PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2017/844

Date: 25 October 2017

Queensland Government

environmental management

saunders havill group







Significant Biodiversity Assessment Report

Implementation Guideline 14 and 17 Response

Wyatt Road, Undullah

PACIFIC INTERNATIONAL GROUP

Wyatt Road, Undullah
Pacific International Development Corporation Pty Ltd
26 April 2017
8020

surveying town planning urban design environmental management landscape architecture

Document Control

Title	EDQ – Significant Biodiversity Assessment Report
Address	Wyatt Road, Undullah
Job Number	**8020**
Client	**Pacific International Development Corporation Pty Ltd**

Document Issue

Issue	Date	Prepared By	Checked By
Draft	29.03.2017	Olivia Short	Dr Andrew Davies
Client Draft V1	30.03.2017	Olivia Short	Dr Andrew Davies
Client Draft V1	07.04.2017	Olivia Short	Dr Andrew Davies
EDQ Submission 1	26.04.2017	Angela Little	Dr Andrew Davies
Final			

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Reports and/or Plans by Others

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Executive Summary

Pacific International Development Corporation's (**PIDC**) Flinders Project represents a significant land holding within the Greater Flagstone Priority Development Area (PDA) and comprises the entire south-western portion of the PDA. The land spans three cadastral allotments covering a total of 1,028 ha. It is noteworthy that the proponent previously obtained a Material Change of Use approval through **Economic Development Queensland** for a former iteration of the Context Plan over the subject area that did not include a Lake proposal, hence the new submission.

A desktop analysis conducted prior to the commencement of field surveys identified that the site's characteristics and potential constraints are mapped under various State and Local Government legislative mapping and database search tools. While retaining important natural site values, detailed surveys demonstrate the level of constraint is significantly less than depicted in the majority of the abovementioned site searches.

Site Features & Ecological Values

The site's ecological values trigger consideration against both Commonwealth and State Legislation. Survey methods, currency and timing have been dictated by the requirements of these Government entities. In the first instance, studies and consultation have been completed for the purposes of preparing and lodging a referral under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) to the Commonwealth **Department of the Environment and Energy**. Additional broader survey has been completed and incorporated into this Significant Biodiversity Assessment Report prepared in support of a Context Plan Submission to **Economic Development Queensland** (EDQ).

The project area is considered extremely disturbed as a result of historical broad scale clearing and pastoral practices including bushfire management. Koala (*Phascolarctos* cinereus) activity, in the forms of scats, and Grey-headed Flying-fox (*Pteropus poliocephalus*) were the only listed threatened species scheduled as Matters of National Environmental Significance (MNES) recorded on-site. Evidence of the Koala was recorded in vegetated locations across the site, with higher activity levels considered reflective of isolated food resources within fragmented eucalypt stands (refer to **Plan 4** in **Section 4**). The most optimal habitat features for this species are associated with confirmed remnant and regrowth vegetation areas in the north of the site adjacent to the Flinders – Karawatha Bioregional Corridor.

The Grey-headed Flying-fox was also recorded foraging in the north of the site, and it is noteworthy that suitable foraging habitat for the species is consistent with preferred habitat for Koala (i.e. most optimal foraging habitat is within the northern portion of the site). Of the EPBC Act listed Migratory species, only Rainbow Bee-eater (*Merops ornatus*) were recorded on-site, however, habitat satisfying the descriptions of 'critical to the survival of the species' under the EPBC Act was not observed.

At the State level, the Swamp Tea-tree (*Melaleuca irbyana*), which is listed as Endangered under the *Nature Conservation Wildlife Regulation 2009,* was 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. Historical studies recorded the presence of Powerful Owl (*Ninox strenua*) in the northern vegetated area set aside for retention and rehabilitation.

The property retains relatively small patches of Of Concern and Least Concern RE communities concentrated in the northern portion of the site. In all vegetated communities, remnant status is achieved through a measure of the structure, composition and floristic diversity of tree species and not reflective of the mid and understorey condition, which on this site has been heavily modified.

The land holding contains lower slopes and gullies leading up to rocky ridge tops and elevations found throughout the western portions of the PDA. The topography forms numerous overland flow paths and drainage features with defined watercourses located in lower reaches along the southern property boundary. In nearly all areas, the hydrological features commence within the allotment and drain to the south east, ultimately connecting to Woollaman Creek. The site is located within a patchwork landscape of relatively large cleared and vegetated rural allotments. The vast majority of connected areas through the contextual land forms is along the northern property boundaries and drainage lines including Undullah and Woollaman Creeks.

Context Plan

Ecological input has been provided at all key design junctures in development of the Context Plan. **PIDC** has sought to protect the site's highest ecological values through sensitive land use responses including Conservation Parkland areas and the restoration of the Undullah / Woollaman Creek corridor. These uses occupy a large proportion of the site above and beyond conceptual designation in the Development Scheme and seek to conserve the vast majority of remnant vegetation and Koala Habitat values across the site.

The over-arching design philosophy of the site layout is to concentrate development impacts within the southern disturbed portion of the site where nil to lower ecological values occur to enable genuine and robust protection of the Significant Biodiversity Values within the northern portion of the site. The concentration of impacts limits the ability to integrate some environmental features within development zones, however, these are compensated for by offsets and improvement works within the retained Conservation Parkland and corridor areas.

Specific land uses are outlined below:

Conservation Area

This area contains the majority of remnant Regional Ecosystems and mapped Koala Bushland Habitat on the site, and will ultimately form part of the broader Flinders – Karawatha Bioregional Corridor adjoining to the north. This area is considered to contain the greatest Significant Biodiversity Values associated with the site and is proposed to be retained and rehabilitated under the development. Further, the focus of conservation outcomes in this location reflects consultation with the **Commonwealth Department of the Environment and Energy** and preferred outcomes for Koala, a listed threatened species and Matter of National Environmental Significance.

Undullah / Woollaman Creek Corridor

In general, this corridor was highly disturbed, maintaining extensive weed infestations and isolated and fragmented remnant values with areas mapped as Koala Bushland Habitat along the corridor do not necessarily coincide with vegetative values on-ground. Flow paths and tributaries were generally considered to constitute 'drainage features' and it is anticipated that their lower reaches interacting with Undullah and Woollaman Creeks will be retained and enhanced within conservation areas and open space uses under the proposal. The proposed retention and rehabilitation of the corridor in concert with complementary open space uses amongst retained and rehabilitated remnant and regrowth areas is considered a far superior ecological outcome to that currently present on-ground, and in keeping with the intent of the Development Scheme.

Central Drainage Lines and Lake Area

The central drainage lines and adjoining overland flow paths in paddock areas generally contain no true watercourse or riparian features. These areas would only contain water in periods of high rainfall events and contain very few opportunities for water to be retained, other than relatively small constructed farm dams. The drainage lines maintain cleared open stretches and regrowth vegetation, with lower reaches that contain some riparian type features more indicative of a defined 'watercourse'. They do not contain remnant vegetation and are largely dominated by regrowth species where vegetation occurs. Some areas are highly eroded due to cattle access and dispersive soils with very few noteworthy ecological values recorded. As such, the central drainage lines maintain limited apparent utility for ongoing connectivity value other than ancillary to the Woollaman Creek corridor. It is understood that the intention is to create complimentary open space uses along these drainage lines with core retention and rehabilitation areas. Further, it is noteworthy that the Commonwealth **Department of the Environment and Energy** at this stage of the Federal assessment process under the *Environment Protection and Biodiversity Conservation Act 1999* consider these potential linkages as functionally lost in terms of habitat and connectivity value due to adjoining and future surrounding development outcomes.

The proposal includes the creation of a lake with wetland features where the central drainage lines converge in the south, which presents an opportunity to provide significant habitat features that would otherwise not be present in the ephemeral and relatively disturbed drainage lines currently present on-site. Lower lying portions of these drainage lines currently maintain some indicators of riparian features, and these would likely be significantly augmented in the presence of a permanent water body. It is probable that the lake area would augment the occurrence and availability of prey resources for significant predatory raptor species, with landscaping features also incorporating native habitat values appropriate for fauna utilisation. It is anticipated that the Lake proposal in conjunction with significant rehabilitation works will provide superior ecological values relative to those currently present on-site.

Other Land Uses

With regard to the balance of the site, there is little meaningful connectivity or ecosystem function to the south of the project and thus site design does not seek to encourage or support movement in this direction. Rather, core development precincts are to be located within the southern portion of the property where the highest levels of disturbance were identified during site surveys. In this location, development logically adjoins the expansion of urban uses and facilitates extension over the balance of the western portion of the Greater Flagstone Priority Development Area. Land uses in this area include:

- Town Centre
- Neighbourhood Centres
- Urban Living
- Regional and District Sports Parks
- Regional and District Recreation Parks
- Recreational Lake
- State Primary School
- Potential Private Primary School
- Kindergarten and Childcare Facilities
- Neighbourhood (retail) Centre
- Community Facilities

Refer to **Plan 1** in **Section 1** for the arrangement of the proposed land uses of the Context Plan

General

The proposed Context Plan generally reflects the original outcomes outlined by the Urban Land Development Authority (ULDA – Now EDQ) in the Development Scheme. To implement the proposed Context Plan, some relatively small areas of remnant vegetation will be cleared while areas of non-remnant Category X will be retained. The ecological difference between these areas on ground is marginal compared to the strategic benefits of consolidation rather than fragmentation through site layout and design.

Development impacts will be managed through the measures outlined in *PDA Guideline No.17 (Remnant Vegetation and Koala Habitat)* or as altered through site specific outcomes listed in the Natural Environment Site Strategy anticipated to be conditioned on approval. Where impacts occur at the level outlined in Guideline 17, compensatory offsets will be triggered. The development, management and offset of site values may also be governed through an approval from the **Commonwealth Department of the Environment and Energy**, which is principally interested in achieving the same outcomes for the site.

This Significant Biodiversity Assessment Report forms the background data and rationale for the future Natural Environment Site Strategy (NESS) anticipated for the project. The information included herein has been utilised to inform the Context Plan and future Plan of Development Applications, as well as outline requirements and formats for subsequent Environmental Management Plans.

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Acronymns

ASRIS	Australian Soil Resource Information System
DAF	Department of Agriculture, Fisheries and Forestry (Qld)
DILGP	Department of Infrastructure, Local Government and Planning (Qld)
DSITA	Department of Science, Infomration Technology, Innovation and the Arts (Qld) (former)
DEE	Department of the Environment and Energy (Cth)
EDQ	Economic Development Queenslnad (formally ULDA)
EHP	Department of Environment and Heritage Protection (Qld)
EOA	*Environmental Offsets Act 2014* (Qld)
EOP	Environmental Offset Policy 2014 (Qld)
EPBC	*Environment Protection and Biodiversity COnservation Act 1999* (Cth)
EVNT	Presumed extinct, endangered, vulnerable and near threatened species protected under NCWR
GFPDA	Greater Flagstone Priority Development Area (formally Greater Flagstone UDA)
IMP	Infrastructure Master Plan
Koala SPRP	*South East Queensland Koala Conservation State Planning Regulatory Provisions*
LCC	Logan City Council
LPA	*Land Protection (Pest and Stock Route Management) Act 2002*
MNES	Matters of National Environmental Significance
MSES	Matters of State Environmental Significance
NCA	*Nature Conservation Act 19992* (Qld)
NCWR	*Nature Conservation (Wildlife) Regulation 2006*
NESS	Natural Environment Site Strategy
NRM	Department of Natural Resources and Mines (Qld)
PDA	Priority Development Area (formally UDA)
PMAV	Property Map of Assessable Vegetation
RE	Regional Ecosystem
SARA	State Assessment Referral Agency
SAT	Spot Assessment Technique Survey
SBV	Signficant Biodivesity Value
SEQRP	South East Queensland Regional Plan 2009-2031
SPA	*Sustainable Planning Act 2009*
SPP	State Planning Policy
SS	Site Strategies
TEC	Threatened Ecological Community
ULDA	Urban Land Development Authority (now known as EDQ)
UDA	Urban Development Area (now known as PDA)
VMA	*Vegetation Management Act 1999*
WWBW	Waterway Barrier Works

I. Introduction

The *Environmental Management Division* of **Saunders Havill Group** (SHG) was engaged by **Pacific International Development Corporation Pty Ltd** (PIDC) to prepare a Significant Biodiversity Assessment Report (SBAR) in response to **Economic Development Queensland's** (**EDQ**) *PDA Implementation Guideline No. 14 (Environmental values and sustainable resources* - IG14) and *PDA Implementation Guideline No.17 (Remnant Vegetation and Koala Habitat Obligations in Greater Flagstone and Yarrabilba PDAs* – IG17*)* for a proposed master planned community located at Wyatt Road, Undullah. The proponent has previously obtained a preliminary approval from EDQ for a similar development proposal over the site, however, through subsequent detailed design and assessment, including the addition of a constructed lake, a new application was considered appropriate.

The site is located within the *Greater Flagstone Priority Development Area* (GFPDA) and as such is administered by **EDQ**. Although being entirely included within the **Logan City Council** (LCC) local government area, **EDQ** have jurisdiction for the implementation and enforcement of development applications in relation to the project as a key regulator of development within *Priority Development Areas* (PDA) for the **Department of Infrastructure, Local Government and Planning** (DILGP). Despite this legislative position on assessment, the majority of infrastructure assets, inclusive of open space and proposed conservation areas, will ultimately transition to the ownership of **LCC**.

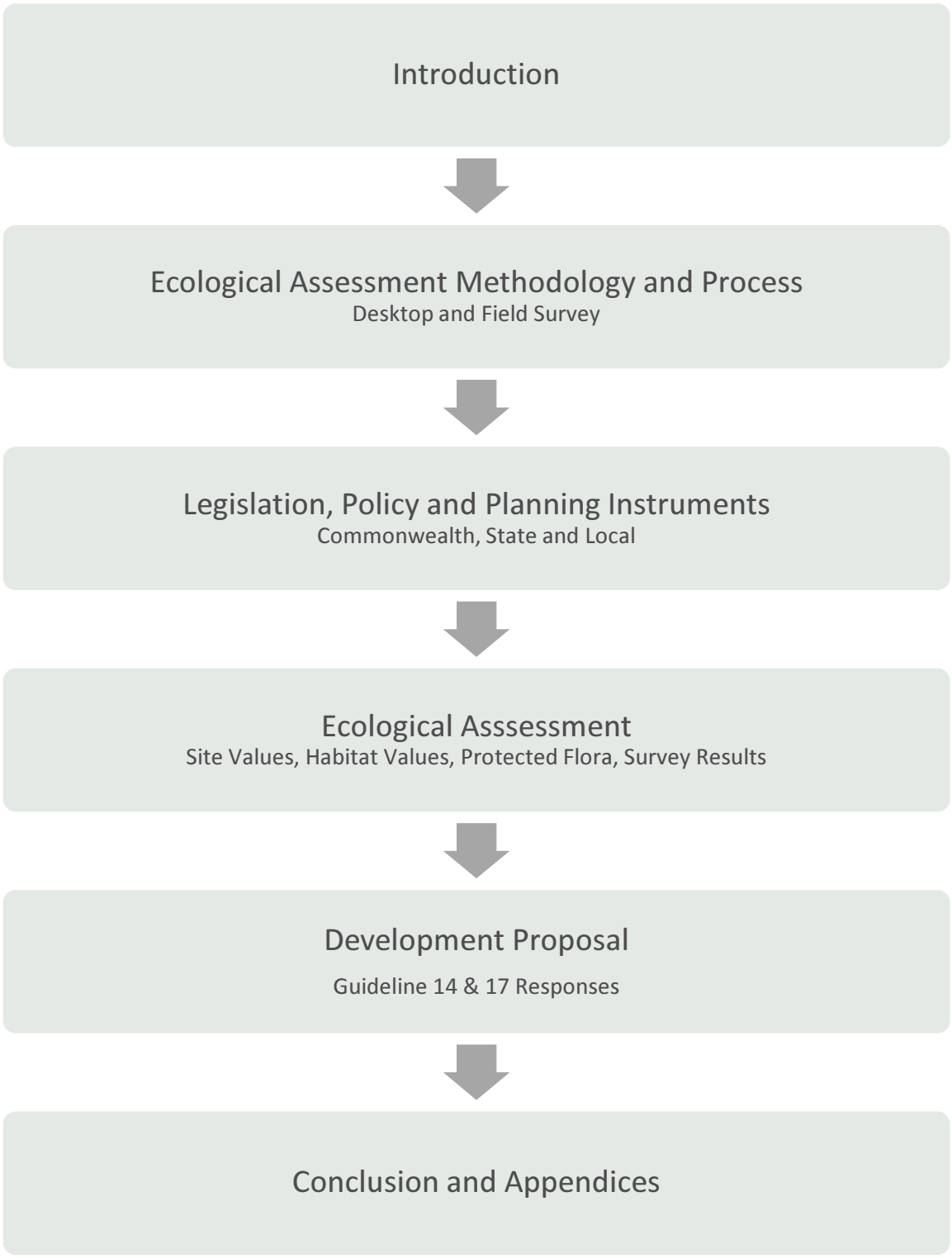
This SBAR provides a review of the site's ecological values in accordance with Commonwealth and State Government legislation and is intended to support the submission of a Context Plan and Preliminary Approval inclusive of Site Strategies (SS) and Infrastructure Master Plans (IMPs) to **EDQ**.

I.I. Key Site Details

Address	Wyatt Road, Undullah, QLD 4285
RPD	Lot 3 on S311896 Lot 200 on SP133189 Lot 1 on RP97710
Area	1,028 ha
Tenure	Freehold
Local Government Area	Logan City Council
Planning Scheme/Local Plan	Greater Flagstone UDA Development Scheme
Area Classification/Zone	Urban Living/Environmental Protection
Existing Land Use	Rural
Proposed Land Use	Residential/ Neighbourhood Centre/Education/Sports
VMA / PMAV	Category X – Non Remnant, Category B - Of Concern and Least Concern, Watercourse
Koala Habitat Values	Medium & Low Value Bushland, Medium & Low Value Rehabilitation
State Planning Policy (MSES)	Wildlife Habitat, Regulated Vegetation, Regulated Vegetation Intersecting a Watercourse

1.2. Report Structure

This SBAR adopts the following structure:

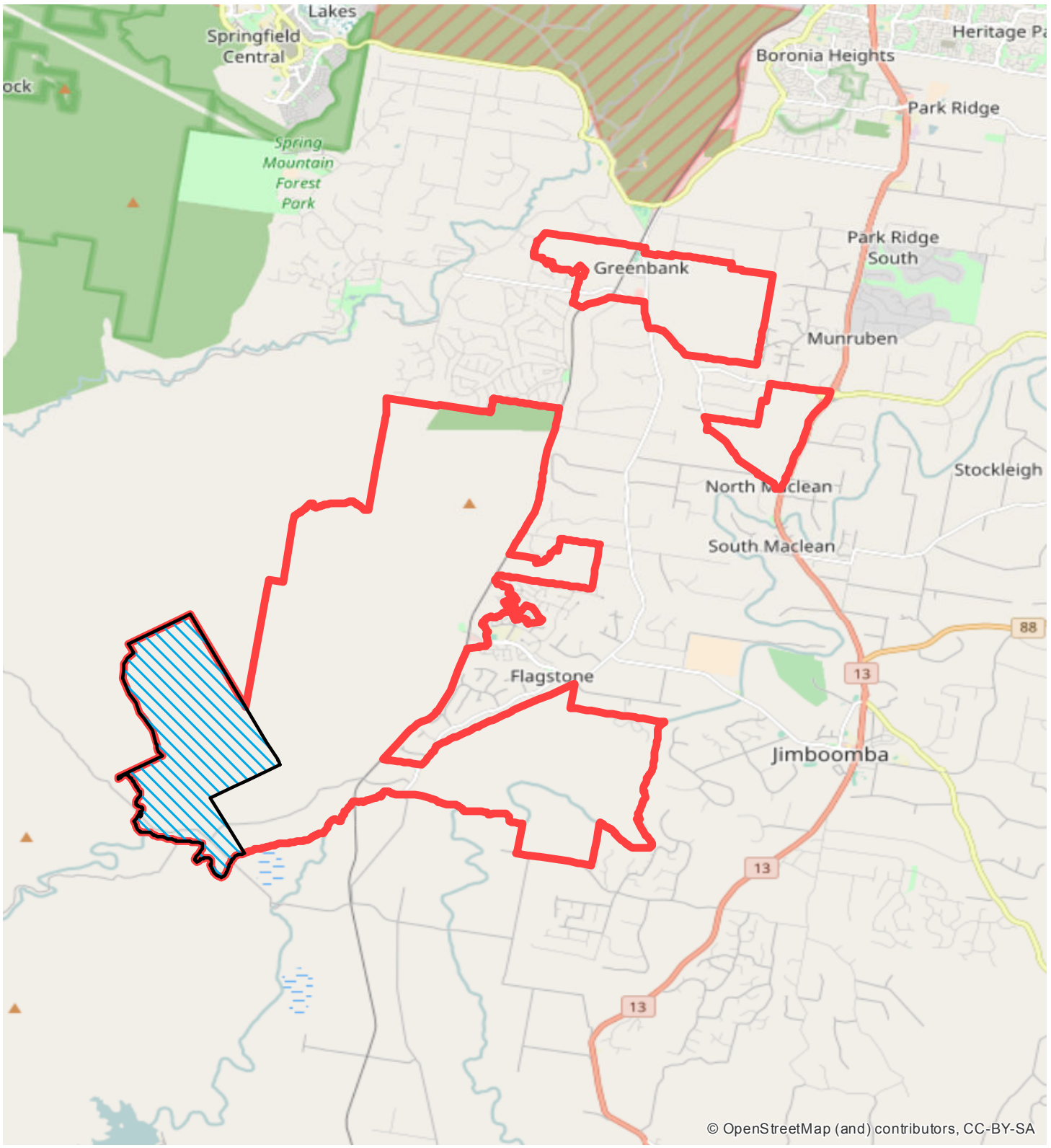


1.3. Context and Background

Contextually, the site is located 25 km southeast of Ipswich CBD and 27 km southwest of Logan City in the western suburb of Undullah. The site is predominately surrounded by rural residential development and is located to the west of the Brisbane-Sydney Railway Line. The surrounding landscape contains a mixture of cleared agricultural land and vacant bushland. The site itself forms the south-western edge of the Greater Flagstone PDA and adjoins the proposed Undullah development to the east. The subject area is flanked by Undullah creek to the south-west and Woollaman Creek to the south and Flinders-Karawatha Bioregional Corridor to the north-west. The site context is displayed in **Figure 1** and site aerial in **Figure 2**.

The proposed residential development footprint falls within a modified and disturbed landscape composed of open paddocks and regrowth and remnant vegetation. The area has been subject to historical and contemporary flora and fauna assessments to address various approval requirements including targeted surveys carried out specifically for this application. The results of these assessments are summarised and presented in this report.

The property has been identified for future development and is located within the Greater Flagstone PDA. The Flinders PDA project site will be developed in accordance with the proposed Context Plan (refer **Plan 1**). The Context Plan refines outcomes of the site in alignment with the *Greater Flagstone Urban Development Area Development Scheme*, as implemented by **EDQ**. Specific Site Strategies will be prepared for the development, including the Natural Environment Site Strategy. The Context Plan is anticipated to be conditioned with the first approval on site to become the principal planning document by which planning and environmental outcomes are achieved.



Legend

- Project site boundary
- Greater Flagstone PDA boundary

Figure 1

Site Context

Pacific International Development Corporation Pty Ltd

File ref. 8020 E Figure 1 Site Context B
Date *27/03/2017*
Project *Wyatt Road, Undullah*

0 1,000 2,000 4,000 6,000 *m*

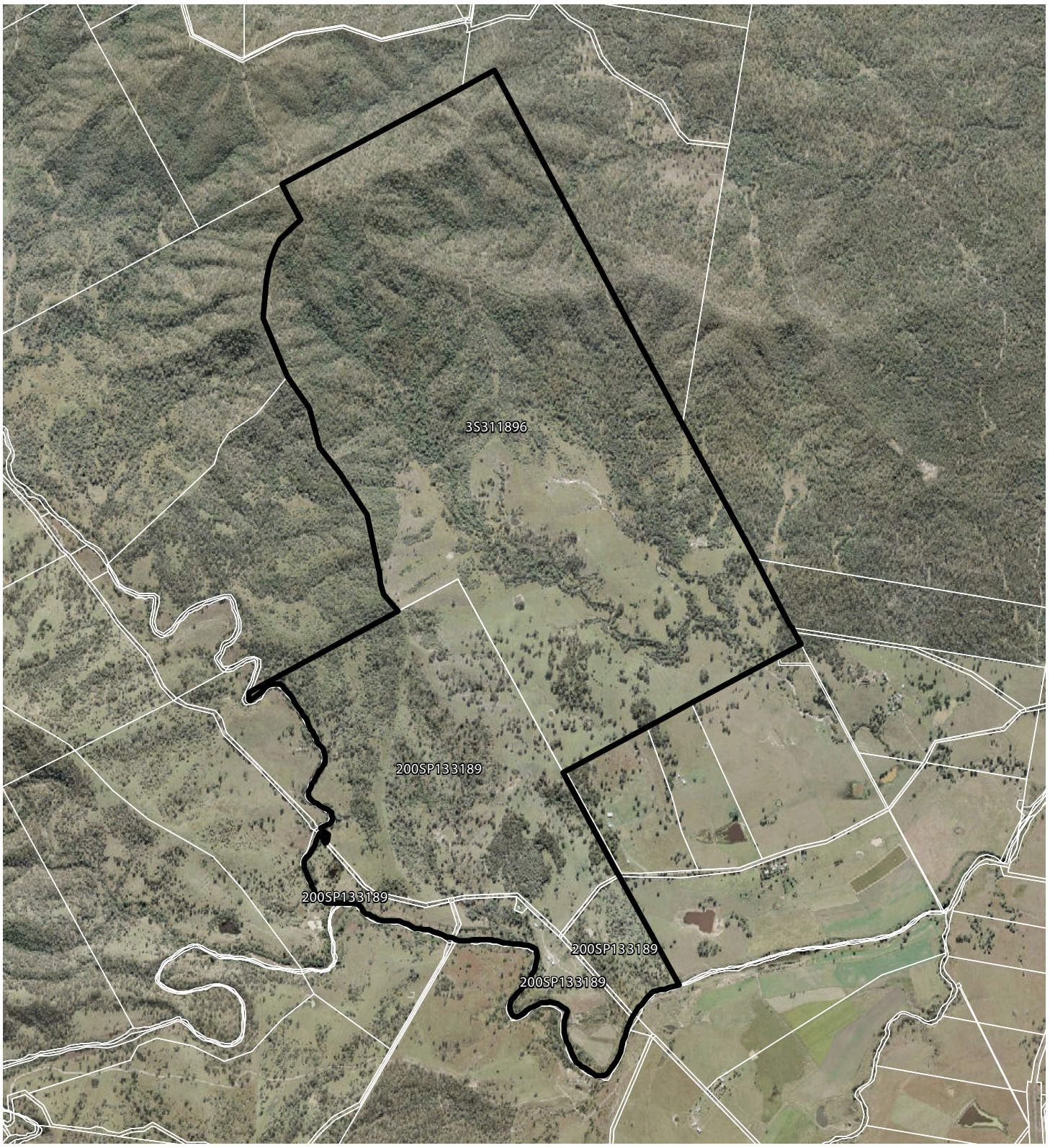
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Scale (A4): 1:125,000 [GDA 1994 MGA Z56]

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2016)



Legend

Project site boundary

Qld DCDB

Figure 2

Site Aerial

Pacific International Development Corporation Pty Ltd

File ref. 8020 E Figure 2 Site Aerial B
Date *27/03/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

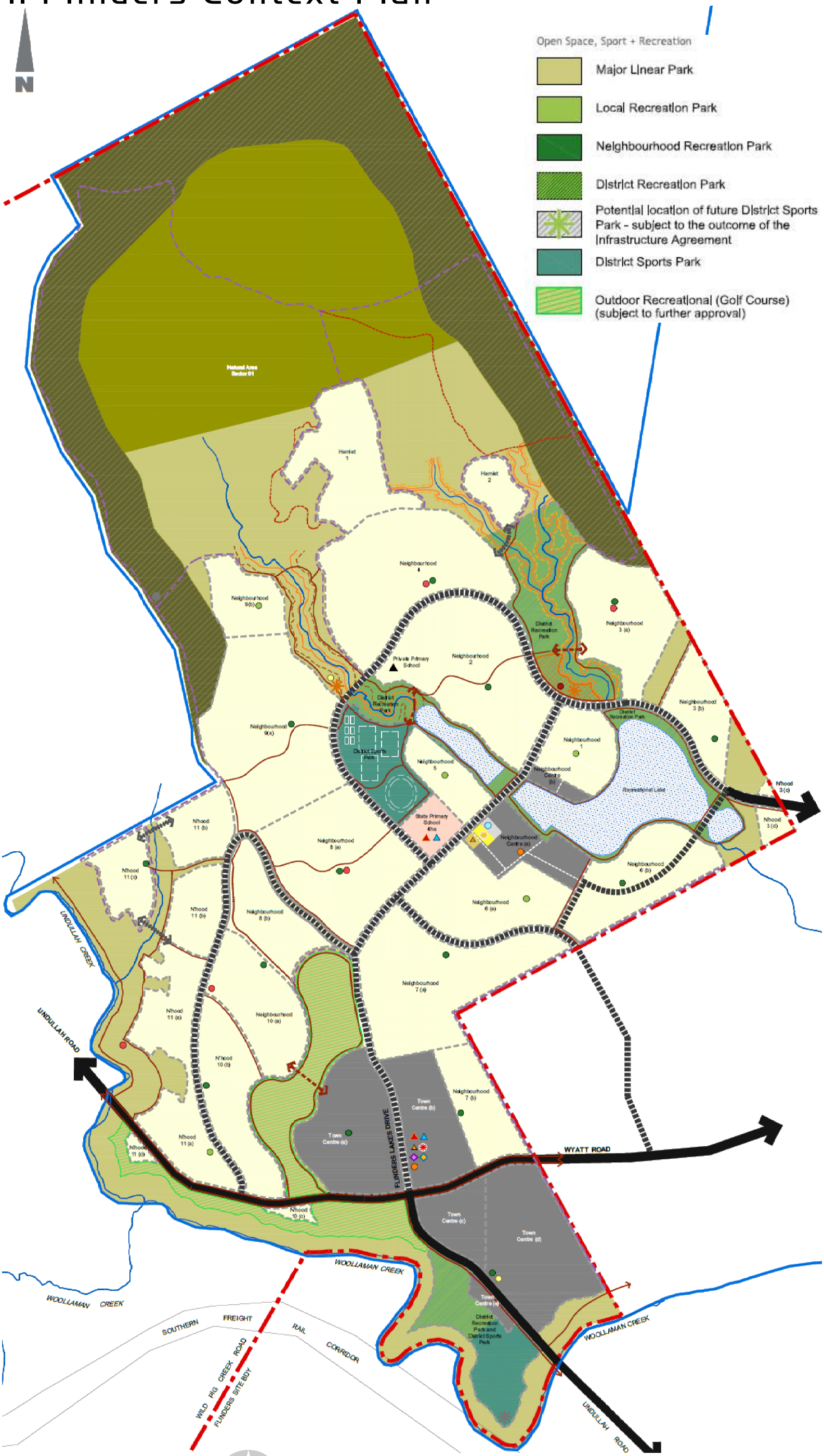
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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2016), Aerial (Qld Globe 2015)

1. Flinders Context Plan



Open Space, Sport + Recreation

- Major Linear Park
- Local Recreation Park
- Neighbourhood Recreation Park
- District Recreation Park
- Potential location of future District Sports Park - subject to the outcome of the Infrastructure Agreement
- District Sports Park
- Outdoor Recreational (Golf Course) (subject to further approval)

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: QLD GIS Layers (QLD Gov. Information Service 2017), Context Plan (robertsday, December 2016)

* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

- Flinders Site Boundary
- Sector Boundary
- ULDA Development Area Boundary
- Neighbourhood / Hamlet Boundary
- Town Centre - minimum net residential density - 25 dwellings/ hectare
- Neighbourhood Centre - minimum net residential density - 20 dwellings/ hectare
- Urban Living - minimum net residential density - 15 dwellings/ hectare (unless it can be demonstrated this density cannot be achieved due to site constraints)

Community Facilities + Uses

- State Primary School
- Kindergarten
- Childcare
- Neighbourhood Meeting Room/ House
- Community Facility + Place of Assembly Inc. Library
- District Community Centre Hub Including Branch Library + Local Youth Centre
- Multi - Purpose Community Use Area
- Art Gallery
- Community Health Hub
- District Community Garden
- Neighbourhood Community Garden
- Urban Community Garden

Natural Area

- Environmental Protection Zone
- Natural Area (Including waterways + stream protection zones)
- Recreational Lake (Indicative)
- Fauna Crossing
- Waterways

PLAN ISSUE:

Issue	Date	Description	Drawn	Checked
A	4/04/2017	Prelim Draft	TC	FM

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Flinders PACIFIC INTERNATIONAL GROUP

RPD: 35311896 4/04/2017 8020 E 01 Flinders Context Plan A

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. Field Survey
4. Analysis and Recommendation

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:

- Commonwealth's EPBC Protected Matters Search Tool
- Australian Soils Resource Information System Mapping
- Atlas of Living Australia Searches
- Australian Koala Foundation Koala Map
- Koala Tracker Mapping
- Queensland Government Wildlife Online Database for the study area and surrounds
- Queensland Government Regulated Vegetation Management Mapping and Pre-Clear Mapping
- Queensland Government Koala Habitat Values Mapping
- Queensland Government Protected Plants Survey Mapping
- Queensland Government Wetland Protection Areas Mapping
- Queensland Government Environmental Overlay Mapping i.e. SARA, SPP
- Development Scheme Documents and Maps

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

Previous studies conducted by **James Warren & Associates Pty Ltd** (JWA) in 2010 intended for State level approvals were reviewed as guidance prior to SHG's study. The following survey methods were employed by JWA and results relevant to threatened matters are discussed herein:

- Baited Hair Traps
- Elliot traps
    - Terrestrial
    - Arboreal
- Baited Cage Traps
- Call Playback
- Spotlighting

- Bird surveys
- Ultrasonic bat surveys
- Mist Netting
- Random meanders
- Opportunistic and targeted searches

A number of targeted flora and fauna surveys were undertaken over the referral area between November 2015 and December 2016. These have been carried out using a number of survey methods to describe various on-site habitat and vegetation characteristics. 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 (November 2015 to December 2016).
- Observational Survey – A detailed observational survey 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) (November 2015 to December 2016).
- Nocturnal spotlighting (13th January 2016)
- Motion detector camera surveys (10th November 2015 to 6th January 2016)
- SAT – The Spot Assessment Technique (SAT) and Koala habitat assessments were carried out to identify the presence of Koalas and their habitat (11th, 18th and 19th November 2015);
- Specific surveys for Collared delma (*Delma torquata*) and similar reptiles – Potential habitat for this cryptic species was systematically surveyed (19th November 2015)
- Specific surveys for Grey-headed Flying-fox (*Pteropus poliocephalus*) – Nocturnal spotlighting (13th January 2016), resource habitat and opportunistic surveys for this species (November 2015 to December 2016) were conducted.
- Specific surveys for Microbats – Potential flyways and foraging areas were systematically surveyed using ultrasonic detection (13th January 2016)
- Systematic bird surveys (diurnal, Dawn and Dusk - 6th, 13th and 14th January 2016)
- Targeted amphibian surveys (13th January 2016)
- Diurnal stratified flora and fauna surveys (November 2015 to December 2016)
- Targeted rock-outcrop habitat survey (12th January 2016)
- Random meander flora surveys (November 2015 to July 2016)
- GPS Tree Plot of proposed development area (June 2016 to present)
- Identification – Identification of habitat values within the area relevant to terrestrial vertebrate fauna, including ecological corridors (November 2015 to December 2016); and
- Description – A description of the major fauna habitats present (November 2015 to December 2016)

The study area has undergone a comprehensive assessment of the terrestrial vertebrate fauna and faunal values of the subject land for inclusion within this significant biodiversity assessment.

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* (the 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 allotments was undertaken through the *Environment Protection and Biodiversity Conservation Act* Online Protected Matters Search Tool. 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 the general vicinity of the development site. **Table 1** lists a summary of the search results within a 5 km radius of the site. The complete results of this search are included in **Appendix A**.

Table 1: EPBC Act 1999 Protected Matters Search Results

Wetlands of International Importance		
Moreton Bay (30-40 km upstream)		
Threatened Ecological Communities		
Lowland Rainforest of Subtropical Australia (critically endangered)- community may 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		
Threatened Species		
Scientific Name	**Common Name**	**Status**
Plants		
Bosistoa transversa	Three-leaved Bosistoa	Vulnerable
Notelaea ipsviciensis	Cooneana Olive	Critically Endangered
Notelaea lloydii	Lloyd's Olive	Vulnerable
Phaius australis	Lesser Swamp-orchid	Endangered
Phebalium distans	Mt Berryman Phebalium	Critically Endangered
Thesium austral	Austral Toadflax	Vulnerable
Birds		
Anthochaera phrygia	Regent Honeyeater	Critically Endangered
Botaurus poiciloptilus	Australasian Bittern	Endangered
Dasyornis brachypterus	Eastern Bristlebird	Endangered

Scientific Name	Common Name	Status
Erythrotriorchis radiatus	Red Goshawk	Vulnerable
Geophaps scripta scripta	Squatter Pigeon (southern)	Vulnerable
Grantiella picta	Painted Honeyeater	Vulnerable
Lathamus discolor	Swift Parrot	Critically Endangered
Poephila cincta cincta	Black-throated Finch (southern)	Endangered
Rostratula australis	Australian Painted Snipe	Endangered
Turnix melanogaster	Black-breasted Button-quail	Vulnerable
Fish		
Maccullochella mariensis	Mary River Cod	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	Endangered
Petauroides Volans	Greater Glider	Vulnerable
Petrogale penicillata	Brush-tailed Rock-wallaby	Vulnerable
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)	Koala	Vulnerable
Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable
Other		
Cycas ophiolitica	-	Endangered
Reptiles		
Delma torquata	Collared Delma	Vulnerable
Furina dunmalli	Dunmall's Snake	Vulnerable
Saiphos reticulatus	Three-toed Snake-tooth Skink	Vulnerable

3.2. Nature Conservation Act 1992

The *Nature Conservation Act 1992* classifies and protects significant areas (Protected Areas) and protects threatened plant and animal species. The *Nature Conservation (Wildlife) Regulation 2006* (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 5 km 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 B** for full search results.

Table 2: NCA Wildlife Online Search Results

Scientific Name	Common Name	Status
Plants		
Melaleuca irbyana	-	Endangered
Birds		
Ninox strenua	Powerful Owl	Vulnerable
Mammals		
Phascolarctos cinereus	Koala	Vulnerable

3.3. Protected Plants

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 presumed extinct, endangered, vulnerable and 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 listed in Schedule 6.

Under the amended NCA, a protected plant that is in the wild must not be 'taken' (i.e. cleared) unless taking is under:

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

A search of the Flora Survey Trigger Map shows the site is mostly located within a High Risk Area for protected plants (refer to **Appendix C** for Environmental Searches).

3.4. 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.

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 Category A, B, C or R are subject to clearing requirements. The latter vegetation categories can only be cleared in accordance with an exemption, a self-assessable vegetation clearing code, an area management plan or a development approval. A supporting map defining Regional Ecosystems, wetlands, watercourses and essential habitat, is provided with the Regulated Vegetation Management Map.

Regulated Vegetation Management Mapping shows the site as containing Category X (non-remnant) and Category B (remnant vegetation) (refer **Figure 3**). Category X vegetation is not regulated under the VMA. The Vegetation Management Supporting Map (refer **Figure 4**) shows small patches of the subject site is mapped as containing



remnant vegetation consisting of Of Concern and Least Concern Regional Ecosystems. A description of these REs is presented below:

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).

RE 12.3.7 – Least Concern

Description	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 12.9-10.7 – Of Concern

Description	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).

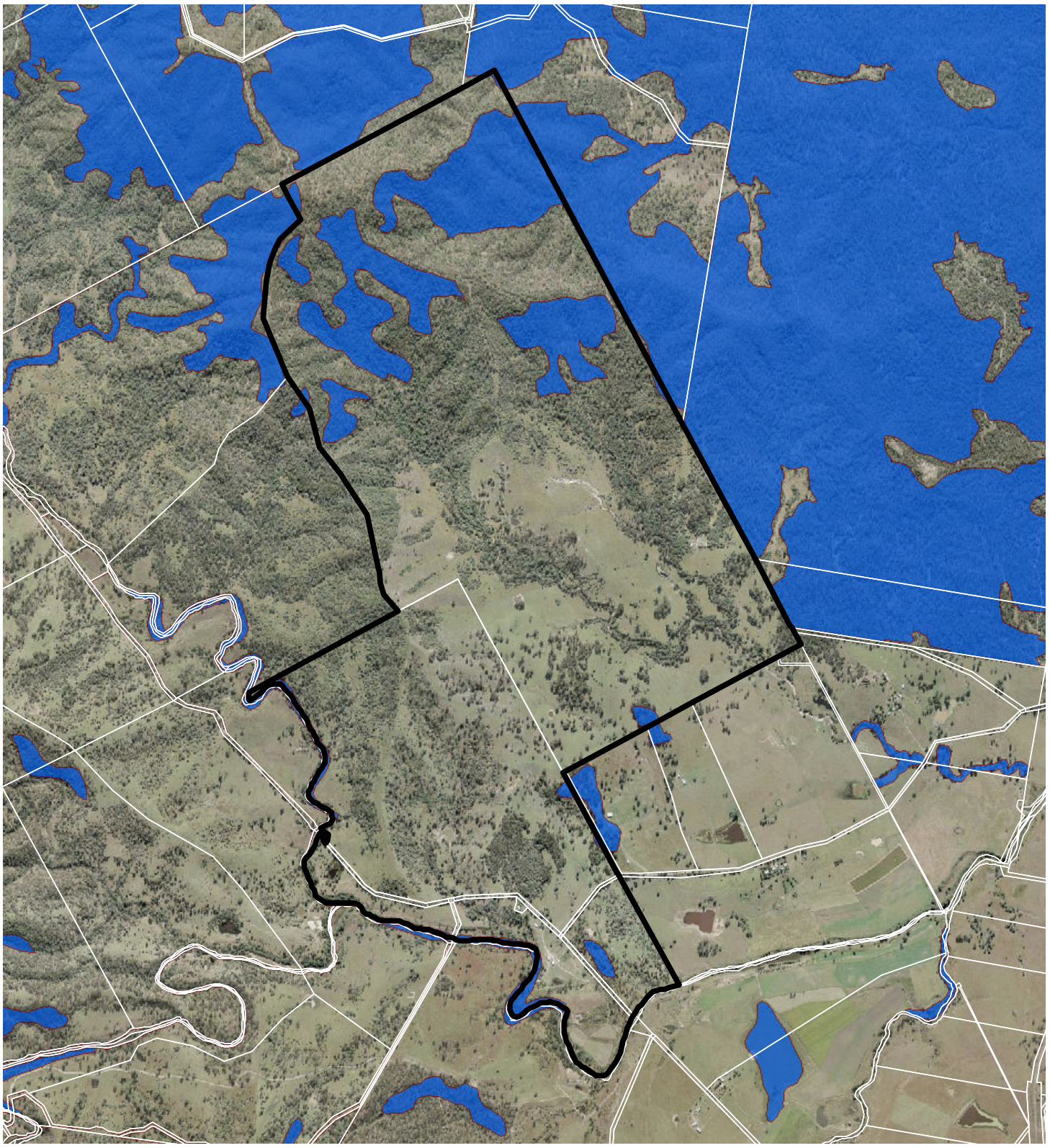
RE 12.9-10.17 – Least Concern

Description	Open forest to woodland complex generally with a variety of stringybarks, grey gums, ironbarks and in some areas spotted gum. Canopy trees include Eucalyptus 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: 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 north-western portion of the site mapped as Of Concern RE is considered to provide essential habitat for *Phascolarctos cinereus* (Koala). Further, site vegetation has been rectified by Property Map of Assessable Vegetation (**Appendix C**). The clearing of Category B Regulated Vegetation is exempt under the VMA within a Priority Development Area.

Of Concern and Least Concern vegetation is not directly referenced within the PDA Development Scheme or IG14 as a Significant Biodiversity Value, although this status may change subject to co-location with other features. Clearing of Endangered vegetation, where ground truthed and considered viable is generally to be avoided under IG14. However, clearing of Endangered vegetation communities can occur within the confines of EDQ IG17. Importantly, there are no Endangered Regional Ecosystems mapped or ground-rectified on this site (**Figure 4** and **Appendix C**).



Legend

- Referral area
- Qld DCDB

Regulated Vegetation

- 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 3

VMA - Regulated Vegetation Management Map

Pacific International Development Corporation Pty Ltd

File ref. 8020 E Figure 3 RVMM B
Date *27/03/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

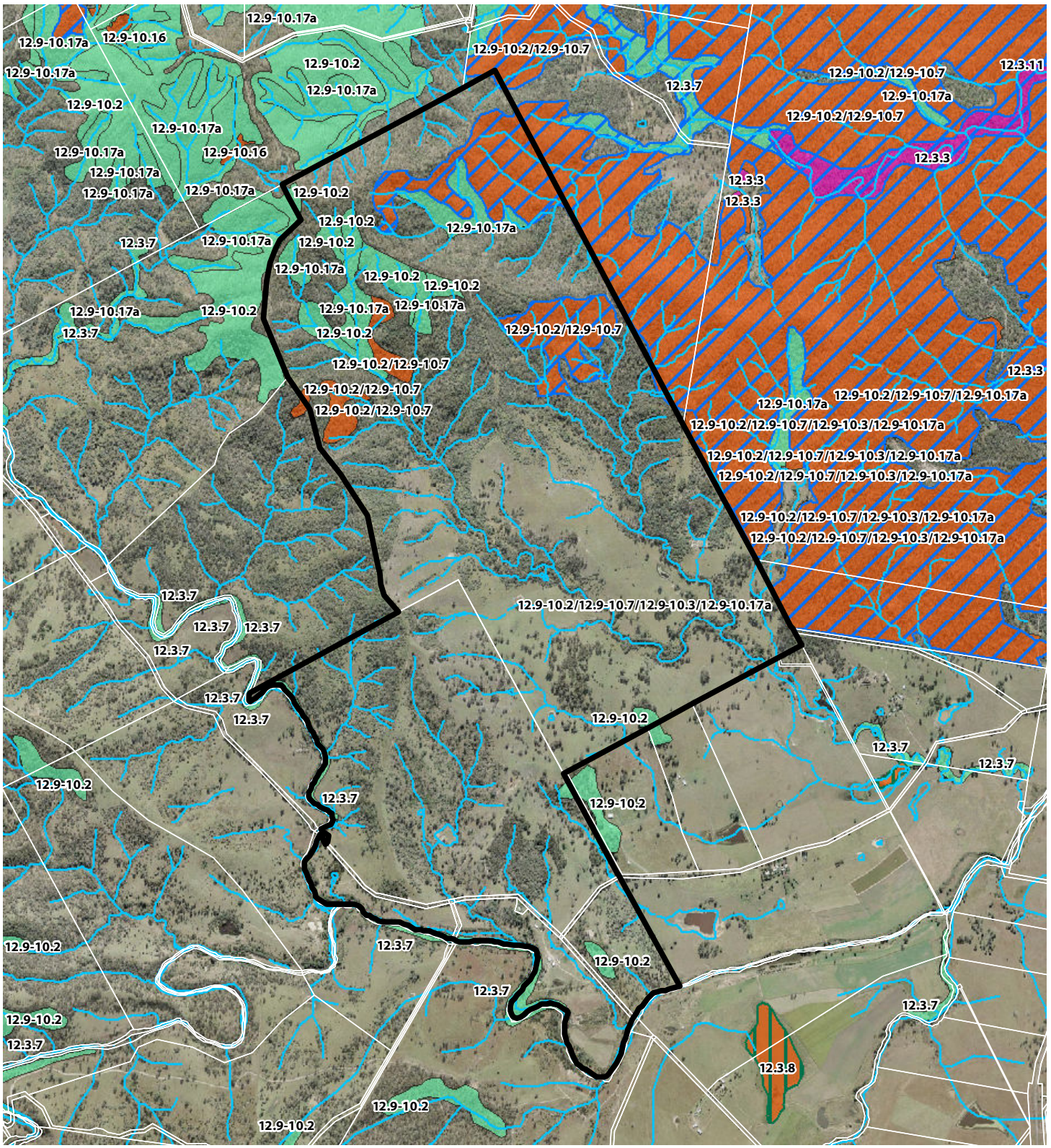
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Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2016), Aerial (Qld Globe 2015)



Legend

- Referral area
- Qld DCDB
- VM Watercourses
- VM Essential Habitat
- VM Wetland

Regional Ecosystems mapping

- 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 4

VMA - Regulated Vegetation Supporting Map

Pacific International Development Corporation Pty Ltd

File ref. 8020 E Figure 4 RVSM B
Date *27/03/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2016), Aerial (Qld Globe 2015)

3.5. South East Queensland Koala Conservation State Planning Regulatory Provisions

The *South East Queensland Koala Conservation State Planning Regulatory Provisions* (Koala SPRP) came into effect in May 2010. The Koala SPRP targets areas of the Koala Coast, and Pine Rivers and areas outside the urban footprint, where koalas are known to be under the most significant risks (areas previously regulated by the *Interim South East Queensland Koala State Planning Regulatory Provision (February 2010*) or the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2026).* The Koala SPRP prohibits clearing bushland habitat in the priority areas of Koala Coast and Pine Rivers, and in areas outside the urban footprint.

As the site is located within the Greater Flagstone Priority Development Area, development is not subject to the *Sustainable Planning Act 2009* and thus not subject to the provisions of the Koala SPRP. Further, the site is not located within the Koala SPRP trigger area. It is noted that the Koala Habitat Values Map identifies predominantly Low Value Rehabilitation Habitat across the site, with small areas of Medium and Low Value Bushland, and Medium Value Rehabilitation Habitat mapped across the project area (refer **Figure 5**). Koala Habitat Value mapping links directly to IG17 obligations for the Koala.

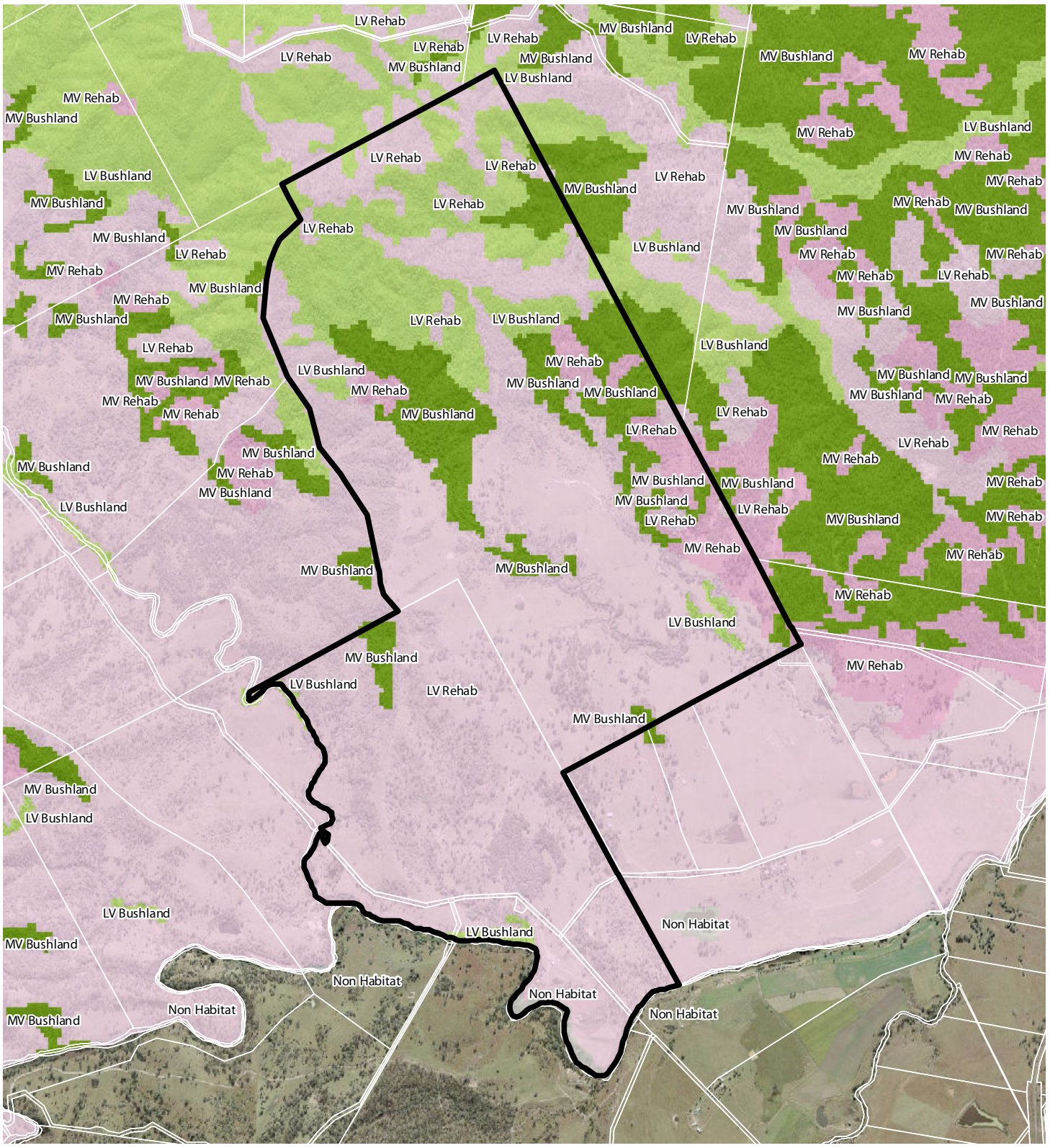
3.6. Coastal Protection and Management Act 1995

The *Coastal Protection and Management Act 1995* (Qld) seeks to protect the coastal resources of the coastal zone. The Act establishes a framework for the protection, conservation, rehabilitation and management of the coastal zone with regard to the core objectives of the national strategy for ecologically sustainable development in the use of the Coastal Zone. The Act also ensures decisions about land use and development safeguard life and property from the threat of coastal hazards.

Coastal Development is managed to protect coastal resources through the planning and development framework established under the *Sustainable Planning Act 2009* (Qld) (SPA). Specifically, coastal development requiring assessment under SPA is required to respond to Module 10: Coastal Protection of the State Development Assessment Provisions (SDAP) specifically in relation to:

- Tidal Works; and
- Development in a Coastal Management District.

The site is not located within a Coastal Management District (refer **Appendix C** for Environmental Searches) and does not involve tidal works. Further, the provisions of the SPA do not apply within a PDA.



Legend

- Referral area
- Qld DCDB

Koala 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
- Non-habitat
- Water

Figure 5

SEQ Koala Conservation - Habitat Values Mapping

Pacific International Development Corporation Pty Ltd

File ref. 8020 E Figure 5 Koala Habitat B
Date *27/03/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

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Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2016), Aerial (Qld Globe 2015)

3.7. Wetland Protection Areas

The Queensland Government is committed to the statutory protection of wetlands in catchments adjoining the Great Barrier Reef lagoon, with a focus on actions outlined in the *Reef Water Quality Protection Plan 2013*.

The **Department of Infrastructure, Local Government and Planning** (DILGP) is an assessment manager or referral agency for a development application for material change of use, reconfiguring a lot or operational works involving high impact earthworks (as defined in the *Sustainable Planning Regulation 2009*) in wetland protection areas (WPA). Under Schedule 26 of the *Sustainable Planning Regulation 2009*, high impact earthworks is defined as operational work that involves changing the form of land, or placing a structure on land, in a way that diverts water to or from a wetland. The SDAP Module 11: Wetland Protection seeks to ensure that development is planned, designed, constructed and operated so as to not cause harm to the hydrology of wetlands in wetland protection areas that protect matters of national and state environmental significance.

While the property contains multiple constructed dams, the site is not mapped within a Wetland Protection Area (WPA) trigger area or as containing high conservation value wetlands by SARA mapping (refer **Appendix C** for Environmental Searches). Further, as the site is located within a PDA, the provisions of the SPA do not apply.

3.8. Fisheries Act 1994 (Qld)

The *Fisheries Act 1994* deals with the use, conservation and improvement of Queensland's fisheries resources and fish habitats. The legislation deals with the impact from coastal development on marine fish habitat, including protected marine plants and declared fish habitat areas. Development proposals that modify, or have a temporary or permanent loss of fish habitat are assessed by the **Department of Agriculture and Fisheries** (DAF).

The site has is mapped as containing or adjoining low (green), moderate (amber), high (red) and major (purple) risk waterways for Waterway Barrier Works (refer **Figure 6**). Despite the overarching exemptions provided through the *Economic Development Queensland Act* (EDQ Act) for most *Sustainable Planning Act 2009* processes Fisheries Legislation relative to water courses continues to apply. Detailed site design will need to be conscious of the Self Assessable Code and where applicable SDAP Module 5: Fisheries Resources criteria at detailed design phase of waterway crossings or related works.

3.9. Australian Soil Resource Information System

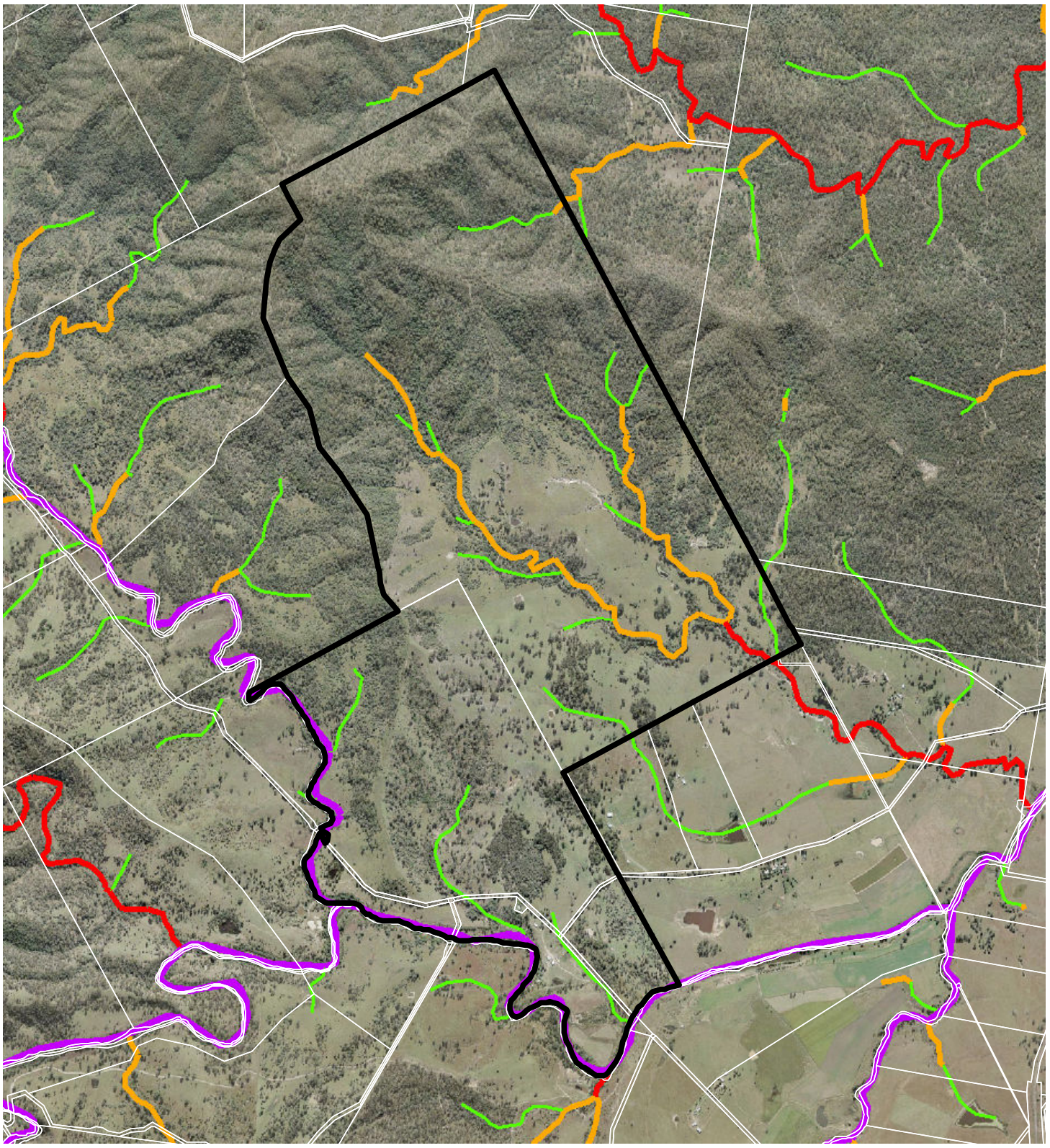
The Australian Soil Resource Information System (ASRIS) collates and maintains the best available, nationally consistent soil and land resource information for Australia. It provides a scientific information infrastructure for assessing and monitoring the condition of Australia's soil and land resources 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 almost entirely Chromosols with some portions on Dermosols in south-eastern property corners (refer **Figure 7** and Descriptions, below). Chromosols are considered a component of Land Zone 9-10 Regional Ecosystems. The pH is estimated to be about 5.5-6.0, indicating acidic soils, while the texture has been mapped as clay loam, sandy or silty clay loam with a clay content of 30-35%.

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

- Referral area
- Qld DCDB

Waterways

Risk of Impact

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

Figure 6

Fisheries Resources - Waterways for Waterway Barrier Works

File ref. 8020 E Figure 6 Fisheries B
Date *27/03/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

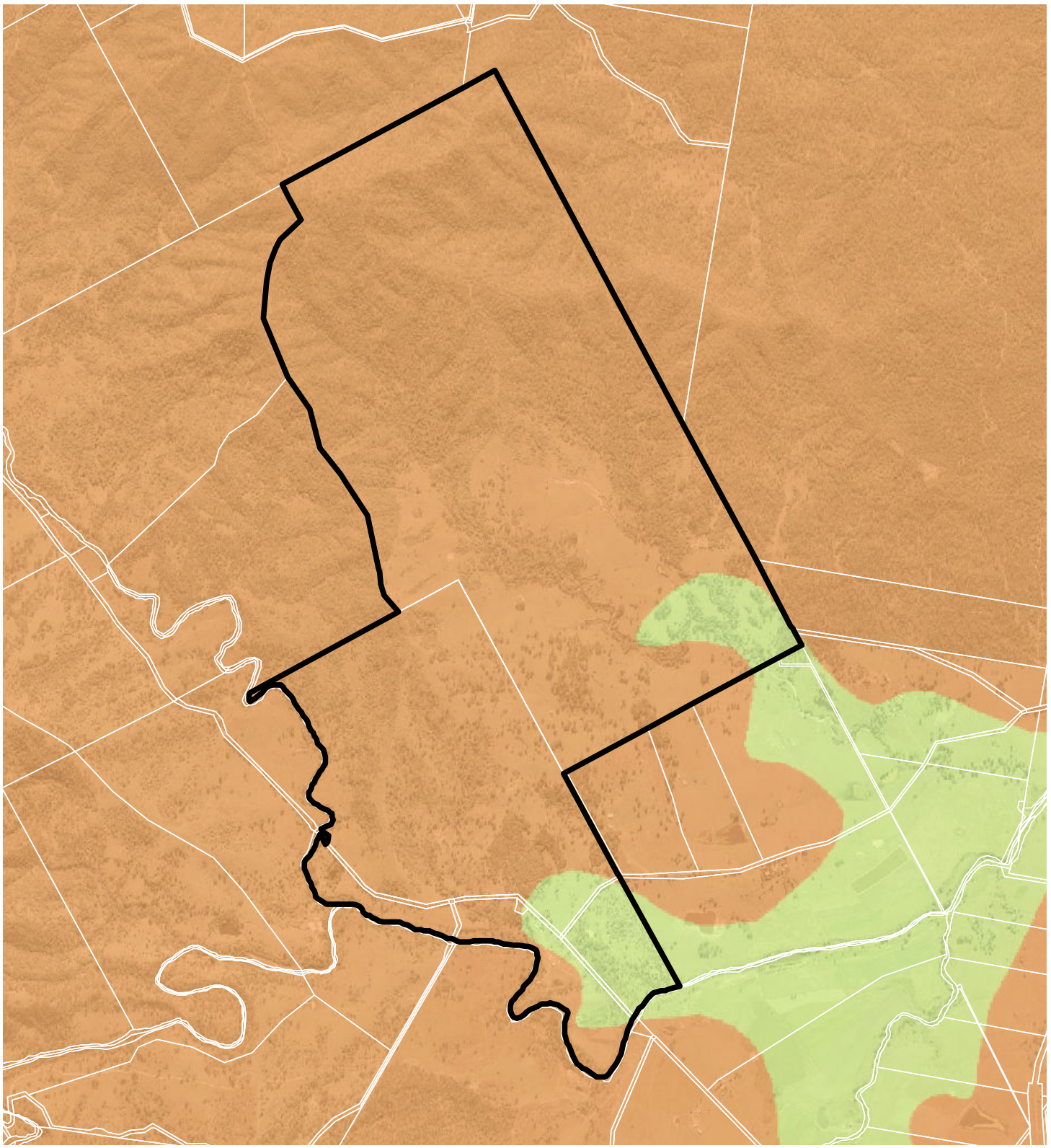
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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2016), Aerial (Qld Globe 2015)



Legend

- Referral area
- Qld DCDB
- Chromosols
- Dermosols

Figure 7

ASRIS Soils Mapping (level 4)

Pacific International Development Corporation Pty Ltd

File ref. 8020 E Figure 7 ASRIS Soils B
Date *27/03/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2016), Aerial (Qld Globe 2015), Soils (ASRIS.kmz 2016)

3.10. State Planning Policy

On the 2 December 2013, the Queensland Government's single State Planning Policy (SPP) came into effect, replacing the previous 10 State Planning Policies. **Part A** of the SPP confirms the hierarchical order of the State planning instruments, with the SPP placed third below 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. Carry out of self-assessable development mentioned in **Part F**.

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

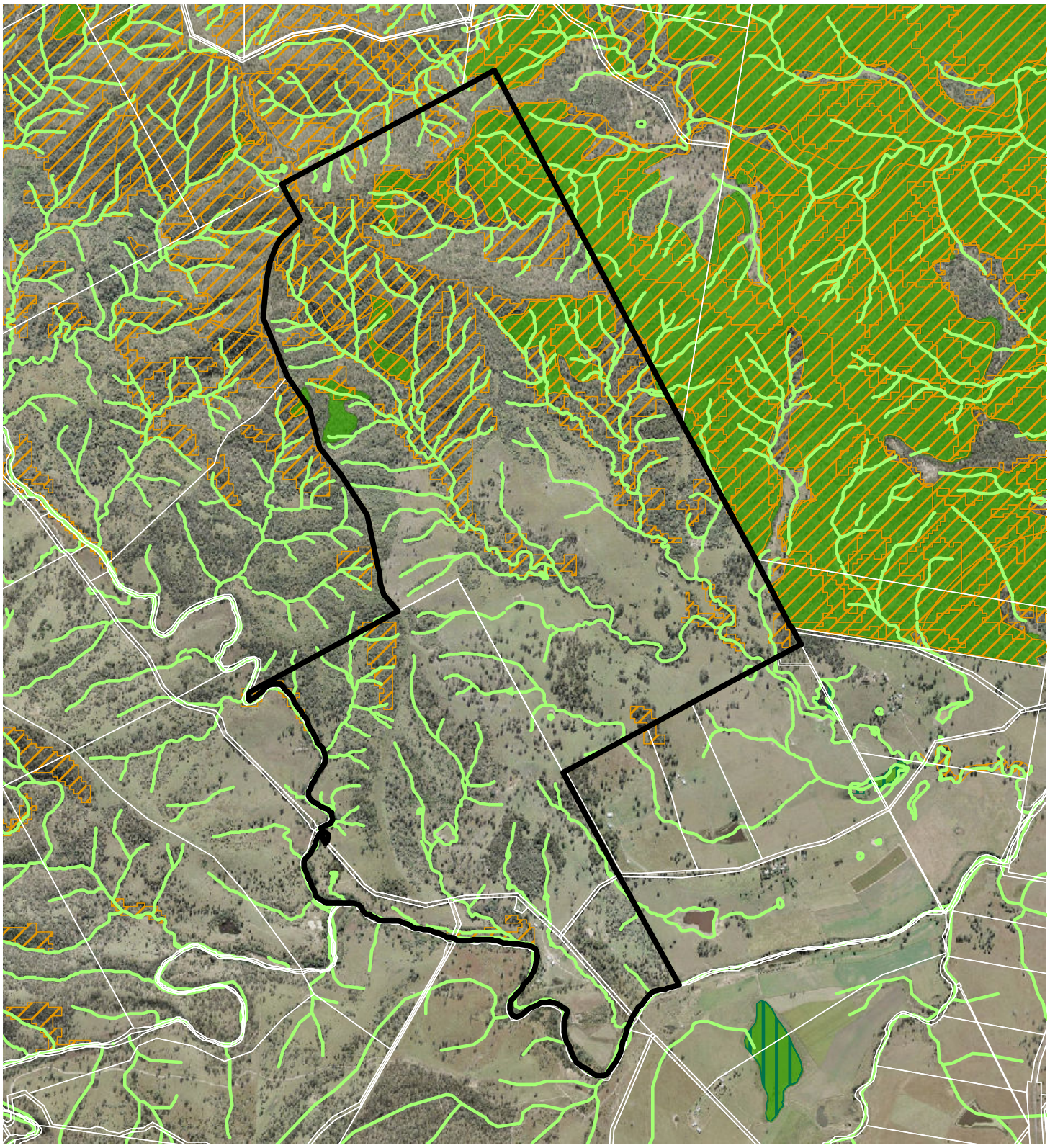
1. Biodiversity
2. Coastal Environment
3. Cultural Heritage
4. Water Quality

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 of the sixteen 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.

MSES mapping identifies the site as containing areas of Wildlife Habitat, Regulated Vegetation and Regulated Vegetation Intersecting a Watercourse (refer **Figure 8**), although this mapping does not trigger any specific requirements for development due to the location of the site within the Greater Flagstone PDA.

PDAs 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.

SARA mapping shows the investigation area as within the South East Queensland Regional Plan 2009-2013 as Regional Landscape and Rural Production Area and Urban Footprint under the Draft Plan (**Figure 9**).



Legend

- Referral area
- Qld DCDB
- Regulated Vegetation interesecting a watercourse
- Regulated Vegetation
- Wildlife Habitat
- Wetlands

Figure 8

Qld Matters of State Environmental Significance

File ref. 8020 E Figure 8 MSES B
Date *27/03/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

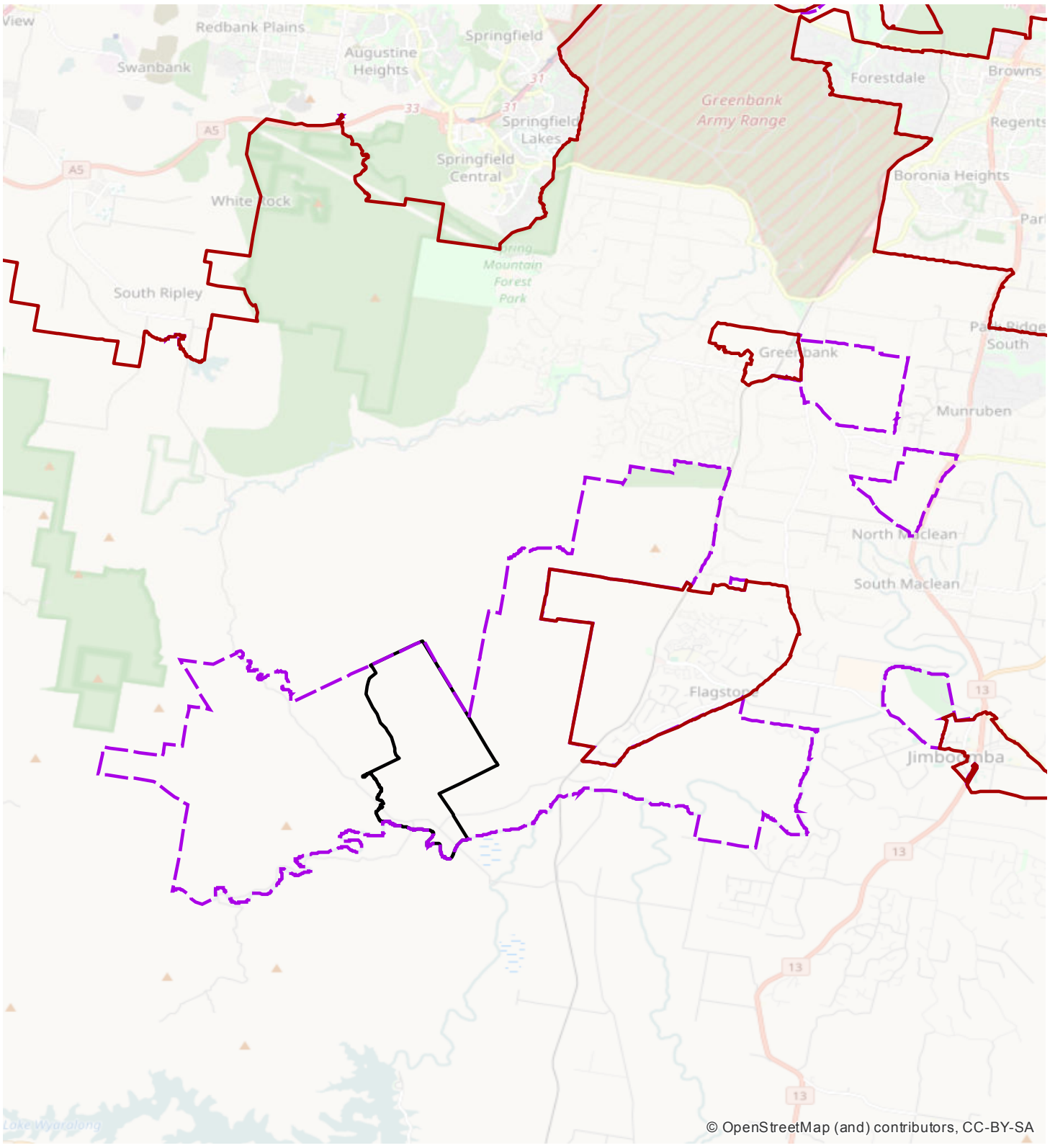
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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2016), Aerial (Qld Globe 2015), Soils (ASRIS.kmz 2016)



Legend

- Project site boundary
- SEQ Urban footprint
- Draft SEQ Urban footprint changes

Figure 9

South East Queensland Regional Plan - Urban Footprint and Draft Changes

File ref. 8020 E Figure 9 SEQ RP Urban Footprint B
Date *28/03/2017*
Project *Wyatt Road, Undullah*

0 1,000 2,000 4,000 6,000 *m*

Scale (A4): 1:150,000 [GDA 1994 MGA Z56]

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2016)

3.II. Economic Development Queensland

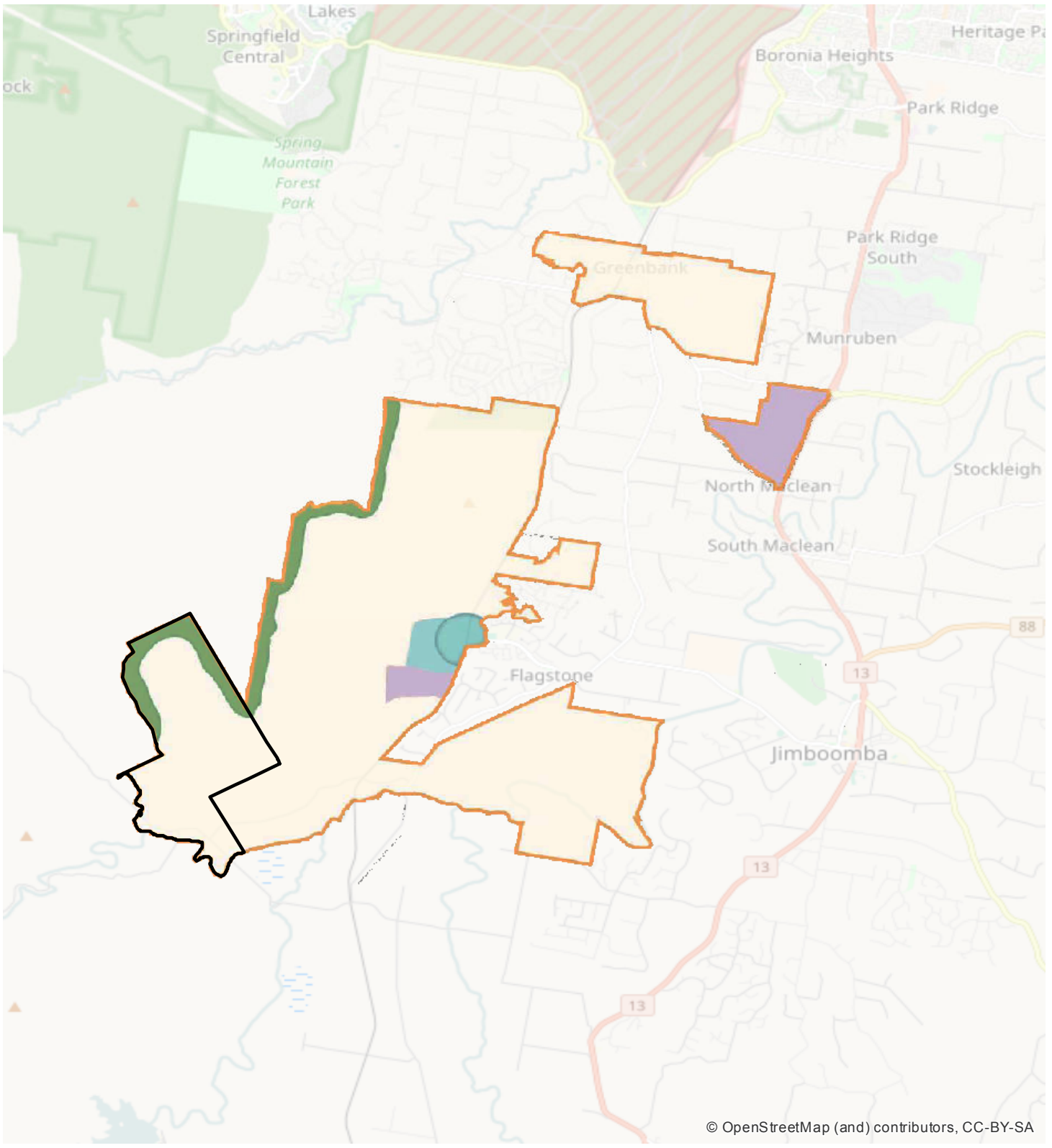
The development proposal occurs within the former Greater Flagstone Urban Development Area (UDA), declared under the *Urban Land Development Authority Act 2007* (ULDA Act). This legislation supersedes the requirements of local government planning provisions (in this case, the **Logan City Council** *Planning Scheme*) and selective other state legislation (e.g. *Sustainable Planning Act 2009*, *Vegetation Management Act 1999*, and others).

More recently, the **ULDA** has been replaced by **Economic Development Queensland** (EDQ) and the UDA renamed as a Priority Development Area (PDA), with the meaning defined in the *Economic Development Act 2012* (EDQ Act).

The Greater Flagstone UDA Development Scheme was approved in October 2011, and regulates development within the PDA. The Scheme identifies that the site falls predominately within the Urban Living Zone, with the northern boundary adjoining the Flinders-Karawatha Bioregional Corridor buffered by Environmental Protection zoning (refer **Figure 10**). The Urban Living Zone applies to most of the area intended for urban development within the PDA. The majority of the zone is intended to be developed as neighbourhoods focused on identifiable and accessible centres comprising a mix of residential including houses, multiple residential and other residential and live work opportunities through home based business. The Environmental Protection zone is intended for conservation purposes.

Development applications referred to **EDQ** for assessment against the *Greater Flagstone UDA Development Scheme* will be assessed against the EDQ's Implementation Guidelines. Applicable guidelines specifically include Guideline 14 – Environment and Natural Resource Sustainability (IG14), and Guideline 17 – Remnant Vegetation and Koala Habitat Obligations in Greater Flagstone and Yarrabilba PDAs (IG17).

Overarching objectives for the natural environment are in the process of being prepared as part of the whole of site strategy. Once approved by **EDQ,** this document will act as the primary planning instrument for the development.



Legend

- Project site boundary
- Urban living
- Major centre
- Industry & business
- Environmental protection

Figure 10

Greater Flagstone PDA - Zoning

Pacific International Development Corporation Pty Ltd

File ref. 8020 E Figure 10 EDQ Zoning B
Date *27/03/2017*
Project *Wyatt Road, Undullah*

0 1,000 2,000 4,000 6,000 *m*

N

Scale (A4): 1:125,000 [GDA 1994 MGA Z56]

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2016)

3.12. Superseded Instruments

3.12.1 Logan Planning Scheme 2015

The *Logan Planning Scheme 2015 v1.1* was adopted by **Logan City Council** on 12 May 2015 and subsequently commenced on 19 May 2015. While not subject to the provisions of the planning scheme, it is important to note development intent for the site during consultation with Council, who will ultimately be responsible for the maintenance of any open space and conservation areas.

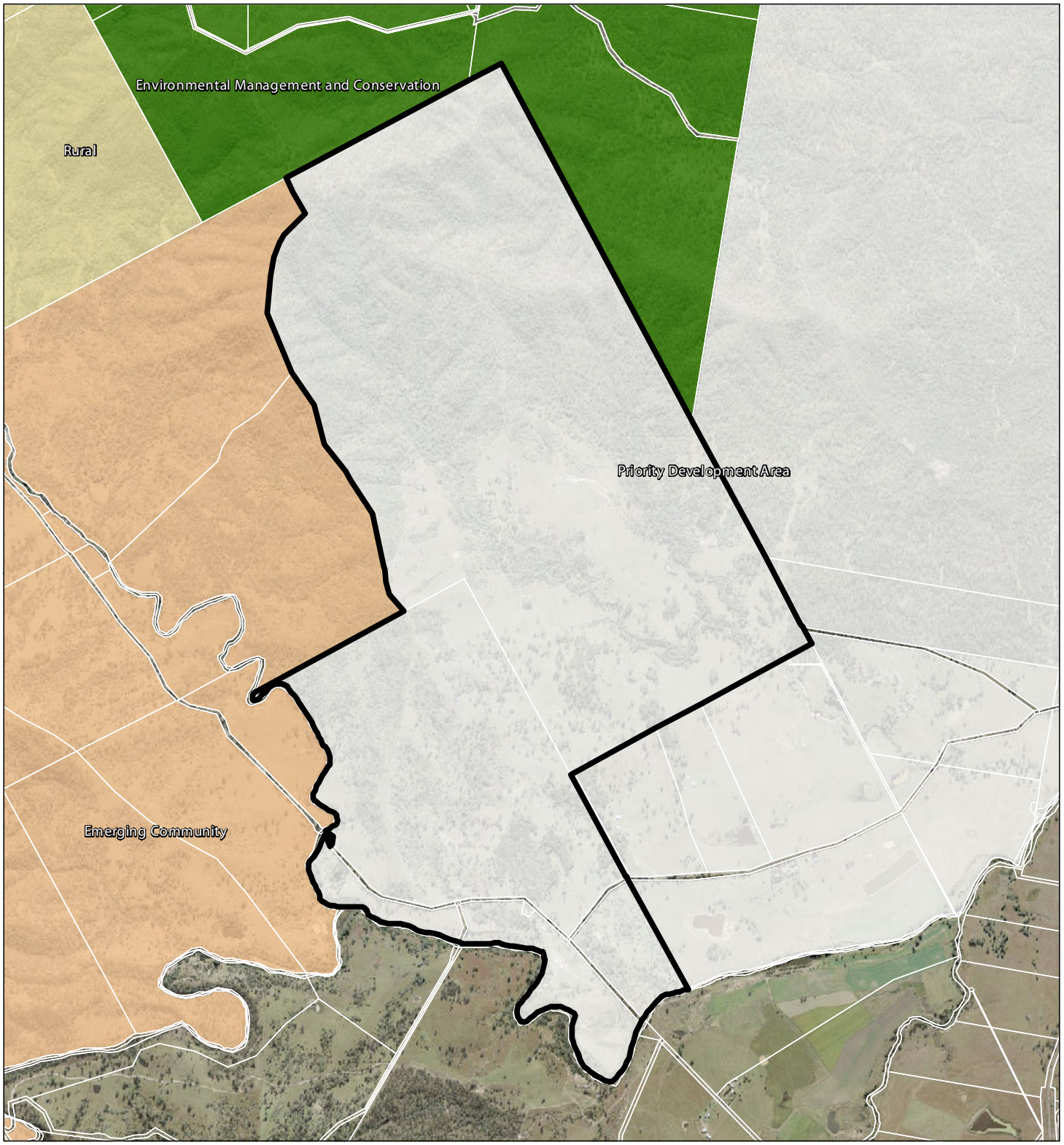
The *Logan Planning Scheme 2015* acknowledges the PDA status of the site through zoning (refer **Figure 11**).

In addition, the site is mapped within the following environmental overlays under the *Logan Planning Scheme 2015*:

- Biodiversity Areas Overlay as containing:
  - Primary and Secondary Vegetation Management Areas (refer **Figure 12**);
  - Biodiversity Corridors (refer **Figure 13**). It is noted that Undullah and Woollaman Creeks form a mapped Biodiversity Corridor along the property's south-western boundary;
  - Matters of State and Local Environmental Significance are reflected in LCC mapping across the site (refer **Figure 14**).
- Bushfire Hazard Overlay as containing areas of Very High, High and Medium Bushfire Hazard and Potential Impact Buffers (refer **Figure 15**).
- Flood Hazard Overlay as containing areas of flooding and inundation associated with some mapped waterways (refer **Figure 16**).
- Landslide Hazard Overlay as containing hazard areas equal to or greater than 15 percent slope (refer **Figure 17**).
- Waterway Corridors and Wetlands Overlay as containing or adjoining a River Waterway, a Major Waterway, Medium and Minor Waterways and Minor Wetlands associated with Undullah and Woollaman Creeks and their tributaries (refer **Figures 18a & 18b**).

3.13. Review of Historical Aerial Imagery

Analysis of historical aerial imagery reveals that the site was largely denuded of vegetation by 1958 except for steeper slopes in southern areas, presumably to maintain soil integrity, and rugged ridges in the north (refer **Plan 2**). Cleared areas on-site continued to be maintained through to 1970. By 1987 regrowth vegetation dominated by opportunistic *Acacia* species is apparent adjoining treed areas. As recent as 2004, however, clearings throughout the property including along the rugged ridges in the north remain apparent.



Legend

- Project Site Boundary

Zone Map

- Centre
- Community facilities
- Emerging community
- Environmental management & conservation
- Low density residential
- Low impact industry
- Low-Medium density residential
- Medium density residential
- Medium impact industry
- Mixed use
- Priority development area
- Recreation and open space
- Rural
- Rural residential
- Special purpose
- Specialised centre

Figure 11

Logan Planning Scheme 2015 Zoning

File ref. 8020 E Figure 11 LCC Zoning A
Date *21/04/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

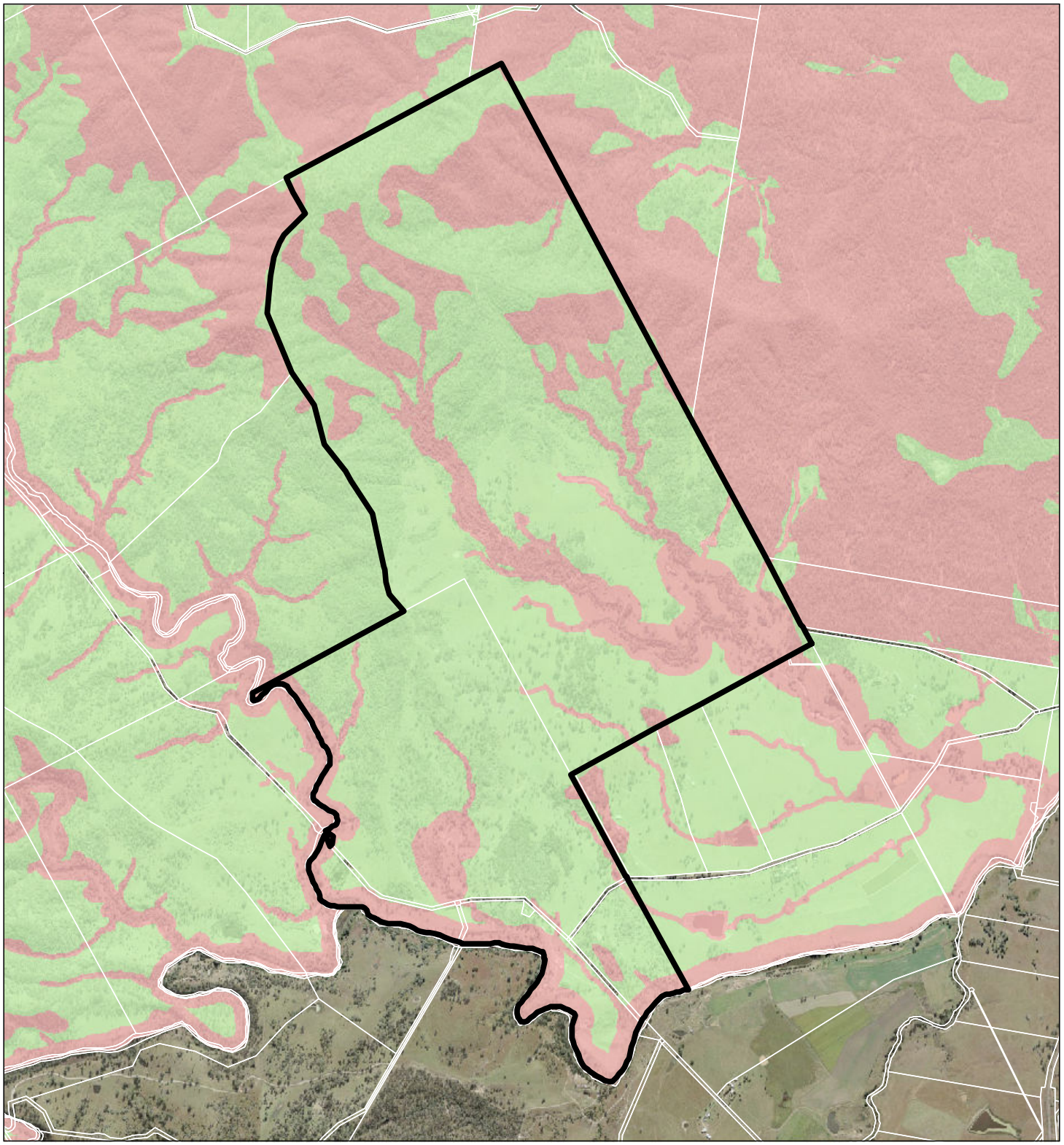
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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2016), Aerial (QLD Globe 2016), Zone Map (Logan City Council 2017)



Legend

- Project Site Boundary
- Qld DCDB

Vegetation Management Areas

- Primary vegetation management area
- Secondary vegetation management area

Figure 12

Logan Planning Scheme 2015
Vegetation Management Areas

File ref. 8020 E Figure 12 LCC VM Areas A
Date *21/04/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

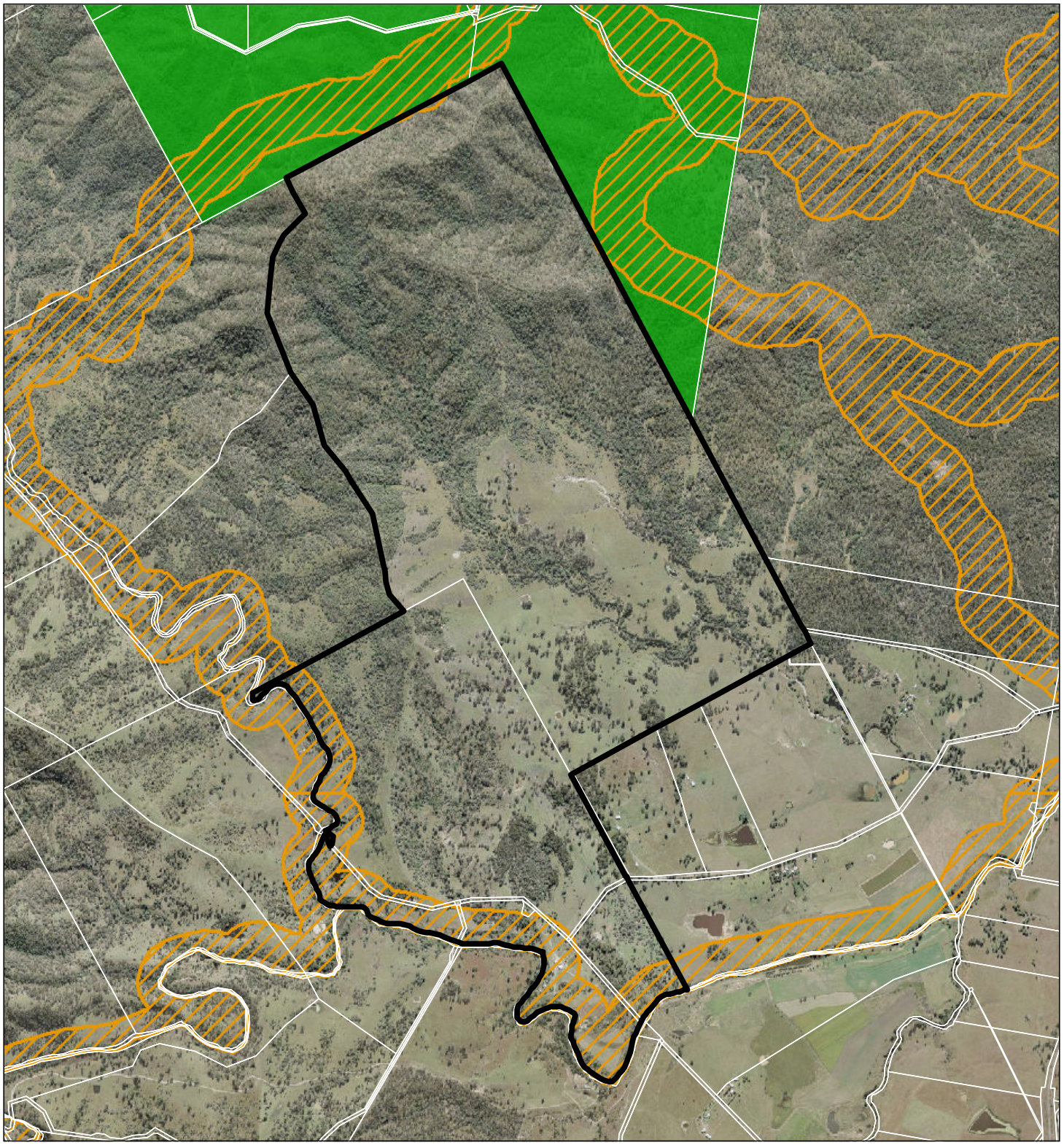
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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2017), Aerial (QLD Globe 2017), Vegetation Management Areas (Logan City Council 2017)



Legend

- Project Site Boundary
- Qld DCDB
- Koala corridor
- Biodiversity corridor
- Environmental management and conservation area

Figure 13

Logan Planning Scheme 2015
Biodiversity Corridors

Pacific International Development Corporation Pty Ltd

File ref. 8020 E Figure 13 LCC Corridor A
Date *21/04/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

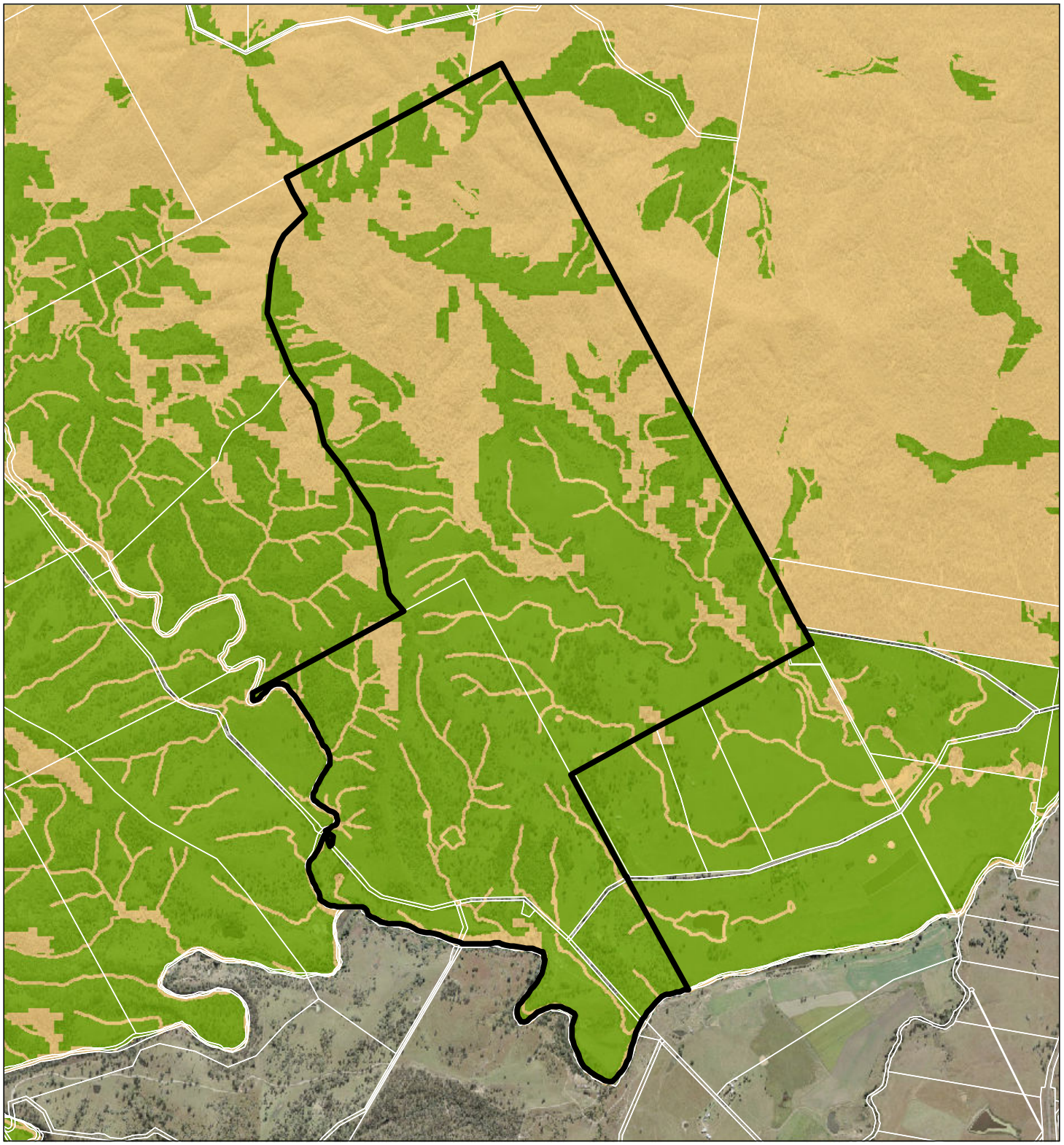
Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

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Layer Sources *QLD GIS Layers (QLD Gov. Information Service 2017), Aerial (QLD Globe 2017), Biodiversity Corridors (Logan City Council 2017)*



Legend

- Project Site Boundary
- Qld DCDB
- Matters of State & Local Significance (lines)
- Matters of State Significance (polygons)
- Matters of Local Significance (polygons)

Figure 14

Logan Planning Scheme 2015
MSES and MLES

Pacific International Development Corporation Pty Ltd

File ref. 8020 E Figure 14 LCC MLES A
Date *21/04/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

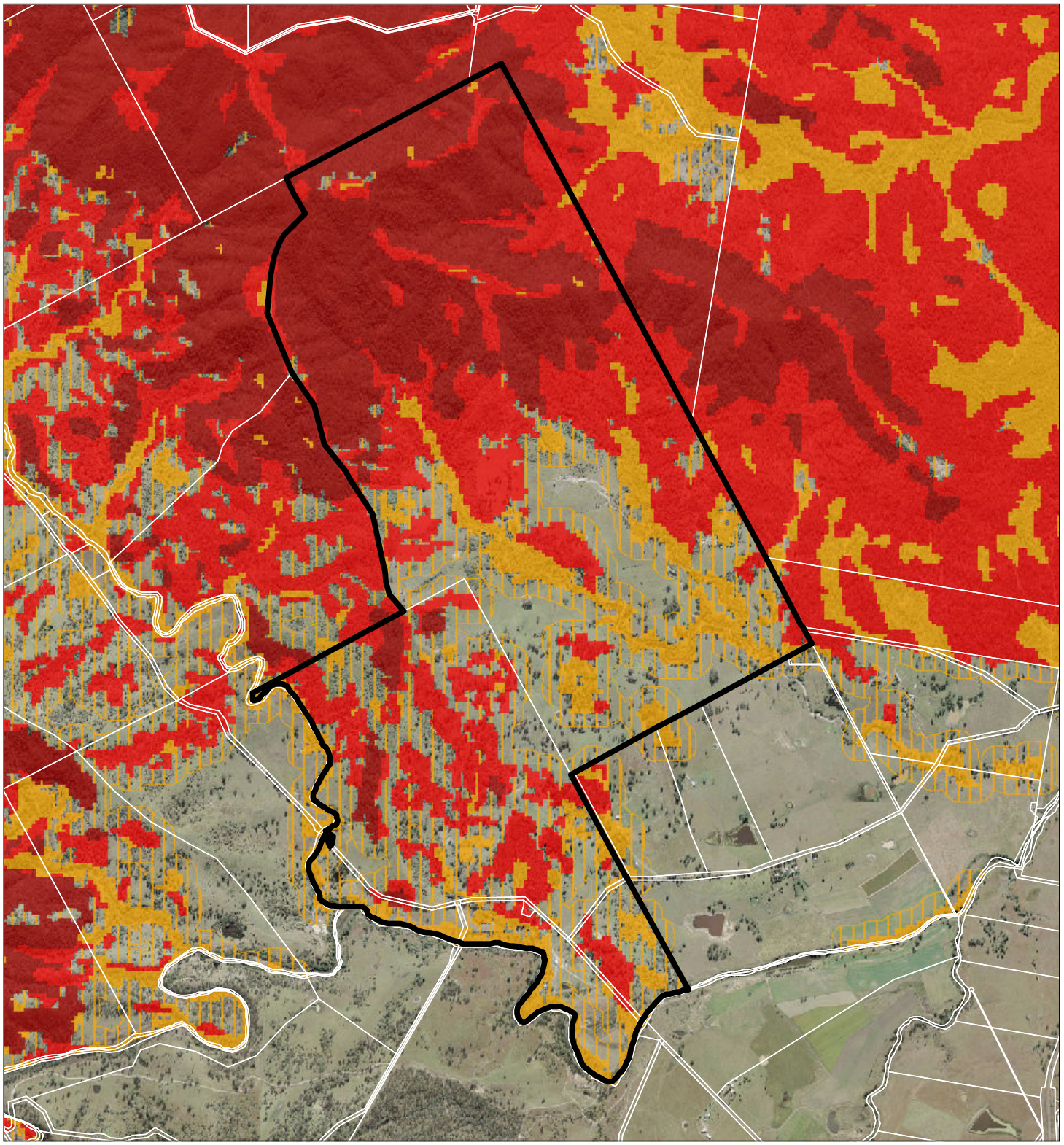
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Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

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Layer Sources *QLD GIS Layers (QLD Gov. Information Service 2017), Aerial (Qld Globe 2017), MSES and MLES (Logan City Council 2017)*



Legend

- Project Site Boundary
- Qld DCDB

Bushfire Hazard Risk Area

- Bushfire hazard (Very High Potential)
- Bushfire hazard (High Potential)
- Bushfire hazard (Medium Potential)
- Bushfire hazard (Potential Impact Buffer)

Figure 15

Logan Planning Scheme 2015
Bushfire Hazard Risk Area

File ref. 8020 E Figure 15 LCC Bushfire A
Date *21/04/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

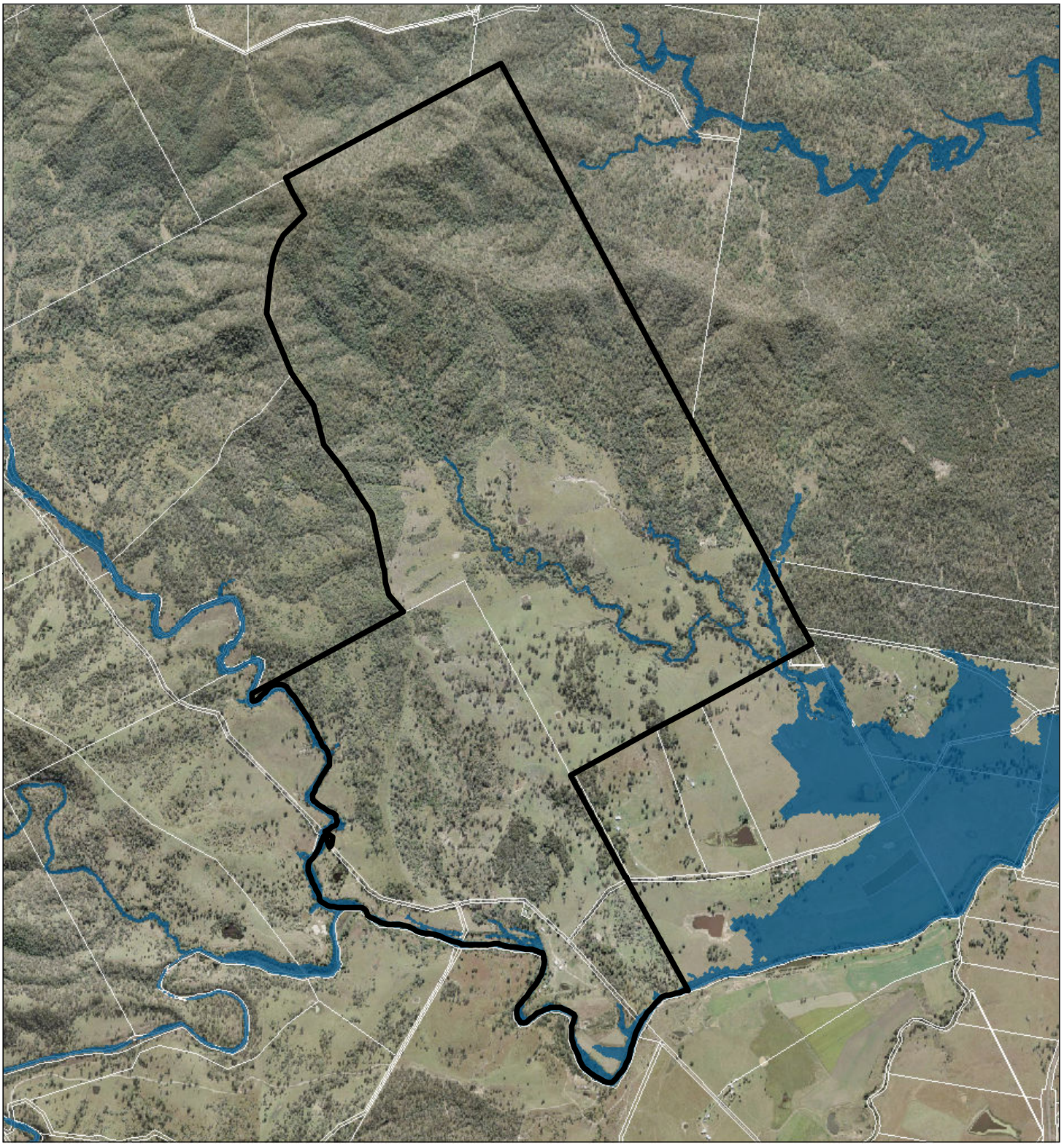
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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2017), Aerial (QLD Globe 2017), Bushfire Hazard Risk Area (Logan City Council 2017)



Legend

- Project Site Boundary
- Qld DCDB
- Flood hazard trigger

Figure 16

Logan Planning Scheme 2015
Flood Hazard Risk Area

Pacific International Development Corporation Pty Ltd

File ref. 8020 E Figure 16 LCC Flood Hazard A
Date *21/04/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

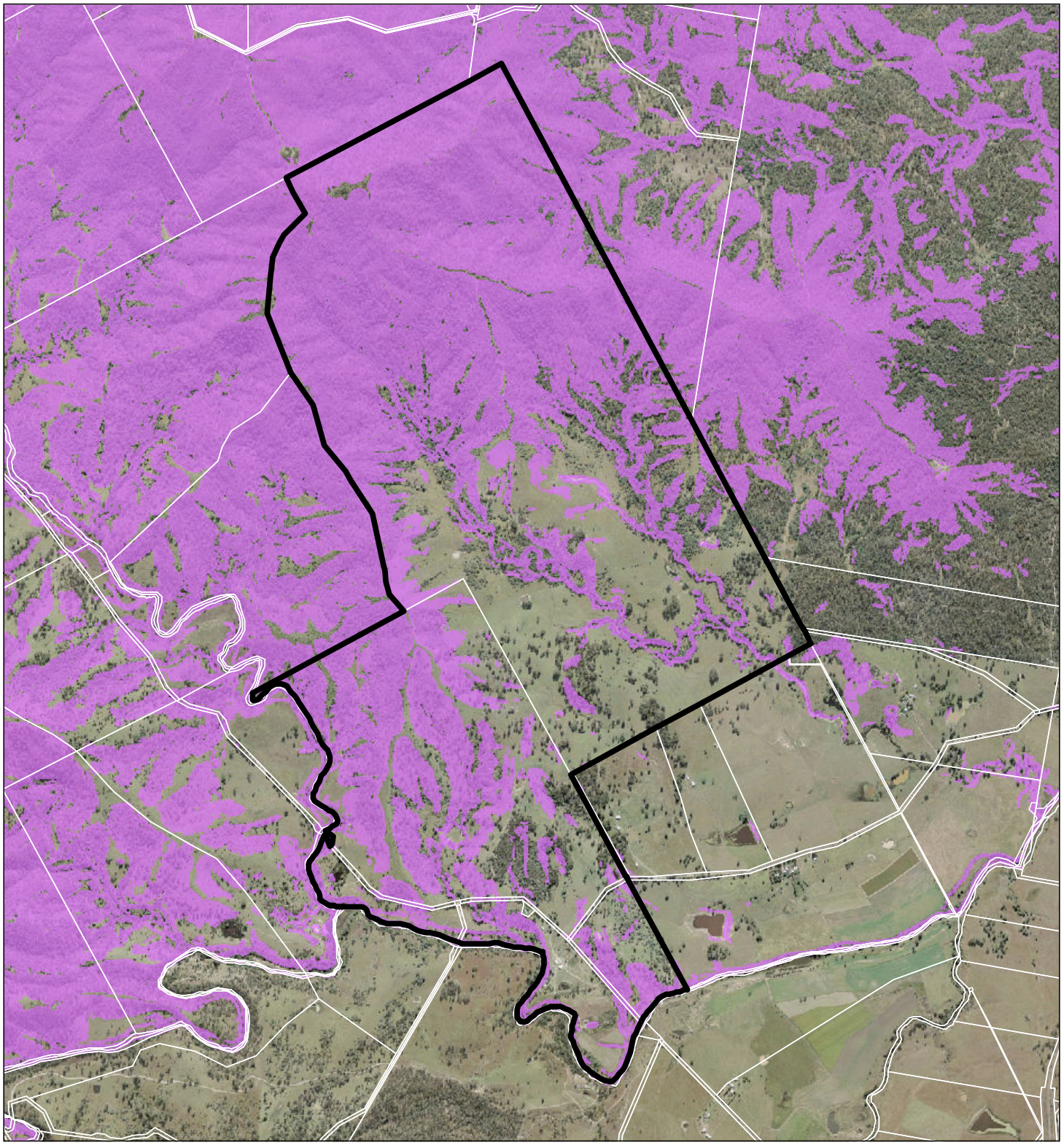
Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

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Layer Sources *QLD GIS Layers (QLD Gov. Information Service 2017), Aerial (QLD Globe 2017), Bushfire Hazard Risk Area (Logan City Council 2017)*



Legend

- Project Site Boundary
- Qld DCDB
- => 15% slope hazard area
- 12% to 15% slope hazard area
- 12% slope investigation area

Figure 17

Logan Planning Scheme 2015
Slope Hazard Risk Area

Pacific International Development Corporation Pty Ltd

File ref. 8020 E Figure 17 LCC Slope Hazard A
Date *21/04/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

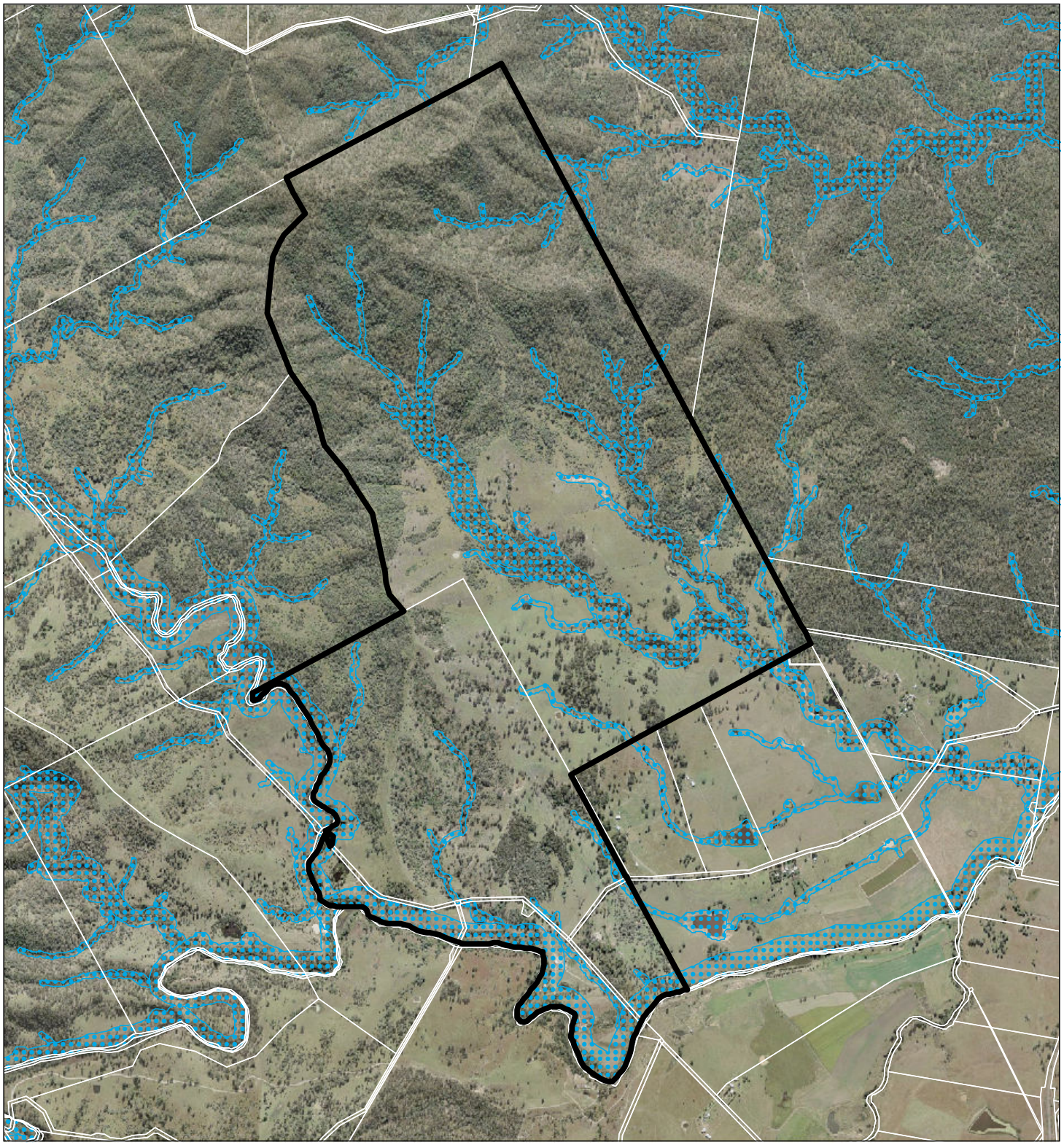
Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

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Layer Sources QLD GIS Layers (QLD Gov. Information Service 2017), Aerial (QLD Globe 2017), Slope Hazard Risk Area (Logan City Council 2017)



Legend

- Project Site Boundary
- Qld DCDB
- Waterway Corridors

Figure 18a

Logan Planning Scheme 2015
Waterway Corridors

Pacific International Development Corporation Pty Ltd

File ref. 8020 E Figure 18a LCC Waterway Corridors A
Date *21/04/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

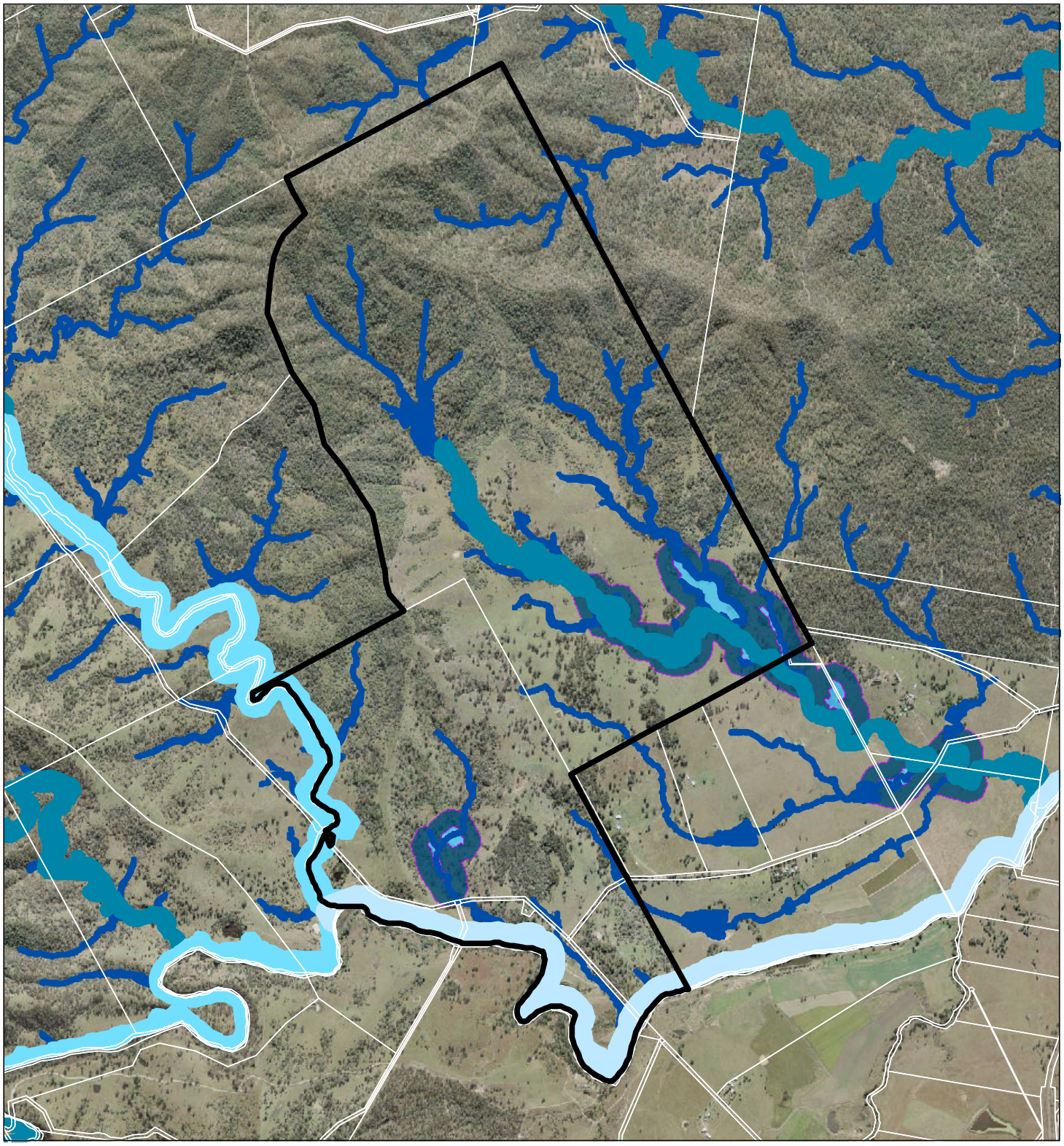
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Layer Sources *QLD GIS Layers (QLD Gov. Information Service 2016), Aerial (QLD Globe 2016), Waterway Corridors (Logan City Council 2017)*



Legend

- Project Site Boundary
- Qld DCDB
- Minor waterway
- Medium waterway
- Major waterway
- River waterway

Wetlands

- Major Wetland
- Minor Wetland
- Wetland buffer
- Wetland buffer trigger

Figure 18b

Logan Planning Scheme 2015
Waterways and Wetlands

Pacific International Development Corporation Pty Ltd

File ref. 8020 E Figure 18b LCC Waterway Wetlands A
Date *21/04/2017*
Project *Wyatt Road, Undullah*

0 200 400 600 800 1,000 *m*

Scale (A4): 1:32,500 [GDA 1994 MGA Z56]

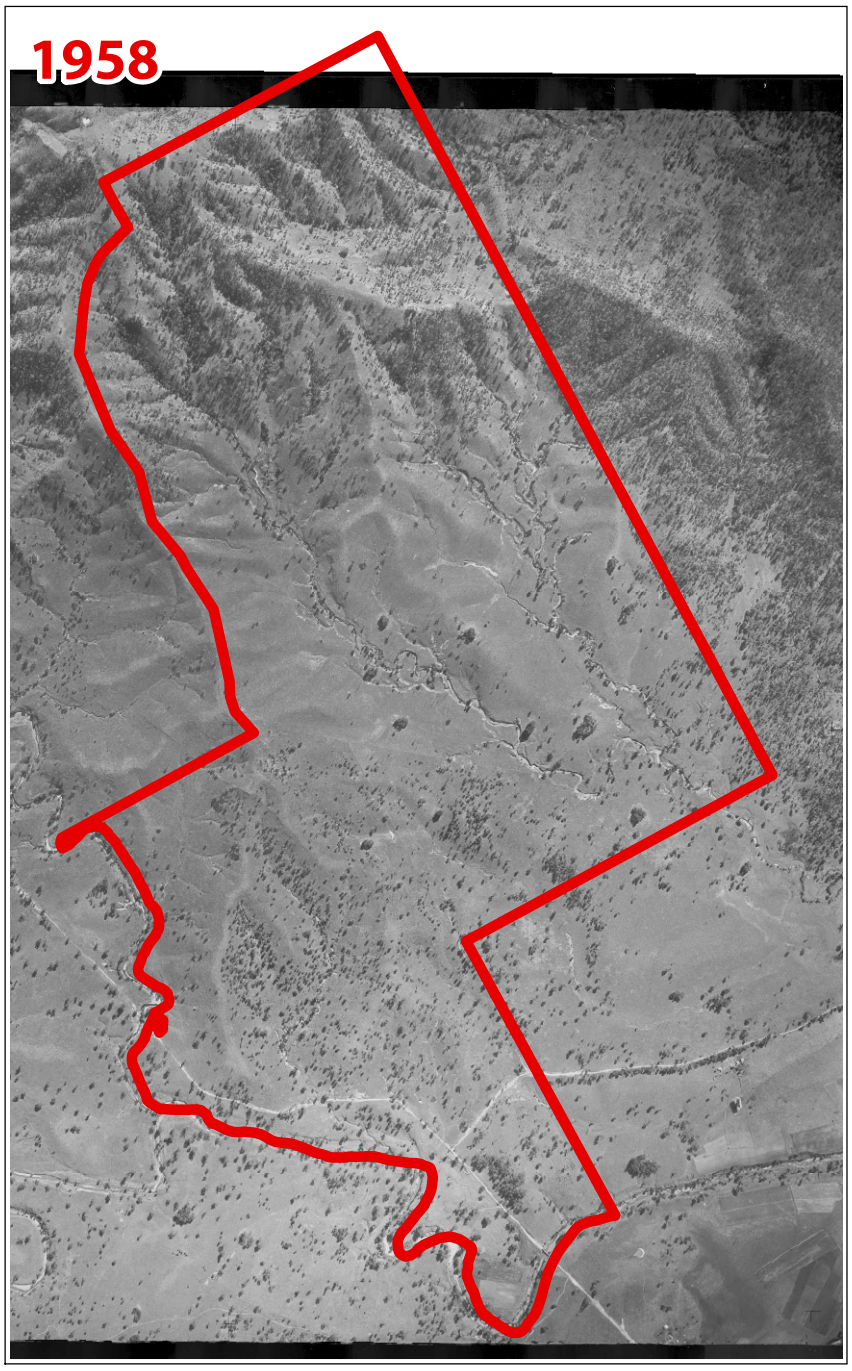
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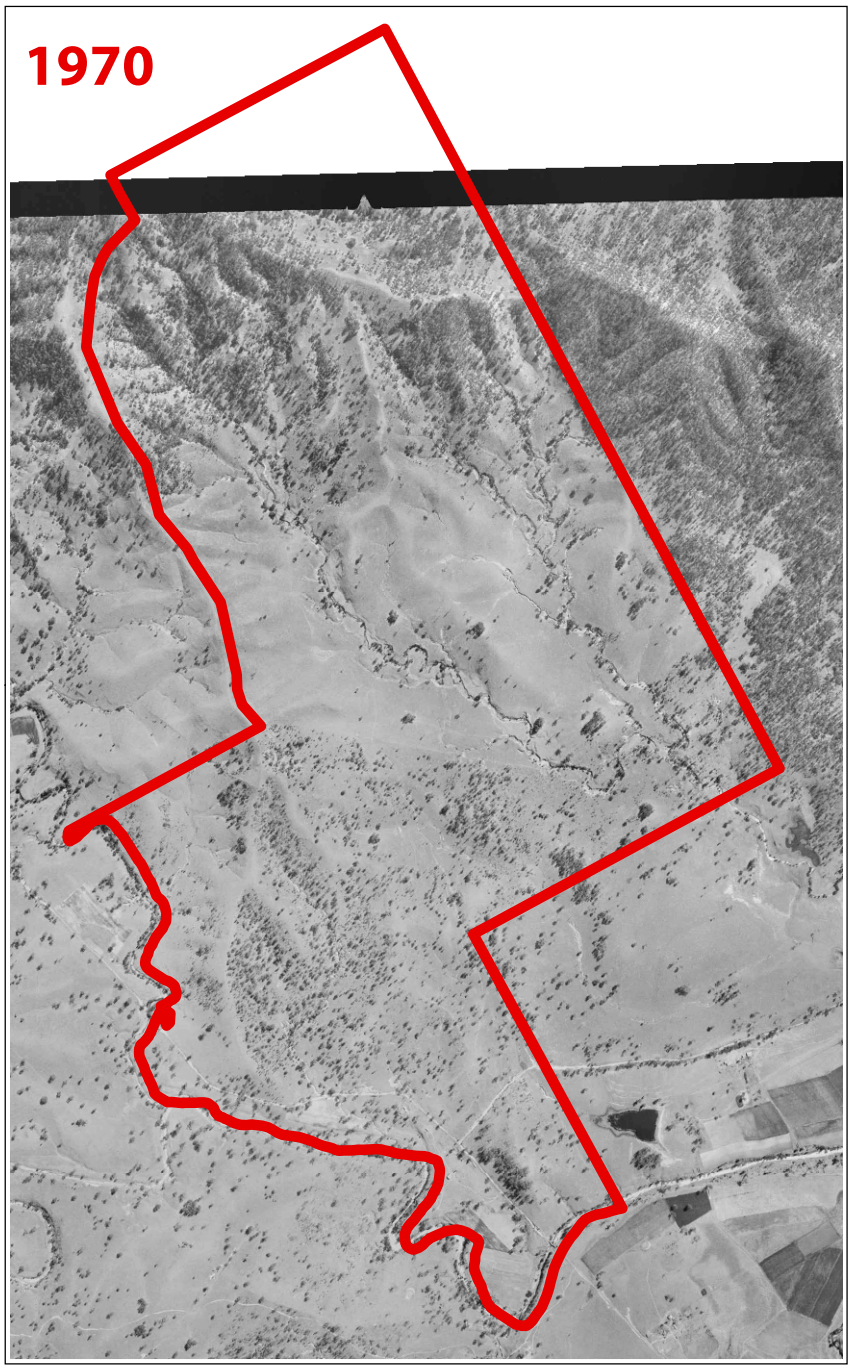
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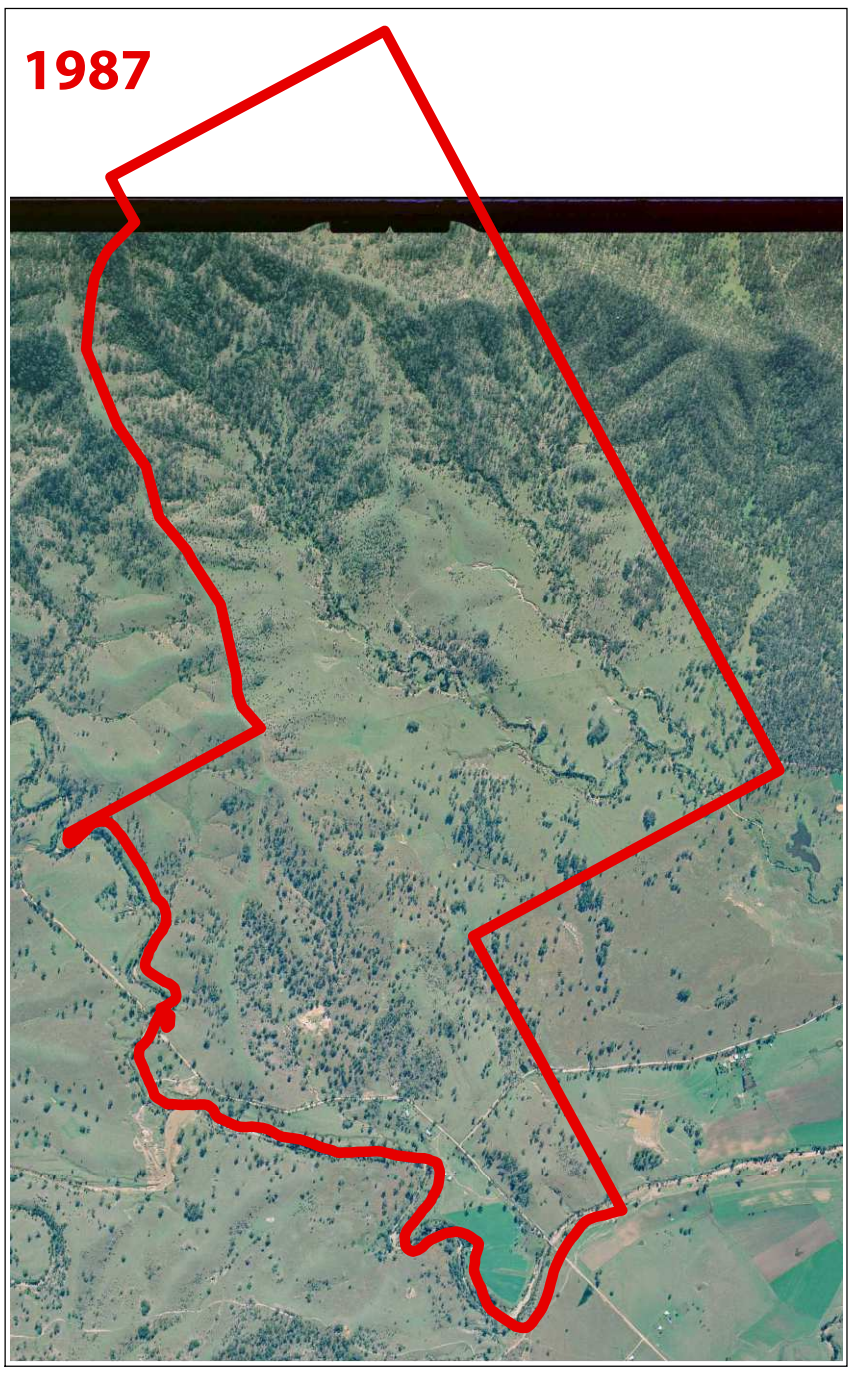
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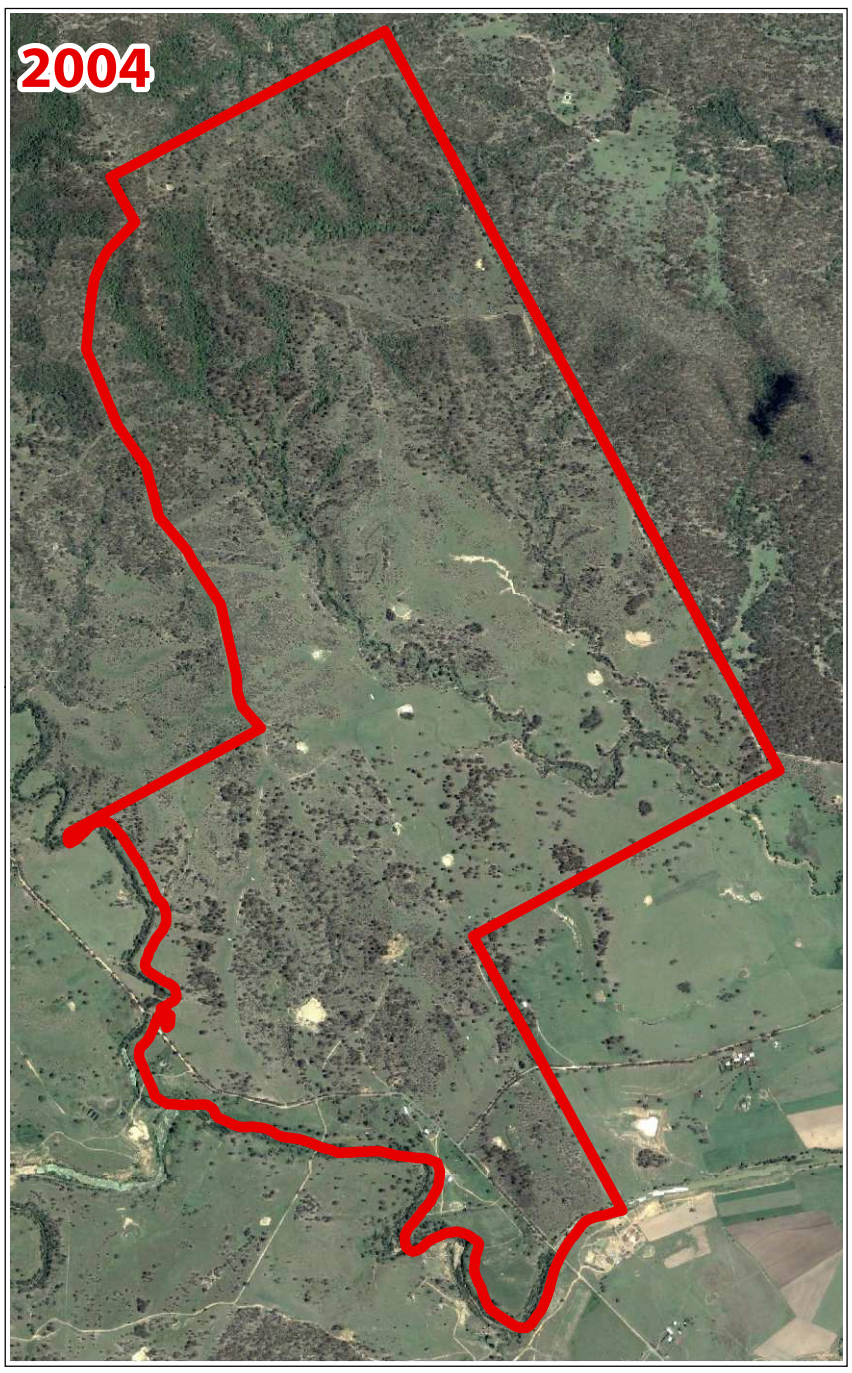
Layer Sources *QLD GIS Layers (QLD Gov. Information Service 2016), Aerial (QLD Globe 2016), Waterway and Wetlands (Logan City Council 2017)*

2. Aerial History









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: QLD GIS Layers (QLD Gov. Information Service 2017), Aerial (Nearmap 2017)

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LEGEND

Project site boundary

PLAN ISSUE:

Issue	Date	Description	Drawn	Checked
A	27/03/2017	Prelim Draft	TC	FM

0 200 400 600 800 1,000 1,200 1,400 1,600 m

Universal Transverse Mercator GDA 1994 MGA Zone 56 1:35,000 @ A3

saunders havill group

Flinders PACIFIC INTERNATIONAL GROUP

RPD: 35311896 27/03/2017 8020 E 02 Aerial History A

4. Ecological Assessment

4.1. Introduction

The proposed residential development area has been subject to extensive on ground surveys by SHG to identify existing ecological values at the site. The following Sections present results from flora and fauna surveys conducted at the site with a focus on the presence or absence of threatened values and assessment of the potential for the residential development to impact on these matters.

Contextually, the investigation site covers approximately 1,028 hectares north of Woollaman Creek accessed via Wyatt or Undullah Road. The investigation area ranges from approximately three hundred (300) meters above sea level in the north west property corner down to thirty (30) meters above sea level in Woollaman Creek. The property is currently managed for rural purposes and has had a history of cattle use. Sections of the site were also used for military training during the Second World War and UXO clearing activities are well advanced.

The investigation area is mapped as containing approximately130 hectares of remnant vegetation of which 58.48 hectares is mapped as Least Concern Regional Ecosystem community and the remaining 71.42 hectares a composite Of Concern Regional Ecosystem community (**Figure 4**). The composite Regional Ecosystem community is located across two polygons, one of which contains 80% Least Concern RE12.9-10.2 and 20% Of Concern RE12.9-10.7, and the second composite community containing 70% 12.9-10.2, 20% RE12.9-10.7 and 10% 12.9-10.17a. The Least Concern Regional Ecosystems are mapped within separate remnant polygons as RE12.9-10.2, RE12.9-10.17a and RE12.3.7, whereas, the Of Concern Regional Ecosystem community polygon contains 12.9-10.7.

The four (4) Regional Ecosystem communities mapped throughout the investigation area singly and in composites include:

- *Least Concern Regional Ecosystem 12.9-10.2 is described as Corymbia citriodora subsp. Variegate +/- Eucalyptus crebra open forest on sedimentary rocks.*
- *Least Concern Regional Ecosystem 12.9-10.17a is described as Lophostemon confertus or Lophostemon suaveolens dominated open forest usually with emergent Eucalyptus and/or Corymbia species. Occurs in gullies and southern slopes on Cainozoic and Mesozoic sediments.*
- *Of Concern Regional Ecosystem 12.9-10.7 is described as Eucalyptus crebra +/- Eucalyptus tereticornis, Corymbia tessellaris, Angophora spp., Eucalyptus melanophloia woodland on sedimentary rocks.*
- *Least Concern Regional Ecosystem 12.3.7 is described as Eucalyptus tereticornis, Casuarina cunninghamiana subsp. Cunninghamiana +/- Melaleuca spp. fringing woodland.*

The proposed development area is focused on the disturbed sections of the site and affects less than 20% of the total remnant vegetation.

4.2. General Description of Site Value

Overall, the site was found to be relatively disturbed by historical clearing and rural practices, particularly in the southern portion, reduced maintenance practices resulting in a very high density of *Acacia* regrowth in the northern portion of the site and an abundance of introduced species, including evidence of feral animals.

SHG have carried out significant contemporary flora and fauna field assessments at the site between November 2015 and December 2016. These surveys were carried out to address all potential threatened flora and fauna issues, however, the primary focus was placed on Koalas as they are known to occur in the region. *Delma torquata* (Collared Delma) and *Pteropus poliocephalus* (Grey-headed Flying-fox) specific surveys were also conducted as likelihood analyses suggested potential for these listed species to occur on-site. *Petrogale penicillata* (Brush-tailed Rock-wallaby) specific surveys were conducted due to documentation associated with previous studies in the region and existing *Dasyurus maculatus maculatus* (Spot-tailed Quoll) surveys were augmented with baited camera traps. Survey effort is outlined in **Plan 3**.

The following general observations were made across the proposed development site:

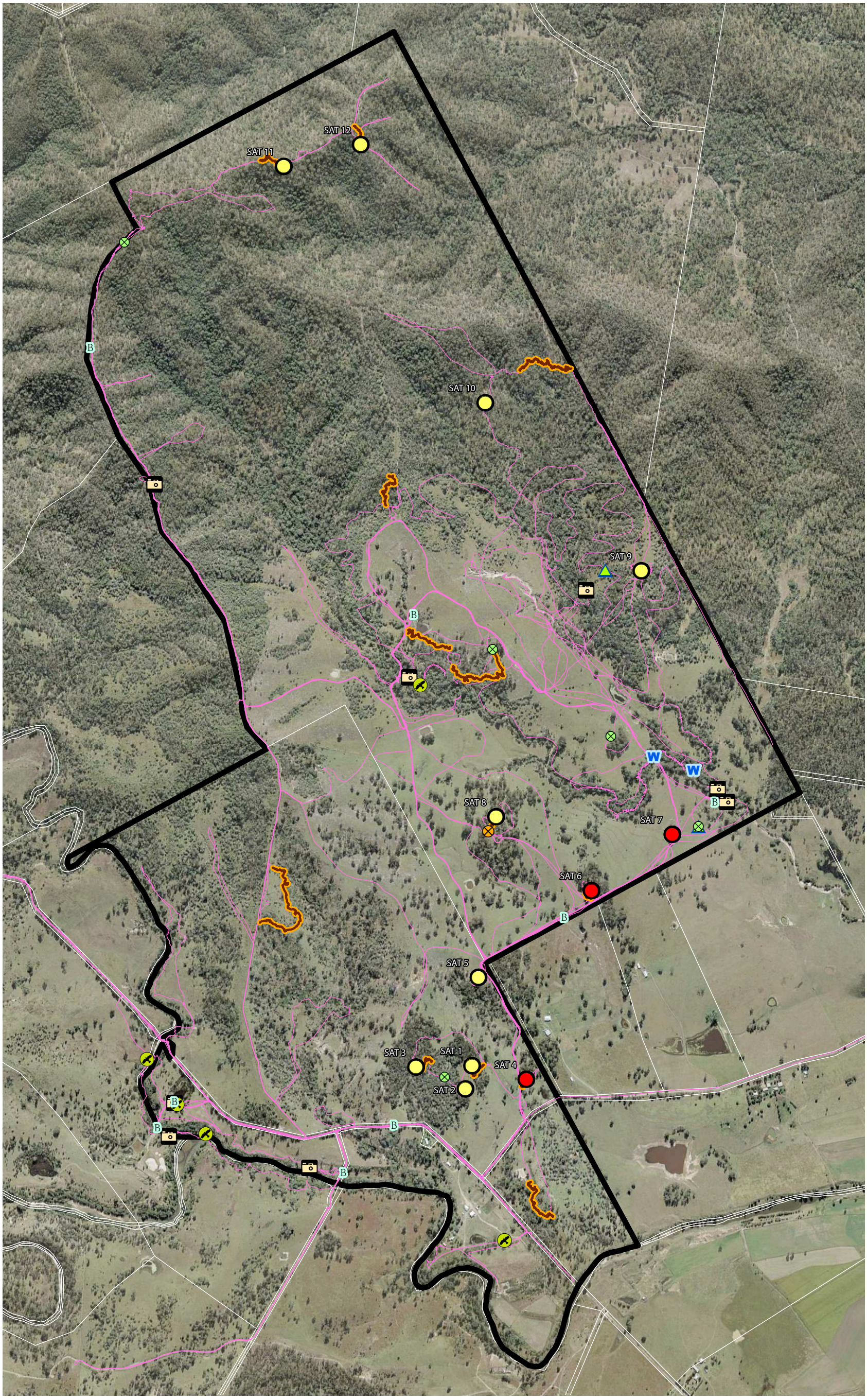
- The *Environment Protection and Biodiversity Conservation* Online Protected Matters Search Tool (PMST) listed two (2) Threatened Ecological Communities as likely to occur within the area and within five (5) kilometres of the site. The *Lowland Rainforest of Subtropical Australia* and the *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* Threatened Ecological Communities did not occur on or immediately adjacent to the application site.
    - The *Lowland Rainforest of Subtropical Australia* has typically 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 with 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, none of which are located within or adjacent to the application site.
    - The *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* Threatened Ecological 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, none of which are located within or adjacent to the application site.
- The PMST listed twenty-seven (27) threatened native flora and fauna species as possibly occurring on the application site and eleven (11) listed migratory species. Evidence of *Phascolarctos cinereus* (Koala) was observed on-site, and *Pteropus poliocephalus* (Grey-headed Flying Fox) were sited during nocturnal surveys, however, no roosting sites were located on site.
    - A number of listed avi-fauna were also recorded on-site or as flyover throughout the survey period including *Ardea ibis* (Cattle Egret), *Haliaeetus leucogaster* (White-bellied Sea Eagle), and *Merops ornatus* (Rainbow Bee-eater).
    - No EPBC threatened flora species were observed throughout the survey periods.
- The *Nature Conservation (Wildlife) Regulation 1994* (NCWR) lists six (6) threatened species as possibly occurring within five (5) kilometres of the application site. Habitat to support *Calyptorhynchus lathami lathami* (Glossy Black-cockatoo), *Ninox strenua* (Powerful Owl), *Phascolarctos cinereus* (Koala), and *Marsdenia coronata* (Slender Milkvine) was recorded throughout the survey, however, no individuals were observed. *Melaleuca irbyana* (Swamp Tea Tree) was observed as isolated and scattered individuals in only two locations throughout the survey area.
- Although not currently mapped as remnant vegetation, pre-clear Regional Ecosystem communities suggest that the Of Concern RE12.9-10.3 and the Endangered RE12.3.3 once occurred on the site. Some evidence of these vegetation communities were observed in the lower portions of the site including isolated clumps dominated by *Eucalyptus moluccana* (Gum Topped Box) as well as some evidence of the Endangered RE12.3.3 including scattered individuals of relatively large *Eucalyptus tereticornis* (Forest Red Gum), particularly along

Woollaman Creek and the areas associated with the creek and floodplains towards the south west corner of Lot 3 on S311896. Although evidence occurs, these clumps do not meet the minimum requirements of a remnant vegetation community.

For survey clarity, the site was separated into four (4) distinct vegetation areas (refer **Plan 4**). Within each of these areas there remain sub-areas and ecotonal changes which alter the balance of features based on factors including topography, drainage, aspect, level of ongoing maintenance, nexus to tracks and other weed access points:

- Area 1 – Paddock, Wattle Regrowth and Scattered Trees
- Area 3 – Central Drainage Feature
- Area 3 – Woollaman Creek and Buffer Area
- Area 4 – Vegetated Ridgelines and Gullies

3. Field Survey Effort



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: QLD GIS Layers (QLD Gov. Information Service 2017), Aerial (Qld Globe 2017)

* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

LEGEND

- Qld DCDB
- Project site boundary
- Waterway assessment
- Rocky outcrop habitat
- Spot lighting & bat recording
- Sensor Camera location
- Bird Survey
- Observation site
- Melaleuca Irbyana
- Scat meander

SAT Location

Usage

- Medium
- Low
- Tracklog

PLAN ISSUE:

Issue	Date	Description	Drawn	Checked
A	21/04/2017	Prelim Draft	TC	AD

0 100 200 400 600 800 m

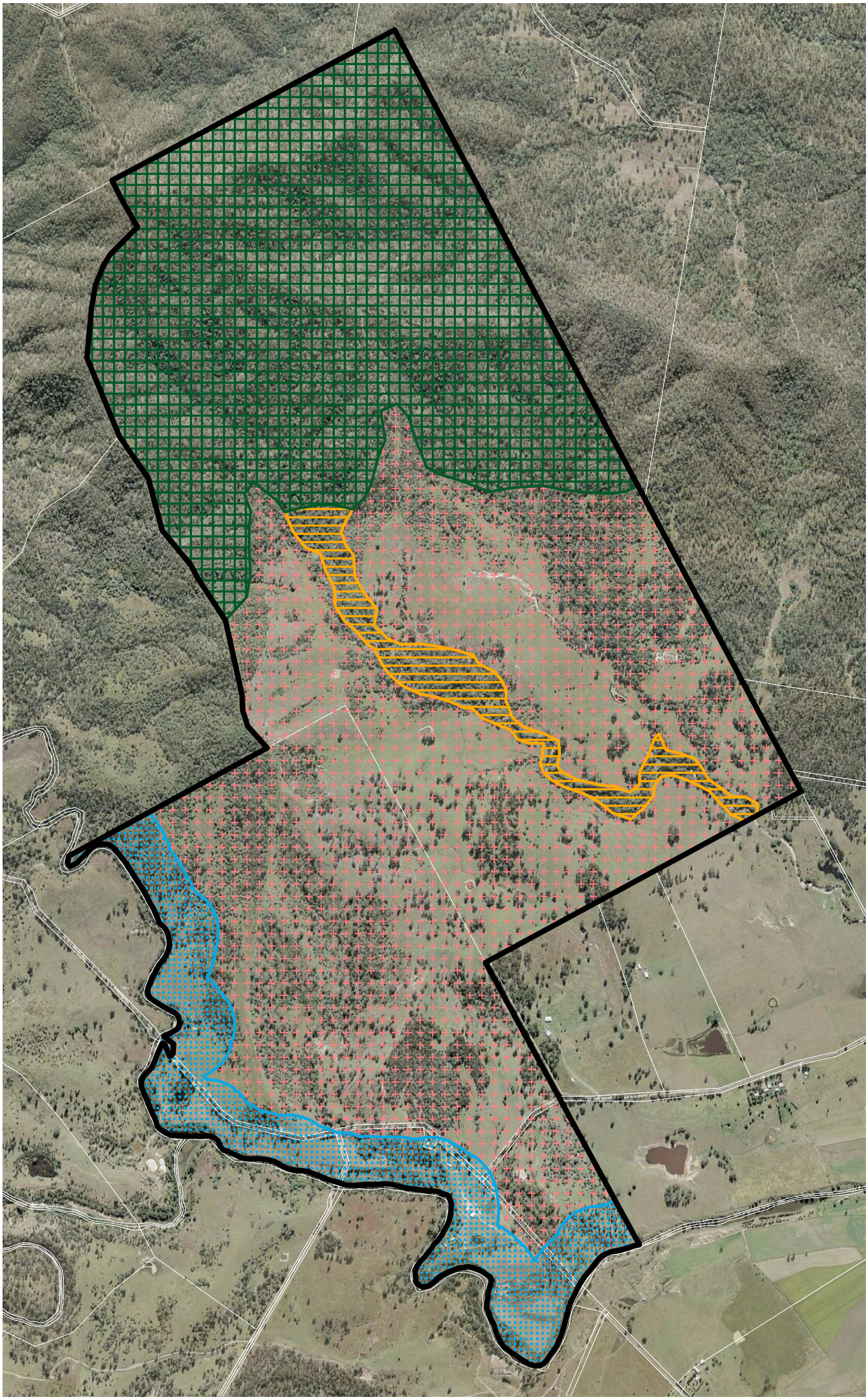
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Flinders Pacific International Development Corporation

RPD: 35311896 21/04/2017 8020 E 03 Field Survey A

4. Assessment Zones



NOTES
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Layer Sources: QLD GIS Layers (QLD Gov. Information Service 2017), Aerial (Nearmap 2017)

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LEGEND

- Qld DCDB
- Project site boundary
- Development area

Assessment zones

- Woollaman Creek & buffer area
- Vegetated ridgelines & gullies
- Central vegetated drainage feature
- Paddocks/Wattle regrowth/ scattered canopy trees

PLAN ISSUE:

Issue	Date	Description	Drawn	Checked
A	28/03/2017	Prelim Draft	TC	FM

0 100 200 400 600 800 m

Universal Transverse Mercator GDA 1994 MGA Zone 56 1:17,500 @ A3

saunders havill group

Flinders PACIFIC INTERNATIONAL GROUP

RPD: 35311896 28/03/2017 8020 E 04 Field Zones A

4.2.1 Area I – Paddock, Wattle Regrowth and Scattered Trees

The majority of the proposed development area contains open paddocks currently utilised for cattle production. These areas are periodically slashed and largely devoid of shrub and canopy vegetation. Some small patches of established trees are scattered across the open paddocks, however, are too small to be mapped under the Queensland *Vegetation Management Act* as remnant due to being isolated patches less than one hectare in size.



Photo: Open paddocks amongst patches of Regrowth dominated by Acacia spp.

Portions of this area include drainage features or overland flow paths confirmed on-site to not contain features usually associated with a watercourse (i.e. lacking defined bed and banks and riparian vegetation). Due to the maintenance associated with this vegetation area, the ground layer has promoted a mosaic of a number of introduced grasses amongst patches of *Imperata cylindrica* (Blady Grass). The majority of the area is dominated by exotic grasses and introduced pastoral weed species including *Cynodon dactylon* (Couch Grass), *Lantana camara* (Lantana), *Bidens pilosa* (Cobbler's Pegs), *Ageratum houstonianum* (Blue Billy goat Weed), *Melinis repens* (Red Natal Grass) and *Chloris virgate* (Rhodes Grass). No obvious signs of *Phascolarctos cinereus* (Koala) were recorded throughout this area.



Photo: Lower portion of the site managed for cattle grazing.

Although the majority of the area is mapped as non-remnant vegetation, a large portion contains regrowth species typical of the preclear vegetation communities. The regrowth area is dominated by *Acacia* species including *Acacia disparrima* (Hickory Wattle), *Acacia concurrens* (Black Wattle) and *Acacia leiocalyx* (Early Flowering Black Wattle) and scattered *Eucalyptus* and *Corymbia* species including *Eucalyptus siderophloia* (Grey Ironbark), *Eucalyptus crebra* (Narrow Leaf Ironbark), *Corymbia citriodora* (Spotted Gum), *Eucalyptus tereticornis* (Forest Red Gum) and *Eucalyptus moluccana* (Gum Topped Box). *Allocasuarina littoralis* (Black She Oak) is also recorded in areas that area associated with the development footprint and *Allocasuarina torulosa* (Forest She Oak) recorded within the upper portions on the steeper slopes. Regrowth vegetation has also been recorded along a number of drainage lines and flow paths, however, none of these are considered to contain significant values. Isolated stands of eucalypt and *Corymbia* specimens are present within the paddock areas.

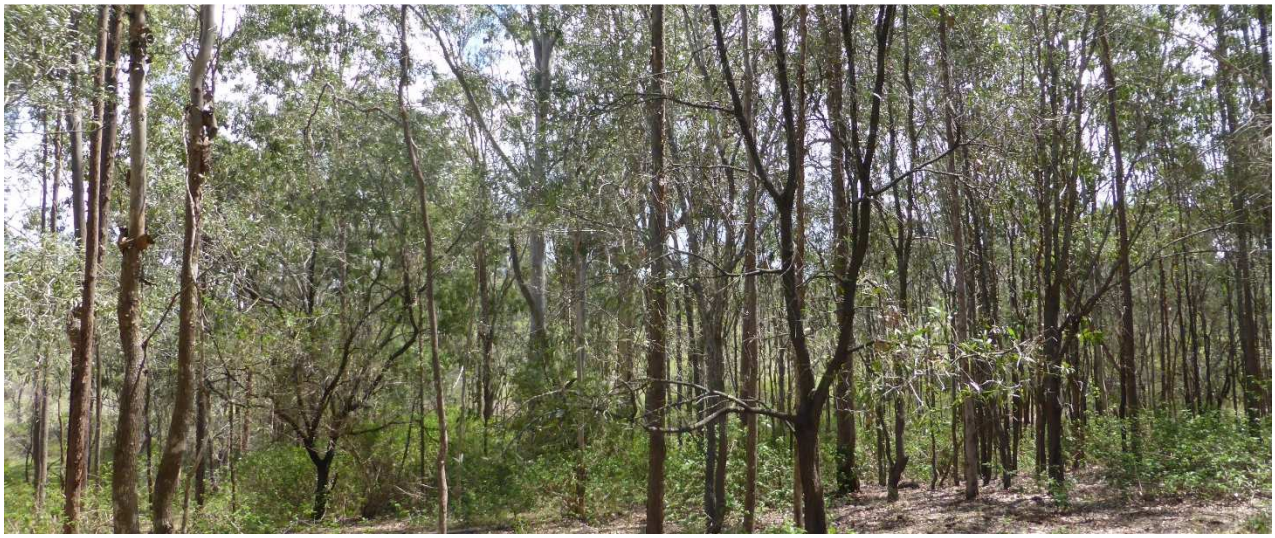


Photo: Regrowth Vegetation dominated by Acacia disparrima (Hickory Wattle).



Photo: Isolated selectively cleared clumps of native eucalypts surrounded by open paddocks.

4.2.2 Area 2 – Central Drainage Feature

As mentioned previously, watercourses are mapped by the Queensland Government across the application area with the majority more likened to overland flow paths that contain no riparian features or species. These areas would only contain water in periods of high rainfall events and contain very few opportunities for water to be retained. A large number of these features also contain constructed farm dams as a result of cattle production.

The Central Drainage Feature identified on **Plan 4** maintains regrowth vegetation and has lower reaches that contain some riparian type features including fringing vegetation typical of waterways, such as *Melaleuca viminalis* (Weeping Bottlebrush) and *Melaleuca quinquenervia* (Broad Leaf Paperbark) along embankments and small clumps of *Cyperus polystachyos* (Bunchy Sedge), *Juncus usitatus* (Common Rush) and some edges dominated by *Lomandra longifolia* (Mat Rush). These areas are generally likened to a defined watercourse.

The Central Drainage feature does not contain remnant vegetation and is largely dominated by regrowth species. Some areas are highly eroded due to cattle access with very few noteworthy ecological values recorded.

4.2.3 Area 3 – Woollaman Creek and Buffer

Some very large scattered *Eucalyptus tereticornis* (Forest Red Gum) specimens were observed along the edge of the floodplains towards the south east property corner and particularly along Woollaman Creek, which forms the southern property boundary of the assessment area.



Photo: Regrowth vegetation along watercourse towards the south east corner of Lot 3 on S311896

Woollaman Creek contains patchy vegetation as well as a number of remnant polygons mapped as containing Least Concern Regional Ecosystem 12.3.7. This community is described as *Eucalyptus tereticornis (Forest Red Gum), Casuarina cunninghamiana +/- Melaleuca spp., fringing woodland*. The species observed throughout the two remnant polygons are consistent with the current Regional Ecosystem mapping.

Species recorded within the sparse canopy are dominated by *Eucalyptus tereticornis* (Forest Red Gum). These specimens were often extremely large with some recorded around forty (40) meters in height and most exceeding a trunk girth (DBH) of greater than 1,000 mm. These *Eucalyptus tereticornis* (Forest Red Gum) specimens also

contained large hollows, which were utilised by a number of common avi-fauna including *Trichoglossus moluccanus* (Rainbow Lorikeet), *Trichoglossus chlorolepidotus* (Scaly-breasted Lorikeet), *Eolophus roseicapilla* (Galah) and *Cacatua galerita* (Sulphur-crested Cockatoo).

The sub-canopy was dominated by *Casuarina cunninghamiana* (River She Oak), however, other scattered or clumped native species were also recorded including *Melaleuca quinquenervia* (Broad Leaf Paperbark), *Melaleuca viminalis* (Weeping Bottlebrush), *Waterhousia floribunda* (Weeping Lilly Pilly), *Angophora subvelutina* (Broadleaf Apple), *Lophostemon suaveolens* (Swamp Box), *Ficus coronata* (Sandpaper Fig), and *Glochidion sumatranum* (Large Leaf Cheese Tree).

The shrub layer along the creek embankments is dominated by *Lantana camara* (Lantana) and large patches of *Maclura cochinchinensis* (Cockspur Thorn). The vegetated beds within the creek itself are also dominated by introduced species including *Megathyrsus maximus* (Guinea Grass), *Urochloa mutica* (Para Grass), *Gomphocarpus physocarpus* (Balloon Cotton Bush), *Ageratum houstonianum* (Blue Billygoat Weed), *Ambrosia artemisiifolia* (Annual Ragweed), *Senna pendula* (Easter Cassia), *Solanum chrysotrichum* (Giant Devil's Fig), *Baccharis halimifolia* (Groundsel Bush) and *Solanum mauritianum* (Wild Tobacco Tree).



Photo: Remnant vegetation mapped along Woollaman Creek



Photo: Fringing remnant vegetation observed along Woollaman Creek.

4.2.4 Area 4 – Vegetated Ridgelines and Gullies

The Vegetated Ridgelines and Gullies contain a matrix of remnant and non-remnant vegetation to be set aside as environmental areas under the proposal. The canopy species within each of the remnant polygons are consistent with the current Regional Ecosystem mapping with *Corymbia citriodora* (Spotted Gum) and *Eucalyptus siderophloia* (Grey Ironbark) dominating the canopy. Other species recorded depending on the position within the landscape throughout the remnant polygons included *Eucalyptus tereticornis* (Forest Red Gum), *Eucalyptus acmenoides* (White Mahogany), *Angophora leiocarpa* (Smooth Bark Apple), *Eucalyptus crebra* (Narrow Leaf Ironbark) and *Eucalyptus moluccana* (Gum Topped Box).

The understorey of these areas is dominated by *Acacia* species, including *Acacia disparrima* (Hickory Wattle), *Acacia concurrens* (Black Wattle) and *Acacia leiocalyx* (Early Flowering Black Wattle). Other species recorded in lower densities included *Alphitonia excelsa* (Soap Tree), *Allocasuarina littoralis* (Black She Oak), and *Lophostemon suaveolens* (Swamp Box). Recruitment of *Eucalyptus* and *Corymbia* species was also recorded within the sub-canopy layers.

Native species recorded within the shrub layer were dominated by juvenile *Eucalyptus, Corymbia* and *Acacia* species, whereas, the ground layer was dominated by introduced pastoral grasses suitable for cattle grazing.

Lantana camara (Lantana) is the most dominant introduced species recorded throughout the area ranging from severe infestations to isolated and scattered clumps. It is acknowledged that land management practices more recently included the management of *Lantana camara* (Lantana) to reduce the infestations.

4.3. Habitat Values

Habitat opportunities for significant fauna species within the application area are associated with the vegetated ridgelines and gullies and Undullah/Woollaman Creeks set aside for environmental uses. Of the listed species considered likely to occur within the site, vegetation structure on site only contained potential habitat for the Koala, Grey-headed Flying-fox and some bird species. Significant disturbance within cleared open paddocks and unmaintained regrowth areas are considered to have little to no habitat values for significant fauna species.



Survey findings noted that given the presence of potential habitat for these species, a strategy to maximise the protection of specific habitat needs to be considered. Particular consideration should be given to the maintenance of habitat associated with the northern ridgelines and southern creek corridor. In addition, the design of habitat retention areas should be such that it limits to the perimeter of the habitat area to edge effects.

4.4. Flora Survey Results

A total of one hundred and forty-six (146) flora species were identified across the investigation area, of which ninety-nine (99) species are native flora species (**Table 3**) and the remaining forty-seven (47) are introduced or weed species (**Table 4**).

Table 3: Native Flora

Scientific Name	Common Name
Acacia concurrens	Black Wattle
Acacia disparrima	Hickory Wattle
Acacia fimbriata	Fringed Wattle
Acacia leiocalyx	Early Flowering Black Wattle
Adiantum hispidulum	Rough Maindenhair Fern
Allocasuarina littoralis	Black She Oak
Allocasuarina torulosa	Forest Oak
Alphitonia excelsa	Soap Tree
Angophora leiocarpa	Smooth Bark Apple
Angophora subvelutina	Smudgee Apple
Brachychiton discolor	Lace Tree
Breynia oblongifolia	Coffee Bush
Bursaria spinosa	Black Thorn
Cassytha glabella	Devil's Twine
Casuarina cunninghamiana	River She Oak
Cayratia clematidea	Slender Grape
Centella asiatica	Pennywort
Cheilanthes distans	Bristle Cloak Fern
Chrysocephalum apiculatum	Yellow Buttons
Corymbia citriodora	Spotted Gum
Corymbia intermedia	Pink Bloodwood
Coryombia tessellaris	Moreton Bay Ash
Cymbopogon refractus	Barbed Wire Grass
Cyperus haspan	A Flat Sedge
Cyperus involucratus	Umbrella Sedge
Cyperus polystachyos	Bunchy Sedge
Davallia solida	Haresfoot Fern
Dianella longifolia	Blueberry Lilly
Dianella nervosa	Blueberry Lilly
Dichondra repens	Kidney Weed
Drynaria rigidula	Basket Fern
Elaeocarpus reticulatus	Blueberry Ash
Eleocharis equisetina	Spike Rush
Eucalyptus acmenoides	White Mahogany
Eucalyptus carnea	Thick-leaved White Mahogany
Eucalyptus crebra	Narrow Leaf Ironbark
Eucalyptus siderophloia	Grey Ironbark
Eucalyptus tereticornis	Forest Red Gum



Scientific Name	Common Name
Eucalyptus moluccana	Gum-topped Box
Eustrephus latifolius	Wombat Berry
Exocarpus cupressiformis	Native Cherry
Exocarpus latifolius	Broad-leaved Cherry
Ficus coronata	Creek Sandpaper Fig
Ficus obliqua	Small-leaved Fig
Gahnia aspera	Saw Sedge
Geitonoplesium cymosum	Scrambling Lilly
Geodorum densiflorum	Pink Nodding Orchid
Goodenia rotundifolia	Goodenia
Grevillea robusta	Silky Oak
Grewia latifolia	Dog's Balls
Hardenbergia violacea	Native Sarsaparilla
Histiopteris incisa	Bats Wing Fern
Imperata cylindrica	Blady Grass
Jacksonia scoparia	Dogwood
Jagera pseudorhus	Foambark
Juncus usitatus	Common Rush
Leptospermum variable	Tea-tree
Lobelia purpurascens	White Root
Lomandra hystrix	Creek Mat Rush
Lomandra longifolia	Mat Rush
Lomandra multiflora	Many-flowered Matrush
Lomatia silaifolia	Crinkle Bush
Lophostemon confertus	Brush Box
Lophostemon suaveolens	Swamp Box
Ludwigia peploides	Water Primrose
Lygodium microphyllum	Climbing Maidenhair Fern
Macaranga tanarius	Macaranga
Macrozamia lucida	Pineapple Zamia
Mallotus philippensis	Red Kamala
Melaleuca irbyana	Swamp Tea-tree
Melaleuca linariifolia	Snow in Summer
Melaleuca quinquenervia	Broad-leaved Paperbark
Melaleuca saligna	Willow Bottlebrush
Melaleuca viminalis	Weeping Bottlebrush
Melia azedarach	White Cedar
Melodorum leichhardtii	Zig Zag Vine
Murdannia graminea	Slug Herb
Oplismenus aemulus	Creeping Beard Grass
Oplismenus hirtellus	Pademelon Grass
Oplismenus undulatifolius	Basket Grass
Ottochloa gracillima	Graceful Grass
Parsonisa straminea	Monkey Rope Vine
Persicaria decipiens	Slender Knotweed
Petalostigma pubescens	Quinine Bush
Philydrum lanuginosum	Woolly Frogmouth
Platycerium bifurcatum	Elkhorn Fern
Platycerium superbum	Staghorn
Plectranthus parviflorus	Plectranthus
Poa labillardieri	Tussock Grass
Pteridium esculentum	Bracken

Scientific Name	Common Name
Pyrrosia confluens	Robber Fern
Sida cordifolia	Flannel Weed
Smilax australis	Austral Sarsparilla
Syzygium australe	River Cherry
Themeda triandra	Kangaroo Grass
Trema tomentosa	Poison Peach
Typha orientalis	Bulrush
Wahlenbergia gracilis	Graceful Bluebell
Xanthorrhoea johnsonii	Forest Grass Tree

At the State level, the Swamp Tea-tree (*Melaleuca irbyana*) is listed as Endangered under the *Nature Conservation Wildlife Regulation, 2009,* and was 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.

4.5. Weed Species

Forty-seven introduced flora species were identified throughout the survey period (**Table 4**).

Table 4: Introduced Flora

Scientific Name	Common Name
Ageratum houstonianum	Blue Billygoat Weed
Ambrosia artemisiifolia	Annual Ragweed
Andropogon virginicus	Whisky Grass
Asclepias curassavica	Red-head Cotton Bush
Asparagus africanus	Climbing Asparagus Fern
Baccharis halimifolia	Groundsel Bush
Bidens pilosa	Cobbler's Pegs
Chloris gayana	Rhodes Grass
Chloris virgata	Feathertop Rhodes Grass
Cinnamomum camphora	Champhor Laurel
Commelina diffusa	Wandering Jew
Conyza bonariensis	Flaxleaf Fleabane
Corymbia torelliana	Cadaghi
Gomphocarpus physocarpus	Balloon Cotton Bush
Heliotropium amplexicaule	Blue Heliotrope
Ipomoea cairica	Mile-a-minute
Lantana camara	Lantana
Lantana montevidensis	Creeping Lantana
Leucaena leucocephala	Leucaena
Macfadyena unguis-cati	Cat's Claw Creeper
Maclura cochinchinensis	Cockspur Thorn
Megathyrsus maximus	Guinea Grass
Melinis minutiflora	Mollasses Grass
Melinis repens	Red Natal Grass
Morus alba	White Mulberry
Myriophyllum aquaticum	Parrot's Feather
Neonotonia wightii	Glycine
Nymphaea caerulea	Blue Water Lilly
Ochna serrulata	Ochna

Scientific Name	Common Name
Opuntia tomentosa	Velvety Tree Pear
Paspalum dilatatum	Paspalum
Passiflora foetida	Stinking Passionflower
Passiflora suberosa	Corky Passion Vine
Psidium cattleianum	Cherry Guava
Schefflera actinophylla	Umbrella Tree
Schinus terebinthifolius	Broadleaved Pepper
Senna pendula	Easter Cassia
Sida rhombifolia	Paddy's Lucerne
Solanum mauritianum	Wild Tobacco Tree
Solanum nigrum	Blackberry Nightshade
Solanum seaforthianum	Brazilian Nightshade
Solanum torvum	Devil's Fig
Sorghum halepense	Johnson Grass
Tecoma stans	Yellow Bells
Tithonia diversifolia	Japanese Sunflower
Urochloa mutica	Para Grass
Xanthium occidentale	Noogoora Burr

4.6. Fauna Survey

The following observations were made during site surveys regarding fauna.

- A total of eighty-five (85) fauna species were observed on site, consisting of five (5) amphibians, sixty-two (62) birds, eleven (11) mammals and seven (7) reptile species (**Table 5**).

- The migratory species, *Merops ornatus* (Rainbow Bee-eater) and *Haliaeetus leucogaster* (White-bellied Sea Eagle) were recorded on-site and as fly-overs, respectively.

- While *Pteropus poliocephalus* (Grey-headed Flying-fox) was located on-site in relatively small numbers, suitable *Eucalyptus* food trees would provide foraging habitat for this threatened species throughout the broader landscape and outside the development area. No risk to this species would occur due to the largely vegetated areas within the north of the property being protected within the environmental corridor.

- Given a large portion of the proposed development area is cleared of remnant vegetation and managed for cattle production, utilisation of the site by fauna is largely limited to those that have adapted to highly modified environments.





Photo: Local common fauna utilising the grazing areas

- Fauna connectivity will be predominantly maintained on-site through the retention of the northern vegetated ridgelines. It is this area that retains over 80% of the remnant vegetation mapped on-site and includes habitat that potentially could be utilised for State threatened species including *Calyptorhynchus lathami lathami* (Glossy Black-cockatoo), *Ninox strenua* (Powerful Owl), *Phascolarctos cinereus* (Koala), and *Marsdenia coronata* (Slender Milk vine).
- The Council mapped Biodiversity Corridor running along Undullah/Woollaman creeks will be maintained with a core conservation area catering for ongoing connectivity and habitat values throughout the adjoining southern landscape.
- Motion sensor cameras were deployed in various locations across the site in potential habitat and vegetated areas to record the use of the site by fauna. These areas included the recording of potential fauna movement along drainage lines as well as Undullah/Woollaman Creeks. Although only common species were recorded, of particular note is the use of these drainage lines by a number of *Canis lupus dingo* (Dingo).

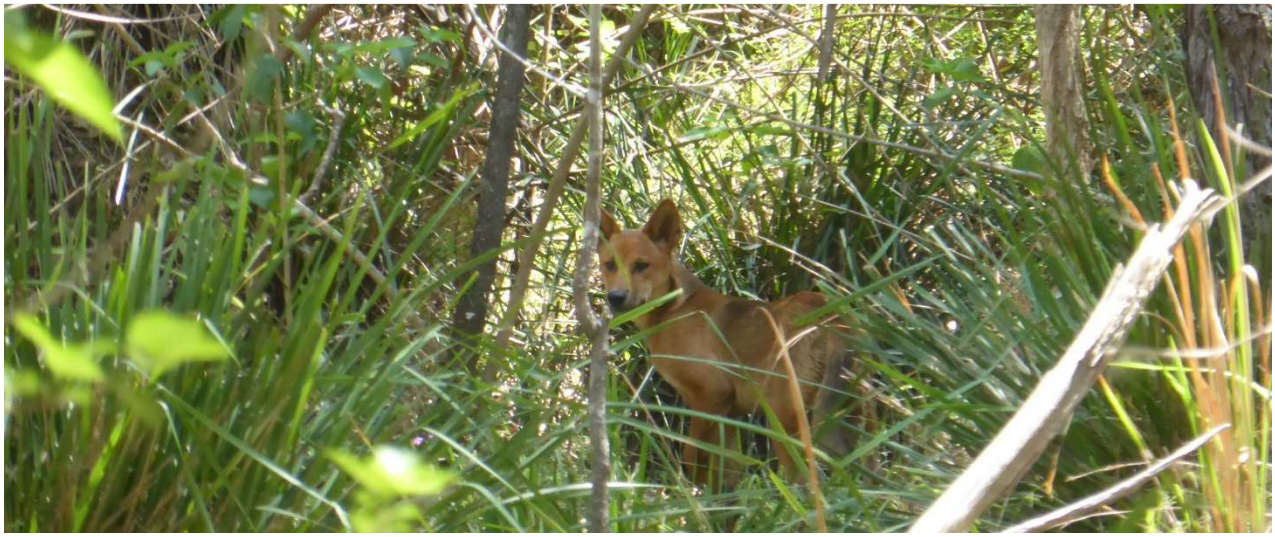


Photo: Canis lupus dingo (Dingo) recorded utilising the drainage line towards the south east corner of Lot 3 on S311896



Photo: Motion sensor cameras identifying fauna movement throughout drainage lines.



Photo: Scattered large hollow bearing trees recorded along Woollaman Creek.

Table 5: Fauna Species

Scientific Name	Common Name
AMPHIBIANS	
Crinia signifera	Eastern Common Froglet
Limnodynastes ornatus	Ornate Burrowing Frog
Litoria brevipalmata	Green-thighed Frog
Litoria nasuta	Rocket Frog
Rhinella marina	Cane Toad
BIRDS	
Alcedo azurea	Azure Kingfisher



Scientific Name	Common Name
Alectura lathami	Australian Brush-turkey
Anas superciliosa	Pacific Black Duck
Aquila audax	Wedge-tailed Eagle
Ardea ibis	Cattle Egret
Ardea intermedia	Intermediate Egret
Ardea pacifica	White-necked Heron
Artamus leucorynchus	White-breasted Woodswallow
Cacatua galerita	Sulphur-crested Cockatoo
Centropus phasianinus	Pheasant Coucal
Chenonetta jubata	Australian Wood-Duck
Climacteris picumnus	Brown Treecreeper
Coracina novaehollandiae	Black-faced Cuckoo-shrike
Coracina tenuirostris	Cicadbird
Cormobates leucophaea metastasis	White-throated Treecreeper
Corvus orru	Torresian Crow
Coturnix ypsilophora	Brown Quail
Cracticus nigrogularis	Pied Butcherbird
Cracticus torquatus	Grey Butcherbird
Dacelo novaeguineae	Laughing Kookaburra
Dendrocygna eytoni	Plumed Whistling Duck
Dicrurus bracteatus	Spangled Drongo
Egretta novaehollandiae	White-faced Heron
Entomyzon cyanotis	Blue-faced Honeyeater
Eolophus roseicapilla	Galah
Eurystomus orientalis	Dollarbird
Falco cenchroides	Nankeen Kestrel
Gallinula tenebrosa	Dusky Morehen
Geopelia placida	Peaceful Dove
Grallina cyanoleuca	Magpie-lark
Gymnorhina tibicen	Australian Magpie
Haliaeetus leucogaster	White-bellied Sea Eagle
Hirundo neoxena	Welcome Swallow
Macropygia amboinensis	Brown Cuckoo-Dove
Malurus cyanochlamys	Superb Fairy Wren
Malurus lamberti	Varigated 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
Milvus migrans	Black Kite
Myzomela sanguinolenta	Scarlet Honeyeater
Neochima temporalis	Red-browed Finch
Ocyphaps lophotes	Crested Pigeon
Pardalotus striatus	Straited Pardalote
Pelecanus conspicillatus	Australian Pelican
Phalacrocorax sulcirostris	Little Black Cormorant
Philemon corniculatus	Noisy Minor
Platycercus adscitus	Pale-headed Rosella
Podargus strigoides	Tawny Frogmouth
Psophodes olivaceus	Eastern Whipbird
Rhipidura leucophrys	Willie Wagtail

Scientific Name	Common Name
Scythrops novaehollandiae	Channel-billed Cuckoo
Smicrornis brevirostris	Weebill
Strepera graculina	Pied Currawong
Taeniopygia bichenovii	Double-barred Finch
Threskiornis molucca	Australian White Ibis
Todiramphus macleayii	Forest Kingfisher
Trichoglossus chlorolepidotus	Scaly-breasted Lorikeet
Trichoglossus haematodus	Rainbow Lorikeet
Vanellus miles	Masked Lapwing
MAMMALS	
Bos taurus	European Cattle
Canis lupus dingo	Dingo
Canis lupus familiaris	Dog
Equus caballus	Horse
Isoodon macrourus	Northern Brown Bandicoot
Lepus europaeus	European Brown Hare
Macropus giganteus	Eastern Grey Kangaroo
Pteropus poliocephalus	Grey-headed Flying Fox
Sus scrofa	Pig
Trichosurus vulpecula	Common Brushtail Possum
Vulpes	Red Fox
REPTILES	
Cryptoblepharus virgatus	Wall Skink
Intellagama lesueurii	Eastern Water Dragon
Lamproppholis delicata	Grass Skink
Pogona barbata	Bearded Dragon
Pseudechis porphyriacus	Red-bellied Black Snake
Pseudonaja textilis	Eastern Brown Snake
Varanus varius	Lace Monitor

4.6.1 Koala (Phascolarctos cinereus)

Evidence of *Phascolarctos cinereus* (Koala) was recorded on-site, however, no individual specimens were observed throughout the survey periods. The survey for Koala included twelve (12) Spot Assessment Technique (SAT) Surveys which provided various details on Koala activity levels throughout the property with three (3) recording medium use and nine (9) recording a low Koala use. It is noted that six (6) other Scat meanders recorded 'no use' (refer **Appendix D** for SAT Survey results).

Although the results showed variation in use it is believed that the medium use areas are not a true representation of Koala activity levels as in these locations the surveys were conducted in selectively cleared isolated patches of vegetation that are surrounded by large areas of open space where no trees are recorded. The predominance of retained Koala trees in these areas positively skews scat levels in the absence of expected non-habitat species producing what is considered an anomaly under the SAT methodology.

4.6.2 Grey-headed Flying-fox (*Pteropus poliocephalus*)

While *Pteropus poliocephalus* (Grey-headed Flying-fox) was located on-site in relatively small numbers, suitable *Eucalyptus* food trees would provide foraging habitat for this threatened species throughout the broader landscape and outside the development area. No risk to this species would occur due to the largely vegetated areas within the north of the property being protected within the environmental area.

4.6.3 Greater Glider (*Petauroides volans*)

The Greater Glider prefers tall eucalypt forests and woodlands. It is found in highest abundance typically in taller, montane, moist eucalypt forests, with relatively old trees and abundant hollows. The northern portion of the site particularly within Lot 3 on S311896, retains some of these characteristics, however, due to past clearing regimes, this habitat is limited. Although some older trees have retained some hollows in this portion of the site, these large trees are fairly rare or scattered across the landscape and therefore reduce the likelihood of this species occurring. The protection of this environmental zone may increase the potential for this species to utilise the site in the future.

4.6.4 Brush-tailed Rock Wallaby (*Petrogale penicillata*)

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 been recorded on south facing slopes. This species browses 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 exposed rock outcrops were observed along the northern boundary of Lot 3 on S311896, no evidence, including scats or den sites, were observed at the time of the assessment and the species Is not expected to occur.

In the case of the Greater Glider, Brush-tailed Rock Wallaby and the Grey-headed Flying Fox, potential habitat for these species was identified within the proposed environmental zone at the northern portion of Lot 3 on S311986. This habitat, although having undergone relatively severe disturbance, has the potential to support these species should they occur. Further to this, the proposed development area does not encroach on this potential habitat and will not negatively affect any of these species. Although a relatively small amount of eucalypts and *Corymbia* specimens will be removed, the development is concentrated within areas already disturbed and currently managed for cattle production.

4.6.5 Large-eared Pied Bat (*Chalinolobus dwyeri*)

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 records for this species were confirmed utilising the ultrasonicsonic bat detector and no suitable habitat characteristics were identified within the project area.

This species is specifically known to roost near the entrances of caves, crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the *Petrochelidon ariel* (Fairy Martin), none of which were identified throughout the survey period. Some minor characteristics of this bats habitat, being eucalypt forest at high elevations, were identified within the northern portion of Lot 3 on S31198, however, this uncommon species is considered highly unlikely to occur. It should also be noted that this area forms part of the environmental zone and any potential habitat is not affected by the proposed development area.

4.6.6 Swift Parrot (Lathamus discolor)

Lathamus discolour (Swift Parrot) is considered very distinctive. It undertakes the longest migration of any parrot species in the world, with breeding occurring only in Tasmania and migration to mainland Australia occurring within the wintering months to the box-ironbark forests and woodlands as far north as southeast Queensland. This species has been recorded within woodland and forest patches containing *Eucalyptus crebra* (Narrow Leaf Ironbark), *Eucalyptus tereticornis* (Forest Red Gum) as well as yellow box forests, and it feeds mostly on nectar and mainly from eucalypts.

Targeted bird surveys as per EPBC Act guidelines have been conducted at various locations in association with potential habitat features. These surveys included temporally stratified dusk and dawn samples. In addition,

opportunistic bird searches were conducted throughout the entire survey period across the entire property. No evidence of *Lathamus discolour* (Swift Parrot) was observed throughout all site assessments.

4.6.7 Migratory Birds

Migratory species, *Merops ornatus* (Rainbow Bee-eater) and *Haliaeetus leucogaster* (White-bellied Sea Eagle) were recorded both on-site and as fly-overs, but ideal habitat for both species was lacking. The limited available habitat was not considered to represent an important area of habitat for migratory species. This is primarily because the site does not contain marine and riparian systems such as shorelines, mudflats and sandflats and deep water.

4.6.8 Spot-tailed Quoll (*Dasyurus maculatus maculatus*) and Collared delma (*Delma torquata*)

Specific habitat assessment surveys were completed for *Dasyurus maculatus maculatus* (Spot-tailed Quoll), and *Delma torquata* (Collared Delma), however, no individual specimens were observed throughout the assessment period and suitable habitat was generally lacking.

4.7. Corridor Assessment

In general, the subject site represents a relatively disturbed rural landscape with extensive historical clearing on lower slopes and gullies and along the Undullah / Woollaman Creek corridor. The result is a patchwork of open clearings and regrowth and remnant vegetation along drainage lines that have undergone extensive erosion and shedding of dispersive soils.

Noteworthy habitat values are predominantly retained in the northern areas of remnant and regrowth Koala Habitat adjoining the Flinders – Karawatha Bioregional Corridor. There is limited to no effective connectivity value currently maintained through the central gully lines of the paddock areas between the northern vegetation and farmland to the south, with the Undullah / Woollaman Creek corridor representing the greatest opportunity for ongoing connectivity value. This is reflected in **Logan City Council's** mapping of this area as a Biodiversity Corridor (**Figure 13**), and it is understood from recent discussions that the maintenance of these mapped Biodiversity Corridors is a priority for both LCC and EDQ.

4.7.1 Woollaman Creek Corridor

SHG conducted extensive surveys of the Undullah / Woollaman Creek corridor investigated the relative value of adjoining drainage features and the extent of remnant and regrowth vegetation and Koala Habitat (refer **Plans 5.1 & 5.2**).

In general, the corridor was highly disturbed, maintaining extensive weed infestations and isolated, though relatively large, *Eucalyptus tereticornis* (River Red Gum) specimens outside of remnant areas. Those areas mapped as remnant vegetation within the corridor were confirmed in description and status with minor discrepancies in extent at the property scale. Other regrowth areas were dominated by mono-specific *Acacia* stands and *Lantana* undergrowth with some *Eucalyptus* and *Corymbia* recruitment evident. Areas mapped as Koala Bushland Habitat did not necessarily coincide with vegetative values on-ground, with portions of these mapped polygons over cleared paddocks (**Plan 5.1**).

Flow paths mapped as MSES watercourses (**Plans 5.1 & 5.2**) were generally considered to constitute 'drainage features' as defined under the *Water Act 2000*. Regardless, it is anticipated that the lower reaches interacting with Undullah and Woollaman Creeks will be retained and enhanced within conservation areas and open space uses under the proposal.

It is understood that a buffer of 100 m is proposed to the high bank of Undullah / Woollaman Creek with a core 50 m conservation corridor to be replanted and rehabilitated and the outer corridor accommodating complementary open space uses amongst retained and rehabilitated remnant and regrowth areas (**Plan 5.1**). This is considered a far superior ecological outcome to that currently present on-ground, and in keeping with the intent of the Development Scheme.

4.7.2 Central Drainage Lines

The central drainage lines are considered to maintain features representative of a 'drainage feature' as defined under the *Water Act 2000* (refer **Plans 5.3 and 5.4**). Overland flow paths feeding these drainage lines generally contain no true watercourse or riparian features nor indicative species. These areas would only contain water in periods of high rainfall events and contain very few opportunities for water to be retained. Some of these features also contain constructed farm dams as a result of cattle production.

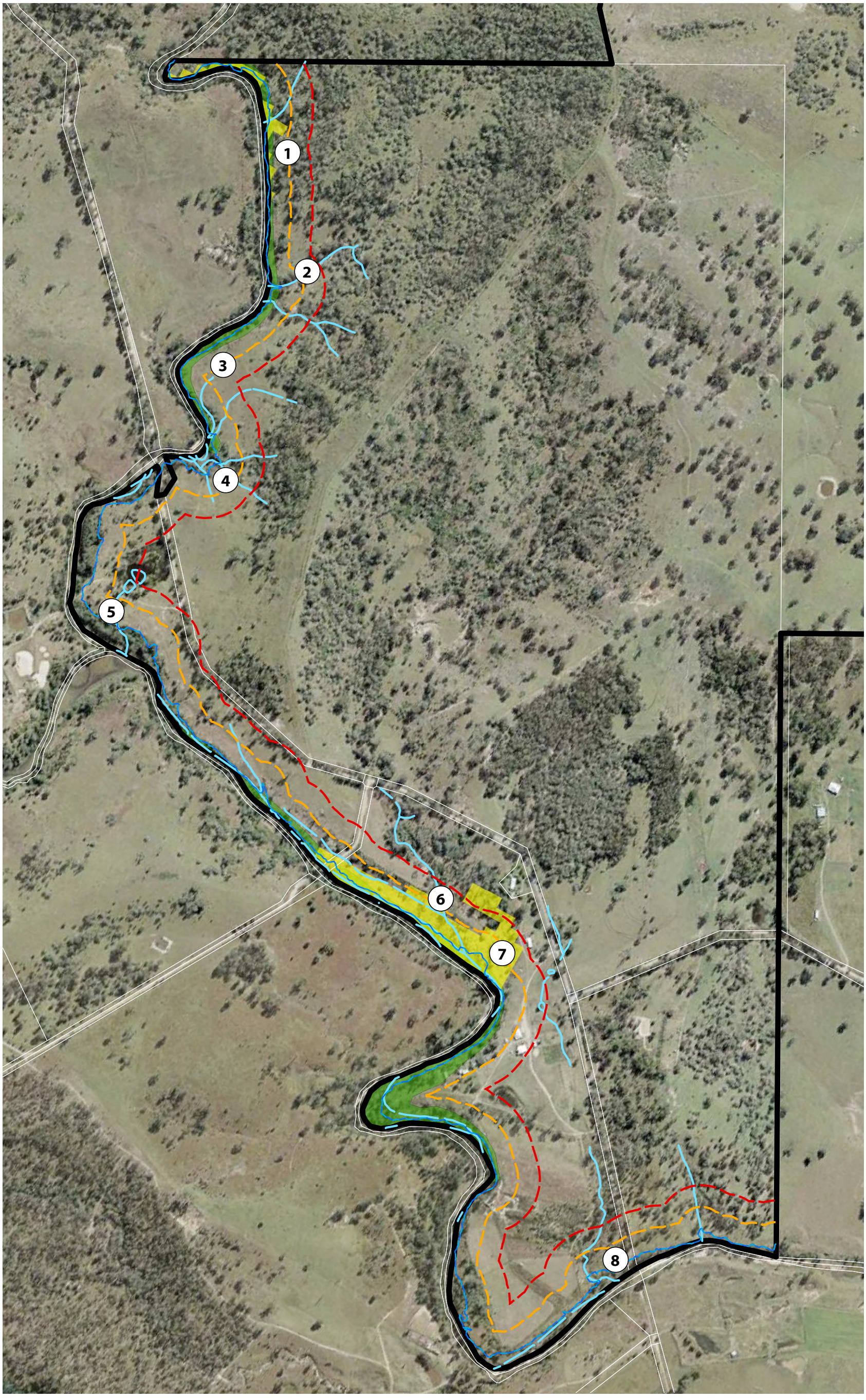
The Central Drainage Lines maintain cleared open stretches and regrowth vegetation, with lower reaches that contain some riparian type features including fringing vegetation such as *Melaleuca viminalis* (Weeping Bottlebrush) and *Melaleuca quinquenervia* (Broad Leaf Paperbark) along embankments and small clumps of *Cyperus polystachyos* (Bunchy Sedge), *Juncus usitatus* (Common Rush) and some edges dominated by *Lomandra longifolia* (Mat Rush). These lower reaches contain areas more indicative of a defined 'watercourse'.

The Central Drainage Lines do not contain remnant vegetation and are largely dominated by regrowth species where vegetation occurs. Some areas are highly eroded due to cattle access and dispersive soils with very few noteworthy ecological values recorded.

Given the lack of important values to the south, and the current disturbed nature of the central drainage lines, they maintain limited apparent utility for ongoing connectivity value other than ancillary to the Woollaman corridor. It is understood that the intention is to create complimentary open space uses along these drainage lines with core retention and rehabilitation areas reflective of what would be required to meet acceptable solutions of the relevant State Development Assessment Provisions outside of the PDA area i.e. 25 m and 10 m setbacks to the high banks of the western and eastern drainage lines, respectively. These core retention areas will be buffered by open space uses and complimentary landscape plantings to provide ancillary habitat, refuge and connectivity values throughout the urbanised development area. It is noteworthy that the Commonwealth **Department of the Environment and Energy** at this stage of the Federal assessment process under the *Environment Protection and Biodiversity Conservation Act 1999* consider these potential linkages as functionally lost in terms of habitat and connectivity value due to adjoining and future surrounding development outcomes.

The proposal includes the creation of a lake with wetland features where the central drainage lines converge in the south of the site (**Plans 1 & 5.3**). This proposal presents an opportunity to provide significant habitat features that would otherwise not be present in the ephemeral and relatively disturbed drainage lines currently present on-site. Lower lying portions of these drainage lines currently maintain some indicators of riparian features, and these would likely be significantly augmented in the presence of a permanent water body. It is probable that the lake area would augment the occurrence and availability of prey resources for significant predatory raptor species, with landscaping features also incorporating native habitat values appropriate for fauna utilisation. It is anticipated that the Lake proposal in conjunction with significant rehabilitation works will provide superior ecological values relative to those currently present on-site.

5.I. Woollaman Creek Assessment



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: QLD GIS Layers (QLD Gov. Information Service 2017), Aerial (Nearmap 2017)

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LEGEND

- 1 — Photo location (see next plan)
- Qld DCDB
- Project site boundary
- MSES watercourse
- Woollaman Creek high bank
- 50m buffer (from top of bank)
- 100m buffer (from top of bank)

PLAN ISSUE:

Issue	Date	Description	Drawn	Checked
A	7/04/2017	Prelim Draft	TC	FM

0 100 200 400 m

Universal Transverse Mercator GDA 1994 MGA Zone 56 1:9,000 @ A3

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RPD: 35311896 7/04/2017 8020 E 05 I Creek Assessment A

5.2. Woollaman Creek Buffer Area Assessment (Photo Plan)

















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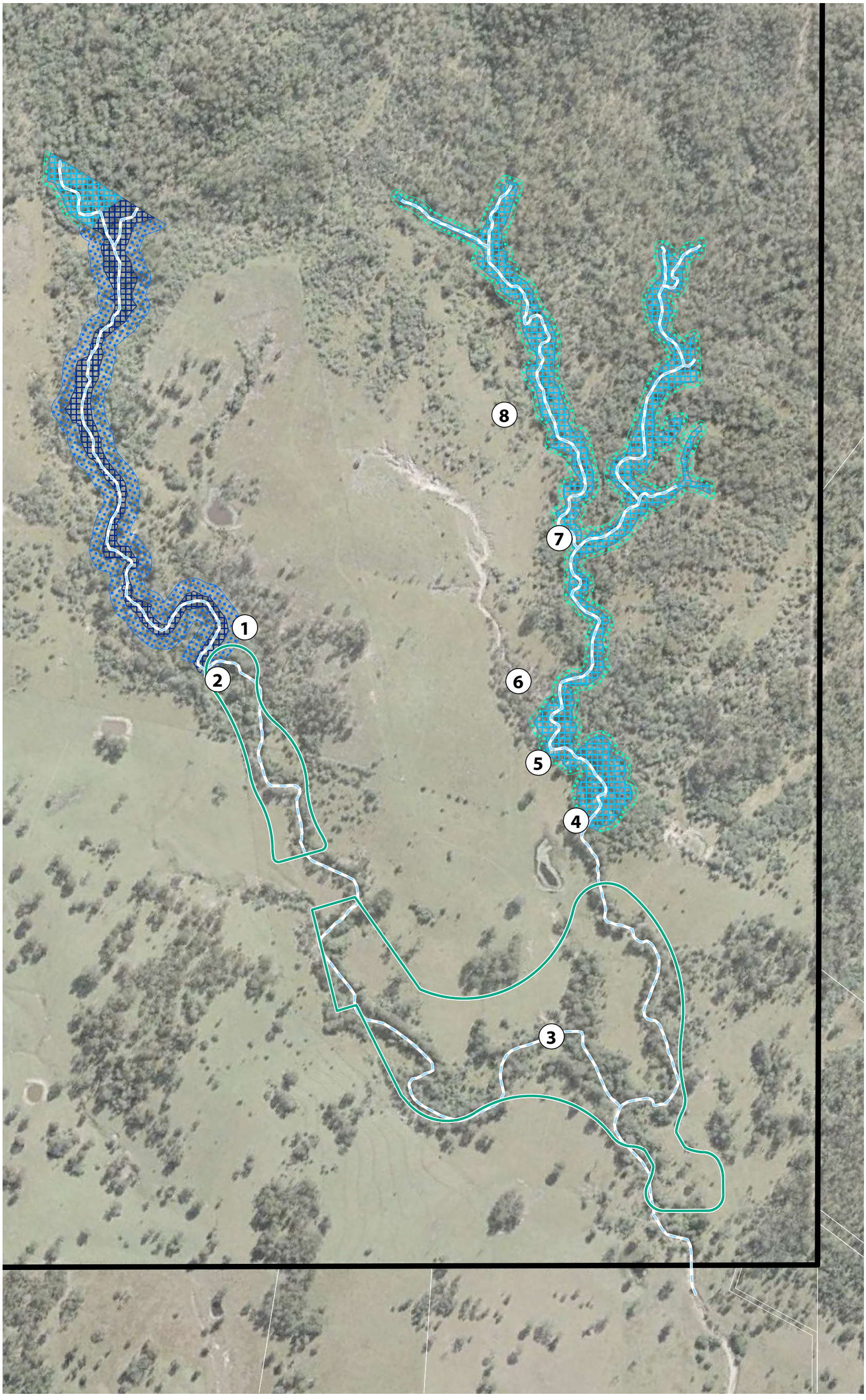
LAN ISSUE:

Issue	Date	Description	Drawn	Checked
	7/04/2017	Prelim Draft	TC	FM

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RPD: 35311896 7/04/2017 8020 E 05 2 Creek Assessment A

5.3. Central Waterways Assessment



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Layer Sources: QLD GIS Layers (QLD Gov. Information Service 2017), Aerial (Nearmap 2017)

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LEGEND

- Qld DCDB
- Project site boundary
- Proposed lakes
- Central waterways centerlines
- medium waterway with highbanks
- minor waterway with highbanks
- 25m buffer from highbanks
- 10m buffer from highbanks

PLAN ISSUE:

Issue	Date	Description	Drawn	Checked
A	7/04/2017	Prelim Draft	TC	FM

0 100 200 400 m

Universal Transverse Mercator GDA 1994 MGA Zone 56 1:7,500 @ A3

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RPD: 35311896 7/04/2017 8020 E 05 3 Waterway Assessment A

5.4. Central Waterways Assessment (Photo Plan)

















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LAN ISSUE:

Issue	Date	Description	Drawn	Checked
A	7/04/2017	Prelim Draft	TC	FM

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RPD: 35311896 7/04/2017 8020 E 05 4 Waterway Assessment A

5. Proposed Context Plan

5.1. Summary of Ecological Assessment Units

A variety of detailed ecological methods have been employed to ground truth and verify a number of mapping and database features. These occurred in both isolated survey events and in combination with other legislative assessment processes. For the purposes of conceptual site design and land use planning, survey data were analysed, aggregated and correlated to form four (4) broad and distinct ecological assessment units described as:

Area 1 – Paddocks, Wattle Regrowth and Scattered Trees
Historical and ongoing land practices have resulted in the removal of noteworthy ecological features and values from this mapping unit. Area 1 includes the most disturbed areas of the site adjoin access roads, and represents the most logical starting point for the project based on locality, access to infrastructure and lack of ecological values.

Area 2 – Woollaman Creek and Buffer
The Undullah and Woollaman Creek Corridor is to have a core habitat area rehabilitated and maintained to provide for ongoing connectivity values. It is anticipated that complimentary uses will be incorporated into buffer areas with the extent of remnant and high value regrowth vegetation maintained.

Area 3 – Central Drainage Feature
The central drainage feature is to be utilised predominantly for open space uses with the outer banks, channel and bed rehabilitated to provide connectivity, that is ancillary to the Woollaman Creek Corridor, between the proposed lake area to the south and the vegetated ridgelines to be preserved. It is anticipated that significant waterway stability works will be required along this drainage feature that will inevitably define the ultimate flow path as well as within other highly disturbed and dispersive flow paths that are to be maintained across the site.

Area 4 – Vegetated Ridgelines and Gullies
Area 4 encapsulates the areas of highest ecological value on-site, including the majority of remnant vegetation, and is to be set aside as conservation area above and beyond that prescribed within the Development Scheme.

The abovementioned areas are depicted in **Plan 4** and described in **Section 4.2**.

5.2. Site Design

The proposed Flinders Context Plan (refer **Plan 1**) has been guided by historical and ongoing ecological advice as well as previous applications and discussions with EDQ. Issues identified through these processes have been further surveyed in accordance with relevant intergovernmental requirements for specific State and National Matters of Environmental Significance. Site design directly reflects identified ecological areas and values with a focus on utilisation of lower values areas and retention of highest priority areas.

Key environmental features of the proposed development include:

1) Conservation Area – Encompasses most of the remnant Regional Ecosystems and Koala habitat values on-site and is located adjoining the Flinders-Karawatha Bioregional Corridor. The Conservation Area incorporates the highest value ecological features on the project site.

2) Woollaman Creek Corridor – The Woollaman Creek Corridor represents an opportunity to facilitate ongoing connectivity and habitat values through the adjacent landscape and beyond. The intent is to rehabilitate and maintain a core corridor free from development with complimentary uses within the buffer area that maintains the current extent of remnant and high value regrowth vegetation.

3) Site design maintains drainage features within open space areas to provide ancillary connectivity values between the proposed lake and the conservation areas in the north. It is anticipated that the outer bank, channel and bed of these flow paths will be rehabilitated to provide for stepping stone connectivity in an urban context.

A vast portion of the site above and beyond that mapped for conservation in the Development Scheme is to be retained to provide ongoing environmental values. The preservation of this area is intended to augment the values preserved within the adjoining Flinders-Karawatha Bioregional Corridor. The Flinders Context Plan provides a consolidated conservation area in the north the site to support and extend the natural features of the adjacent values. This outcome is achieved because of the prevalence of higher value ecological features within north of the site and relative indifference in vegetation quality between the understorey, mid-storey and ground layer.

The over-arching design philosophy of the site layout is to concentrate development impacts within the southern portion of the site where no and/or lower values occur to enable genuine and robust protection of the Significant Biodiversity Values in the north. This proposal in conjunction with the Woollaman Creek corridor will ensure that habitat values flanking the development area will remain connected and intact. The concentration of impacts away from these values limits the ability to integrate some environmental features within development zones, however, these are compensated for by offsets and improvement works within the retained areas.

6. Conclusion & Impacts

Ecological Assessments were conducted over the proposed residential development site between November 2015 and December 2016 to describe the ecological values and target specific threatened matters. The survey effort was designed to provide adequate information to assess the likelihood of adverse impacts on listed species.

The following conclusions have been made:

- The proposed development area is highly modified due to past agricultural practices, clearing and site maintenance. Exotic flora were prevalent across the site.
- Regulated Vegetation as mapped under the *Vegetation Management Act, 1999,* was confirmed on-site, with a relatively small area of remnant vegetation occurring within the proposed development area.
- Of threatened flora or fauna species listed under the *Environmental Protection and Biodiversity Conservation Act, 1999* (EPBC Act), field surveys recorded Grey-headed Flying-fox foraging and evidence of Koala activity in the form of scats.
- No Koala sightings were recorded within the proposed development area. Koala habitat and usage assessments found predominantly 'Low' evidence of Koala usage within areas containing recognised Koala habitat trees.
- *Melaleuca irbyana* listed threatened species protected under the *Nature Conservation Act 1992* (Qld) (NCA) were observed at two locations on-site, however, they were isolated specimens not considered to form the listed Swamp Tea-tree TEC.
- Despite extensive targeted searches, no evidence of *Dasyurus maculatus maculatus* (Spot-tailed Quoll), *Delma torquata* (Collared Delma), *Lathamus discolour* (Swift Parrot) or *Petrogale penicillata* (Brush-tailed Rock-wallaby) was recorded on-site. *Pteropus poliocephalus* (Grey-headed Flying-fox) and *Merops ornatus* (Rainbow Bee-eater) were recorded as foragers only.
- Suitable food resources for *Pteropus poliocephalus* (Grey-headed Flying-fox) in the form of winter flowering eucalypts are present on-site, however, the quality and amount available is considered insignificant in the context of the surrounding landscape.
- Mapped watercourse features were assessed as highly degraded drainage features largely populated with weed species. Only Woollaman Creek and significant anabranches formed true watercourses.
- Highest values ecological areas were contained to the vegetated ridgelines and gullies to be preserved in the north of the site.

6.1. Guideline 14 – Environmental Values and Sustainable Resource Use

Guideline 14 outlines the values and strategies for protecting the environment and optimising resource use in PDAs and includes the following strategies:

- Environmental values
- Pollution sources
- Climate change issues
- Natural resources

As such, a response to Guideline 14 is presented, below.



Guideline 14 Response: Ecological Processes and Systems

Values	Strategies	Comments
1. Significant terrestrial biodiversity values Areas of significant biodiversity value may include: ▪ Land mapped in the applicable PDA development scheme as having significant biodiversity values ▪ Mapped biodiversity corridors identified in the applicable PDA development scheme ▪ Other areas of significance identified in the applicable PDA development scheme ▪ Viable areas of remnant vegetation containing endangered regional ecosystems as defined in Appendix 1 ▪ Listed threated species habitat	Identify significant terrestrial biodiversity values within and adjoining the development area by undertaking: ▪ Robust field surveys ▪ Desktop assessments using local, state and commonwealth environment databases and mapping searches Demonstrate how the development minimises impacts on significant biodiversity values by minimising vegetation clearing generally within the area and by specifically: ▪ Retaining and enhancing areas of viable remnant vegetation containing endangered regional ecosystems as defined in Appendix 1 ▪ Avoiding, minimising or off-setting the clearing of non-viable remnant vegetation containing endangered regional ecosystems as defined in Appendix 1 ▪ Minimising the clearing of remnant and regulated regrowth vegetation within the area ▪ Providing adequate buffers between development and any identified significant biodiversity value within or adjoining the development site ▪ Providing management plans to reduce and control clearing and manage other development and construction impacts in the area.	Previous ecological assessments conducted by **James Warren & Associates Pty Ltd (JWA)** informed an Ecological Assessment Report (dated Dec 2011) submitted with the original Precinct 1 MCU application. These studies were reviewed prior to **SHG**'s ecological studies. Detailed ecological surveys by **SHG** were undertaken over the project area between November 2015 and July 2016. These have been carried out using a number of survey methods to describe various on-site habitat and vegetation characteristics. These surveys included targeted flora and fauna surveys, specifically to identify the potential presence of listed threatened species and locate ecologically significant areas. The results of this survey assisted in informing the Flinders current Precinct 1 Context Plan and ultimate development proposal. An Ecological Assessment Report (EAR) for the EPBC Act Referral for this site was prepared by **SHG** for the entire Flinders project site within the Greater Flagstone Priority Development Area, and is supported by this Significant Biodiversity Assessment Report. As part of this reporting, desktop and ground truthing flora, fauna, habitat and waterway field assessments were completed over the entire project site. As discussed in the EAR and this Significant Biodiversity Assessment Report, ecological values which meet the Guideline 14 definition of 'significant biodiversity values'



Values	Strategies	Comments
		are contained within the northern Environmental Protection Area and Natural Areas, which is intended to be retained and rehabilitated as part of the development. It is noted that the majority of mapped remnant vegetation communities will be retained within Conservation Areas, with only very small isolated patches of Least Concern RE (surrounded by cleared paddock areas) in the south to be cleared. The proposed development footprint contains primarily non-remnant vegetation and grassed paddock used for cattle grazing. The Proposed Clearing Area is not mapped within an Environmental Protection Area or Biodiversity Corridor under the GFPDA Development Scheme. Importantly, the Proposed Development Area is located within the Urban Living precinct under the Development Scheme, which has been strategically identified to minimise impacts on landscape scale significant biodiversity values. The Proposed Development Area is located outside areas of ground-truthed and PMAV rectified Of Concern remnant vegetation (that is essential habitat for the Koala) and is located primarily within areas of Category X (non-remnant) and small areas of Category B (Least Concern RE12.9-10.2). Removal of small patches of Least Concern and regrowth vegetation is required to facilitate a practical development footprint in accordance with Development Scheme intent and density requirements. No significant biodiversity values will be impacted by clearing. Importantly, the Proposal provides sufficient buffers

Values	Strategies	Comments
		between the development and significant biodiversity values to ensure edge effects associated with the development are minimised and values are retained. Ongoing connectivity values will be ably facilitated by the retention and rehabilitation of the Conservation Area and the corridor along Undullah and Woollaman creeks. Overall, development is limited to the proposed development footprint. No significant biodiversity values were identified by **SHG** within the proposed development area. Biodiversity values associated Of Concern and Least Concern vegetation and waterways within the northern extent of the Flinders project area will be retained and rehabilitated as part of the development. The Greater Flagstone Project Natural Environment Overarching Site Strategy (NESS) will be prepared for the management of clearing and construction as well as ongoing operational impacts on terrestrial biodiversity values and is subject to approval by **EDQ**. As part of the NESS, stage specific Vegetation Clearing Management Plans and Fauna Management Plans will be prepared to mitigate and manage clearing and construction impacts as the development is sequenced.
2. Ecological connectivity	▪ Identify priority vegetation patches, fauna habitat features and fauna movement corridors in and beyond the application site through detailed site assessments completed in accordance with the relevant local government authority guidelines or planning scheme policies for ecological assessment	Ecological assessments completed by **SHG** in accordance with Guideline 14 requirements did not identify any priority vegetation patches, habitat features or fauna corridors within the Proposed Development Area, which has been largely set to avoid the removal or impact on Significant Biodiversity Areas.

Values	Strategies	Comments
	▪ Retain vegetation connections between priority vegetation patches, fauna habitat features and fauna linkages to ensure ecological connectivity is maintained or enhanced ▪ Minimise locating major infrastructure through identified corridor linkages ▪ Undertake strategic rehabilitation of degraded land where required to improve or create functioning corridors.	The Proposed Development Area is located outside areas of ground-truthed and PMAV rectified Of Concern remnant vegetation (that is essential habitat for the Koala) and is located primarily within areas of Category X (non-remnant) and only very small patches of Category B (Least Concern RE12.9-10.2). The Proposal retains 'Significant Vegetation' as Environmental Protection Zone and Natural Areas which will maintain connectivity to the Flinders Peak-Karawatha Bioregional Wildlife Corridor to the north, provide a buffer between the development and the bioregional corridor, and protect ridgelines. The retention and rehabilitation of the Undullah / Woollaman creek riparian corridor will facilitate ongoing connectivity through the surrounding landscape. Ancillary linear parks extend from northern natural areas, with the intent of strategic rehabilitation of the degraded waterways. Detailed Rehabilitation Plans will be prepared and issued to **EDQ** for assessment. No infrastructure is proposed within Environmental Protection Areas and Natural Areas. Importantly, appropriate buffers will be maintained to ensure edge effects are minimised and significant biodiversity values are protected.
3. Sustainable landscaping practices	▪ Incorporate biodiversity friendly landscape principles and practices such as retaining habitat trees in road reserves and opens space areas ▪ Maximise use of locally occurring native species in landscaping	Sustainable landscape principles and practices will be incorporated under the Proposal. The enhancement of drainage lines which traverse the Flinders site have been addressed through the preparation of the *Waterway Corridor Restoration Strategy*



Values	Strategies	Comments
	▪ Identified opportunities for revegetation and rehabilitation along waterways and biodiversity corridors	which specifically examines weed management, revegetation and bank stability. In addition, a Community Greenspace Master Plan has been prepared by **Place Design Group.** It is intended that site strategies will include: • Channel reconstruction to an appropriate stream type and floodplain elevation; • Stabilisation of the new channel using structures to mimic natural channel features • Streambank bio-engineering to allow vegetation to establish on high shear stress streambanks; • Restoration of the floodplain with bio-retention basins and structural integrity; • Restoration of native plant communities in the floodplain, along stream banks, and in off-channel wetlands; and • Control of weeds and invasive plant species. Landscaping Plans will be provided at subsequent development stages and subject to approval by **EDQ**.
4. Bushfire risk management	▪ Ensure significant biodiversity values are protected from exempt clearing by ensuring new built infrastructure is adequately set back from identified biodiversity areas ▪ Where a firebreak is required to protect new infrastructure ensure clearing associated with the firebreaks is located external to significant biodiversity areas.	A *Bushfire Management Strategies* Plan has been prepared for Precinct 1 by **The Consultancy Bureau (Feb 2012)** and submitted with the Precinct 1 MCU Application. The strategies will ensure significant biodiversity values are protected, and new exempt clearing is not created for significant biodiversity areas (i.e. Environmental Protection Zone and Natural Areas).

Values	Strategies	Comments
	Note: Protection from bushfire is not considered suitable justification for impacts on significant biodiversity values.	

Guideline 14 Response: Waterways and Wetlands

1. Wetlands	▪ Identify and accurately map the extent of, and describe the values for, any identified wetlands of high ecological significance and referrable wetlands ▪ Provide adequate buffers between development and wetlands that are in and adjacent to the PDA (where feasible incorporate open space, storm water treatment or fauna corridors within wetland buffers) ▪ Where a wetland of high ecological significance occurs, a minimum buffer of 50 metres between the development proposal and the wetland is recommended Note: Trigger for assessment of wetland areas is where the stage of works occurs within 100m of the wetland area.	SARA Wetland Protection Area mapping and SPP MSES mapping does not identify protected wetlands within or adjacent the Proposed Clearing Area. Surveys by **SHG** confirmed that no natural wetland values were identified across the site. The proposed Lake area will provide superior wetland features once constructed.
2. Waterways	▪ Identify and accurately map waterways in accordance with DEHP's stream order hierarchy (1-5). ▪ Determine existing and proposed waterway values of site stream orders (eg. Intact remnant vegetation, riparian values, fauna connectivity, natural water quality function, watercourse stability)	A number of watercourses and minor flow paths mapped under the *Vegetation Management Act 1999, Fisheries Act 1994* and *State Planning Policy 2014* traverse Flinders project area for Precinct 1. As part of the numerous ecological assessments, ground-truthed watercourse determinations were undertaken by **SHG.**



	▪ Retain waterways in their undisturbed condition by minimising disturbance to natural drainage. Where this is not proposed provide a detailed waterway assessment report justifying encroachment or removal of waterway areas. ▪ Provide adequate buffers between development and retained waterways to provide waterway protection including temperature, bank stability, light, aquatic habitat, terrestrial habitat. ▪ Where waterways have been designated or identified to provide dual use (fauna corridor, open space connection, stormwater conveyance) provide additional buffer setback.	Confirmed watercourses have been retained by the proposal within Natural Areas and Linear Parks and the degraded flow paths will be rehabilitated as part of the development to restore bed and banks and enhance natural hydrology and ecological function. Detailed Rehabilitation Plans will be prepared and issued to **EDQ** for assessment. Buffers to waterways and Significant Biodiversity Values have been considered in site design and will be incorporated within the NESS.
3. Water Quality	▪ Water discharge to on-site and adjacent water systems (freshwater, estuarine and marine) must meet water quality standards under current Queensland legislation. ▪ Soil disturbance must be managed to avoid associated contaminants entering adjacent water systems. ▪ Identify nutrient hazard areas and appropriately manage soil and groundwater disturbance to avoid or minimise nutrient mobilisation that may increase the risk of coastal algal blooms. ▪ Avoid or minimise waste water discharge from the site in accordance with a waste water management plan prepared by a suitably qualified person. ▪ Avoid areas with highly permeable soils or a high water table when locating waste disposal activities or facilities.	The *Overarching Site Strategy for Total Water Cycle Management* has been prepared by **Gilbert & Sutherland and Mortons-Urban Solutions** to manage construction and operational impacts associated with water discharge, soil disturbance, water quality and natural hydrology. A *Waterway Corridor Restoration Strategy (Precinct 1 and Eastern Catchment)* has been prepared by **Gilbert & Sutherland, JWA Pty Ltd, Place Design** and **Mortons Urban Solutions** and details the proposed restoration strategy for proposed waterway corridors, and mitigation measures of the potential impacts. This includes addressing waterway instability evident on site. Erosion and Sediment Control Plans will be prepared as part of the management plans for development stages of the Flinders project and will manage and minimise

	▪ Provide adequate buffers for water quality between development and retained waterways.	impacts on mapped waterways. These plans are will be subject to compliance assessment by **EDQ**. Buffers to waterways and Significant Biodiversity Values have been considered in site design and will be incorporated within the NESS.

6.2. Guideline 17 – Remnant Vegetation and Koala Obligations

Guideline 17 applies to development in the Greater Flagstone PDA where the project will result in clearing of:

1. Remnant vegetation containing endangered regional ecosystems; or
2. Koala bushland habitat or areas suitable for high and medium value rehabilitation, as shown on the Koala Habitat Values Map.

Preliminary master planning indicates that some areas that contain mapped Koala Habitat Values will be impacted by the proposed development. The vast majority of mapped Koala values will be retained and rehabilitated within conservation areas. Desktop calculations demonstrate that only 37.7 ha of Medium and Low Values Bushland will be unavoidably removed to facilitate the development intent of the proposal (refer **Plan 6**). It is anticipated that 22.4 ha of Medium Value Rehabilitation Habitat will also be unavoidably removed (**Plan 6**).

As per IG17, the following Koala obligations will likely apply at the State level under the proposal:

Value	**Rate**	**Total**
Bushland Habitat	$15,000 per hectare	$565,500
Rehabilitation Habitat	$5,000 per hectare	$112,000
Total		**$677,500**

A per dwelling cost of $150 also applies under IG17.

6.3. Potential Impacts

The proposed **Flinders** Context Plan will be implemented over a relatively long time frame and development is intended to commence within the least significant ecological features of the site, before sequencing towards the retained habitat areas. Each application area, sub-stage and or isolated infrastructure item has the potential to generate the following generic impacts, although the actual impact of many of those listed are likely to be either fully or partially mitigated through suitable design and construction methods:

POTENTIAL CONSTRUCTION IMPACTS

- Direct removal of site vegetation (Remnant, Non Remnant and Isolated Tree Specimens)
- Loss of habitat – Primarily as associated with the above vegetation and to a lesser extent changes to site drainage lines and removal of some farm dams.
- Construction of the proposed lake likely to enhance environmental values post-works
- Excavation / compaction / changes in existing ground levels
- Altering of hydrological flows (note that flows leaving the site will be managed in accordance with the Stormwater Masterplan)
- Noise, vibration and dust
- Fragmentation (should be able to be minimised with sequencing and directional clearing)
- Erosion and sedimentation
- Threats associated with open cut trenching etc. and fauna entrapment

POTENTIAL OPERATIONAL IMPACTS

- Edge effects to conservation parklands

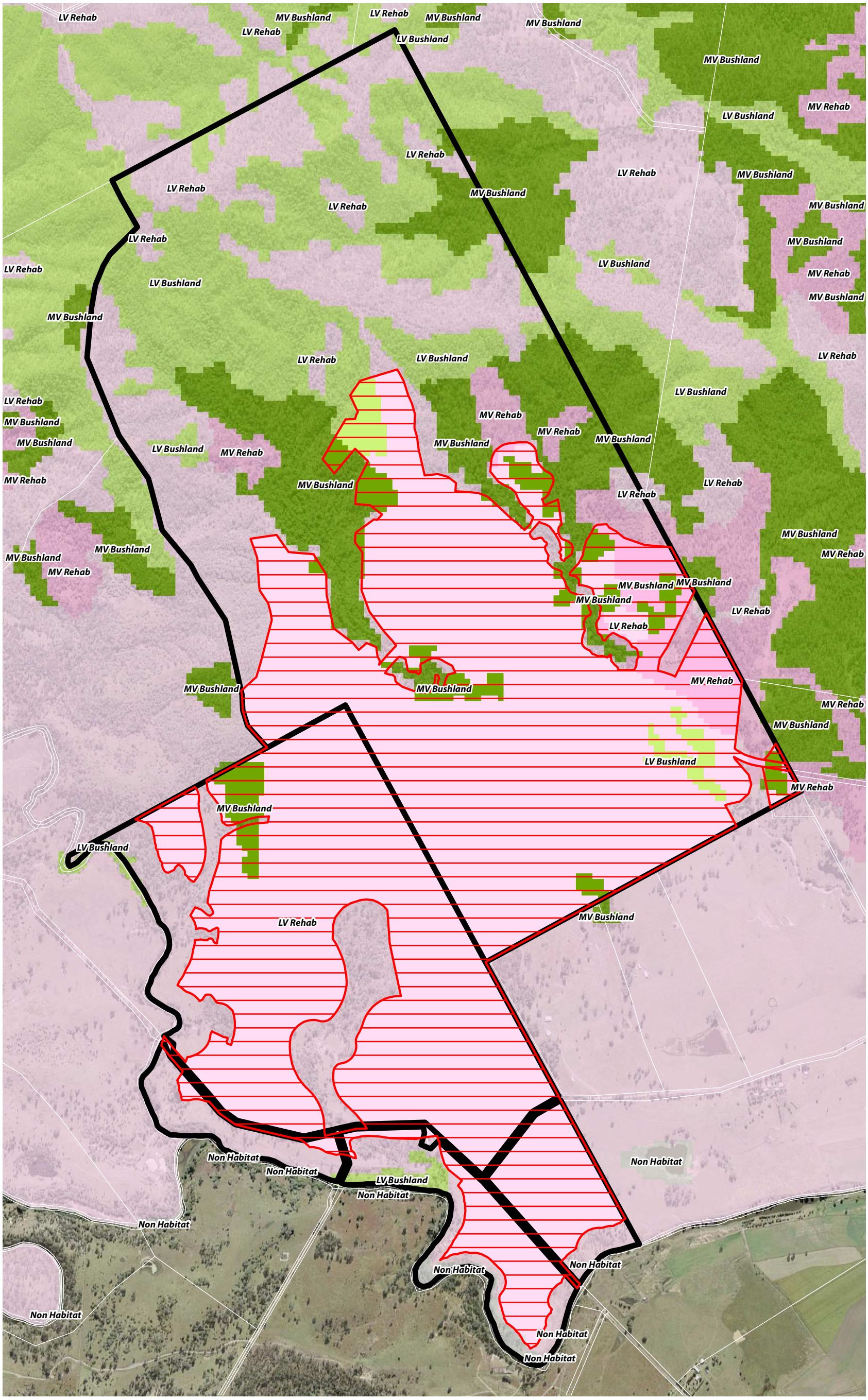
- Weed introduction (domestic garden escapees)
- Increased hydrology with increased hardstand (Waterway stability)
- Altering of run-off chemical and nutrient components (Quality)
- Barriers to fauna movement
- Vehicle and pedestrian movement and trespass
- Introduction of domestic and predatory species

Potential impacts associated with construction are direct and occur at set times over an acute period, whereas, operational impacts are ongoing and less measurable in long terms projects. Housing density outcomes sought by **EDQ** are not conducive to micro-scale integration of natural features with large earthworks modelling required to make housing product workable and affordable while maintaining density targets. Almost the entire land holding fits within this category. Ecological connectivity is best enhanced via augmentation and buffering to the Flinders-Karawatha Bioregional Corridor and the core rehabilitation of the Woollaman Creek Corridor. The project design focuses on consolidating the environmental assets and sensitive land uses to the north where the ecological values were assessed at their highest and an expanded network of environmental areas can be created.

Largely the outcome achieved through the Context Plan reflects the original outcomes outlined by the Urban Land Development Authority (ULDA – Now EDQ) in the *Biodiversity & Natural Resource Strategy Framework Report* Prepared by Oregon Environmental in April 2011.

Impacts will be managed through the measures outlined in the Implementation Guidelines and or as altered through site specific outcomes listed in the endorsed Natural Environment Site Strategy. Where impacts occur at the level outlined in IG17, offsets will be triggered. The development, management and offset of site values may also be governed through an approval from the Commonwealth **Department of the Environment**, which is principally interested in achieving the same outcomes for the site.

6. Qld Koala Habitat Values Impact Assessment



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: QLD GIS Layers (QLD Gov. Information Service 2017), Aerial (Nearmap 2017)

* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

LEGEND

- Qld DCDB
- Project site boundary
- Development area

Koala 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
- Non-habitat
- Water

Medium & Low Value Bushland Habitat to remove: 37.7 ha

Medium Value Rehabilitation Habitat to remove: 22.4 ha

PLAN ISSUE:

Issue	Date	Description	Drawn	Checked
A	7/04/2017	Prelim Draft	TC	FM

0 100 200 400 600 800 m

Universal Transverse Mercator GDA 1994 MGA Zone 56 1:17,500 @ A3

saunders havill group

Flinders PACIFIC INTERNATIONAL GROUP

RPD: 35311896 7/04/2017 8020 E 06 Koala Habitat Values Impact A

7. Recommendations

The **Flinders** Project represents a major project of a regional scale requiring extensive design, planning and management to ensure potential adverse environmental impacts are considered and mitigated. In conjunction with adjoining projects, the land holdings cover the majority of the southern portion of the Greater Flagstone Priority Development Area.

Significant technical studies have been completed to date covering flora and fauna over the Context Plan area which has resulted in ground truthed scientific data being used to inform the master planning process. Notwithstanding the above, there are natural limitations to the ability to assess ecological aspects to the micro scale given the size of the site and the overall duration in delivering a project of this scale.

In this regard, a Natural Environment Site Strategy (NESS) is anticipated to be conditioned on approval with the intent of providing a long term and robust ecological framework for the assessment of future detailed stages of development. The NESS will outline the requirements for detailed management plans (such as vegetation and fauna management plans) and processes which will ultimately consider and address the micro scale ecological aspects.

The following recommendations are made by this Significant Biodiversity Assessment Report for the **Flinders** Project Context Plan:

1. **Conservation Parkland Interface**
   As noted throughout, the ecological function for this project is based on the consolidation of a large robust and sustainable conservation area in the north of the site. To ensure the success of this outcome into the operational phase of the project, interface issues linked to the impending residential development edge need to be managed. Ideally this interface is inclusive of open space uses and roads and other measures within the streetscape and conservation parkland planning.

2. **Natural Environment Site Strategy**
   As a result of the distinct land uses proposed through the Context Plan it is recommended the Natural Environment Site Strategy separates applicable requirements, standards and outcomes for each use type. This should reduce future confusion as the majority of permissible outcomes in the development area are likely to be prohibited in the conservation area. Core components of the NESS include:

   a. Core Environmental Elements
      i. Remnant and Other Vegetation
      ii. Koala Mapping and Koalas
      iii. Other Flora and Fauna
      iv. Conservation Network
      v. Buffers and Interface (integrated open space)
      vi. Watercourses & Drainage Features
      vii. Clearing and Management
      viii. Rehabilitation, monitoring and management
   b. Environmental Offsets
   c. Guideline Compliance

3. **Preclearance Surveys**

   Further to the assessment completed in this Context Plan Report, additional pre-clearance surveys should be undertaken prior to the preparation of self-certification operational works management plans for Vegetation and Fauna.

4. **Conservation Parkland – Open Space Management Plan**

   An area specific Open Space Management Plan should be prepared for the Conservation Parkland area to guide works to occur during the PIDC ownership prior to the dedication to Council. The Plan should be prepared in consultation with LCC and cover items including:

   - Weed removal and control
   - Rehabilitation
   - Fire Management / Tracks / Trails and Access
   - Fauna Deterrent Measures to discourage fauna from entering the residential development area
   - Future Permissible Activities and Uses
   - Waterway stability works and treatment outlets as considered likely in areas of site watercourses
   - Maintenance, management and reporting

5. **Waterway & Watercourse Crossings**

   Future detailed waterway and drainage feature crossings shall be located and designed to minimise disturbance and impact to the existing vegetation on any of the confirmed site watercourse areas. In locations where ecological attributes occur or are to be maintained up and downstream, the crossing design shall comply with IG14, IG17 and more specifically Main Roads Fauna Sensitive Road Design Manual Volume 2 and or relevant sections of the Fisheries Waterway Barrier Works Self Assessable Code.

6. **Environmental Offsets – Coordination**

   Environmental Offsets are applicable to the unavoidable removal of mapped Koala Habitat. Offsets are also triggered through the separate Commonwealth Government referral process. Offset solutions, contributions and outcomes need to be coordinated with both levels of government to minimise overlap without compromising varying levels of legislative control.

7. **Environmental Management Plans**

   A range of management plans and documents will be required during the progressive development of the site. The precise type and detail of these management plans will reflect the size and type of development proposed in accordance with the Natural Environment Site Strategy. Anticipated management plans and the details they would need to include are:

8. **Vegetation Clearing and Management Plan**

   A Vegetation Clearing and Management Plan (VC&MP) should form part of a broader management document prepared as part of the self-certification OPERATIONAL WORKS drawings for all stages of works including vegetation removal. The VC&MP should cover clearing of all vegetation:

   - Clearly show all trees to be removed and retained
   - Include details of all civil works likely to impact on existing vegetation
   - Temporary and permanent exclusion and protection fencing
   - Roles and responsibilities for site contractors, the client and the consultant group
   - Stockpiling and site access locations

- A clearing sequencing plan showing the commencement of clearing and direction of removal (this should be in conjunction with the Fauna Management Plan to allow for the appropriate flushing of fauna towards surrounding safe haven areas.
- Links to weed management and revegetation proposals
- The stock piling and reuse of cleared vegetation
- Specific details on the removal of previously identified potential fauna habitat trees
- Where trees are shown to be retained occur within disturbance zones they should be accompanied by necessary arborist specifications incorporated into the VC&MP.

9. Fauna Management Plan

A Fauna Management Plan (FMP) should be prepared for the impacts of the construction phase covering for the loss of vegetated areas, isolated trees and barriers and impediments to the existing open rural areas. The FMP should link closely with the VC&MP and include details on:

- Summary of species surveyed as using the site and which of those are likely to be impacted by works occurring within each stage of works.
- List relevant State and Federal legislation constraints and controls for the above listed fauna
- A plan showing existing habitat opportunities and locations
- Detail the threats for existing fauna species
- Include clearing sequencing plan from VC&MP
- Specify management and mitigation measures – could include temporary use of fauna exclusion fencing
- Details of fauna spotter role and contacts and certification
- Specific fauna management procedures for potential or known habitat trees
- Clearing procedures in accordance with Koala Plan guidelines and specifications.
- Commitment to the early installation of nest boxes to surrounding bushland areas to be retained
- Commitment to the early rehabilitation of proposed strategic corridors to minimise lag time between clearing and the functioning of future corridors.

10. Waterway Corridor Restoration Strategy

In combined site inspections between ecological and hydrological experts evidence of natural erosion and soil dispersion was located and recorded within site drainage features. These areas warranted the preparation of a Waterway Corridor Restoration Strategy previously issued to EDQ governing works at appropriate timeframes within the development cycle. Importantly solutions for restoration works need to be cognisant of the locality in which they occur with limited restrictions through the core development zone to the south and major restriction through conservation areas. Core components of the Waterway Restoration Strategy include:

- Site and waterway appraisal
- Vegetation & Weeds
- Soils and Geology
- Catchment
- Geomorphological conditions
- Constraints and existing uses and Objectives
- Future uses and activities
- Managing hydrological changes and flow rates
- Stabilisation measures
- Performance measurements
- Monitoring and reporting

8. Appendices

Appendix A

Environment Protection and Biodiversity Conservation Act 1999 Protected Matters Database Search

Appendix B

Nature Conservation Act 1992 (Qld) Wildnet Database Search Results

Appendix C

Other Environmental Searches

Appendix D

Koala SAT Survey Results



Appendix A

Environment Protection and Biodiversity Conservation Act 1999
Protected Matters Database Search

Australian Government

Department of the Environment

EPBC Act Protected Matters Report

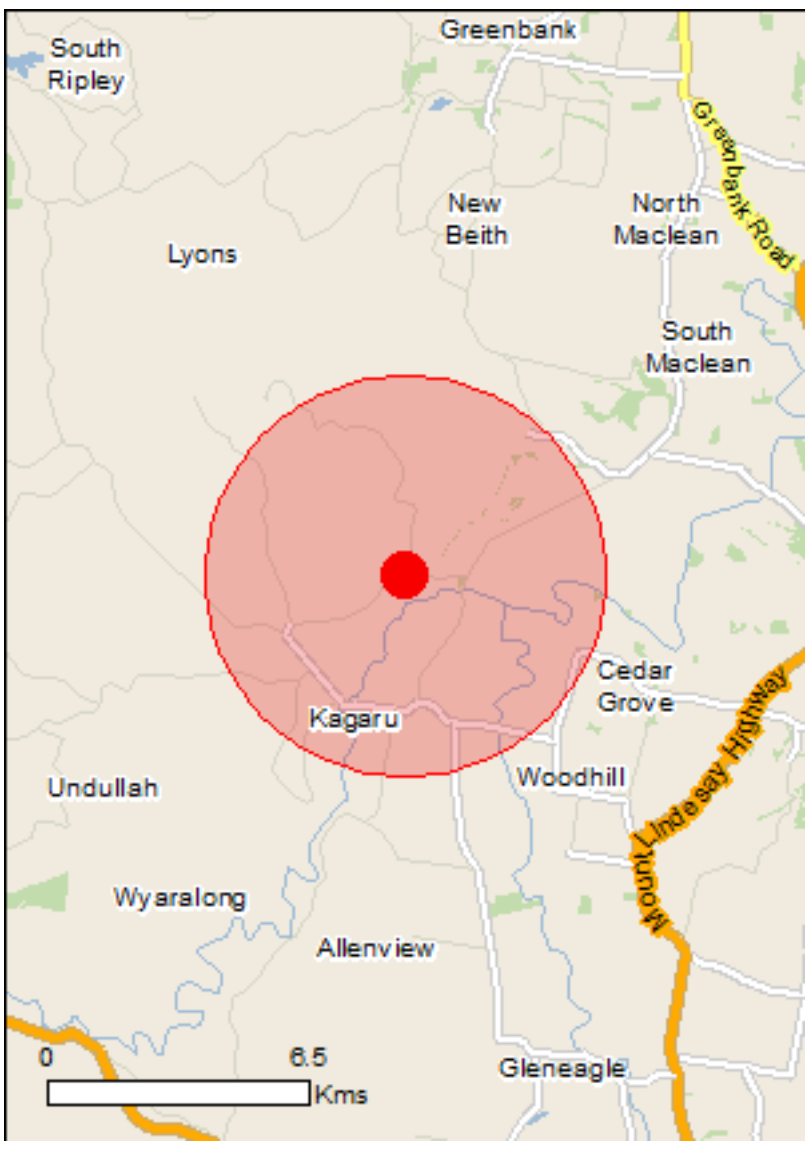
This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

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.

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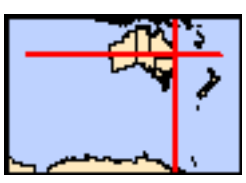
Summary
Details
Matters of NES
Other Matters Protected by the EPBC Act
Extra Information
Caveat
Acknowledgements



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

Coordinates

Buffer: 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:	2
Listed Threatened Species:	27
Listed Migratory Species:	11

Other Matters Protected by the EPBC Act

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

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. 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:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	31
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
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may 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]	Critically Endangered	Foraging, feeding or related behaviour may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may 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
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Fish		
[Maccullochella mariensis](#) Mary River Cod [83806]	Endangered	Translocated population known to 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 may 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
[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		
[Bosistoa transversa](#) Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to 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
[Phebalium distans](#) Mt Berryman Phebalium [81869]	Critically Endangered	Species or species habitat may occur within area
[Thesium australe](#) Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
[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
[Saiphos reticulatus](#) Three-toed Snake-tooth Skink [88328]	Vulnerable	Species or species habitat may occur within

Name	Status	Type of Presence
		area

Listed Migratory Species [Resource Information]

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

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat likely to occur 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
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]

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

Name	Threatened	Type of Presence
Birds		
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Cuculus saturatus Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat may occur within 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]	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
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Extra Information

Invasive Species [Resource Information]

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

Name	Status	Type of Presence
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 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

Name	Status	Type of Presence
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
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
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
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area

Caveat

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

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

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

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

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

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

- migratory and
- marine

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

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

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

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

Coordinates

-27.83712 152.92275

Acknowledgements

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

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

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

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

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Canberra ACT 2601 Australia
+61 2 6274 1111

Appendix B

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: -27.8371
Longitude: 152.9227
Distance: 5
Email: keiragrundy@saundershavill.com
Date submitted: Thursday 21 Jul 2016 11:56:19
Date extracted: Thursday 21 Jul 2016 12:00:03

The number of records retrieved = 3

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	Strigidae	*Ninox strenua*	powerful owl		V		1
animals	mammals	Phascolarctidae	*Phascolarctos cinereus*	koala		V	V	9
plants	higher dicots	Myrtaceae	*Melaleuca irbyana*			E		2

CODES

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

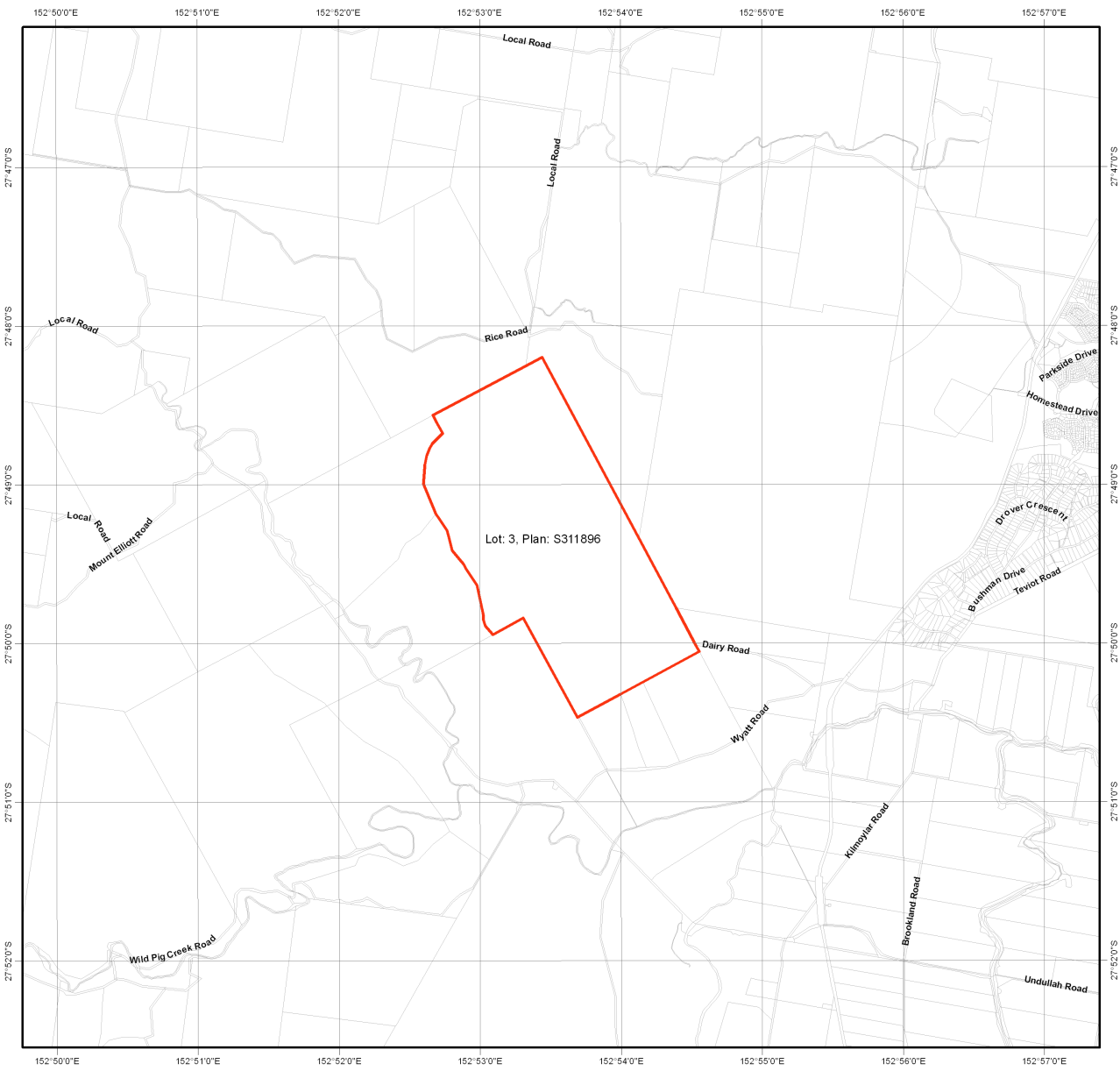
Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.* The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ( ).

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.

Appendix C

Other Environmental Searches



Coastal Hazard Areas Map
Erosion Prone Area

Legend

- Lot and Plan
- Erosion due to storm impact and long term trends including sediment supply deficit and channel migration
- Erosion from permanent tidal inundation due to sea level rise
- Coastal Management District
- Coastal Building Lines



N

0 490 980 1,470 1,960 2,450 m

This product is projected into:
GDA 1994 MGA Zone 56

Notes

1. The areas shown on this map are indicative of the extent of erosion and permanent inundation defined by erosion prone area plans declared under the Coastal Protection and Management Act 1995. Only the declared erosion prone area plans should be used for development assessment. To determine the actual position of the erosion prone area a registered surveyor or geotechnical consultant may be required if there is any doubt.

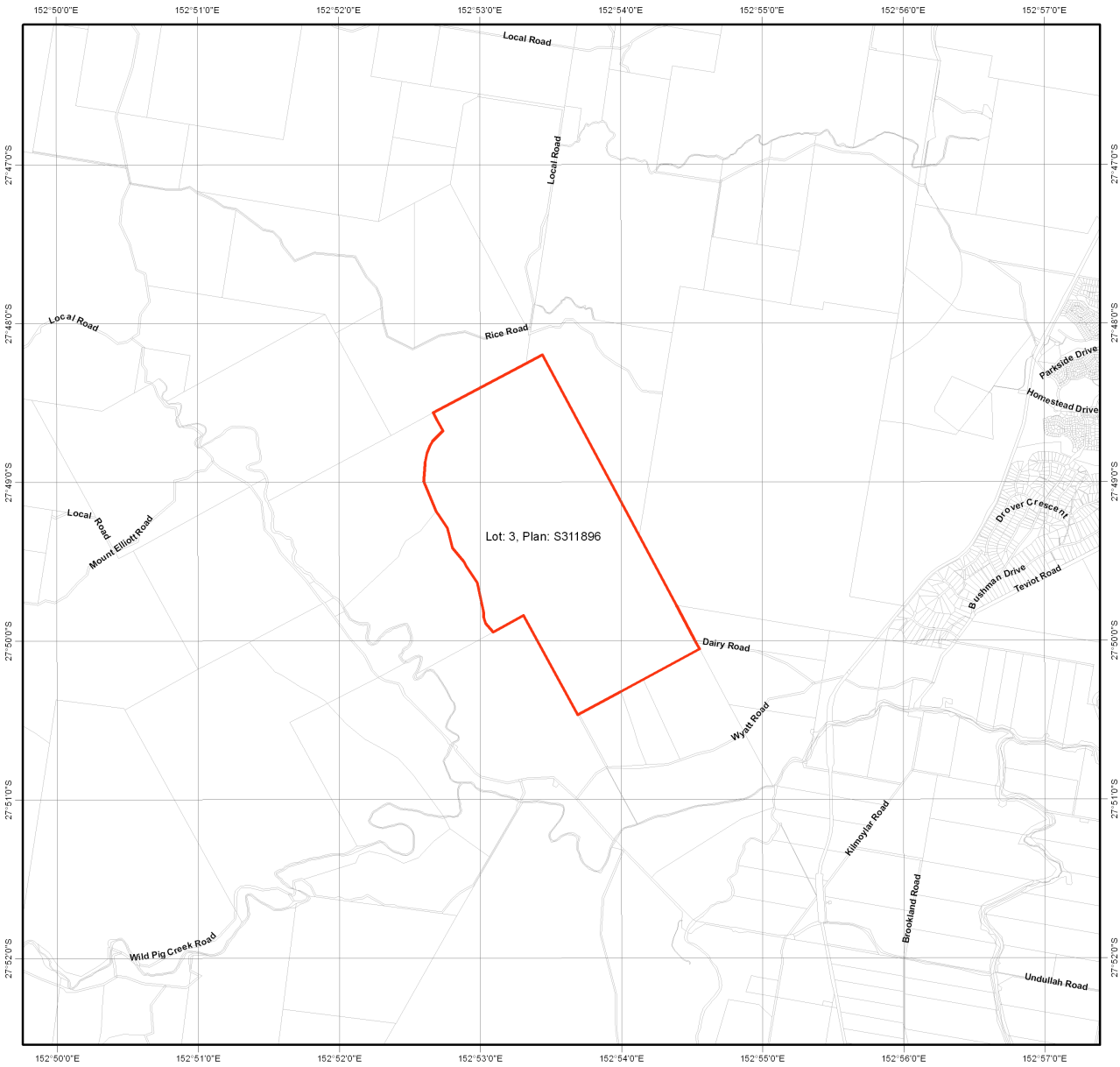
2. Erosion prone area plans for each local government area and a comprehensive description of their determination are available from the Department of Environment and Heritage Protection website at www.ehp.qld.gov.au

Version 6 - February 2016

Disclaimer

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Coastal Hazard Areas Map
Storm Tide Inundation Area

Legend

- Lot and Plan
- High hazard area (greater than 1.0m water depth)
- Medium hazard area (less than 1.0m water depth)
- Coastal Management District
- Coastal hazard data not available in this area Refer to note 1 to determine
- Coastal Building Lines

*** Regional default values for a 100yr ARI inundation level including 0.8m sea level rise.**



N

0 490 980 1,470 1,960 2,450 m

This product is projected into:
GDA 1994 MGA Zone 56

Notes

1. A default storm tide inundation level of 1.5 m HAT in South East Queensland regional planning area and 2 m HAT for the remainder of Queensland is used where projected storm tide inundation levels have not been determined locally.

2. The high hazard area may coincide with the area of permanent inundation - refer to the Erosion Prone Area map.

3. The map should be used as a guide only. Field surveys are recommended to verify feature boundaries.

Version 4 - July 2015

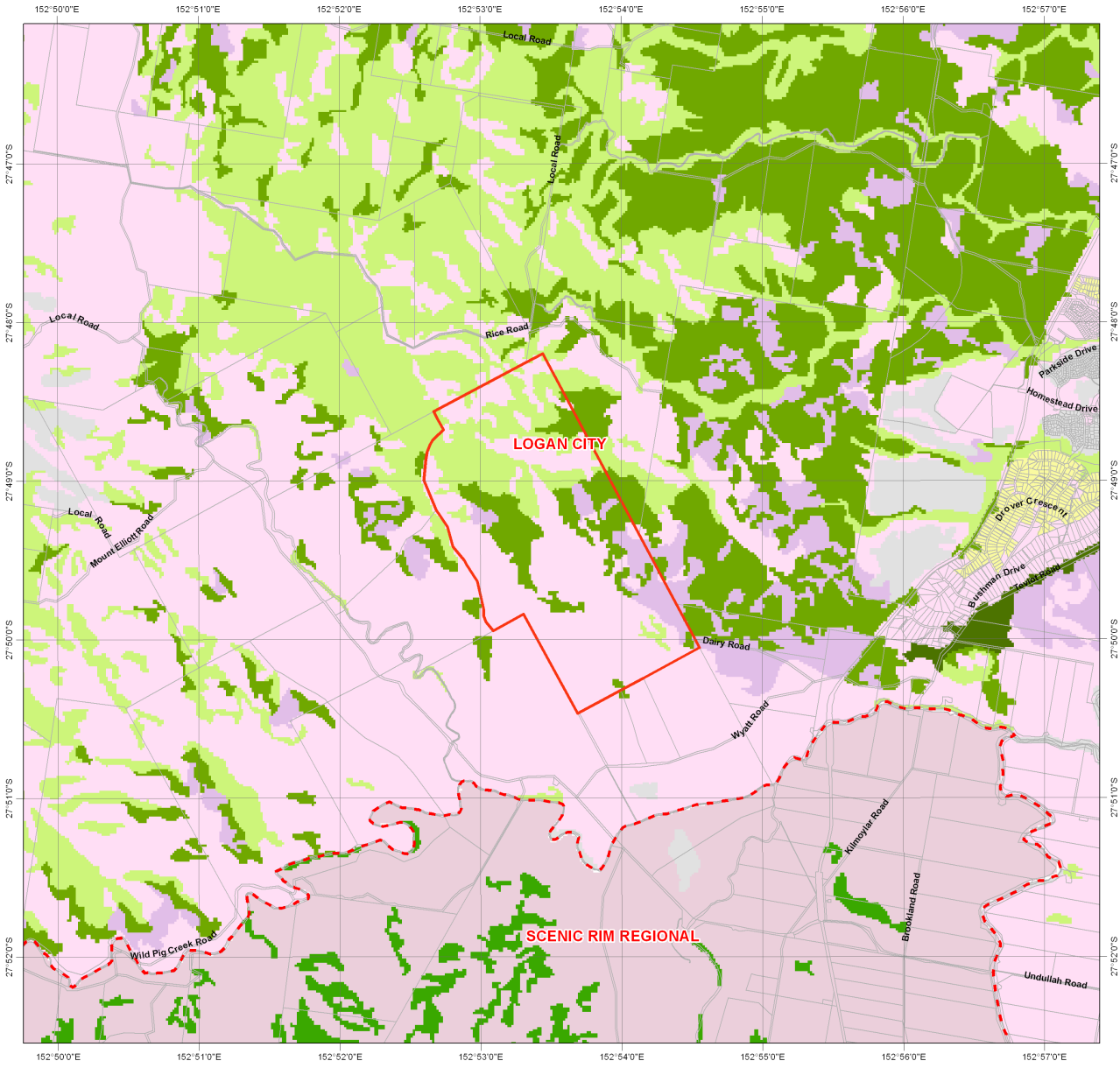
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Queensland Government

Map requested: (11/08/2016 14:17:53)
Lot: 3 Plan: S311896



Koala Habitat in South East Queensland

Lot and Plan

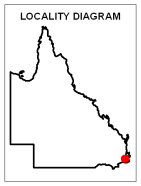
Koala SPP - Habitat Values

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
- Cadastral Boundaries
- Local Government Boundaries



N

0 680 1,360 2,040 2,720 3,400 m

This product is projected into GDA 1994 MGA Zone 56

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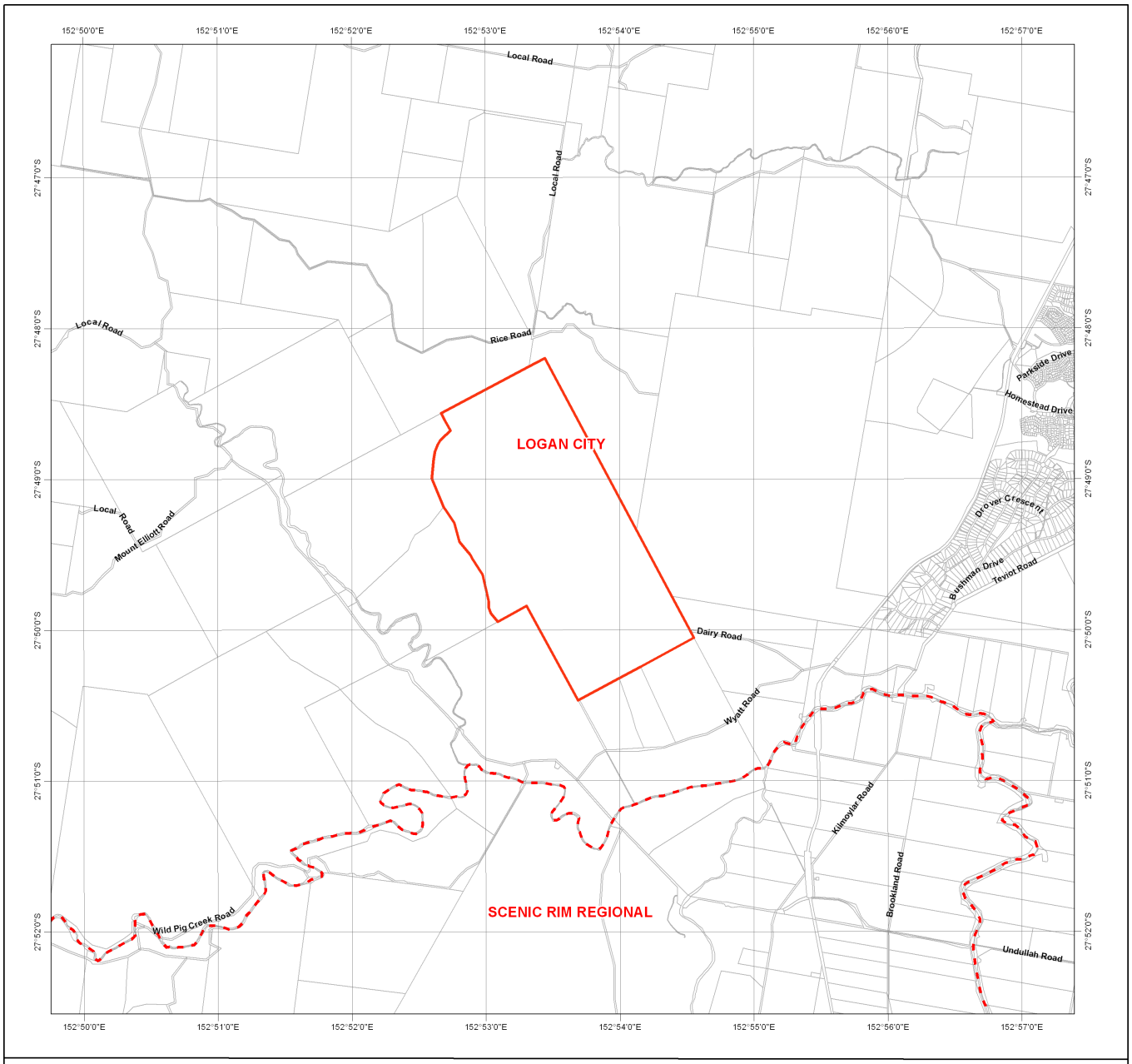
Based on or contains data provided by the State of Queensland 2010.

Note - These maps are not regulatory. Regulatory maps and requirements can be downloaded from the EHP 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 Heritage Protection.

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Queensland Government

Map requested: (11/08/2016 14:17:59)
Lot: 3 Plan: S311896



Koala Conservation in South East Queensland State Planning Regulatory Provisions

- Lot and Plan
- Priority Koala Assessable Development Areas
- Koala Assessable Development Areas
- Outside SPRP Koala Assessable Development Areas

Koala SPRP - Identified Broad-Hectare Areas

- Koala SPRP - Identified Broad-Hectare Areas

Koala SPRP - Habitat Values

Bushland Habitat

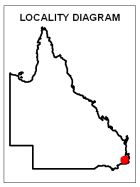
- High Value Bushland
- Medium Value Bushland
- Low Value Bushland

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
- Cadastral Boundaries
- Local Government Boundaries



N

0 680 1,360 2,040 2,720 3,400 m

This product is projected into GDA 1994 MGA Zone 56

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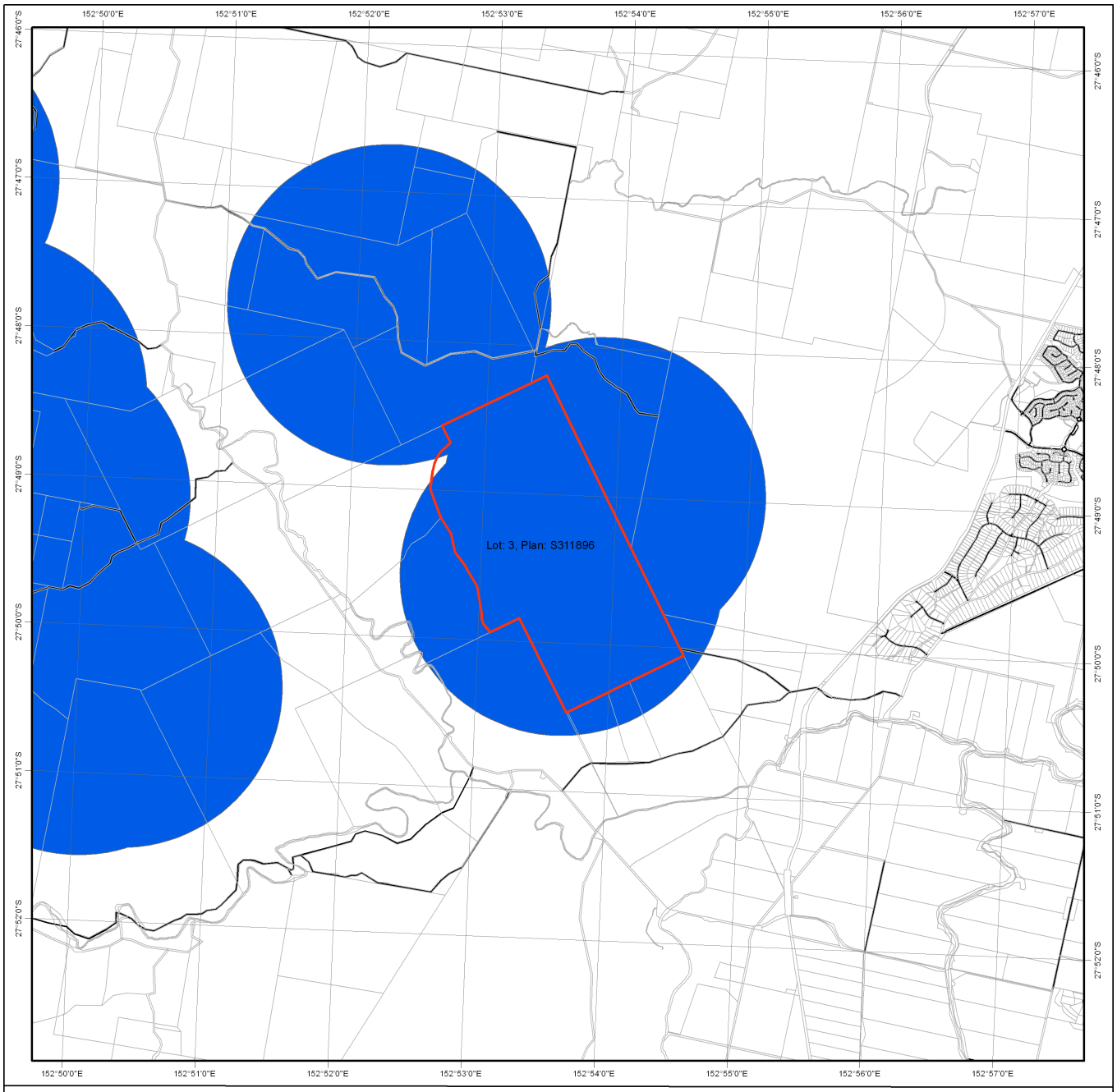
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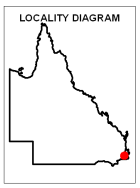
Queensland Government



Protected Plants Flora Survey Trigger Map

Legend

- Lot and Plan
- High risk area
- Cadastral line
  Property boundaries shown are provided as a locational aid only
- Freeways / motorways / highways
- Secondary roads / streets



N

0 490 980 1,470 1,960 2,450 m

This product is projected into:
GDA 1994 Queensland Albers

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

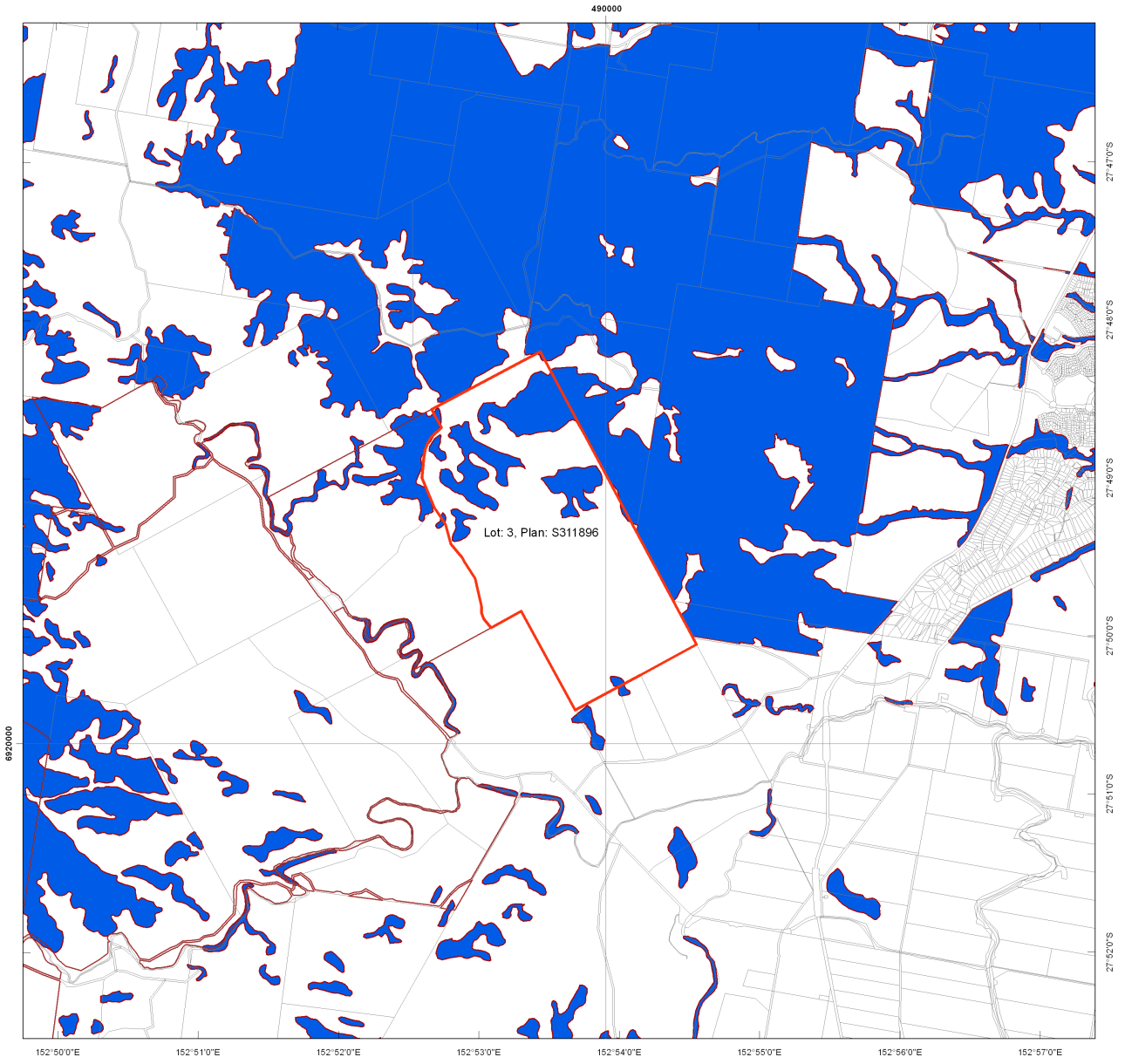
This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

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

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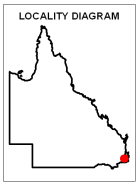


Regulated Vegetation Management Map

Please note, the Government has proposed changes to the Category C and Category R areas which are shown on the Proposed Regulated Vegetation Management Map. For more information on these changes, please refer to the Department's website.

Legend

- Lot and Plan
- Category A area (Vegetation offsets/compliance notices/VDecs)
- Category B area (Remnant vegetation)
- Category C area (High-value regrowth vegetation)
- Category R area (Reef regrowth watercourse vegetation)
- Category X area (Vegetation not regulated under the VMA)
- Water
- Area not categorised
- Cadastral line
  Property boundaries shown are provided as a locational aid only



N

0 680 1,360 2,040 2,720 3,400 m

This product is projected into:
GDA 1994 MGA Zone 56

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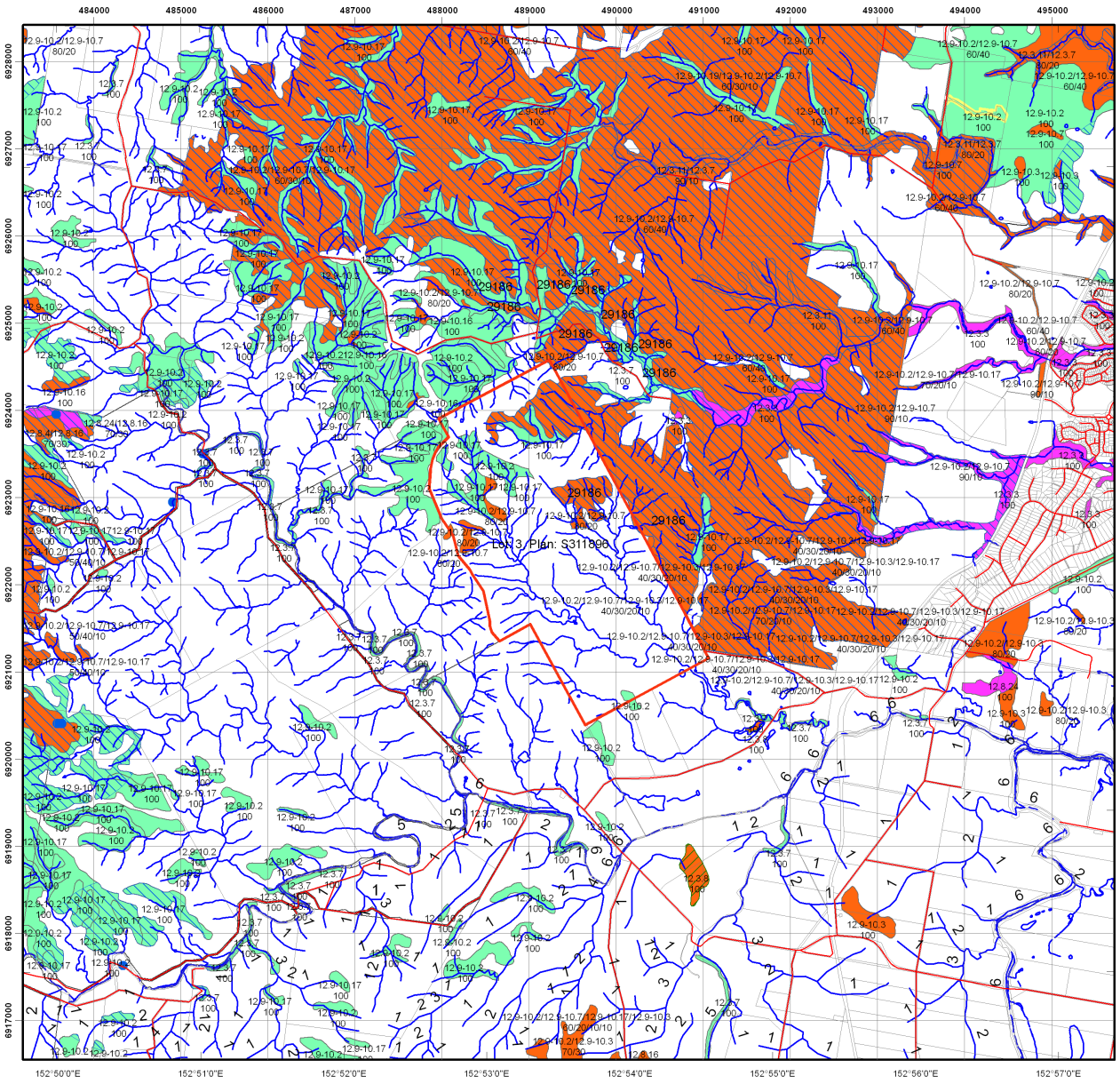
Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.dnrm.qld.gov.au or contact the Department of Natural Resources and Mines.

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

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

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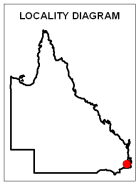
Vegetation Management Supporting Map

Legend

- Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category A or B area containing remnant vegetation
- Category A or B area under Section 20AH
  These areas are edged in yellow and filled with the remnant RE Status
- Category C area containing endangered regional ecosystems
- Category C area containing of concern regional ecosystems
- Category C area that is a least concern regional ecosystem
- Category C area containing high value regrowth vegetation
- Category C area under Section 20AI
  These areas are edged in purple and filled with the remnant RE Status
- Non Remnant
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourse on the vegetation management watercourse and drainage feature map
  (Stream order shown as black number against stream where available)
- Roads
- National Parks, State Forest and other reserves
- Cadastral line
  Property boundaries shown are provided as a locational aid only

Queensland Government

LOCALITY DIAGRAM



N

0 490 980 1,470 1,960 2,450 m

This product is projected into:
GDA 1994 MGA Zone 56

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

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

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

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

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Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - Module 8: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the *Sustainable Planning Act 2009*; and
- Self-assessable vegetation clearing codes made under the *Vegetation Management Act 1999*

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s or on and within 2.2 km of an identified coordinate on the accompanying essential habitat map.

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

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

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

The Department of Natural Resources and Mines website (http://www.dnrm.qld.gov.au) has more information on how the layer is applied under the State Development Assessment Provisions - Module 8: Native vegetation clearing and the *Vegetation Management Act 1999*.

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

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

1) (a) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or
2) (b) in which the protected wildlife, at any stage of its life cycle, is located.

Essential habitat identifies endangered or vulnerable native wildlife prescribed under the *Nature Conservation Act 1994*.

Essential habitat in Category A and B (Remnant vegetation species record) areas:1100m Species Information

(no results)

Essential habitat in Category A and B (Remnant vegetation species record) areas:1100m Regional Ecosystems Information

(no results)

Essential habitat in Category A and B (Remnant vegetation) areas:1100m Species Information

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
29186	Phascolarctos cinereus (southeast Queensland bioregion)	Koala	V	Open eucalypt forest and woodland that has: a) multiple strata layers containing Eucalyptus, Corymbia, Angophora, Lophostemon or Melaleuca trees that—at 1.3 metres above the ground—have a diameter both greater and less than 30 centimetres; and b) at least 1 of the following species: Eucalyptus tereticornis, E. fibrosa, E. propinqua; E. umbra, E. grandis, E. microcorys, E. tindaliae, E. resinifera, E. populnea, E. robusta, E. nigra, E. racemosa, E. crebra, E. exserta, E. seeana, Lophostemon confertus, L. suaveolens, Melaleuca quinquenervia.	Sea level to 1000m.	no soil information	None

Essential habitat in Category A and B (Remnant vegetation) areas:1100m Regional Ecosystems Information

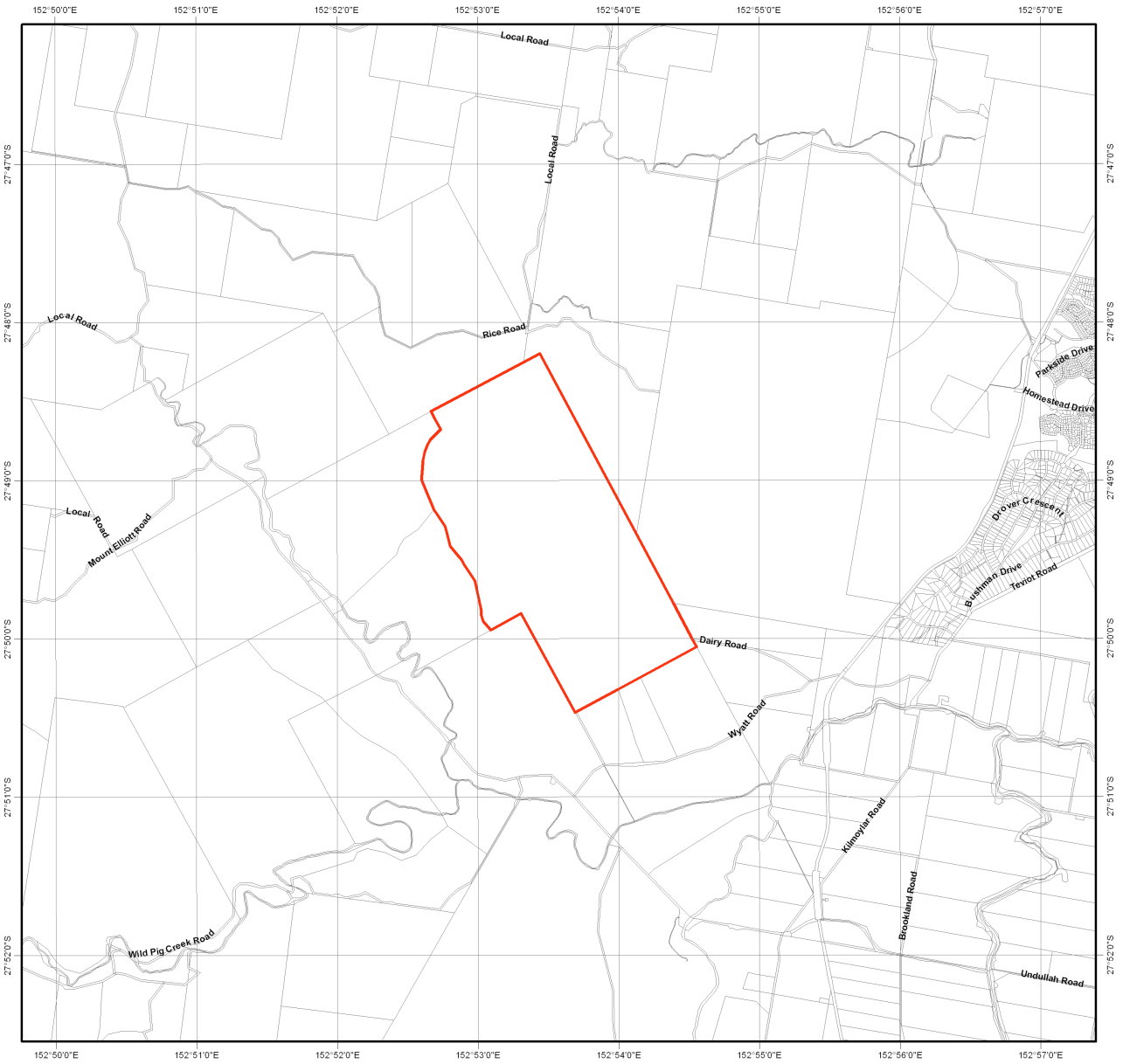
Label	Regional Ecosystem (this is a mandatory essential habitat factor, unless otherwise stated)
29186	12.3.3, 12.3.4, 12.3.6, 12.3.7, 12.3.10, 12.3.11, 12.5.2, 12.5.3, 12.8.14, 12.9-10.4, 12.9-10.7, 12.9-10.17, 12.11.5, 12.11.18, 12.12.12

Essential habitat in Category C (High value regrowth vegetation) areas:1100m Species Information

(no results)

Essential habitat in Category C (High value regrowth vegetation) areas:1100m Regional Ecosystems Information

(no results)



Map of Referable Wetlands
Wetland Protection Areas

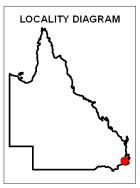
Lot and Plan

Cadastral Boundary

Wetland Protection Areas

Wetland

Trigger Area



N

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

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

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

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

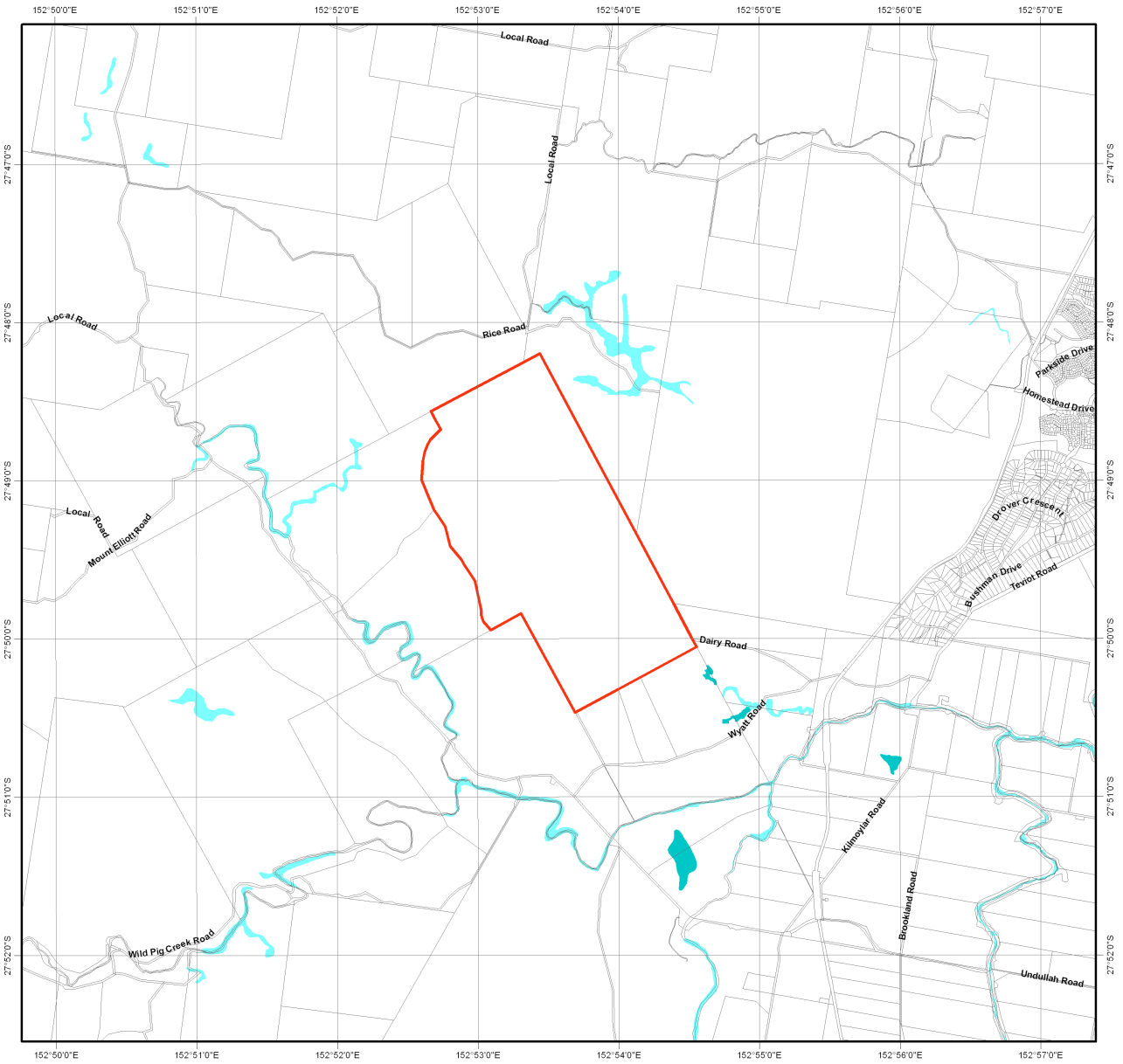
For further information or assistance with interpretation of this product, please contact the Department of Environment and Heritage Protection at www.ehp.qld.gov.au or email planning.support@ehp.qld.gov.au.

0 680 1360 2040 2720 3400 m

This product is projected into GDA 1994 MGA Zone 56

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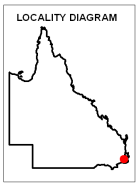
Queensland Government



Map of Referable Wetlands for the Environmental Protection Act 1994

Lot and Plan
Cadastral Boundary
HES Wetland
GES Wetland

LOCALITY DIAGRAM



N

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

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

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

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

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Appendix D

Koala SAT Survey Results

SAT 1				
Date:	**11th November, 2015**			
No.	**Species Name**	**Common Name**	**DBH**	**Scats**
1	*Corymbia citriodora*	Spotted Gum	400	Scats
2	*Corymbia citriodora*	Spotted Gum	120	Nil
3	*Corymbia citriodora*	Spotted Gum	130	Nil
4	*Acacia disparrima*	Hickory Wattle	110	Nil
5	*Acacia disparrima*	Hickory Wattle	130	Nil
6	*Acacia disparrima*	Hickory Wattle	140	Nil
7	*Corymbia citriodora*	Spotted Gum	130	Nil
8	*Corymbia citriodora*	Spotted Gum	100	Nil
9	*Corymbia citriodora*	Spotted Gum	170	Nil
10	*Corymbia citriodora*	Spotted Gum	120	Nil
11	*Corymbia citriodora*	Spotted Gum	130	Nil
12	*Corymbia citriodora*	Spotted Gum	160	Nil
13	*Acacia disparrima*	Hickory Wattle	260	Nil
14	*Acacia disparrima*	Hickory Wattle	120	Nil
15	*Corymbia citriodora*	Spotted Gum	120	Nil
16	*Corymbia citriodora*	Spotted Gum	170	Nil
17	*Corymbia citriodora*	Spotted Gum	200	Nil
18	*Acacia disparrima*	Hickory Wattle	200	Nil
19	*Corymbia citriodora*	Spotted Gum	300	Scats
20	*Corymbia citriodora*	Spotted Gum	130	Nil
21	*Eucalyptus tereticornis*	Forest Red Gum	140	Nil
22	*Corymbia citriodora*	Spotted Gum	170	Nil
23	*Corymbia citriodora*	Spotted Gum	110	Nil
24	*Corymbia citriodora*	Spotted Gum	170	Nil
25	*Corymbia citriodora*	Spotted Gum	120	Nil
26	*Corymbia citriodora*	Spotted Gum	170	Nil
27	*Corymbia citriodora*	Spotted Gum	160	Nil
28	*Eucalyptus crebra*	Narrow Leaf Ironbark	120	Nil
29	*Acacia disparrima*	Hickory Wattle	200	Nil
30	*Corymbia citriodora*	Spotted Gum	220	Nil
Total Percentage of Use				6.67
Use Category (Based on Activity Category East Coast (low)				Low

SAT 2				
Date:	**11th November, 2015**			
No.	**Species Name**	**Common Name**	**DBH**	**Scats**
1	*Corymbia citriodora*	Spotted Gum	360	Scats
2	*Corymbia citriodora*	Spotted Gum	320	Nil
3	*Eucalyptus tereticornis*	Forest Red Gum	320	Nil
4	*Eucalyptus tereticornis*	Forest Red Gum	150	Nil
5	*Corymbia citriodora*	Spotted Gum	150	Nil
6	*Corymbia citriodora*	Spotted Gum	380	Nil
7	*Corymbia citriodora*	Spotted Gum	150	Nil
8	*Corymbia citriodora*	Spotted Gum	370	Nil
9	*Corymbia citriodora*	Spotted Gum	140	Nil
10	*Acacia disparrima*	Hickory Wattle	170	Nil
11	*Eucalyptus crebra*	Narrow Leaf Ironbark	160	Nil
12	*Eucalyptus crebra*	Narrow Leaf Ironbark	120	Nil
13	*Acacia disparrima*	Hickory Wattle	250	Nil
14	*Corymbia citriodora*	Spotted Gum	140	Nil
15	*Eucalyptus tereticornis*	Forest Red Gum	210	Nil
16	*Corymbia tessellaris*	Moreton Bay Ash	300	Nil
17	*Corymbia citriodora*	Spotted Gum	210	Nil
18	*Corymbia citriodora*	Spotted Gum	200	Nil
19	*Corymbia tessellaris*	Moreton Bay Ash	160	Nil
20	*Corymbia citriodora*	Spotted Gum	200	Nil
21	*Eucalyptus crebra*	Narrow Leaf Ironbark	120	Nil
22	*Corymbia citriodora*	Spotted Gum	180	Nil
23	*Acacia disparrima*	Hickory Wattle	120	Nil
24	*Corymbia citriodora*	Spotted Gum	120	Nil
25	*Corymbia citriodora*	Spotted Gum	150	Nil
26	*Acacia disparrima*	Hickory Wattle	140	Nil
27	*Corymbia citriodora*	Spotted Gum	370	Nil
28	*Corymbia citriodora*	Spotted Gum	210	Nil
29	*Acacia disparrima*	Hickory Wattle	120	Nil
30	*Corymbia citriodora*	Spotted Gum	220	Nil
Total Percentage of Use				3.33
Use Category (Based on Activity Category East Coast (Low)				Low

SAT 3				
Date:	**11th November, 2015**			
No.	**Species Name**	**Common Name**	**DBH**	**Scats**
1	*Eucalyptus tereticornis*	Forest Red Gum	130	Scats
2	*Acacia disparrima*	Hickory Wattle	180	Nil
3	*Acacia disparrima*	Hickory Wattle	220	Nil
4	*Eucalyptus tereticornis*	Forest Red Gum	290	Nil
5	*Acacia disparrima*	Hickory Wattle	180	Nil
6	*Acacia disparrima*	Hickory Wattle	110	Nil
7	*Eucalyptus crebra*	Narrow Leaf Ironbark	120	Nil
8	*Acacia disparrima*	Hickory Wattle	130	Nil
9	*Eucalyptus tereticornis*	Forest Red Gum	190	Nil
10	*Eucalyptus tereticornis*	Forest Red Gum	180	Nil
11	*Acacia disparrima*	Hickory Wattle	140	Nil
12	*Acacia disparrima*	Hickory Wattle	100	Nil
13	*Acacia disparrima*	Hickory Wattle	140	Nil
14	*Eucalyptus tereticornis*	Forest Red Gum	460	Nil
15	*Eucalyptus tereticornis*	Forest Red Gum	100	Nil
16	*Eucalyptus tereticornis*	Forest Red Gum	100	Nil
17	*Eucalyptus tereticornis*	Forest Red Gum	180	Nil
18	*Eucalyptus tereticornis*	Forest Red Gum	180	Scats
19	*Eucalyptus tereticornis*	Forest Red Gum	160	Nil
20	*Eucalyptus tereticornis*	Forest Red Gum	140	Nil
21	*Acacia disparrima*	Hickory Wattle	150	Nil
22	*Eucalyptus tereticornis*	Forest Red Gum	200	Nil
23	*Corymbia tessellaris*	Moreton Bay Ash	130	Nil
24	*Eucalyptus tereticornis*	Forest Red Gum	190	Nil
25	*Corymbia citriodora*	Spotted Gum	500	Nil
26	*Acacia disparrima*	Hickory Wattle	180	Nil
27	*Eucalyptus crebra*	Narrow Leaf Ironbark	700	Scats
28	*Corymbia citriodora*	Spotted Gum	200	Nil
29	*Corymbia citriodora*	Spotted Gum	270	Nil
30	*Corymbia citriodora*	Spotted Gum	100	Nil
Total Percentage of Use				10.00
Use Category (Based on Activity Category East Coast (low)				Low

SAT 4				
Date:	**11th November, 2015**			
No.	**Species Name**	**Common Name**	**DBH**	**Scats**
1	*Corymbia citriodora*	Spotted Gum	120	Scats
2	*Corymbia citriodora*	Spotted Gum	160	Nil
3	*Corymbia citriodora*	Spotted Gum	200	Nil
4	*Corymbia citriodora*	Spotted Gum	120	Nil
5	*Corymbia citriodora*	Spotted Gum	170	Scats
6	*Corymbia citriodora*	Spotted Gum	320	Nil
7	*Corymbia citriodora*	Spotted Gum	280	Nil
8	*Corymbia citriodora*	Spotted Gum	150	Scats
9	*Corymbia citriodora*	Spotted Gum	160	Nil
10	*Eucalyptus tereticornis*	Forest Red Gum	420	Nil
11	*Eucalyptus tereticornis*	Forest Red Gum	480	Nil
12	*Corymbia citriodora*	Spotted Gum	110	Nil
13	*Corymbia citriodora*	Spotted Gum	150	Scats
14	*Eucalyptus tereticornis*	Forest Red Gum	300	Nil
15	*Corymbia citriodora*	Spotted Gum	460	Nil
16	*Corymbia citriodora*	Spotted Gum	220	Nil
17	*Corymbia citriodora*	Spotted Gum	200	Nil
18	*Corymbia citriodora*	Spotted Gum	600	Scats
19	*Corymbia citriodora*	Spotted Gum	290	Nil
20	*Corymbia citriodora*	Spotted Gum	100	Nil
21	*Acacia disparrima*	Hickory Wattle	220	Nil
22	*Corymbia citriodora*	Spotted Gum	350	Scats
23	*Acacia disparrima*	Hickory Wattle	400	Nil
24	*Corymbia citriodora*	Spotted Gum	360	Nil
25	*Corymbia citriodora*	Spotted Gum	140	Scats
26	*Eucalyptus tereticornis*	Forest Red Gum	240	Nil
27	*Corymbia citriodora*	Spotted Gum	180	Nil
28	*Corymbia citriodora*	Spotted Gum	160	Nil
29	*Corymbia citriodora*	Spotted Gum	200	Nil
30	*Corymbia citriodora*	Spotted Gum	170	Nil
Total Percentage of Use				23.33
Use Category (Based on Activity Category East Coast (low)				Medium

SAT 5				
Date:	**11th November, 2015**			
No.	**Species Name**	**Common Name**	**DBH**	**Scats**
1	*Corymbia citriodora*	Spotted Gum	140	Scats
2	*Corymbia citriodora*	Spotted Gum	200	Nil
3	*Corymbia citriodora*	Spotted Gum	160	Nil
4	*Corymbia citriodora*	Spotted Gum	110	Nil
5	*Corymbia citriodora*	Spotted Gum	210	Nil
6	*Corymbia citriodora*	Spotted Gum	210	Nil
7	*Corymbia citriodora*	Spotted Gum	170	Nil
8	*Eucalyptus tereticornis*	Forest Red Gum	100	Nil
9	*Corymbia citriodora*	Spotted Gum	160	Scats
10	*Corymbia citriodora*	Spotted Gum	220	Nil
11	*Corymbia citriodora*	Spotted Gum	710	Nil
12	*Corymbia citriodora*	Spotted Gum	110	Nil
13	*Corymbia citriodora*	Spotted Gum	180	Nil
14	*Corymbia citriodora*	Spotted Gum	120	Nil
15	*Corymbia citriodora*	Spotted Gum	160	Nil
16	*Acacia disparrima*	Hickory Wattle	100	Nil
17	*Corymbia citriodora*	Spotted Gum	120	Nil
18	*Corymbia citriodora*	Spotted Gum	900	Scats
19	*Corymbia citriodora*	Spotted Gum	120	Nil
20	*Corymbia citriodora*	Spotted Gum	110	Nil
21	*Eucalyptus tereticornis*	Forest Red Gum	130	Scats
22	*Corymbia citriodora*	Spotted Gum	130	Scats
23	*Acacia disparrima*	Hickory Wattle	180	Nil
24	*Acacia disparrima*	Hickory Wattle	130	Nil
25	*Corymbia citriodora*	Spotted Gum	210	Nil
26	*Corymbia citriodora*	Spotted Gum	110	Nil
27	*Corymbia citriodora*	Spotted Gum	170	Nil
28	*Corymbia citriodora*	Spotted Gum	680	Nil
29	*Corymbia citriodora*	Spotted Gum	150	Nil
30	*Corymbia citriodora*	Spotted Gum	210	Scats
Total Percentage of Use				20.00
Use Category (Based on Activity Category East Coast (low)				Low

SAT 6				
Date:	**11th November, 2015**			
No.	**Species Name**	**Common Name**	**DBH**	**Scats**
1	*Eucalyptus tereticornis*	Forest Red Gum	180	Scats
2	*Corymbia citriodora*	Spotted Gum	510	Scats
3	*Corymbia citriodora*	Spotted Gum	610	Nil
4	*Corymbia citriodora*	Spotted Gum	660	Nil
5	*Corymbia citriodora*	Spotted Gum	420	Scats
6	*Corymbia citriodora*	Spotted Gum	260	Scats
7	*Corymbia citriodora*	Spotted Gum	390	Scats
8	*Corymbia citriodora*	Spotted Gum	300	Scats
9	*Corymbia citriodora*	Spotted Gum	620	Nil
10	*Corymbia citriodora*	Spotted Gum	600	Nil
11	*Corymbia citriodora*	Spotted Gum	450	Nil
12	*Corymbia citriodora*	Spotted Gum	500	Nil
13	*Corymbia citriodora*	Spotted Gum	700	Nil
14	*Acacia disparrima*	Hickory Wattle	100	Nil
15	*Corymbia citriodora*	Spotted Gum	800	Nil
16	*Corymbia citriodora*	Spotted Gum	280	Nil
17	*Acacia disparrima*	Hickory Wattle	110	Nil
18	*Corymbia citriodora*	Spotted Gum	620	Nil
19	*Corymbia citriodora*	Spotted Gum	400	Nil
20	*Eucalyptus moluccana*	Gum Topped Box	330	Nil
21	*Corymbia citriodora*	Spotted Gum	700	Nil
22	*Eucalyptus tereticornis*	Forest Red Gum	430	Nil
23	*Corymbia citriodora*	Spotted Gum	520	Nil
24	*Eucalyptus moluccana*	Gum Topped Box	700	Nil
25	*Corymbia citriodora*	Spotted Gum	580	Nil
26	*Corymbia citriodora*	Spotted Gum	500	Nil
27	*Corymbia citriodora*	Spotted Gum	530	Nil
28	*Corymbia citriodora*	Spotted Gum	680	Scats
29	*Corymbia citriodora*	Spotted Gum	650	Nil
30	*Corymbia citriodora*	Spotted Gum	300	Nil
Total Percentage of Use				23.33
Use Category (Based on Activity Category East Coast (low)				Medium

SAT 7				
Date:	**11th November, 2015**			
No.	**Species Name**	**Common Name**	**DBH**	**Scats**
1	*Eucalyptus moluccana*	Gum Topped Box	210	Scats
2	*Eucalyptus moluccana*	Gum Topped Box	550	Scats
3	*Eucalyptus moluccana*	Gum Topped Box	220	Scats
4	*Eucalyptus moluccana*	Gum Topped Box	190	Nil
5	*Eucalyptus moluccana*	Gum Topped Box	300	Nil
6	*Eucalyptus moluccana*	Gum Topped Box	490	Nil
7	*Eucalyptus moluccana*	Gum Topped Box	370	Nil
8	*Eucalyptus moluccana*	Gum Topped Box	120	Scats
9	*Eucalyptus moluccana*	Gum Topped Box	270	Nil
10	*Eucalyptus moluccana*	Gum Topped Box	300	Nil
11	*Eucalyptus moluccana*	Gum Topped Box	290	Scats
12	*Eucalyptus moluccana*	Gum Topped Box	190	Nil
13	*Eucalyptus moluccana*	Gum Topped Box	450	Nil
14	*Eucalyptus moluccana*	Gum Topped Box	130	Nil
15	*Eucalyptus moluccana*	Gum Topped Box	520	Nil
16	*Eucalyptus moluccana*	Gum Topped Box	680	Nil
17	*Eucalyptus moluccana*	Gum Topped Box	490	Nil
18	*Eucalyptus moluccana*	Gum Topped Box	250	Nil
19	*Eucalyptus moluccana*	Gum Topped Box	700	Nil
20	*Eucalyptus moluccana*	Gum Topped Box	300	Nil
21	*Eucalyptus moluccana*	Gum Topped Box	400	Scats
22	*Eucalyptus moluccana*	Gum Topped Box	200	Nil
23	*Eucalyptus tereticornis*	Forest Red Gum	330	Nil
24	*Eucalyptus moluccana*	Gum Topped Box	380	Nil
25	*Eucalyptus moluccana*	Gum Topped Box	350	Scats
26	*Eucalyptus moluccana*	Gum Topped Box	280	Nil
27	*Eucalyptus moluccana*	Gum Topped Box	180	Nil
28	*Eucalyptus moluccana*	Gum Topped Box	200	Nil
29	*Eucalyptus moluccana*	Gum Topped Box	350	Nil
30	*Eucalyptus moluccana*	Gum Topped Box	230	Scats
Total Percentage of Use				26.67
Use Category (Based on Activity Category East Coast (low)				Medium

SAT 8				
Date:	**11th November, 2015**			
No.	**Species Name**	**Common Name**	**DBH**	**Scats**
1	*Eucalyptus crebra*	Narrow Leaf Ironbark	430	Scats
2	*Eucalyptus tereticornis*	Forest Red Gum	200	Nil
3	*Acacia disparrima*	Hickory Wattle	100	Scats
4	*Eucalyptus tereticornis*	Forest Red Gum	260	Nil
5	*Corymbia citriodora*	Spotted Gum	650	Nil
6	*Corymbia citriodora*	Spotted Gum	130	Nil
7	*Corymbia citriodora*	Spotted Gum	190	Nil
8	*Acacia disparrima*	Hickory Wattle	100	Nil
9	*Corymbia citriodora*	Spotted Gum	320	Nil
10	*Acacia disparrima*	Hickory Wattle	110	Nil
11	*Corymbia citriodora*	Spotted Gum	180	Nil
12	*Corymbia citriodora*	Spotted Gum	450	Nil
13	*Corymbia citriodora*	Spotted Gum	280	Nil
14	*Eucalyptus tereticornis*	Forest Red Gum	120	Nil
15	*Eucalyptus tereticornis*	Forest Red Gum	380	Nil
16	*Acacia disparrima*	Hickory Wattle	200	Nil
17	*Corymbia citriodora*	Spotted Gum	180	Nil
18	*Eucalyptus tereticornis*	Forest Red Gum	260	Nil
19	*Corymbia citriodora*	Spotted Gum	300	Nil
20	*Acacia disparrima*	Hickory Wattle	200	Nil
21	*Eucalyptus tereticornis*	Forest Red Gum	310	Nil
22	*Eucalyptus tereticornis*	Forest Red Gum	160	Nil
23	*Acacia disparrima*	Hickory Wattle	150	Nil
24	*Eucalyptus tereticornis*	Forest Red Gum	280	Nil
25	*Corymbia tessellaris*	Moreton Bay Ash	230	Nil
26	*Corymbia citriodora*	Spotted Gum	600	Nil
27	*Corymbia citriodora*	Spotted Gum	340	Nil
28	*Corymbia citriodora*	Spotted Gum	240	Nil
29	*Corymbia intermedia*	Pink Bloodwood	190	Nil
30	*Corymbia citriodora*	Spotted Gum	240	Nil
Total Percentage of Use				6.67
Use Category (Based on Activity Category East Coast (low)				Low

SAT 9				
Date:	**18th November, 2015**			
No.	**Species Name**	**Common Name**	**DBH**	**Scats**
1	*Eucalyptus moluccana*	Gum Topped Box	350	Scats
2	*Eucalyptus moluccana*	Gum Topped Box	1050	Scats
3	*Corymbia citriodora*	Spotted Gum	600	Nil
4	*Eucalyptus moluccana*	Gum Topped Box	550	Nil
5	*Corymbia citriodora*	Spotted Gum	100	Nil
6	*Corymbia citriodora*	Spotted Gum	190	Nil
7	*Eucalyptus moluccana*	Gum Topped Box	200	Nil
8	*Eucalyptus moluccana*	Gum Topped Box	180	Nil
9	*Eucalyptus melanophloia*	Silver Leaf Ironbark	130	Nil
10	*Acacia disparrima*	Hickory Wattle	200	Nil
11	*Eucalyptus moluccana*	Gum Topped Box	140	Nil
12	*Corymbia citriodora*	Spotted Gum	100	Nil
13	*Corymbia citriodora*	Spotted Gum	100	Nil
14	*Eucalyptus moluccana*	Gum Topped Box	150	Nil
15	*Eucalyptus moluccana*	Gum Topped Box	140	Nil
16	*Acacia disparrima*	Hickory Wattle	350	Nil
17	*Acacia disparrima*	Hickory Wattle	250	Nil
18	*Eucalyptus moluccana*	Gum Topped Box	110	Nil
19	*Eucalyptus moluccana*	Gum Topped Box	200	Nil
20	*Eucalyptus moluccana*	Gum Topped Box	380	Nil
21	*Eucalyptus moluccana*	Gum Topped Box	300	Nil
22	*Corymbia citriodora*	Spotted Gum	120	Nil
23	*Eucalyptus moluccana*	Gum Topped Box	200	Nil
24	*Alphitonia excelsa*	Soap Tree	100	Nil
25	*Eucalyptus moluccana*	Gum Topped Box	210	Nil
26	*Eucalyptus moluccana*	Gum Topped Box	150	Nil
27	*Acacia disparrima*	Hickory Wattle	250	Nil
28	*Acacia disparrima*	Hickory Wattle	250	Nil
29	*Acacia disparrima*	Hickory Wattle	200	Nil
30	*Acacia disparrima*	Hickory Wattle	170	Nil
Total Percentage of Use				6.67
Use Category (Based on Activity Category East Coast (low)				Low

SAT 10				
Date:	**18th November, 2015**			
No.	**Species Name**	**Common Name**	**DBH**	**Scats**
1	*Corymbia citriodora*	Spotted Gum	820	Scats
2	*Corymbia citriodora*	Spotted Gum	600	Nil
3	*Corymbia citriodora*	Spotted Gum	110	Nil
4	*Corymbia citriodora*	Spotted Gum	120	Nil
5	*Corymbia tessellaris*	Moreton Bay Ash	100	Nil
6	*Corymbia citriodora*	Spotted Gum	100	Nil
7	*Corymbia citriodora*	Spotted Gum	130	Nil
8	*Corymbia citriodora*	Spotted Gum	100	Nil
9	*Corymbia citriodora*	Spotted Gum	130	Nil
10	*Corymbia citriodora*	Spotted Gum	170	Nil
11	*Corymbia citriodora*	Spotted Gum	130	Nil
12	*Eucalyptus siderophloia*	Grey Ironbark	120	Nil
13	*Corymbia citriodora*	Spotted Gum	150	Nil
14	*Corymbia citriodora*	Spotted Gum	130	Nil
15	*Corymbia citriodora*	Spotted Gum	130	Nil
16	*Corymbia citriodora*	Spotted Gum	160	Nil
17	*Corymbia citriodora*	Spotted Gum	370	Nil
18	*Corymbia citriodora*	Spotted Gum	190	Nil
19	*Corymbia citriodora*	Spotted Gum	170	Nil
20	*Eucalyptus siderophloia*	Grey Ironbark	100	Nil
21	*Corymbia citriodora*	Spotted Gum	180	Nil
22	*Corymbia citriodora*	Spotted Gum	120	Nil
23	*Corymbia citriodora*	Spotted Gum	180	Nil
24	*Corymbia citriodora*	Spotted Gum	130	Nil
25	*Corymbia citriodora*	Spotted Gum	200	Nil
26	*Corymbia citriodora*	Spotted Gum	110	Nil
27	*Corymbia citriodora*	Spotted Gum	200	Nil
28	*Corymbia citriodora*	Spotted Gum	150	Nil
29	*Corymbia citriodora*	Spotted Gum	180	Nil
30	*Corymbia citriodora*	Spotted Gum	100	Nil
Total Percentage of Use				3.33
Use Category (Based on Activity Category East Coast (Low)				Low

SAT 11				
Date:	**18th November, 2015**			
No.	**Species Name**	**Common Name**	**DBH**	**Scats**
1	*Eucalyptus crebra*	Narrow Leaf Ironbark	430	Scats
2	*Acacia melanoxlyn*	Black Wattle	160	Scats
3	*Eucalyptus crebra*	Narrow Leaf Ironbark	100	Nil
4	*Eucalyptus siderophloia*	Grey Ironbark	180	Nil
5	*Corymbia citriodora*	Spotted Gum	160	Nil
6	*Corymbia citriodora*	Spotted Gum	130	Nil
7	*Eucalyptus tereticornis*	Forest Red Gum	150	Nil
8	*Corymbia citriodora*	Spotted Gum	130	Nil
9	*Eucalyptus crebra*	Narrow Leaf Ironbark	120	Nil
10	*Corymbia citriodora*	Spotted Gum	120	Nil
11	*Acacia melanoxlyn*	Black Wattle	160	Nil
12	*Corymbia citriodora*	Spotted Gum	150	Nil
13	*Corymbia citriodora*	Spotted Gum	130	Nil
14	*Corymbia citriodora*	Spotted Gum	160	Nil
15	*Corymbia citriodora*	Spotted Gum	120	Nil
16	*Eucalyptus siderophloia*	Grey Ironbark	100	Nil
17	*Corymbia citriodora*	Spotted Gum	100	Nil
18	*Eucalyptus crebra*	Narrow Leaf Ironbark	480	Nil
19	*Corymbia citriodora*	Spotted Gum	110	Nil
20	*Eucalyptus tereticornis*	Forest Red Gum	120	Nil
21	*Corymbia citriodora*	Spotted Gum	300	Nil
22	*Corymbia citriodora*	Spotted Gum	120	Nil
23	*Eucalyptus tereticornis*	Forest Red Gum	130	Scats
24	*Corymbia citriodora*	Spotted Gum	120	Nil
25	*Corymbia citriodora*	Spotted Gum	700	Nil
26	*Corymbia citriodora*	Spotted Gum	170	Nil
27	*Eucalyptus crebra*	Narrow Leaf Ironbark	110	Nil
28	*Corymbia citriodora*	Spotted Gum	730	Nil
29	*Corymbia citriodora*	Spotted Gum	150	Nil
30	*Eucalyptus crebra*	Narrow Leaf Ironbark	180	Nil
Total Percentage of Use				10.00
Use Category (Based on Activity Category East Coast (Low)				Low

SAT 12				
Date:	**18th November, 2015**			
No.	**Species Name**	**Common Name**	**DBH**	**Scats**
1	*Eucalyptus tereticornis*	Forest Red Gum	850	Scats
2	*Eucalyptus tereticornis*	Forest Red Gum	220	Nil
3	*Corymbia citriodora*	Spotted Gum	100	Nil
4	*Corymbia citriodora*	Spotted Gum	100	Nil
5	*Corymbia citriodora*	Spotted Gum	490	Nil
6	*Eucalyptus crebra*	Narrow Leaf Ironbark	500	Nil
7	*Corymbia citriodora*	Spotted Gum	100	Nil
8	*Corymbia citriodora*	Spotted Gum	130	Nil
9	*Acacia melanoxlyn*	Black Wattle	100	Nil
10	*Acacia disparrima*	Hickory Wattle	100	Nil
11	*Corymbia citriodora*	Spotted Gum	100	Nil
12	*Lophostemon confertus*	Brush Box	200	Nil
13	*Corymbia citriodora*	Spotted Gum	110	Nil
14	*Corymbia citriodora*	Spotted Gum	500	Nil
15	*Corymbia citriodora*	Spotted Gum	500	Nil
16	*Corymbia citriodora*	Spotted Gum	400	Nil
17	*Corymbia citriodora*	Spotted Gum	600	Nil
18	*Acacia disparrima*	Hickory Wattle	110	Nil
19	*Acacia disparrima*	Hickory Wattle	110	Nil
20	*Acacia disparrima*	Hickory Wattle	200	Nil
21	*Eucalyptus crebra*	Narrow Leaf Ironbark	150	Nil
22	*Corymbia citriodora*	Spotted Gum	100	Nil
23	*Corymbia citriodora*	Spotted Gum	100	Nil
24	*Corymbia citriodora*	Spotted Gum	110	Nil
25	*Corymbia citriodora*	Spotted Gum	110	Nil
26	*Eucalyptus crebra*	Narrow Leaf Ironbark	110	Nil
27	*Corymbia citriodora*	Spotted Gum	100	Nil
28	*Corymbia citriodora*	Spotted Gum	100	Nil
29	*Corymbia citriodora*	Spotted Gum	550	Nil
30	*Corymbia citriodora*	Spotted Gum	120	Nil
Total Percentage of Use				3.33
Use Category (Based on Activity Category East Coast (Low)				Low