



Pre-clearance habitat report - 60 Stapylton
Jacobs Well Road and 31 Yellowwood Road
Stapylton
January 2019

Gassman Development Perspectives



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1 Introduction

Gassman Development Perspectives (Gassman), on behalf of KS8 Pty Ltd (the developer), engaged Ecosure to provide fauna spotter catcher (FSC) services for proposed stage 1 clearing works at 60 Stapylton Jacobs Well Road and 31 Yellowwood Road Stapylton (project area). The Yellowwood Road property is separate to and lies to the north of stage 1 clearing works at 60 Stapylton Jacobs Well Road. We understand that Gassman required:

- a pre-clear fauna habitat assessment, identifying all habitat features, to be completed prior to the pre-start meeting
- all habitat features to be clearly identified prior to the commencement of works
- a pre-clear report to be submitted prior to the pre-start meeting
- a ground and arboreal fauna trapping program (i.e. Elliot and cage trapping) to be undertaken within the two weeks immediately prior to clearing works commencing, to capture and relocate fauna
- an Australian Qualifications Framework (AQF) Level 5 Arborist to inspect the tree protection zone (TPZ) of trees to be retained, provide a brief report at the pre-start meeting and be present during works occurring close to the TPZ
- Department of Environment and Science (DES) approved FSCs on all clearing fronts.
- the presence of the FSC and consulting Ecologist during the pre-start meeting.

This report includes the results of the pre-clear habitat survey for the proposed stage 1 clearance area at 60 Stapylton Jacobs Well Road Stapylton (Figure 1) and 31 Yellowwood Road Stapylton (Figure 2).



Figure 1: Stage 1 - 60 Stapylton Jacobs Well Road

Gassman Development Perspectives

Stapylton FSC services - Stage 1

Habitat features

- Arboreal termite mound (with hollow), Hollow
- Arboreal termite mound (with hollow)

- Arboreal termite mound/s
- Arboreal termite mound/s, Hollow
- Arboreal termite mound/s, Multiple hollows
- Ground termite mound/s
- Multiple hollows
- Hollow
- Nest
- Log
- Stage 1 project area



Job number: PR4113
Revision: 0
Author: RJ
Date: 09/01/2019



0 50 100 150 m

GDA 1994 MGA Zone 56
Projection: Transverse Mercator
Datum: GDA 1994
Units: Meter



Figure 2: Stage 1 - 31 Yellowwood Road

Gassman Development Perspectives

Stapylton FSC services - Stage 1

 Stage 1 project area - Yellowwood Road

Habitat features

 Hollow



Job number: PR4113
Revision: 0
Author: RJ
Date: 09/01/2019



0 25 50 75 m

GDA 1994 MGA Zone 56
Projection: Transverse Mercator
Datum: GDA 1994
Units: Meter

2 Methods

2.1 Fauna habitat

The pre-clear fauna habitat assessment was conducted by Ecosure Ecologist, Bob Johnston on 7 and 8 January 2019 using a GPS mobile device and Fulcrum® application with customised forms to capture data. The forms capture relevant information such as GPS coordinates, description of habitat feature, occupancy, fauna utilising habitat feature, action undertaken and a photograph.

The pre-clear habitat assessment focused on locating breeding and sheltering habitat for fauna so the FSC could inspect them prior to clearing. Habitat features include, but are not limited to:

- hollow bearing trees, or trees which could potentially have small hollows
- arboreal termite mounds (with or without a hollow entrance)
- dead trees (stags) with hollows
- native bee hives
- nests or dreys
- hollow logs
- burrows

It is difficult to determine from ground level if every hollow recorded was large or deep enough to be suitable fauna habitat without climbing or using a pole camera to inspect each hollow. Therefore, a precautionary approach was used and any feature that was considered a potential hollow was recorded to better guide FSCs during clearing. Trees identified as having potential or actual habitat value were marked using red and white flagging tape.

3 Results

3.1 Habitat features

A total of 215 habitat features were recorded at 60 Stapylton Jacobs Well Road and two habitat features were recorded at 31 Yellowwood Road (Table 1). Note that some trees had more than one habitat feature (i.e. a hollow and an arboreal termite mound). Locations of habitat features are shown in Figures 1 & 2. Habitat features include:

- 86 hollow bearing trees with a single hollow
- 61 arboreal termite mounds (with no hollow entrance)
- 31 hollow bearing trees with more than one hollow
- 22 hollow logs (lying on the ground)
- 8 nests
- 7 arboreal termite mounds (with a hollow entrance)
- 2 ground termite mounds.

Table 1: Habitat features located within the project area during pre-clear survey.

Date	Latitude	Longitude	breeding place*	Tree species	Common name	Notes
07/01/19	-27.72819	153.23528	hollow	<i>Mangifera indica</i>	mango	recorded at Yellowwood Road
07/01/19	-27.72813	153.23510	hollow	<i>Ficus rubiginosa</i>	rusty fig	recorded at Yellowwood Road
07/01/19	-27.73426	153.23722	arboreal termite mound/s, multiple hollows	<i>Eucalyptus microcorys</i>	tallowood	
07/01/19	-27.73405	153.23376	multiple hollows	<i>Ficus watkinsiana</i>	strangler fig	
07/01/19	-27.73283	153.23589	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73353	153.23597	arboreal termite mound/s	stag	dead tree	
07/01/19	-27.73334	153.23651	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73393	153.23731	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73247	153.23451	arboreal termite mound/s	<i>Corymbia intermedia</i>	pink bloodwood	
07/01/19	-27.73358	153.23486	nest	<i>Corymbia intermedia</i>	pink bloodwood	
07/01/19	-27.73376	153.23458	hollow	stag	dead tree	
07/01/19	-27.73429	153.23707	log			
07/01/19	-27.73490	153.23649	multiple hollows	stag	dead tree	
07/01/19	-27.73510	153.23658	multiple hollows	<i>Eucalyptus tereticornis</i>	Queensland blue gum	
07/01/19	-27.73512	153.23674	hollow	stag	dead tree	
07/01/19	-27.73510	153.23707	hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73525	153.23715	hollow	stag	dead tree	

Date	Latitude	Longitude	breeding place*	Tree species	Common name	Notes
07/01/19	-27.73564	153.23712	hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73573	153.23707	arboreal termite mound/s	<i>Eucalyptus fibrosa</i>	broad-leaved ironbark	
07/01/19	-27.73570	153.23701	hollow	stag	dead tree	
07/01/19	-27.73576	153.23695	hollow	stag	dead tree	
07/01/19	-27.73576	153.23664	arboreal termite mound/s	stag	dead tree	
07/01/19	-27.73652	153.23650	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73645	153.23657	arboreal termite mound/s	<i>Eucalyptus microcorys</i>	tallowood	
07/01/19	-27.73646	153.23708	multiple hollows	stag	dead tree	
07/01/19	-27.73631	153.23688	arboreal termite mound/s	<i>Eucalyptus fibrosa</i>	broad-leaved ironbark	
07/01/19	-27.73621	153.23659	arboreal termite mound/s	<i>Eucalyptus microcorys</i>	tallowood	
07/01/19	-27.73616	153.23627	hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73638	153.23620	log			
07/01/19	-27.73634	153.23611	hollow	stag	dead tree	
07/01/19	-27.73531	153.23599	nest	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73513	153.23602	hollow	stag	dead tree	
07/01/19	-27.73535	153.23555	multiple hollows	stag	dead tree	
07/01/19	-27.73527	153.23558	multiple hollows	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73510	153.23571	multiple hollows	<i>Eucalyptus tereticornis</i>	Queensland blue gum	
07/01/19	-27.73475	153.23625	multiple hollows	stag	dead tree	

Date	Latitude	Longitude	breeding place*	Tree species	Common name	Notes
07/01/19	-27.73462	153.23655	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
07/01/19	-27.73477	153.23664	hollow	stag	dead tree	
07/01/19	-27.73473	153.23676	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
07/01/19	-27.73471	153.23708	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
07/01/19	-27.73462	153.23725	arboreal termite mound/s, hollow	stag	dead tree	
07/01/19	-27.73454	153.23714	hollow	stag	dead tree	
07/01/19	-27.73426	153.23710	arboreal termite mound/s, hollow	stag	dead tree	
07/01/19	-27.73415	153.23740	arboreal termite mound/s, hollow	<i>Eucalyptus fibrosa</i>	broad-leaved ironbark	
07/01/19	-27.73395	153.23741	hollow	stag	dead tree	
07/01/19	-27.73396	153.23743	arboreal termite mound/s, hollow	stag	dead tree	
07/01/19	-27.73352	153.23709	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
07/01/19	-27.73366	153.23719	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
07/01/19	-27.73372	153.23722	multiple hollows	stag	dead tree	
07/01/19	-27.73376	153.23746	hollow	stag	dead tree	
07/01/19	-27.73367	153.23733	multiple hollows	stag	dead tree	
07/01/19	-27.73358	153.23741	arboreal termite mound/s	<i>Eucalyptus fibrosa</i>	broad-leaved ironbark	
07/01/19	-27.73348	153.23727	multiple hollows	stag	dead tree	
07/01/19	-27.73338	153.23727	hollow	stag	dead tree	
07/01/19	-27.73332	153.23739	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	

Date	Latitude	Longitude	breeding place*	Tree species	Common name	Notes
07/01/19	-27.73331	153.23721	arboreal termite mound/s, hollow	stag	dead tree	
07/01/19	-27.73316	153.23731	hollow	stag	dead tree	
07/01/19	-27.73304	153.23718	hollow	stag	dead tree	
07/01/19	-27.73316	153.23698	log			
07/01/19	-27.73290	153.23689	hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73309	153.23692	multiple hollows	<i>Corymbia citriodora</i>	lemon-scented gum	
07/01/19	-27.73325	153.23710	hollow	stag	dead tree	
07/01/19	-27.73328	153.23710	arboreal termite mound/s, hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73328	153.23706	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73389	153.23679	arboreal termite mound/s	<i>Eucalyptus fibrosa</i>	broad-leaved ironbark	
07/01/19	-27.73348	153.23655	hollow	stag	dead tree	
07/01/19	-27.73356	153.23657	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
07/01/19	-27.73314	153.23662	hollow	stag	dead tree	
07/01/19	-27.73306	153.23652	arboreal termite mound/s, hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73318	153.23663	hollow	stag	dead tree	
07/01/19	-27.73328	153.23663	log			
07/01/19	-27.73324	153.23654	log			
07/01/19	-27.73333	153.23645	hollow	stag	dead tree	
07/01/19	-27.73359	153.23638	multiple hollows	<i>Eucalyptus tereticornis</i>	Queensland blue gum	

Date	Latitude	Longitude	breeding place*	Tree species	Common name	Notes
07/01/19	-27.73340	153.23633	multiple hollows	<i>Eucalyptus tereticornis</i>	Queensland blue gum	
07/01/19	-27.73319	153.23616	hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73323	153.23627	log			
07/01/19	-27.73303	153.23632	arboreal termite mound (with hollow)	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73286	153.23628	log			
07/01/19	-27.73285	153.23627	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73283	153.23601	multiple hollows	stag	dead tree	
07/01/19	-27.73273	153.23606	arboreal termite mound/s, hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73277	153.23587	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
07/01/19	-27.73312	153.23605	hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73321	153.23587	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73338	153.23588	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73335	153.23589	multiple hollows	stag	dead tree	
07/01/19	-27.73354	153.23595	multiple hollows	<i>Corymbia citriodora</i>	lemon-scented gum	
07/01/19	-27.73394	153.23585	arboreal termite mound/s, multiple hollows	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73363	153.23552	hollow	<i>Corymbia intermedia</i>	pink bloodwood	
07/01/19	-27.73333	153.23569	arboreal termite mound/s, multiple hollows	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73307	153.23571	hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73306	153.23564	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	

Date	Latitude	Longitude	breeding place*	Tree species	Common name	Notes
07/01/19	-27.73299	153.23566	multiple hollows	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73290	153.23570	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
07/01/19	-27.73281	153.23572	multiple hollows	<i>Eucalyptus siderophloia</i>	grey ironbark	
07/01/19	-27.73274	153.23565	hollow	stag	dead tree	
07/01/19	-27.73260	153.23548	log	stag	dead tree	
07/01/19	-27.73267	153.23456	log			
07/01/19	-27.73256	153.23429	multiple hollows	stag	dead tree	
07/01/19	-27.73266	153.23412	arboreal termite mound/s	<i>Corymbia intermedia</i>	pink bloodwood	
07/01/19	-27.73364	153.23411	log			
07/01/19	-27.73344	153.23410	log			
07/01/19	-27.73522	153.23367	multiple hollows	<i>Corymbia citriodora</i>	lemon-scented gum	
07/01/19	-27.73440	153.23323	arboreal termite mound/s	<i>Corymbia intermedia</i>	pink bloodwood	
07/01/19	-27.73349	153.23298	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
07/01/19	-27.73374	153.23336	multiple hollows	stag	dead tree	active tree martin nest in hollow
07/01/19	-27.73321	153.23349	hollow	<i>Eucalyptus tereticornis</i>	Queensland blue gum	
07/01/19	-27.73404	153.23377	log			
08/01/19	-27.73712	153.23672	nest	<i>Melaleuca nodosa</i>	prickly-leaved paperbark	
08/01/19	-27.73740	153.23603	nest	<i>Melaleuca nodosa</i>	prickly-leaved paperbark	
08/01/19	-27.73687	153.23625	nest	<i>Melaleuca nodosa</i>	prickly-leaved paperbark	

Date	Latitude	Longitude	breeding place*	Tree species	Common name	Notes
08/01/19	-27.73449	153.23895	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
08/01/19	-27.73482	153.23875	arboreal termite mound (with hollow)	stag	dead tree	
08/01/19	-27.73420	153.23883	hollow	stag	dead tree	
08/01/19	-27.73442	153.23883	hollow	stag	dead tree	
08/01/19	-27.73439	153.23841	hollow	stag	dead tree	
08/01/19	-27.73430	153.23847	hollow	stag	dead tree	
08/01/19	-27.73430	153.23848	arboreal termite mound/s	<i>Eucalyptus crebra</i>	narrow-leaved ironbark	
08/01/19	-27.73378	153.23876	hollow	stag	dead tree	
08/01/19	-27.73399	153.23870	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73383	153.23849	hollow	stag	dead tree	
08/01/19	-27.73360	153.23855	arboreal termite mound (with hollow)	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73347	153.23843	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73393	153.23843	arboreal termite mound/s	<i>Eucalyptus crebra</i>	narrow-leaved ironbark	
08/01/19	-27.73398	153.23821	arboreal termite mound/s	<i>Eucalyptus fibrosa</i>	broad-leaved ironbark	
08/01/19	-27.73349	153.23839	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73303	153.23852	ground termite mound/s			
08/01/19	-27.73337	153.23829	arboreal termite mound/s	<i>Eucalyptus fibrosa</i>	broad-leaved ironbark	
08/01/19	-27.73427	153.23792	hollow	stag	dead tree	
08/01/19	-27.73340	153.23813	hollow	stag	dead tree	

Date	Latitude	Longitude	breeding place*	Tree species	Common name	Notes
08/01/19	-27.73337	153.23812	log			
08/01/19	-27.73327	153.23808	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73304	153.23813	arboreal termite mound/s	<i>Eucalyptus crebra</i>	narrow-leaved ironbark	
08/01/19	-27.73322	153.23778	arboreal termite mound/s	<i>Eucalyptus fibrosa</i>	broad-leaved ironbark	
08/01/19	-27.73317	153.23772	log			
08/01/19	-27.73341	153.23782	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73357	153.23779	hollow	stag	dead tree	
08/01/19	-27.73423	153.23755	arboreal termite mound/s	<i>Eucalyptus crebra</i>	narrow-leaved ironbark	
08/01/19	-27.73656	153.23770	arboreal termite mound/s	<i>Eucalyptus crebra</i>	narrow-leaved ironbark	
08/01/19	-27.73681	153.23745	ground termite mound/s			
08/01/19	-27.73712	153.23674	arboreal termite mound (with hollow)	<i>Eucalyptus fibrosa</i>	broad-leaved ironbark	
08/01/19	-27.73712	153.23663	hollow	stag	dead tree	
08/01/19	-27.73715	153.23661	arboreal termite mound/s	<i>Eucalyptus crebra</i>	narrow-leaved ironbark	
08/01/19	-27.73738	153.23588	multiple hollows	stag	dead tree	
08/01/19	-27.73735	153.23563	log			
08/01/19	-27.73732	153.23548	arboreal termite mound/s	<i>Corymbia intermedia</i>	pink bloodwood	
08/01/19	-27.73723	153.23557	multiple hollows	stag	dead tree	
08/01/19	-27.73720	153.23563	log			
08/01/19	-27.73713	153.23563	hollow	stag	dead tree	

Date	Latitude	Longitude	breeding place*	Tree species	Common name	Notes
08/01/19	-27.73717	153.23622	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73725	153.23622	hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73717	153.23636	hollow	stag	dead tree	
08/01/19	-27.73695	153.23637	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73655	153.23700	log			
08/01/19	-27.73674	153.23638	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73684	153.23616	arboreal termite mound/s, hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73673	153.23608	arboreal termite mound/s	<i>Eucalyptus fibrosa</i>	broad-leaved ironbark	
08/01/19	-27.73703	153.23515	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
08/01/19	-27.73716	153.23497	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
08/01/19	-27.73705	153.23503	log			
08/01/19	-27.73698	153.23495	arboreal termite mound (with hollow), hollow	stag	dead tree	
08/01/19	-27.73661	153.23556	arboreal termite mound/s	<i>Corymbia intermedia</i>	pink bloodwood	
08/01/19	-27.73683	153.23493	arboreal termite mound/s	<i>Eucalyptus fibrosa</i>	broad-leaved ironbark	
08/01/19	-27.73692	153.23486	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
08/01/19	-27.73690	153.23476	hollow	stag	dead tree	
08/01/19	-27.73691	153.23475	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
08/01/19	-27.73689	153.23476	nest	<i>Corymbia citriodora</i>	lemon-scented gum	
08/01/19	-27.73685	153.23468	hollow	<i>Eucalyptus propinqua</i>	grey gum	

Date	Latitude	Longitude	breeding place*	Tree species	Common name	Notes
08/01/19	-27.73668	153.23489	log			
08/01/19	-27.73665	153.23491	hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73659	153.23496	log			
08/01/19	-27.73653	153.23506	arboreal termite mound/s, hollow	stag	dead tree	
08/01/19	-27.73651	153.23511	log			
08/01/19	-27.73635	153.23534	arboreal termite mound/s	<i>Eucalyptus fibrosa</i>	broad-leaved ironbark	
08/01/19	-27.73628	153.23534	hollow	stag	dead tree	
08/01/19	-27.73623	153.23532	hollow	stag	dead tree	
08/01/19	-27.73618	153.23535	hollow	stag	dead tree	
08/01/19	-27.73626	153.23506	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
08/01/19	-27.73636	153.23494	multiple hollows	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73673	153.23467	nest	<i>Corymbia citriodora</i>	lemon-scented gum	
08/01/19	-27.73650	153.23466	multiple hollows	<i>Corymbia intermedia</i>	pink bloodwood	
08/01/19	-27.73641	153.23476	arboreal termite mound (with hollow)	<i>Eucalyptus crebra</i>	narrow-leaved ironbark	
08/01/19	-27.73635	153.23459	hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73626	153.23467	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73613	153.23474	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
08/01/19	-27.73619	153.23481	nest	<i>Corymbia citriodora</i>	lemon-scented gum	
08/01/19	-27.73611	153.23499	log			

Date	Latitude	Longitude	breeding place*	Tree species	Common name	Notes
08/01/19	-27.73614	153.23506	arboreal termite mound/s, hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73608	153.23502	hollow	stag	dead tree	
08/01/19	-27.73600	153.23505	hollow	stag	dead tree	
08/01/19	-27.73596	153.23493	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
08/01/19	-27.73605	153.23489	hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73617	153.23466	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73614	153.23431	multiple hollows	<i>Corymbia intermedia</i>	pink bloodwood	
08/01/19	-27.73602	153.23435	arboreal termite mound/s	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73595	153.23445	hollow	<i>Corymbia citriodora</i>	lemon-scented gum	
08/01/19	-27.73601	153.23463	hollow	<i>Eucalyptus propinqua</i>	grey gum	
08/01/19	-27.73595	153.23456	arboreal termite mound (with hollow)	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73590	153.23484	arboreal termite mound/s, hollow	<i>Eucalyptus siderophloia</i>	grey ironbark	
08/01/19	-27.73589	153.23496	multiple hollows	stag	dead tree	

* hollow = single hollow, multiple hollows = more than one hollow, log = hollow log lying on ground, arboreal termite mound/s = termite mound/s on tree (no hollow entrance), arboreal termite mound/s (with hollow) = termite mound/s on tree (with a hollow entrance).

4 Discussion and recommendations

4.1 Habitat features

4.1.1 Arboreal termite mounds

There were 61 arboreal termite mounds with no visible hollow entrances and seven arboreal termite mounds with visible hollow entrances recorded in the project area. Note that due to the location of some hollow entrances within arboreal termite mounds, they are often difficult to observe from the ground, therefore the actual number may be higher.

Arboreal termite mounds provide breeding and sheltering habitat for a range of birds such as kingfishers and kookaburras (Morcombe 2003). Lace monitors *Varanus varius* are also known to lay their eggs in active arboreal termite mounds that are then re-sealed by the termites (Wilson & Swan 2013). The female lace monitor returns after the incubation period to dig them out.

Birds and reptiles that may use arboreal termite mounds for breeding purposes will generally use them between August and February (Morcombe 2003; Wilson & Swan 2013). Although no fauna was observed within the arboreal termite mounds, clearing is likely to occur within the latter part of the breeding season, therefore it is possible breeding will still be occurring. Mitigation measures for trees with arboreal termite mounds are provided below (see section 4.2) to reduce the risk to fauna during clearing.

4.1.2 Hollow bearing trees

There were 86 trees with a single hollow and 31 trees with more than one hollow recorded in the project area. Hollow bearing trees provide breeding and sheltering habitat for birds, microbats, arboreal mammals such as possums and gliders and occasionally reptiles. Given the difference in breeding cycles of these species, hollows could be used for breeding or sheltering purposes year-round (Brisbane City Council 2010; Morcombe 2003).

During the pre-clear survey, a pair of tree martins *Petrochelidon nigricans* were recorded utilising a hollow for breeding purposes. Additionally, the pre-clearing fauna trapping program has captured and released seven common brushtail possums *Trichosurus vulpecula* within the first five trapping days.

It is likely there are more birds, microbats, possums and other arboreal mammals such as gliders using the hollows for breeding and sheltering purposes within the project area than identified through the trapping program. Many of the trees with hollows recorded within the project area are unsuitable to climb and inspect due to safety reasons and the use of an inspection camera may not provide definitive evidence that the hollow is unoccupied. As it is impractical to use an elevated work platform (EWP) to inspect every inaccessible hollow, mitigation measures are provided below (see section 4.2) to reduce the risk to fauna during clearing.

4.1.3 Arboreal nests

There were eight arboreal nests recorded within the project area. All the nests appeared to be inactive at the time of the pre-clear survey. It is recommended that the nests are closely monitored immediately prior to their removal to ensure they are not being used for breeding purposes.

4.1.4 Macropods

Macropods such as the eastern grey kangaroo *Macropus giganteus* and swamp wallaby *Wallabia bicolor* have been previously recorded within the project area (Gassman 2011; Ecosure 2018a; Ecosure 2018b) and scats were observed during the pre-clear survey. Stage 1 clearing is unlikely to pose a threat to the wellbeing of the macropods as they can disperse into the stage 2 project area. When stage 2 clearing commences consideration needs to be given to placement of the fauna fencing to allow the macropods to safely self-relocate.

At present, there are two areas where macropods can exit the stage 1 and stage 2 project areas. These include Stapylton Jacobs Well Road to the north of the stage 1 project area and Christensen Road to the south of the stage 2 project area (Figure 3). However, there is a large culvert (approximately 2.5 m x 2.5 m) adjacent to the stage 1 project area entrance driveway that extends under Stapylton Jacobs Well Road to a property that may provide suitable habitat for macropods. Cattle fencing is currently installed on either side of the culvert, which are unlikely to restrict access to the macropods.

It is unknown if the macropods currently use the culvert to traverse between the properties on either side of Stapylton Jacobs Well Road. However, it is recommended that when fauna fencing is installed for the clearing works along Stapylton Jacobs Well Road, access to the culvert is left unrestricted. This will provide an additional opportunity for the macropods to self-relocate.

4.1.5 Wedge-tailed eagle nest

A wedge-tailed eagle *Aquila audax* nest is located in the stage 2 project area and has been clearly flagged. All personnel working on site will be made aware of the location of the nest.



Figure 3: Stapylton Stage 1 - Possible macropod self- relocation area

Gassman Development Perspectives

Stapylton FSC services - Stage 1

- Macropod accessible areas
- Macropod inaccessible areas
- Stage 1 project area



Job number: PR4113
Revision: 0
Author: RJ
Date: 10/01/2019



0 100 200 300 m

GDA 1994 MGA Zone 56
Projection: Transverse Mercator
Datum: GDA 1994
Units: Meter

4.2 Clearing recommendations

In accordance with the Decision notice (PN163781/23/DA2,ROL201800079/OPW201800485/ OPW201800486) issued by Council of the City of Gold Coast (Council), specifically conditions 3, 6, 7, 9, 10 and 11 relating to the operational works, and Ecosure's FSC operational procedures, the following mitigation measures applicable to the stage 1 project area are recommended to reduce the risk to fauna during clearing:

- Pre-clearing recommendations:
 - a suitably qualified FSC is to be present for each piece of clearing equipment (i.e. excavator or bulldozer), unless they are working in close proximity and the FSC is able to safely and effectively service more than one machine
 - all habitat features are to be marked with red and white flagging tape during pre-clear surveys
 - immediately prior to clearing, the FSC will cross reference all habitat features with GPS coordinates (provided by Ecosure) and will replace any flagging tape that may have been removed or dislodged
 - prior to the commencement of works, all hollow ground logs must be relocated from areas to be cleared to those areas where vegetation is to be retained and rehabilitated
 - fauna exclusion fencing is to be installed along the road confluence to contain fauna during works and prevent vehicle strike - Note that it is not advisable to install fauna exclusion fencing at the boundary between the stage 1 and stage 2 project areas as access between these areas for macropods to self-relocate may be required (see section 4.1.4).
- Recommendations during clearing:
 - all clearing must be undertaken in accordance with Part 3 of the Nature Conservation (Koala) Conservation Plan 2006 (Qld) (the 'Koala Plan')
 - communication (UHF radio) between the FSC and the clearing machine operator is to be maintained at all times
 - the FSC is to search ahead of clearing works for the presence of koala or other arboreal fauna in trees
 - if any koalas are observed, a 30 m exclusion zone is to be established and work is to cease in that area until the koala moves on
 - the FSC is to search ahead of clearing works for any fauna sheltering beneath logs, rocks, bark or in hollows or shrubs
 - clearing should begin from Stapylton Jacobs Well Road and proceed in a south-easterly direction where fauna have an opportunity to move ahead of clearing areas into forested areas and away from roads
 - where practical, hollow bearing trees should be left in situ as long as possible (minimum 24 hours preferably) while smaller trees around them are cleared to encourage fauna to relocate on their own

- where possible, an excavator with a fixed harvesting head should be used to gently lower trees with hollows, arboreal termite mounds with hollows or nests for the FSC to inspect
- where possible, the FSC is to climb trees or use pole cameras to inspect hollows, arboreal termite mounds with hollows or nests for fauna immediately prior to clearing
- if fauna breeding activity is confirmed within tree hollows, nests or arboreal termite mounds with hollows, the tree should be left in-situ until the fauna has vacated
- if fauna sheltering activity is confirmed within tree hollows, nests, arboreal termite mounds or dreys, appropriate measures to safely remove and relocate fauna to suitable habitat or appropriate care must be used
- trees with hollows, arboreal termite mounds or nests where no obvious breeding activity is observed should be laid over as gently as possible in a direction that is likely to reduce damage to the habitat feature and minimise deceleration injuries and/or death to animals
- if fauna is injured and requires transportation to appropriate care, clearing work should cease until the FSC advises clearing work can continue
- where possible, logs and hollow limbs should be stockpiled and relocated to areas of retained vegetation, so they can be used for habitat
- all felled timber piles left to rest for greater than 24 hours must be reinspected for fauna by a FSC prior to mulching/milling/chipping
- native bee hives are to be relocated by the FSC to areas where vegetation is to be retained.

5 References

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Gassman (2011) *Ecological Assessment, Lot 1 on RP6882 and Lot 240 on W31320, Stapylton-Jacob's Well Road and Christensen Road, Stapylton*. Report prepared for Patricia and William Hester, September 2011.

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Revision History

Revision No.	Revision date	Details	Prepared by	Reviewed & Approved by
00	11/01/2019	Pre-clear report, 60 Stapylton Jacobs Well Road and 31 Yellowood Road Stapylton (Stage 1)	Bob Johnston Ecologist	Dave Fleming, Manager - SEQ

Distribution List

Copy #	Date	Type	Issued to	Name
1	11/01/2019	Electronic	Gassman Development Perspectives	Kathryn Tibbles
2	11/01/2019	Electronic	Gassman Development Perspectives	Mitchell Gassman
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PR4113-RE Pre-clear report, 60 Stapylton Jacobs Well Road and 31 Yellowood Road Stapylton (Stage 1)

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