

## Connectivity for Wildlife

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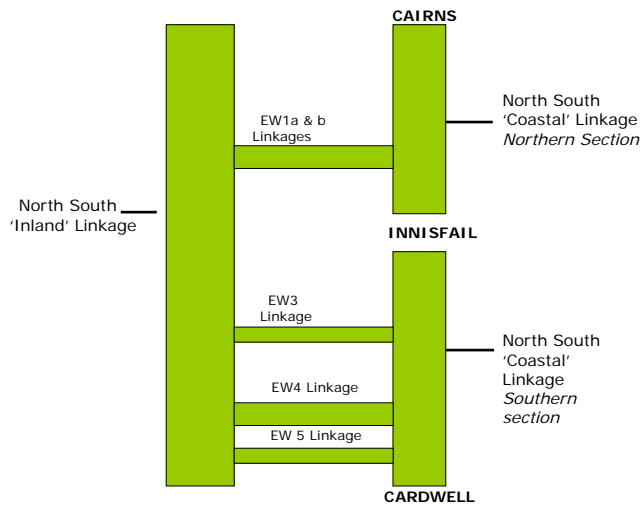
## Connectivity for Wildlife

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- ❑ Connectivity is a species-specific scale
- ❑ Rain forest fauna are generally intolerant of fragmentation and isolation
- ❑ Flightless beetles and fruit pigeons require different habitat connectivity configurations
- ❑ Restoring connectivity for the most specialised fauna is likely to be optimal
- ❑ De-fragmentation acts to isolate threats to forest patches, effectively fragmenting the disturbance



## Connectivity for Wildlife – Regional Scale



## Connectivity for Wildlife – Regional Scale



Restoration works at Big Maria Ck bridge crossing points

Culvert crossing at Little Banyan Ck has good vegetation cover and its size allows some movement under the road

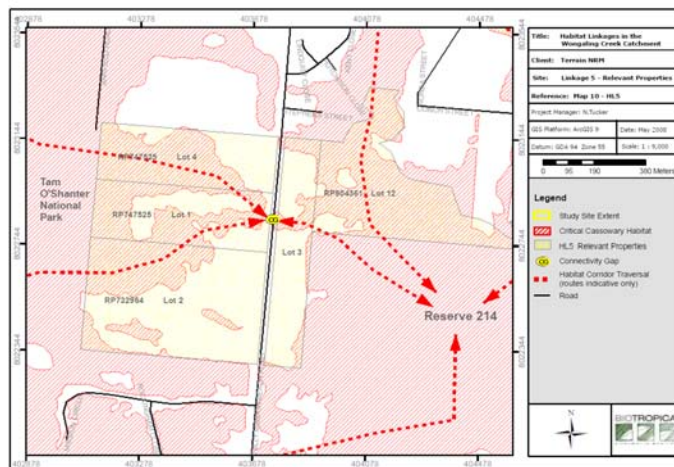


## Habitat Linkages – Catchment Scale



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## Habitat Linkages Catchment Scale



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## Connectivity for Wildlife - Local Scale Donaghy's Corridor

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## Connectivity for Wildlife - Local Scale Donaghy's Corridor

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After 3 years;

- 119 plants
- 40 vertebrates
- Numerous invertebrates
- Long distance movements
- Genetic mixing



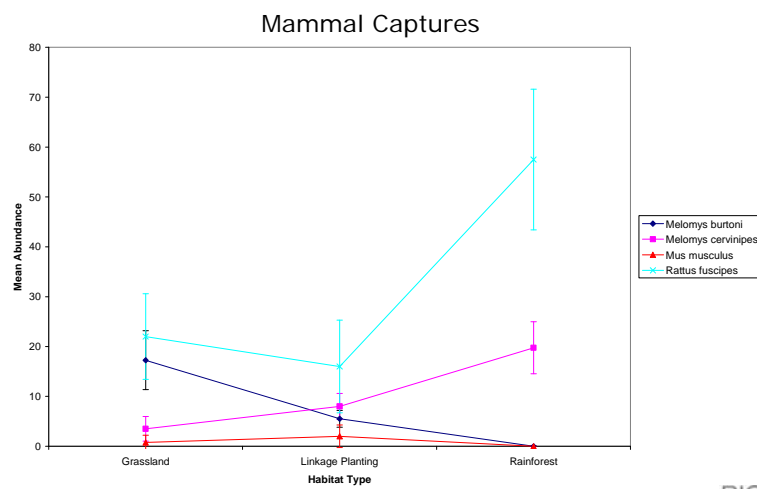
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## Connectivity for Wildlife - Linear Infrastructure scale Powerline Corridor – Wooroonooran N.P



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## Connectivity for Wildlife - Linear Infrastructure scale Powerline Corridor – Wooroonooran N.P



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**Connectivity for Wildlife - Linear Infrastructure scale**  
**East Evelyn Underpass**

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**Connectivity for Wildlife - Linear Infrastructure scale**  
**East Evelyn Underpass Planting**

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## Connectivity for Wildlife - Linear Infrastructure scale Cardwell Range Re-alignment Project

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- ❑ \$160 million for 4.2km of road re-alignment adjacent to NP and WTWHA/GBRMP
- ❑ Ecological surveys to locate habitats, species of concern
- ❑ Strategies to determine best management for each
- ❑ Five faunal underpasses for cassowaries/reptiles/amphibians
- ❑ Five rope bridges for mahogany gliders
- ❑ Roadside fencing strategy
- ❑ Viaduct for general wildlife movement (light/moisture modeling)
- ❑ Rehabilitation Strategies for different surfaces

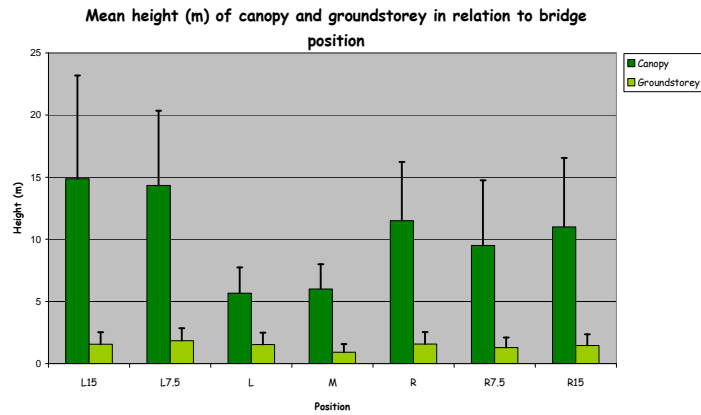


## Cardwell Range Re-alignment Project – Viaduct location

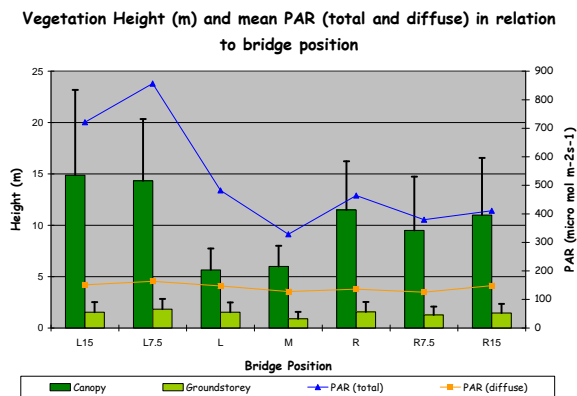
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## Connectivity for Wildlife - Linear Infrastructure scale Cardwell Range Re-alignment Project Lessons from Kuranda: Effect of overhead bridges - height

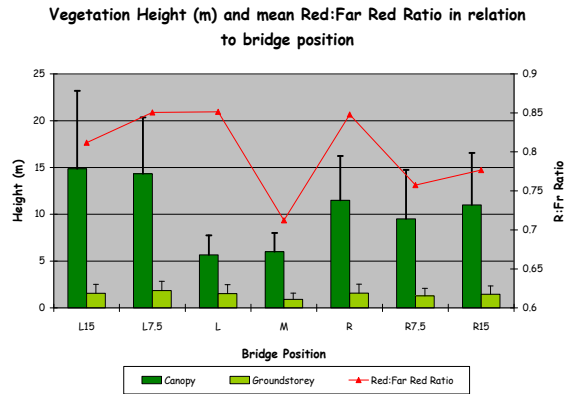


## Connectivity for Wildlife - Linear Infrastructure scale Cardwell Range Re-alignment Project Lessons from Kuranda: Effect of overhead bridges – height and PAR



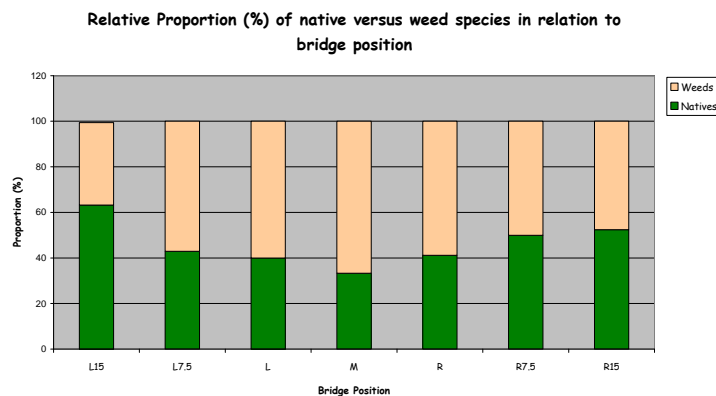
## Connectivity for Wildlife - Linear Infrastructure scale Cardwell Range Re-alignment Project

Lessons from Kuranda: Effect of overhead bridges – height and R-FR light



## Connectivity for Wildlife - Linear Infrastructure scale Cardwell Range Re-alignment Project

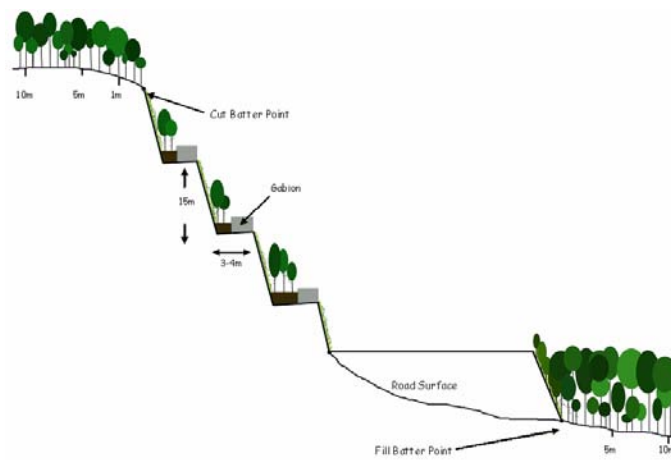
Lessons from Kuranda: Native and Exotic Plants



## Connectivity for Wildlife - Linear Infrastructure scale Cardwell Range Re-alignment Project Lessons from Kuranda: Effects of bridges on soil moisture



## Connectivity for Wildlife - Linear Infrastructure scale Cardwell Range Re-alignment Project Lessons from Kuranda: Cut batter treatments



## Connectivity for Wildlife - Linear Infrastructure scale Cardwell Range Re-alignment Project

### Lessons from Kuranda: Fish don't jump

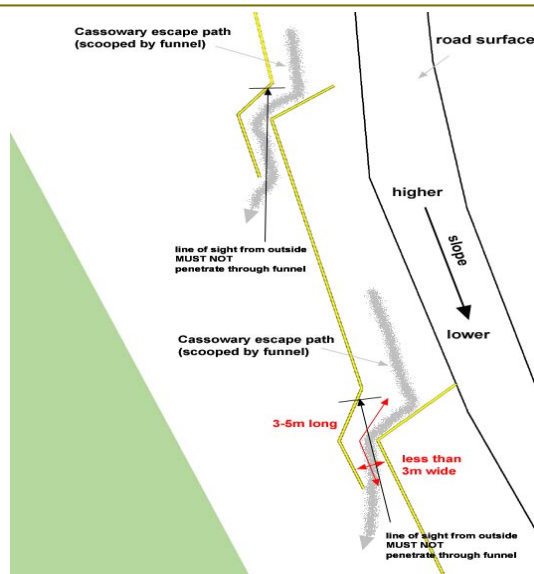
- ❑ Kuranda Range Road crosses Streets Creek
- ❑ Few permanent watercourses on the highway
- ❑ Locally endemic Streets Creek Red morph Rainbow Fish movement thwarted by drop-offs from the culvert base
- ❑ Retrofitting/new design needed



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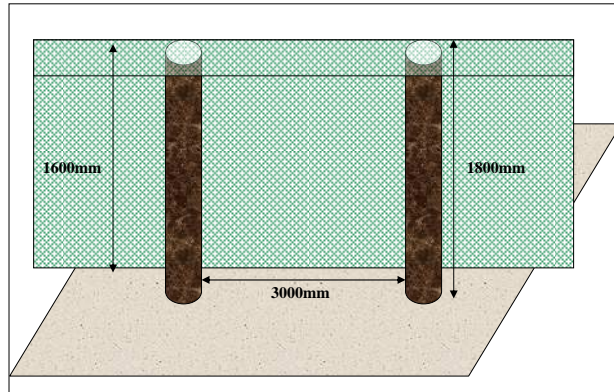
## Connectivity for Wildlife - Linear Infrastructure scale Cardwell Range Re-alignment Project

### Lessons from Kuranda: Fencing and funneling

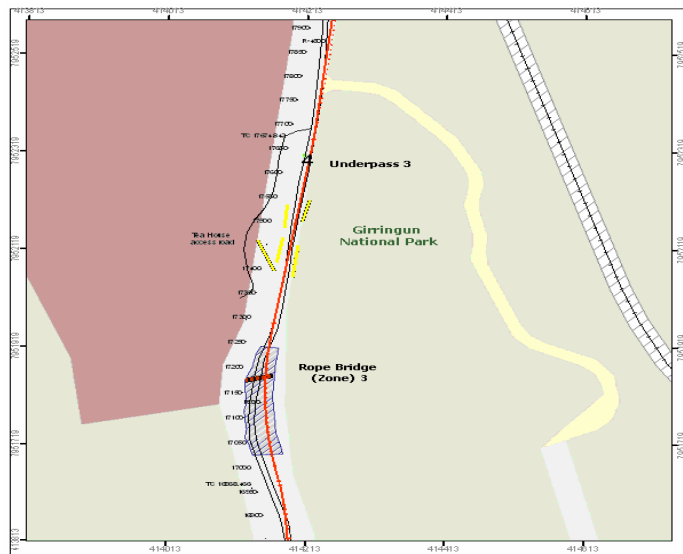


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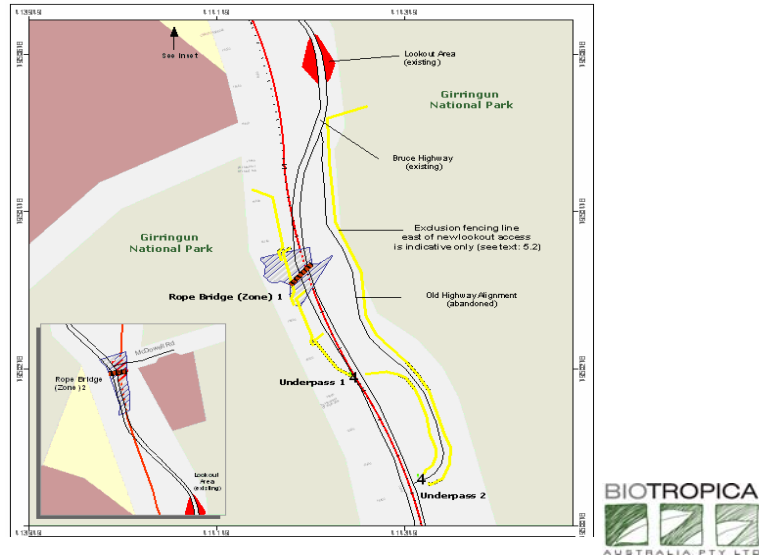
**Connectivity for Wildlife - Linear Infrastructure scale**  
**Cardwell Range Re-alignment Project**  
**Lessons from Kuranda: Fencing and funnelling**



**Connectivity for Wildlife - Linear Infrastructure scale**  
**Cardwell Range Re-alignment Project**  
**Lessons from Kuranda: Underpasses and Overpasses**



## Connectivity for Wildlife - Linear Infrastructure scale Cardwell Range Re-alignment Project Lessons from Kuranda: Underpasses and Overpasses



## Connectivity for Wildlife - Linear Infrastructure scale Cardwell Range Re-alignment Project: Underpasses and Overpasses



**Connectivity for Wildlife - Linear Infrastructure scale**  
**Cardwell Range Re-alignment Project**  
Lessons from Kuranda: Trees and Terramesh

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