

25 July 2019
Ref No: 3351-1026

Hazell Bros Group
Sent by email.

Attention: Mr Chris Sharpe

Dear Chris

Byron Bay Bypass - Stage 2 Pre-clearing Report

Introduction

GeoLINK was engaged by Hazell Bros Group (HB) to undertake initial pre-clearing surveys for Stage 2 (chainage 650-1180) of the Byron Bay Bypass Project. The objective of the survey was to address the following HB's Environmental Management Plan (EMP) Flora and Fauna Management Sub-plan management actions:

- *FF3: The pre-clearing process will be consistent with Guide 1 – Pre-clearing process of the RMS Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA projects (RTA, 2011).*
- *FF4: Pre-clearing surveys are to be undertaken by a qualified and experienced consultant ecologist prior to any clearing or installation of fencing.*
- *FF6: Hollow-bearing trees and logs:*
 - *A pre-clearing survey must be conducted prior to commencement of clearing or construction within the area of proposed works consistent with Guide 1 – Pre-clearing process of the RMS Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA projects (RTA, 2011).*
 - *All hollow-bearing trees are to be obviously marked (ie sprayed with "H" and flagged with bright tape).*
 - *Details are to be recorded on the relevant register during the survey.*
 - *A map would be produced identifying the location of any hollow-bearing trees and logs, and identifying any that are thought to be occupied by fauna.*
- *FF7: Nests:*
 - *Any nests observed in trees or shrubs should be recorded.*
 - *Details are to be recorded on the relevant register during the survey.*
 - *Locations of nests would be mapped.*

Previous ecologist surveys at the site are detailed in the *Byron Bay Bypass Environmental Impact Statement* (GHD 2016).

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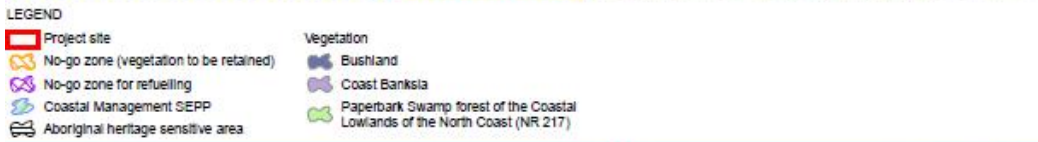
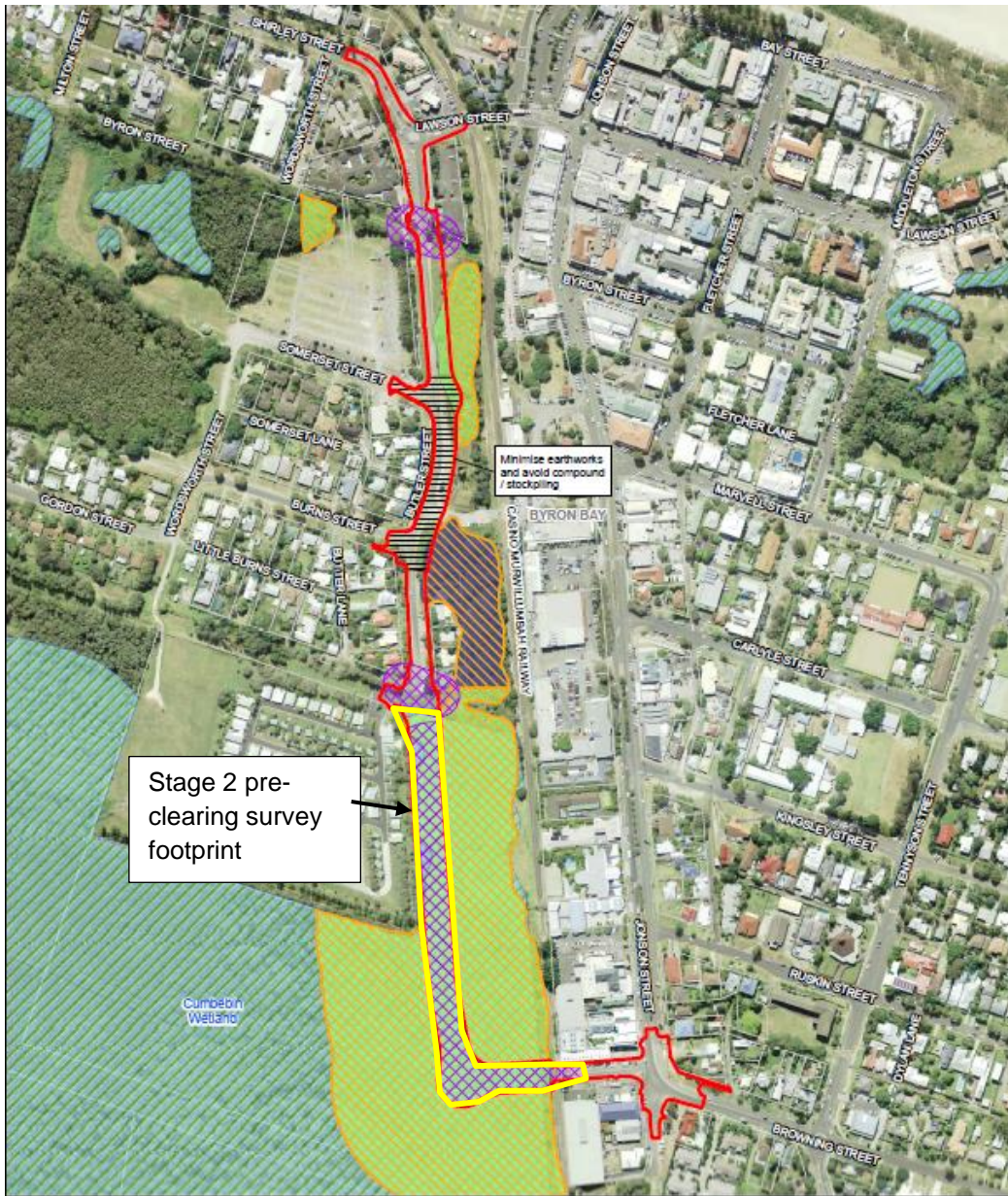


Methodology

A diurnal inspection of the site was undertaken by GeoLINK ecologists David Andrighetto and Ian Colvin for 4.5 person hours on 24/07/2019. The inspection involved meander walk transects across the Stage 2 clearing footprint (refer to **Figure 1**). Key activities undertaken as part of the initial pre-clearing survey included:

- Identifying, marking and mapping significant fauna habitat features such as actual and potential hollow-bearing trees; trees with termitaria with cavities, nests and dreys; native bee hives and significant ground habitat features (e.g. large hollow logs and rock features).
- Searches for threatened flora species identified on the NSW Office of Environment and Heritage (OEH) BioNet database (search 19/07/2019) as being recorded within a 5 km radius of the site.
- Identifying structures to be removed that require inspection prior to removal or works (e.g. culverts).
- Recording opportunistic threatened fauna encountered.
- Locating nearby habitat suitable for the release of fauna as part of fauna rescue and relocation during clearing.

Final pre-clearing surveys (including active fauna searches) would be undertaken by an ecologist immediately prior to clearing. Additionally, Mitchell's Rainforest Snail (*Thersites mitchellae*) surveys addressing EMP Flora and Fauna Management Sub-plan management action FF6 would be undertaken prior to commencing clearing in the species habitat area during both the day and the evening (preferably after rain) on two separate occasions immediately prior to clearing.



Environmentally sensitive areas Figure 5-1

Figure 1 Byron Bay Bypass Stage 2 Pre-clearing Survey Footprint (yellow outline).

Base illustration source: GHD (2019) *Byron Bay Bypass Construction Environmental Plan*.

Results

Threatened Flora

No threatened flora species were detected at the site. This is consistent with the findings of GHD (2016).

Key Fauna Habitat Features

The 'Paperbark Swamp Forest' habitat identified in GHD (2016) comprises the main fauna habitat areas at the site. Key fauna habitat features that, if occupied at the time of clearing, would put fauna at risk of fauna injury/mortality include:


- Rainforest elements with fallen timber and leaf-litter including Bangalow Palm (*Archontophoenix cunninghamiana*) frond accumulations. This habitat provides potential habitat for the Mitchell's Rainforest Snail (*Thersites mitchellae*) and occurs in localised areas across the site.
- Six hollow-bearing trees with small-medium hollows. These provide habitat for hollow-obligated species.
- One Brush-turkey (*Alectura lathamii*) nest.
- Two constructed waterways approximately 0.5 m deep and 2-5 metres wide. The baseline water quality monitoring data indicates these waterways are of low aquatic habitat value. Notwithstanding, they still provide potential habitat for common habitat generalists such as the Eastern Long-necked Turtle (*Chelodina longicollis*).
- Dense groundcover (including fallen timber and leaf-litter resources).
- Monkey Rope (*Parsonsia straminea*) thickets in canopy trees providing shelter for arboreal fauna such as Ringtail Possums (*Pseudocheirus peregrinus*) and Carpet Python (*Morelia spilota*).

A fauna habitat feature register that includes the location and a description of the hollow-bearing trees and detected nest is provided in **Table 1**. The locations of these features are displayed in **Illustration 1**.

Table 1 Habitat Feature Register

Feature Number	Easting	Northing	Feature Type	Tree Species	No. of Hollows	Fauna Species Present	Comment
5	559711	6830934	Hollow-bearing tree	Broad-leaved Paperbark (<i>Melaleuca quinquenervia</i>)	1	Unknown	-
6	559719	6830913	Hollow-bearing tree	Pink-flowered Doughwood (<i>Melicope elleryana</i>)	1	Unknown	-
7	559730	6830801	Hollow-bearing tree	Stag	1	Unknown	-
8	559728	6830745	Hollow-bearing tree	Cheese Tree (<i>Glochidion ferdinandi</i>)	1	Unknown	-
9	559743	6830734	Hollow-bearing tree	Stag	1	Unknown	-
10	559736	6830724	Brush-turkey nest	-	N/A	-	-
11	559749	6830618	Hollow-bearing tree	Swamp Mahogany (<i>Eucalyptus robusta</i>)	1	Unknown	-
12	559812	6830615	Hollow-bearing tree	Stag	1	Unknown	-

No significant bush rock or log habitat are present.



One preferred Koala food tree species (a Swamp Mahogany *Eucalyptus robusta*) occurs within the clearing limits at the Stage 2 site. No Koala scats were detected below this tree. Additional Swamp Mahogany trees occur locally, however in very low numbers.

Terrestrial Fauna Relocation and Rescue

Fauna rescue and relocation would be undertaken in accordance with the HB Flora and Fauna Management Sub-plan. Fauna releases would:

- Primarily be within 50 m of the subject works area where the animal was captured where possible.
- On public land as far away as possible from threats such as clearing local roads and construction activities.
- In suitable habitat.
- Any Mitchell's Rainforest Snail's found would be relocated into adjacent habitat, preferably at least 20 m from the project boundary in accordance with the HB Flora and Fauna Management Sub-plan.



LEGEND

- Clearing limit
- Waterway (potential aquatic habitat)
- Required Mitchell's Rainforest Snail survey area
- Recommended additional Mitchell's Rainforest Snail survey area
- Brush Turkey nest
- Hollow-bearing tree



Recommendations

Environmental management at the subject site would be undertaken in accordance with the HB's EMP (including Flora and Fauna Management Sub-plan) requirements. Key specific recommendations following completion of initial pre-clearing surveys for Stage 2 include:

- Final pre-clearing surveys by an ecologist immediately prior to clearing.
- Ecologist supervision during clearing to undertake fauna rescue and relocation as required.
- Mitchell's Rainforest Snail surveys addressing EMP Flora and Fauna Management Sub-plan management action FF6 would be undertaken prior to commencing clearing in the species habitat area between chainage 900 and 1180 during both the day and the evening (preferably after rain) on two separate occasions immediately prior to clearing.
- Clearing of hollow-bearing trees would be undertaken in accordance with the *Procedure for the clearing of hollow bearing trees and logs* (see Appendix D of the Flora and Fauna Management Sub-plan). This includes two-staged clearing.

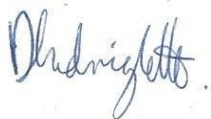
Key recommendations additional to the provisions of the HB's EMP and Flora and Fauna Management Sub-plan include:

- The Environmental Officer would inspect the waterways prior to any instream works or dewatering activities. Appropriate controls would be implemented if aquatic fauna are present at the time of the works. This potentially includes engaging a suitability licenced aquatic ecologist to undertake aquatic fauna salvage and relocation.
- Due diligence Mitchell's Rainforest Snail pre-clearing surveys are recommended in the Stage 2 clearing area between chainage 650 and 900 in addition to chainage 900-1180.

Please contact the undersigned if you require any further information.

Yours sincerely

GeoLINK



David Andrighetto

Ecologist

UPR	Description	Date Issued	Issued By
3351-1026	First issue	25/07/2019	David Andrighetto