	Forest Red Gum	1	2.3

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 1	**%** 2.33	**No.:** 8	**%** 18.6	**No.:** 9	**%** 20.93

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	27.08.2014	
Site Number:	33	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	491412	•	26	**N**	6922078	•	41	**E**
End Point:	491460	•	26	**N**	6922071	•	58	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Eucalyptus crebra	Narrow-leaved Ironbark	7	15.2
Corymbia citriodora	Spotted Gum	35	76.1
Eucalyptus tereticornis	Forest Red Gum	2	4.3
Eucalyptus moluccana	Gum-topped Box	2	4.3

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 2	**%** 4.35	**No.:** 9	**%** 19.6	**No.:** 11	**%** 23.91

Notes:

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 27.08.2014

Site Number: 34 **Recorder:** Angela/Dave **Locality:**

Start Point: 491167 • 26 **N** 6922551 • 92 **E**

End Point: 491117 • 76 **N** 6922539 • 56 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	12	31.6
Corymbia tessellaris	Moreton Bay Ash	14	36.8
Eucalyptus crebra	Narrow-leaved Ironbark	10	26.3
Acacia concurrens	Black Wattle	2	5.3

Primary Koala Food Trees **No.:** 0 **%** 0

Secondary Koala Food Trees **No.:** 10 **%** 26.3

Total Koala Food Trees **No.:** 10 **%** 26.32

Notes:

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 28.08.2014

Site Number: 35 **Recorder:** Angela/Dave **Locality:**

Start Point: 492790 • 57 **N** 6925083 • 72 **E**

End Point: 492788 • 15 **N** 6925032 • 65 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Eucalyptus tereticornis	Forest Red Gum	6	14.0
Corymbia citriodora	Spotted Gum	17	39.5
Lophostemon sauveolens	Swamp Box	6	14.0
Corymbia tessellaris	Moreton Bay Ash	8	18.6
Corymbia intermedia	Pink Bloodwood	2	4.7
Acacia disparrima	Hickory Wattle	4	9.3

Primary Koala Food Trees **No.:** 6 **%** 14

Secondary Koala Food Trees **No.:** 0 **%** 0

Total Koala Food Trees **No.:** 6 **%** 13.95

Notes: e

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	28.08.2014	
Site Number:	36	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492718	•	32	**N**	6924979	•	36	**E**
End Point:	492683	•	65	**N**	6925014	•	98	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Eucalyptus tereticornis	Forest Red Gum	10	32.3
Corymbia citriodora	Spotted Gum	18	58.1
Corymbia intermedia	Pink Bloodwood	1	3.2
Eucalyptus siderophloia	Grey Ironbark	2	6.5

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 10	**%** 32.3	**No.:** 2	**%** 6.45	**No.:** 12	**%** 38.71

Notes:

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 28.08.2014

Site Number: 37 **Recorder:** Angela/Dave **Locality:**

Start Point: 492811 • 15 **N** 6924936 • 60 **E**

End Point: 492858 • 89 **N** 6924952 • 83 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Eucalyptus tereticornis	Forest Red Gum	16	35.6
Eucalyptus crebra	Narrow-leaved Ironbark	1	2.2
Alphitonia excelsa	Red Ash	2	4.4
Acacia disparrima	Hickory Wattle	13	28.9
Acacia concurrens	Black Wattle	6	13.3
Lophostemon sauveolens	Swamp Box	1	2.2
Eucalyptus seeana	Narrow-leaved Red Gum	2	4.4
Corymbia tessellaris	Moreton Bay Ash	4	8.9

Primary Koala Food Trees **No.:** 16 **%** 35.6

Secondary Koala Food Trees **No.:** 3 **%** 6.67

Total Koala Food Trees **No.:** 19 **%** 42.22

Notes:

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 28.08.2014

Site Number: 38 **Recorder:** Angela/Dave **Locality:**

Start Point: 492828 • 52 **N** 6924582 • 78 **E**

End Point: 492870 • 86 **N** 6924556 • 71 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Acacia disparrima	Hickory Wattle	4	10.8
Corymbia citriodora	Spotted Gum	24	64.9
Eucalyptus tereticornis	Forest Red Gum	1	2.7
Corymbia intermedia	Pink Bloodwood	1	2.7
Corymbia tessellaris	Moreton Bay Ash	4	10.8
Alphitonia excelsa	Red Ash	1	2.7
Eucalyptus crebra	Narrow-leaved Ironbark	2	5.4

Primary Koala Food Trees **No.:** 1 **%** 2.7

Secondary Koala Food Trees **No.:** 2 **%** 5.41

Total Koala Food Trees **No.:** 3 **%** 8.11

Notes:

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 28.08.2014

Site Number: 39 **Recorder:** Angela/Dave **Locality:**

Start Point: 492752 • 59 **N** 6924541 • 62 **E**

End Point: • **N** • **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Eucalyptus tereticornis	Forest Red Gum	11	31.4
Acacia disparrima	Hickory Wattle	1	2.9
Corymbia citriodora	Spotted Gum	19	54.3
Corymbia intermedia	Pink Bloodwood	2	5.7
Allocasurina littoralis	Black She Oak	1	2.9
Corymbia tessellaris	Moreton Bay Ash	1	2.9

Primary Koala Food Trees **No.:** 11 **%** 31.4

Secondary Koala Food Trees **No.:** 0 **%** 0

Total Koala Food Trees **No.:** 11 **%** 31.43

Notes: flats adjacent to waterway

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	8.10.2014	
Site Number:	40	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	493048	•	26	**N**	6924510	•	56	**E**
End Point:	493031	•	76	**N**	6924555	•	99	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)	5	**Surface Water Area (%)**	0
Leaf Litter Cover (%)	60	**Distance to Surface Water:**	~100m (dam)
Evidence of Dogs:	Fox	**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	18	69.2
Eucalyptus tereticornis	Forest Red Gum	5	19.2
Eucalyptus crebra	Narrow-leaved Ironbark	1	3.8
Acacia concurrens	Black Wattle	1	3.8
Alphitonia excelsa	Red Ash	1	3.8

Primary Koala Food Trees				Secondary Koala Food Trees				Total Koala Food Trees			
No.:	5	**%**	19.2	**No.:**	1	**%**	3.85	**No.:**	6	**%**	23.08

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	28.08.2014	
Site Number:	41	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	493135	•	40	**N**	6924638	•	44	**E**
End Point:	493100	•	52	**N**	6924667	•	41	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	17	37.8
Eucalyptus crebra	Narrow-leaved Ironbark	3	6.7
Acacia disparrima	Hickory Wattle	5	11.1
Eucalyptus tereticornis	Forest Red Gum	3	6.7
Corymbia tessellaris	Moreton Bay Ash	13	28.9
Acacia leiocalyx	Black Wattle	1	2.2
Acacia concurrens	Black Wattle	3	6.7

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 3	**%** 6.67	**No.:** 3	**%** 6.67	**No.:** 6	**%** 13.33

Notes:

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 28.08.2014

Site Number: 42 **Recorder:** Angela/Dave **Locality:**

Start Point: 492849 • 81 **N** 6923251 • 80 **E**

End Point: 492838 • 23 **N** 6923202 • 56 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) **Surface Water Area (%)** 0

Leaf Litter Cover (%) **Distance to Surface Water:**

Evidence of Dogs: **Weather:** Fine

Scientific Name	Common Name	Number	%
Corymbia intermedia	Pink Bloodwood	5	13.9
Corymbia citriodora	Spotted Gum	15	41.7
Eucalyptus tereticornis	Forest Red Gum	6	16.7
Allocasurina littoralis	Black She Oak	1	2.8
Acacia concurrens	Black Wattle	6	16.7
Alphitonia excelsa	Red Ash	3	8.3

Primary Koala Food Trees **No.:** 6 **%** 16.7

Secondary Koala Food Trees **No.:** 0 **%** 0

Total Koala Food Trees **No.:** 6 **%** 16.67

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	28.08.2014	
Site Number:	43	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492834	•	18	**N**	6923081	•	25	**E**
End Point:	492853	•	43	**N**	6923037	•	82	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	
Evidence of Dogs:		**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia intermedia	Pink Bloodwood	3	8.6
Acacia concurrens	Black Wattle	13	37.1
Eucalyptus tereticornis	Forest Red Gum	1	2.9
Melaleuca irbyana	Swamp Tea-tree	1	2.9
Alphitonia excelsa	Red Ash	11	31.4
Lophostemon sauveolens	Swamp Box	3	8.6
Acacia leiocalyx	Black Wattle	1	2.9
Eucalyptus moluccana	Gum-topped Box	2	5.7

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 1	**%** 2.86	**No.:** 2	**%** 5.71	**No.:** 15	**%** 8.57

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	28.08.2014	
Site Number:	44	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492117	•	88	**N**	6922864	•	54	**E**
End Point:	492141	•	64	**N**	6922910	•	56	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	Unknown
Evidence of Dogs:	-	**Weather:**	Fine

Scientific Name	Common Name	Number	%
Acacia concurrens	Black Wattle	23	46.0
Corymbia citriodora	Spotted Gum	15	30.0
Eucalyptus crebra	Narrow-leaved Ironbark	1	2.0
Corymbia tessellaris	Moreton Bay Ash	5	10.0
Alphitonia excelsa	Red Ash	4	8.0
Eucalyptus tereticornis	Forest Red Gum	1	2.0
Corymbia intermedia	Pink Bloodwood	1	2.0

Primary Koala Food Trees			Secondary Koala Food Trees			Total Koala Food Trees		
No.:	1	**%** 2	**No.:**	1	**%** 2	**No.:**	2	**%** 4

Notes:

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	8.10.2014	
Site Number:	45	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492999	•	01	**N**	6921304	•	64	**E**
End Point:	493017	•	55	**N**	6921349	•	10	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)	5	**Surface Water Area (%)**	0
Leaf Litter Cover (%)	60	**Distance to Surface Water:**	~100m (dam)
Evidence of Dogs:	Fox	**Weather:**	Fine

Scientific Name	Common Name	Number	%
Acacia disparrima	Hickory Wattle	26	43.3
Eucalyptus siderophloia	Grey Ironbark	5	8.3
Corymbia intermedia	Pink Bloodwood	5	8.3
Corymbia tesselaris	Moreton Bay Ash	2	3.3
Angophora leiocarpa	Smooth-barked Apple	3	5.0
Eucalyptus tereticornis	Forest Red Gum	5	8.3
Alphitonia excelsa	Red Ash	6	10.0
Eucalyptus seeana	Narrow leaved Red Gum	5	8.3
Corymbia citriodora	Spotted Gum	2	3.3
Lophostemon sauveolens	Swamp Box	1	1.7

Primary Koala Food Trees				Secondary Koala Food Trees				Total Koala Food Trees			
No.:	5	**%**	8.3	**No.:**	10	**%**	16.6	**No.:**	15	**%**	25

Notes: evidence of fire and logging, approx 30% dead wattles

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	8.10.2014	
Site Number:	46	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	490598	•	36	**N**	6922709	•	98	**E**
End Point:	490645	•	82	**N**	6922734	•	52	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)	80	**Surface Water Area (%)**	0
Leaf Litter Cover (%)	20	**Distance to Surface Water:**	Unknown
Evidence of Dogs:	-	**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	29	48.3
Eucalyptus siderophloia	Grey Ironbark	3	5.0
Eucalyptus crebra	Narrow-leaved Ironbark	4	6.7
Eucalyptus tereticornis	Forest Red Gum	8	13.3
Alphitonia excelsa	Red Ash	11	18.3
Acacia disparrima	Hickory Wattle	5	8.3

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 8	**%** 13.3	**No.:** 7	**%** 11.7	**No.:** 15	**%** 25

Notes: south facing mid slope (steep)

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	8.10.2014	
Site Number:	47	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	492126	•	21	**N**	6921974	•	74	**E**
End Point:	492087	•	76	**N**	6922006	•	32	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)	90	**Surface Water Area (%)**	0
Leaf Litter Cover (%)	5	**Distance to Surface Water:**	Unknown
Evidence of Dogs:	-	**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	37	72.5
Eucalyptus mollucana	Gum-topped Box	6	11.8
Eucalyptus crebra	Narrow-leaved Ironbark	6	11.8
Eucalyptus tereticornis	Forest Red Gum	2	3.9

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 2	**%** 3.9	**No.:** 12	**%** 23.6	**No.:** 14	**%** 27.5

Notes: evidence of fire and logging, scattered shrubs, dead stags

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	9.10.2014
Site Number:	48	**Recorder:**	Angela/Dave			**Locality:**	
Start Point:	491824	•	33	**N**	6923121	• 71	**E**
End Point:	491793	•	41	**N**	6923086	• 60	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)	60	**Surface Water Area (%)**	0
Leaf Litter Cover (%)	40	**Distance to Surface Water:**	Unknown
Evidence of Dogs:	-	**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia citriodora	Spotted Gum	30	50.0
Eucalyptus siderophloia	Grey Ironbark	11	18.3
Corymbia intermedia	Pink Bloodwood	9	15.0
Eucalyptus tereticornis	Forest Red Gum	5	8.3
Acacia disparrima	Hickory Wattle	5	8.3

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 5	**%** 8.3	**No.:** 11	**%** 18.3	**No.:** 16	**%** 26.6

Notes: high density of Lantana, evidence of logging, found possible feral pig scats

Koala Habitat Transect Data Sheet

Location: Undullah **Date:** 9.10.2014

Site Number: 49 **Recorder:** Angela/Dave **Locality:**

Start Point: 491890 • 06 **N** 6922533 • 60 **E**

End Point: 491897 • 46 **N** 6922480 • 54 **E**

Transect Length (m): 50 **Transect Breadth (m):** 20

Vegetation Ground Cover (%) 70 **Surface Water Area (%)** 0

Leaf Litter Cover (%) 30 **Distance to Surface Water:** Unknown

Evidence of Dogs: - **Weather:** Fine

Scientific Name	Common Name	Number	%
Eucalyptus tereticornis	Forest Red Gum	14	26.4
Eucalyptus siderophloia	Grey Ironbark	9	17.0
Acacia concurrens	Black Wattle	15	28.3
Corymbia tesselaris	Moreton Bay Ash	8	15.1
Acacia disparrima	Hickory Wattle	5	9.4
Alphitonia excelsa	Red Ash	1	1.9
Corymbia intermedia	Pink Bloodwood	1	1.9

Primary Koala Food Trees **No.:** 14 **%** 26.4

Secondary Koala Food Trees **No.:** 9 **%** 17

Total Koala Food Trees **No.:** 23 **%** 43.4

Notes: high density of Lantana, evidence of logging

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	10.10.2014	
Site Number:	50	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	491291	•	18	**N**	6923123	•	58	**E**
End Point:	491255	•	65	**N**	6923088	•	25	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)	85	**Surface Water Area (%)**	0
Leaf Litter Cover (%)	10	**Distance to Surface Water:**	Unknown
Evidence of Dogs:	-	**Weather:**	Overcast

Scientific Name	Common Name	Number	%
Corymbia tesselaris	Moreton Bay Ash	44	64.7
Corymbia citriodora	Spotted Gum	4	5.9
Eucalyptus siderophloia	Grey Ironbark	13	19.1
Alphitonia excelsa	Red Ash	3	4.4
Acacia disparrima	Hickory Wattle	3	4.4
Acacia leiocalyx	Black Wattle	1	1.5

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 0	**%** -	**No.:** 13	**%** 19.1	**No.:** 13	**%** 19.1

Notes: exposed rock (5%)

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	10.10.2014	
Site Number:	51	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	490877	•	66	**N**	6923157	•	32	**E**
End Point:	490912	•	98	**N**	6923122	•	69	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	Unknown
Evidence of Dogs:	-	**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia tesselaris	Moreton Bay Ash	28	50.0
Corymbia intermedia	Pink Bloodwood	1	1.8
Alphitonia excelsa	Red Ash	1	1.8
Corymbia citriodora	Spotted Gum	18	32.1
Eucalyptus siderophloia	Grey Ironbark	5	8.9
Acacia disparrima	Hickory Wattle	1	1.8
Eucalyptus tereticornis	Forest Red Gum	2	3.6

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 2	**%** 3.6	**No.:** 5	**%** 8.9	**No.:** 7	**%** 12.5

Notes: western side of gully, evidence of fire and logging (old), exposed rock

Koala Habitat Transect Data Sheet

Location:	Undullah					**Date:**	10.10.2014	
Site Number:	52	**Recorder:**	Angela/Dave			**Locality:**		
Start Point:	491118	•	45	**N**	6925110	•	96	**E**
End Point:	491155	•	15	**N**	6925073	•	27	**E**

Transect Length (m):	50	**Transect Breadth (m):**	20
Vegetation Ground Cover (%)		**Surface Water Area (%)**	0
Leaf Litter Cover (%)		**Distance to Surface Water:**	Unknown
Evidence of Dogs:	-	**Weather:**	Fine

Scientific Name	Common Name	Number	%
Corymbia intermedia	Pink Bloodwood	4	6.5
Eucalyptus tereticornis	Forest Red Gum	8	12.9
Alphitonia excelsa	Red Ash	1	1.6
Eucalyptus siderophloia	Grey Ironbark	3	4.8
Petalostigma pubescens	Quinine Bush	7	11.3
Corymbia tesselaris	Moreton Bay Ash	10	16.1
Acacia disparrima	Hickory Wattle	2	3.2
Eucalyptus crebra	Narrow-leaved Ironbark	2	3.2
Corymbia citriodora	Spotted Gum	21	33.9
Angophora leiocarpa	Smooth-barked Apple	4	6.5

Primary Koala Food Trees		Secondary Koala Food Trees		Total Koala Food Trees	
No.: 8	**%** 12.9	**No.:** 5	**%** 8	**No.:** 13	**%** 20.9

Notes: scattered Lantana, evidence of fire and logging

Appendix D

Habitat Suitability Assessment

HABITAT ASSESSMENT FOR LISTED EPBC SPECIES

Matters of National Environmental Significance						
Wetlands of International Importance	Moreton Bay	RAMSAR Listed	30-40km upstream	The site is located approximately 30-40 kilometres directly east of Moreton Bay.	There will be no measurable affect to Moreton Bay.	No Risk
Listed Threatened Ecological Communities						
Name		**Status**	**Type of Presence**	**Description of Community**	**Likelihood of Occurrence**	**Risk**
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland		Endangered	Community may occur within the area.	The Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community occurs in coastal catchments, mostly at elevations of less than 20 m above sea level that are typically found within 30 km of the coast, however, distance can vary by catchment. The canopy layer is dominated by Casuarina glauca (Swamp Oak) and in Queensland is represented by RE12.1.1 or RE12.3.20. Neither Casuarina glauca (Swamp Oak) nor RE12.1.1 or RE12.3.20 were identified on-site, and therefore the TEC is not present.	No species representing these characteristics or vegetation communities were observed within the assessment area.	No Risk
Lowland rainforest of Subtropical Australia		Critically Endangered	Community may occur within the area.	Typically there is a relatively low abundance of species from the genera *Eucalyptus, Melaleuca* and *Casuarina*. Buttresses are common as is an abundance and diversity of vines. This community is usually associated Regional Ecosystems 12.3.1, 12.5.13, 12.8.3, 12.8.4, 12.8.13, 12.11.1, 12.11.10, 12.12.1, and 12.12.16.	No species representing these characteristics or vegetation communities were observed within the assessment area.	No Risk
Poplar Box Grassy Woodland on Alluvial Plains		Endangered	Community may occur within the area.	Typically a grassy woodland with a canopy dominated by Eucalyptus populnea and understorey mostly of grasses and other herbs. This community is usually associated with RE11.3.2, 11.3.17, 11.4.7, 11.4.12 and 12.3.10, none of which are located within or adjacent to the investigation area.	No species representing these characteristics or vegetation communities were observed within the assessment area.	No Risk
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland		Critically Endangered	Community may occur within the area.	This threatened community is characterised by a species-rich understorey of native tussock grasses, herbs and scattered shrubs and the dominance of White Box, Yellow Box, or Blakely's Red gum trees. This community is usually associated with Regional Ecosystem 11.8.2a, 11.8.8, 11.9.9a, 13.3.1, 13.11.8, and 13.12.9. It can also be a small component of Regional Ecosystem 11.3.23, 12.8.16, 13.3.4, 13.11.3 and 13.11.4.	No species representing these characteristics or vegetation communities were observed within the assessment area.	No Risk

Species	Common Name	Status	EPBC Code	Description of Community / Habitat	Likelihood of Occurrence	Risk
Birds						
Anthochaera phrygia	Regent Honeyeater	Endangered	82338	Regent Honeyeaters mostly occur in dry Box-Ironbark Eucalypt woodland and dry sclerophyll forest associations in areas of low to moderate relief, wherein they prefer moister, more fertile sites. These areas are generally associated with creek flats and river valleys and foothills. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. They are a generalist forager, which mainly feed on nectar from a wide range of eucalypts and mistletoes.	The site is covered in both remnant and non remnant vegetation communities dominated by eucalypt and Corymbia species however all riparian areas are highly disturbed. Very few mature large specimens remain throughout the majority of the site as a result of historical logging practices and vegetation clearing.	No Risk
Botaurus poiciloptilus	Australasian Bittern	Endangered	1001	The Australasian Bittern occurs in terrestrial wetlands and, rarely, estuarine habitats, mainly in the temperate southeast and southwest. It favours wetlands with tall dense vegetation, where it forages in still, shallow water up to 0.3 m deep, often at the edges of pools or waterways, or from platforms or mats of vegetation over deep water. It favours permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and / or reeds or cutting grass growing over muddy or peaty substrate. The Australasian Bittern occurs in the far South-East of Queensland; it has been reported North to Baralaba and West to Wyandra, although in most years it is probably confined to a few coastal swamps. It is rarely recorded in Queensland, and possibly survives only in protected areas such as the Cooloola and Fraser regions.	No suitable habitat was observed throughout the assessment area.	No Risk

Species	Common Name	Status	EPBC Code	Description of Community / Habitat	Likelihood of Occurrence	Risk
Calidris ferruginea	Curlew Sandpiper	Critically Endangered	856	Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and around non-tidal swamps, lakes and lagoons near the coast, and ponds in salt works and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters.	No suitable foraging or breeding habitat occurs on site, with these habitat features limited to the mouth of the rivers and estuaries in the region. No indication of the species was detected on-site during field surveys consistent with lack of suitable habitat.	No Risk
Erythrotriorchis radiatus	Red Goshawk	Vulnerable	942	A wide ranging and highly mobile species generally observed over eucalypt habitats. This species prefers forest and woodland with a mosaic of vegetation types, large prey populations (birds) and permanent water. The vegetation types include eucalypt woodland, open forest, tall open forest, gallery rainforest, swamp sclerophyll forest and rainforest margins. Habitat has to be open enough for fast attack and manoeuvring in flight, but provide cover for ambushing of prey.	Due to a lack of records within the local area, it is unlikely that this species will occur. However, possible foraging habitat throughout the mapped remnant areas. There is no evidence of permanent residence on site and very few areas containing permanent water.	No Risk
Geophaps scripta scripta	Squatter Pigeon (southern)	Vulnerable	64440	This species inhabits open grasslands and woodlands typically with a native understorey although may occur in artificial pasture.	No confirmed local records. The species is now very rarely observed in southern Queensland. Not expected onsite and no direct impact from proposed actions.	No Risk
Grantiella picta	Painted Honeyeater	Vulnerable	470	This species inhabits Boree/ Weeping Myall (Acacia pendula), Brigalow (A. harpophylla) and Box-Gum Woodlands and Box-Ironbark Forests.	No suitable habitat was observed throughout the assessment area.	No Risk
Hirundapus caudacutus	White-throated Needletail	Vulnerable	682	The White-throated needle tail is almost exclusively aerial. This species has been recorded roosting in trees in forests and woodlands, both among dense foliage in the canopy or in hollows	No suitable habitat was observed throughout the assessment area.	No Risk

Species	Common Name	Status	EPBC Code	Description of Community / Habitat	Likelihood of Occurrence	Risk
Lathamus discolour	Swift Parrot	Endangered	744	Swift Parrots breed in Tasmania during spring to early summer. During autumn and winter the species migrates to the mainland where it follows a nomadic existence linked to the availability and timing of flowering of trees in various locations. While the species is very uncommon in south-east Queensland, its occurrence cannot be completely discounted. There are suitable winter flowing species present on the site which may attract birds during flowing (e.g. E. tereticornis).	Due to a lack of records within the local area and south east Queensland, it is highly unlikely that this species will occur.	No Risk
Numenius madagascariensis	Eastern Curlew	Critically Endangered	847	The species breeds on open mossy or transitional bogs, moss-lichen bogs and wet meadows, and on the swampy shores of small lakes; in the non-breeding season it is essentially coastal, occurring at estuaries, mangrove swamps, saltmarshes and intertidal flats, particularly those with extensive seagrass (Zosteraceae) meadows.	No suitable habitat was observed throughout the assessment area.	No Risk
Rostratula australis	Australian Painted Snipe	Endangered	77037	The Australian Painted Snipe is usually found in shallow inland wetlands, either freshwater or brackish, that are either permanently or temporarily filled. The species has a scattered distribution throughout many parts of Australia, with a single record from Tasmania.	No suitable habitat was observed throughout the assessment area.	No Risk
Turnix melanogaster	Black-breasted Button-quail	Vulnerable	923	Typical habitat occurs in dry rainforest and vegetation immediately adjacent to rainforest. However the species has also been recorded in a variety of low coastal heathlands around Frazer Island and nearby mainland. Deep leaf litter in which the species can forage appears to be particularly favoured.	Habitats on the site are highly disturbed due to prior logging regimes, weed invasion and prior pastoral/grazing activities. Although this species is known to favour areas with a dense shrub layer, including thick Lantana camara patches, no evidence (i.e.: platelets) has been observed on site. Evidence of feral pigs and dogs may have also contributed to a lack of records.	No Risk
Fish						

Species	Common Name	Status	EPBC Code	Description of Community / Habitat	Likelihood of Occurrence	Risk
Maccullochella mariensis	Mary River Cod	Endangered	83806	The Mary River Cod occurs mainly in pools within relatively undisturbed tributaries. They prefer relatively large and deep shaded pools with abundant, slowly flowing water.	No suitable habitat to support this species was observed throughout the assessment area.	No Risk
Insect						
Species	**Common Name**	**Status**	**EPBC Code**	**Description of Community / Habitat**	**Likelihood of Occurrence**	**Risk**
Argynnis hyperbius inconstans	Australian Fritillary	Critically Endangered	88056	The Australian fritillary is restricted to areas where its larval food plant, Viola betonicifolia (the arrowhead violet), occurs (NSW Scientific Committee 2002). The arrowhead violet is widespread throughout Queensland and NSW, at both high and low altitudes. However, the Australian fritillary appears to only occupy lower altitude sites (<600m), and in these lower altitude regions there has been significant clearing for urban expansion.	No suitable habitat to support this species was observed throughout the assessment area.	No Risk
Mammals						
Species	**Common Name**	**Status**	**EPBC Code**	**Description of Community / Habitat**	**Likelihood of Occurrence**	**Risk**
Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	183	The Large-eared Pied Bat roosts on sandstone cliffs and fertile woodland valley habitat within close proximity of each other. However in South-east Queensland habitat includes rainforest and moist eucalypt forest habitats at high elevations.	No confirmed local records of this uncommon species.	No Risk
Dasyurus maculatus maculatus	Spot-tailed Quoll	Endangered	75184	The Spot-tailed Quoll has a preference for mature wet forest habitat. Unlogged forest or forest that has been less disturbed by timber harvesting is also preferable. This predominantly nocturnal species rests during the day in dens. Habitat requirements include suitable den sites such as hollow logs, tree hollows, rock outcrops or caves. Individuals require an abundance of food such as birds and small mammals, and large areas of relatively intact vegetation through which to forage.	Although no suitable den sites were observed on broader site, it may be possible that the site could be used for foraging purposes, including Flagstone Creek which may act as a corridor for species distribution. Although no evidence has been found throughout the field assessment, consideration to this species is important.	Low Risk

Species	Common Name	Status	EPBC Code	Description of Community / Habitat	Likelihood of Occurrence	Risk
Petauroides volans volans	Greater Glider	Vulnerable	254	The greater glider is an arboreal nocturnal marsupial, largely restricted to eucalypt forests and woodlands. It is primarily folivorous, with a diet mostly comprising eucalypt leaves, and occasionally flowers. It is typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows/	Although suitable habitat was observed on the broader site, the project area contains very few trees in relation to significant habitat areas to the west.	No Risk
Petrogale penicillata	Brush-tailed Rock-wallaby	Vulnerable	225	This species prefers rocky habitats, including loose boulder-piles, rocky outcrops, steep rocky slopes, cliffs, gorges and isolated rock stacks. Most populations have been found on north facing slopes but have occurred on south facing slopes. This species browse on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees.	No suitable habitat located on site.	No Risk
Phascolarctos cinereus	Koala	Vulnerable	85104	They are found in a range of habitats, from coastal islands and tall eucalypt forests to low woodlands inland. The species is known from the surrounding area and evidence has been recorded on-site.	Extensive searches of this species, including SAT surveys and spotlighting did not find any individual specimens. However some old scats were observed throughout the site in various locations. The site is highly disturbed with intensive logging regimes and severe infestations of *Lantana camara* have also reduced the quality of habitat for this species.	Medium Risk
Potorous tridactylus tridactylus	Long-nosed Potoroo	Vulnerable	66645	Species generally prefers rainforest and adjacent to wet sclerophyll forest, coastal heathlands and similar habitats with a dense understorey. Like all Potoroos, fungi are the major component of the diet and is also known to feed on invertebrates.	No suitable habitat was observed throughout the assessment area.	No Risk

Species	Common Name	Status	EPBC Code	Description of Community / Habitat	Likelihood of Occurrence	Risk
Pteropus poliocephalus	Grey-headed Flying Fox	Vulnerable	186	Species generally roosts in camps in trees adjacent to larger permanent watercourse. The Grey-headed flying fox requires foraging resources and roosting sites. It is a canopy-feeding frugivore and nectarivore, which utilises vegetation communities including rainforests, open forests, closed and open woodlands, Melaleuca swamps and Banksia woodlands. It also feed son commercial fruit crops. The primary food source is blossom from Eucalyptus and related genera.	No camps were observed throughout the assessment area however food resources cover the site. This species is highly likely to occur when the eucalypts are in flower.	Low Risk
Reptiles						
Delma torquata	Collared Delma	Vulnerable	1656	In general, the species occurs on rocky hillsides on basalt and lateritic soils supporting open eucalypt and Acacia woodland with a sparse understorey of shrubs and tussocks or semi-evergreen vine thicket.	No suitable habitat was observed throughout the assessment area.	No Risk
Furina dunmalli	Dunmall's Snake	Vulnerable	59254	Dunmall's Snake has been found in a broad range of habitats, including forests and woodlands on black alluvial cracking clay and clay loams dominated by Brigalow other Wattles, native Cypress or Bull-oak, and various Blue Spotted Gum, Ironbark, White Cypress Pine and Bull oak open forest and woodland associations on sandstone derived soils. Dunmall's Snake occurs primarily in the Brigalow Belt region in the South-eastern interior of Queensland. Records indicate sites at elevations between 200–500 m above sea level. The snake is very rare or secretive with limited records existing. It has been recorded at Archokoora, Oakey, Miles, Glenmorgan, Wallaville, Gladstone, Lake Broadwater, Mount Archer, Exhibition Range National Park, roadside reserves between Inglewood and Texas, Rosedale, Yeppoon and Lake Broadwater Conservation Park.	No suitable habitat was observed throughout the assessment area.	No Risk
Saiphos reticulatus	Three-toed Snake-tooth Skink	Vulnerable	88328	The Three-toed Snake-tooth Skink has been found in loose, well mulched friable soil, in and under rotting logs, in forest litter, under fallen hoop pine bark and under decomposing cane mulch. In Queensland, the Three-toed Snake-tooth Skink has been recorded in rainforest, closed forest, wet sclerophyll forest, tall open Blackbutt (Eucalyptus pilularis) forest, tall layered open eucalypt forest and closed Brush Box (Lophostemon confertus) forest.	No suitable habitat was observed throughout the assessment area.	No Risk
Listed Migratory Species						

Species	Common Name	Status	EPBC Code	Description of Community / Habitat	Likelihood of Occurrence	Risk
Migratory Marine Birds						
Species	**Common Name**	**Status**	**EPBC Code**	**Description of Community / Habitat**	**Likelihood of Occurrence**	**Risk**
Apus pacificus	Fork-tailed Swift	Migratory	678	This species is almost exclusively aerial and mostly occur over inland palins but sometimes above foothills or in coastal areas.	Possible as a fly over species however no impact to this species is likely to occur.	No Risk
Migratory Terrestrial Species						
Species	**Common Name**	**Status**	**EPBC Code**	**Description of Community / Habitat**	**Likelihood of Occurrence**	**Risk**
Cuculus optatus	Oriental Cuckoo	Migratory	86651	It mainly inhabits forests, occurring in coniferous, deciduous and mixed forest. It feeds mainly on insects and their larvae, foraging for them in trees and bushes as well as on the ground.	No suitable habitat was observed throughout the assessment area.	No Risk
Hirundapus caudacutus	White-throated Needle tail	Migratory	682	The White-throated needle tail is almost exclusively aerial. This species has been recorded roosting in trees in forests and woodlands, both among dense foliage in the canopy or in hollows. The species breeds in wooded lowlands and sparsely vegetated hills, as well as mountains covered with coniferous forests.	Low potential to occur on site within roosting periods.	No Risk
Monarcha melanopsis	Black-faced Monarch	Migratory	609	The Black-faced Monarch mainly occurs in rainforest ecosystems, including semi-deciduous vine thickets, complex notophyll vine forests, tropical (mesophyll) rainforest, subtropical (notophyll) rainforest, mesophyll (broadleaf) thicket/shrubland, warm temperate rainforest, dry (monsoon) rainforest and occasionally cool temperate rainforest.	No suitable habitat was observed throughout the assessment area.	No Risk
Monarcha trivirgatus	Spectacled Monarch	Migratory	610	The Spectacled Monarchs natural habitats are subtropical or tropical moist lowland forests, subtropical or tropical mangrove forests, and subtropical or tropical moist montane forests. Its preference is for thick understorey areas.	No suitable habitat was observed throughout the assessment area.	No Risk
Motacilla flava	Yellow Wagtail	Migratory	644	The yellow wagtail occurs in a variety of damp or wet habitats with low vegetation, from rushy pastures, meadows, hay fields and marshes to damp steppe and grassy tundra. Outside of the breeding season it is also found in cultivated areas. The yellow wagtail typically forages in damp grassland and on relatively	No suitable habitat was observed throughout the assessment area.	No Risk

Species	Common Name	Status	EPBC Code	Description of Community / Habitat	Likelihood of Occurrence	Risk
				bare open ground at edges of rivers, lakes and wetlands, but also feeds in dry grassland and in fields of cereal crops		
Myiagra cyanoleuca	Satin Flycatcher	Migratory	612	Satin Flycatchers inhabit heavily vegetated gullies in eucalypt dominated forests and taller woodlands, and on migration occur in coastal forests, woodlands, mangroves and drier woodlands and open forests.	No suitable habitat was observed throughout the assessment area.	No Risk
Rhipidura rufifrons	Rufous Fantail	Migratory	592	The Rufous fantail mainly inhabits wet sclerophyll forests, often in gullies dominated by Eucalypts such as *Eucalyptus microcorys*, *Eucalyptus pilularis*, *Eucalyptus resinifera* and a number of other Eucalyptus species.	No suitable habitat was observed throughout the assessment area.	No Risk

HABITAT ASSESSMENT FOR LISTED NCA SPECIES (6207) 10km Search

Species	Common Name	Status	Description of Community / Habitat	Likelihood of Occurrence	Risk
Birds					
Calyptorhynchus lathami	Glossy Black-cockatoo	Vulnerable	The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW. The Glossy Black-Cockatoo is highly dependent on the distribution of Allocasuarina species and is found in open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (*Allocasuarina littoralis*) and Forest Sheoak (*A. torulosa*) are important foods. Requires tree hollows for breeding.	Flora species utilised for foraging by this species were present in the areas of retained vegetation along watercourses and not within the greater extent of the landscape. Foraging of she-oak species is generally seasonal in nature with birds often returning to areas previously utilised. Limited to no signs of repeated foraging on sheoaks in the area were observed.	Low Risk
Hirundapus caudacutuc	White-throated Needletail	Vulnerable	The White-throated needle tail is almost exclusively aerial. This species has been recorded roosting in trees in forests and woodlands, both among dense foliage in the canopy or in hollows	No suitable habitat was observed throughout the assessment area.	No Risk
Ninox strenua	Powerful Owl	Vulnerable	The Powerful Owl inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest.	An active Powerful Owl nest was recorded was recorded west of clearing area in 2009. No suitable	Low Risk

HABITAT ASSESSMENT FOR LISTED NCA SPECIES (6207) 10km Search

Species	Common Name	Status	Description of Community / Habitat	Likelihood of Occurrence	Risk
				habitat was observed throughout the assessment area.	
Mammals					
Phascolarctos cinereus	Koala	Vulnerable	They are found in a range of habitats, from coastal islands and tall eucalypt forests to low woodlands inland. The species is known from the surrounding area and evidence has been recorded on-site.	Extensive searches of this species, including SAT surveys and spotlighting did not find any individual specimens. However some old scats were observed throughout the site in various locations. The site is highly disturbed with severe infestations of Lantana camara throughout the waterways and have also reduced the quality of habitat for this species.	Medium Risk