Greg Clancy, of Birdlife Australia Northern NSW, made the following submission on the project:

Woolgoolga to Ballina Pacific Highway Upgrade (SSI)

Objects to this project

My submission is attached. A PowerPoint documenting many fo the threatened species of the area is also attached.

- Attachment: Submission by Dr G. P. Clancy Pacific Highway upgrade Woolgoolga to Ballina2.pdf
- Attachment: Threatened Species of Glenugie to Iluka Road turnoff2.pdf

Submission on Pacific Highway Upgrade Woolgoolga to Ballina Environmental Impact Statement

Dr Greg. P. Clancy
Ecologist
PO Box 63 Coutts Crossing NSW 2460
[redacted]

Dear Sir/Madam,

I wish to lodge the following submission in opposition to the preferred route of the Pacific Highway Upgrade through the Clarence Valley (Glenugie to Harwood) as it is a major divergence from the existing highway, opening up a major corridor through an extremely ecologically sensitive area which will be significantly impacted by the proposal. There is an alternative, the **original orange option**, which generally approximates the existing highway with small bypasses at Grafton and Ulmarra. In excess of 80 threatened species of flora and fauna will be impacted by the upgrade in the Glenugie to Harwood section.

Impacts on the Coastal Emu will add additional and unnecessary pressure on an already declining population. Methods to ameliorate this impact vary from very optimistic to farcical. If the preferred route is constructed I have no doubt, as a practicing scientist with decades of experience with birds, that the Emu will be adversely affected.

I carried out studies on the Endangered Black-necked (Satin) Stork for my Doctor of Philosophy and located a nesting pair in the Blackadder Creek-Corindi area. I am very concerned that the route at that location will adversely impact on the species. I have provided the co-ordinates for the four separate nests used at different times by this pair to Chris Thomson, Ecologist with SKM.

I will add comment to the executive summary and selected sections of the RMS Biodiversity Assessment paper. My comments are in bold.

Biodiversity Assessment - Copy of Executive summary

Much of the native vegetation in the study area has been cleared or fragmented for agriculture and rural development, with the exception of the Summervale Range **(in the Glenugie to Harwood section)** and associated foot slopes, Wardell heath, and several adjoining state forests and conservation reserves. The project traverses a number of these key habitats and corridors including the boundaries of eight state forests

These formations consist of 57 separate vegetation communities including six Threatened Ecological Communities listed as Endangered under the NSW *Threatened Species Conservation Act 1995* (TSC Act) and one Critically Endangered Ecological Community listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). These are:

- Sub-tropical coastal floodplain forest of the NSW North Coast Bioregion (TSC Act)
- Swamp sclerophyll forest on coastal floodplains of the NSW North coast, Sydney Basin and south east corner bioregions (TSC Act)
- Swamp oak floodplain forest of the NSW North Coast, Sydney Basin and South East

Corner bioregions (TSC Act)
• Coastal Cypress Pine shrubby open forest of the North Coast Bioregion (TSC Act)
• Freshwater wetlands on coastal floodplains on the NSW North coast, Sydney Basin and South East Corner bioregions (TSC Act)
• Lowland Rainforest on floodplain in the NSW North Coast Bioregion (TSC Act)
• Lowland Rainforest of sub-tropical Australia (EPBC Act).
A total of 123 threatened flora and fauna species were identified either as known from or potentially occurring in the study area comprising 63 vertebrate fauna species (one an endangered population), 54 plant species, three invertebrate species and three fish species and six conservation reserves which adjoin the project boundary. **(There are 80+ species definitely recorded in the Glenugie to Harwood section)**

The project traverses the major river catchments of the Clarence and Richmond rivers. Eight Nationally Important Wetlands (from the Directory of Important Wetlands in Australia (2001)) and thirteen State listed wetlands (State Environmental Planning Policy No.14) are located in this study area. Many of these wetlands are recharged or fed by the Clarence River catchment and support significant areas of groundwater dependent ecosystems.

The preferred route approximates a number of significant wetlands in the Coldstream River catchment. They should be fully avoided.

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Avoidance and mitigation approach

RMS has adopted a policy with regard to road development and associated impacts on biodiversity, which is that the planning and construction of roads should, in order of consideration, endeavour to:
• Avoid impacts on habitat, through the planning process **(This should have been the preferred option)**
• Minimise impacts on habitat, through the planning process **(rearranging the deck chairs on the Titanic)**
• Mitigate impacts on habitat, through a range of mitigation measures **(once the habitat is cleared the damage is done. Underpasses, overpasses etc. will assist a few animals but won't replace the lost habitat.)**
• Offset any residual impacts. **(The protection of areas elsewhere still results in a net loss of biodiversity. The work offset in this context is an oxymoron.)**
The initial route planning phase focused on avoiding and minimising impacts to biodiversity through examination of a number of route options. Those potential routes that best fit the environmental, social and economic criteria were short-listed which included consideration of biodiversity values and habitat for identified threatened species. Following selection of a preferred route detailed biodiversity surveys within the project boundary sought to refine the alignment and concept design of the footprint to further avoid and minimise the loss of important vegetation communities and habitats and avoid significant species or habitat. Engineering constraints, road design and safety standards were considered during this refinement.
In this regard the selection of the preferred route was influenced by the biodiversity investigations and the data informed both the route selection and the concept design. **(RMS have admitted that ecological considerations were given less value than social and economic considerations in route selection).**

Evaluation of impacts

In considering the residual impacts there would be a loss of around 948 hectares of

remnant vegetation ranging from low, through moderate and high condition, one third of which (around 337 hectares) consists of the listed threatened ecological communities described. The likely clearing estimates have been quantified based on the concept design construction footprint (the road construction footprint including water quality and sediment basins plus an additional 10 metre allowance for construction buffer). This does not include clearing that may be required for potential ancillary facilities beyond this construction footprint. An additional potential loss of 25 hectares may be required for ancillary facilities. The scale of impact is large and significance assessments indicate that the project is likely to have a significant impact on:

• Five endangered ecological communities including one critically endangered ecological community listed under the EPBC Act, Lowland Rainforest of Subtropical Australia
• Eleven threatened flora species (6 of which are also listed under the EPBC Act)
• Twenty threatened fauna species (7 of which are also listed under the EPBC Act)
• One endangered population listing under the TSC Act: emu population in the NSW North Coast Bioregion and Port Stephens LGA area.

The expected impacts from the project highlight the importance of mitigating and managing long-term indirect impacts to rare and high quality habitats and maintaining existing connectivity in the landscape. Although mitigation and management measures would reduce impacts for these species and communities, there would be residual impacts. Residual impacts would form the focus of an offset strategy. **(This is not acceptable at a time when Australia is facing its second great vertebrate extinction event)**

In general, the types of potential impacts to biodiversity during construction and operation of the project include:

• Loss of native vegetation (including habitat for threatened flora and threatened ecological communities)
• Loss of habitat for fauna (including food resources, shelter and refuge areas during nonbreeding
and breeding life-cycle events)
• Direct mortality of native fauna
• Loss of connectivity for flora and fauna (including links to national parks and state forests and identified local and regional wildlife corridors)
• Fragmentation of habitat and resulting edge effects from road noise, altered light and wind levels
• Changes to water quality as a result of works in or adjacent to aquatic habitats and alterations to natural hydrological flows
• Invasion and spread of weeds and pest fauna species
• Potential spread of disease pathogens.

(Most of these impacts can be totally avoided in the Clarence Valley section by adopting the orange option)

Mitigation and management

A biodiversity management framework has been developed to provide a consistent approach to the mitigation and management of biodiversity for the project. The key aspects of the framework include:

• Guidance on significant issues to be addressed in the detailed design
• A Biodiversity Connectivity Strategy including a summary of proposed dedicated and combined fauna crossing underpasses, overpasses and arboreal crossing structures in addition to connectivity design principles for inclusion in the detailed design **(these are OK to some extent but they won't work for some species, such as the Coastal Emu, and don't compensate for the large amount of habitat loss.)**
• A Flora and Fauna Management Plan consistent with RMS best practice for protecting and managing biodiversity during construction, including several threatened species

management sub-plans which address the management of significantly impacted species
• A Biodiversity Monitoring Strategy which outlines the proposed structure and content of a monitoring program for monitoring the effectiveness of mitigation measures and applying adaptive management outcomes based on objectives and performance measures. **(It is of no practical benefit to the project as it will only monitor the decline of species and it will be too late to move the highway when the results of the monitoring are known.)**

Offset strategy

A Biodiversity Offset Strategy is outlined with the objective of delivering a package of offsets to achieve a neutral or net beneficial biodiversity outcome for the region as a result of the project. The strategy would be applied consistently across the project to offset the impacts of the project.

The Biodiversity Offset Strategy meets the NSW Department of Planning and Infrastructure (DoP&I) Director-General's requirements and ensures that the project is consistent with the Office of Environment and Heritage (OEH) *Principles for the use of biodiversity offsets in NSW* and the Commonwealth Governments policy statement with respect to environmental offsets under the EPBC Act. The offset would, as a minimum, be commensurate with the magnitude of the impacts of the development and ideally deliver outcomes that are 'like for like'. In this respect it will aim to target comparable vegetation and habitat types.

(Offsets are no compensation for the loss of valuable habitat. A remote area can be given a higher conservation zoning but this still results in a net loss of biodiversity, which is not acceptable.)

Conclusions

The proposed upgrade of the Pacific Highway from Woolgoolga to Ballina would have a significant impact on aspects of the biodiversity of study area. There would be a loss of around 948 hectares of remnant vegetation from low to high condition, one third of which (337 hectares) consists of listed threatened ecological communities. An additional potential loss of 25 hectares is likely to be required for ancillary facilities. The scale of impact highlights the importance of mitigating and managing long-term indirect impacts to rare and high quality habitats and maintaining existing connectivity in the landscape.
This Biodiversity Working Paper identifies matters which are relevant to the assessment of impacts to threatened species, populations, and ecological communities or their habitats arising from the proposed project being assessed under Part 5.1 of the *Environmental Planning and Assessment Act*, 1979. Significance assessments indicate that the project is likely to have a significant impact on five endangered ecological community (including one critically endangered community), 11 threatened flora species and 14 threatened fauna species or populations. Although mitigation measures would reduce impacts for these species and communities, they are not likely to totally ameliorate the impact.
The assessment address key thresholds identified under the draft *Guidelines for Threatened Species Assessment* under Part 3A (repealed, now Part 5.1) of the *Environmental Planning and Assessment Act* 1979. These key thresholds and the principles in the guidelines were taken into consideration in assessing the impacts on threatened species, populations and communities as a likely result of the project.
As the project would result in clearing of native vegetation including critically endangered ecological communities, threatened species and their habitat, it is unlikely that the objective of maintaining or improving biodiversity values can be met. It would therefore be necessary

to offset this impact to fulfil this outcome.
The NSW North Coast Bioregion supports high biodiversity and a considerable number of State and Commonwealth listed threatened species and ecological communities. Measures to avoid and mitigate listed key threatening processes have been duly considered through the route planning process and biodiversity management strategies. This thorough process considered the long-term protection of the majority of the threatened species identified as known or likely to occur in the study area.
There is no conclusive scientific knowledge on the ability of each of the assessed species to sustain a loss of the magnitude expected or resilience to change including adaptation to the proposed mitigation measures. As such, there is a risk that the project could have a significant impact on several threatened flora and fauna, most notably the coastal emu endangered population and the critically endangered Lowland Rainforest of Subtropical Australia present in the study area. **(This, in itself, should be enough evidence on which to make a decision to reject the preferred route through the Clarence Valley and to adopt the orange option.)**

Extracts from the body of the report

In theory, access to identified important habitats can be provided for emus via appropriately placed and adequately sized crossing structures (i.e. bridges and arches) in addition to exclusion fencing, which should also act as directional fencing leading to the crossing structures. However there is a risk in this approach in that it relies on effectiveness of these mitigation measures when there is no current scientific evidence to indicate that wild emus are capable of finding and using crossing structures or can be directed by fencing. In the absence of scientific certainty the benefit of providing crossing structures remains to be proven. (Page 437) **(This reinforces my grave concern for the Coastal Emu)**

The objective of the Biodiversity Offset Strategy is to deliver a package of offsets to achieve a neutral or net beneficial biodiversity outcome for the region as a result of the project. The strategy would be applied consistently across the project to offset the impacts identified in this assessment. Where there is scope to reduce the impacts through the detailed design phase for each of the 11 sections, the refined construction footprint would be considered in the calculations of offsets. (page 439) **(Offsets still result in a net loss of Biodiversity.)**

In conclusion I assert that the research and documentation prepared for the RMS clearly indicates that the preferred route through the Clarence Valley is totally unacceptable on ecological grounds and that the orange route is the only acceptable route for the upgrade. The issue of the impact on the Black-necked Stork at Corindi also needs to be addressed.

Dr Greg. P. Clancy
25/01/13

Threatened Species of Glenugie to Iluka Road turnoff

Pacific Highway upgrade

Dr Greg. P. Clancy

List of threatened flora and fauna of Pacific Highway upgrade route Glenugie State Forest to Iluka Road turnoff NSW Threatened Species Conservation Act

- **FLORA**
- Square-fruited Ironbark — *Eucalyptus tetrapleura*
- Weeping Paperbark — *Melaleuca irbyana*
- Grevillea — *Grevillea quadricauda*
- Fern — *Lindsaea incisa*
- Moonee Quassia — *Quassia* sp. 'Mooney Creek'
- Swamp Orchid — *Phaius australis*
- Hairy Melichrus — *Melichrus hirsutus*

FAUNA

mammals

Spotted-tailed Quoll	*Dasyurus maculatus*
Brush-tailed Phascogale	*Phascogale tapoatafa*
Common Planigale	*Planigale maculata*
Koala	*Phascolarctos cinereus*
Squirrel Glider	*Petaurus norfolcensis*
Yellow-bellied Glider	*Petaurus australis*
Rufous Bettong	*Aepyprymnus rufescens*
Grey-headed Flying-fox	*Pteropus poliocephalus*
Common Blossom-Bat	*Syconycteris australis*
Yellow-bellied Sheathtail-bat	*Saccolaimus flaviventris*
Greater Broad-nosed Bat	*Scoteanax rueppellii*
Hoary Wattled Bat	*Chalinolobus nigrogriseus*
Large Pied Bat	*Chalinoilobus dwyeri*
Eastern Bent-wing Bat	*Miniopterus schreibersii oceanenis*
Little Bent-wing Bat	*Miniopterus australis*
Beccari's Freetail-bat	*Mormopterus beccarii*
Eastern Freetail-bat	*Mormopterus norfolkensis*
Eastern Cave Bat	*Vespadelus troughtoni*
Eastern False Pipistrelle	*Falsistrellus tasmaniensis*

Northern Long-eared Bat *Nyctophilus bifax*
Large-footed Myotis *Myotis adversus*
Eastern Chestnut Mouse *Pseudomys gracilicaudatus*

birds

Emu *Dromaius novaehollandiae* (endangered population)
Magpie Goose *Anseranus semipalmata*
Wompoo Fruit-Dove *Ptilinopus magnificus*
Superb Fruit-Dove *Ptilinopus superbus*
Black-necked Stork *Ephippiorhynchus asiaticus*
Australasian Bittern *Botaurus poiciloptilus*
Eastern Osprey *Pandion cristatus*
Square-tailed Kite *Lophoictinia isura*
Spotted Harrier *Circus assimilis*
Little Eagle *Hieraaetus morphnoides*
Brolga *Grus rubicunda*
Pale-vented Bush-hen *Amaurornis moluccana*
Bush Stone-curlew *Burhinus grallarius*
Australian Pied Oystercatcher *Haematopus longirostris*

Comb-crested Jacana	*Irediparra gallinacea*
Australian Painted Snipe	*Rostratula australis*
Glossy Black-Cockatoo	*Calyptorhynchus lathami*
Little Lorikeet	*Glossopsitta pusilla*
Swift Parrot	*Lathamus discolor*
Turquoise Parrot	*Neophema pulchella*
Powerful Owl	*Ninox strenua*
Barking Owl	*Ninox connivens*
Sooty Owl	*Tyto tenebricosa*
Masked Owl	*Tyto novaehollandiae*
Eastern Grass Owl	*Tyto longimembris*
Brown Treecreeper	*Climacteris picumnus*
Speckled Warbler	*Chthonicola sagittata*
Mangrove Honeyeater	*Lichenostomus fasciogularis*
Regent Honeyeater	*Anthochaera phrygia*
Black-chinned Honeyeater	*Melithreptus gularis*
Grey-crowned Babbler	*Pomatostomus temporalis*
Varied Sittella	*Daphoenositta chrysoptera*
Barred Cuckoo-shrike	*Coracina lineata*
White-eared Monarch	*Carterornis leucotis*
Scarlet Robin	*Petroica boodang*
Hooded Robin	*Melanodryas cucullata*
Diamond Firetail	*Stagonopleura guttata*

Reptiles

Three-toed Snake-tooth Skink	*Coeranoscincus reticulatus*
White-crowned Snake	*Cacophis harriettae*
Pale-headed Snake	*Hoplocephalus bitorquatus*
Stephen's Banded Snake	*Hoplocephalus stephensii*

Amphibians

Giant Barred Frog	*Mixophyes iteratus*
Green-thighed Frog	*Litoria brevipalmata*

72 species

Species covered by the provisions of the Environment Protection and Biodiversity Conservation Act (Federal)

FLORA

Grevillea	*Grevillea quadricauda*
Square-fruited Ironbark	*Eucalyptus tetrapleura*
Swamp Orchid	*Phaius australis*

FAUNA

mammals

Spotted-tailed Quoll	*Dasyurus maculatus*
Koala	*Phascolarctos cinereus*
Grey-headed Flying-fox	*Pteropus poliocephalus*
Large Pied Bat	*Chalinolobus dwyeri*
New Holland Mouse	*Pseudomys novaehollandiae*

birds

Magpie Goose	*Anseranus semipalmata*
White-throated Needletail	*Hirundapus caudacutus*
Fork-tailed Swift	*Apus pacificus*
Eastern Great Egret	*Ardea modesta*
Cattle Egret	*Ardea ibis*
Glossy Ibis	*Plegadis falcinellus*
Australasian Bittern	*Botaurus poiciloptilus*

Eastern Osprey	*Pandion cristatus*
White-bellied Sea-Eagle	*Haliaeetus leucogaster*
Australian Painted Snipe	*Rostratula australis*
Swift Parrot	*Lathamus discolor*
Pacific Golden Plover	*Pluvialis fulva*
Latham's Snipe	*Gallinago hardwickii*
Marsh Sandpiper	*Tringa stagnatilis*
Common Greenshank	*Tringa nebularia*
Caspian Tern	*Hydroprogne caspia*
Rainbow Bee-eater	*Merops ornatus*
Regent Honeyeater	*Anthochaera phrygia*
Rufous Fantail	*Rhipidura rufifrons*
Black-faced Monarch	*Monarcha melanopsis*
Spectacled Monarch	*Symposiarchus trivirgatus*

reptile

Three-toed Snake-tooth Skink *Coeranoscincus reticulatus*

Amphibian

Giant Barred Frog *Mixophyes iteratus*

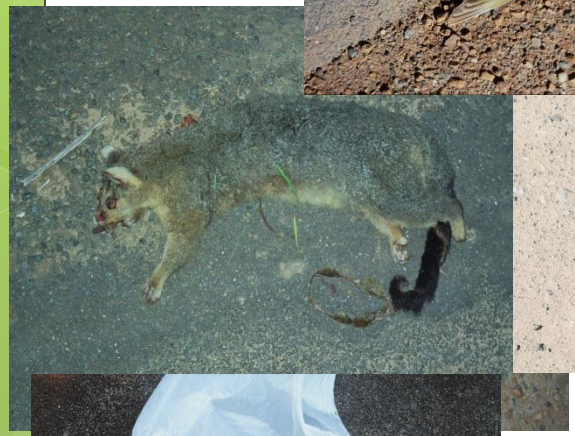
16 additional species

ROADKILLS









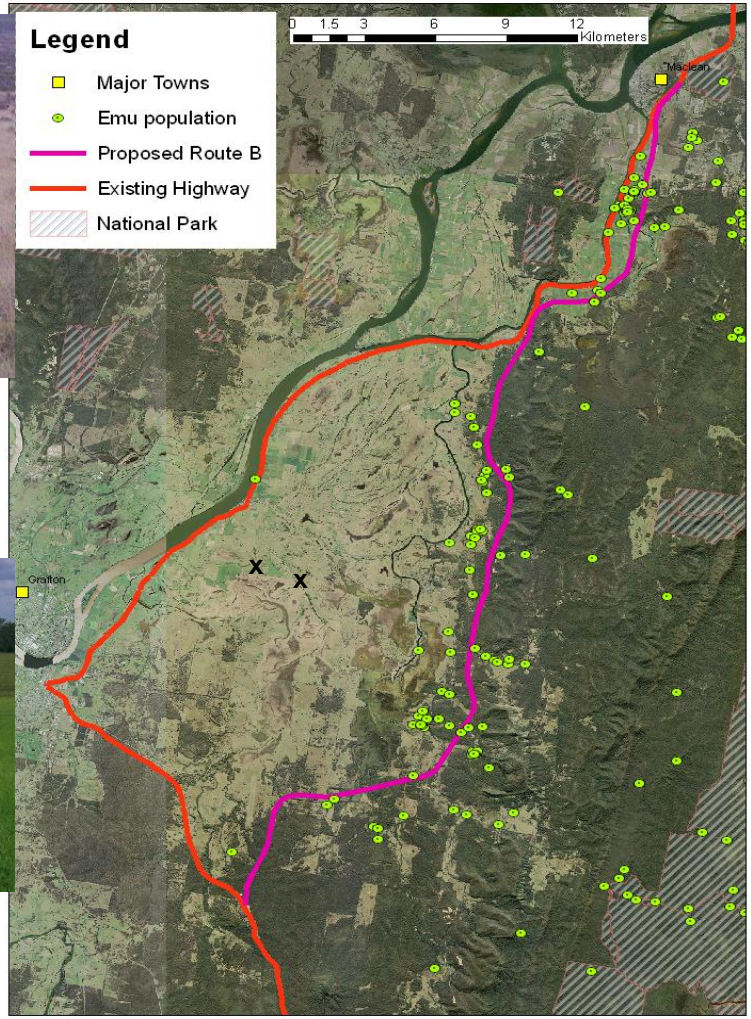


Hairy Melichrus

Swamp Orchid

Coastal Emu

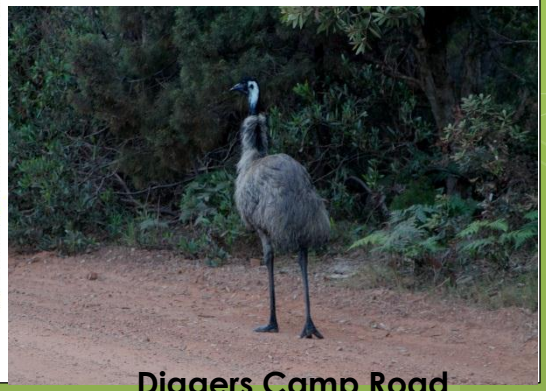
Red Cliff YNP



Bungalwalbin

Wooli Road

Mogul Stud



Diggers Camp Road

Yellow-headed Emu at Main Camp

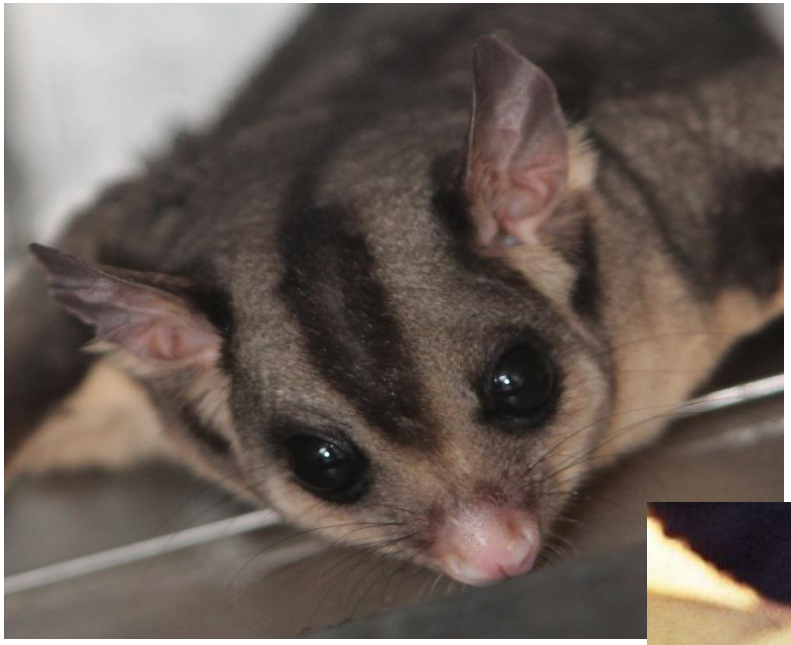
Iluka Emus

Emus between Deep Creek and Swan Creek

Spotted-tailed Quoll

Brush-tailed Phascogale

Common Planigale



Yellow-bellied Glider scar tree

Squirrel Glider

Rufous Bettong

Common Blossom-bat

Grey-headed Flying-fox

Large Pied Bat

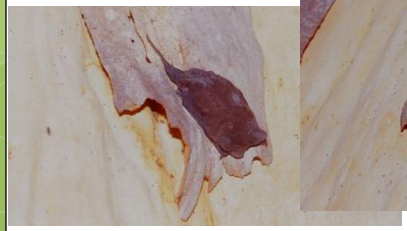
Northern Long-eared Bat

Large-footed Myotis

Hoary Wattled Bat

Little Bent-wing Bat

Greater Broad-nosed Bat

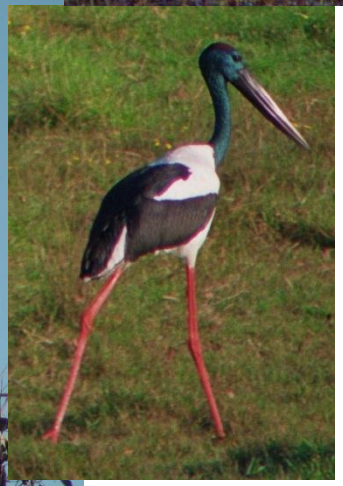


Eastern Freetail-bat

Magpie Goose

Brolga

Superb Fruit-Dove

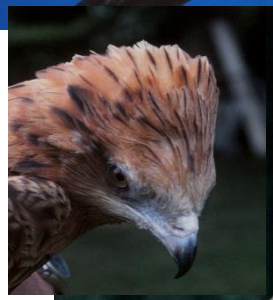


Black-necked Stork

Pale-vented Bush-hen

Bush Stone-curlew

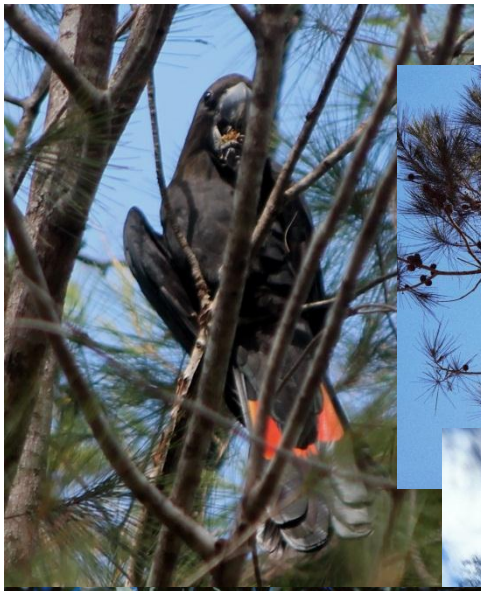
Eastern Osprey

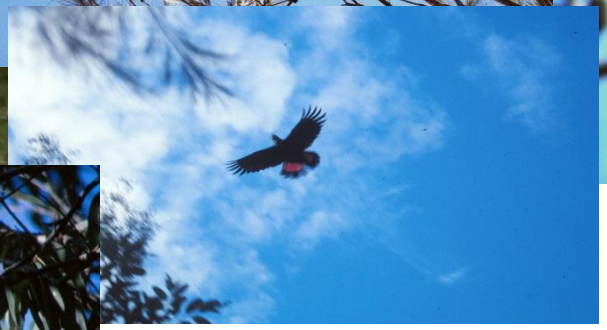


Square-tailed Kite

Comb-crested Jacana

Pied Oystercatcher





Glossy Black-Cockatoo

Swift Parrot

Turquoise Parrot

Little Lorikeet

Eastern Grass Owl

Masked Owl

Speckled Warbler

Black-chinned Honeyeater

Grey-crowned Babbler

Babbler dormitory

Brown Treecreeper

White-eared Monarch

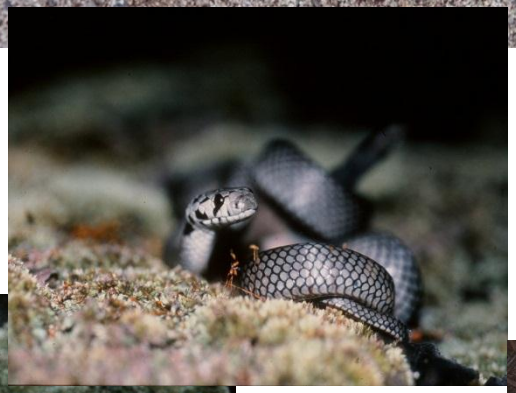
Hooded Robin

Scarlet Robin

Diamond Firetail

Three-toed Snake-eyed Skink

Pale-headed Snake



White-crowned Snake

Giant Barred Frog

Green-thighed Frog

EPBC species