

20 August 2019
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Hazell Bros Group
By email: Chris.Sharpe@hazellbros.com.au

Attention: Mr Chris Sharpe

Dear Chris

Byron Bay Bypass - Stage 1 Post Clearing Report

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Introduction and Methodology

This letter report presents the results of clearing phase pre and during clearing fauna surveys and supervision undertaken by GeoLINK for Hazell Bros Group (HBG) for Stage 1 (chainage 189-650) of the Byron Bay Bypass Project. Specifically, this document relates to clearing undertaken as follows:

- 25-26 July 2019: Urban street tree removal (Butler Street).
- 14-15 August 2019: Swamp sclerophyll forest and Banksia regrowth east of Butler Street between Culvert 2-1 and the pedestrian railway crossing to the south.

Clearing was undertaken in accordance with the HBG Environmental Management Plan (EMP) Flora and Fauna Management Sub-plan, with consideration of the findings of the *Byron Bay Bypass - Stage 1 Pre-clearing Report* (GeoLINK 2019a).

Key activities undertaken as part of pre/during clearing surveys and inspections included:

- Ensuring clearing limits were delineated.
- Diurnal Mitchell's Rainforest Snail (MRS; *Thersites mitchellae*) surveys within swamp sclerophyll forest within the clearing footprint.
- Flush surveys in areas of dense understorey vegetation.
- Searches through ground habitat features (including leaf litter, vegetation and fallen timber).
- Canopy inspections pre and during clearing.
- Inspections of fallen timber.
- Habitat tree clearing inspection and post-felling fauna searches.
- Fauna rescue and relocation as required.
- Nocturnal survey prior to topsoil stripping (after the windrowed vegetation was removed).
- Inspection of Culvert 2-1 for microbats.

The survey methodology for each day of clearing is provided in the clearing registers in **Attachment 1**. A total of 9.75 hours of pre/ during phase surveys and inspections were undertaken as part of the subject works. This is additional to nocturnal MRS surveys undertaken as part of the *Byron Bay Bypass – Due Diligence: Stage 1 Mitchell’s Rainforest Snail Survey* (GeoLINK 2019b) on 8 August 2019.

Results

The results of the subject pre/ during clearing surveys and inspections are provided in the clearing registers in **Attachment 1**. Key findings include:

- No MRS were recorded within the subject Stage 1 clearing area.
- No fauna captures as part of rescue/ relocations were required.
- Four actual hollow-bearing trees with small to medium hollows were removed. The hollows were generally not well formed and of limited habitat value. None of the hollows were occupied or showed evidence of fauna usage. Another potential hollow-bearing tree was removed (and is included in the hollow/ habitat inspection register), however post felling inspections confirmed it did not contain actual tree hollows.
- No active bird nests or possum dreys were present.
- Fauna ‘self-relocations’ (i.e. where the fauna moved out of the clearing area without requiring capture) included:
 - 2 x Eastern Water Dragons (*Intellagama lesueurii*).
 - 1 x Grass Sun-Skink (*Lampropholis delicata*).
 - 1 x Rocket Frog (*Litoria nasuta*).
 - Several non-nesting avifauna (e.g. Noisy Miners *Manorina melanocephala*, Pied Butcherbird *Cracticus nigrogularis*, etc).
- A Carpet Python (*Morelia spilota*) was reported in the ATF installation area at the railway line. The snake moved outside of work area into adjacent vegetation on its own and did not require capture.
- Salvaged habitat features include:
 - One small hollow log.
 - Bangalow Palm fronds.
- No microbats were recorded within Culvert 2-1.

Please contact the undersigned if you require any further information.

Yours sincerely

GeoLINK



David Andrighetto

Ecologist



UPR	Description	Date Issued	Issued By
3351-1034	First issue	20/08/2019	David Andrighetto

Attachment 1 Byron Bay Bypass - Stage 1 Clearing Registers

Table 1 Clearing Phase Survey Register

Survey Date	Surveyor	Location	Habitat	Survey Type	Survey Effort (hrs)	Total Dreys Removed	Total Nests Removed	Total Actual Hollow-bearing Trees Removed	Total Significant Logs Removed	Comment
25/07/2019	David Andrighetto	Stage 1	Urban Street Trees	Final clearing inspection (diurnal).	0.5	0	0	1	0	No fauna present. Clearing supervision by HB on 25 and 26 July 2019.
14/08/2019	David Andrighetto	Stage 1 North	Swamp Sclerophyll Forest and Banksia Regrowth	Final clearing inspection (diurnal), including: <ul style="list-style-type: none"> MRS surveys pre-clearing (1.75 hrs). Flush surveys. Searches through ground habitat (leaf litter and fallen timber). Inspection of canopy trees. Searches below flaky bark. Clearing supervision and searches through fallen timber. 	6.5	0	0	3	0	No fauna rescue or relocation required. Self relocated fauna include: <ul style="list-style-type: none"> 1 x Eastern Water Dragon. 1 x Grass Sun-Skink (<i>Lampropholis delicata</i>).
15/08/2019	David Andrighetto	Stage 1 North	Swamp Sclerophyll Forest and Banksia Regrowth	Final clearing inspection (diurnal), including: <ul style="list-style-type: none"> MRS surveys pre-clearing (0.25 hrs). Flush surveys. Searches through ground habitat (leaf litter and fallen timber). Inspection of canopy trees. Searches below flaky bark. Clearing supervision and searches through fallen timber. Inspection of previous day's clearing area and fallen timber. 	2	0	0	0	0	No fauna rescue or relocation required. Self relocated fauna include: <ul style="list-style-type: none"> 1 x Eastern Water Dragon. 1 x <i>Litoria nasuta</i>. 1 x Carpet Python recorded near ATF installation area at railway line; the snake moved outside of work area into adjacent vegetation and did not require direct capture.
15/08/2019	David Andrighetto	Stage 1 North	Swamp Sclerophyll Forest and Banksia Regrowth	Nocturnal survey post removal of fallen timber and before topsoil stripping.	0.75	0	0	0	0	No fauna rescue or relocation required.

Table 2 Clearing Phase Survey Register

Id.	Feature	Easting	Northing	Common Name	Scientific Name	Tree Height (m)	DBH (cm)	Total Hollows Number	Limb Hollow Small (<5cm)	Limb Hollow Medium (5-15cm)	Limb Hollow Large (>15cm)	Trunk Hollow Small (<5cm)	Trunk Hollow Medium (5-15cm)	Trunk Hollow Large (>15cm)	Total Fissures	Total Basal Hollows	Height of Hollows off the Ground	Nests	Possum Dreys	Date Felled/Removed	Fauna Present	Evidence of Fauna?	Evidence of Breeding?	Hollows Salvaged for Reuse?	Recommended Action	Release of Fauna	Comments
1	Hollow-bearing Tree	559709	6830984	Coastal Cypress Pine	<i>Callitris columellaris</i>	14	50	2	1	0	0	0	1	0	0	0	Med trunk hollow: 1.5m. Small branch hollow: 6m.	0	0	25/07/2019	No	No evidence of fauna.	No evidence of fauna breeding.	No (no significant hollows)	Hollows inspected prior to removal (direct inspection with torch where possible). No fauna observed. Arborist removed branch hollow; ecologist inspection confirmed it was empty. Ecologist blocked lower hollow entrance.	N/A	The remainder of the tree without available hollows was removed the following day (26/07/2019).
2	Hollow-bearing tree	559726	6831276	Broad-leaved Paperbark	<i>Melaleuca quinquenervia</i>	8	28	2	1	0	0	1	0	0	0	0	2m and 4m	0	0	14/08/2019	No	No evidence of fauna.	No evidence of fauna breeding.	No (no significant hollows)	Hollows inspected prior to removal (binocular/inspection camera inspection where possible). No fauna observed. Tree bumped and monitored in accordance with procedure during felling.	N/A	No well formed hollows (<10cm deep)
3	Hollow-bearing tree	559730	6831274	Broad-leaved Paperbark	<i>Melaleuca quinquenervia</i>	9	70	3	1	2	0	0	0	0	0	0	1.8m; 2m and 3m	0	0	14/08/2019	No	No evidence of fauna.	No evidence of fauna breeding.	No (no significant hollows and outer timber heavily decayed)	Hollows inspected prior to removal (binocular/inspection camera inspection). No fauna observed. Tree bumped and monitored in accordance with procedure during felling.	N/A	Medium branch hollow 1.8 m off the ground was approximately 40cm deep; the other two hollows were shallow.
4	Hollow-bearing tree	559733	6831269	Broad-leaved Paperbark	<i>Melaleuca quinquenervia</i>	8	35	2	0	2	0	0	0	0	0	0	4m and 5m	0	0	14/08/2019	No	No evidence of fauna.	No evidence of fauna breeding.	No (no significant hollows)	Hollows inspected prior to removal (binocular inspection). No fauna observed. Tree bumped and monitored in accordance with procedure during felling.	N/A	No well formed hollows (<10cm deep)
5	Hollow-bearing tree	559735	6831257	Umbrella Cheese Tree	<i>Glochidion sumatranum</i>	10	55	0	0	0	0	0	0	0	0	0	0	0	0	14/08/2019	No	No evidence of fauna.	No evidence of fauna breeding.	No (no significant hollows)	Potential hollows inspected prior to removal (binocular inspection). No fauna or evidence observed. Tree bumped and monitored in accordance with procedure during felling.	N/A	No actual tree hollows present (only minor cavities)
6	Hollow log	559732	6831305	Umbrella Cheese Tree	<i>Glochidion sumatranum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14/08/2019	No	No evidence of fauna.	No evidence of fauna breeding.	Yes - relocated outside of clearing limit to west.	Direct inspection then relocation.	N/A	Small hollow log approximately 0.8m long 20cm diameter. Not a significant log.
7	Bangalow Palm Fronds	559732	6831305	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14/08/2019	No	No evidence of fauna.	No evidence of fauna breeding.	Yes - relocated outside of clearing limit to west.	Direct inspection then relocation.	N/A	Accumulations of Bangalow Palm fronds inspected then relocation to the west of the clearing limits.
8	Culvert 2-1	559699	6831411	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15/08/2019	No	-	-	-	Direct torch inspection for microbats.	-	No microbats present.

Table 3 Fauna Rescue Register

<i>Date</i>	<i>Fauna Present</i>	<i>Health (injured during tree felling)</i>	<i>Does it Require Immediate Attention</i>	<i>Wildlife Care Agency Called:</i>	<i>Outcome</i>	<i>Where was the Animal(s) Released</i>	<i>Other Comments</i>	<i>Project Ecologist</i>	<i>Construction Manager</i>
25/07/2019	No	N/A	N/A	N/A	Pre clearing inspection of urban street trees. No fauna present requiring rescue or relocation.	No fauna present requiring rescue or relocation.	No fauna present. Clearing supervision by HB on Thursday and Friday.	David Andrighetto	Chris Sharpe
14/08/2019	No fauna requiring capture for relocation	N/A	N/A	N/A	Pre-clearing inspection of Swamp Sclerophyll Forest and Banksia regrowth in Stage 1. No fauna present requiring rescue or relocation.	-	-	David Andrighetto	Chris Sharpe
15/08/2019 (diurnal survey)	No fauna requiring capture for relocation	N/A	N/A	N/A	Pre-clearing inspection of Swamp Sclerophyll Forest and Banksia regrowth in Stage 1. No fauna present requiring rescue or relocation.	-	-	David Andrighetto	Chris Sharpe
15/08/2019 (nocturnal survey)	No fauna requiring capture for relocation	N/A	N/A	N/A	Pre-clearing inspection of Swamp Sclerophyll Forest and Banksia regrowth in Stage 1. No fauna present requiring rescue or relocation.	-	-	David Andrighetto	Chris Sharpe