

22 July 2019
Ref No: 3351-1023

Hazell Bros Group
Sent by email.

Attention: Mr Chris Sharpe

Dear Chris

Byron Bay Bypass - Stage 1 Pre-clearing Report

Introduction

GeoLINK was engaged by Hazell Bros Group (HB) to undertake initial pre-clearing surveys for Stage 1 (chainage 189-650) 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 were undertaken as part of the *Byron Bay Bypass Review of Environmental Factors* (GHD 2017) and *Byron Bay Bypass Addendum Review of Environmental Factors* (GHD 2019a).

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Methodology

A diurnal inspection of the site was undertaken by GeoLINK ecologist David Andrighetto for 1 hour on 19/07/2019. The inspection involved a meander walk transect across the Stage 1 clearing footprint (refer to **Figure 0.1**). Key activities undertaken as part of the initial pre-clearing survey included:

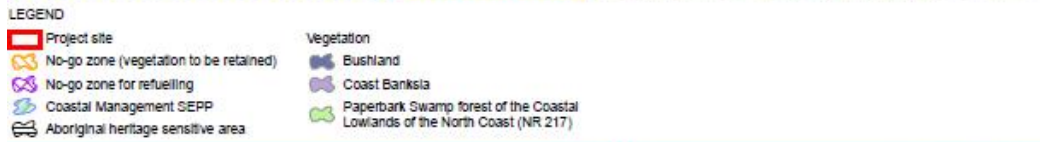
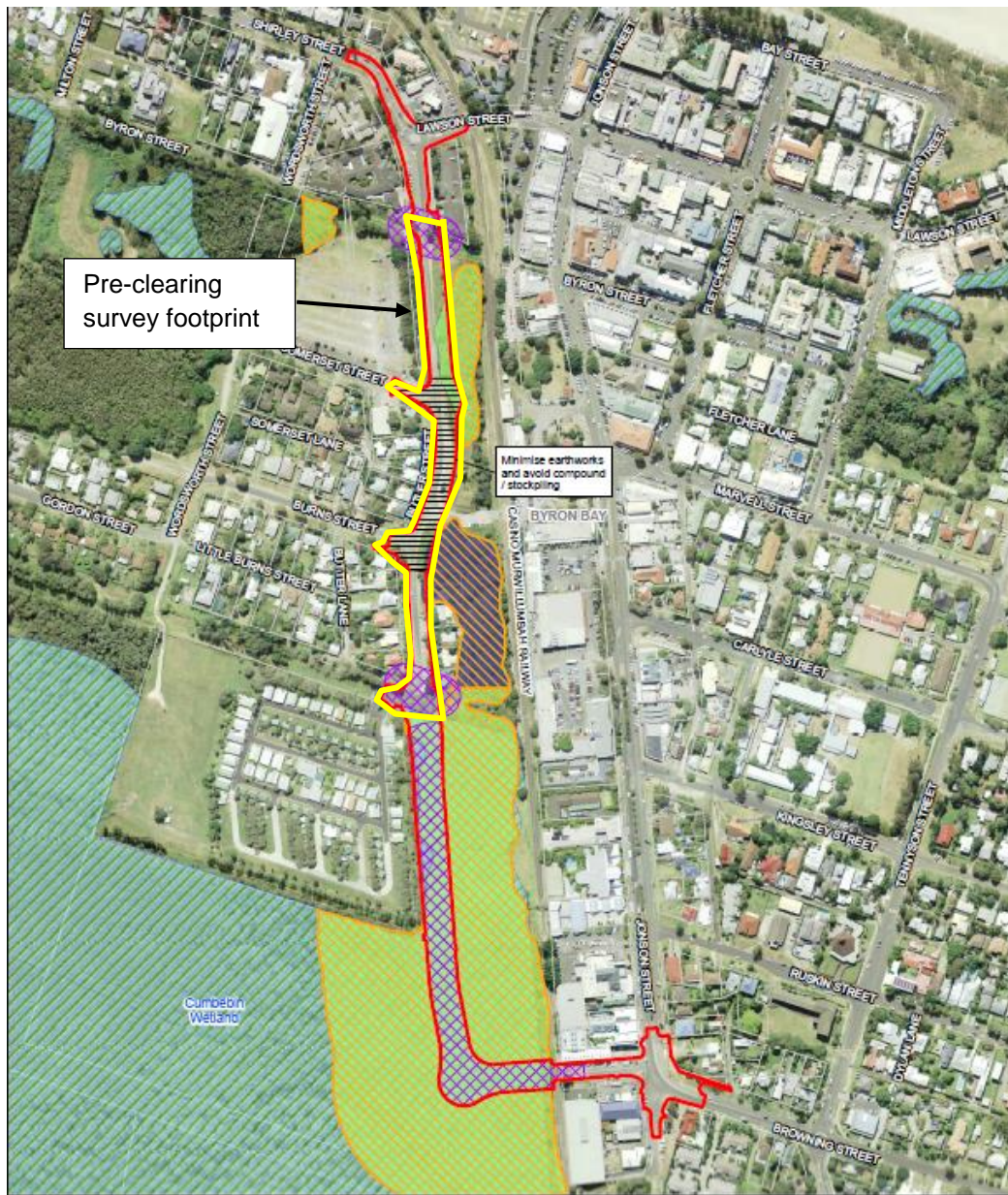
- Identifying, marking and mapping significant fauna habitat features such as actual and potential hollow-bearing trees; trees with termitaria with cavities, nests and dreys; native bee hives and significant ground habitat features (e.g. large hollow logs and rock features).
- Searches for threatened 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.

Due to high public presence at the time of the survey, habitat features were only partially marked in the field and will be completed marked (flagging tape and spray paint) during final pre-clearing surveys undertaken by an ecologist immediately prior to clearing.

Key survey limitations included:

- The site clearing limits were not delineated at the time of the survey.
- Avoiding the protester interface near chainage 190.
- Standard seasonal variations in flora and fauna detectability.

Final pre-clearing surveys undertaken by an ecologist immediately prior to clearing would aim to alleviate these limitations.



Environmentally sensitive areas Figure 5-1

Figure 0.1 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 (2017) and GHD (2019).

Key Fauna Habitat Features

The 'Bushland' and 'Paperbark Swamp Forest' vegetation communities identified in GHD (2017) comprise 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:

- Four hollow-bearing trees with small hollows. The hollows do not appear to be well formed and are likely to be of limited habitat value.
- One waterway and culvert under Butler Street at approximate chainage 190 (culvert 2-1). The waterway provides aquatic habitat for aquatic species (e.g. turtles, eels, etc) while the culvert cavities provide opportunities for fauna including microbats and Eastern Water Dragons (*Intellagama lesueurii*).

A fauna habitat feature register that includes the location and a description of the subject habitat features is provided in **Table 1**. The locations of these features are displayed in **Figure 2**.

Table 1 Habitat Feature Register

Feature Number	Location (Approx. Chainage)	Easting	Northing	Feature Type	Tree Species	No. of Hollows	Fauna species present	Comment
1	642	559709	6830984	Hollow-bearing tree	Coastal Cypress Pine (<i>Callitris columellaris</i>)	2	Unknown	Small hollows; limited quality.
2	340	559726	6831276	Hollow-bearing tree	Broad-leaved Paperbark (<i>Melaleuca quinquenervia</i>)	2	Unknown	Small hollows; limited quality.
3	350	559730	6831274	Hollow-bearing tree	Broad-leaved Paperbark (<i>Melaleuca quinquenervia</i>)	3	Unknown	Small hollows; limited quality.
4	355	559733	6831269	Hollow-bearing tree	Broad-leaved Paperbark (<i>Melaleuca quinquenervia</i>)	2	Unknown	Small hollows; limited quality.
5	190	559699	6831411	Culvert and water way	-	-	-	Potential aquatic habitat; cavities within the culvert providing fauna habitat.

No bird nests, significant bush rock or log habitat were present.

No preferred Koala food tree species occur within the clearing limits at the Stage 1 site.

Terrestrial Fauna Relocation and Rescue



Figure 2 Fauna Habitat Features

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

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.

Other Recordings

Myrtle Rust is a plant disease caused by the exotic fungus *Puccinia psidii*. It was first detected in Australia on 23 April 2010 on the NSW Central Coast and is now established along the east coast of Australia from southern NSW to far north Queensland, with localised occurrences in Victoria and Tasmania.

Evidence of Myrtle Rust infestation was locally observed on Broad-leaved Paperbark (*Melaleuca quinquenervia*) trees across the site. This pathogen is known to occur in the Byron Bay locality.

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. This would include final pre-clearing surveys by an ecologist immediately prior to clearing.

Key additional/ specific recommendations following completion of initial pre-clearing surveys for Stage 1 includes:

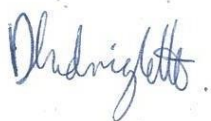
- The Environmental Officer would inspect the waterway at approximate chainage 190 prior to installation of bunds or dewatering activities. Appropriate controls would be implemented if aquatic fauna are present at the time of the works. This potentially includes engaging a suitability licenced aquatic ecologist to undertake aquatic fauna salvage and relocation.
- The chainage 190 culvert would be inspected for microbats prior to any works at the culvert.
- A Myrtle Rust management procedure should be established for the project in consultation with Byron Shire Council.

The hollow-bearing trees at the site are of low quality and may be able to be inspected easily with an arborist/inspection camera. Two stage clearing therefore may not be warranted for these trees. It should be noted that two-stage clearing is also not a requirement of the Stage 1 Approvals (GHD 2017 and 2019a).

Please contact the undersigned if you require any further information.

Yours sincerely

GeoLINK



David Andrighetto

Ecologist



UPR	Description	Date Issued	Issued By
3351-1023	First issue	22/07/2019	David Andrighetto

