enquiries refer
**Ian Gaskell**
in reply please quote
**Cont: 1266-02**

PCU042385

6 March 2013

Michael Young
Major Projects Assessment
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001



Dear Michael

**Re: Pacific Highway Upgrade Woolgoolga to Ballina – Environmental Impact Statement**

This submission primarily focuses on the ecological survey work and impact assessment undertaken for the section of the Pacific Highway upgrade located within the geographic boundary of Ballina Shire. However, an examination of the broader issues/deficiencies associated with this section of the Highway appear to extend throughout the entire Highway Route.

## 1. Vegetation Mapping

The approach the EIS has undertaken to map vegetation communities along the route of the proposed Highway is inconsistent. In this regard, vegetation mapping of some sections of the Highway is confined to the identified project corridor (e.g. **Figures 3-6 to 3.9**). In other sections of the Highway, vegetation mapping extends out to a distance of approximately 500m either side of the project corridor. Council is of the opinion that to assess the true landscape impact of the Highway, vegetation mapping should be extended out to a uniform distance of 500m. Such an approach is required given the project which extends for a distance over 155km fragments local and regional wildlife corridors, Endangered Ecological Communities (EECs) and threatened flora and fauna habitats at a landscape level.

In addition, numerous vegetation communities located within the project area and/or wider study area remain unmapped (e.g. **Figures 3.13- 3.17, Figures 3.27 -3.30**) The submitted EIS also fails to clearly map the existing EECs that are located north of Chainage 159000.

For the section of the Highway previously known as Woodburn to Ballina, the EIS relies on the vegetation mapping produced by Geolyse Pty Ltd during the development of the route selection. During this process the Environmental Review Group (ERG) consistently raised concerns in regard to the accuracy of the subject vegetation mapping. As a consequence, the then RTA employed an expert botanist to review the methodology which underpinned the accuracy of vegetation mapping. That review identified that a range of shortcomings were associated with the PATN vegetation classification scheme used by Geolyse. Of most significance the peer review in part concluded:

*"An accurate vegetation map with end-designed map units is a key component of the ecological assessment, particular Endangered Ecological Communities make up a large proportion of the study area. Even though equivalent EEC's are identified the PATN communities are to coarse and heterogeneous for determining the precise extent of specific EEC's"*

And;

"*In progressing to the next stage of the ecological assessment, which will presumably examine the preferred route in greater detail, increased emphasis should be placed on meander transverses (in combination with quadrats to increase the area searched to maximise chances of detecting sparely distributed significant species*"

Despite the findings of this independent review, the submitted EIS has failed to undertake any or at best undertook only limited additional survey work and/or vegetation mapping to overcome these historical issues. **Figures 2.22 -2.26** of the EIS depict the extent of "*flora survey traverses*" undertaken in 2005. However, these depictions are inconsistent with the survey methods described within the Geolyse reports and the abovementioned independent botantist's review. Consequently, Council considers that the areas depicted within the EIS as being subjected to 2005 flora traverses are inaccurate.

**Table 2.5** of the EIS confirms that fine scale vegetation mapping was conducted in relation to Sections 9-11 of the Highway. Given the vegetation mapping depicted within the EIS contains the same as the vegetation communities as were produced within the earlier Geolyse ecological reports this statement remains highly questionable. In this regard consistent with earlier Geolyse reports the EIS incorrectly maps the vegetation communities to the west of Chainages 162000 to 162500 as subtropical rainforest EEC. The subject vegetation is a dry sclerophyll forest.

In contrast, Council's vegetation mapping of the vegetation communities occurring between chainages 146000 to 149000 although not complete show the complexity of the vegetation communities in that occur within that section of the Highway. Attached for your convenience (**Annexure A**) are extracts from Council's vegetation mapping layer.

## 2. Survey Effort

The submitted EIS (**Table 2.10**) concludes that the survey work undertaken for the project conforms with DEC Threatened Species Surveys Guidelines. However, the purported compliance is only achieved by the EIS merging a reported 57 different plant communities into 5 broad vegetation communities. The grouping of vegetation communities does not form part of the DEC Guidelines. Conversely, the DEC Guidelines use stratification to determine survey effort. In this respect, the Guidelines state;

*"Stratification is necessary to ensure that the full range of potential habitats and vegetation types will be systematically sampled. The survey area should be initially stratified on biophysical attributes (eg. landform, geology, elevation, slope, soil type, aspect), followed by vegetation structure (eg. forest, woodland, shrubland), and then floristics (eg. species)"*

*"Each of the stratification units must be sampled."*

In this instance, the submitted EIS has failed to stratify and/or undertake the required surveys in relation to the biophysical attributes as described in the above text.

Whilst, the EIS contends that the survey work for threatened fauna is consistent with DEC Guidelines this conclusion questionable given the issues associated with stratification of differing vegetation communities. Council is of the opinion to be compliant with Guidelines surveys should have been undertaken on all 57 different vegetation communities. However, it would be expected that survey effort would increase once all of the abovementioned biophysical factors have been taken into account

That issue aside, although Council has not extensively assessed the level of survey effort undertaken for the project an examination of data highlights areas of non compliance to the Guidelines. For instance, for forest owls the EIS confirms that a total of 38 sites were subjected to 53 call playback survey nights. However, to be complaint with the Guidelines surveys are required to be undertaken for a minimum of five (5) nights per site. Hence, survey effort should have totalled 190nights. Similarly, the EIS completed a total of 152 pitfall trap nights however, based on the EIS 5 broad vegetation classification a total of 288 trap nights should have occurred. As previously stated, Council is of the opinion that to be complaint with the Guidelines and dependant on size, all of the 57 different vegetation communities along the proposed highway should have been subjected to detailed assessment.

Of even greater concern is that **Table 2.10** identifies 932ha of native vegetation occurs within the footprint of the project area. However, the offsets strategy (**Tables 10-33 and 34**) confirm that approximately 1384ha of native vegetation is to be affected (both directly and indirectly) by the proposed Highway upgrade. This represents an area of approximately 452ha which should have been subjected to detailed assessments given these areas will be indirectly impacted by the construction of the Highway. Based on this increased area of impact it is clearly evident that the survey effort undertaken during the preparation of the EIS is not compliant with the Guidelines. Furthermore, **Figures 2.48-2.52** confirm that no additional detailed fauna survey work has been undertaken on the section of Highway north of Chainage 137000 since 2005.

In this regard, the submitted EIS primarily relies on the flora and fauna surveys conducted by Geolyse Pty Ltd between 2005-2006. It was always understood that once a preferred route had been selected RMS would undertake detailed flora and fauna surveys. This position was affirmed within the Preferred Route Submissions Report (PRSR) for the upgrade of the Pacific Highway between Woodburn and Ballina which stated;

*"The RTA is aware of the ecological sensitivity of the study area and has endeavoured to take this aspect into account in selecting the location of the preferred route. Further ecological studies are to be undertaken over a number of seasons and the results of all the ecological assessments will be incorporated in the environmental assessment of the preferred route. Appropriate mitigation measures would be designed and implemented to minimise impacts on flora and fauna.*

*It is not feasible to undertake a detailed ecological assessment of the entire study area at the project planning stage. Broad ecological assessments undertaken prior to the selection of the preferred route are considered to be adequate. Their purpose was to identify the ecological constraints of the various route options. Modifications to the alignment of the preferred route have taken into account particular ecological issues and further investigations will be undertaken as part of the environmental assessment of the preferred route.*

Despite these undertakings the submitted EIS has only undertaken limited additional survey work since those initial broad scale ecological assessments were conducted.

During the preparation of the PRSR Council and the ERG consistently raised concerns as to the rigour of the survey work undertaken. These concerns now appear to be justified given the limited additional survey work which has been undertaken (BBAH 2012) in the vicinity of the Wardell Interchange confirms the occurrence of;

- 20ha of Hairy Joint Grass;
- 17 individual Stinking Cryptocarya (*Cryptocarya foetida*);
- 8 Green-leaved Rose Walnut (*Endiandra muelleri subsp. bracteata*);
- 8 Rusty Rose Walnut (*Endiandra hayesii*);
- 11 White Lace Flower (*Archidendron hendersonii);*
- the occurrence of Atlas Rainforest Beetle (*Nurus atlas*) and Pink underwing Moth (*Phyllodes imperialis southern subspecies).*

All of the above species which are threatened species pursuant to either or both the Threatened Species Conservation Act (1995) and/or the Environment Protection and Biodiversity Conservation *Act* (1999) were not detected by Geolyse during the route selection process. This issue is considered significant given Geolyse undertook specific surveys in this general locality and, as such, raises significant concerns as to the rigour of the early survey work which is now been relied on to justify and accurately identify the ecological impact of the Highway upgrade.

While it welcomed that these additional threatened species have now been detected the EIS has still failed to detect the threatened plant species growing between Chainages 155500and 156000. These threatened species records formed part of the submissions tended by Council to the RMS consultants (Hyder Consulting) as part of the identification of the preferred route.

In relation to threatened species occurrence the EIS fails to acknowledge the occurrence of the following threatened fauna species

- Koala (Chainage 146000,150500 and 156700)
- Wallum Froglet 150700 and 1567000
- Grey crowned babbler (Chainage 147000)

***Threatened Species Identification and Mapping***

**Section 2.3.2** of the EIS states that wildlife database searches were conducted during the preparation of the report. Aside from koala and emu records the EIS provides no mapping to identify the location of threatened species records and their geographic position in relation to the proposed Highway. The preparation of threatened species mapping is considered standard industry process that has not been undertaken in this case. Given the lack of detailed survey work and given the extent of the project area, threatened species mapping is considered to be imperative to being able to assess the correct ecological impact of the highway on the environment.

In regards to threatened species records the author of the EIS refers as having discussions with Ballina Council staff in regards to obtaining threatened species records. These discussions did not take place and to date, Council has no formal request to supply any ecological information to RMS's consultants.

The submitted EIS is considered deficient and/or selective in the manner in which it maps known threatened species records. In this respect, EIS has failed to:

- accurately and/or include all of the threatened species records identified within the Geolyse reports prepared as part of the Woodburn to Ballina project. Examples of the errors include, Blossom Bat records missing from **Figure 3-57**, *Syzygium moorei* and *Isoglossa eranthemoides* records absent **Figure 3-79 ;**
- map the location of *Marsdenia longiloba* and *Oberonia titania* referred to as occurring within volume 2 of the Biodiveristy Report ;
- map the location of the 68 Macadamia tetraphylla plants identified as occurring on Page 772 of the Biodiversity Report;
- include threatened species records previously supplied to RMS's consultants Geolyse by Council (refer Annexure B ) on 16 November 2004;
- include koala records which were previously supplied to RMS's consultants Geolyse by Friends of the Koala on 2 November 2005;
- provide a consistent approach to mapping threatened flora species. For instance, threatened flora distribution is clearly depicted in Figures 3.6-3.31 and Figures 3.71-3.79 of the Biodiversity Report. In contrast, Figures 10.3 - 10-29 contained within the main EIS only provides only a vague outline as to the distribution of Hairy Joint Grass (HJG) and other associated threatened plant species. Such inconsistencies have resulted in a mapped area of HJG (north of Station 158) been identified and as a "potential ancillary facility"
- map the location and extent of the Long-nosed Potoroo population that occurs within the Wardell heathland;

Rather than producing a set of composite maps that clearly depict all known significant ecological constraints/features such as, regional corridors, EECs and threatened species records the EIS sectionalises this information throughout various maps within the EIS. As a consequence, the true ecological value and impact of the proposed highway upgrade on these landscape units remains unclear.

For instance, when this information is collated in relation to the Wardell heathland and the adjoining Coolgardie escarpment (Chainages 154500 and 158000) it reveals road construction in this area will impact on at least:

- 5 Endangered Ecological Communities;
- 9 threatened plants species;
- the habitat of 5 known threatened species of fauna;
- fragment the regional corridor;
- remove mapped NPWS key fauna habitat.

However, Council database records confirm that an additional eight (8) species of fauna are known to occur from within this section of the Highway. Furthermore, Council database records also confirm a further (8) threatened fauna species are known to utlilised the habitats between Chainages 15300-15500. The EIS fails to acknowledge the occurrence of any of these species.

## 3. Impact Assessment

***Fauna species***

The EIS uses a regional approach to assess the impact of the proposed Highway upgrade on threatened species. Impact assessment for fauna species should be based on a species home range, habitat requirements and geographic barriers restricting movement. For instance,

species such as Wallum Froglet, Common Planigale and as the Bush Hen Bush have sedentary or have small home ranges and as such database records and subsequent obtained from those broader environments have little relevance and cannot be considered to be part of the same "*population*".

Consequently, impact assessment for fauna species will require assessment of numerous populations as they occur over the spatial extent of the Highway. Given the EIS has failed to undertake detailed fauna survey work the EIS should have used database records to predict threatened species usage of habitat. Such database records should have accounted for species specific foraging, home ranges and migratory traits over the broader landscape rather than only considering the threatened species records located within the immediate project corridor.

***Flora species***

Impact assessment in relation to a number of flora species contained within the EIS is based on assumptions rather than on scientific fact. A review of the impact of the Highway on the threatened plants identified as growing at the Wardell interchange confirms it will remove between 54% and 75% of each species the "known" population. The EIS then attempts to reduce the level of impact by identifying that 94.62 hectares of "*potential rainforest habitat*" for each species occurs within and surrounding the project boundary.

However, the fact remains unless additional survey work confirms the occurrence of threatened plants from these surrounding habitats and genetic exchange can clearly be identified, impact assessment must be confined to the threatened plants contained within the existing EIS. Consequently, impact assessment should be based on known occurrence rather than potential occurrence.

The EIS also attempts to minimise impacts to threatened plant species stating that remaining areas of rainforest located within the road boundary are a "*potential*" area for habitat restoration. While the EIS does not commit to undertaking this" *potentia*l" outcome all of these potential restoration areas will be subjected to ongoing edge effects and therefore will require RMS to undertake ongoing rehabilitation and maintenance works in perpetuity.

Such commitments have not formed the basis of RMS commitments on other Highway projects undertaken within Ballina Shire. In this regard rehabilitation works within the road corridor for the Ballina Bypass have been completely unsuccessful. While the Tintenbar to Ewingsdale project is currently under construction it is now apparent that large areas of the corridor that were nominated for revegetation cannot be revegetated due to the installation of infrastructure such as table drains, fencing, maintenance access tracks etc.

In relation to the impact assessment for the Red Lilly Pilly (*Syzygium hodgkinsoniae) the EIS* (**page 664**) concludes that the Highway upgrade will not have a significant impact on the species. However, **Figure 3.79** confirms that the species is growing within the middle of the Wardell interchange. Given this individual represents the species total population it can only be concluded that the Highway will have a significant impact.

The EIS remains silent on the possible occurrence the Southern Swamp Orchid (*Phaius australis*) which known to occur in close proximity to the existing route of the Pacific Highway. It is considered the species has the potential to occur within floodplain EECs. Council considers that detailed survey work should be undertaken

## 4. Wardell/Coolgardie Koala Population

Council is currently in the process of preparing a comprehensive koala plan of management (CKPOM) in accordance with *State Environmental Planning Policy No.44 - Koala Habitat Protection*. Whilst, this work is ongoing the initial information received by Council's ecological consultants indicates that the Wardell locality supports two (2) regional important core koala source populations that have persisted since the locality since 1900s. Whilst the submitted EIS fails to clearly identify the existence of these koala populations Council's ecological consultant has confirmed that the proposed Highway upgrade will fragment and isolate abovementioned koala populations.

Furthermore, in the vicinity of the Wardell heathland the Biodiversity Connection Strategy (BCS) proposes to establish a range of dedicated fauna underpasses and koala fencing. However, it remains unknown how these underpass locations relate to the abovementioned core koala populations. As a consequence, it is expected that additional detailed assessment is required to determine what impact the Highway on these koala populations.

## 5. Mitigation Measures

### *Fauna Movement Structures*

**Table 10 -29** identifies fauna crossing structures proposed to be established along the Highway route to allow fauna moment to occur post construction. In this regard, whilst **Table 10 -29** provides some details on the sizing of proposed fauna movement structures it provides no details on the overall cross section length of the structures. For instance, at Station 143.2 **Table 10-29** states that 3 cell culverts 2.4mX0.45m are to be installed to facilitate the movement of Oxleyam Pygmy Perch. However, the **Table 10 -29** fails to provide any details on distance, flow velocities, water depths in which Oxleyam Pygmy Perch will be required to swim through. Without such information it remains unknown whether the target fauna species will successfully utilise the subject movement structures.

As previously discussed the submitted EIS has failed to map the location of the Long nosed Potoroo population. In this regard the **Table 10-29** proposes to establish potoroo fauna movement structures between Stations 156 and 157. However, whilst Council has no knowledge of potoroos in this area, the species is known to occur around Station 151250.

The BCS appears to have given no serious consideration to habitat enhancement/reconstruction leading into and away from the nominated structures. Whilst, Section 4 of the BCS confirms that landscape conductivity will be increased by undertaking strategic revegetation of lands within the road reserve.

However, in reality it is considered that very little of this land will be available as viable fauna habitat given the fauna fencing which is going to be installed is usually well removed from edge of the highway due to its visual impact. Consequently, it is considered that landscape linkage outside of the road reserve should be a priority for increasing fauna conductivity.

It also noted that the BCS does not proposed to establish any fauna movement structures between Stations 146400 and 148000 despite this area being the most extensive area of native vegetation, located within the regional corridor. This area is also partly mapped as key habitat. Council is of the opinion this area should be a priority for the installation of major fauna crossing infrastructure.

The type and location of fauna movement structures contained within the EIS is also at odds with the structures recommended during the route selection process. In this respect, the RTA commissioned Ecosense to review the ecological assessment process undertaken by Geolyse. In regards to fauna movement structures Ecosense concluded to facilitate fauna movements that total of 4 bridges, 2 major and 6 minor fauna structures were required between Chainages 146500-159000 (**see Annexure C**). However, the submitted EIS primarily relies on culvert structures to facilitate fauna movements through the abovementioned habitats. Consequently, it remains unknown why the EIS has not included the previously recommended fauna movement structures.

***Threatened Plants***

The impact assessments for threatened plant species associated with Appendix E consistently refers to reducing the ecological impact of the Highway by undertaking restoration works within the remaining habitats of the road corridor. However, these commitments do not form part of the mitigation measures contained within **Section 10.4** of the EIS. Furthermore, **Table 10- 32** fails to include all of the threatened species of plants (refer Table 6-1) that are known to be impacted by the proposed Highway upgrade. Council is of the opinion that RMS should commit to rehabilitate and provide ongoing habitat maintenance for all areas of native vegetation retained and/or rehabilitated within the Highway corridor.

It is considered that any proposed Highway upgrade should include adequate mitigation measures for all threatened species of flora. In this regard, it is noted despite concluding the highway will have a significant impact **Table 10-32** fails to recommend any mitigation measures for the *Macadamia tetraphylla* population occurring *around the* Wardell Interchange.

This is considered a significant issue given the EIS when undertaking its impact assessment refers to the Macadamia Recovery Plan prepared by Costello et al (2009). The recovery plan identifies the Coolgardie Road population (Wardell interchange) as an important population. Under the recovery Plan an Important population sis defined as;

***"Important Populations***

*Given the fragmented and small nature of all populations of each species, all populations are considered important for the survival of each species.*

*On the basis of currently available information, it is not possible to prioritise individual macadamia populations. The Plan includes prioritised (high or medium) population clusters for each species on the basis of:*

*1.Extent of geographical range (particularly whether a cluster is found at the northern or southern limit of a species range).*

*2. High density areas (multiple populations of multiple individuals).*

*3. Areas of hybridisation (critical for the future evolution of macadamia species, particularly in light of climate change impacts).*

*4. Degree of genetic isolation and genetic differentiation.*

*5. Extent and pattern of available remnant habitat. which identifies prioritised population clusters of which*

It is considered that the *M. tetraphylla* population at Wardell conforms to all five (5) criteria. However, of most importance is that this population represents one of the species most southern known populations.

For the threatened plant species listed in **Table 10.32** the EIS proposes to implement Mitigation Measures B8 and B9. Part of these mitigation measures include the seed collection to be used later for revegetation projects of disturbed areas. While such an initiative is welcomed it remains unknown how the project would establish in excess of 10 hectares of HJG habitat. Furthermore, the EIS provides no commitment to achieving any threatened flora offset ratios. As previously mentioned given the road corridor will be subjected to ongoing edge effects it is questionable whether these areas are the best location to achieve the species long-term viability.

## 6. Biodiversity Offsetting

The EIS seeks to delay in identifying suitable offsetting sites, although the Biodiversity Offsetting Strategy (BOS) promotes seeking land parcels up to 100km away from the Highway as offset sites. Given the above strategy, Council is concerned Highway construction will result in losses to the local and regional biodiversity values of the Wardell/Coolgardie landscape and that these losses in biodiversity will not be will not be compensated for locally.

The ecological value of this broad landscape unit is well documented in published literature. For instance, the Far North Coast Regional Conservation Plan maps Wardell/Coolgardie landscape as the Regional Conservation Priority Area 4, Tuckean-Blackwall Range. The Plan refers to the Blackwall Range which incorporates Coolgardie as being a significant contiguous area of high conservation value, with highly significant remnants of a largely depleted landscape which connects between existing and future conservation areas.

Likewise, the Comprehensive Coastal Assessment which was commissioned by DECCW for vegetation on the floodplain and Lower Slopes on the Far North Coast concluded;

"*The survey data highlighted the very high conservation significance of the area of vegetation centred around Wardell, Coolgardie and the Blackwall Range. The area is a rare contiguous sample of the transition from alluvial floodplain to extensive coastal barrier sandplains and ranges of meta-sedimentary and basalt bedrock. This area contained superb examples of undisturbed old-growth swamp sclerophyll forest, lowland floodplain and riparian rainforest, dry and wet sclerophyll forests and diverse wallum wet and dry heaths.*"

Consequently, it is considered that such areas of high conservation significance should for the priority from rehabilitation under an offset package. The rehabilitation of habitats which adjoin the proposed Highway would also improve the landscape success of the fauna movement structures which for part of the EIS.

It appears the EIS has given no consideration to using the residual sections of properties purchased for the construction of the Highway as offset areas. In this regard, **Annexure D** depicts properties along the route of the Highway which are currently owned by RMS. It is envisaged RMS will be required to purchase the large sections of the remaining properties along the Highway Route and, as such, these properties represent an excellent opportunity for RMS to offset the impact of the Highway within the locality of the area of impact and increase the opportunity for landscape restoration to facilitate regional fauna movements.

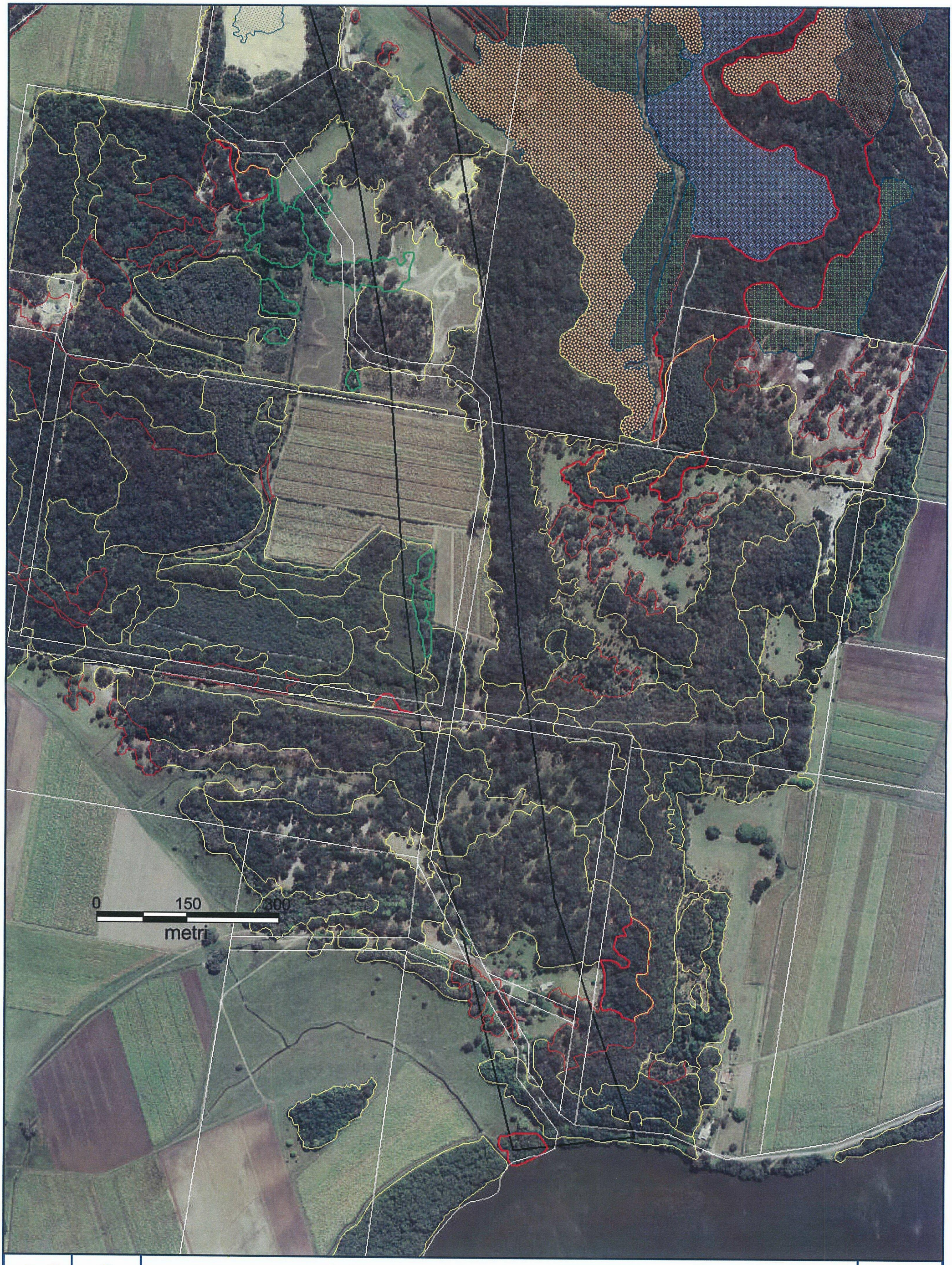
**Conclusion**

The submitted EIS is considered deficient for the reasons contained within this submission. It is considered EIS has failed undertake the level of survey work and/or impact assessment that is required to accurately predict what impact the Highway upgrade will have on ecological significant habitats within and adjacent to the Highway. Should you have any enquires regarding the matter raised in this submission please contact Council's Environmental Scientist Mr Ian Gaskell on 66 861233

Yours faithfully

Rod Willis
**Group Manager**
**Regulatory Services**

# Annexure A

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# Ballina Council Vegetation Communities
# Chainage 146000 to 149000
# Approximate location of Proposed HWY



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# Ballina Council Vegetation Communities

## Approximate location of Proposed HWY



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# Annexure B

# Threatened Species in Ballina

## Frogs

- Wallum Froglet
- Wallum Sedge Frog

## Birds (Coastal)

- Black Bittern
- Black-necked Stork
- Beach Stone-curlew
- Ground Parrot
- Albert's Lyrebird
- White-eared Monarch
- Wompoo Fruit-Dove
- Rose-crowned Fruit-Dove
- Brolga
- Bush-hen
- Masked Owl
- Sooty Owl
- Grey-crowned Babbler
- Bush Stone-curlew
- Glossy Black-Cockatoo
- Osprey

## Mammals

- Spotted-tailed Quoll
- Common Planigale
- Koala
- Squirrel Glider
- Long-nosed Potoroo
- Red-legged Pademelon
- Grey-headed Flying-fox
- Common Blossom-bat
- Little Bent-wing Bat
- Common Bent-wing Bat
- Eastern Long-eared Bat

## Flora

- Archidendron hendersonii
- Endiandra hayesii
- Green Leafed Rose Walnut
- Tinospora tinosporoides
- Macadamia tetraphylla
- Syzygium hodgkinsoniae
- Geijera paniculata

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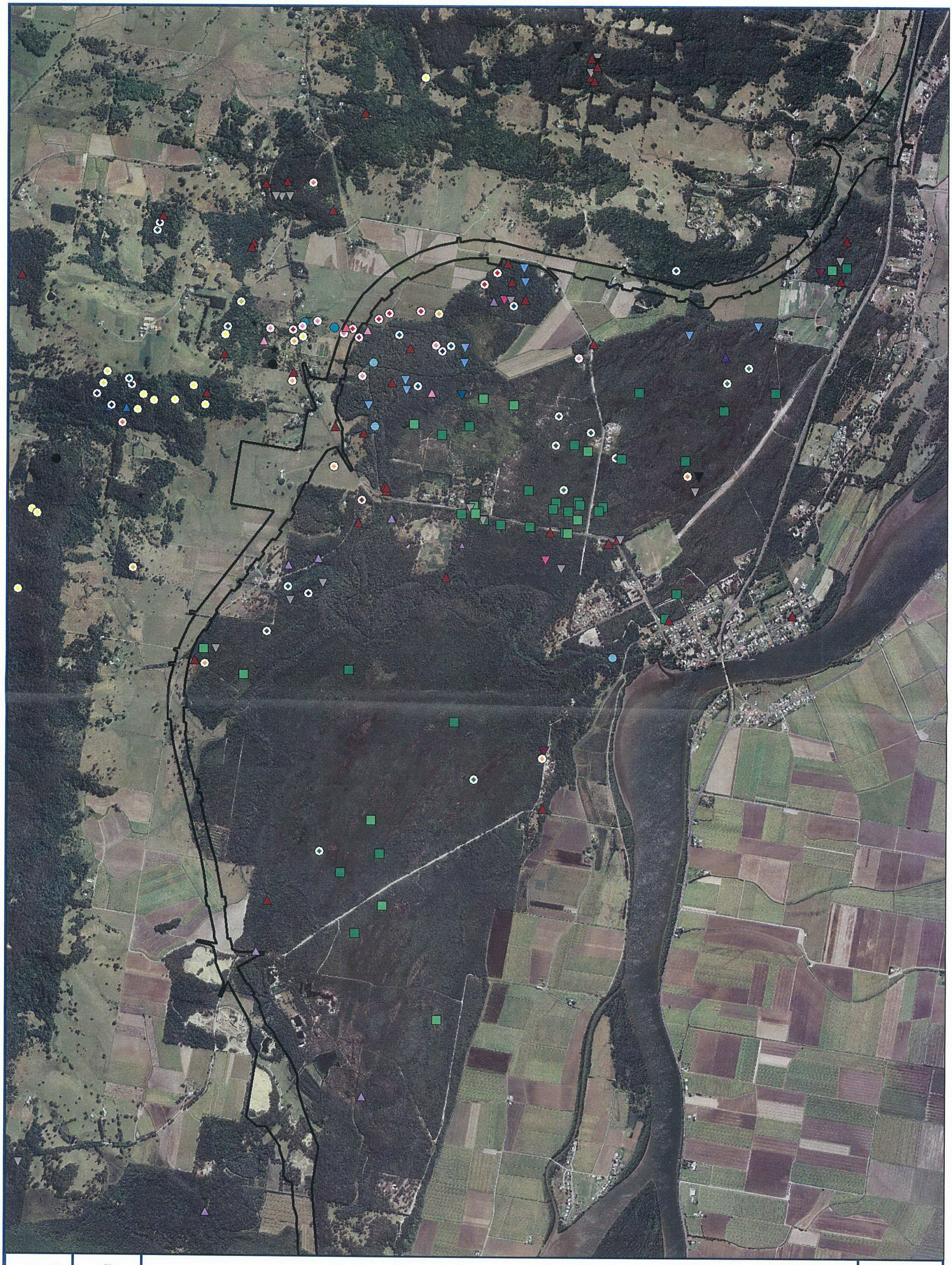
**Key to Threatened Fauna in Ballina Shire**

Produced by: Fran King

Dept: Regulatory Services

Referred to:

Date:05/03/2003



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# Ballina Council Threatened Species Records

## Approximate location of Proposed HWY



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# Annexure C

# Woodburn to Ballina

Upgrading the Pacific Highway

# Technical Review of the Ecological Investigations for the Route Selection Process

November 2007



RTA/Pub. 07 XXXX

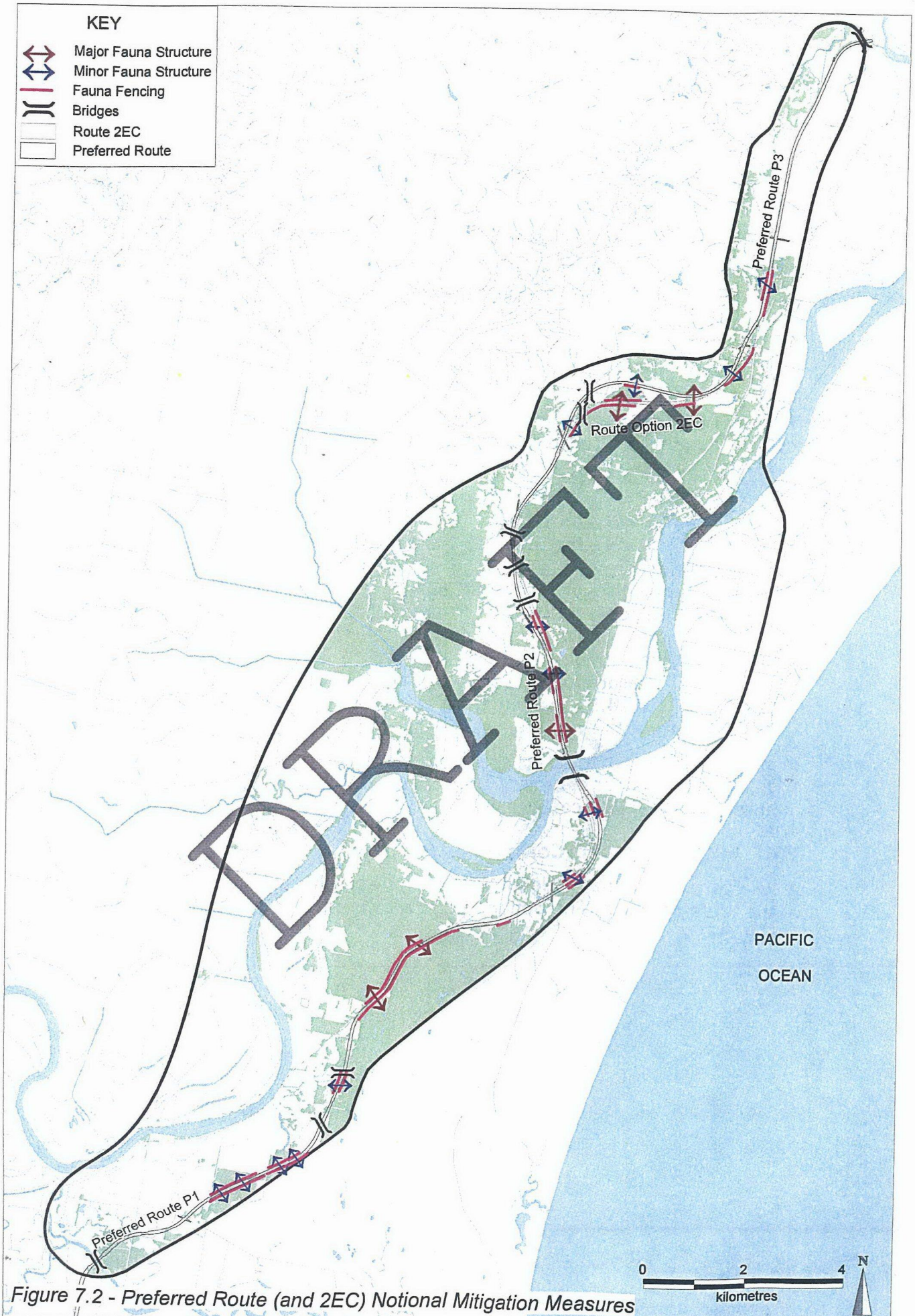


*Figure 7.2 - Preferred Route (and 2EC) Notional Mitigation Measures*

# Annexure D

LEGEND

RMS owned land

Proposed highway upgrade

Regional Corridor

Cadastre

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# RMS owned land Ballina Shire in relation to proposed highway upgrade

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