

# Annual Compliance Report

10 June 2019 to 9 June 2020 EPBC 2014/7206  
Flagstone West Urban Development Project,  
Flagstone, Queensland  
Peet Flagstone City Pty Ltd  
09 September 2020

Job No: 6779 E

**PEET**

# Document control

Document: Annual Compliance Report 10 June 2019 to 9 June 2020 EPBC 2014/7206, prepared by Saunders Havill Group for Peet Flagstone City Pty Ltd, dated 09 September 2020.

## Document Issue

Issue	Date	Prepared By	Checked By
A	08 September 2020	HS	AD
B	09 September 2020	HS	AD

Prepared by

© Saunders Havill Group Pty Ltd 2020.

ABN 24 144 972 949

[www.saundershavill.com](http://www.saundershavill.com)

SHG has prepared this document for the sole use of the Client and for a specific purpose, as expressly stated in the document. No other party should rely on this document without the prior consent of SHG. SHG undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document. This document has been prepared based on the Client's description of their requirements and SHG's experience, having regard to assumptions that SHG can reasonably be expected to make in accordance with sound professional principles. SHG may have also relied upon information provided by the Client and other third parties to prepare this document, some of which may not have been verified. Subject to the above conditions, this document may be transmitted, reproduced or disseminated only in its entirety.

# Table of contents

1. Introduction	4
1.1. Approval summary	4
2. Declaration of accuracy	6
3. Description of activities	7
3.1. Stability works	10
3.2. Rehabilitation works	13
3.3. Koala habitat	17
4. EPBC approval conditions compliance table	18
5. Appendices	22

## Figures

Figure 1: Project area locality	5
Figure 2: Site aerial	9

## Tables

Table 1: EPBC approval conditions compliance table	18
--	----

# 1. Introduction

The Environmental Management Division of Saunders Havill Group was engaged by Peet Flagstone City Pty Ltd (Peet) to prepare this Annual Compliance Report for the Flagstone West Urban Development Project at Flagstone, Queensland. This report provides an assessment of the project’s compliance with the approval granted under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) (ref EPBC 2014/7206), and is specifically required by condition 8 of the approval granted on 30 October 2014. The approval was granted by the Australian Government Department of the Environment and is currently administered by the Australian Government Department of Agriculture, Water and the Environment (the Department).

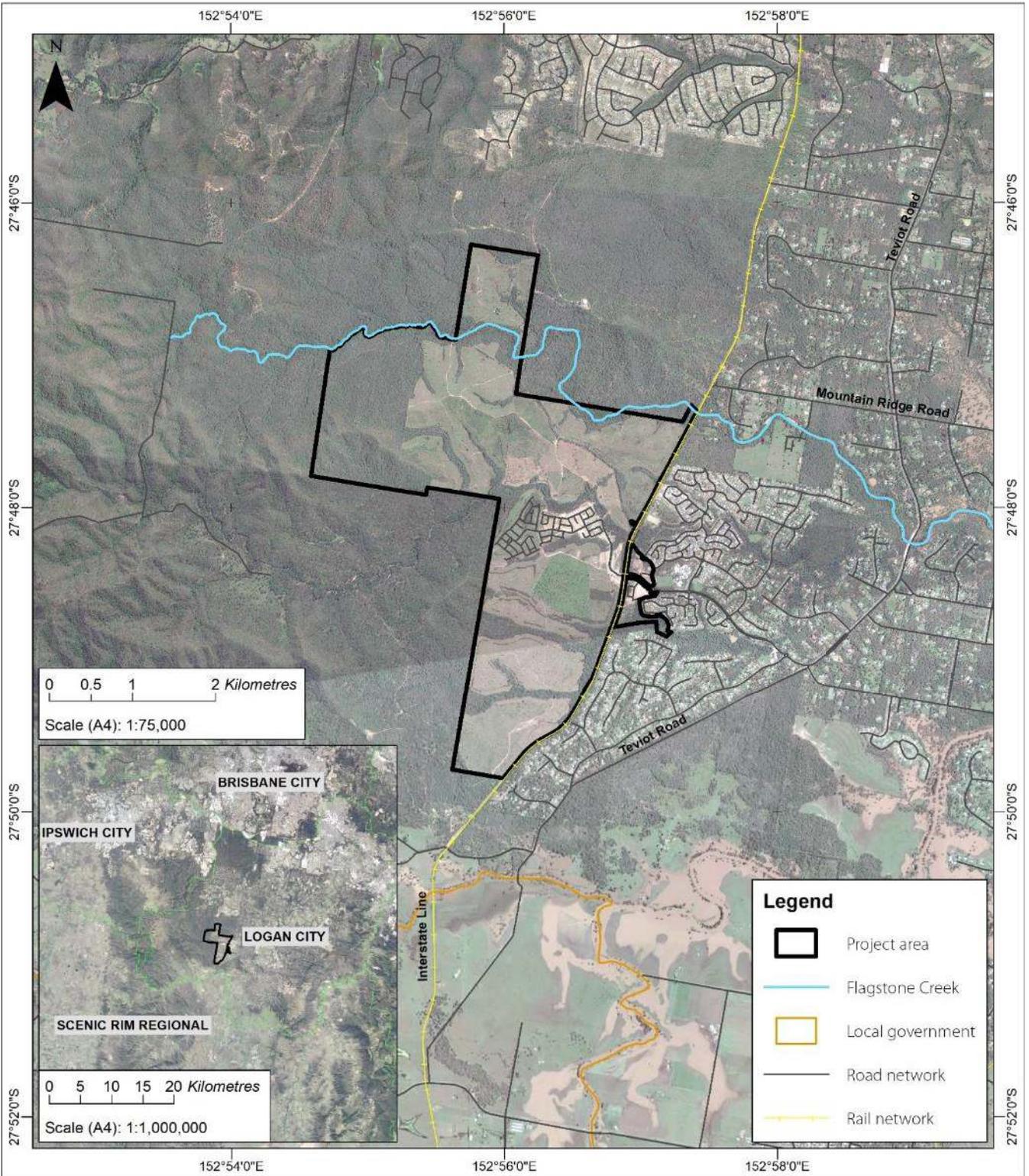
The project area is located approximately 18 kilometres (km) by road from Logan City (refer to project area locality map at **Figure 1**) and is within the Logan City local government area.

Since the approval was granted, the real property description of the project area has been modified as a consequence of updates to the cadastral database (i.e. property boundaries) administered by the Queensland Government Department of Natural Resources, Mines and Energy (DNRME). These updates effect several parcel boundaries and the Flagstone Creek alignment in the northern portion of the project, however they are considered minor overall and likely reflect ground-truthing work in the area. The area that pertains to the approval now totals approximately 1,258 hectares (ha), which is an increase of 13 ha. Many koala habitat areas for retention about property and creek boundaries and as a result of the DNRME updates to the cadastral database, there has been a net increase to the critical koala habitat area for retention of 1.9 ha. The area of clearing approved under condition 5 is 148 ha and there are nil changes proposed as a consequence of the updates to the cadastral database.

## 1.1. Approval summary

<b>Department reference</b>	EPBC 2014/7206
<b>Approval holder</b>	Peet Flagstone City Pty Ltd
<b>ACN</b>	151 187 594
<b>Approval date</b>	30 October 2014
<b>Expiry date of approval</b>	31 December 2035
<b>Approved action</b>	To construct a mixed use development (including residential, commercial and community developments and associated infrastructure) on a 1,245.26 ha* site at Flagstone, Queensland
<b>Controlling provision</b>	Approved - listed threatened species and communities (sections 18 & 18A)
<b>Reporting period</b>	10 June 2019 to 9 June 2020
<b>Address</b>	Homestead Drive, Flagstone (and Jimboomba), Queensland 4280
<b>Local government area</b>	Logan City

\* The project area is now approximately 1,258 ha as a result of updates to the digital cadastral database administered by DNRME. These updates affected the alignment of property boundaries and Flagstone Creek.



File ref: 6779 E01 Project area locality

Coordinate System: GDA 1994 MGA Zone 56  
 Projection: Transverse Mercator Datum: GDA 1994  
 Data sources: © State of Queensland (Department of Natural Resources, Mines and Energy) 2020. © State of Queensland (Department of Transport and Main Roads) 2020. Imagery: Google Earth Pro 2017  
 © State of Queensland, Includes material © Airbus DS 2013-17, all rights reserved

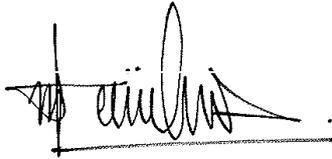
**Flagstone West Urban Development Project**  
**EPBC 2014/7206**  
**Figure 1 - Project area locality**  
**Prepared on 07 September 2020**

Prepared by **SH** saunders havill group

## 2. Declaration of accuracy

In making this declaration, I am aware that sections 490 and 491 of the EPBC Act make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed



Full name

Murray Saunders

Position

Director

Organisation

Saunders Havill Group (ABN 24 144 972 949)

Date

09 September 2020

### 3. Description of activities

The Flagstone West Urban Development Project is a masterplan community situated in the Greater Flagstone Priority Development Area. It is estimated 30,000 people will reside in the project area by year 2045, and supporting infrastructure within a 10 km radius will include:

- central business district;
- open space amenities;
- primary school;
- medical amenities;
- shopping and general amenities;
- sport amenities;
- community centre; and
- tertiary education services (e.g. TAFE or university).

In addition, the Brisbane-Sydney Railway dissects part of the site and a passenger train station is planned to service the locality.

During the reporting period, the following activities were under construction or established in the project area (refer photos):

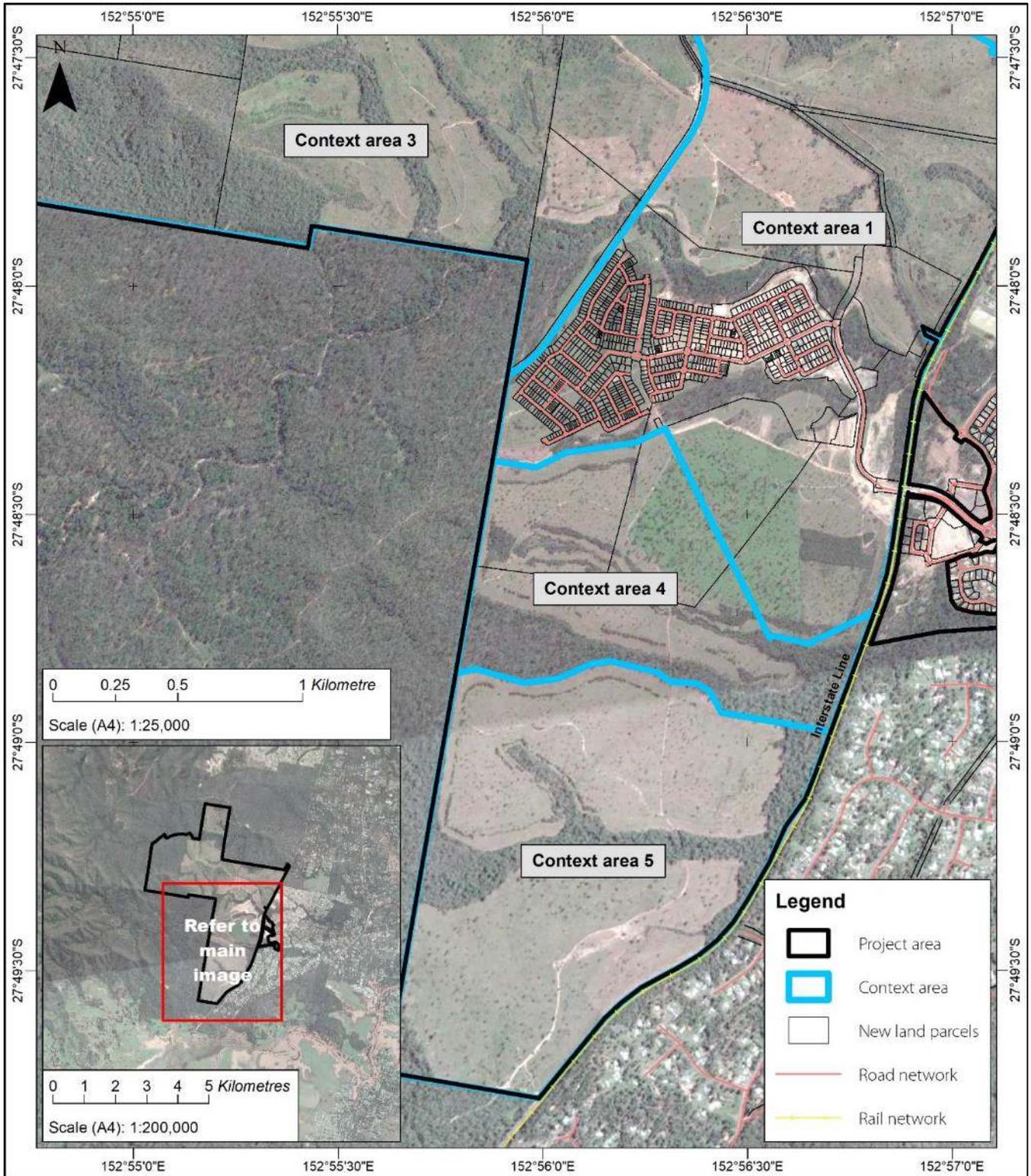
- road infrastructure;
- residential land parcels; and
- open space amenities.

As part of constructing these land uses, earthworks and minor vegetation clearing in context area 1 occurred during the reporting period (refer **Figure 2**). These activities were completed with permits from state and local administering authorities in place.

Other notable events during the third year of activities include:

- Opening of the Water Play Park on 21 December 2019, and of Flagstone's Coles in March 2020.
- Development expanded to the west and north-east of existing development:
  - Ongoing creation of residential lots, roads and public facilities.
  - Continued earthworks and construction activities within the north-eastern section and a small area in the south-western section, not accessible to the public at this time.

- Issuing of community grants by Peet Flagstone. These grants support clubs and volunteer organisations to deliver outcomes that benefit the community, and included the following during the reporting period:
  - FSS Yarning Circle Funding.
  - Flagstone State Community College – Attendance celebration.
  - Ry2Shred Toy Drive sponsorship.
  - Flagstone Community Association – Halloween and Haunted Doors.
  - Flagstone Community Association – Twilight Markets.
  - KK Bodyworx – Mental Health First Aid Course.
  - Green Hero’s Sharing Planet Earth Environment Education Program.
  - Cancer Council – Local Relay for Life.
  - Digni-TEA donation.
  - Jimboomba Gymnastic Club.
  - Flagstone Community Centre Kitchen Project.
  - Flagstone State Community College Y12 Car Wash.
- The following events occurred during the reporting period with support from Peet Flagstone:
  - Active Family Fun Day.
  - Krank School Holiday Program.
  - YMCA Playgroup and Activities.
  - Skate Titans Event.
  - Community Carols.



File ref: 6779 E02 Stability works

Coordinate System: GDA 1994 MGA Zone 56  
 Projection: Transverse Mercator Datum; GDA 1994  
 Data sources: © State of Queensland (Department of Natural Resources, Mines and Energy) 2020. © State of Queensland (Department of Transport and Main Roads) 2020. Imagery: Google Earth Pro 2017  
 © State of Queensland, Includes material © Airbus DS 2013-17, all rights reserved

**Flagstone West Urban Development Project  
 EPBC 2014/7206**

**Figure 2 - Stability works  
 Prepared on 07 September 2020**

Prepared by **SH saunders havill group**

### 3.1. Stability works

During November and December 2016, an existing drainage gully in context area 1 required remedial works to address ongoing degradation, stability and integrity issues. The completed remedial works were essential to rectify these issues and undertaken along an approximate 250 metre (m) section of the drainage line inside the impact area approved by the Department. The stability works include the temporary removal of portions of vegetation to enable the remediation of unstable erosion channels. Within the drainage feature this includes the fixing of dispersive soils, the profiling of undercuts and rilling prior to the complete revegetation of the remediation area with native species. Importantly, the stability works do not result in an increase in development footprint or an alteration of environmental and recreational open spaces.

As part of undertaking these stability works, the approval holder liaised with state and local government stakeholders to ensure the required permits and approvals were in place. A copy of the detailed rehabilitation plan for the stability works was included in the Annual Compliance Report for the reporting period 10 June 2016 to 9 June 2017. Photos outlining the current state of these works are presented within this subsection.

Stabilisation works observed during the site visit associated with the last reporting period were observed, where the majority are well established with some maintenance required. Detention basins previously established along the interface between residential development and the tributary branching from Sandy Creek were inspected. A small amount of litter and sediment deposition was observed within the detention basins, and re-establishment of flora species incorporated to assist in water filtration and mitigation of flow velocity was continued to be observed (refer **Photo 1** and **Photo 2**).



**Photo 1: Detention basin adjacent to dog park in south-eastern extent.**



**Photo 2: Detention basin in south-west.**

Previously installed logs providing habitat and slowing potential velocity of water flow were continued to be observed throughout the creek corridor. Natural regenerating wattle regrowth along the northern bank was observed to be more established compared to the previous inspection (refer **Photo 4**). In addition, flora within the ground layer such as *Lomandra* spp. and grasses were observed to have re-established, providing enhanced stability for surface soils during rainfall events and slowing water velocity. Some weed removal is required, however, vegetation re-establishment has continued.

During site inspections, it was noted that in-stream matting to provide bank stabilisation particularly within creek bends requires maintenance. It is anticipated that following high rainfall events, water flow has broken through the matting and slowly eroded the dispersive soils (refer **Photo 3**). This was observed in a minimal number of isolated areas and damage is considered negligible at this stage.

In response to the observed maintenance issues, Peet are liaising with the landscape contractor to rectify the issues.



**Photo 3: Bank stabilisation requiring minor maintenance.**



**Photo 4: Natural regeneration along the tributary.**

## 3.2. Rehabilitation works

An assessment of rehabilitation works was conducted by two Ecologists from Saunders Havill Group. The site visit included assessing maintenance of rehabilitation works and new rehabilitation measures implemented during the reporting period. The following rehabilitation works were observed:

- Maintenance of revegetation and bank stabilisation works implemented during the previous reporting period on the eastern side of the bridge on Flagstonian Drive situated at the entrance to the estate was observed. Previously planted *Lomandra* species are now well established and stabilisation of the bank and into the gully line was recorded (refer **Photo 5**). The western side of the bridge was observed to have a build-up of sediment deposition that was covered in grass species.
- Evidence of rehabilitation associated with the bridge crossing connecting Flagstonian Drive to the future residential area to the north-east of Sandy Creek. Evidence of fauna utilising the culverts beneath the bridge was noted during the brief inspection. This was in the form of tracks adjacent to and within the culverts (refer **Photo set 6**). Tracks observed are from Fox, Dog, species within the *Macropus* genus, and unidentifiable bird species.
- It is assumed that fauna usage occurs throughout the Sandy Creek corridor and tributary due to the observed presence of larger mammals during field survey. Mammals observed during field inspection were two Red-necked Wallabies (*Macropus rufogriseus*). In addition, several bird species were noted utilising vegetation associated with the creek and detention basins, including a White-necked Heron (*Ardea pacifica*).
- Pre-existing fauna management measures were continued to be observed along and abutting the banks of the tributary creek – consisting largely of the placement of logs and small piles of previously felled trees (refer **Photo set 7**). This area was identified as functioning fauna habitat, where shelter and protection from weather and potential predators was abundant.
- Continued evidence of rehabilitation works along both the southern and northern banks of the tributary was noted during site visit. New rehabilitation efforts further upstream were observed to have become well-established. The density of instream vegetation (*i.e.*, *Lomandra* species) was noted and a more natural state was reflected (refer **Photo set 8**). Overall, bank stabilisation and rehabilitation efforts were mostly observed to be in good condition.



**Photo 5:        Rehabilitated area on the eastern side of Flagstonian Drive bridge crossing.**



**Photo set 6:        Example of fauna tracks on-site in the waterway corridors.**



**Photo set 7: Example of log placement across the tributary corridor.**



**Photo set 8: Re-established instream vegetation density.**

### 3.3. Koala habitat

The Flagstone City project was deemed a controlled action based on impacts to the vulnerable-listed Koala species. Site surveys completed during the referral process determined that Koalas occur infrequently and at a low density at the project site. This finding is supported by subsequent fauna spotter catcher reports (2016, 2017, 2018 and 2019) provided in previous Annual Compliance Reports which showed Koalas were not observed during pre-clearance surveys or during clearing works.

A fauna spotter catcher assessment was completed during this reporting period for clearing of vegetation which was characterised as regrowth vegetation and not contributing to the 148 ha clearing limit of 'critical habitat'. For information, a copy of the most recent fauna spotter catcher assessments for this reporting period are included as **Appendix A** to this report. These inspections failed to locate any Koalas in the active portion of the site during the pre-clearance survey or while clearing works were underway.

## 4. EPBC approval conditions compliance table

The EPBC approval conditions for the Flagstone West Urban Development Project are replicated in **Table 1** with a designation on compliance or non-compliance if the condition was applicable during the reporting period, and evidence and comments as necessary. A copy of the EPBC approval and conditions is provided in **Appendix B**.

**Table 1: EPBC approval conditions compliance table**

Condition number / reference	Condition	Is the project compliant with this condition?	Evidence / comments
1	<p>For the purpose of protecting koala habitat the approval holder must provide the minimum offset payment listed in Appendix 1 of these conditions, for each of the Context Plan areas. Payment must be provided to the Queensland State Government for the entire Context Plan offset payment within 12 months of receiving Context Plan area approval or in accordance with the following sunset dates to each Context Plan area (Appendix 1), whichever is sooner:</p> <ul style="list-style-type: none"> <li>Context Plan Area 1 - by 31 October 2015</li> <li>Context Plan Area 3 - by 31 October 2029</li> <li>Context Plan Area 4 - by 31 October 2020</li> <li>Context Plan Area 5 - by 31 October 2024</li> </ul>	Compliant	<p>The minimum offset payment of \$303, 661.70 for context area 1 was paid to the Queensland State Government on 14 April 2015. In response, Economic Development Queensland (part of the Queensland Government Department of Infrastructure, Local Government and Planning) issued a letter confirming the payment was received. Information on how the offset payment was invested in koala matters was provided in the Annual Compliance Report dated 8 September 2017.</p> <p>No other context areas were approved by the Queensland State Government nor did a sunset date pass during the reporting period. Subsequently, no context area payments were made to the Queensland State Government during the reporting period.</p>
2	Notwithstanding the above, within 15 years of the Commonwealth approval of the action all outstanding financial contributions must be paid to the Queensland State Government.	Not applicable	All financial contributions are payable by 29 October 2029.

Condition number / reference	Condition	Is the project compliant with this condition?	Evidence / comments
3	Within 30 days of payment being made, the approval holder must provide written evidence to the Minister that the offset contribution for each Context Plan area has been paid to the Queensland State Government. Actions must not commence within an approved Context Plan area until the offset contribution has been paid.	Not applicable	During the reporting period an offset payment was not required as work was limited to context area 1 where the payment was made prior to commencement of the action. Further, a sunset date for a context area offset payment did not pass during the reporting period.
4	Within 6 months of each offset payment made to the Queensland State Government, the approval holder must provide the Department written evidence on the actions that have been taken with the offset payment.	Not applicable	During the reporting period, an offset payment was not made nor did the 6 month deadline for a previous payment occur.
5	Clearing of up to a maximum of 148 ha must be within the project area shown in Appendix 1.	Compliant	Clearing within the project area has not exceeded the approved 148 ha. Works for the project have occurred in context area 1 only, which is the least vegetated portion of the site. Clearing within this area during the reporting period did not occur within the 'critical habitat' identified as part of the 148 ha.
6	Within ten days after the commencement of the action, the approval holder must advise the Department in writing of the actual date of commencement.	Compliant	The action commenced on 10 June 2017. A letter stating the action commenced was provided to the Department on 17 June 2016.
7	The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the plans required by this approval, and make them available upon request to the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.	Compliant	The Saunders Havill Group records and holds all relevant information for this EPBC approval on behalf of the approval holder. Electronic records of all material are held collectively by the Saunders Havill Group and approval holder and will be made available upon request in accordance with section 458 of the EPBC Act, or if required to verify compliance with the conditions of approval.

Condition number / reference	Condition	Is the project compliant with this condition?	Evidence / comments
8	Any potential or suspected non-compliance with these conditions of approval must be reported to the department in writing within 48 hours of the approval holder becoming aware of the potential or suspected non-compliance. Within three months of every 12 month anniversary of the commencement of the action, the approval holder must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any plans as specified in the conditions. Documentary evidence providing proof of the date of publication must be provided to the Department at the same time as the compliance report is published.	Compliant	<p>The approval holder and Saunders Havill Group have not become aware of a potential or suspected non-compliance with the conditions during the reporting period.</p> <p>The anniversary of the commencement of the action is 10 June. The annual deadline for publishing the report addressing compliance with each of the conditions of the approval (i.e. this Compliance Report) is 9 September. When this deadline is a non-business day in Brisbane, the next business day is taken to be the deadline. Documentary evidence providing proof of the date of publication will be provided to the Department when the report is published.</p> <p>The Annual Compliance Report for the 12 month period ending 9 June 2019 was published on the Peet website on 9 September 2019. The Department was notified of the report publication and provided with evidence on the 10 September 2019.</p>
9	Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister.	Not applicable	The Minister has not provided a direction to complete an independent audit of compliance.
10	If the approval holder wishes to carry out any activity otherwise than in accordance with a plan as specified in the conditions, the approval holder must submit to the Department for the Minister's written approval a revised version of that plan. The varied activity shall not commence until the Minister has approved the revised	Not applicable	The approval holder has not sought to carry out any activity that is not in accordance with a plan as specified in the conditions.

Condition number / reference	Condition	Is the project compliant with this condition?	Evidence / comments
	plan, that plan must be implemented in place of the plan originally approved.		
11	If the Minister believes that it is necessary or convenient for the better protection of Koala to do so, the Minister may request that the approval holder make specified revisions to a plan specified in the conditions and submit the revised plan for the Minister's written approval. The approval holder must comply with any such request. The revised approved plan must be implemented. Unless the Minister has approved the revised plan, then the approval holder must continue to implement the plan originally approved, as specified in the conditions.	Not applicable	The approval holder has not received a request from the Minister to revise a plan specified in the conditions.
12	If, at any time after five years from the date of this approval, the approval holder has not commenced the action, then the approval holder must not commence the action without written agreement of the Minister.	Not applicable	The action commenced on 10 June 2016.

## 5. Appendices

### Appendix A

Fauna management and spotter catcher services reports

### Appendix B

EPBC approval and conditions granted 30 October 2014

# Appendix A

Fauna management and spotter catcher services reports

LEADING THE WAY  
IN ENVIRONMENTAL  
MANAGEMENT



**PRE-CLEARANCE  
FAUNA AND  
HABITAT REPORT**

**FLAGSTONE STAGE 2- 5**

SEE CIVIL

**January 2020**

## Contents

<b>Document Control</b> .....	<b>4</b>
<b>1. Introduction</b> .....	<b>5</b>
1.1 Background .....	5
1.2 Site Location and Description .....	5
1.3 Legislation and Permits.....	7
<b>2. Project Aims and Objectives</b> .....	<b>7</b>
2.1 Pre Clearing Survey .....	7
<b>3. Methodology</b> .....	<b>8</b>
3.1 Method Limitations .....	8
<b>4. Results</b> .....	<b>9</b>
4.1 Vegetation Communities .....	9
<b>5. Fauna Observed</b> .....	<b>12</b>
5.1 Likelihood of Occurrence of Fauna of Conservation Significance	13
5.2 Habitat Features and Evaluation .....	14
5.3 Other Fauna Considerations & Indicators.....	19
<b>6. Recommendations</b> .....	<b>21</b>
6.1 Vegetation Clearing Provisions .....	21
6.2 Specific Habitat Clearing Provisions .....	22
6.3 Fauna Spotter .....	24
<b>7. Closure</b> .....	<b>25</b>
<b>8. References</b> .....	<b>26</b>

## List of Figures

<b>Figure 1: Site Location</b> .....	<b>6</b>
<b>Figure 2. Habitat features on site</b> .....	<b>15</b>

## List of Tables

<b>Table 1: Observed fauna located within the proposed development site</b> .....	<b>12</b>
<b>Table 2: Conservation Significant Fauna likelihood within project boundaries</b> .....	<b>13</b>



## List of Photo Plates

<b>Photo Plate 1: Vegetation composition within an area of the clearing site extent.....</b>	<b>10</b>
<b>Photo Plate 2. Vegetation composition showing a denser midstory and native grass cover ..</b>	<b>11</b>
<b>Photo Plate 3: Arboreal termitaria recorded on site showing obvious excavation on site .....</b>	<b>16</b>
<b>Photo Plate 4: Terrestrial termitaria present on site.....</b>	<b>17</b>
<b>Photo Plate 5: Arboreal fauna scratch marks noted on a Corymbia .....</b>	<b>18</b>
<b>Photo Plate 6: Brushtail Possum scat (left) and suspected Bandicoot dig (right) recorded on site .....</b>	<b>20</b>



## Document Control

### Version Control

Version	Purpose	Author	Reviewed / approved by	Date
Rev 0.1	Draft	Samuel Gilbey	Jacinta Wehbe	13/01/2019
Rev 1.0	Final	Samuel Gilbey	Jacinta Wehbe	13/01/2019

### Distribution Control

Copy	Purpose	Method	Issued to:	Name	Date
1.	File Copy	Electronic	Biodiversity Australia	Chantal Sargeant	13/01/2019
2.	Client Copy	Electronic	SEE Civil	Ryan Lange	13/01/2020

Project Number: FQ3868

Our Document Reference: FQ3868-BFQ-REP-SEECivil-FlagstoneStg2-5-FullPreclearReport-rev1.0

This document has been prepared to the requirements of the client identified on the cover page and no representation is made to any third party. It may be cited for the purposes of scientific research or other fair use, but it may not be reproduced or distributed to any third party by any physical or electronic means without the express permission of the client for whom it was prepared or Biodiversity Australia Pty Ltd.



# 1. Introduction

## 1.1 Background

Biodiversity Australia Pty Ltd was commissioned by SEE Civil ('the client') to produce a Pre-clearing Fauna and Habitat Report as part of the clearing works at Flagstone Stage 2- 5, Flagstone Drive, Flagstone ('the site'). Approximately 27 hectares of vegetation was surveyed, proposed to be cleared to allow for construction of a housing development

## 1.2 Site Location and Description

The site is situated over Lot 2 (SP303089), Lot 911 (SP303089), and Lot 50010 (SP3003089), Flagstone Drive, Flagstone, located to the immediate north of newly developed residential estates in Flagstone. To the north of the site is cleared bushland, with scattered Eucalyptus trees and Acacia regrowth. The broader Jimboomba region is experiencing continual residential growth (**Figure 1**).

The majority of the surveyed site features a consistent vegetation community, with pockets where other vegetation species are dominant. The vegetation within the clearing extent consists of a mixed diversity of eucalypt species in the canopy. The midstory varies from sparse to dense in areas, and consists primarily of mixed Wattles (*Acacia* spp.), Black She-oak (*Allocasuarina littoralis*), Soap Tree (*Alphitonia excelsa*) and canopy recruits. Some invasive species including Lantana (*Lantana camara*) are dense in parts.

The groundcover consists of a variety of native and introduced grasses. Weed abundance is generally low, with some higher densities present at edges where disturbance is greater. Dense leaf litter, woody debris and rocky areas are present throughout.



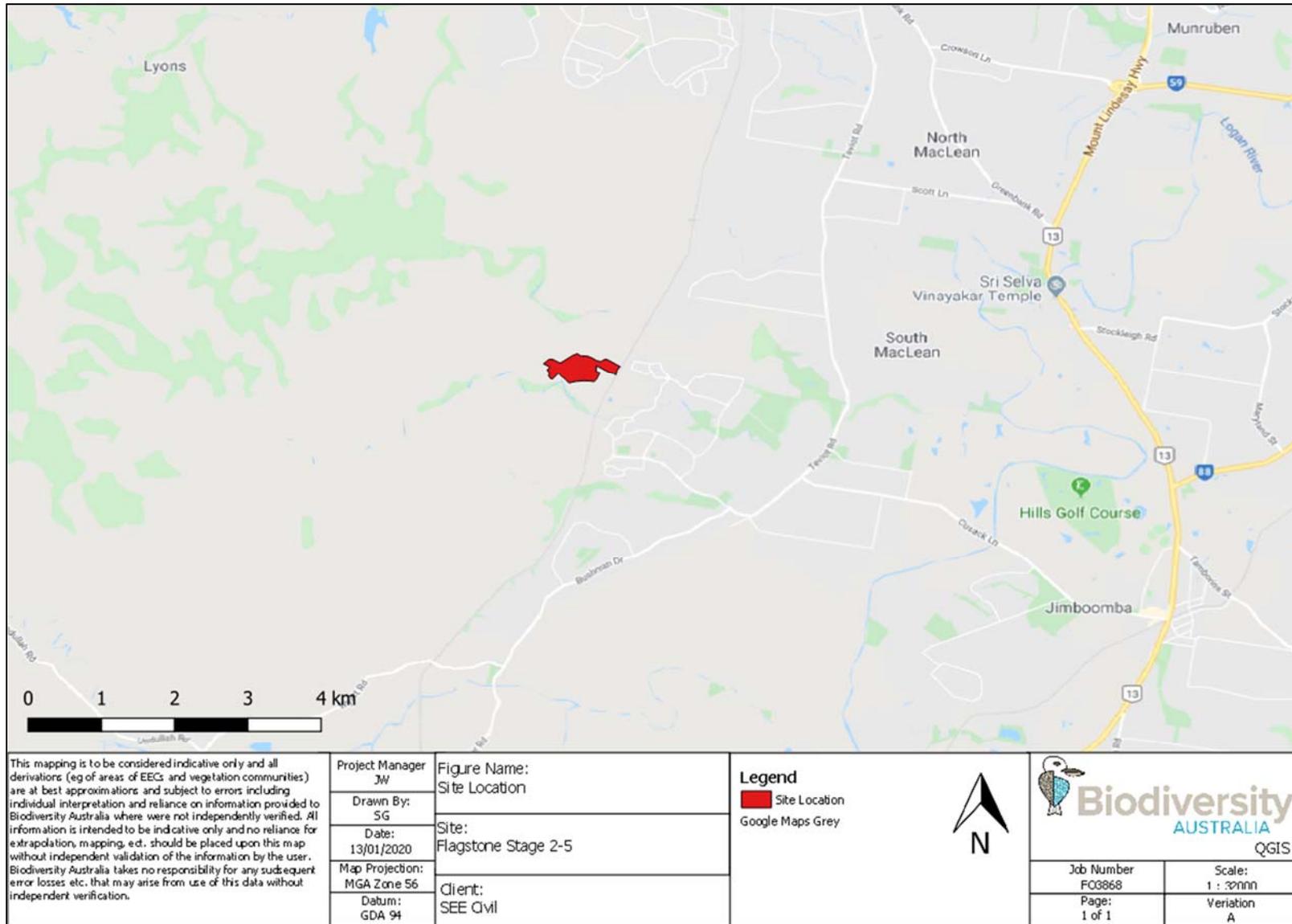


Figure 1: Site Location



### 1.3 Legislation and Permits

Relevant legislation applicable to land clearing and vegetation removal is governed by local, state and federal authorities. This includes:

- *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- *Nature Conservation Act 1992* (NC Act) and associated regulations;
- *Environmental Protection Act 1994*;
- *Animal Care and Protection Act 2011*, and
- *Nature Conservation (Koala) Conservation Plan 2017*.
- *State Planning Policy 2017*.

Biodiversity Australia also holds a current Department of Environment and Science (DES) Rehabilitation Permit (Permit No. WA0014880), allowing for the handling and relocation of native fauna.

## 2. Project Aims and Objectives

### 2.1 Pre-Clearing Survey

A pre-clearing fauna habitat survey was carried out by one Biodiversity Australia Fauna Spotter Catcher on Friday January 10<sup>th</sup>, 2020. This survey was undertaken to determine the likely presence of native fauna, particularly any species designated under relevant legislation as being endangered, vulnerable or near threatened (EVNT), critically endangered, special least concern, migratory or colonial. The survey also includes an assessment of the associated habitat value of the site. The overarching objectives of pre-clearance survey works are to:

- Minimise the harm to native wildlife during clearing works, and
- Minimise the potential for disruption to works due to the unanticipated occurrence of designated species within the clearing area.



### 3. Methodology

Survey methodologies involved walking the entire site, and identifying key features likely to provide habitat for native wildlife. Any habitat features located were marked with flagging tape to enable identification by machinery operators, and all evidence of animals observed on site was documented.

Key habitat features include:

- hollow branches,
- hollow stumps and logs,
- bird nests,
- arboreal and terrestrial termite nests,
- scratch-marks,
- decorticating bark,
- general habitat (thick vegetation, rock outcrops),
- digs and scats, and
- call(s) or actual sightings.

Also noted where present were features such as:

- Koala habitat.

While it is acknowledged that the pre-clearing assessment does not provide the level of site specific detail which can be achieved by a full ecological fauna survey, which would include a variety of diurnal and nocturnal techniques such as spotlighting and trapping, an accurate assessment of the fauna habitat value and likely presence of significant fauna species can be made by an experienced ecologist based on the results of a pre-clearing survey combined with a desktop assessment.

#### 3.1 Method Limitations

Whilst the survey method seeks to achieve the overarching objectives, the survey has limitations. These are addressed by the desktop habitat evaluation and through implementation of recommendations to monitor the works with consideration of the various behaviours of potentially impacted fauna.

The fauna pre-clearance survey provides a snapshot of fauna assemblages and habitat conditions at the time of the survey and are strongly influenced by weather and season. It is therefore likely that not all fauna present on the site, and not all habitat features were identified as a result of the survey. Specifically, some life cycle stages and cryptic fauna such as amphibians are extremely hard to identify/locate and as works progress, these species may be observed. These limitations are addressed by the habitat evaluation and recommendations to monitor the works.



## 4. Results

### 4.1 Vegetation Communities

The dominant vegetation returned from desktop searches mapped within the proposed extent of clearing (refer Appendix 1) at the site includes non-remnant vegetation comprised of three regional ecosystems (REs), including:

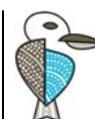
- RE 12.9-10.2 (25%) Least Concern: *Corymbia citriodora* subsp. *variegata* open forest or woodland usually with *Eucalyptus crebra*. Other species such as *E. tereticornis*, *E. moluccana*, *E. acmenoides* and *E. siderophloia* may be present in scattered patches or in low densities. Understorey can be grassy or shrubby. Shrubby understorey of *Lophostemon confertus* (whipstick form) often present in northern parts of bioregion. Occurs on Cainozoic and Mesozoic sediments.
- RE 12.9-10.7 (10%) Of Concern: *E. crebra* dominant with *E. tereticornis*, *C. tessellaris*, *Angophora leiocarpa*, *E. melanophloia* woodland. Occurs on Cainozoic and Mesozoic sediments.
- RE 12.3.3 (10%) Endangered: *Eucalyptus tereticornis* woodland. *Eucalyptus crebra* and *E. moluccana* are sometimes present and may be relatively abundant in places, especially on edges of plains and higher-level alluvium. Other species that may be present as scattered individuals or clumps include *Angophora subvelutina* or *A. floribunda*, *Corymbia clarksoniana*, *C. intermedia*, *C. tessellaris*, *Lophostemon suaveolens* and *E. melanophloia*. Occurs on Quaternary alluvial plains, terraces and fans where rainfall is usually less than 1000mm/y.

Relevant maps are presented in **Appendix 1**.

Vegetation on site is a mix of open and closed eucalypt woodland (**Photo Plate 1 and Photo Plate 2**). The canopy is generally sparse, approximately 50-100 years of age. Canopy species included Grey Ironbark (*Eucalyptus siderophloia*), Narrow-leaved Ironbark (*E. crebra*), Spotted Gum (*Corymbia Citriodora* subsp. *Variegata*), Gum-topped Box (*E. moluccana*), Moreton Bay Ash (*C. tessellaris*), Pink Bloodwood (*C. intermedia*), and Smooth-barked Apple (*Angophora leiocarpa*).

The density of the midstory varied significantly across the site, ranging from very sparse to dense. Species observed in the midstory included Hickory Wattle (*Acacia implexa*), Soap Tree (*Alphitonia excelsa*), Swamp Box (*Lophostemon suaveolens*), Black Wattle (*Acacia leiocalyx*), Black She-oak (*Allocasuarina littoralis*), Weeping Bottlebrush (*Callistemon viminalis*) and canopy recruits. Patches of Lantana (*Lantana camera*) are present throughout the site.

The composition of the understory varied from sparse to dense, and is predominantly native grass species. Understorey species included Rough Saw Sedge (*Gahnia aspera*), Spiny-headed Mat-rush (*Lomandra longifolia*), Monkey Rope (*Parsonsia straminea*), and Grass Tree (*Xanthorrhoea* spp.). The site generally had a low weed abundance. In areas that have experienced historical disturbance (e.g. site margins) there is a higher abundance of weeds and garden ornamentals including Rhodes Grass (*Chloris gayana*), Red Natal Grass (*Melinis repens*), Lantana (*Lantana*



*camara*), and Balloon Cotton (*Gomphocarpus physocarpus*). Groundcover includes dense leaf litter, coarse woody debris, and rocky areas.



**Photo Plate 1: Vegetation composition within an area of the clearing site extent**





Photo Plate 2. Vegetation composition showing a denser midstory and native grass cover

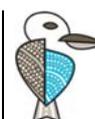


## 5. Fauna Observed

All fauna species observed during the pre-clearance surveys on January 10<sup>th</sup>, 2020 are presented in **Table 1**. A full list of potential fauna returned from desktop searches within 2km of the site can be found in the Wildlife Online extract (refer **Appendix 2**).

**Table 1: Observed fauna located within the proposed development site**

Common Name	Scientific Name	Presence on site	*EPBC Status	†NC Act Status
<b>Aves</b>				
Black-face Cuckoo-shrike	<i>Coracina novaehollandiae</i>	Observed		C
Blue-faced Honeyeater	<i>Entomyzon cyanotis</i>	Observed		C
Intermediate Egret	<i>Ardea intermedia</i>	Observed		C
Indian Myna	<i>Acridotheres tristis</i>	Observed		Y
Rainbow Bee-eater	<i>Merops ornatus</i>	Observed		SL
Superb Fairy-wren	<i>Malurus cyaneus</i>	Observed		C
Torresian Crow	<i>Corvus orru</i>	Observed		C
Wedge-tailed Eagle	<i>Aquila audax</i>	Observed		C
Willie Wagtail	<i>Rhipidura leucophrys</i>	Observed		C
<b>Mammals</b>				
Grey Kangaroo	<i>Macropus giganteus</i>	Observed		C
*Environment Protection and Biodiversity Conservation Act 1999				
†Nature Conservation Act 1992				
Value Codes: Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Vulnerable (V), Near Threatened (NT), Special Least Concern (SC), Least Concern (C), Introduced but Naturalised (Y) or not protected (.)				



## 5.1 Likelihood of Occurrence of Fauna of Conservation Significance

Results of the Wildlife Online search (**Appendix 2**) identifying the potential for conservation significant fauna species to occur within the project footprint are presented below in Table 2.

**Table 2: Conservation Significant Fauna likelihood within project boundaries**

Common Name	Scientific Name	Potential of occurrence	After survey assessment of potential occurrence	*EPBC Status	†NC Act Status
<b>Aves</b>					
Rainbow Bee-eater	<i>Merops ornatus</i>	Observed	Potential		SL
<b>Mammals</b>					
Koala	<i>Phascolarctos cinereus</i>	Potential	Potential	V	V
Grey Headed Flying Fox	<i>Pteropus poliocephalus</i>	Potential	Potential	V	V
*Environment Protection and Biodiversity Conservation Act 1999					
†Nature Conservation Act 1992					
Value Codes: Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Vulnerable (V), Near Threatened (NT), Special Least Concern (SL), Least Concern (C), Introduced but Naturalised (Y) or not protected ().					

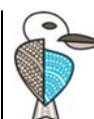
A likelihood of occurrence assessment was undertaken to determine the potential presence of conservation significant fauna species with the site, based on the results of the pre-clearing survey and the vegetation and fauna habitat observed on site. The likelihood of occurrence criteria includes:

- **Confirmed** – species presence has been detected in the pre-clearing survey or previous surveys within the site.
- **Unconfirmed sighting** – witnessed by one observer but unverified by second observer.
- **Potential** – suitable habitat/fodder is present within the site.
- **Unlikely** – although species have been recorded within 2 km of the site, no records or suitable habitat have been identified within the site.

### 5.1.1 Koalas

The site survey undertaken by the Fauna Spotter Catcher on January 10<sup>th</sup>, 2020 confirmed the presence of non-juvenile Koala fodder species within the site, including *E. crebra*, *E. moluccana*, *Angophora leiocarpa*, *Lophostemon suaveolens*, *Corymbia citriodora* subsp. *variegata*, *C. intermedia*, *E. siderophloia*, and *E. tereticornis* (Queensland Herbarium, 2001).

The *Planning Act 2016* and associated koala habitat values mapping (i.e. SPP mapping) have identified the habitat values of the site as 'Medium Value Bushland' for Koalas, the site falls outside the Koala Assessable Development Areas (**Appendix 3**).



Due to the connectivity to nearby bushland, and historical disturbance of the site, there is a potential that Koalas will be found on site during clearing. Wildlife Online searches (DEHP, 2014b) presented 4 historical records of Koalas within a 2km radius of the site.

Although no observations of Koalas were made during the pre-clearance assessment, all precautionary measures will be undertaken before clearing takes place. If a Koala is encountered on site during clearing it will be managed in accordance with the *Nature Conservation (Koala) Conservation Plan 2017*.

### 5.1.2 Grey-headed Flying-fox

The Grey-headed Flying-fox is listed as a *Vulnerable* species under the *Nature Conservation Act 1992*. Due to the presence of fodder species on site, there is a potential that this species forage and roost on this site.

### 5.1.3 Rainbow Bee-eater

The Rainbow Bee-eater is listed as *Special Least Concern* species under the *Nature Conservation Act 1992*. Breeding usually occurs in Australia between August and January, with eggs laid in excavated tunnels along the banks of rivers or cliff-faces (DE, 2020). No nests were identified during the pre-clearance assessment, these may become more obvious during clearing, The Fauna Spotter will inspect habitat for this species during clearing of the river banks

## 5.2 Habitat Features and Evaluation

The site features many terrestrial and arboreal habitat areas, primarily in the form of hollow bearing trees. Each feature was identified and flagged during the pre-clearance survey, and GPS points taken, as outlined in **Figure 2**.

Numerous large hollow bearing trees and hollow bearing stags were identified within the clearing extent, with many large enough to house larger arboreal mammals and avian species. Some examples of animals that will use hollows for habitat and breeding include Greater Gliders (*Petauroides volans*), Sugar Gliders (*Petaurus breviceps*), Squirrel Gliders (*Petaurus norfolcensis*), and Powerful Owls (*Ninox strenua*).

Arboreal termitaria are prevalent throughout the site, as are terrestrial termite mounds. Many of these mounds featured an excavation at the time of the pre-clearance survey, suggesting some may be in use by reptiles, arboreal mammals or birds. Further details of these habitat features is discussed below.



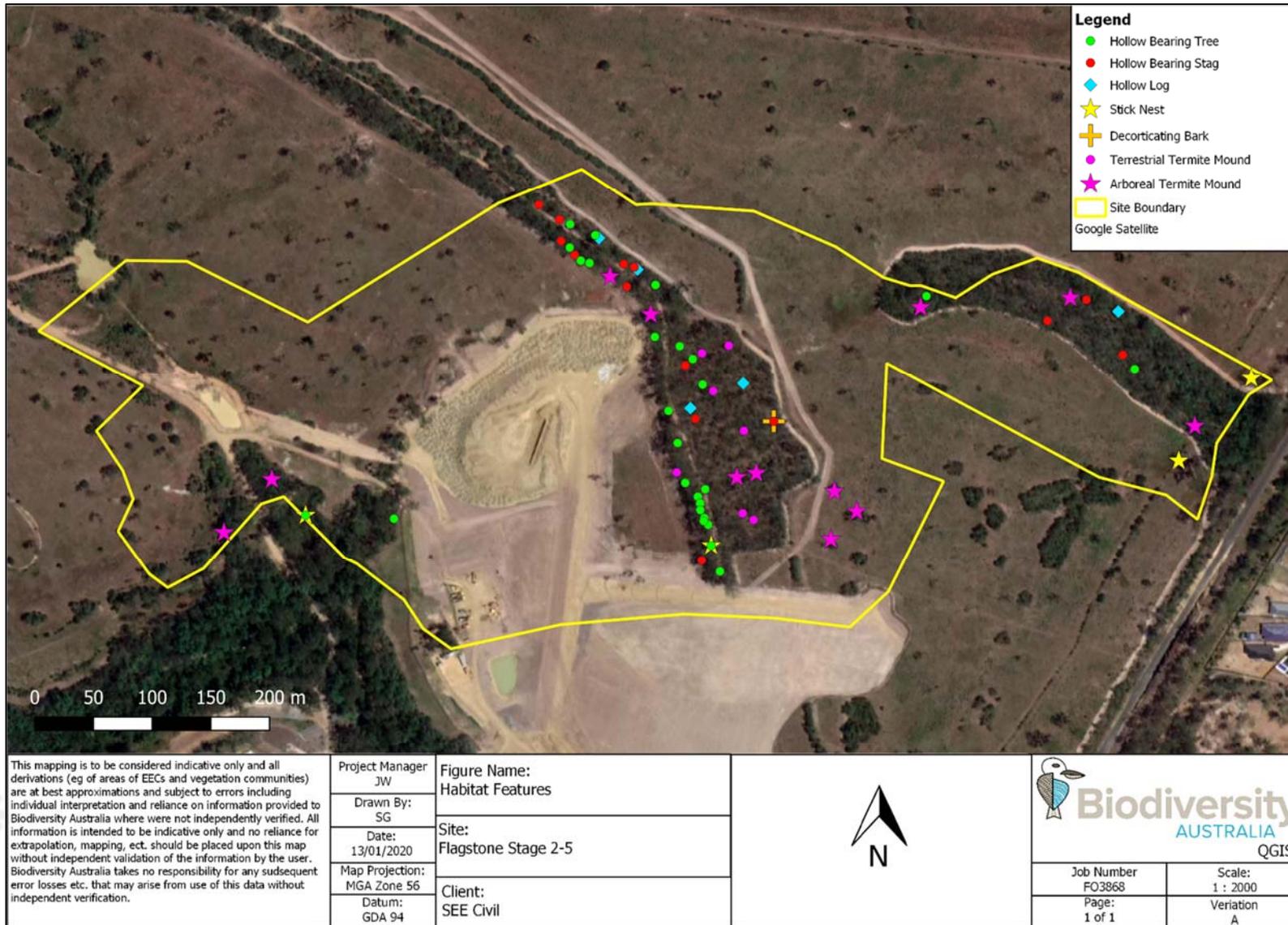


Figure 2. Habitat features on site



## 5.2.1 Termitaria

### Arboreal termitaria

Twelve arboreal termitaria are present within the surveyed area, some featuring excavations (**Photo Plate 3**). Active termitaria support obvious excavated tunnel entrances, which open into a larger chamber inside the mound. Arboreal termitaria are commonly used as nesting sites for Forest Kingfishers (*Todiramphus macleayii*), Sacred Kingfishers (*T. sanctus*), and Laughing Kookaburras (*Dacelo novaeguineae*) or as shelter sites for gliders (*Petaurus* spp.), possums and some reptiles.



**Photo Plate 3:** Arboreal termitaria recorded on site showing obvious excavation on site

### Terrestrial termitaria

A high density of terrestrial termitaria are also present on site (**Photo Plate 4**). These features provide foraging for variety of species like the Short-beaked Echidna (*Tachyglossus aculeatus*) and nesting opportunities for many species within the Varanidae family. Lace Monitors (*Varanus varius*) lay clutches of eggs within the protection of a hole dug into a termite nest; the termites seal up the hole, camouflaging the Monitor's clutch (Cogger 2014).





**Photo Plate 4: Terrestrial termitaria present on site**

### 5.2.2 Arboreal Hollows

Arboreal hollows may provide shelter and breeding habitat for a range of species, particularly arboreal mammals, nesting parrots, arboreal snakes, skinks, geckoes and amphibians. Both live and stag hollow-bearing trees were identified, in addition to open sap tree wounds, thus increasing the habitat potential as individual species require different hollow types and food sources. Squirrel Gliders (*Petaurus norfolcensis*) and Sugar Gliders (*P. brevipes*) have both been identified as primarily occurring within woodland and open forests that are comprised of *Eucalyptus* and/or *Corymbia* canopy species with a shrubby understory of *Acacia* (Van Dyck and Strahan 2008). This vegetation structure occurs at various intervals throughout the site. Gliders prefer hollows that are comprised of large cavities, allowing the housing of multiple family members, with a small entrance that protects from large Varanid predators.



### 5.2.3 Scratch Marks

A selection of trees were noted to have scratch marks on their trunks, indicating that there has been substantial arboreal fauna activity in the area, most likely being species of monitors and/or nocturnal mammals such as possums and gliders (**Photo Plate 5**).



**Photo Plate 5: Arboreal fauna scratch marks noted on a Corymbia**

### 5.2.4 Avian Nests

Four stick nests were identified within the clearing extent. Although no activity was observed around these nests, they will need to be monitored during clearing works. As mentioned in the section discussing arboreal termite mounds, many mounds feature excavations, and may be utilised by Kingfishers or Kookaburras for nesting.

Many areas on site feature piles of sandy soil, displaced during initial clearing of vegetation for fire trails and tracks. These soil piles are suitable for Striated Pardalote nesting, and as such, care should be taken during clearing works to ensure burrows are identified.

### 5.2.5 Decorticating Bark

A selection of live trees and stags within the site and were identified as having accumulations of decorticating bark which is the preferred shelter habitat for members of the Gekkonidae and Scincidae families, and may also be used as roosts by microbats and even small gliders.



### 5.2.6 Log Piles, Hollow Stumps and Hollow Logs

Several hollow logs were noted within the site extent, some of which have resulted from initial vegetation clearing for internal tracks and fire breaks. These structures are significant within the landscape as breeding places and shelter for all manner of reptiles and amphibian, as well as small terrestrial mammals.

### 5.2.7 Ground Cover

Ground cover of fallen leaf litter are present throughout sections of the site. This ground cover provides suitable habitat for ground dwelling fauna particularly reptiles and amphibians (Cogger 2014). These species are often cryptic and can be difficult to manage during clearing works. The Fauna Spotter Catcher will attempt to capture all fauna prior to clearing, however, where deemed an appropriate means to control movement of cryptic ground dwelling fauna, the Fauna Spotter Catcher may implement directional clearing. This involves the clearing operator moving slowly and consistently through the site in a directional manner ensuring that no isolated pockets of vegetation area formed. Fauna are hence encouraged to move ahead of the clearing front away from works and into suitable habitat adjacent to the site.

## 5.3 Other Fauna Considerations & Indicators

### 5.3.1 Native Bee Hives

While no native bee hives were found during the pre-clearance survey, several hollow trees and stags were present on site, providing suitable habitat. Due to the cryptic and temperature dependant nature of these insects, it is often difficult to locate hives, as they may be situated in high branches of large trees and stags and inactive if the temperature is too low (below 17°C). Native bees are important for the pollination of co-evolved vegetation, which often cannot be pollinated by the larger European Bee. As such, Biodiversity Australia treats all sites as capable of harbouring native bee hives and takes measures to rescue and relocate these important ecological structures, as outlined in **Section 6.2.9**.

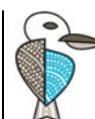
### 5.3.2 Scats, tracks and scratches

Scats, tracks and other evidence of faunal presence were noted within the extent of the site (**Photo Plate 6**). A number of small mammal diggings were observed in soft soil, however it is difficult to distinguish diggings as belonging to native species such as echidnas or bandicoots, or introduced species such as hares. Macropod tracks and scats were also noted in several areas, suggesting grazing and/or thoroughfare by macropod species including Eastern Grey Kangaroos, which were directly observed on site.





Photo Plate 6: Brushtail Possum scat (left) and suspected Bandicoot dig (right) recorded on site



## 6. Recommendations

### 6.1 Vegetation Clearing Provisions

Prior to clearing each morning, it is recommended a short survey be undertaken by the Fauna Spotter Catcher at the clearing front, to monitor any significant features that should be considered during the days clearing. During all clearing works the Fauna Spotter Catcher should be working with a hand held GPS device or similar that enable them to see previously GPS marked fauna habitat features. This will ensure the Fauna Spotter Catcher will be aware of all previously marked fauna habitat identified through the pre-clearance survey. The Fauna Spotter Catcher should also be aware of the Biodiversity Australia fauna habitat method for labelling potential fauna habitat locations with blue tape. The number of rings of blue tape tied to potential habitat tree indicates the type of habitat found in the area.

#### 6.1.1 General Provisions

- All potential habitat features are to be flagged where possible prior to felling to enable positive identification to machinery operators.
- The most effective way to manage clearing of habitat trees is to clear them one at a time with a Fauna Spotter Catcher present conducting pre and post checks of each tree that is felled.
- Any branches and debris on the ground are to be checked pre and post clearing by the Fauna Spotter Catcher.
- All decorticating bark to be checked/removed by the spotter before felling if possible, or inspected immediately after felling.
- If a Koala is detected, the routine protocol pursuant to the *Nature Conservation (Koala) Conservation Plan 2017* is to be applied (refer Section 6.2.1).

#### 6.1.2 Directional Clearing

The primary concern for the Fauna Spotter Catcher is to safely manage or capture and relocate all fauna present in the clearing area. Where applicable to minimise fauna interactions (especially cryptic fauna) and incidents such as fauna mortality, the Fauna Spotter Catcher should implement directional clearing, allowing fauna to move easily into surrounding bushland. This method can reduce the number of fauna interactions during a clearing event. It is recommended that clearing always be driven in a direction that encourages fauna to disperse away from roads; this will vary from site to site but will generally be in a way that directs fauna away from the highway and into connecting habitat. It has been determined that this should occur in an east to west direction, encouraging fauna away from the interstate train line and towards the vegetation corridor to the west of site.



## 6.2 Specific Habitat Clearing Provisions

### 6.2.1 Koalas

One additional Fauna Spotter trained in Koala spotting is required during all clearing activities. The Koala spotter will work ahead of the machine dedicated to looking for Koalas on site. This is an additional precautionary measure necessary to ensure if a Koala is present on site it will be found and managed in accordance with *Nature Conservation (Koala) Conservation Plan 2017*.

All precautionary measures will be undertaken before clearing takes place; including; dedicated Koala searches for individuals, scat and claw marks on trees, as well as identification of Koala significant habitat. If a Koala is encountered on site it will be managed in accordance with the *Nature Conservation (Koala) Conservation Plan 2017* works will be halted and an exclusion zone with a corridor is established, allowing the Koala to self-disperse via connected canopies/habitat away from danger. In accordance with the above document, Koalas will not be interfered with in any way unless they are at immediate risk of harm (traffic, drowning, injury etc). Works will be resumed only when the Koala is confirmed to be absent from the work area.

### 6.2.2 General Wetland Habitat Clearing & De-watering

Biodiversity Australia recommends that a team of suitably qualified Fauna Spotter Catchers be present for any major dewatering works in order to monitor for potential fauna disturbance and undertake relocation of native fauna if required.

Additionally, any dewatering of surface water within minor features to enable the planned works to be undertaken should be conducted under the supervision of licensed Fauna Spotter Catchers trained in capture and relocation of native aquatic and terrestrial wildlife as per statutory obligations.

Should fauna be encountered during the course of the works, works should be halted and a licenced Fauna Spotter Catcher contacted to immediately attend the site and relocate the fauna in accordance with the relevant licence and fauna handling and relocation procedure for the species.

### 6.2.3 Hollow-bearing Trees

With the assistance of the operator, the Fauna Spotter Catcher will ensure enough disturbance prior to felling to encourage mature nesting birds and Ringtail Possums to disperse away from the tree. Where possible, trees supporting arboreal hollows will be felled in a manner where the least amount of disturbance is sustained by the hollow as possible.

Once felled each tree will be thoroughly inspected by the Fauna Spotter Catcher for the presence of any fauna. This project will preserve identified hollows suitable for placement in retained habitat, at the discretion of the Fauna Spotter Catcher.

Nocturnal fauna will be captured and held in clean calico catch bags in a cool quite location away from clearing works until after dark when they will be released by the Fauna Spotter Catcher into a nearby area which supports suitable habitat. Juvenile birds removed from nest hollows will be transported to a wildlife carer to be raised.



#### 6.2.4 Dense Vegetation

Where possible, dense vegetation should be removed in a manner where the least amount of disturbance is sustained by the foliage as possible.

#### 6.2.5 Avian Stick Nests

The Fauna Spotter Catcher will direct the clearing operator to fell these trees last wherever practicable and as gently as possible to cause minimal disturbance to the nests. Once each tree is felled, as soon as it is safe to do so, the Fauna Spotter Catcher will inspect the nest. Any chicks will be captured and transported to a wildlife carer to be raised. If the nest is active additional measures may be taken to remove the chicks from the nest prior to felling. These measures may need to be approved by council before action is taken.

#### 6.2.6 Termitaria

Trees supporting active termite mounds will be felled in a manner where the termite mounds will not directly impact the ground or another object sustaining damage. Once felled the Fauna Spotter Catcher will carefully break open the mound to inspect the nesting/shelter chamber for any fauna. Any terrestrial mounds will be excavated by hand where possible, or broken open gently by machinery and investigated by the Fauna Spotter Catcher before proceeding.

#### 6.2.7 Ground Cover

Thick ground cover, leaf litter, naturally felled trees, anthropogenic and construction debris stockpiles should be inspected by a Fauna Spotter Catcher immediately prior to their removal or modification, to prevent fauna being injured as a result of stockpile movement.

#### 6.2.8 Decorticating Bark

Loose bark is to be removed by the Fauna Spotter Catcher to a practical height before tree felling, and the remainder removed once the tree has been felled.

#### 6.2.9 Native Bee Hive Rescue

While no native bee hives were recorded in the pre-clearance survey, it is acknowledged that hives can be hard to locate, as they are often in the upper reaches of trees and high limbs. Any hives found subsequent to this survey will be flagged at the base of the tree in which it is found. With reference to the Biodiversity Australia Native Bee Rescue Procedural document, the tree will then be felled in a manner that will prevent loss of hive contents or damaging the structure of the hive. Once safe to do so the hive will be removed with the use of a chainsaw or manually, and housed artificially or kept in its log, dependant on circumstances. The hive will then be transferred for rehabilitation by a suitably qualified meliponist on Biodiversity Australia staff. Once rehabilitated, Biodiversity Australia will relocate hive to suitable habitat adjacent to the project.



### 6.2.10 Clearing Stockpiles

Biodiversity Australia recommends a Fauna Spotter Catcher to be present for the mulching, shearing, or movement of vegetation stockpiles if the timber has been on the ground for more than 24hrs. This is due to the likelihood of fauna moving back into these structures as a means of temporary shelter, or because their usual territory has been dismantled and they are unable to disperse due to encroachment on neighbouring territories.

### 6.2.11 Other Fauna Indicators

The Fauna Spotter Catcher will monitor the site closely whilst clearing is undertaken, ensuring no larger fauna (such as large macropods) are present, and if so, are dispersed toward suitable habitat prior to commencement of works.

## 6.3 Fauna Spotter

It is recommended that one Fauna Spotter Catcher to be present per clearing front for all vegetation clearing on site, as well as one additional Koala spotter. The Fauna Spotter Catchers will communicate with the clearing operator and foreman any concerns outlined in this report, and any other concerns that arise after conducting a short survey of the clearing front prior to clearing works each morning.

Upon commencement of site clearing, the Fauna Spotter Catchers will closely monitor the clearing of each tree, thoroughly checking both before (where possible) and after felling for any wildlife. Of main concern during tree felling is the presence of arboreal fauna that may be utilising the shelter of hollows, loose bark or foliage in the larger trees.

All major habitat features have been noted within this report, however features on site may alter in the time elapsed prior to clearing. The Fauna Spotter Catcher will also continually survey the site during vegetation removal for any additional habitat features identified. Any injured wildlife will be transported by the Fauna Spotter Catcher to an appropriate vet or wildlife carer dependant on the injury or age of the animal. The Fauna Spotter Catcher will discuss any issues highlighted in this report with the Site Foreman and will be responsible for all fauna handling and management as outlined in the Fauna Handling Report produced by Biodiversity Australia for use on this project.

Any terrestrial fauna captured during the clearing will be secured in a clean calico catch bag and hung in a dark quiet location away from the disturbance area. The animals will be released into suitable habitat at an appropriate time (i.e. after dark for nocturnal species). All uninjured wildlife will be released into nearby bush land away from major roads, as deemed suitable by the onsite Fauna Spotter Catcher. Any injured or juvenile wildlife will be transported by the Fauna Spotter Catcher to an appropriate vet or wildlife carer dependant on the injury or age of the animal.



## 7. Closure

This report has been undertaken for the specific purposes of SEE Civil as detailed in our correspondence to them, and is solely for the use of SEE Civil. This report is only to be used in full, and may not be used to support objectives other than those set out herein, except where written approval, with comments, is provided by Biodiversity Australia. Biodiversity Australia accepts no responsibility for the accuracy of information supplied to them by second and third parties. Should more detail be required please do not hesitate to call our office on the details below.



**Phone** 1300 319 954  
Level 1, 9 Harbour Village Parade, Coomera QLD 4209  
PO Box 3401 Helensvale Town Centre QLD 4212  
[www.biodiversityaust.com.au](http://www.biodiversityaust.com.au)



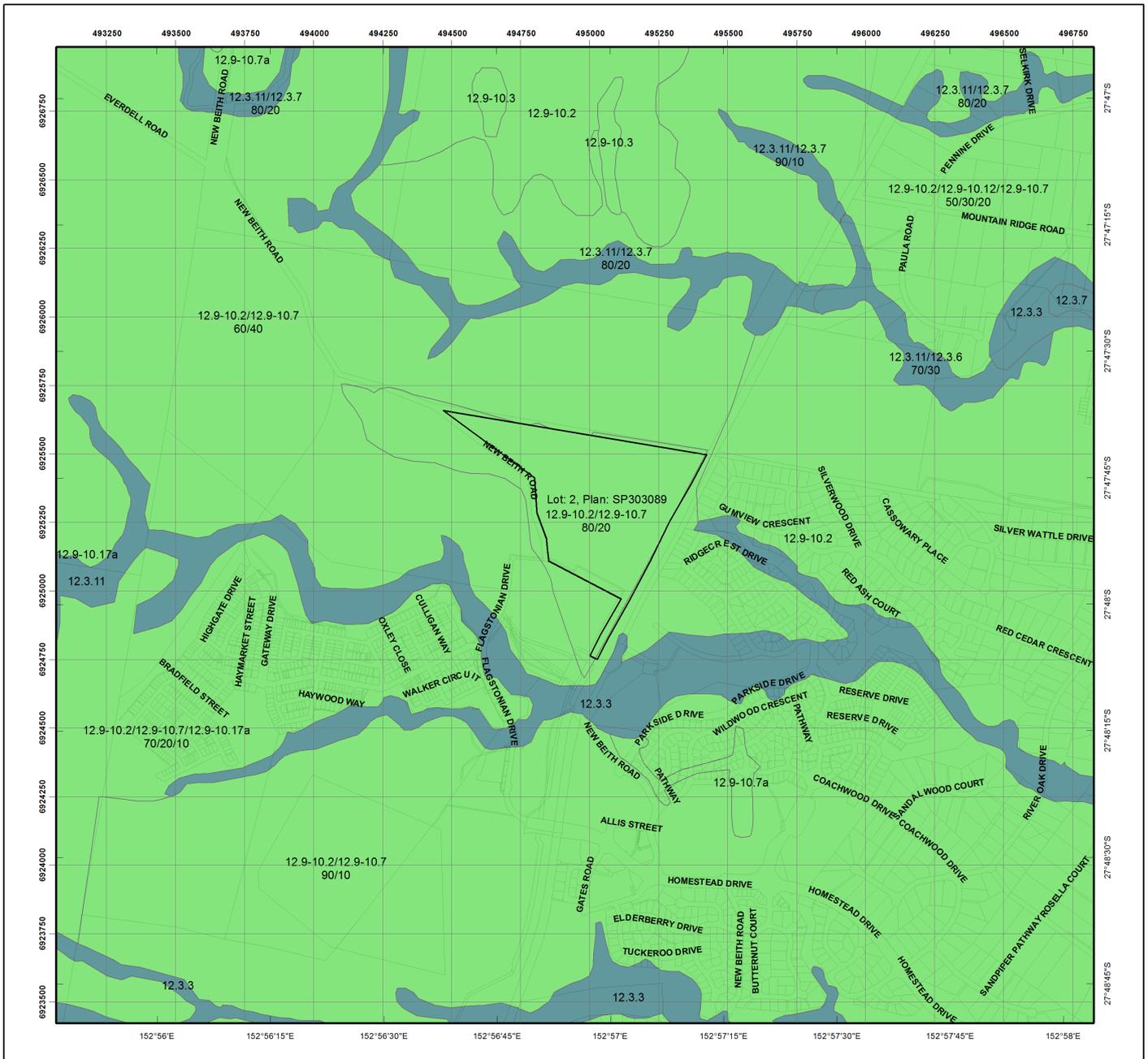
## 8. References

- Department of Environment and Heritage Protection (2014). State Government Supported Community Infrastructure Koala Conservation Policy (2014). Koala Conservation Unit, Brisbane.
- Department of Environment and Heritage Protection (2014a). Copy of the certified Regional Ecosystem and Remnant Map – Version 6 for the purpose of the Vegetation Management Act 1999. Online RE Maps, The Department of Environment and Heritage Protection, Brisbane.
- Department of Environment and Heritage Protection (2014b). Copy of the Wildlife Online Generate a Species List for a Specified Point. Wildlife Online Extract. The Department of Science, Information Technology, Innovation and the Arts, Brisbane.
- Department of Environment and Resource Management (2010). South East Queensland Koala Conservation State Planning Regulatory Provisions. Sustainable Communities and Landscapes, The Department of Environment and Resource Management.
- Department of the Environment (2014). EPBC Act Protected Matters Report, Department of the Environment.
- Department of the Environment (2014). EPBC Act referral guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory). Department of the Environment.
- Department of the Environment (2015). EPBC Act Referral Guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory). Commonwealth of Australia
- Department of the Environment (2020). *Merops ornatus* in Species Profile and Threats Database, Department of the Environment, Canberra.
- Environmental Protection Agency (2001). Key to Eucalypts of Greater Brisbane. Queensland Herbarium, Brisbane.
- Environmental Protection Agency (2006). Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006-2016. Queensland Government, Brisbane.
- Morcombe, M. (2003). Field Guide to Australian Birds (Second Edition: Revised and Updated). Brisbane, Australia: Steve Parish Publishing Pty Ltd.
- Quantum GIS Development Team (2016). Quantum GIS Geographic Information System. Open Source Geospatial Foundation Project. <http://qgis.osgeo.org>
- Queensland Government (2010). State Planning Policy (2/10) Koala Conservation in South East Queensland. SEQ Koala Protection Area Koala Habitat Values Map 7. Queensland Government, Brisbane.
- Queensland Museum. (2007). Wildlife of Greater Brisbane: A Queensland Museum Wild Guide (2nd ed.). South Brisbane, Australia: Queensland Museum.



## 9. Appendix 1

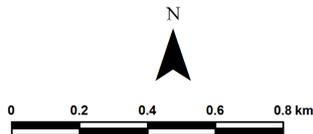
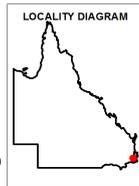




### Pre-clearing Regional Ecosystems coloured by Broad Vegetation Groups

#### Broad Vegetation Groups BVG5M Description (BVG1M codes)

- Lot and Plan
- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Water
- Cadastral Boundaries



This product is projected into GDA 1994 MGA Zone 56

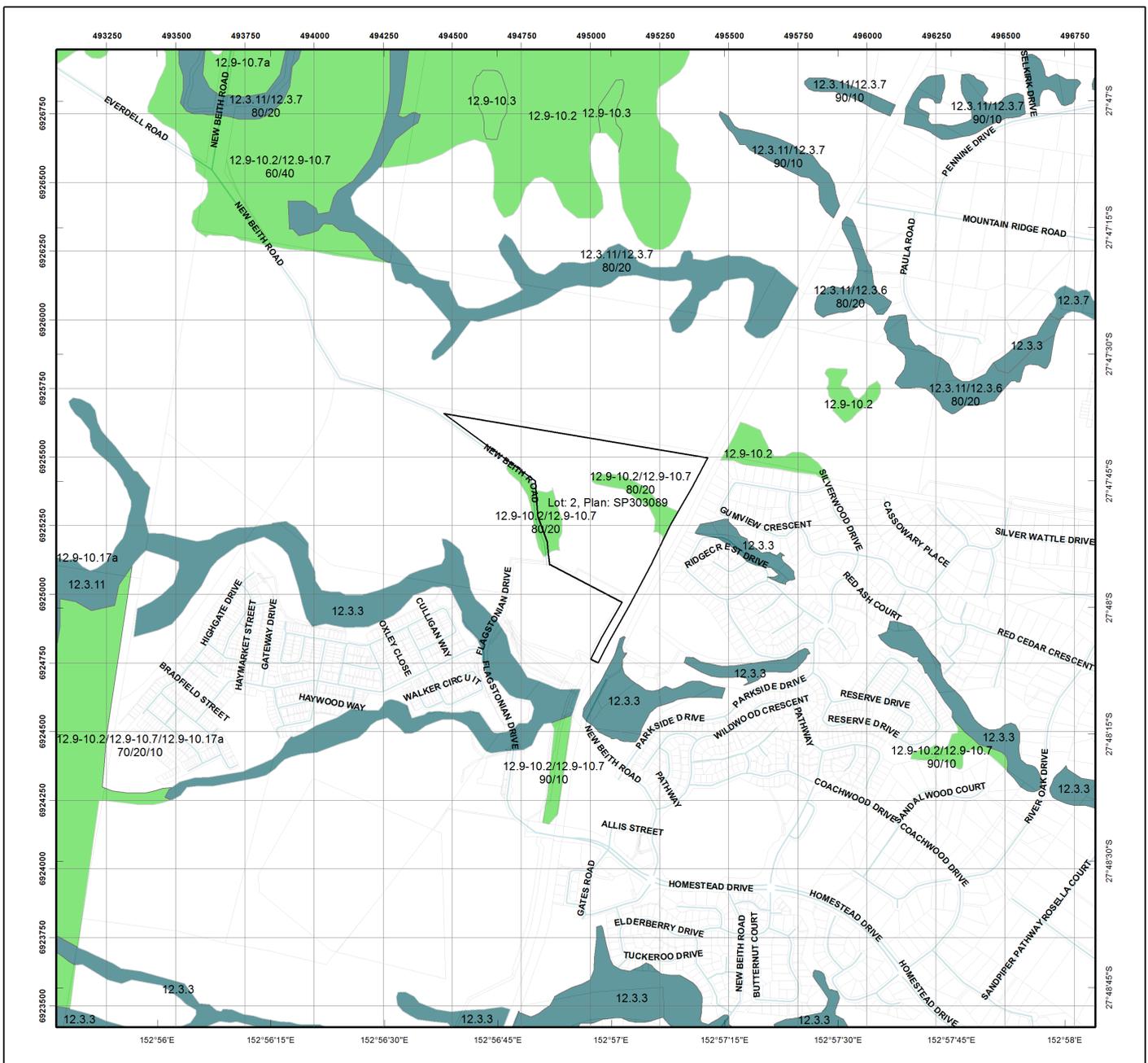
Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled.

Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.

Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil.

The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework".

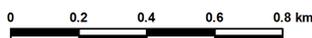
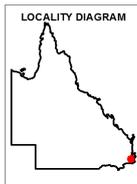
Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.



### Remnant 2017 Regional Ecosystems coloured by Broad Vegetation Groups

#### Broad Vegetation Groups BVG5M Description (BVG1M codes)

- Lot and Plan
- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Non-remnant vegetation, cultivated or built environment
- Water
- Cadastral Boundaries



This product is projected into GDA 1994 MGA Zone 56

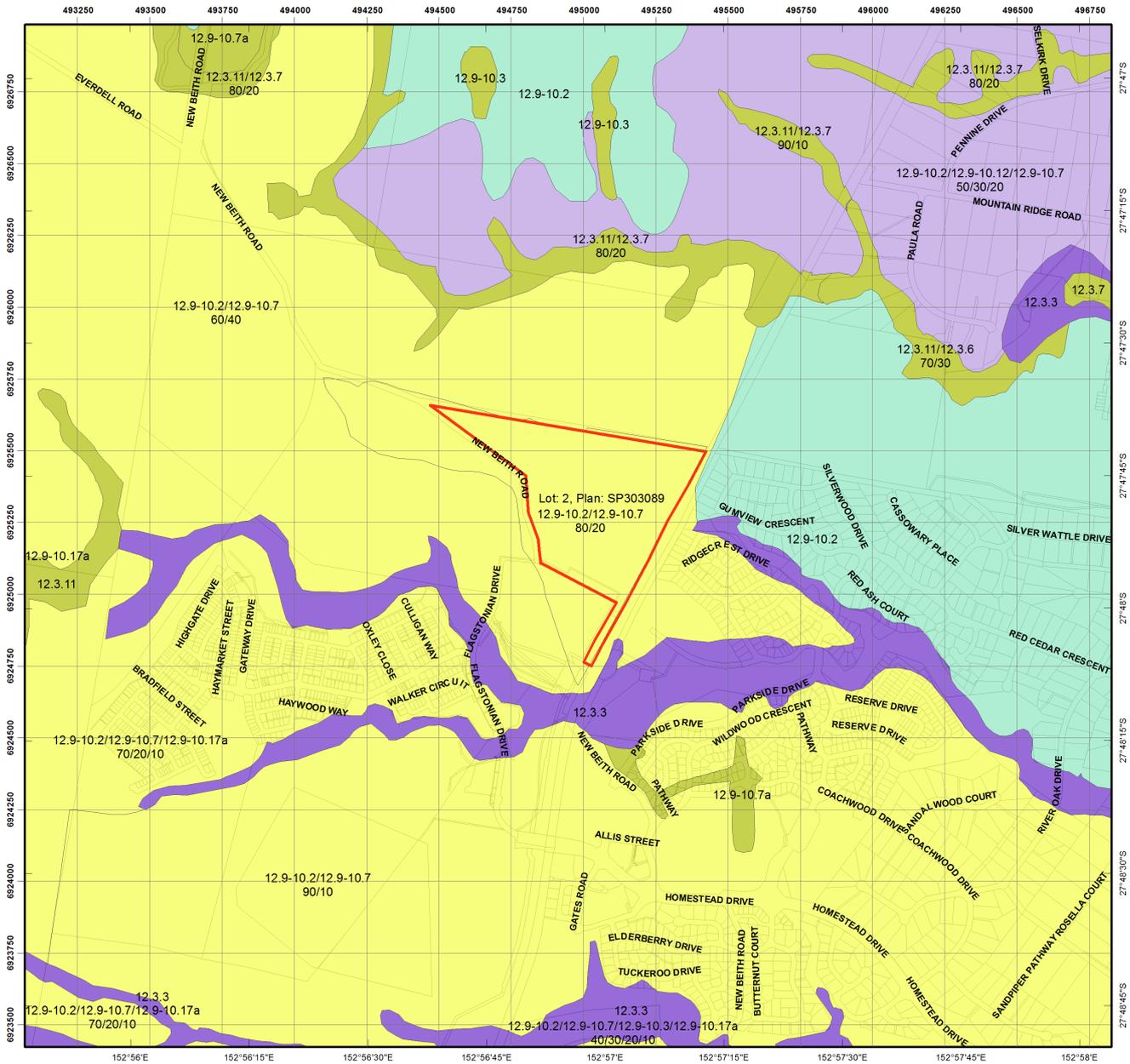
Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled.

Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.

Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework".

Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.

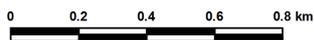
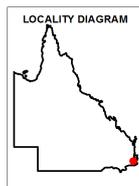
Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy. Non-remnant vegetation includes regrowth and disturbed native vegetation.



### Pre-clearing Regional Ecosystems

#### Biodiversity Status

- Lot and Plan
- Endangered - Dominant vegetation
- Endangered - Sub-dominant
- Of Concern - Dominant
- Of Concern - Sub-dominant
- No concern at present
- Water
- Cadastral Boundaries



This product is projected into GDA 1994 MGA Zone 56

Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres. Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The polygons are labelled by regional ecosystem (RE); where more than one RE occurs, the percentage of each is labelled. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework". Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.



## 10. Appendix 2





# Queensland Government

## Wildlife Online Extract

Search Criteria: Species List for a Specified Point

Species: Animals

Type: Native

Status: All

Records: All

Date: All

Latitude: -27.7980

Longitude: 152.9475

Distance: 2

Email: samuel.gilbey4@gmail.com

Date submitted: Monday 13 Jan 2020 08:39:36

Date extracted: Monday 13 Jan 2020 08:40:02

The number of records retrieved = 51

### **Disclaimer**

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

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

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

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Hylidae	<i>Litoria caerulea</i>	common green treefrog		C		1
animals	birds	Acanthizidae	<i>Acanthiza reguloides</i>	buff-rumped thornbill		C		2
animals	birds	Acanthizidae	<i>Gerygone olivacea</i>	white-throated gerygone		C		2
animals	birds	Accipitridae	<i>Aviceda subcristata</i>	Pacific baza		C		1
animals	birds	Artamidae	<i>Cracticus nigrogularis</i>	piebald butcherbird		C		1
animals	birds	Artamidae	<i>Cracticus torquatus</i>	grey butcherbird		C		2
animals	birds	Artamidae	<i>Gymnorhina tibicen</i>	Australian magpie		C		3
animals	birds	Cacatuidae	<i>Cacatua galerita</i>	sulphur-crested cockatoo		C		1
animals	birds	Cacatuidae	<i>Eolophus roseicapilla</i>	galah		C		1
animals	birds	Campephagidae	<i>Coracina novaehollandiae</i>	black-faced cuckoo-shrike		C		1
animals	birds	Columbidae	<i>Ocyphaps lophotes</i>	crested pigeon		C		1
animals	birds	Columbidae	<i>Macropygia amboinensis</i>	brown cuckoo-dove		C		1
animals	birds	Cuculidae	<i>Scythrops novaehollandiae</i>	channel-billed cuckoo		C		1
animals	birds	Estrildidae	<i>Taeniopygia bichenovii</i>	double-barred finch		C		1
animals	birds	Halcyonidae	<i>Todiramphus sanctus</i>	sacred kingfisher		C		1
animals	birds	Maluridae	<i>Malurus melanocephalus</i>	red-backed fairy-wren		C		1
animals	birds	Meliphagidae	<i>Entomyzon cyanotis</i>	blue-faced honeyeater		C		3
animals	birds	Meliphagidae	<i>Manorina melanocephala</i>	noisy miner		C		3
animals	birds	Meliphagidae	<i>Lichmera indistincta</i>	brown honeyeater		C		1
animals	birds	Meliphagidae	<i>Caligavis chrysops</i>	yellow-faced honeyeater		C		2
animals	birds	Meliphagidae	<i>Ptilotula fusca</i>	fuscous honeyeater		C		2
animals	birds	Monarchidae	<i>Grallina cyanoleuca</i>	magpie-lark		C		1
animals	birds	Neosittidae	<i>Daphoenositta chrysoptera</i>	varied sittella		C		2
animals	birds	Pachycephalidae	<i>Pachycephala rufiventris</i>	rufous whistler		C		2
animals	birds	Pachycephalidae	<i>Pachycephala pectoralis</i>	golden whistler		C		2
animals	birds	Pardalotidae	<i>Pardalotus striatus</i>	striated pardalote		C		2
animals	birds	Podargidae	<i>Podargus strigoides</i>	tawny frogmouth		C		1
animals	birds	Psittacidae	<i>Platycercus adscitus</i>	pale-headed rosella		C		1
animals	birds	Psittacidae	<i>Alisterus scapularis</i>	Australian king-parrot		C		1
animals	birds	Psittacidae	<i>Trichoglossus chlorolepidotus</i>	scaly-breasted lorikeet		C		2
animals	birds	Psittacidae	<i>Trichoglossus haematodus moluccanus</i>	rainbow lorikeet		C		2
animals	birds	Rallidae	<i>Gallirallus philippensis</i>	buff-banded rail		C		1
animals	birds	Rhipiduridae	<i>Rhipidura albiscapa</i>	grey fantail		C		2
animals	birds	Rhipiduridae	<i>Rhipidura leucophrys</i>	willie wagtail		C		2
animals	birds	Strigidae	<i>Ninox boobook</i>	southern boobook		C		1
animals	birds	Threskiornithidae	<i>Platalea flavipes</i>	yellow-billed spoonbill		C		1
animals	mammals	Dasyuridae	<i>Antechinus flavipes flavipes</i>	yellow-footed antechinus (south-east Queensland)		C		6
animals	mammals	Macropodidae	<i>Macropus giganteus</i>	eastern grey kangaroo		C		3
animals	mammals	Macropodidae	<i>Macropus rufogriseus</i>	red-necked wallaby		C		3
animals	mammals	Muridae	<i>Rattus tunneyi</i>	pale field-rat		C		1
animals	mammals	Peramelidae	<i>Isoodon macrourus</i>	northern brown bandicoot		C		1
animals	mammals	Petauridae	<i>Petaurus norfolcensis</i>	squirrel glider		C		1
animals	mammals	Petauridae	<i>Petaurus breviceps</i>	sugar glider		C		2
animals	mammals	Phalangeridae	<i>Trichosurus vulpecula</i>	common brushtail possum		C		2
animals	mammals	Phascolarctidae	<i>Phascolarctos cinereus</i>	koala		V	V	4

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	mammals	Pseudocheiridae	<i>Pseudocheirus peregrinus</i>	common ringtail possum		C		1
animals	mammals	Pteropodidae	<i>Pteropus scapulatus</i>	little red flying-fox		C		1
animals	mammals	Pteropodidae	<i>Pteropus alecto</i>	black flying-fox		C		1
animals	mammals	Pteropodidae	<i>Pteropus poliocephalus</i>	grey-headed flying-fox		C	V	2
animals	reptiles	Agamidae	<i>Intellagama lesueurii</i>	eastern water dragon		C		1
animals	reptiles	Agamidae	<i>Pogona barbata</i>	bearded dragon		C		1

#### CODES

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

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

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

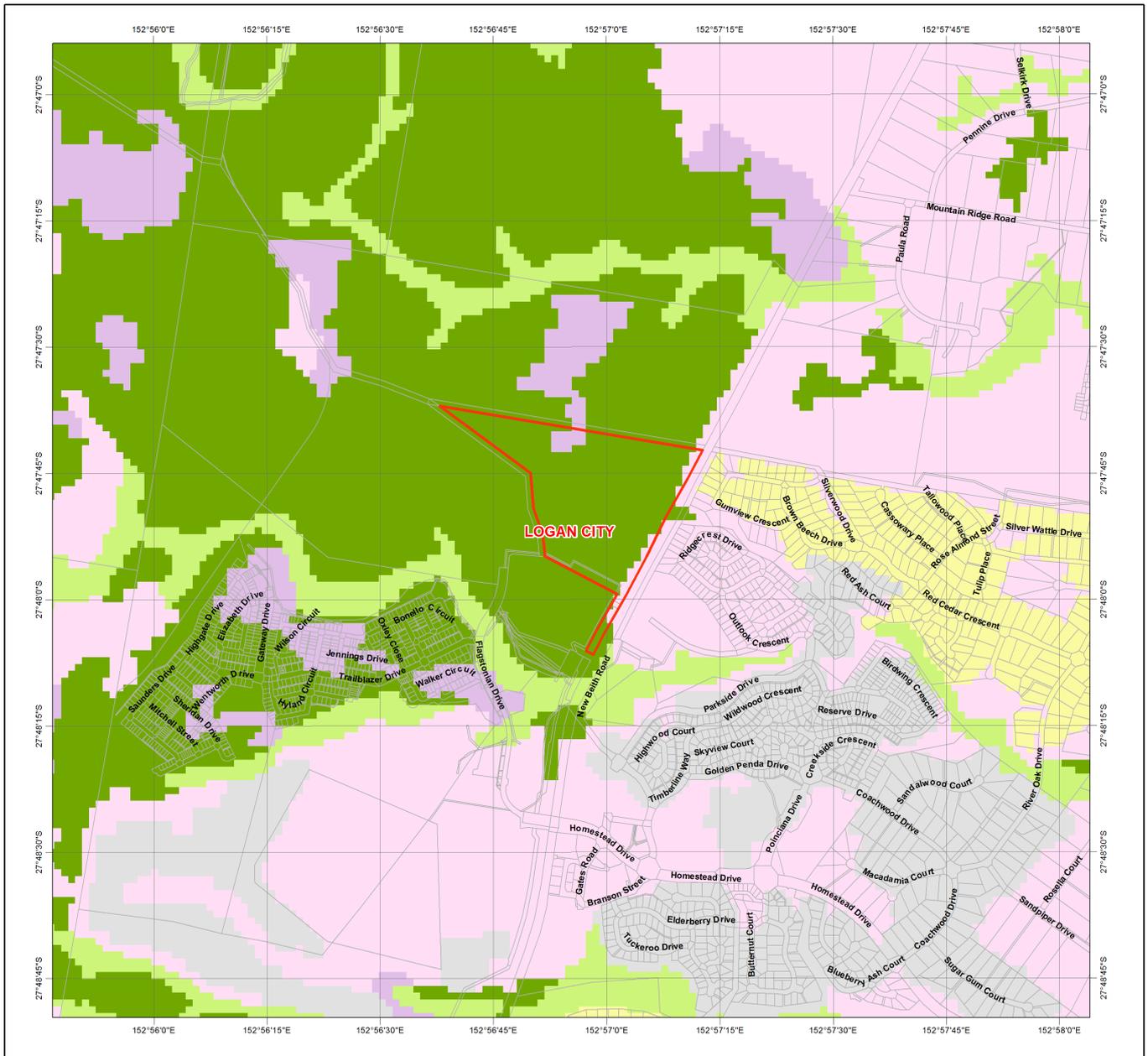
Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).

This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.

This number is output as 999 if it equals or exceeds this value.

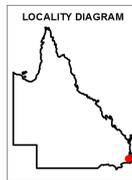
## 12. Appendix 3





## 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



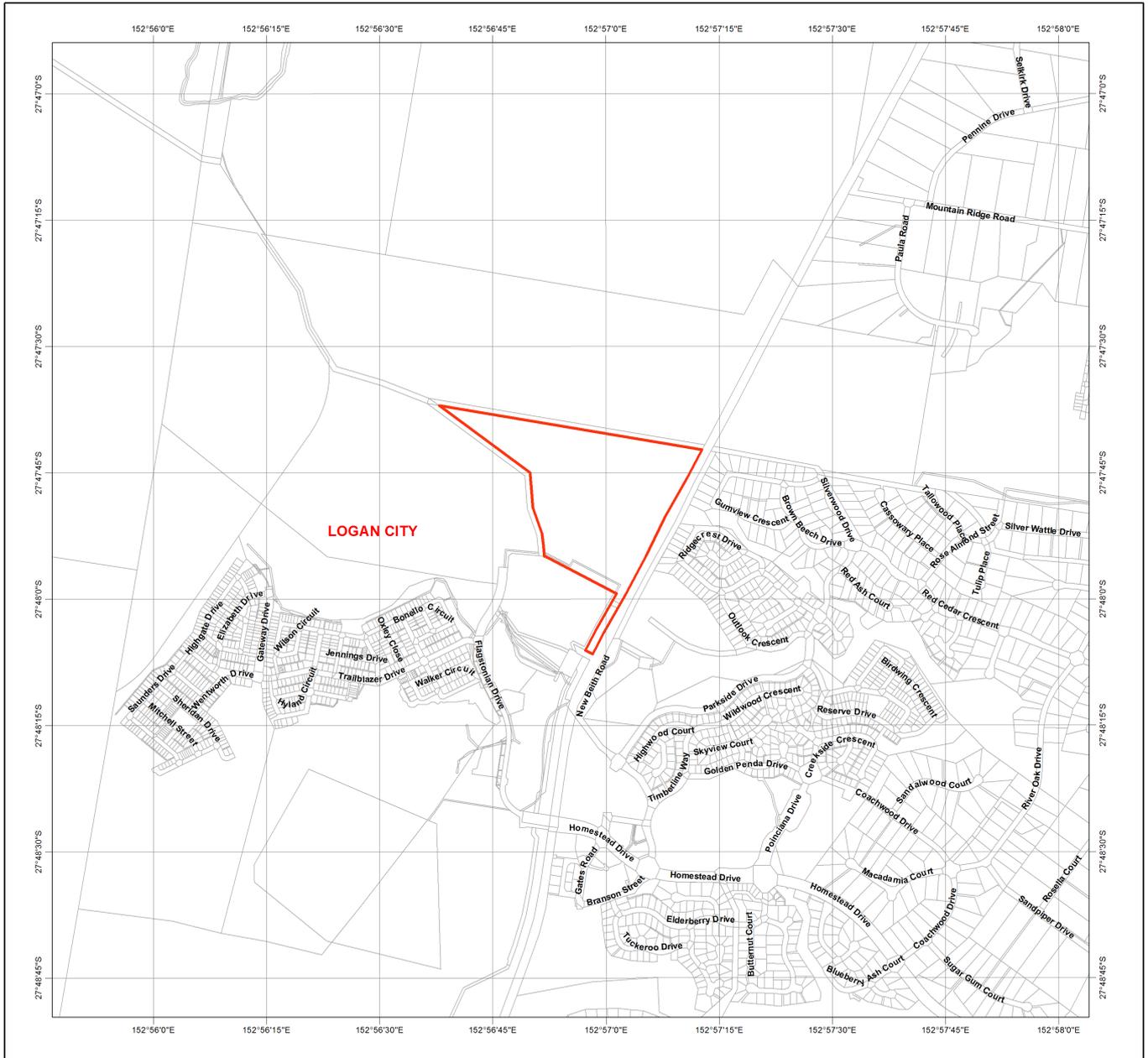
This product is projected into GDA 1994 MGA Zone 56

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

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

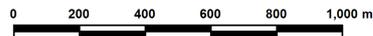
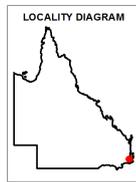
Based on or contains data provided by the State of Queensland 2010.

Note - These maps are not regulatory. Regulatory maps and requirements can be downloaded from the DES 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 Science.



### 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



This product is projected into GDA 1994 MGA Zone 56

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

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

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

Note - These maps are not regulatory. Regulatory maps and requirements can be downloaded from the DES 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 Science.

© The State of Queensland, 2020

LEADING THE WAY  
IN ENVIRONMENTAL  
MANAGEMENT



**POST CLEARING FAUNA  
MANAGEMENT REPORT**

FLAGSTONE STAGE 2-5

**February 2020**

## Contents

<b>Document Control Page .....</b>	<b>3</b>
<b>1. Introduction .....</b>	<b>4</b>
1.1 Background.....	4
1.2 Site Location and Description .....	4
1.3 Legislation and Permits.....	6
<b>2. Methodology .....</b>	<b>8</b>
2.1 Vegetation/Habitat Clearing.....	8
2.2 General Provisions .....	8
<b>3. Results.....</b>	<b>10</b>
3.1 Fauna Interactions.....	10
<b>4. Summary .....</b>	<b>13</b>
<b>5. References.....</b>	<b>14</b>



## Document Control Page

### Version Control

Version	Purpose	Author	Reviewed / approved by	Date
Rev 0.1	Draft	Samuel Gilbey	Jacinta Wehbe	22/01/2019
Rev 1.0	Final	Samuel Gilbey	Jacinta Wehbe	04/02/2019

### Distribution Control

Copy	Purpose	Method	Issued to:	Name	Date
1.	File Copy	Electronic	Biodiversity Australia	Chantal Sargeant	03/02/2020
2.	Client Copy	Electronic	SEE Civil	Ryan Lange	04/02/2020

Project Number: FQ3868

Our Document Reference: FQ3868-BFQ-REP-SEECivil-FlagstoneStg2-5-FullPostClearReport-rev1.0

This document has been prepared to the requirements of the client identified on the cover page and no representation is made to any third party. It may be cited for the purposes of scientific research or other fair use, but it may not be reproduced or distributed to any third party by any physical or electronic means without the express permission of the client for whom it was prepared or Biodiversity Australia Pty Ltd.



# 1. Introduction

## 1.1 Background

Biodiversity Australia Pty Ltd was commissioned by SEE Civil ('the client') to produce a Post Clearing Fauna Management Report as part of the clearing works at Flagstone Drive, Flagstone ('the site').

Approximately 27 hectares was cleared to allow construction of a residential development.

## 1.2 Site Location and Description

The clearing site was situated over Lot 2 (SP303089), Lot 911 (SP303089), and Lot 50010 (SP3003089), Flagstone Drive, Flagstone, located in the developing urban Flagstone district. To the immediate south of the site is the upper reach of the Logan River where rehabilitated riparian vegetation is beginning to encroach on site. The interstate train line borders the eastern margin of the site. The Broader Jimboomba region is experiencing continual residential growth (





).

The majority of the surveyed site featured a consistent vegetation community, with pockets where other vegetation species are dominant. The vegetation within the clearing extent consisted of a mixed diversity of Eucalypt species. The site contained windrows of dense vegetation bordered by open fields with scattered regrowth Eucalypt and Acacia species.

The northern front of the site contained a high abundance of weed species including Weeds of National Significance (WoNS) such as Lantana (*Lantana camara*).

Groundcover consisted of a variety of native and introduced grasses. Weed abundance was generally low, with higher densities present at site edges where disturbance is greater. Leaf litter, woody debris and rocky outcrops were present within the denser woodland areas.

### 1.3 Legislation and Permits

Relevant legislation applicable to land clearing and vegetation removal is governed by Local, State and Federal authorities. This includes:

- *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- *Nature Conservation Act 1992* (NC Act) and associated regulations;
- *Environmental Protection Act 1994*;
- *Animal Care and Protection Act 2011*; and
- Nature Conservation (Koala) Conservation Plan 2006 and Koala Management Plan 2006-2016 (Koala Plan).

Biodiversity Australia also holds a current Department of Environment and Science (DES) Rehabilitation Permit (Permit No. WA0014880), allowing for the handling and relocation of native fauna and a Scientific users registration enabling the use of animals for scientific purpose.



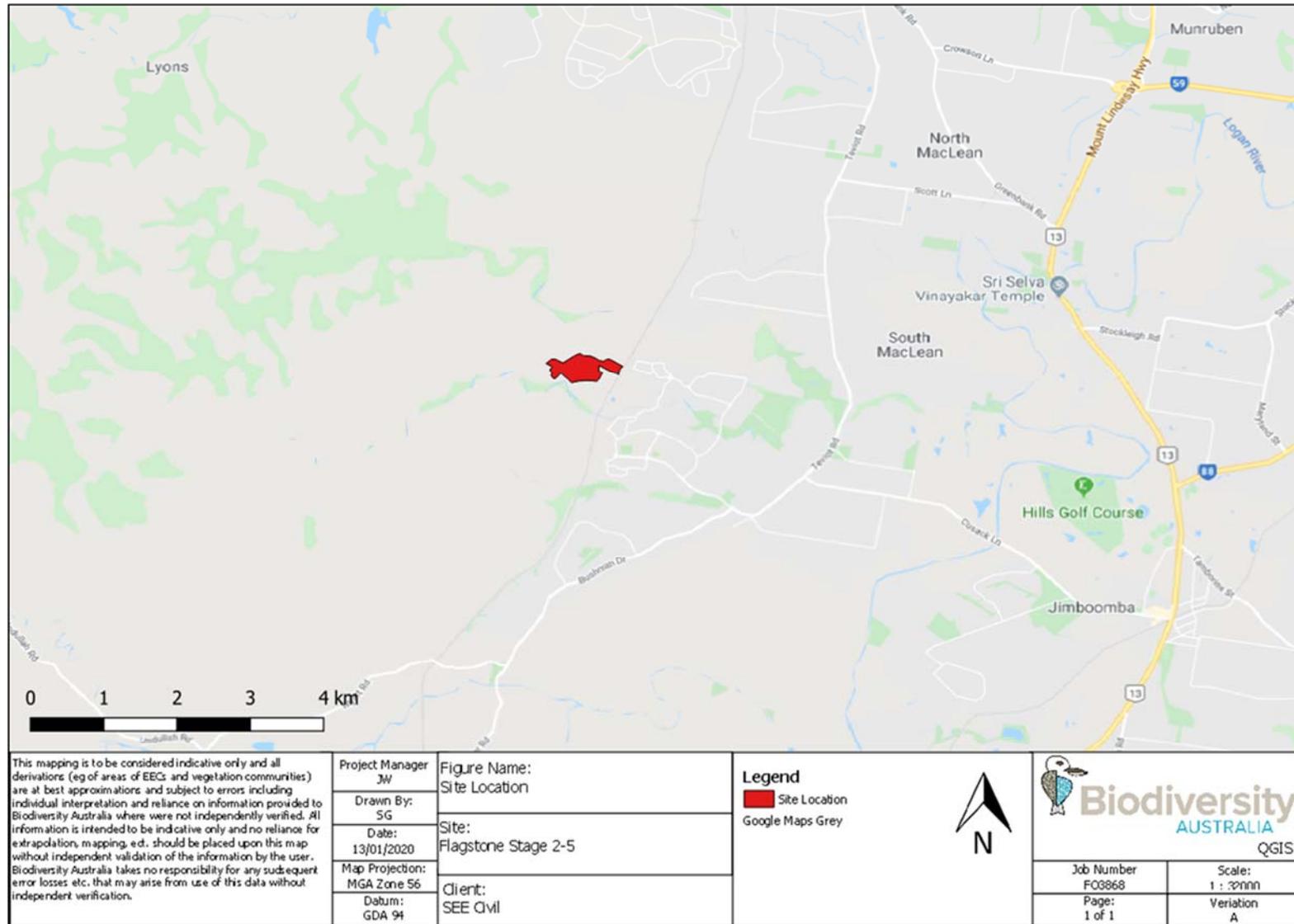


Figure 1: Site Location



## 2. Methodology

### 2.1 Vegetation/Habitat Clearing

Earthworks were undertaken over a period of 12 days, between Tuesday 14<sup>th</sup> January 2020 and Thursday 30<sup>th</sup> January 2020. Two on-site fauna spotters were present to monitor and manage all fauna interactions during tree felling and one fauna spotter was present to monitor shearing and mulching over the 12 day clearing event. An excavator was primarily used for clearing works, which allowed for the thorough examination of all habitat features once they were felled and/or moved. Vegetation clearing was undertaken in accordance with Biodiversity Australia's internal Fauna Management Procedures.

### 2.2 General Provisions

- All potential habitat features were flagged where possible prior to felling to enable positive identification to machinery operators.
- It was deduced that the most effective method to manage clearing of habitat trees was to clear them one at a time with a Fauna Spotter present conducting pre and post checks of each tree that was felled.
- Any branches and debris on the ground were checked pre and post clearing by the Fauna Spotter.
- All decorticating bark was checked/removed by spotter before felling if possible, or inspected after felling.
- When fauna was detected, works were immediately halted in that section of the site to allow the fauna spotter safe ingress to capture the fauna

#### 2.2.1 Directional Clearing

Capturing all fauna present in the clearing area was the fauna spotters' priority for the works. Where applicable to minimise fauna interactions (especially cryptic fauna) and incidents such as fauna mortality the Fauna Spotter implemented directional clearing, allowing fauna to move easily into surrounding bushland.

#### 2.2.2 Hollow-bearing Trees

With the assistance of the operator, the fauna spotter ensured enough disturbance prior to felling to encourage mature nesting birds and ringtail possums to disperse away from the tree. Where possible, trees supporting arboreal hollows were felled in a manner where the least amount of disturbance was sustained as possible.

Once felled, each tree was thoroughly inspected by the Fauna Spotter for the presence of any fauna.

Nocturnal fauna was captured and held in clean calico catch bags in a cool quiet location away from clearing works until after dark when they were released by the Fauna Spotter into a nearby area which supported suitable habitat.



### 2.2.3 Notable Dense Vegetation

Where possible, dense vegetation was removed in a manner where the least amount of disturbance was sustained by the foliage and once grounded was thoroughly checked by the Fauna Spotter.

### 2.2.4 Bird Nests

Nests were inspected prior to vegetation disturbance wherever possible. The Fauna Spotter directed the clearing operator to fell relevant trees in such a manner to cause minimal disturbance to the nests. Once each tree was felled, as soon as it was safe to do so, the Fauna Spotter inspected the nest.

### 2.2.5 Termitaria

Trees supporting active mounds were felled in a manner where the termite mounds would not directly impact the ground or another object and sustain damage.

Once felled the Fauna Spotter carefully broke open the mound to inspect the nesting/shelter chamber for any fauna.

Any terrestrial mounds were excavated by hand where possible or broken open gently by machinery and investigated by the fauna spotter before proceeding.

### 2.2.6 Ground Cover

Thick ground cover, leaf litter, naturally felled trees, anthropogenic and construction debris stockpiles were inspected by a fauna spotter immediately prior to their removal or modification, so as to avoid fauna being injured as a result of stockpile movement.

### 2.2.7 Decorticating Bark

Loose bark was removed by the Fauna Spotter to a practical height before tree felling, and the remainder removed once the tree has been felled.

### 2.2.8 Koalas

All cautionary measures were undertaken before clearing took place.

### 2.2.9 Man Made Structures

When these structures were disturbed or removed during the clearing works, the Fauna Spotter was present to monitor potential hidden fauna.

### 2.2.10 Other Fauna Indicators

The Fauna Spotter monitored the site closely whilst clearing was undertaken, ensuring no larger fauna were present and dispersing any towards suitable habitat prior to commencement of works.



### 3. Results

#### 3.1 Fauna Interactions

Due to the presence of these features within the site extent, the management of Koalas and other arboreal fauna were of primary concern to the fauna spotter during clearing works.

Due to the active vigilance of the on-site fauna spotter, a total of 23 fauna interactions were successfully managed over the 12 day clearing period (Error! Reference source not found.).

**Table 1** identifies the species, number and details of all fauna caught on site.

**Table 1: Fauna interactions recorded during the clearing event.**

Common Name	Total Number	Capture & Release	Self-dispersed	Fatal Field Injury	Euthanised in Field	Taken to Vet /Carer	*NC Act Status
<b>Mammals</b>							
<b>Brushtail Phascogale</b> <i>Phascogale tapoatafa</i>	1			1			C
<b>Bush Rat</b> <i>Rattus fuscipes</i>	1	1					C
<b>Squirrel Glider</b> <i>Petaurus norfolcensis</i>	4	2	2				C
<b>Microbat Sp.</b>	1		1				-
<b>Ringtail Possum</b> <i>Pseudocheirus peregrinus</i>	2		2				C
<b>Brushtail Possum</b> <i>Trichosurus vulpecula</i>	11	8	2	1			C
<b>Reptiles</b>							
<b>Eastern Bearded Dragon</b> <i>Pogiona barbata</i>	1	1					C
<b>Australian Water Dragon</b> <i>Intellagama lesueurii</i>	1			1			C
<b>Lace Monitor</b> <i>Varanus varius</i>	1		1				C
<b>Total</b>	<b>23</b>	<b>12</b>	<b>8</b>	<b>3</b>			
*Nature Conservation Act 1992 Value Codes: Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Vulnerable (V), Near Threatened (NT), Special Least Concern (SL), Least Concern (C), or Introduced but Naturalised (Y).							



All juvenile animals were captured in good health and transferred to a wildlife carer to be raised. Those with mortal injuries were humanely euthanised in the field as per the Biodiversity Australia Euthanasia Policy, developed in accordance with relevant legislative requirements.



Photo Plate 1: Photo Plate 1: Squirrel Glider, captured and released into adjacent habitat



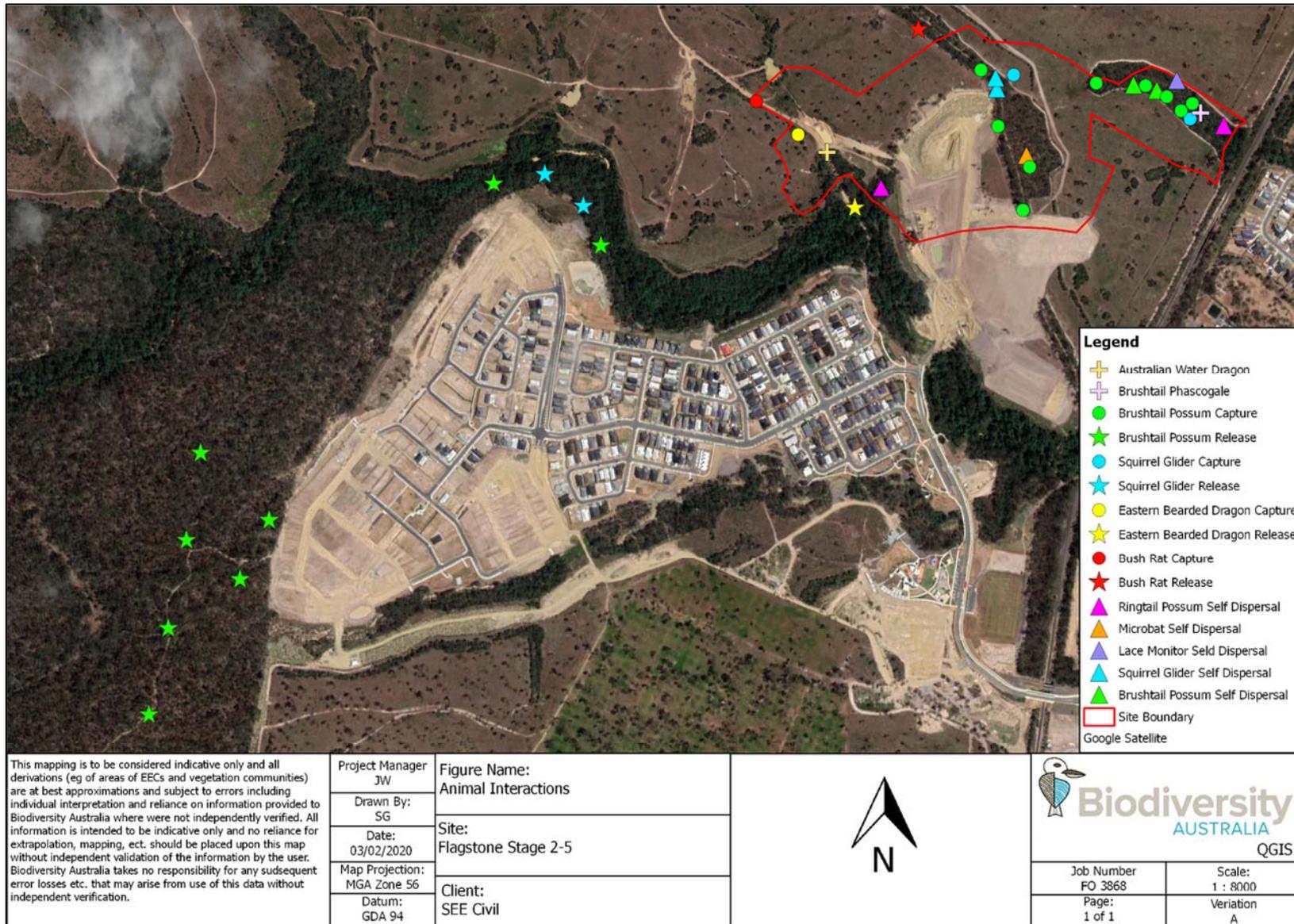


Figure 2: Animal Interactions recorded during vegetation removal



## 4. Summary

Vegetation clearing at Flagstone Stage 2-5, was undertaken over a period of day 12 days, between Tuesday 14<sup>th</sup> January 2020 and Thursday 30<sup>th</sup> January 2020. During clearing works, two on-site fauna spotters were required to monitor and manage all fauna interactions. Due to the constant fauna management across the site:

- 12 interactions resulted in successful capture and subsequent release;
- 8 interactions resulted in successful self-dispersal into adjoining habitat; and
- 3 interactions resulted in injury and subsequent field euthanasia/death.

All released individuals were in optimal health and were released outside of the clearing area into suitable habitat located to the south-west of the site.



## 5. References

- Department of Environment and Resource Management (2010). South East Queensland Koala Conservation State Planning Regulatory Provisions. Sustainable Communities and Landscapes, The Department of Environment and Resource Management.
- Department of the Environment (2014). EPBC Act Protected Matters Report, Department of the Environment.
- Department of the Environment (2014). EPBC Act referral guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory). Department of the Environment.
- Department of the Environment (2015). EPBC Act Referral Guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory). Commonwealth of Australia
- Department of Environment and Heritage Protection (2014). State Government Supported Community Infrastructure Koala Conservation Policy (2014). Koala Conservation Unit, Brisbane.
- Department of Environment and Heritage Protection (2014a). Copy of the certified Regional Ecosystem and Remnant Map – Version 6 for the purpose of the Vegetation Management Act 1999. Online RE Maps, The Department of Environment and Heritage Protection, Brisbane.
- Department of Environment and Heritage Protection (2014b). Copy of the Wildlife Online Generate a Species List for a Specified Point. Wildlife Online Extract. The Department of Science, Information Technology, Innovation and the Arts, Brisbane.
- Environmental Protection Agency (2001). Key to Eucalypts of Greater Brisbane. Queensland Herbarium, Brisbane.
- Environmental Protection Agency (2006). Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006-2016. Queensland Government, Brisbane.
- Quantum GIS Development Team (2016). Quantum GIS Geographic Information System. Open Source Geospatial Foundation Project. <http://qgis.osgeo.org>
- Queensland Government (2010). State Planning Policy (2/10) Koala Conservation in South East Queensland. SEQ Koala Protection Area Koala Habitat Values Map 7. Queensland Government, Brisbane.



# Appendix B

EPBC approval and conditions granted  
30 October 2014



**Approval**

**Flagstone West Urban Development Project, QLD (EPBC 2014/7206)**

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

**Proposed action**

**person to whom the approval is granted** Peet Flagstone City Pty Ltd

**proponent's ACN** ACN: 151187594

**proposed action** To construct a mixed use development (including residential, commercial and community developments and associated infrastructure) on a 1,245.26 ha site at Flagstone, Queensland [See EPBC Act referral 2014/7206]

**Approval decision**

Controlling Provision	Decision
Listed threatened species and communities (sections 18 & 18A)	Approved

**conditions of approval**

This approval is subject to the conditions specified below.

**expiry date of approval**

This approval has effect until 31 December 2035

**Decision-maker**

**name and position** Deb Callister  
Queensland and Sea Dumping Assessment Branch

**signature**

**date of decision** 30 October 2014

## Conditions attached to the approval

<b>Conditions</b>
<b>Offsets</b> <ol style="list-style-type: none"><li>1. For the purpose of protecting <b>koala habitat</b> the approval holder must provide the minimum offset payment listed in Appendix 1 of these conditions, for each of the <b>Context Plan areas</b>. Payment must be provided to the <b>Queensland State Government</b> for the entire <b>Context Plan</b> offset payment within 12 months of receiving <b>Context Plan area</b> approval or in accordance with the following sunset dates to each <b>Context Plan area</b> (Appendix 1), whichever is sooner:<ul style="list-style-type: none"><li>• <b>Context Plan Area 1</b> – by 31 October 2015</li><li>• <b>Context Plan Area 3</b> – by 31 October 2029</li><li>• <b>Context Plan Area 4</b> – by 31 October 2020</li><li>• <b>Context Plan Area 5</b> – by 31 October 2024</li></ul></li><li>2. Notwithstanding the above, within 15 years of the Commonwealth approval of the action all outstanding financial contributions must be paid to <b>the Queensland State Government</b>.</li><li>3. Within 30 days of payment being made, the <b>approval holder</b> must provide written evidence to the <b>Minister</b> that the offset contribution for each <b>Context Plan area</b> has been paid to the <b>Queensland State Government</b>. Actions must not <b>commence</b> within an approved <b>Context Plan area</b> until the offset contribution has been paid.</li><li>4. Within 6 months of each offset payment made to the <b>Queensland State Government</b>, the approval holder must provide the <b>Department</b> written evidence on the actions that have been taken with the offset payment.</li></ol>
<b>Clearing</b> <ol style="list-style-type: none"><li>5. <b>Clearing</b> of up to a maximum of 148 ha must be within the <b>project area</b> shown in Appendix 1.</li></ol>
<b>Standard Conditions</b> <ol style="list-style-type: none"><li>6. Within ten days after the <b>commencement of the action</b>, the <b>approval holder</b> must advise the <b>Department</b> in writing of the actual date of commencement.</li><li>7. The <b>approval holder</b> must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the plans required by this approval, and make them available upon request to the <b>Department</b>. Such records may be subject to audit by the <b>Department</b> or an independent auditor in accordance with section 458 of the <b>EPBC Act</b>, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the <b>Department's</b> website. The results of audits may also be publicised through the general media.</li><li>8. Any potential or suspected non-compliance with these conditions of approval must be reported to the <b>Department</b> in writing within 48 hours of the <b>approval holder</b> becoming aware of the potential or suspected non-compliance. Within three months of every 12 month anniversary of the <b>commencement of the action</b>, the <b>approval holder</b> must publish a report on their website addressing compliance with each of the conditions of this approval. Documentary evidence providing proof of the date of publication must be provided to the <b>Department</b> at the same time as the compliance report is published. The compliance report must remain on the website for the life of the approval.</li><li>9. Upon the direction of the <b>Minister</b>, the <b>approval holder</b> must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to</li></ol>

<p>the <b>Minister</b>. The independent auditor must be approved by the <b>Minister</b> prior to the commencement of the audit. Audit criteria must be agreed to by the <b>Minister</b> and the audit report must address the criteria to the satisfaction of the <b>Minister</b>.</p>
<p><b>10.</b> If the <b>approval holder</b> wishes to carry out any activity otherwise than in accordance with a plan, the <b>approval holder</b> must submit to the <b>Department</b> for the <b>Minister's</b> written approval a revised version of that plan. The varied activity shall not commence until the <b>Minister</b> has approved the varied plan in writing. If the <b>Minister</b> approves the revised plan, that plan must be implemented in place of the plan originally approved.</p>
<p><b>11.</b> If the <b>Minister</b> believes that it is necessary or convenient for the better protection of the <b>listed koala</b> to do so, the <b>Minister</b> may request that the <b>approval holder</b> make specified revisions and submit the revised plan for the <b>Minister's</b> written approval. The <b>approval holder</b> must comply with any such request. The revised approved plan must be implemented. Unless the <b>Minister</b> has approved the revised plan, then the <b>approval holder</b> must continue to implement the plan originally approved, as specified in the conditions.</p>
<p><b>12.</b> If, at any time after five years from the date of this approval, the <b>approval holder</b> has not <b>commenced the action</b>, then the <b>approval holder</b> must not <b>commence the action</b> without the written agreement of the <b>Minister</b>.</p>

## Definitions

**Approval holder:** means the person to whom the approval is granted.

**Clearing:** means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of native vegetation.

**Commencement of the action:** means any works involved in the construction phase of the project, including **clearing** vegetation, the erection of any onsite temporary structures and the use of heavy duty equipment for the purpose of breaking the ground for buildings or infrastructure. This excludes the erection of signage, fences, barriers or bunting for the purposes of excluding areas containing listed threatened species.

**Context Plan area:** means the area defined by the proponent for development (refer to Appendix 1 for map)

**Department:** the Australian Government Department responsible for the *Environment Protection and Biodiversity Conservation Act 1999*.

**EPBC Act:** means the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

**EPBC Act Offsets Policy:** means the *Environment Protection and Biodiversity Conservation Act 1999 environmental offsets policy* (October 2012) or any subsequent revisions.

**Koala food trees:** means species of tree whose leaves are consumed by koalas. See lists of known koala food trees prepared by state and local government and non-government organisations. Note that food trees may vary spatially and temporally and information specific to the local area is likely to be most accurate.

**Koala habitat:** means areas of vegetation containing **Koala food trees**.

**Listed Koala:** Koala (*Phascolarctos cinereus* - combined populations of Queensland, New South Wales and the Australian Capital Territory) listed as vulnerable under the **EPBC Act**.

**Minister:** is the Minister administering the *Environment Protection and Biodiversity Conservation Act 1999* and includes a delegate of the **Minister**.

**Project area:** area defined as Flagstone West Boundary on map at Appendix 1.

**Queensland State Government:** means the relevant Queensland State Government Department responsible for administering the offset.

# Appendix 1 Map of Context Plan areas 1, 3, 4 & 5 and related offset payments

