



Transport for NSW

# Beaches Link and Gore Hill Freeway Connection



*Burnt Bridge Creek*

## Biodiversity (flora and fauna)

Sydney has a rich biodiversity with a variety of native plants and animals that form thriving ecosystems both on land and in the water. We are committed to protecting the local flora and fauna during construction and operation of this project.

### Assessing biodiversity

We have carried out extensive biodiversity surveys in the study area. These surveys include consideration of relevant species, communities, populations and habitats, and their likelihood of occurrence in areas that may be impacted by the project. In addition we have completed a detailed Biodiversity Development Assessment Report to understand the biodiversity impact of the project. To read the report, please refer to Appendix S in the EIS.

### What we found on land

A large amount of our project is working within an area which has been changed by people over the years and contains exotic species, weeds and planted native or non-indigenous species.

We identified seven native vegetation communities within the study area, which covers around 15.05 hectares:

- Sydney Peppermint - Smooth-barked Apple - Red Bloodwood shrubby open forest of moist sandstone gullies, eastern Sydney Basin Bioregion
- Water Gum - Coachwood riparian scrub along sandstone streams, Sydney Basin Bioregion
- Red Bloodwood - Scribbly Gum/Old-man Banksia open forest on sandstone ridges of northern Sydney and the Central Coast
- Red Bloodwood - Silvertop Ash - Stringybark open forest on ironstone in the Sydney region
- Mallee - Banksia - Tea-tree - Hakea heath-woodland of the coastal sandstone plateaus of the Sydney basin
- Smooth-barked Apple - Turpentine - Blackbutt tall open forest on enriched sandstone slopes and gullies of the Sydney region
- Smooth-barked Apple - Red Bloodwood - Blackbutt tall open forest on shale sandstone transition soils in eastern Sydney.

For more information please refer to Chapter 19: Biodiversity in the EIS.

We identified several patches of one threatened vegetation community, the Duffys Forest endangered ecological community, along Wakehurst Parkway in the study area.

We identified two threatened flora species within the study area:

- Magenta Lilly Pilly (*Syzygium paniculatum*)
- Netted Bottle Brush (*Callistemon linearifolius*).

We found three other threatened flora species close to the study area. In addition, there is the possibility of 14 threatened species within the project area but these were not identified during our field studies.

We found the following threatened animals within or next to the project area during our field studies::

- Powerful Owl (*Ninox strenua*)
- Rosenberg's Goanna (*Varanus rosenbergi*)
- Little Bent-winged Bat (*Miniopterus australis*)
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
- Large-eared Pied Bat (*Chalinolobus dwyeri*)
- Grey-headed Flying-fox (*Pteropus poliocephalus*).

There is a high likelihood of six listed threatened species within the project area including Eastern Pygmy-possum, Red-crowned Toadlet, Glossy Black-cockatoo, White-bellied Sea-Eagle, Varied Sittella and Eastern Coastal Free-tailed Bat. One endangered population of Little Penguins in the Manly Point area, is known to occasionally be found within the project area.

### What we found in the fresh water

We assessed five main waterways and two waterbodies as part of the project at:

- Willoughby Creek
- Flat Rock Creek
- Burnt Bridge Creek
- Manly Creek (also known as Curl Curl Creek)
- Trefoil Creek
- Manly Dam
- Wakehurst Golf Club west dam 1 - a site downstream of the Wakehurst Parkway east construction support site.

Additional smaller creeks and dry waterways within the construction footprint were also assessed. No threatened freshwater fauna, flora species, ecological communities, endangered populations or freshwater migratory species were found to be likely to live within the construction footprint.

### What we found in Middle Harbour

We carried out an assessment in the Middle Harbour waterway between Yeoland Point and Grotto Point.

We identified 11 threatened marine species that are known or likely to occur in the study area:

- Black rockcod (*Epinephelus daemeli*)
- White's seahorse (*Hippocampus whitei*)
- New Zealand fur seal (*Arctocephalus forsteri*)
- White shark (*Carcharodon carcharias*)
- Grey nurse shark (*Carcharias taurus*)
- Australian fur seal (*Arctocephalus pusillus doriferus*)
- Loggerhead turtle (*Caretta caretta*)
- Green turtle (*Chelonia mydas*)
- Leatherback turtle (*Dermochelys coriacea*)
- Hawksbill turtle (*Eretmochelys imbricata*)
- Flatback turtle (*Natator depressus*).

We also identified two threatened marine ecological communities within the study area:

- Seagrass (*Posidonia australis*)
- Subtropical and temperate coastal saltmarsh.

## Reducing our impact

**We understand the importance of the natural environment and are committed to minimising our impact, protecting the local plant and animal life and implementing monitoring programs.**

### On the land

#### Fauna

The proposed fauna exclusion fencing along both the eastern and western edge of the Wakehurst Parkway construction footprint, would prevent fauna (including small fauna species such as the Eastern Pygmy-possum) from accessing the road and being subjected to vehicle strike

Fauna underpasses and rope crossings would be upgraded/replaced or constructed as part of the realignment and upgrade of the Wakehurst Parkway to facilitate the safe crossing of fauna including native fauna species beneath or over the road.

Any artificial light impacts on native fauna in the operational phase of the project will be minimised where feasible and reasonable through further design development



*example of a fauna underpass*

## Flora

Most of the sites we will use for our construction either already contain trees and plantings which have been planted by people (ie, they are not remnant) or have already been otherwise disturbed. We will re-establish any exotic trees and plantings impacted as appropriate following construction.

The project will not have a significant impact on any of the threatened flora species based on the very low numbers to be removed, most of which are planted (ie, they are not remnant).

Some of the other key measures we are implementing to reduce the impact of our work include:

- amenity trees removed as a result of establishing construction support sites will be replaced at a ratio equal to or greater than 1:1
- offsetting the removal of native vegetation and potential habitat required by the project. Biodiversity credits required to achieve a standard of 'no net loss' of biodiversity based on the reference design have been calculated by an accredited assessor
- replanting vegetation within the project area, where possible
- configuring the Flat Rock Drive site to be mainly located in the area replanted since 1998, and avoid the old growth sections. The site will be refined during further design development and construction planning to minimise impacts on native vegetation.
- selecting an alignment for the ramps to Burnt Bridge Creek Deviation that avoids major clearing of older growth vegetation in the

Burnt Bridge Creek corridor both along and to the west of Burnt Bridge Creek Deviation

- reconfiguring the Wakehurst Parkway South site to reduce the impact on Duffys Forest
- minimising vegetation removal during further design development and detailed construction planning, where possible.

## In the water

We have specifically designed the vertical alignment of the proposed Middle Harbour crossing to take advantage of the deeper water and minimise dredging required.

Our dredging of the bed of the harbour (profiling) methodology has been designed to minimise impact on the marine environment and has been used safely in some very sensitive marine environments around the world. This includes the use of a closed environmental clamshell bucket and silt curtains to minimise sediments containing contaminated material going into the water.

We have designed and located the cofferdams offshore to reduce the impact on more sensitive ecosystems at the shoreline, and the sensitive areas of seagrass.

## Fauna

Construction activities within Middle Harbour have the potential to decrease the surrounding water quality and impact the occurrence and behaviour of fish and other prey for threatened fauna species. However, these impacts would be temporary and localised and species would be able to forage in other parts of the harbour. The selected methodology for the project (including but not limited to the use of floating silt curtains and the use of a closed environmental clamshell bucket for dredging of the upper layers of sediment) will limit the potential for turbidity impacts on the surrounding marine environment.

An observer qualified to spot Little Penguins would be used during marine construction activities. A stop-work procedure would also be developed by a suitably qualified and experienced ecologist and implemented upon evidence of any Little Penguin in the proximity of the works area.

Before we start major construction, a Construction Environmental Management Plan (CEMP) will be developed to detail how the project will preserve, protect and manage any potential impact to the local environment. The CEMP will need to be approved by DPIE before we can start any major construction work.

We will continue to have a dedicated team of environmental specialists who oversee this process.

## Contact us



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Visit our interactive web portal  
Read the EIS, find out more or ask our  
team a question.



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Our phone line is monitored 24 hours  
when work is taking place.



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#### Italian

Se avete bisogno di un interprete, chiamate il servizio traduttori e interpreti (TIS National) al numero **131 450** e chiedete di telefonare a Transport for NSW al numero **1800 931 189**.

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Se necessitar de um(a) Intérprete, por favor, ligue para o Serviço de Tradução e Interpretação (TIS National), através de **131 450** e peça o telefone do Transport for NSW, através de **1800 931 189**.

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