



## Appendix G Fauna Habitat Types

### G.1 Fauna Habitat Descriptions

Fauna habitat types have been classified into several groups depending on the vegetation type (where possible this is linked to the appropriate EVC), vegetation structure and general features present (i.e. waterbodies etc). It should be noted that at a number of locations along the alignment, areas were considered by the zoologist to comprise fauna habitat types, but were considered by the botanists not to comprise an EVC due to the paucity of native understorey flora species. Where this occurred, the appropriate fauna habitat type was attributed to the site regardless of the absence of the EVC.

#### G.1.1 Woodlands

Several woodland habitats occur throughout the survey corridor. The key features, characteristic fauna and occurrence of each woodland habitat type within the survey corridors are described in detail below.

##### Riparian Woodland

*Corresponding EVC:* Riparian Forest (EVC 18).

*Relevant Landscape Units:* 3, 10, 11, 12 and 13

Riparian Woodland habitats occur along sections of the survey corridor that intersect with permanent watercourses. Sections of Riparian Woodland habitat range from narrow sections along rivers and streams, single scattered trees to large areas of more than 50 metres width.

The overstorey of Riparian Woodland habitats is typically dominated by tall eucalypts, particularly River Red-gum *Eucalyptus camaldulensis*. Many of the trees are large or very large hollow-bearing individuals, although trees of a range of sizes and maturity are often present. Within the Riparian Woodland habitat there are typically few or no midstorey trees or shrubs. Similar to the Box Woodland habitats, better quality examples of Riparian Woodlands usually have one or more of the following features: (a) native grasses with a mixture of small shrubs and herbs dominating the ground layer, and/or (b) a large coverage of organic litter and/or (c) some coarse woody debris, and/or (d) they form a continuous corridor along the watercourse, linking other areas of woodland habitat and larger remnant woodland reserves. However, many examples of this habitat along the proposed survey corridors are narrow and/or in a modified condition, which would reduce their value as a habitat and a movement corridor for many less mobile or adaptable fauna species.

The Riparian Woodlands are relatively similar in their fauna values to the other Woodland habitats, where many woodland-dependent fauna utilise the habitat for foraging, breeding and as a corridor for movements across the landscape. The native fauna typically using Riparian Woodlands



include: (a) resident, woodland-dependent fauna that can persist in narrow woodland corridors, such as arboreal and semi-arboreal mammals, some woodland-dependant birds and ground fauna (lizards and snakes); (b) more mobile woodland-dependent fauna species such as parrots, honeyeaters, thornbills, pardalotes; (c) semi-aquatic fauna that shelter, forage or breed in areas associated with water, such as ibis, herons and frogs; (d) diurnal birds of prey for perching and nesting; (d) hollow-dependent micro-bats; and (e) fauna using the surrounding grassland habitats such as Australian Magpies and ravens.

### **Dry Woodland**

*Corresponding EVC:* Heathy Dry Forest (EVC 20), Herb-rich Foothill Forest (EVC 23), *Acacia mearnsii* Woodland (EVC 47/22).

*Relevant Landscape Units:* 10, 11, 13, 14 and 15

Dry Woodland habitats occur predominantly in two sections of the survey corridor: a) at the southern end near Sugarloaf Reservoir, and b) in Toolangi State Forest, south of the Healesville–Kinglake Road. Other sections of the survey corridor include small narrow areas of Dry Woodland habitat, mainly within remnant patches of roadside vegetation.

The species composition of Dry Woodland habitats is similar to that of the Dry Forest habitats that occur north of the Healesville–Kinglake Road, but are characterised by a general lack of damp vegetation areas.

The overstorey of Dry Woodland habitats is typically dominated by eucalypt species such as Red Stringybark (*Eucalyptus macrorhyncha*), Bundy (*Eucalyptus goniocalyx*), Messmate Stringybark (*Eucalyptus obliqua*), Broad-leaved Peppermint (*Eucalyptus dives*) and Narrow-Leaf Peppermint (*Eucalyptus radiata*). The overstorey varies from low, open woodland to a medium to tall open forest or woodland. There is a limited mid-storey of small shrubs in Dry Woodland habitats along the survey corridor and the understorey is comprised mainly of scattered dry bracken (which, at the time of the surveys, had begun to senesce due to the dry conditions) and a dense layer of leaf litter and fallen debris.

While a few large dead trees (stags) occur within the main areas of Dry Woodland along the survey corridor, the trees within the survey corridor generally lack hollows. Despite this, the Dry Woodland patches still have suitable characteristics for a wide range of fauna, including arboreal and ground-dwelling mammals. The dense leaf litter and reasonable ground cover provide good habitat for a range of reptiles and frogs. Medium-sized water bodies<sup>72</sup> within the survey corridor

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<sup>72</sup> Artificial waterbodies created as a source of water during fire



also provides a permanent water source for a range of small mammals, including micro-bats, which use the area for foraging, and permanent habitat for a suite of frog species.

Given their large size and relatively low level of disturbance (likely to be directly related to their land tenure), the main Dry Woodland habitat patches along the survey corridor are likely to act more as high-quality habitat itself rather than as marginal-quality corridors linking better-quality habitats. Remnant patches are also likely to fulfil a critically important corridor role of providing “stepping stones” for species that engage in longer-distance migrations (e.g., Satin Flycatcher). Due to their species diversity, habitat diversity and wildlife corridor values, the Dry Woodland habitats within the survey corridor are considered to be in good condition and of high value to fauna.

Native fauna that would typically use Dry Woodlands include: (a) resident, woodland-dependent fauna, such as arboreal and semi-arboreal mammals, birds, lizards and snakes; (b) more mobile woodland-dependent birds such as parrots, honeyeaters, cuckoos, other bush-birds; (c) diurnal and nocturnal birds of prey that would use the woodland for foraging, perching and nesting; and (d) hollow-dependent micro-bats.

### **Box Woodland**

*Corresponding EVC*<sup>73</sup>: Grassy Woodland (EVC 175)m, Plains Grassy Woodland (EVC 55).

*Relevant Landscape Units*: 3, 10 and 11

The majority of the Box Woodland habitats occurring within the survey corridor are narrow strips within the road reserves. In some areas, the Box Woodland extends into some of the private property adjacent to road reserves or areas adjacent to larger woodland reserves.

Tree species in the Box Woodland habitat within the survey corridor are mostly White Box *Eucalyptus albens*, Grey Box *E. microcarpa*, Yellow Box *E. mellidora* and Blakely’s Red-gum *E. blakelyi*. The Box Woodlands contain a range of different tree sizes and ages, from regenerating individuals (e.g. less than 10m height and less than 20cm DBH) up to very large hollow-bearing individuals (e.g. up to 30m height and greater than 150cm DBH). Within the Box Woodlands along the alignment, there are typically few or no midstorey trees or shrubs. Better quality examples of this habitat type have one or more of the following features: (a) native grasses with a mixture of small shrubs and herbs dominating the ground layer, and/or (b) a large coverage of organic litter, and/or (c) some coarse woody debris, and/or (d) they form a continuous corridor

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<sup>73</sup> It should be noted that at a number of locations along the alignment, areas were considered by the zoologist to comprise *Box Woodland* as a fauna habitat type, but were considered by the botanists not to comprise an EVC due to the paucity of native understorey flora species.



along the roadsides, linking to other areas of habitat and larger remnant woodland reserves. However, areas of this habitat type throughout the survey corridor are often modified, fragmented and poorly linked to other areas (except for use as “stepping stones” by more mobile fauna species).

Many woodland-dependent fauna utilise Box Woodland habitat for foraging, breeding and as a corridor for movements across the landscape. The native fauna species typically using the Box Woodland include: (a) resident, woodland-dependent fauna that can persist in narrow woodland corridors, such as arboreal and semi-arboreal mammals<sup>74</sup>, some woodland-dependant birds and ground fauna (lizards and snakes); (b) more mobile woodland-dependent fauna species such as parrots, honeyeaters, thornbills, pardalotes; (c) diurnal birds of prey for perching and nesting; (d) hollow-dependent micro-bats; and (e) fauna using the surrounding grassland habitats such as Australian Magpies and ravens.

Noisy Miners (*Manorina melancephala*) were recorded commonly in woodland remnants during the surveys. Noisy Miners are aggressive honeyeaters that are well-known to harass other species<sup>75</sup>. Consequently, other bird species recorded in woodland remnants were mostly species that can persist despite harassment from Noisy Miners (e.g. Eastern Rosella, Red-rumped Parrots, Australian Magpies, Galahs, ravens, corellas, Striated Pardalotes, White-plumed Honeyeaters). Better quality woodland remnants are expected to have a greater diversity of fauna present.

### **G.1.2 Forests**

Two forest habitats occur within the survey corridor: Dry Forests and Damp Forests. These forest habitats are described below.

#### **Dry Forest**

*Corresponding EVC:* Lowland Forest (EVC 16), Grassy Dry Forest (EVC 20), Shrubby Foothills Forest (EVC 45), Valley Grassy Forest (EVC 47).

*Relevant Landscape Units:* 5, 7, 10, 11 and 14

Dry Forest habitats occur along the survey corridors mainly in the northern section of the Toolangi State Forest (north of Castella Road and south of the transmission line easement). Dry Forest generally has a tall open canopy, dominated by Messmate Stringybark (*Eucalyptus obliqua*) and Narrow-leaf Peppermint (*Eucalyptus radiata*), but often also including tree species such as Red Stringybark (*Eucalyptus macrorhyncha*), Broad-leaved Peppermint (*Eucalyptus dives*), Brittle Gum

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<sup>75</sup> There are a number of recent Australian studies documenting the active role of Noisy Miners in suppressing many other woodland bird species from using small and/or fragmented woodland remnants (Grey *et. al.* 1997).



(*Eucalyptus mannifera*), Swamp Gum (*Eucalyptus ovata*), Candlebark (*Eucalyptus rubida*), and Yellow Box (*Eucalyptus melliodora*). Dry Forest habitats in this region typically have a young open shrubby mid-storey, dominated by Burgan (*Kunzea ericoides*), and Blackwood species, with an understorey of low, sparse to dense heathy or narrow-leaved shrubs, grasses and herbs.

Despite subtle differences in vegetation composition among Dry Forest sites within the survey corridor, the general presence of a dense overstorey and good ground cover means that this is valuable fauna habitat, and all sites have potential to provide habitat for a suite of threatened forest-dependent fauna. Some significant fauna species (e.g. Powerful Owl) are known to occur historically within Toolangi State Forest in the vicinity of the survey area.

In most areas, there are a large number of hollow-bearing trees and dead stags that provide habitat for a range of mammals and birds. The dense damp leaf litter and the prevalence of densely vegetated gullies (see Damp Forest) throughout the survey corridor make the forest habitat in and around Toolangi suitable for a range of reptiles and listed frog species.

Given the large size and relatively low level of disturbance within Toolangi State Forest (likely to be directly related to its land tenure), Dry Forest habitat along the survey corridor is likely to act more as high-quality habitat itself rather than as a marginal-quality corridor linking better-quality habitats. The fauna habitat throughout Toolangi State Forest links with other areas of forest in Kinglake National Park, private property, roadside reserves and other sections of state forest. Toolangi State Forest is also likely to fulfil a critically important corridor role of providing “stepping stones” for species that engage in longer-distance migrations (e.g. Satin Flycatcher).

Due to high species diversity, habitat diversity and important wildlife corridor values, Dry Forest habitats within the survey corridor are considered to provide high quality fauna habitat.

### **Damp Forest**

*Corresponding EVC:* Damp Forest (EVC 29), Wet Forest (EVC 30), Fern Swamp (EVC 721).

*Relevant Landscape Units:* 5 and 10

Damp Forest habitats occur along the survey corridors mainly in moist gullies in the northern section of the Toolangi State Forest (north of Castella Road and south of the transmission line easement). Damp Forest generally has a tall canopy, dominated by Messmate Stringybark (*Eucalyptus obliqua*) and Narrow-leaf Peppermint (*Eucalyptus radiata*), but sometimes also including species such as Mountain Ash (*Eucalyptus regnans*) and Swamp Gum (*Eucalyptus ovata*). Damp Forest habitats in this region typically have a dense shrub layer of broad-leaved species typical of wet forest, mixed with species from drier forests. The ground layer includes herbs and grasses as well as a fern-rich flora community often dominated by tree-ferns. At many



sites, a range of dense ground cover species such as Bracken, Gahnia and Lomandra dominate the ground cover, and there is a dense damp layer of leaf litter and fallen debris.

The general presence of a dense overstorey and good ground cover means that Damp Forests have high value for fauna. All Damp Forest sites within the survey corridor have potential to support a suite of threatened forest-dependent fauna. Some significant fauna species have been observed historically within Toolangi State Forest in the vicinity of the survey area (e.g. Spot-tail Quoll, Leadbeater's Possum and Regent Honeyeater).

In most of the gullies, there are hollow-bearing trees that provide habitat for a range of mammals and birds. The dense damp leaf litter make the Damp Forest habitats suitable for a range of frog species and moisture-favouring reptiles.

Given the linear nature of gullies and drainage lines where Damp Forest habitat occurs, this habitat is likely to act as a corridor between other habitats for fauna that favour or depend on very dense and moist gullies (e.g. Rufous Fantail, Satin Flycatcher and Southern and Brown Toadlets). These gullies provide links with other areas of forest in Kinglake National Park, private property, roadside reserves and other sections of state forest. The extensive areas of Dry Forest that surround the Damp Forest gullies are also likely to fulfil an important corridor role of providing "stepping stones" for species that engage in longer-distance migrations (e.g. Satin Flycatcher).

Due to high species diversity, habitat diversity and important wildlife corridor values, Damp Forest habitats within the survey corridor are considered to provide high quality fauna habitat.

### **G.1.3 Scattered Indigenous Trees and Shrubs**

*Corresponding EVC:* None.

*Relevant Landscape Units:* 1, 2, 3, 4, 6, 7, 10, 11, 12, 13, 14 and 15

Scattered indigenous trees and shrubs occur as individual trees, small clusters of trees or as sparse aggregations along road reserves and within paddocks on private farmland. The trees are mostly Yellow Box *Eucalyptus melliodora*, White Box *E. albens*, River Red-gum *E. camaldulensis* and Buloke *Allocasurina luehmanii*. Scattered trees are mostly larger individuals (e.g. up to 30 metres height and greater than 150 centimetres DBH). Around the scattered trees were typically little or no young regenerating trees, no midstorey and a ground layer dominated by non-indigenous grasses and bare ground. Many of the trees had hollow-bearing limbs or trunks with a range of hollow sizes.

Scattered indigenous trees and shrubs occur throughout the survey corridor. Many areas of this habitat type are expected to be avoided during the construction phase through micro-alignment changes and careful management during the construction phase.



Many woodland-dependent fauna are unable to exploit isolated trees. The native fauna species typically using scattered trees would include: (a) more mobile woodland-dependent fauna species such as parrots, honeyeaters, thornbills, pardalotes; (b) diurnal birds of prey for perching and nesting; (c) hollow-dependent micro-bats<sup>76</sup>; and (d) fauna using the surrounding grassland habitats such as Australian Magpies and ravens. Other woodland-dependent fauna may use the trees to assist with dispersal on occasions (e.g. as a stepping stone between better quality habitats elsewhere).

#### **G.1.4 Native Grassland (with negligible exposed rocks)**

*Corresponding EVC:* derived forms of the woodland EVCs.

*Relevant Landscape Units:* 2, 4, 10, 11, 12, 13 and 14

Native Grassland habitat within the survey corridor is characterised by an absence (or very low abundance) of overstorey and midstorey vegetation, and a ground layer dominated by native grass species (particularly Spear Grasses *Austrostipa* spp. and Kangaroo Grass *Themeda triandra*, but also Wallaby Grasses *Austrodanthonia* spp. and scattered other low shrubs and herbs). These Native Grasslands would have been grassy woodland habitats originally, but the vast majority of trees and shrubs have been removed since European settlement, leaving only the ground-layer vegetation (i.e. a derived grassland).

Native Grasslands occur patchily in the vicinity of the survey corridor. They tend to occur in one or more of the following situations:

- Where there are likely to be sub-surface rocks that prevent cultivation or other high impact agricultural uses. Native grassland areas without any exposed rock often occur interspersed or nearby native grassland areas that do have exposed rocky areas (see section Rocky Grassland habitat description).
- As narrow strips along some of the road reserves intercepted by the pipeline alignment. These areas may be connected to other grassland areas along the road reserves or in adjacent properties. These areas are typically patchily distributed and may contain a high level of exotic grasses. These areas may provide corridors for movements by ground dwelling fauna but are considered less optimal habitats for ground dwelling grassland fauna.
- In isolated patches of varying sizes within paddocks and along riparian zones on private property. Most areas are adjacent to road reserves or riparian areas that have been fenced off from agricultural use. Some paddocks that are considered native grassland are also grazed by

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<sup>76</sup> One of the key findings from recent research in northern Victoria was the importance of scattered hollow-bearing trees for native micropteran bats (Lumsden and Bennett 2005).



livestock and are in a more degraded condition. Most of these areas have exotic grasses interspersed throughout them or in patches but still retain a tussocky structure and provide habitat for ground dwelling grassland fauna.

Due to their limited and patchy extent, modified condition, disturbance regimes and lack of rocky cover, the Native Grassland habitat intercepted within the survey corridor is likely to support a depleted array of typical grassland-dependent fauna species. A greater faunal diversity is more likely at locations where this habitat adjoins rocky grassland areas (e.g. Section A) or remnant woodland habitats (e.g. Section B). All native grassland habitats surrounding Yea potentially support a population of the threatened Striped Legless Lizard. Common snakes and lizards are the grassland-dependent fauna considered most likely to use these areas.

A number of fauna species typical of agricultural areas (dominated by exotic grasslands) would also use the Native Grassland habitats regularly for foraging. This mostly includes common species such as Australian Magpies, cockatoos and Richard's Pipit, and introduced species such as rabbits and hares.

### **G.1.5 Rocky Grassland**

*Corresponding EVC:* derived forms of the woodland EVCs.

*Relevant Landscape Units:* 2, 3, 10, 13 and 15

The majority of this habitat type occurs in the northern section of the survey corridor (e.g. Section A and Section B). The majority of these sites occur within private land and have some history of farming.

There are three broad types of Rocky Grassland habitat, which often occur interspersed or adjacent to each other.

- 1) The examples with the highest values for fauna (especially ground-dwelling species) have abundant exposed rock and a dense tussocky grass structure. Exposed rocks can be either loose and/or emergent from below the surface, and have a range of sizes. The abundance of rock would reduce the access to grazing and trampling of the vegetation by stock.
- 2) The examples with moderate value for fauna generally had a lower level of exposed rock (both emergent and loose surface rock). In these areas, a modified grass tussock structure remained interspersed amongst the rocks, but there were also more heavily grazed sections where the tussocky structure had been removed. These moderate areas have a depleted diversity and abundance of the fauna typical of higher quality Rocky Grassland areas, but are still valuable for fauna.
- 3) The lower quality examples of Rocky Grassland habitat had minimal loose surface rock and relatively widely spaced emergent rock. Grazing by stock through these areas had removed



the tussocky structure and most other native flora, resulting in only low-grazed exotic grasses remaining. No native ground-dwelling reptiles were recorded within these habitats during the present surveys, although some adaptable species they may use these areas on occasions due to their generally close proximity to better quality Rocky Grassland areas.

Where possible the pipeline alignment should be designed to avoid the direct removal or disturbance of these areas, particularly the higher quality examples.

### **G.1.6 Exotic and non-indigenous/planted Vegetation**

*Corresponding EVC:* None.

*Relevant Landscape Units:* Exotic vegetation is the most common habitat type present within the survey corridor. It occurs at all of the Landscape Units and is interspersed amongst other habitat types.

Exotic vegetation comprises three main components; exotic grasslands, cultivated crops and scattered exotic trees and shrubs.

**Exotic grasslands** are characterised by an absence (or paucity) of overstorey and midstorey vegetation, and a ground layer dominated by non-indigenous grasses. Exotic grasslands occur scattered along the alignment. They are found extensively through the grazed paddocks of the survey corridor as well as along road reserves and some riparian areas. Along the alignment, exotic grassland areas mostly comprised of introduced Toowoomba Canary-grass *Phalaris aquatica* and a range of exotic pasture grasses. Within the grazed paddocks, exotic grasslands are browsed close to the ground and also contain a high proportion of bare ground.

Exotic Grassland habitats are relatively abundant in the local area, and indeed throughout the region and the state. In some circumstances (largely dependent upon the history of land use since European settlement), they can retain values for some grassland-dependent fauna. However, if heavily modified or grazed (such as occurs within the paddock sections of the survey corridor), few native fauna are able to persist within these grasslands.

The fauna of degraded exotic grassland in the paddock sections of the survey corridor are likely to be characterised by common and adaptable open country fauna, including both native species (e.g. Australian Magpie, Richards Pipit) and introduced species (e.g. Common Starling, Skylark, European Rabbit). Kangaroos were also recorded foraging within exotic grasslands.

**Cultivated crops** form a high proportion of the proposed alignment. This high intensity form of agriculture reduces these areas to negligible value for fauna. The cultivated crops are likely to be characterised by common and very adaptable bird species (e.g. Australian Magpie, Little Raven) and introduced species (e.g. Common Starling, Skylark).



*Exotic trees and shrubs* occur scattered throughout the survey corridor. Some of these are isolated individual trees and shrubs, while others comprise small patches (including some areas where the exotic trees and shrubs are spreading naturally (i.e. not planted)). This also includes some flora species that are native to Australia, but that are not indigenous to the local area. In general, these scattered shrubs and trees have low values for most fauna species, but may be used to a limited extent by adaptable birds and other fauna as a site for foraging and for protective cover.

Many exotic grassland habitats surrounding Yea potentially support a population of the threatened Striped Legless Lizard.

### **G.1.7 Constructed Features**

*Corresponding EVC:* None.

*Relevant Landscape Units:* Scattered throughout the survey corridor.

Constructed features include human-made structures such as roads, fences, powerlines and power poles. On occasions, they may be used as a perching site, or location for foraging. A range of species (e.g. small birds and micro bats) often nest in structures like old fence-posts and farm sheds, however, generally, this habitat has low values for most native fauna species.

Constructed features such as rock walls occur nearby the survey corridor. These rock walls may be used by lizards, snakes and other ground-dwelling fauna. None are expected to be affected by the proposed pipeline alignment.

### **G.1.8 Permanent Rivers**

*Corresponding Wetland Classification (Environment Australia 2001):* Inland Wetlands – Permanent Rivers and Streams (wetland type B1)

*Relevant Landscape Units:* 1, 3, 10 and 13

There are several permanent rivers throughout the survey corridor and each of the provisional pipeline alignments requires a crossing of a waterway at some stage. These rivers contain a wide range of native and exotic flora and provide suitable habitat for a range of native fauna.

At the time of assessment most of the permanent rivers contained water. Some rivers, such as the Goulburn and Yea River at Devlins Bridge, were flowing at the times of the various field assessments (despite extended drought conditions). It is therefore expected that these rivers flow during most months of most years. Water within these rivers appeared to be relatively shallow on the upstream side of the proposed crossing point, with deeper pools on the downstream side.

Habitat features differed between river systems within the survey corridor. Several rivers (such as Yea River at Pert's Reserve) contained good habitat (e.g. aquatic vegetation, submerged and



emergent woody debris), whilst other rivers (mostly unnamed), provided far less suitable fauna habitat and water.

A number of waterbirds (e.g. Australian Wood Duck, Dusky Moorhen) and wetland-associated birds (e.g. Clamorous Reed-warbler) were observed at the Permanent Rivers intercepted by the survey corridors throughout the survey corridor. Others would be expected, including additional ducks and waterhens, herons, cormorants, grebes and kingfishers. A high density and diversity of woodland birds were also recorded within Permanent River areas such as Pert's Reserve, probably attracted by higher invertebrate food availability and a source of drinking water (as well as good protective cover).

Eight frog species were heard calling at a number of locations within rivers throughout the survey corridor during the present surveys (*Crinia signifera*, *C. parasignifera*, *Limnodynastes dumerilii*, *L. tasmaniensis*, *Litoria ewingii*, *L. paraewingii*, *L. peronii* and *L. verreauxii*) and others would be anticipated. Tiger Snakes and other predators (such as birds of prey) would be attracted to the river due to the relatively high abundance of frogs and other potential prey items.

Several mammals have been recorded foraging and moving within habitat surrounding rivers throughout the survey corridor (e.g. possums, native rats and Platypus). Many other predominantly terrestrial animals would be expected to visit the waterway (with its protective vegetation cover) as a source of drinking water and other associated resources (e.g. Black Wallaby, Eastern Grey Kangaroo, Short-beaked Echidna). Semi-aquatic species such as Water Rats and turtles are also expected to forage within these areas.

### **G.1.9 Ephemeral Waterways**

*Corresponding Wetland Classification (Environment Australia 2001):* Inland Wetlands – Seasonal and irregular Rivers and Streams (wetland type B2)

*Relevant Landscape Units:* 2, 3, 4, 5, 6, 7, 10, 11, 12, 13 and 15

The survey corridor has several ephemeral waterways. Many of these waterways were either dry at the time of the assessments, or were reduced to small isolated pools of stagnant water. Ephemeral Waterways in the local area which were flowing visually appeared to have high to very high sediment loads. Drought conditions and numerous farms dams probably reduce the extent to which these waterways contain water.

These ephemeral waterways occur within private land and public reserves. As described in the description of Riparian Woodland habitat, vegetation along the waterways is mostly large River Red-gums with a grassy understorey. The channels themselves range in width from 1m to 5 or more metres, and are usually less than 2m in depth. The waterways meander and would contain a mixture of shallow faster sections and slower deeper pools when flowing. These waterways mostly



had high levels of coarse woody debris in the channels and exposed roots from the surrounding trees. Some also contained low aquatic vegetation.

These waterways were surrounded either by grasslands used for grazing or by cultivated crops. Some of these waterways were fenced, although many had full access to grazing by stock.

The Riparian Woodland vegetation associated with these seasonal-intermittent waters has important values for fauna. However, the waterways themselves probably make a relatively smaller contribution to the values for fauna at these sites due to the infrequency with which they now currently contain water. They would provide a temporary source for food for waterbirds when containing water, and some more adaptable frogs would be able to persist. The high level of woody debris would also be used by reptiles for protective cover.

#### **G.1.10 Ephemeral Wetlands**

*Corresponding Wetland Classification (Environment Australia 2001):* Inland Wetlands – Seasonal Intermittent Freshwater Ponds (wetland type B10)

*Relevant Landscape Units:* 3, 4, 10, 12, 13 and 15

Ephemeral wetlands persist within private properties and public reserves throughout the survey corridor. Many of these are surrounded by cultivated crops in paddocks and are most common within the Yea River Floodplain Landscape Unit. It is possible that other seasonal wetlands persist in other parts of the survey corridor, but were not recognised due to ongoing drought conditions and grazing and trampling by stock. If additional areas of this habitat were found to persist, it is anticipated they would be in a poor condition and of low value for most fauna.

The ephemeral wetlands identified comprised low-lying areas, with almost no overstorey or midstorey vegetation. The ground layer was a mixture of dense exotic grasses (especially Toowoomba Canary-grass *Phalaris aquatica*), and scattered native and aquatic low flora species.

A variety of native species were recorded within these areas (e.g. waterbirds and frogs). Several species of common frogs were heard calling throughout the survey corridor and these species were also found during active searches following rainfall. Common waterbirds were observed foraging or flying over these areas (e.g. ibis, egret, herons and spoonbills), but wetland habitats are individually too small and modified to support valuable waterbird habitat<sup>77</sup>. Birds and reptiles that use dense low vegetation would also be expected to use this habitat (e.g. Superb Fairy-wrens, Golden-headed Cisticolas, skinks), which in turn could attract predators upon these species (e.g.

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<sup>77</sup> Yea Wetlands are considered to be permanent wetlands. These wetlands are not considered in this report as they do not occur within the survey corridor



snakes, birds of prey). However, in general, these habitats within the survey corridor appear to have relatively low values for fauna.

### **G.1.11 Channels**

*Corresponding Wetland Classification (Environment Australia 2001):* Irrigated Land and Irrigation Channels (wetland type C7).

*Relevant Landscape Units:* 3, 10 and 13

The major channel throughout the survey corridor is the Maroondah Aqueduct. This aqueduct is a constructed channel 3m in width and at the time of assessment contained water. Between the Melba Highway and Steels Creek Road the aqueduct is piped and the easement is approximately 15m in width. The easement has been fenced off from the public and contains a mix of exotic and native grasses, including the endangered Matted-flax Lily *Dianella amoena*.

Sections where the aqueduct is open (mainly between Steels Creek Road and Sugarloaf Reservoir) supports a suite of waterbirds and amphibians, and to some extent may provide a water source for small mammals and reptiles. Whilst the aqueduct may provide some occasional habitat for these species, it is not considered to contain any high quality fauna habitat.

### **G.1.12 Farm dams**

*Corresponding Wetland Classification:* Human-made wetlands – Farm ponds (wetland type C2).

*Relevant Landscape Units:* 1, 2, 3, 4, 6, 10, 11, 12, 13, 14 and 15

Within agricultural paddocks throughout the survey corridor, there are a number of relatively small farm dams. Most of these dams are fully accessible to grazing and trampling by cattle and other agricultural animals. These human-made wetlands are small in extent (most of which are less than 20m by 20m) and generally contain little or no aquatic vegetation. Pasture grasses and bare ground cover the banks of the majority of these wetlands. There are very low levels of woody debris or other ground-level cover around the edges of the farm dams.

These farm dams were being used by mostly a small number of mostly common waterbirds (e.g. Australian Wood Duck, Masked Lapwing, Pacific Black Duck) and frogs (e.g. Common Froglet, Plains Froglet, Spotted Marsh Frog) that are able to persist in these poor quality wetland areas. Less commonly, Yellow-billed Spoonbill, White-faced Heron, Hardhead, Great Egret and Cattle Egret and other adaptable wetland-dependent species were recorded.

Some farm dams may also be utilised by common farmland fauna for drinking water or bathing (e.g. Galah, Long-billed Corella, Eastern Grey Kangaroo). However, in general they would have low values for most wetland-dependent fauna.



## Appendix H Recorded Fauna Species

### Threat Status:

EPBC	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
FFG	Victorian <i>Flora and Fauna Guarantee Act 1988</i>
DSE	Advisory list of threatened vertebrate fauna in Victoria (DSE 2007)
Mi	Listed migratory species under the <i>EPBC Act 1999</i>
Ma	Listed marine species under the <i>EPBC Act 1999</i>
CE	Critically endangered
EN	Endangered
VU	Vulnerable
NT	Near threatened (lower risk)
DD	Data deficient
L	Listed under the FFG Act 1988
N	Nominated for Listing under the FFG Act 1988
*	Introduced, non-indigenous species

### Presence of Species:

PMST	Species predicted to occur within the survey corridor from the EPBC Act Protected Matters Search Tool.
AVW	Species recorded during surveys within 10km of the proposed survey corridor and submitted to the Atlas of Victorian Wildlife database (2007 version).
BA	Species recorded during surveys within 10km of the proposed survey corridor and submitted to the Birds Australia Avian Atlas (2007 version).

### Present Assessment:

SLR	Sugarloaf Reservoir (Melbourne Water)
TSF	Toolangi State Forest (Crown Land)
V	Fauna species seen within survey corridor
A	Fauna species heard within survey corridor
I	Incidental Records (scratching, diggings etc) of species within survey corridor
GT	Species trapped in a ground trap
AT	Species trapped in an arboreal trap
HT	Species trapped in a harp trap
RT	Species trapped in a reptile trap
FN	Species trapped in a fyke net during an aquatic assessment
AN	Species detected through ANABAT analysis
HF	Species detected using hair funnels
AS	Species detected during active searching
S	Species detected through scat analysis



Conservation Significance					Species Name	Source			
EPBC Act	FFG Act	DSE 2007	EPBC Migratory	EPBC Marine		PMST	AVW 2007	BA 2007	Current Survey 2007
<b>Birds</b>									
					Emu <i>Dromaius novaehollandiae</i>		✓		
				Ma	Stubble Quail <i>Coturnix pectoralis</i>		✓		
		NT			Brown Quail <i>Coturnix ypsilophora</i>		✓	✓	
					Painted Button-quail <i>Turnix varia</i>		✓		
		NT			Little Button-quail <i>Turnix velox</i>		✓		
VU	L	CR			Plains-Wanderer <i>Pedionomus torquatus</i>	✓		✓	
					White-headed Pigeon <i>Columba leucomela</i>		✓		
					Peaceful Dove <i>Geopelia striata</i>		✓		
					Wonga Pigeon <i>Leucosarcia melanoleuca</i>		✓		✓
					Crested Pigeon <i>Ocyphaps lophotes</i>		✓		✓
					Common Bronzewing <i>Phaps chalcoptera</i>		✓		✓
					Brush Bronzewing <i>Phaps elegans</i>		✓		✓
	L	VU			Lewin's Rail <i>Rallus pectoralis</i>		✓	✓	
					Buff-banded Rail <i>Gallirallus philippensis</i>		✓		
					Australian Spotted Crake <i>Porzana fluminea</i>		✓		✓
	L	VU		Ma	Baillon's Crake <i>Porzana pusilla</i>		✓	✓	
				Ma	Spotless Crake <i>Porzana tabuensis</i>		✓		



					Black-tailed Native-hen <i>Gallinula ventralis</i>		✓		
					Dusky Moorhen <i>Gallinula tenebrosa</i>		✓		✓
					Purple Swamphen <i>Porphyrio porphyrio</i>		✓		✓
					Eurasian Coot <i>Fulica atra</i>		✓		✓
					Great Crested Grebe <i>Podiceps cristatus</i>		✓		
					Australasian Grebe <i>Tachybaptus novaehollandiae</i>		✓		✓
					Hoary-headed Grebe <i>Poliiocephalus poliocephalus</i>		✓		✓
					Great Cormorant <i>Phalacrocorax carbo</i>		✓		✓
					Little Black Cormorant <i>Phalacrocorax sulcirostris</i>		✓		✓
		NT		Ma	Black-faced Cormorant <i>Phalacrocorax fuscescens</i>			✓	
		NT			Pied Cormorant <i>Phalacrocorax varius</i>		✓	✓	✓
					Little Pied Cormorant <i>Microcarbo melanoleucos</i>		✓		✓
					Darter <i>Anhinga novaehollandiae</i>		✓		
				Ma	Australian Pelican <i>Pelecanus conspicillatus</i>		✓		
		NT		Ma	Whiskered Tern <i>Chlidonias hybridus</i>		✓	✓	
	L	NT	Mi	Ma	Caspian Tern <i>Hydroprogne caspia</i>		✓		
	L	VU	Mi	Ma	Little Tern <i>Sterna albifrons</i>			✓	
				Ma	Silver Gull <i>Chroicocephalus novaehollandiae</i>		✓		✓
		NT		Ma	Pacific Gull <i>Larus pacificus</i>			✓	
					Masked Lapwing <i>Vanellus miles</i>		✓		✓
					Banded Lapwing <i>Vanellus tricolor</i>		✓		



					Red-kneed Dotterel <i>Erythrogonys cinctus</i>		✓		
					Black-fronted Dotterel <i>Euseyonis melanops</i>		✓		✓
				Ma	Black-winged Stilt <i>Himantopus himantopus</i>		✓		
					Comb crested Jacana <i>Irediparra gallinacea</i>			✓	
			Mi	Ma	Bar-tailed Godwit <i>Limosa lapponica</i>		✓		
		VU	Mi	Ma	Wood Sandpiper <i>Tringa glareola</i>			✓	
			Mi	Ma	Sharp-tailed Sandpiper <i>Calidris acuminata</i>		✓		
		NT	Mi	Ma	Latham's Snipe <i>Gallinago hardwickii</i>	✓	✓	✓	
VU	L	CR		Ma	Australian Painted Snipe <i>Rostratula benghalensis</i>	✓		✓	
	L	EN			Bush Stone-curlew <i>Burhinus grallarius</i>		✓	✓	
		NT	Mi	Ma	Glossy Ibis <i>Plegadis falcinellus</i>		✓	✓	
				Ma	Australian White Ibis <i>Threskiornis molucca</i>		✓		✓
				Ma	Straw-necked Ibis <i>Threskiornis spinicollis</i>		✓		✓
		VU			Royal Spoonbill <i>Platalea regia</i>		✓	✓	
					Yellow-billed Spoonbill <i>Platalea flavipes</i>		✓		
	L	EN		Ma	Little Egret <i>Egretta garzetta</i>		✓	✓	
	L	CR		Ma	Intermediate Egret <i>Ardea intermedia</i>			✓	
	L	VU	Mi	Ma	Great Egret <i>Ardea alba</i>	✓		✓	✓
			Mi	Ma	Cattle Egret <i>Ardea ibis</i>	✓	✓		✓
					White-faced Heron <i>Egretta novaehollandiae</i>		✓		✓
					White-necked Heron <i>Ardea pacifica</i>		✓		✓



		NT		Ma	Nankeen Night Heron <i>Nycticorax caledonicus</i>		✓	✓	
	L	EN			Little Bittern <i>Ixobrychus minutus</i>		✓	✓	
	L	EN			Australasian Bittern <i>Botaurus poiciloptilus</i>		✓	✓	
					Australian Wood Duck <i>Chenonetta jubata</i>		✓		✓
					Black Swan <i>Cygnus atratus</i>		✓		
					Plumed Whistling-Duck <i>Dendrocygna eytoni</i>		✓		
					Australian Shelduck <i>Tadorna tadornoides</i>		✓		✓
					Pacific Black Duck <i>Anas superciliosa</i>		✓		✓
					Chestnut Teal <i>Anas castanea</i>		✓		✓
					Grey Teal <i>Anas gracilis</i>		✓		✓
		VU			Australasian Shoveler <i>Anas rhynchos</i>		✓	✓	
					Pink-eared Duck <i>Malacorhynchus membranaceus</i>		✓		
	L	EN			Freckled Duck <i>Stictonetta naevosa</i>		✓	✓	
		VU			Hardhead <i>Aythya australis</i>		✓	✓	✓
	L	EN			Blue-billed Duck <i>Oxyura australis</i>		✓	✓	
		VU		Ma	Musk Duck <i>Biziura lobata</i>		✓	✓	
		NT			Spotted Harrier <i>Circus assimilis</i>		✓		
				Ma	Swamp Harrier <i>Circus approximans</i>		✓		
	L	VU			Grey Goshawk <i>Accipiter novaehollandiae</i>		✓	✓	
				Ma	Brown Goshawk <i>Accipiter fasciatus</i>		✓		✓
					Collared Sparrowhawk <i>Accipiter cirrhocephalus</i>		✓		✓



					Wedge-tailed Eagle <i>Aquila audax</i>		✓		✓
					Little Eagle <i>Hieraaetus morphnoides</i>		✓		✓
	L	VU	Mi	Ma	White-bellied Sea-Eagle <i>Haliaeetus leucogaster</i>	✓	✓	✓	
				Ma	Whistling Kite <i>Haliastur sphenurus</i>		✓		✓
					Black Kite <i>Milvus migrans</i>		✓		✓
	L	VU			Square-tailed Kite <i>Lophoictinia isura</i>		✓	✓	
					Black-shouldered Kite <i>Elanus axillaris</i>		✓		✓
					Letter-winged Kite <i>Elanus scriptus</i>		✓		
					Australian Hobby <i>Falco longipennis</i>		✓		✓
	L	EN			Grey Falcon <i>Falco hypoleucos</i>			✓	
					Peregrine Falcon <i>Falco peregrinus</i>		✓		x
		VU			Black Falcon <i>Falco subniger</i>		✓	✓	
					Brown Falcon <i>Falco berigora</i>		✓		✓
				Ma	Nankeen Kestrel <i>Falco cenchroides</i>		✓		✓
				Ma	Southern Boobook <i>Ninox novaeseelandiae</i>		✓		✓
	L	EN			Barking Owl <i>Ninox connivens</i>		✓	✓	
	L	VU			Powerful Owl <i>Ninox strenua</i>		✓	✓	✓
					Barn Owl <i>Tyto javanica</i>		✓		✓
	L	EN			Masked Owl <i>Tyto novaehollandiae</i>		✓		
	L	VU			Sooty Owl <i>Tyto tenebricosa</i>		✓	✓	
					Rainbow Lorikeet <i>Trichoglossus haematodus</i>		✓		✓



					Scaly-breasted Lorikeet <i>Trichoglossus chlorolepidotus</i>		✓		
					Musk Lorikeet <i>Glossopsitta concinna</i>		✓		
					Purple-crowned Lorikeet <i>Glossopsitta porphyrocephala</i>		✓		
					Little Lorikeet <i>Glossopsitta pusilla</i>		✓		
					Yellow-tailed Black-Cockatoo <i>Calyptorhynchus funereus</i>		✓		✓
					Gang-gang Cockatoo <i>Callocephalon fimbriatum</i>		✓		✓
					Sulphur-crested Cockatoo <i>Cacatua galerita</i>		✓		✓
					Little Corella <i>Cacatua sanguinea</i>		✓		✓
					Long-billed Corella <i>Cacatua tenuirostris</i>		✓		✓
					Galah <i>Eolophus roseicapilla</i>		✓		✓
					Australian King-Parrot <i>Alisterus scapularis</i>		✓		✓
					Crimson Rosella <i>Platycercus elegans elegans</i>		✓		✓
					Eastern Rosella <i>Platycercus eximius</i>		✓		✓
					Australian Ringneck <i>Barnardius zonarius zonarius</i>		✓		
					Red-rumped Parrot <i>Psephotus haematonotus</i>		✓		✓
	L	NT			Turquoise Parrot <i>Neophema pulchella</i>		✓		
				Ma	Blue-winged Parrot <i>Neophema chrysostoma</i>		✓		
EN	L	EN		Ma	Swift Parrot <i>Lathamus discolor</i>	✓	✓	✓	
					Tawny Frogmouth <i>Podargus strigoides</i>		✓		✓
					Australian Owlet-nightjar <i>Aegotheles cristatus</i>		✓		
				Ma	Dollarbird <i>Eurystomus orientalis</i>		✓		



		NT			Azure Kingfisher <i>Alcedo azurea</i>		✓	✓	✓
					Laughing Kookaburra <i>Dacelo novaeguineae</i>		✓		✓
		NT			Red-backed Kingfisher <i>Todiramphus pyrrhopygia</i>			✓	
				Ma	Sacred Kingfisher <i>Todiramphus sanctus</i>		✓	✓	✓
			Mi	Ma	Rainbow Bee-eater <i>Merops ornatus</i>	✓	✓		
				Ma	White-throated Nightjar <i>Eurostopodus mystacalis</i>		✓		✓
			Mi	Ma	White-throated Needletail <i>Hirundapus caudacutus</i>	✓	✓		
			Mi	Ma	Fork-tailed Swift <i>Apus pacificus</i>	✓	✓		
				Ma	Pallid Cuckoo <i>Cuculus pallidus</i>		✓		✓
				Ma	Fan-tailed Cuckoo <i>Cacomantis flabelliformis</i>		✓		✓
					Brush Cuckoo <i>Cacomantis variolosus</i>		✓		✓
		NT		Ma	Black-eared Cuckoo <i>Chrysococcyx osculans</i>		✓	✓	
				Ma	Horsfield's Bronze-Cuckoo <i>Chrysococcyx basalis</i>		✓		✓
				Ma	Shining Bronze-Cuckoo <i>Chrysococcyx lucidus</i>		✓		✓
					Superb Lyrebird <i>Menura novaehollandiae</i>		✓		✓
					Welcome Swallow <i>Hirundo neoxena</i>		✓	✓	✓
				Ma	Tree Martin <i>Hirundo nigricans</i>		✓	✓	✓
					Fairy Martin <i>Hirundo ariel</i>		✓	✓	✓
					Bassian Thrush <i>Zoothera lunulata</i>		✓	✓	✓
					Grey Fantail <i>Rhipidura albiscarpa</i>		✓	✓	✓
			Mi	Ma	Rufous Fantail <i>Rhipidura rufifrons</i>	✓	✓	✓	✓



					Willie Wagtail <i>Rhipidura leucophrys</i>		✓	✓	✓
					Leaden Flycatcher <i>Myiagra rubecula</i>		✓	✓	✓
			Mi	Ma	Satin Flycatcher <i>Myiagra cyanoleuca</i>		✓	✓	✓
					Restless Flycatcher <i>Myiagra inquieta</i>		✓	✓	✓
			Mi	Ma	Black-faced Monarch <i>Monarcha melanopsis</i>	✓	✓	✓	
					Jacky Winter <i>Microeca fascinans</i>		✓	✓	✓
					Scarlet Robin <i>Petroica multicolor</i>		✓	✓	✓
					Red-capped Robin <i>Petroica goodenovii</i>		✓	✓	
				Ma	Flame Robin <i>Petroica phoenicea</i>		✓	✓	✓
				Ma	Pink Robin <i>Petroica rodinogaster</i>		✓	✓	✓
					Rose Robin <i>Petroica rosea</i>		✓	✓	✓
	L	NT			Hooded Robin <i>Melanodryas cucullata</i>		✓	✓	✓
					Eastern Yellow Robin <i>Eopsaltria australis</i>		✓	✓	✓
					Golden Whistler <i>Pachycephala pectoralis</i>		✓	✓	✓
					Rufous Whistler <i>Pachycephala rufiventris</i>		✓	✓	✓
					Gilbert's Whistler <i>Pachycephala inornata</i>			✓	
					Olive Whistler <i>Pachycephala olivacea</i>		✓	✓	
					Grey Shrike-thrush <i>Colluricincla harmonica</i>		✓	✓	✓
					Magpie-lark <i>Grallina cyanoleuca</i>		✓	✓	✓
					Crested Shrike-tit <i>Falcunculus frontatus</i>		✓	✓	✓
					Eastern Whipbird <i>Psophodes olivaceus</i>		✓	✓	✓



				Ma	Black-faced Cuckoo-shrike <i>Coracina novaehollandiae</i>		✓		✓
				Ma	White-bellied Cuckoo-shrike <i>Coracina papuensis</i>		✓	✓	
				Ma	Cicadabird <i>Coracina tenuirostris</i>			✓	
					White-winged Triller <i>Lalage sueurii</i>		✓	✓	✓
		NT			Spotted Quail-thrush <i>Cinlosoma punctatum</i>		✓	✓	
	L	EN			Grey-crowned Babbler <i>Pomatostomus temporalis</i>		✓		
					White-browed Babbler <i>Pomatostomus superciliosus</i>			✓	
					White-fronted Chat <i>Epthianura albifrons</i>		✓	✓	
					White-throated Gerygone <i>Gerygone olivacea</i>		✓		✓
					Brown Gerygone <i>Gerygone mouki</i>		✓		
					Western Gerygone <i>Gerygone fusca</i>		✓		
					Weebill <i>Smicromis brevirostris</i>		✓		✓
					Southern Whiteface <i>Aphelocephala leucopsis</i>		✓		
					Striated Thornbill <i>Acanthiza lineata</i>		✓		✓
					Yellow Thornbill <i>Acanthiza nana</i>		✓		✓
					Brown Thornbill <i>Acanthiza pusilla</i>		✓		✓
					Buff-rumped Thornbill <i>Acanthiza reguloides</i>		✓		✓
					Yellow-rumped Thornbill <i>Acanthiza chrysorrhoa</i>		✓		✓
					White-browed Scrubwren <i>Sericornis frontalis</i>		✓		✓
					Large-billed Scrubwren <i>Sericornis magnirostris</i>		✓		
	L	VU			Chestnut-rumped Heathwren <i>Calamanthus pyrrhopygius</i>		✓		✓



					Striated Fieldwren <i>Calamanthus fuliginosus</i>		✓		
	L	VU			Speckled Warbler <i>Chthonicola sagittata</i>		✓	✓	
					Pilotbird <i>Pycnoptilus floccosus</i>		✓		
					Brown Songlark <i>Cincloramphus cruralis</i>		✓	✓	✓
					Rufous Songlark <i>Cincloramphus mathewsi</i>		✓	✓	✓
					Little Grassbird <i>Megalurus gramineus</i>		✓	✓	
			Mi	Ma	Clamorous Reed Warbler <i>Acrocephalus stentoreus</i>		✓	✓	✓
					Golden-headed Cisticola <i>Cisticola exilis</i>		✓	✓	✓
					Southern Emu-wren <i>Stipiturus malachurus</i>		✓		
					Superb Fairy-wren <i>Malurus cyaneus</i>		✓		✓
					White-breasted Woodswallow <i>Artamus leucorhynchus</i>			✓	
					Masked Woodswallow <i>Artamus personatus</i>		✓	✓	✓
					White-browed Woodswallow <i>Artamus superciliosus</i>		✓	✓	
					Black-faced Woodswallow <i>Artamus cinereus</i>			✓	
					Dusky Woodswallow <i>Artamus cyanopterus</i>		✓	✓	✓
					Varied Sittella <i>Daphoenositta chrysoptera</i>		✓	✓	✓
		NT			Brown Treecreeper <i>Climacteris picumnus</i>			✓	✓
					White-throated Treecreeper <i>Cormobates leucophaeus</i>		✓		✓
					Red-browed Treecreeper <i>Climacteris erythrops</i>		✓		✓
					Mistletoebird <i>Dicaeum hirundinaceum</i>		✓	✓	✓
					Spotted Pardalote <i>Pardalotus punctatus</i>		✓		✓



					Striated Pardalote <i>Pardalotus striatus</i>		✓		✓
				Ma	Silvereye <i>Zosterops lateralis</i>		✓	✓	✓
					White-naped Honeyeater <i>Melithreptus lunatus</i>		✓	✓	✓
		NT			Black-chinned Honeyeater <i>Melithreptus gularis</i>		✓	✓	
					Brown-headed Honeyeater <i>Melithreptus brevirostris</i>		✓	✓	✓
					Scarlet Honeyeater <i>Myzomela sanguinolenta</i>		✓	✓	
					Eastern Spinebill <i>Acanthorhynchus tenuirostris</i>		✓	✓	✓
					Tawny-crowned Honeyeater <i>Phylidonyris melanops</i>		✓	✓	
	L	VU			Painted Honeyeater <i>Grantiella picta</i>		✓		
EN	L	CR	Mi		Regent Honeyeater <i>Xanthomyza phrygia</i>	✓		✓	
					Lewin's Honeyeater <i>Meliphaga lewinii</i>		✓	✓	✓
					Singing Honeyeater <i>Lichenostomus virescens</i>			✓	
					Fuscous Honeyeater <i>Lichenostomus fuscus</i>		✓	✓	✓
					Yellow-faced Honeyeater <i>Lichenostomus chrysops</i>		✓	✓	✓
					White-eared Honeyeater <i>Lichenostomus leucotis</i>		✓	✓	✓
EN	L	CR	Mi		Helmeted Honeyeater <i>Lichenostomus melanops cassidix</i>	✓	✓		
					Yellow-tufted Honeyeater <i>Lichenostomus melanops</i>		✓	✓	
					Yellow-plumed Honeyeater <i>Lichenostomus ornatus</i>			✓	
					White-plumed Honeyeater <i>Lichenostomus penicillatus</i>		✓	✓	✓
					Crescent Honeyeater <i>Phylidonyris pyrrhoptera</i>		✓	✓	✓
					New Holland Honeyeater <i>Phylidonyris novaehollandiae</i>		✓	✓	✓



					Bell Miner <i>Manorina melanophrys</i>		✓	✓	✓
					Noisy Miner <i>Manorina melanocephala</i>		✓	✓	✓
					Little Wattlebird <i>Anthochaera chrysoptera</i>		✓	✓	✓
					Red Wattlebird <i>Anthochaera carunculata</i>		✓	✓	✓
					Spiny-cheeked Honeyeater <i>Acanthagenys rufogularis</i>			✓	
					Blue-faced Honeyeater <i>Entomyzon cyanotis</i>			✓	
					Noisy Friarbird <i>Philemon corniculatus</i>		✓	✓	✓
					Little Friarbird <i>Philemon citreogularis</i>		✓	✓	
				Ma	Richard's Pipit <i>Anthus novaeseelandiae</i>		✓	✓	✓
					Singing Bushlark <i>Mirafra javanica</i>			✓	
					Beautiful Firetail <i>Stagonopleura bella</i>		✓	✓	
	L	VU			Diamond Firetail <i>Stagonopleura guttata</i>		✓	✓	
					Zebra Finch <i>Taeniopygia guttata</i>		✓	✓	
					Red-browed Finch <i>Neochmia temporalis</i>		✓	✓	✓
					Olive-backed Oriole <i>Oriolus sagittatus</i>		✓	✓	✓
					Satin Bowerbird <i>Ptilonorhynchus violaceus</i>		✓	✓	
					Australian Raven <i>Corvus coronoides</i>		✓	✓	✓
				Ma	Little Raven <i>Corvus mellori</i>		✓	✓	✓
					White-winged Chough <i>Corcorax melanorhamphos</i>		✓	✓	✓
					Pied Currawong <i>Strepera graculina</i>		✓	✓	✓
					Grey Currawong <i>Strepera versicolor</i>		✓	✓	✓



					Pied Butcherbird <i>Cracticus nigrogularis</i>		✓	✓	✓
					Grey Butcherbird <i>Cracticus torquatus</i>		✓	✓	✓
					Australian Magpie <i>Gymnorhina tibicen</i>		✓	✓	✓
		*			Skylark <i>Alauda arvensis</i>		✓	✓	
		*			Domestic Goose <i>Anser anser (domestic)</i>		✓		✓
					Domestic duck <i>Anatidae sp. (domestic)</i>		✓		
					Mallard <i>Anas platyrhynchos</i>		✓		✓
		*			Rock Dove <i>Columba livia</i>		✓		✓
		*			Spotted Turtle-Dove <i>Streptopelia chinensis</i>		✓		✓
		*			European Goldfinch <i>Carduelis carduelis</i>		✓	✓	✓
		*			European Greenfinch <i>Carduelis chloris</i>		✓	✓	✓
		*			Common Blackbird <i>Turdus merula</i>		✓	✓	✓
		*			Song Thrush <i>Turdus philomelos</i>		✓	✓	
		*			Eurasian Tree Sparrow <i>Passer montanus</i>		✓	✓	✓
		*			House Sparrow <i>Passer domesticus</i>		✓	✓	✓
		*			Indian Peafowl <i>Pavo cristatus</i>		✓		
		*			Red-whiskered Bulbul <i>Pyconotus jocosus</i>			✓	
		*			Common Myna <i>Acridotheres tristis</i>		✓	✓	✓
		*			Common Starling <i>Sturnus vulgaris</i>		✓	✓	✓
<b>Mammals</b>									
					Platypus <i>Ornithorhynchus anatinus</i>		✓		✓



					Short-beaked Echidna <i>Tachyglossus aculeatus</i>		✓		✓
EN	L	EN			Spot-tailed Quoll <i>Dasyurus maculatus</i>	✓	✓		
	L	VU			Brush-tailed Phascogale <i>Phascogale tapoatafa</i>		✓		
					Agile Antechinus <i>Antechinus agilis</i>		✓		✓
					Dusky Antechinus <i>Antechinus swainsonii</i>		✓		
		VU			Common Dunnart <i>Sminthopsis murina</i>		✓		
EN	I	NT			Southern Brown Bandicoot <i>Isoodon obesulus obesulus</i>	✓	✓		
					Long-nosed Bandicoot <i>Perameles nasuta</i>		✓		✓
					Common Brushtail Possum <i>Trichosurus vulpecula</i>		✓		✓
					Mountain Brushtail Possum <i>Trichosurus cunninghami</i>		✓		
					Common Ringtail Possum <i>Pseudocheirus peregrinus</i>		✓		✓
					Greater Glider <i>Petauroides volans</i>		✓		✓
					Yellow-bellied Glider <i>Petaurus australis</i>		✓		✓
					Sugar Glider <i>Petaurus breviceps</i>		✓		✓
EN	L	EN			Leadbeater's Possum <i>Gymnobelideus leadbeateri</i>	✓	✓		
					Feathertail Glider <i>Acrobates pygmaeus</i>		✓		
					Eastern Pygmy-possum <i>Cercartetus nanus</i>		✓		
					Koala <i>Phascolarctos cinereus</i>		✓		✓
					Common Wombat <i>Vombatus ursinus</i>		✓		✓
					Black Wallaby <i>Wallabia bicolor</i>		✓		✓
					Eastern Grey Kangaroo <i>Macropus giganteus</i>		✓		✓



VU	L	VU			Grey-headed Flying-fox <i>Pteropus poliocephalus</i>	✓	✓		
	L	VU			Eastern Horseshoe Bat <i>Rhinolophus megaphyllus</i>		✓		
					White-striped Freetail Bat <i>Tadarida australis</i>		✓		✓
					Southern Freetail Bat (long penis) <i>Mormopterus sp. 4</i>		✓		✓
					Gould's Long-eared Bat <i>Nyctophilus gouldi</i>		✓		
					Lesser Long-eared Bat <i>Nyctophilus geoffroyi</i>		✓		✓
	L				Common Bent-wing Bat (eastern subsp.) <i>Miniopterus schreibersii oceanensis</i>		✓		✓
					Gould's Wattled Bat <i>Chalinolobus gouldii</i>		✓		✓
					Chocolate Wattled Bat <i>Chalinolobus morio</i>		✓		✓
		NT			Southern Myotis <i>Myotis macropus</i>		✓		
					Eastern False Pipistrelle <i>Falsistrellus tasmaniensis</i>		✓		✓
					Southern Forest Bat <i>Vespadelus regulus</i>		✓		✓
					Little Forest Bat <i>Vespadelus vulturinus</i>		✓		✓
					Large Forest Bat <i>Vespadelus darlingtoni</i>		✓		✓
					Eastern Broad-nosed Bat <i>Scotorepens orion</i>		✓		✓
					Bush Rat <i>Rattus fuscipes</i>		✓		✓
					Swamp Rat <i>Rattus lutreolus</i>		✓		✓
					Water Rat <i>Hydromys chrysogaster</i>		✓		
EN	L	CR			Smoky Mouse <i>Pseudomys fumeus</i>	✓			
		Cmp			Dingo/Dog (feral) <i>Canis lupus</i>		✓		
		*			Black Rat <i>Rattus rattus</i>		✓		



		*			Brown Rat <i>Rattus norvegicus</i>		✓		
		*			House Mouse <i>Mus musculus</i>		✓		✓
		*			European Rabbit <i>Oryctolagus cuniculus</i>		✓		✓
					European Hare <i>Lepus europeaus</i>		✓		
		*			Pig (feral) <i>Sus scrofa</i>		✓		
					Goat (feral) <i>Capra hircus</i>		✓		
		*			Sheep (feral) <i>Ovis aries</i>		✓		
		*			Red Deer <i>Cervus elaphus</i>		✓		✓
		*			Sambar <i>Cervus unicolor</i>		✓		✓
		*			Fallow Deer <i>Dama dama</i>				✓
		*			Red Fox <i>Vulpes vulpes</i>		✓		✓
					Cat (feral) <i>Felis catus</i>		✓		✓
<b>Reptiles</b>									
					Common Long-necked Tortoise <i>Chelodina longicollis</i>		✓		✓
		DD			Murray River Tortoise <i>Emydura macquarii</i>		✓		
					Marbled Gecko <i>Christinus marmoratus</i>		✓		
VU	L	EN			Striped Legless Lizard <i>Delma impar</i>	✓	✓	✓	✓
		DD			Eastern Bearded Dragon <i>Pogona barbata</i>		✓		
					Mountain Dragon <i>Rankinia diemensis</i>		✓		
					Tree Dragon <i>Amphibolurus muricatus</i>		✓		✓
					Gippsland Water Dragon <i>Physignathus lesueurii howittii</i>		✓		



		VU			Tree Goanna <i>Varanus varius</i>		✓		
					Southern Water Skink <i>Eulamprus tympanum tympanum</i>		✓		✓
					Yellow-bellied Water Skink <i>Eulamprus heatwolei</i>		✓		✓
					Large Striped Skink <i>Ctenotus robustus</i>		✓		
					Cunningham's Skink <i>Egernia cunninghami</i>		✓		
					White's Skink <i>Egernia whitii (group)</i>		✓		
					Three-toed Skink <i>Hemiergis decresiensis</i>		✓		
					McCoy's Skink <i>Nannoscincus maccoyi</i>		✓		✓
					Delicate Skink <i>Lampropholis delicata</i>		✓		✓
					Garden Skink <i>Lampropholis guichenoti</i>		✓		✓
					Weasel Skink <i>Saproscincus mustelinus</i>		✓		✓
					Coventry's Skink <i>Niveoscincus coventryi</i>		✓		✓
					Metallic Skink <i>Niveoscincus metallicus</i>		✓		✓
					Eastern Three-lined Skink <i>Bassiana duperreyi</i>		✓		
					Bougainville's Skink <i>Lerista bougainvillii</i>		✓		✓
					Spencer's Skink <i>Pseudemoia spenceri</i>		✓		
		NT			Glossy Grass Skink <i>Pseudemoia rawlinsoni</i>		✓		
					Tussock Skink <i>Pseudemoia pagenstecheri</i>		✓		
					Southern Grass Skink <i>Pseudemoia entrecasteauxii</i>		✓		
					Blotched Blue-tongued Lizard <i>Tiliqua nigrolutea</i>		✓		✓
					Common Blue-tongued Lizard <i>Tiliqua scincoides</i>		✓		✓



					Stumpy-tailed Lizard <i>Tiliqua rugosa</i>		✓		
					Gray's Blind Snake <i>Ramphotyphlops nigrescens</i>		✓		
					Highland Copperhead <i>Austrelaps ramsayi</i>		✓		
					Lowland Copperhead <i>Austrelaps superbus</i>		✓		
					White-lipped Snake <i>Drysdalia coronoides</i>		✓		
					Tiger Snake <i>Notechis scutatus</i>		✓		
					Red-bellied Black Snake <i>Pseudechis porphyriacus</i>		✓		✓
					Eastern Brown Snake <i>Pseudonaja textilis</i>		✓		✓
					Eastern Small-eyed Snake <i>Rhinoplocephalus nigrescens</i>				✓
<b>Amphibians</b>									
					Victorian Smooth Froglet <i>Geocrinia victoriana</i>	✓		✓	
					Southern Bullfrog <i>Limnodynastes dumerilii</i>		✓		✓
					Striped Marsh Frog <i>Limnodynastes peronii</i>		✓		✓
					Spotted Marsh Frog <i>Limnodynastes tasmaniensis</i>		✓		✓
	L	EN			Brown Toadlet <i>Pseudophryne bibronii</i>		✓		
		VU			Southern Toadlet <i>Pseudophryne semimarmorata</i>		✓		✓
					Plains Froglet <i>Crinia parinsignifera</i>		✓		✓
					Common Froglet <i>Crinia signifera</i>		✓		✓
					Southern Brown Tree Frog <i>Litoria ewingii</i>		✓		✓
					Lesueur's Frog <i>Litoria lesueuri</i>		✓		
					Plains Brown Tree Frog <i>Litoria paraewingii</i>		✓		✓



					Peron's Tree Frog <i>Litoria peronii</i>				✓
VU	L	EN			Growling Grass Frog <i>Litoria raniformis</i>	✓	✓		
					Verreaux's Tree Frog <i>Litoria verreauxii</i>		✓		✓
<b>Invertebrates</b>									
	L	R/R			Large Ant Blue Butterfly <i>Acrodipsas brisbanensis</i>		✓		
CR	L	EN			Golden Sun Moth <i>Synemon plana</i>	✓	✓		
	L	VU			Damselfly <i>Hemiphysalia mirabilis</i>		✓		✓