

# Flora and fauna

Foxground and Berry bypass Princes Highway upgrade



Transport  
Roads & Maritime  
Services

NOVEMBER 2012

ENVIRONMENTAL ASSESSMENT

## Threatened fauna recorded in the study area – unlikely to be impacted

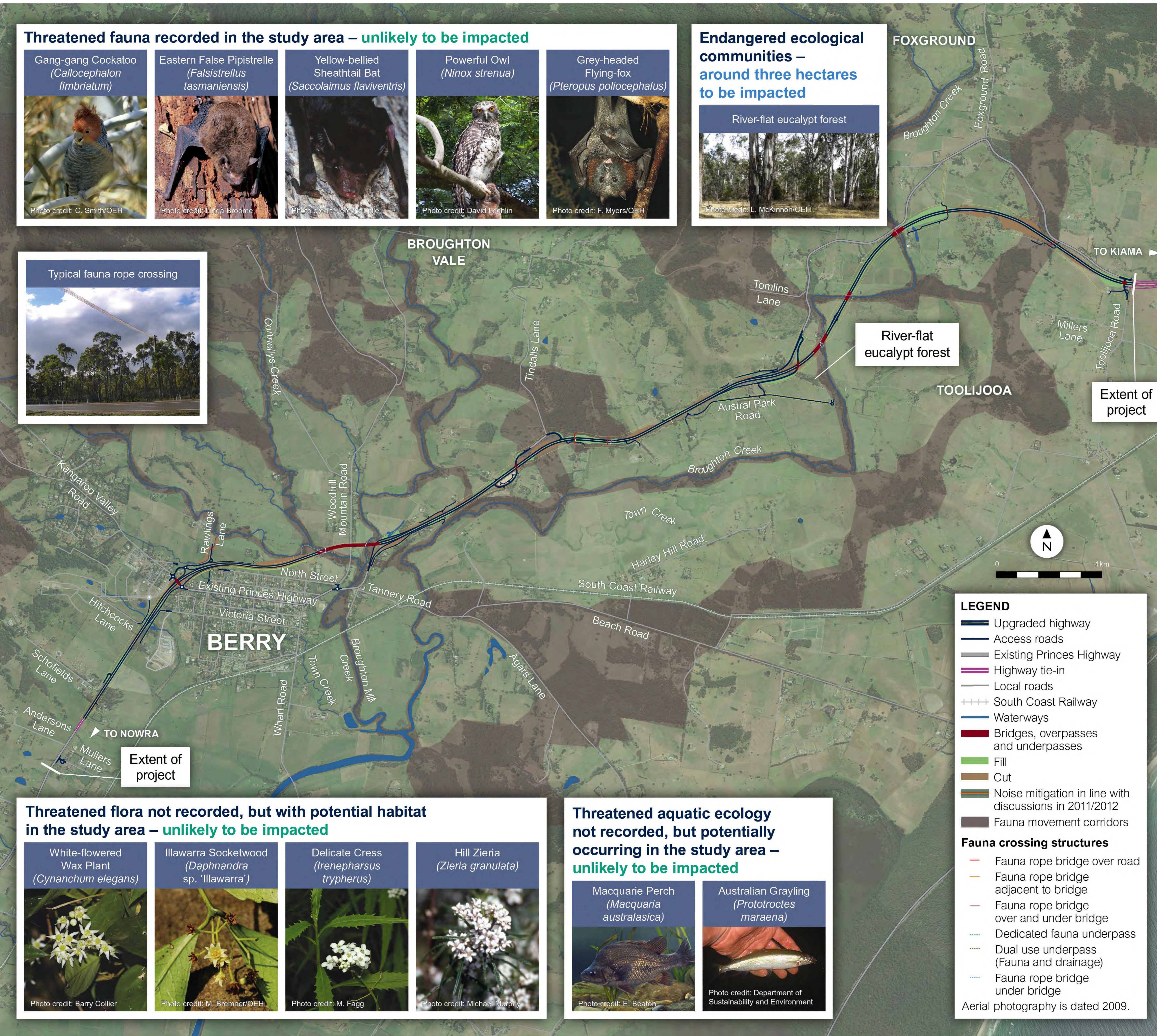
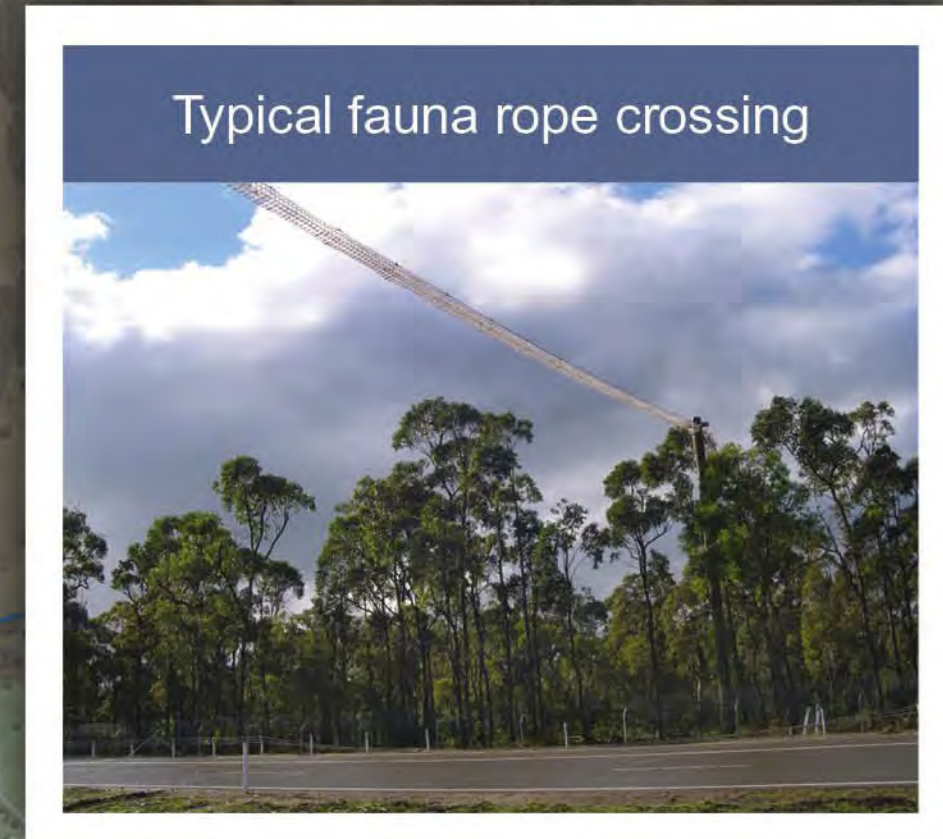
<p><b>Gang-gang Cockatoo</b> (<i>Callocephalon fimbriatum</i>)</p>  <p>Photo credit: C. Smith/OEH</p>	<p><b>Eastern False Pipistrelle</b> (<i>Falsistrellus tasmaniensis</i>)</p>  <p>Photo credit: Linda Broome</p>	<p><b>Yellow-bellied Sheathtail Bat</b> (<i>Saccolaimus flaviventris</i>)</p>  <p>Photo credit: Michael Miller</p>	<p><b>Powerful Owl</b> (<i>Ninox strenua</i>)</p>  <p>Photo credit: David Loshin</p>	<p><b>Grey-headed Flying-fox</b> (<i>Pteropus poliocephalus</i>)</p>  <p>Photo credit: F. Myers/OEH</p>
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## Endangered ecological communities – around three hectares to be impacted

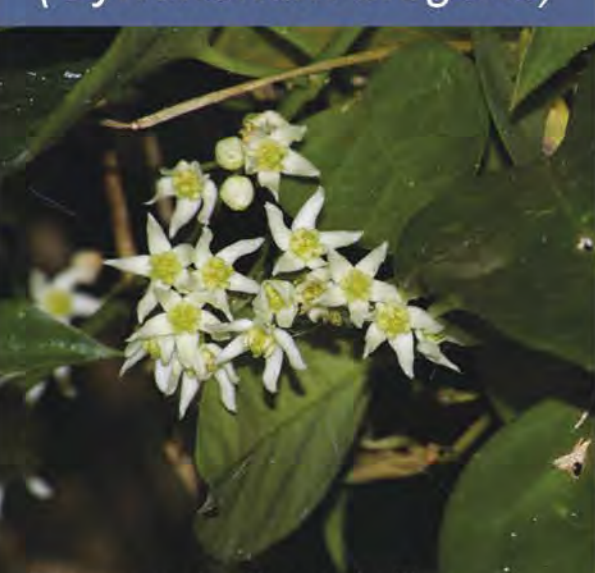
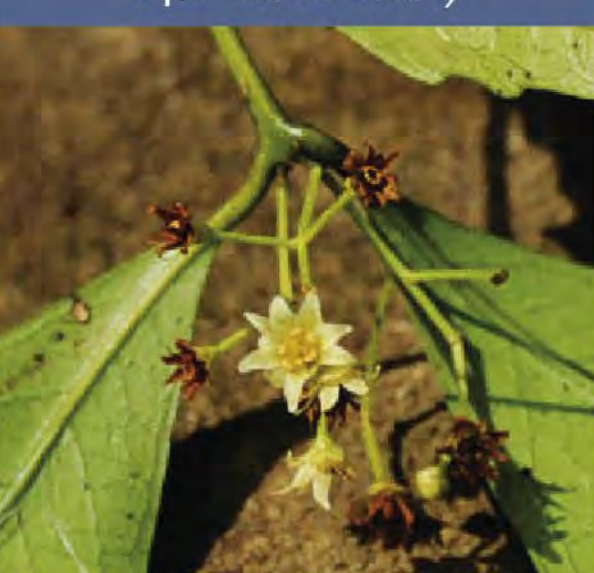
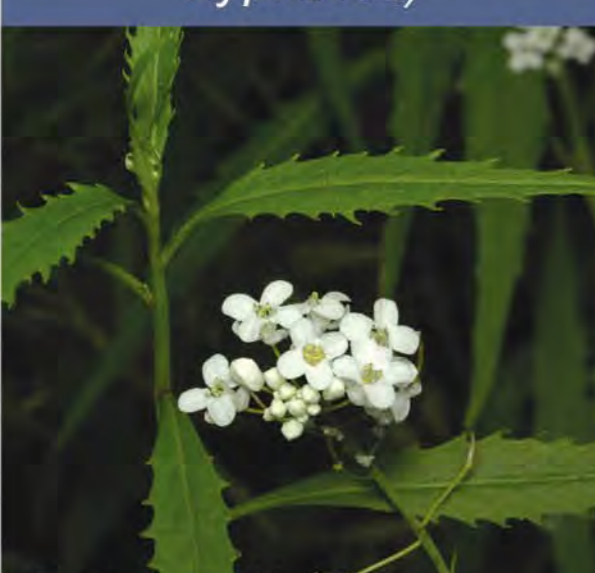

**River-flat eucalypt forest**





Photo credit: L. McKinnon/OEH



## Threatened flora not recorded, but with potential habitat in the study area – unlikely to be impacted

<p><b>White-flowered Wax Plant</b> (<i>Cynanchum elegans</i>)</p>  <p>Photo credit: Barry Collier</p>	<p><b>Illawarra Socketwood</b> (<i>Daphnandra</i> sp. 'Illawarra')</p>  <p>Photo credit: M. Bremner/OEH</p>	<p><b>Delicate Cress</b> (<i>Ireneparsus trypherus</i>)</p>  <p>Photo credit: M. Fagg</p>	<p><b>Hill Zieria</b> (<i>Zieria granulata</i>)</p>  <p>Photo credit: Michael Murphy</p>
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## Threatened aquatic ecology not recorded, but potentially occurring in the study area – unlikely to be impacted

<p><b>Macquarie Perch</b> (<i>Macquaria australasica</i>)</p>  <p>Photo credit: E. Beaton</p>	<p><b>Australian Grayling</b> (<i>Prototroctes maraena</i>)</p>  <p>Photo credit: Department of Sustainability and Environment</p>
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## Threatened flora and fauna in the study area

### Flora

No threatened flora species were recorded in the study area however, based on the proximity of previous records, habitat potentially exists in the study area for the following four threatened flora species:

- White-flowered Wax Plant (*Cynanchum elegans*).
- Illawarra Socketwood (*Daphnandra* sp. 'Illawarra').
- Delicate Cress (*Ireneparsus trypherus*).
- Hill Zieria (*Zieria granulata*).

### Endangered ecological communities

One endangered ecological community was found in the study area:

- River-flat eucalypt forest. This community meets the criteria for the endangered ecological community *River-flat eucalypt forest on coastal floodplains of the North Coast, Sydney Basin and South East Corner bioregions* listed under the *Threatened Species Conservation Act, 1995*.

The environmental assessment found that around three hectares of this community would be impacted by the project.

### Fauna

A total of 114 fauna species listed on the *Threatened Species Conservation Act, 1995* and/or the *Environmental Protection and Biodiversity Conservation Act, 1999*, or their habitat, have been previously recorded within a 10 kilometre radius of the study area.

Known and/or potential habitat exists within the study area for 51 threatened and 29 migratory fauna species.

Minor impacts would be expected to the known/potential habitat of 27 threatened species.

Assessments of significance were carried out for the remaining 24 threatened fauna species which concluded the project would be unlikely to have a significant impact.

The following nine threatened fauna species were recorded during field surveys in the study area:

- Gang-gang Cockatoo (*Callocephalon fimbriatum*).
- Powerful Owl (*Ninox strenua*).
- Yellow-bellied Sheathtail Bat (*Saccolaimus flaviventris*).
- Eastern Freetail Bat (*Mormopterus norfolkensis*).
- Grey-headed Flying-fox (*Pteropus poliocephalus*).
- Eastern Bentwing Bat (*Miniopterus schreibersii oceanensis*).
- Eastern False Pipistrelle (*Falsistrellus tasmaniensis*).
- Southern Myotis (*Myotis macropus*).
- Greater Broad-nosed Bat (*Scoteanax rueppellii*).

Impacts to the known/potential habitat of the 29 migratory species were considered minor.

## Aquatic species

The following two threatened freshwater fish species were not recorded during field surveys, but do potentially exist in the study area:

- Macquarie Perch (*Macquaria australasica*).
- Australian Grayling (*Prototroctes maraena*).

## Impact assessment and mitigation

The environmental assessment has determined that the project is unlikely to have a significant impact upon any threatened flora or fauna including aquatic species; or endangered ecological communities in the study area.

A Biodiversity Offset Strategy has been prepared to compensate for residual impacts that cannot be mitigated, such as the unavoidable loss of River-flat eucalypt forest.

## Other species and ecological impacts

### Impact assessment

The project would have potential direct and indirect impacts to around 57 hectares of native vegetation (including the three hectares of endangered ecological community River-flat eucalypt forest).

The project crosses a number of wildlife movement corridors and is likely to impact on local and/or regional wildlife movement due to habitat fragmentation. Of particular importance is the Seven Mile Beach National Park – Barren Grounds Nature Reserve wildlife corridor.

The project would potentially also have other impacts on terrestrial ecological values including the following:

- Habitat loss associated with the clearance of native vegetation.
- Increased mortality during vegetation clearance and operation and road kills.
- Increased weed invasion.

### Mitigation

Important ecological features have been avoided during the initial route selection stage where possible, however some impacts may still occur as outlined. These impacts would be mitigated by using targeted mitigation measures including:

- Inclusion of four dedicated fauna underpasses with fauna fencing and fauna 'furniture' and two dual use fauna movement and drainage underpasses as well as rope bridges at eight separate locations that are expected to be used by a variety of arboreal mammals.
- Restoration, regeneration and rehabilitation of areas of native vegetation.
- Preparation of a Vegetation Management Plan in consultation with relevant stakeholders.
- Monitoring and control of weed populations that establish in disturbed areas.
- Fencing and protection of endangered ecological communities and potential habitat of threatened species.
- Minimising disturbance to stream banks and streambeds wherever possible.

Proposed mitigation measures are outlined in chapter 7.3 and appendix F of the environmental assessment.