

39 Fauna

39.1 Introduction

The conservation of existing fauna is a key objective of the project. This section outlines the existing fauna and the way it will be managed during the planning, design, construction and operational phases of the Port Wakefield Road Upgrade.

Refer to Part D, Section 24 for a summary of the legislative requirements and the assessment methodology used.

39.2 Existing environment

39.2.1 Fauna habitats in the study area

The habitats available within the Port Wakefield Road Upgrade study area were documented in Brown & Root (2004) and KBR (2006) and include:

- Artificial wetlands, including saline wetlands and associated environments. These occupy the largest area and include the Cheetham saltfield complex, Greenfields wetland and Barker Inlet wetlands.
- Samphire shrubland along the western fringe of the mangrove woodland and along low-lying, saline areas throughout the region.
- Mangrove woodlands. These generally occur west of Port Wakefield Road, but some of the resident and migratory fauna species move between the woodlands and areas inland.
- Woodlands, primarily the indigenous mature river red gum woodlands, provide important habitat.
- Watercourses and drains. While often weed infested, these areas provide some values for herptiles and a few birds. The largest of these sites is Dry Creek, although there are several smaller stormwater drains of potential use for fauna that cross Port Wakefield Road. Also, this includes small stormwater detention basins that have importance for some aquatic birds and amphibians.
- Fragmented, high value habitats, such as sedgelands, some of which are being restored, may in future provide critical habitat for one or a few threatened invertebrate species, such as butterflies.
- Revegetation areas, primarily as woodlands and tall shrublands, including landscaping and amenity plantings.
- Modified areas. These include areas of agriculture and horticulture, undeveloped land, buffer zones, areas of cropland that are not being cropped, and some roadside areas.

Isolated stands of remnant vegetation, primarily eucalypt woodland, are located along the Little Para River to the west and east of Port Wakefield Road. This is one of few large areas of terrestrial habitat areas left in this section. Many hollow-bearing trees by the Little Para River provide habitat for pest species (e.g. feral pigeons, starlings, noisy miners and colonies of the introduced European honeybee). Some common native species such as rainbow lorikeet, galah and Adelaide rosella use this area.

Greenfields wetland, Dry Creek saltfields and Barker Inlet wetlands provide habitat for many species of common aquatic birds such as Australian white ibis, common coot and silver gull. These species use the wetlands for nesting and as a food source. Some species of conservation significance, such as buff-banded rail, Australasian bittern and various wading bird species have been recorded in these wetlands. The presence of conservation significant species and the proliferation of common bird species within the man-made wetlands indicate that these areas play an important role in enhancing biodiversity in the region. In this respect the constructed wetlands are of key conservation significance as habitat areas.

39.2.2 Fauna species in the study area

Further information and full lists of all faunal species recorded in the study area are available in the *Fauna Technical Paper*.

Mammals

Seven bat species, the water rat, common brushtail possum and common ringtail possum have been recorded in the study area. In addition, nine pest animal species are present, of which red fox and brown hare are abundant.

Birds

Over 140 bird species have been recorded in the study area.

A number of species of national and State conservation significance known to occur within the region and study area are birds. These include:

- Three species listed as nationally vulnerable under the EPBC Act of which two have recently been recorded as occurring in the region and study area.
- Approximately 25 species, listed under the EPBC Act under the *National Wildlife Conservation Plan for Migratory Shorebirds* (DEH 2006), occur within the region and parts of the study area.
- A number of other species listed under international conventions or treaties to which Australia is a co-signatory and which are listed as being migratory, have habitat within the region and/or study area or are conservation-dependent species.
- Approximately 30 species are listed under SA legislation (Schedules 7, 8 or 9 of the NPW Act). Many of these species are also listed under the EPBC Act.

Native aquatic bird species

Aquatic bird species are those that rely on aquatic habitat, for example, some ducks, crakes, rails and bitterns are associated with freshwater. In addition, cormorants, gulls, terns and similar species are also considered to be aquatic birds, although these are primarily marine species.

Bird movement patterns were observed as north, south or east between Greenfield wetlands, the Connector wetlands and Dry Creek saltfields. Based on survey results, Port Wakefield Road does not currently appear to impede movement and migration patterns of bird species. Furthermore, there is no evidence that the presence or absence of an arterial road would have any effect on the passage of birds to and from the sites studied (Dr Jeremy Robertson, Flinders University, pers. comm. October 2006).

The Greenfields wetland is a particularly well-established and important freshwater wetland. Few bird species use Greenfields wetland and surrounding wetlands as a permanent residence and many arrive as

vagrants or migrants. The blue-billed duck is believed to be an occasional visitor to Greenfields wetland and the saltfields during the autumn months (Cox 1993). The glossy ibis is also known to visit this area during the autumn and winter months (Cox 1993).

No reduction in the size of the wetlands is proposed, therefore no habitat will be affected.

The white-bellied sea-eagle (*Haliaeetus leucogaster*) and nankeen night-heron (*Nycticorax caledonicus*) were observed at the Little Para River. Both species are classified as threatened.

Native terrestrial bird species

Over 70 native terrestrial bird species have been recorded in the region and many of these could occur in the vicinity of Port Wakefield Road. The largest single group of these are raptors (birds of prey), of which approximately 15 species are present in varying numbers. Some, such as wedge-tailed eagle and peregrine falcon, are represented by one pair or, rarely, two pairs of breeding birds in the region or within a wider area. The habitat of these species includes the study area.

Some are relatively common species, but are non-breeding visitors to the region. Examples of these include swamp harrier and little eagle. Other species are occasional to rare seasonal migrants or visitors, such as black kite and black falcon. These species may be resident further to the north of this region of South Australia and they may be recorded further south occasionally or under exceptional circumstances, such as during droughts.

Some species are breeding residents, including black-shouldered kite and nankeen kestrel. The presence of so many raptors is associated with potential food sources in the region, especially the large numbers of aquatic and shorebird species.

Fringing river red gum woodland along the banks of the Little Para River also provides habitat for many terrestrial bird species. Species such as superb fairywren, rainbow lorikeet, striated pardalote and Australian reed-warbler were recorded in this habitat.

International and other shorebirds

The wider region including the saltfields, Gulf St Vincent, Barker Inlet wetlands and the Greenfields wetland supports 119 migratory and shorebird species, some of which are listed under the EPBC Act and/or schedules of the NPW Act.

Shorebirds make extensive use of the region, which is the second-most important site for these species in South Australia (WWF 2002). Thirty-five species of international migratory shorebirds (20 species listed under the EPBC Act) and other native shorebirds (also known as wading birds or waders) have been recorded in the region. The key regional attraction for these bird species is the diversity of habitats for resting, roosting, feeding, and, for a few species, breeding. The study area forms an important component of the bird habitat in the region.

Reptiles

Much of the area for the Port Wakefield Road Upgrade is cleared of native vegetation and is of low quality as habitat for reptiles. Despite this, the remaining areas of native vegetation, plus introduced vegetation and the debris and habitats used by people, provide suitable habitat for up to 16 species. No reptiles of conservation significance listed under legislation are likely to occur in the area.

Amphibians and freshwater fish

Five common and widespread frog species were recorded in the study area and five native fish species were recorded in the Greenfields wetland.

Aquatic macro-invertebrates

Macro-invertebrates (water bugs) provide a good indication of overall aquatic habitat health. A total of 39 species were recorded from sites within the Port Wakefield Road Upgrade project area. A high number of these were species known to be tolerant of low water quality.

39.3 Effects of project upon existing conditions

39.3.1 Mammals

The survey suggests that, providing as many hollow-bearing trees as possible are protected, other roadworks associated with Port Wakefield Road Upgrade are likely to have little or no effect on local bat or other hollow-dependent fauna populations. Furthermore, given the low abundance and apparently low species richness of bats at the sites surveyed, it is likely that effects on local populations across the whole study area will be minimal.

39.3.2 Birds

The Greenfields wetland region including the Barker Inlet wetlands is a particularly well-established and important freshwater wetland (despite it being a 'man-made' environment). Bird life in the general area is prolific and the habitat is known to be a breeding ground for many species. Birds such as the Australasian bitterns that are rare in south-eastern Australia have found refuge in the wetlands during the current drought and may also use the resource for breeding purposes. Other sites, such as Dry Creek saltfields and Dry Creek, have salt or brackish water and attract and maintain migratory waders and other shorebird species.

With the exception of the Australasian bittern that has taken refuge currently in the Greenfields wetland complex, it is unlikely that any of the species of State conservation significance would occur in the project area. The location of the bittern will not be affected by the upgrade.

Habitat relevant to species of national conservation significance generally does not exist in the vicinity of the upgrades to Port Wakefield Road. The orange-bellied parrot was last recorded in samphire along Gulf St Vincent west of the area in the 1970s and the slender-billed thornbill was last sighted 50 years ago. Neither species has been recorded or is likely to occur in the study area.

In general, birds are not deterred by the presence of a transport corridor (road or rail), although road kills may occur. No habitat will be lost in the vicinity of the Greenfields wetland, Dry Creek and the Connector wetlands.

In general, effects from the widening of Port Wakefield Road are minimal and short term.

Since the development of the wetlands in the early 1990s, bird diversity and population numbers have increased steadily while surrounding land use has changed and intensified over a number of years. Based on assessment of the impact of the Port River Expressway construction and subsequent use of the road, these species are highly adaptable to a changing environment and are unlikely to be affected in the long term by small-scale habitat loss and disruption.

39.3.3 Reptiles

Due to the small populations of common species, the project is likely to have negligible adverse effects on this group.

39.3.4 Amphibians

Amphibian species recorded in the wetlands are common and widespread around Salisbury Highway. They could be affected by the proposal. However, it is unlikely that there will be any long term or major adverse effects following restoration of construction sites.

39.3.5 Aquatic macro-invertebrates

Potential negative effects upon macro-invertebrate communities and therefore on broader aquatic habitat health in the region, are possible during the construction and ongoing operation of the proposed Port Wakefield Road Upgrade. The main effects could arise via:

- habitat loss by removal of riparian vegetation
- reduction in water quality, for example, from increased sediment and pollutant loads entering waterways.

39.4 Environmental management

Details regarding environmental management and mitigation with respect to fauna are discussed in Part D, Section 24 and are not repeated here although these measures are also relevant to the Port Wakefield Road Upgrade.

39.5 Conclusion

Port Wakefield Road passes through a largely disturbed and degraded area with relatively few fauna habitat areas remaining. Most of the roadside verges are weed infested. Fauna is restricted to scattered trees and remnant pockets along creek lines, roadsides, revegetation sites and constructed wetlands.

Neither the critically endangered orange-bellied parrot or the nationally vulnerable slender-billed thornbill were recorded in the study area or the immediate region therefore no adverse impact on these species is predicted.

The majority of the fauna species located in the Port Wakefield Road Upgrade study area are likely to experience minimal environmental effects given the modified nature of the region and minimal works associated with the upgrade. Some additional habitat fragmentation from both a flora and fauna perspective could be associated with road widening and the construction of side entry/exit points.

The effect of Port Wakefield Road Upgrade on local and migratory fauna is likely to be minimal. Birds along Port Wakefield Road are generally undeterred by the current transport corridor although the number of road kills may increase with the increased traffic.

The project will not have a significant effect on any matter of national environmental significance and therefore no referral under the EPBC Act has been made.

