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ELSTERNWICK PARK NATURE RESERVE

HABITAT AND FLORA STRATEGY

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BAYSIDE CITY COUNCIL ELSTERNWICK PARK NATURE RESERVE

Habitat and Flora Strategy

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EXECUTIVE SUMMARY

The preparation of this Habitat and Flora Strategy is to support the construction of Elsternwick Park Nature Reserve (Elsternwick Park NR). Located roughly eight kilometres south-west of Melbourne's CBD, the reserve was largely previously occupied by the Elsternwick Golf Course. Bayside City Council engaged Arcadis Australia Pacific Limited (Arcadis) to prepare this Habitat and Flora Strategy to guide the transition into a valuable biodiversity, public use, stormwater treatment and flood mitigation asset.

Methods

To gain understanding of the current conditions within Elsternwick Park and provide strategic ecological advice, Arcadis completed a desktop database and literature review. This included the review of relevant ecological reports, online resources, GIS data, aerial imagery and legislation. A site familiarisation and ecological assessment also took place on the 29 May 2019 to map areas of existing native vegetation and fauna habitat.

Existing Biodiversity Values

Through the background research and site assessment, the park was found to be extensively modified through clearing of remnant vegetation and alterations to the waterway and topography. While this is the case, small remnants of three Ecological Vegetation Classes (EVCs) were identified onsite – Tall Marsh (EVC 821), Aquatic Herbland (EVC 653) and Grassy Woodland (EVC 175) – with the majority of vegetation comprising mostly planted trees and exotic grass lawns consistent with the previous use of the reserve as a golf course. Although planted, some of the tree species are indigenous or near-indigenous from the greater Melbourne region.

Fauna Habitat Values

Despite the highly modified environment, Elsternwick Park currently supports habitat for a range of native fauna species. The most diverse and significant habitat being the aquatic habitat along Elster Creek which traverses the site. This habitat supports a range of common urban waterbird species, while also providing habitat for two species threatened at a State Level - Latham's Snipe *Gallinago hardwickii*, the Eastern Great Egret *Ardea alba* and Nakeen Night-heron *Nycticorax caledonicus*. Latham's Snipe is also a migratory species listed as such at a Federal level. Within the available terrestrial habitat of the park, a range of bird and bat species also currently utilise the grassed and woodland areas. This includes the Grey-headed Flying fox *Pteropus poliocephalus* listed at a Federal level.

Habitat and Flora Strategy

To accommodate the core priorities identified in Bayside City Council's *Elsternwick Park North Park Development: Proposed Principles and Priorities* Report (Elsternwick Park Association, 2018), it is recommended that seven zones of habitat be established. These habitat zones include Open Water, Tall Marsh, Shallow Wetlands, Swamp Scrub, Damp Sands Herb-rich Woodland, Grassy Woodland and Grassland/Lawn. Habitat descriptions, a summary of the flora and fauna species targeted, design/layout recommendations, potential threats and how to manage these threats have been outlined for each of these zones. Potential threats include user related impacts, domestic dogs, pest/ introduced/weed species, pest fauna species (e.g. Mosquitofish *Gambusia holbrooki*), over abundant native species that impact biodiversity (possums, noisy miners, Common Reed *Phragmites australis*, Cumbungi *Typha* spp. and Swamp Paperbark *Melaleuca ericifolia*) and fire.

Recommendations

Recommendations are also suggested to mitigate impacts to wildlife during the design, construction, post construction and ongoing management phases associated with development of the reserve. It is also recommended that an Environmental Management Plan is prepared to minimise potential impacts and detail site rehabilitation works including revegetation (planting zonation, densities, etc.), habitat augmentation, weed control and pest animal control works.

1 INTRODUCTION

Arcadis Australia Pacific Limited (Arcadis) was engaged by Bayside City Council to prepare a Habitat and Flora Strategy for Elsternwick Park Nature Reserve (Elsternwick Park NR).

In March 2018, the Council voted in favour of the creation of a passive open space/environmentally focussed reserve at the former golf course. Works to remove much of the old golf course infrastructure has already begun, and this Strategy will provide ecological advice integral to achieving the vision for the reserve.

Four core reserve priorities have been identified for the site:

- Environment
- Public amenity
- Flood mitigation
- Water quality.

The highly modified Elster Creek (largely existing as an underground pipe or concrete drain) flows east to west through the site in what is one of the last remaining semi-natural aboveground sections of the waterway. It is central to the four core reserve priorities.

Numerous fauna and habitat surveys have been completed within the reserve and information gathered from these baseline surveys has been complied by Port Phillip EcoCentre Inc (PPEI 2019, draft). The report prepared by PPEI includes a list of 37 target and icon species which are known or likely to occur within the Park currently or could occur if appropriate habitat improvements were to occur. In addition to the 37 target species identified in the fauna report, an additional four bird species, two reptile species, yabbies and freshwater molluscs were identified as target species by Bayside City Council in the Request for Quotation brief regarding preparation of this Strategy. The information from the Fauna Report and the targeted species identified in the brief have informed the preparation of this Strategy.

This Habitat and Flora Strategy provides an overview of the existing biodiversity values and guidance for the creation of flora and fauna habitat across the reserve. This includes accommodating the fauna species identified in the Fauna Report (PPEI 2019) and brief, as mentioned above, as well as habitat for a suite of indigenous flora species and vegetation communities. In developing this Strategy, existing biodiversity conditions were assessed to determine which areas already support suitable fauna habitat and/or native vegetation, and identify the habitat attributes that could be improved to enhance biodiversity values. This Strategy also considers nuisance/pest species (both flora and fauna) and other management issues. This information can be used to assist the design of the proposed works associated with increasing the water holding capacity within the Reserve.

1.1 Study area

Elsternwick Park NR (approximately 13.2 ha) is bounded by St Kilda Street, Bent Avenue, New Street, Glen Huntly Road and the Elsternwick Park football ovals, in Brighton, Victoria. The Study Area occurs within the Gippsland Plain Bioregion and Port Phillip and Westernport Catchment Management Authority area. Located roughly eight kilometres south-west of Melbourne's CBD, the park was previously occupied by Elsternwick Golf Course at 170 Glen Huntly Road.

Elster Creek flows east to west through the site and is located in the southern portion of the Reserve. Surrounded by roads, sporting fields and highly urbanised residential areas within close proximity to Melbourne's CBD, the reserve is an important public open space resource for Bayside City Council residents, as well as those from immediately adjoining municipalities. Currently the park is accessible to the public for passive recreational use which includes picnics and, running/walking etc. At present, dogs must be kept on lead at all times when on the premise, though it should be noted that off-leash dogs were frequently observed.

2 METHODS

2.1 Background research

To incorporate elements of historical and current ecological values at Elsternwick Park NR, the following information was reviewed to inform this Strategy:

- Reports for the study area and surrounds including:
  - The Fauna Report Draft (2019), prepared by Port Phillip EcoCentre Inc (PPEI, 2019)
  - Bayside Biodiversity Action Plan 2018-2017 (Bayside City Council, 2018)
  - Bayside City Council Motions March, July & December 2018 in relation to Elsternwick Park Nature Reserve (Bayside City Council, 2018-2019)
  - Bayside Native Vegetation Works Program Stage 1 (Ecology Australia, 2008) and Stage 2 (Ecology Australia, 2011)
  - Elsternwick Park Nature Reserve Priorities and Principles (Elsternwick Park Association, 2018)
  - The Ecological data review for the Bayside City Council Municipality (Ecology Australia, 2017)
- Flora and fauna records held in the Victorian Biodiversity Atlas (VBA) online database (DELWP 2019a);
- A search for ecological communities and flora and fauna species listed under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) within the region using the EPBC Protected Matters Search Tool (DoEE 2019a);
- Department of Environment, Land, Water and Planning (DELWP) NatureKit interactive map for Ecological Vegetation Class (EVC) mapping/modelling of the area (both extant and pre-1750) (DELWP 2019b), and EVC Benchmarks (DELWP 2019c);
- Relevant GIS data and aerial photography; and
- Relevant legislation, government policies and strategies.

2.2 Site assessment

A site assessment took place on 29 May 2019 to assess the existing ecological values within the park. The site assessment involved:

- Mapping Ecological Vegetation Classes (EVCs) and areas of differing quality within an EVC.
- Identifying areas which support habitat or habitat features for the target species identified within the Fauna Report and Request for Quotation brief, such as:
  - Wetlands and other waterbodies (unobstructed water for Black Swan runaway)
  - Exotic trees (e.g. Monterey Cypress *Hesperocyparis macrocarpa*) and non-indigenous native trees (e.g. Sugar Gums *Eucalyptus cladocalyx*) with significant tree hollows
  - Areas with dense and or open understory
  - Logs and fallen branches/leaves/bark
  - Nesting/breeding areas
  - Connectivity
  - Potential food source such as mistletoe.

- Recording dominant vascular plant species in areas of remnant vegetation and fauna habitat
- Identification of potential existing habitat for rare or threatened flora and fauna species
- Identification of existing habitat which could be enhanced, including;
  - Areas that will support nest boxes or trees suitable to sustain a chainsaw hollow
  - Fragmented habitat that would benefit from movement corridors.
- Identification of noxious weeds listed under the *Catchment and Land Protection Act 1994* (CaLP Act) and other pest plant species of management concern.
- Identification of pest animal management issues and other threats as appropriate

The information gained in both the background research and the site assessment phases were then used to establish Zones of Habitat (outlined in Section 5.5). Each Zone represents an area of habitat designed to support and encourage different groups of flora and fauna, including those identified in the Fauna Report and the Request for Quotation brief.

2.3 Limitations

The site assessment was not intended to involve a detailed flora or fauna survey. Instead, database searches and relevant literature were reviewed to ascertain the species recorded previously in the area.

2.4 Conservation status

The conservation status of species significance was determined using DELWP's advisory lists (DEPI 2014, DSE 2013, DSE 2009) and separately under the EPBC Act 1999 and Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act). Note that although there are no direct legal requirements that flow from inclusion of a species in the advisory list, taxa assessed as rare, vulnerable or endangered in this list are considered through native vegetation planning permit approval and offset processes under Victoria's Native Vegetation Regulations.

2.5 Nomenclature and taxonomy

Plant taxonomy and the use of common names follow the online Victorian Biodiversity Atlas (DELWP 2019a). For fauna, common names are generally used in the text.

Where an asterisk (*) precedes a plant or animal name, it is used to indicate those which are not indigenous to Victoria. A hash (#) is used to denote a Victorian indigenous plant species that is generally accepted as not indigenous i.e. outside of its natural range where recorded within the study area.

3 EXISITING BIODIVERSITY VALUES

3.1 Native vegetation values

The modelling of pre-European Ecological Vegetation Classes (EVC) indicates that Swamp Scrub (EVC 53) occurred along Elster Creek, surrounded by Damp Sands Herb-rich Woodland (EVC 3) in the low lying terrestrial areas slightly upslope, and Grassy Woodland (EVC 175) in the slightly higher part of the site in the north east corner.

Since European settlement, the park has been extensively modified with the clearing of remnant vegetation as well as alterations to the waterway. The vegetation identified onsite has largely recolonised or been planted within the waterway, or has been planted between the former golf fairways.

The indigenous vegetation recorded onsite is described below and illustrated in Figure 1.

3.1.1 Tall Marsh (EVC 821)

Tall Marsh vegetation occurred within Elster Creek and was dominated by Narrow-leaf Cumbungi *Typha domingensis*, River Club-sedge *Schoenoplectus tabernaemontani* and scattered Common Water-ribbons *Cycnogeton procerum* (broad erect leaf variant). It occurred in permanently inundated parts of the wetland and creek system, with the large vegetated clumps commonly surrounded by open water with virtually no weeds.

3.1.2 Aquatic Herbland (EVC 653)

Aquatic Herbland commonly occurred in the slightly shallower permanent or intermittent wetland areas of Elster Creek, compared to the Tall Marsh vegetation. Slender Knotweed *Persicaria decipiens* dominated most areas of this EVC along with a suite of Rushes (*Juncus* spp.), Common Water-ribbons, Common Spike-sedge *Eleocharis acuta*, Knobby Club-sedge *Ficinia nodosa*, Common Reed *Phragmites australis* and Australian Gipsywort *Lycopus australis*. Weeds were uncommon in the inundated parts of the wetland, while the drier edges tended to have a suite of exotic lawn grass species and other herbaceous weeds.

3.1.3 Grassy Woodland (EVC 175)

Grassy Woodland vegetation was present in the north east corner of the site where several large to very large River Red-gums were observed. The largest of these trees has a 121 cm diameter at 1.3 m above ground level and is likely the oldest indigenous tree within the park. The tree is located in the north east corner along the northern tip of New Street (see Figure 1). Several other indigenous trees in the north eastern corner of the site are also large (>70 cm diameter), and are largely surrounded by planted garden beds, lawn or pavement.

3.1.4 Planted indigenous and near-indigenous eucalypts

Of the wide variety of trees planted across the former golf course between the fairways, some planted species are indigenous to the local area, while others are indigenous to wider Melbourne region, but not necessarily the inner south-east area. These planted species observed included:

- River Red Gum *Eucalyptus camaldulensis*
- Manna Gum *Eucalyptus viminalis*
- Swamp Gum *Eucalytpus ovata*
- Black Sheoak *Allocasuarina literalis*
- Red Box *Eucalytpus polyanthemos subsp. vestita* (near-locally indigenous)
- Yellow Gum *Eucalyptus leucoxylon* (near-locally indigenous depending of subspecies and horticultural variants).

Figure 1: Existing Native Vegetation and Noxious Weeds

Figure 1 Existing native vegetation and noxious weeds at Elsternwick Park Nature Reserve.

3.2 Fauna habitat values

Elsternwick Park Nature Reserve currently provides habitat for a range of fauna species. As outlined in the Fauna Report (PPEI 2019), this includes both aquatic and terrestrial habitats that ". . . *in their existing condition already accommodate a range of fauna species that are important contributors to biodiversity in the City of Bayside*."

3.2.1 Aquatic habitat

The areas of aquatic habitat within the park are associated with Elster Creek. According to the Bayside Biodiversity Action Plan (Bayside City Council 2018), "*Elster Creek is the only substantial waterway in Bayside and provides important habitat for the range of flora and fauna, despite being highly modified from its natural form, containing sections of concrete channel and underground pipe*."

Aquatic Herbland occurs in relatively shallow parts of Elster Creek in areas with a low gradient. The vegetation comprises emergent indigenous flora species such as Slender Knotweed *Persicaria decipiens* and a margin of weeds. The cover of the emergent vegetation in this area does change over time depending on water levels, with aerial photography of the site indicating it is periodically inundated to higher levels during wetter months of the year. At the west end of the creekline, Elster Creek is dominated by Narrowleaf Cumbungi *Typha domingensis*, along with emergent Water Ribbons *Cycnogeton procerum*.

Areas that are dominated by Slender Knotweed provide suitable feeding habitat for White-faced Heron *Ardea novaehollandiae*, searching for frogs and small fish. Common frog prey onsite would include Striped Marsh Frog *Limnodynastes peronii* and Spotted Marsh Frog *Limnodynastes tasmaniensis* that have been previously recorded within the park (PPEI 2019). The proliferation of these prey species, along with native fish and aquatic invertebrates, may be limited by the presence of the introduced predator Mosquitofish *Gambusia holbrooki*. Buff-banded Rail *Gallirallus philippensis*, which is known to breed within the park (PPEI 2019), may also use the western section of the creek where Narrow-leaf Cumbungi provides the taller and denser vegetative cover preferred by this species. Latham's Snipe *Gallinago hardwickii*, a spring-summer visitor to the park (PPEI 2019) and Nankeen Night-heron *Nycticorax caledonicus* are also likely also to utilise these areas where sedges and rushes provide cover. This would be used in conjunction with the main wetland section of the creek, where similar vegetation is presented in parts. A range of aquatic invertebrates are also likely to utilise these shallower areas, providing food resources for a range of species. This would be used in conjunction with the main wetland section of the creek, where similar vegetation is presented in parts. A range of aquatic invertebrates are also likely to utilise these shallower areas, providing food resources for a range of species.

The open water sections of Ester Creek include those associated with the main 'wetland' area, as well as a smaller area of open water close to New Street. The main wetland area is fringed to varying degrees by both indigenous and non-indigenous vegetation and includes islands of very large tussock-like cover provided primarily by River Club-sedge *#Schoenoplectus tabernaemontani*. One established, likely planted River Red-gum is present along the southern margin of this main wetland and is likely to provide a roost for various wetland birds and bats using this area. This is also the case for the semi-submerged logs that have been placed within and around the wetland.

The open water surface present along Elster Creek is the preferred habitat of two common duck species known to occur within the park, Pacific Black Duck *Anas superciliosa* and Australian Wood Duck *Chenonetta jubata*. These two, together with the Eurasian Coot *Fulica atra*, Dusky Moorhen *Gallinula tenebrosa* and Purple Swamphen *Porphyrio porphyrio* regularly feed on submerged and emergent vegetation. These wetland bird species are joined at times by Black Swan *Cygnus atratus*, Australasian Grebe *Tachybaptus novaehollandiae*, Hardhead *Aythya australis* (frequent visitor at most times of the year) and Pink-eared Duck *Malacorhynchus membranaceus* (in summer) although rare (PPEI 2019).

Striped Marsh Frog have been heard calling from the main wetland (PPEI 2019); Short-finned Eel *Anguilla australis* have also been recorded (PPEI 2019). Southern Water Skink *Eulamprus tympanum* and Eastern Long-necked Turtle *Chelodina longicollis* will also utilise the open water, fringing vegetation and semi-submerged logs provided in this main wetland area for foraging, basking and potentially breeding. This is also the case for Rakali *Hydromys chrysogaster*, that are a feature of the park but seem to lack nesting sites (PPEI 2019). Large-footed Myotis *Myotis adversus*, apparently recorded within the park in 2010 (PPEI 2019), though details are to be confirmed as this species seems unlikely, will skim the water surface for food such as small fish and other invertebrates. A range of aquatic invertebrates such as various species of dragonflies, damselflies are also likely to utilise deeper, open water sections of the creek at various stages of their life cycles.

3.2.2 Terrestrial habitat

As a recently decommissioned golf course, the park currently presents two main types of terrestrial habitat:

- flat, open grassed areas that are currently occasionally mown and have historically been maintained as tees, fairways and greens when the park was operating as a golf course; and
- indigenous and non-indigenous trees and shrubs that once fringed the golf course fairways and formed the 'roughs'.

Grassed areas

There are a variety of avian species likely to utilise the flat, open grassed areas of the park for feeding. This includes the Sulphur-crested Cockatoo *Cacatua galerita*. Australian Magpie-lark *Grallina cyanoleuca*, Straw-necked Ibis *Threskiornis spinicollis*, Australian White Ibis *Threskiornis moluccus*, Eastern Rosella *Platycercus eximius* and Red-rumped Parrots *Psephotus haematonotus*. Red-rumped Parrots also forage in these grassy open environments, and the only regular records of this species within the Bayside municipality have been confined to the park (PPEI 2019). Exotic species such as Common Starling **Sturnus vulgaris* could also feed in these areas, competing with native birds for food resources, and exhibiting aggressive behaviour when competing for nesting sites that can drive out native species (Birdlife Australia 2019). Masked Lapwing also breeds in open grassy environments and have been recorded nesting within the park, though not successfully (Marcus Gwynne, pers. comm.)).

Other bird species are also likely to utilise the boundary zone between open, grassed areas and wooded sections of the park as hunting grounds for invertebrates and other food. This includes Willie Wagtail and Superb Fairy-wren, although the latter has been seldom recorded within the park (PPEI 2019).

Wooded areas

The terrestrial areas of the park that are dominated by a suite of predominantly planted indigenous and non-indigenous trees and shrubs present habitat for a range of avian, mammal and invertebrate species.

While nest boxes established within trees at the park have also been documented to support breeding of Eastern Rosella (PPEI 2019), there are very few obvious natural hollows that would facilitate this. This is discussed in further detail below. These wooded areas do however provide nesting opportunities for other bird species such as the Australian Magpie *Cracticus tibicen* that will establish nests in the outer branches of larger trees. Noisy Miner *Manorina melanocephala* is also known to nest within the park. This species can however be extremely territorial and is recognised as a threat to bird diversity. The "Reduction in biodiversity resulting from Noisy Miner populations in Victoria" is listed as a potentially threatening processes under the FFG Act; "Aggressive exclusion of birds from potential

woodland and forest habitat by over-abundant noisy miners (*Manorina melanocephala*)" is also listed as a Key Threatening Process under the EPBC Act. The Fauna Report (PPEI 2019) attributes some of the decline of birds across the region to harassment by Noisy Miners.

White-plumed Honeyeaters *Lichenostomus penicillatus* and Spotted Pardalote *Pardalotus punctatus* are also likely to feed and roost within these wooded areas. The Southern Boobook could also use the larger trees as a perch from which to hunt prey items including the introduced House Mouse **Mus musculus* as well as night flying moths and beetles (PPEI 2019).

Grey-headed Flying fox *Pteropus poliocephalus*, a nationally significant species regularly sighted undertaking nocturnal feeding activity within the park (PPEI 2019), would also use the terrestrial habitat where flowering trees and shrubs dominate. This is in addition to a range of microbats that have been recorded including Gould's Wattled Bat *Chalinolobus gouldii*, White-striped Freetail Bat *Austronomous australis*, Lesser Long-eared Bat *Nyctophilus geoffroyi*, Little Forest Bat *Vespadelus vulturnus*. While most of these microbats are likely to occupy the treed areas of the park only when foraging on invertebrates such as beetles and moths, there is potential for the Lesser Long-eared Bat to roost within the park within the fissured and cracked trunks of older Southern Mahogany #*Eucalyptus botryoides*, Sugar Gum **Eucalyptus cladocalyx* and conifer trees in particular. This species will use almost any hole or crevice as a roost site (Mekhorst and Knight 2001).

Note that while the trees and shrubs within the wooded areas of the park do provide opportunities for roosting, perching, foraging and to a lesser extent nesting for aerial species, hollow-bearing trees are not an obvious feature within the park. Obvious hollows were observed in a Desert Ash **Fraxinus angustifolius* subsp. *angustifolius* along the eastern boundary and a Sugar Gum on the western boundary of the reserve (both close to Elster Creek). Tree hollows provide important habitat to a wide range of fauna, particularly birds, arboreal mammals, microbats and some reptiles. Rocks and logs can provide shelter within the groundstorey for ground-dwelling fauna, particularly reptiles, amphibians and some mammals (Jellinek et al. 2004) are also effectively absent, consistent with the previous use of the park as a golf course. The presence or absence of rocks and logs on the ground tends to dictate whether these fauna are present or not. This is often in conjunction with the quality and extent of mid-storey and groundcover vegetation, which during the use of the site of a golf-course, has historically been maintained at low levels across much of its extent.

4 ECOLOGICAL POLICY AND LEGISLATIVE IMPLICATIONS

The design of the reserve will need to take into consideration potential policy and legislative implications associated with impacts to existing native vegetation and wildlife.

4.1 Federal *Environment Protection and Biodiversity Act 1999*

The EPBC Act provides a legislative framework to protect Matters of National Environmental Significance (MNES), which include world heritage properties, national heritage properties, wetlands of international importance (i.e. Ramsar wetlands), Commonwealth marine areas, the Great Barrier Reef Marine Park, listed threatened flora and fauna species and ecological communities, and listed migratory fauna species. It applies to public and private land, whereby a referral to the Federal Department of Environment and Energy is necessary for proposed actions that are likely to significantly impact a MNES.

If a project is likely to have a significant impact on one of the nine MNES listed under the EPBC Act, the action or proposal must be referred to the Commonwealth Department of the Environment and Energy (DoEE). This 'referral' is then released to the public for comment. A 'significant' impact is defined under the EPBC Act as an impact that is important, notable, or of consequence, having regard to its context or intensity (DoE 2013).

Under the EPBC Act, actions that are likely to have a significant impact upon MNES require approval from the Environment Minister to undertake those actions. An action includes any project, development, undertaking, activity or series of activities.

Once the design of the wetland system, proposed paths and other works has been finalised, the requirements for an EPBC Act referral can be determined. At this stage it appears this would be unlikely.

4.2 Victorian *Flora and Fauna Guarantee Act 1988*

The FFG Act applies to public land in Victoria and lists flora and fauna species and ecological communities that are recognised as threatened in the State. Protected flora can also be listed under the Act and include non-threatened plant taxa that belong to a listed community or require protection for other reasons (e.g. over-collection). The Act also identifies Threatening Processes to Victorian ecological values.

Under the FFG Act a permit from DELWP is required where proposed infrastructure will impact on an FFG listed species. This includes a permit to 'take' (to kill, injure, disturb or collect) listed flora species that are members of protected taxa from public land (this does not apply to private land unless listed species are present, and the land is declared 'critical habitat' for the species). Protected flora are:

- Plants that have been declared to be protected under section 46 of the FFG Act
- Plants that are listed as threatened under section 10 of the FFG Act
- Plants that belong to communities that are listed as threatened under section 10 of the FFG Act.

Once the design of the wetland system, proposed paths and other works has been finalised, the requirements for an FFG Act permit can be determined.

4.3 Victorian *Wildlife Act 1975*

The *Wildlife Act 1975* provides for the protection and conservation of native wildlife (fauna) within Victoria. Under the Act a person must not hunt, take or destroy endangered, notable or protected wildlife; this includes all native vertebrate animals, all kinds of deer, non-indigenous

quail, pheasants, and partridges, and all terrestrial invertebrate animals listed under the FFG Act 1988.

Mitigation measures are often required to ensure no wildlife is killed or injured during the removal of trees. This can include checking trees and shrubs for wildlife within nests and hollows prior to their removal and having a wildlife handler present to remove animals as required. Assuming these mitigation measures are employed, it is unlikely a separate permit is required under the Wildlife Act.

4.4 Victorian *Catchment and Land Protection Act 1994*

Under Section 20 of the *Catchment and Land Protection Act 1994* (CaLP Act), all land owners, including the Crown, public authorities and licensees of Crown lands, must, in relation to their land, take all reasonable steps to:

- Avoid causing or contributing to land degradation which causes or may cause damage to land of another land owner
- Eradicate regionally prohibited weeds
- Prevent the growth and spread of regionally controlled weeds on their land
- Prevent the spread of, and as far as possible, eradicate established pest animals.

These are also provisions within the Act to prevent the spread of declared noxious weeds, through regulating the purchase, sale, possession for the purposes of sale, display, propagation or transport of these species into or within Victoria. Furthermore, under the Act it is prohibited to bring into Victoria, keep, sell or release declared pest animals without an authority (permit).

Two noxious weeds were recorded during the field survey.

English Broom **Cytisus scoparius*, listed as Regionally Controlled, occurred as a small cluster of plants just north of the wetland (Figure 1). This population has produced seed that will be stored in the soil, most likely within a few meters of the plants. Care must be taken to ensure that this soil is not spread across the site during any excavation works. The existing plants should be eradicated as soon as possible.

Soursob **Oxalis pes-caprae* exists across the majority of the site and is considered an intractable weed in the reserve. Care must be taken during soil works not to spread soil that may contain contaminants offsite to other areas.

Blackberry **Rubus fruticosus* spp. agg. is also known to occur across the site in low abundance. The species is currently actively controlled and this management should continue.

Machinery and personnel hygiene controls must be developed and followed to ensure noxious weeds from offsite are not accidentally brought into the site during as contaminants on machinery, equipment, clothing or boots.

4.5 Victorian *Planning and Environment Act 1987*

The *Planning and Environment Act 1987* establishes a framework for planning the use, development and protection of land. This includes native vegetation retention controls and planning permit triggers in Clauses 52.16 and 52.17 of all Victorian planning schemes.

Once the design of the wetland system, proposed paths and other works has been finalised, the requirements for a planning permit can be determined. At this stage it is considered likely that a planning permit will be required for the removal of native vegetation, particularly along Elster Creek.

4.5.1 Guidelines for removal, destruction or lopping of native vegetation

The *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017b) forms the basis of Victoria's Native Vegetation Permitted Clearing Regulations and are incorporated into Clauses 52.16 and 52.17 of the Victorian Planning Provisions.

Under these regulations a planning permit is required to remove, lop or destroy native vegetation, the impacts of which are evaluated using a risk-based approach. If a permit to remove, lop or destroy native vegetation is granted, native vegetation offsets will be required to offset the impacts of vegetation clearing on Victoria's biodiversity.

Once the design of the wetland system, proposed paths and other works has been finalised, impacts to native vegetation can be assessed. At this stage it is considered likely that native vegetation removal will be required along Elster Creek to expand the wetland capacity, and as such native vegetation losses will need to be quantified and offsets will be required.

5 HABITAT AND FLORA STRATEGY

5.1 Strategy objectives

Bayside City Council's *Environmental Sustainability Framework 2016-2025* (Bayside City Council, undated) describes their commitment for leading the way for environmental sustainability, partnering with the community, developing community and ecosystem resilience for future climate change impacts and advocating and influencing for healthier ecosystems and more liveable Bayside urban areas. Their *Biodiversity Action Plan* reinforces these goals by stating the Council "is committed to maintaining natural biodiversity assets and increasing conservation effort within its unique natural areas" (Bayside City Council 2018).

Transitioning Elsternwick Park to a nature reserve presents a fantastic opportunity for Bayside City Council to implement some of these goals, particularly around community engagement and support, liveable cities, and sustainable natural environments. The reserve's four core priorities are detailed in the *Elsternwick Park North Park Development: Proposed Principles and Priorities* (Elsternwick Park Association, 2018), and are focused on the environment, water quality, public amenity and flood mitigation.

From an ecological perspective, several strengths and challenges/threats to the transition exist, including:

Strengths

- Expanding wetland habitats and water holding capacity that can provide additional fauna habitat resources for a wider range of species
- Re-creating pre-European vegetation communities
- Allowing bio-filtration of nutrients and pollutants from storm water to reduce their levels within Elster Creek before they leave the reserve and eventually enter into Port Phillip Bay
- Opportunity to become a show-case site for creative ecological, sensitive water and sensitive urban design
- Opportunities to monitor and measure the efficacy and effectiveness of habitat reconstruction in urban areas

Challenges and threats

- Conflicts of use for different purposes
  - Human and pet disturbances to wildlife and vegetation
  - Ongoing and long-term maintenance of water retention facilities (e.g. vegetation management on levees, dredging of sediments from storm water treatment ponds)
- Removal of native vegetation when constructing new water retention facilities
- Weed and pest animal invasion
- Potential over-abundance of highly competitive native plant species including Common Reed *Phragmites australis*, Cumbungi *Typha* spp. and Swamp Paperbark *Melaleuca ericifolia*
- Over-abundance of highly competitive native wildlife, particularly the aggressive Noisy Miner
- Wildfire risk to facilities and adjoining residents.

The Elsternwick Park Nature Reserve Draft Fauna Report, 2019 (PPEI 2019) lists 37 fauna species that should be targeted for habitat provision during the design phase of the park's redevelopment. This Strategy incorporates information from the Fauna Report (PPEI 2019) to strategically accommodate the habitat and feeding preferences of the targeted species identified as well as flora species that could naturally occurred in the area prior to European settlement.

The Elsternwick Park Nature Reserve Draft Fauna Report, 2019 (PPEI 2019) lists 37 fauna species that should be targeted for habitat provision during the design phase of the park's redevelopment. An additional four bird species, two reptile species, yabbies and freshwater molluscs were identified as target species by Bayside City Council in the Request for Quotation brief regarding preparation of this Strategy.

The establishment of habitat for these fauna species, along with the re-establishment of flora species that would have naturally occurred in the area prior to European settlement is the overarching objective of this Strategy.

To achieve this objective, seven different zones of habitat have been designated for the reserve to accommodate the targeted flora and fauna species known to or likely to utilise the site. They represent vegetation that would have previously dominated the site, along with common wetland habitats that develop in constructed wetlands. The zones include:

1. Open water – from deep through to shallow with submerged vegetation
2. Tall Marsh – an inundated reedbed vegetation community
3. Shallow wetlands – Primarily Aquatic Herbland, rushland or sedgeland vegetation occurring in ephemeral, shallow, slow flowing or still water
4. Swamp Scrub – a Swamp Paperbark dominated scrub of intermittently inundated areas
5. Damp Sands Herb-rich Woodland – occurring across low-lying dryland habitats, incorporating sections of interconnecting shrubby understorey to provide small bird habitat
6. Grassy Woodland – occurring on slightly elevated dryland habitats with more open grassy ground-layer
7. Grassland and lawn– currently dominated by exotic grasses with a long-term goal of transitioning to indigenous if feasible.

Details of the habitat requirements and suitability of each zone for each of the targeted fauna species is provided in Appendix A. Appendix B details the flora species recommended for revegetation along with their likely fauna utilisation (e.g. feeding resources, nesting resources).

Section 5.5 provides details for each of the zones of habitat, including a habitat description, summary of the flora and fauna species targeted, design and layout recommendations, potential threats and management issues. Further details of the recommended management actions are provided in Section 6.

5.2 Ecological values to be accommodated

5.2.1 Fauna species

The table below lists the 37 targeted species identified in the Fauna Report (PEEI, 2019) and their accommodating zone/zones. The table also includes an additional 4 bird species, 2 reptiles, yabbies and fresh water molluscs outlined by Bayside City Council in the Request for Quotation brief for the writing of this report. A full summary of habitat preferences, food sources and breeding requirements and further details for each species is listed in Appendix A.

Table 5-1 Summary of target species and their accommodating Zones

Key: Zone 1= Open Water; Zone 2 = Tall Marsh; Zone 3= Shallow wetlands; Zone 4= Swamp Scrub; Zone 5= Damp Sands Herb-rich Woodland; Zone 6= Grassy Woodland; Zone 7= Grassland and lawn.
▲ when inundated after heavy rainfall. ‡ if water is continuously present)

Common Name	Zone 1 OW	Zone 2 TM	Zone 3 SW	Zone 4 SS	Zone 5 DSHRW	Zone 6 GW	Zone 7 GL
Mammals							
Rakali	X	X	X	X			
Grey-headed Flying Fox					X	X	
Little Forest Bat				X	X	X	
Lesser Long-eared Bat				X	X	X	
Large-footed Myotis	X						
Birds							
Australasian Bittern	X	X	X				
Black Swan	X	X	X				
Black-winged Stilt	X		X				
Brown Thornbill				X	X		
Eastern Great Egret	X	X	X	X			X ▲
Eastern Rosella					X	X	X
Eastern Spinebill				X	X	X	
Golden Whistler				X	X	X	
Hardhead	X	X					
Willie Wagtail				X	X	X	X
Laughing Kookaburra					X	X	
Masked Lapwing	X	X	X				X
Mistletoebird					X	X	
Musk Lorikeet					X	X	
Nankeen Night Heron	X	X	X	X	X (potentially)		
Pardalotes (spotted and striated)					X	X	
Powerful Owl						X	
Red-rumped Parrot					X	X	X
Southern Boobook				X	X	X	
White-faced Heron	X	X	X	X			X ▲
Reptiles							
Eastern Blue-tongue Lizard				X	X	X	X
Eastern Long-necked Turtle	X	X	X				
Marbled gecko				X	X	X	
Southern Water Skink	X	X	X	X			
Frogs							
Southern Brown Tree Frog		X	X	X	X		

Common Name	Zone 1 OW	Zone 2 TM	Zone 3 SW	Zone 4 SS	Zone 5 DSHRW	Zone 6 GW	Zone 7 GL
Striped Marsh Frog		X	X	X			X ▲
Fish, Crustaceans and Molluscs							
Common Galaxias	X						
Short-finned Eel	X						
Fresh Water Snail	X	X	X				
Fresh Water Mussels	X	X ‡					
Yabbies	X	X	X				
Tupong	X						
Insects							
Damselflies (various species)	X	X	X	X			
Dragonflies	X	X	X	X			
Common Brown					X	X	X
Red-spotted Jezebel					X	X	X
Imperial Jezebel					X	X	X
Native Bees				X	X	X	
Rain Moth						X	

5.2.2 Flora species for revegetation

Revegetation of the wetlands and terrestrial environments will be required for two main reasons:

1. To rehabilitate disturbed ground after excavation works to increase the water holding capacity of the site.
2. To improve habitat quality and diversity for a range of indigenous flora and fauna species

When designing the layout of the Reserve and developing landscape plans, revegetation should include:

- Creating habitat for small birds susceptible to harassment from Noisy Miners – best achieved through clustered plantings of shrubby species and tall grasses/graminoids along with course woody debris within the woodland environment
- Treeless areas for Masked Lapwing breeding and reptile and amphibian basking
- Extensive vegetated shallow wetlands to provide biofiltration and wildlife habitat, and large open water areas to accommodate Black Swan take off distances (minimum 40 m)
- Incorporation of culturally significant plants, notably River Red-gum seedlings with lineage back to the Separation Tree and Ngargee Tree (Elsternwick Park Association 2018), as well as species used for food and resources
- Sightlines for safety within the Primary Access Area.

To improve ecological function of revegetation, structural heterogeneity of the vegetation is important, along with the inclusion of other habitat elements such as litter, logs, rocks and fallen branches. The Grassy Woodland and Damp Sands Herb-rich Woodland understorey should comprise variously open grassy areas as well as densely shrubby patches that are interconnected to provide cover for smaller woodland birds. Indigenous eucalypts including River Red-gums and Manna Gums can be used to re-create the indigenous canopy, with the

use of shrubby areas between them to provide cover for small birds evading harassment by Noisy Miners. Wetlands should include a diversity of habitats including open water, tall reed beds, shallow vegetated herblands and adequate direct sun for reptile and frog thermoregulation (i.e. sparse overhanging trees).

Due to the large area that needs to be revegetated, it is recommended that a staged approach to revegetation occur. This would involve prioritising works in the excavated land for immediate rehabilitation, then expanding into the less disturbed area as resources become available. Preparation of areas to be revegetated is crucial to provide suppression of highly competitive weeds, and ongoing weed maintenance will be essential. Weed mat should be used to help supress weeds. Tree guards should be avoided near waterbodies and are not essential elsewhere unless grazing from rabbits or trampling from humans are resulting in plant losses (signage and temporary fencing may be adequate to deter the later).

Plantings must also be maintained to reduce plant losses due to weed competition, trampling, vandalism, grazing/browsing, flooding and other unpredicted damaging events. The timing and extent of maintenance will vary depending on the vegetation type being created, the time since plantings and the weed species requiring management. In the first year after planting, regular maintenance every two months is recommended, and this can be expanded as the vegetation becomes more established. Maintenance works are likely to include the following activities:

- Brush-cutting/slashing/hand-weeding around young plantings
- Removal of competing plants from tree guards
- Herbicide control of weed species
- Removal of flood debris from plantings
- Replacement of plant losses
- Maintenance of tree guards and or fencing
- Removal of tree guards from mature plants.

5.3 Ecological threats and their management

A summary of the key threats to the ecological values of Elsternwick Park NR are provided in Table 2 below, along with their key impacts and recommendations for management.

Table 2 Threats to ecological values and their recommended management

Threat	Key impacts at Elsternwick Park	Management recommendations
User related impacts: Unrestricted access to environmental sensitive areas	Disturbance to sensitive fauna species (e.g. Latham's Snipe) Damage to vegetation and soils Increased weed invasion into disturbed areas	Designate the central part of the Nature Reserve as a No-Dogs zone (dog on-leash access permitted around the fenced perimeter primary access routes) When designing the location of walking tracks, provide setbacks around most wetlands to minimise disturbance to wildlife. To allow for public appreciation of the wetlands, dedicate a small proportion of wetlands to allow high levels of user intensity in close vicinity (e.g. boardwalks over wetlands, etc.). Setbacks between paths and wetlands within the Nature Conservation Area should consider the findings of Ecology Australia (2009, 2018), whereby: • 20 m could accommodate low-sensitivity riparian dependant species such as Eurasian Coot, Dusky Moorhen, Purple Swamphen, Australian Wood Duck, Southern Brown Tree Frog, Striped Marsh Frog, Water Rat/Rakali; • 40 m could accommodate moderately sensitive species such as grebes, crakes, rails, bitterns, teals, cormorants, Australasian Darter, Black Fronted Dotterel, White-necked Heron, Eastern Long-necked Turtle; and • 50 m+ could accommodate highly sensitive species such as Powerful Owl, Swamp Harrier, Azure Kindfisher, White-faced Heron, spoonbills, Nankeen Night Heron. Highly sensitive and riparian dependant species with large flight initiation distances (i.e. are easily disturbed into flight) will be better sheltered with adequate setbacks. Include a strategically placed bird hide for waterbird watching
Domestic Dogs	Predation and disturbance to fauna resulting in a loss/decline of fauna populations Disturbance to foraging efficiency (particularly important for migratory birds preparing for their long journeys) Reduced amenity resulting from dog faeces left by owners Negative health impacts to reserve managers who inadvertently encounter dog faeces	Separate the reserve into two management areas: • Primary access routes around the perimeter of the reserve with shared paths and dogs permitted on-leash. • Nature conservation area allowing pedestrian access and designated a No-Dogs zone. This central conservation area should encompass the majority of the site and be fenced to exclude dog access. Monitor and enforce the Dogs on-leash and No-Dogs policy within the reserve as well as; • Provide dog waste bags • Place signs around the reserve to remind users of the dog restricted areas, and to pick up the dog waste

Threat	Key impacts at Elsternwick Park	Management recommendations
Black and Brown Rats	Predation and disturbance to fauna (including eggs and young) resulting in a loss/decline of fauna populations Disturbance to foraging efficiency (particularly important for migratory birds preparing for their long journeys)	Monitor feral animal populations and manage if required. Management techniques will need to be investigated depending on the location and severity of the rat infestation.
Foxes	Predation and disturbance to fauna (including young) resulting in a loss/decline of fauna populations Disturbance to foraging efficiency (particularly important for migratory birds preparing for their long journeys)	Remove fox dens if identified onsite Creation of small islands within larger ponds/wetlands for native species to utilise as refuge. Islands should include shallow areas, exposed mud and dense reeds/emergent vegetation. If adequately elevated these may also include Swamp Scrub, woodland or grassland vegetation types. Monitor fox populations and manage if required Shooting, trapping and/or baiting may be considered, although it should be noted that these methods are not easily undertaken in an urban setting due to the risk to pet animals and visitor safety. Investigation into the feasibility and suitability of these will be required.
Cats	Predation and disturbance to fauna (including young) resulting in a loss/decline of fauna populations Disturbance to foraging efficiency (particularly important for migratory birds preparing for their long journeys)	Undertake intermittent mailouts to cat owners within 1 km of the Nature Reserve, reminding residents of Bayside City Council's cat curfew. Although the City of Port Phillip doesn't have a cat curfew, nearby residents should be encouraged to ensure their cats are kept inside overnight. Creation of small islands within larger ponds/wetlands for native species to utilise as refuge. Islands should include shallow areas, exposed mud and dense reeds/emergent vegetation. If adequately elevated these may also include Swamp Scrub, woodland or grassland vegetation types. Monitor cat populations and manage if required. Trapping and euthanasia if captured cats are not microchipped. However, trapping may be difficult due to the urban environment as people may interfere with the traps.

Threat	Key impacts at Elsternwick Park	Management recommendations
Mosquitofish (*Gambusia holbrooki*)	Aggressive behaviour towards native fish, tadpoles and other aquatic wildlife. Predation of tadpoles and eggs disrupting native frog reproduction and resulting in a loss/decline of frog populations Fin-nip native fish potentially causing infection and death	Unfortunately, Mosquitofish are very difficult to control. As the wetlands will likely have interconnected hydrology, drawing down a particular wetland to eradicate this pest will not be effective as Mosquitofish will re-colonise via the water used to re-fill the wetland. Therefore, the best way to manage for the presence of this pest is to provide additional breeding habitat for frog species, in the form of ephemeral ponds, that are disconnected to permanent ponds or waterways when full. This can be completed in the hope that frog species will prefer to breed in areas where their tadpoles are at a low risk of predation.
Noisy Miners and introduced birds (Blackbird *Turdus merula*, Common Myna *Acridotheres tristis*, Common Starling *Sturnus vulgaris*)	Competition with native birds for feeding and nesting resources Aggressive/harassing behaviour toward native birds (Noisy Miner, Common Myna) Dispersal of weeds and disturbance of soil promoting weed establishment Spread of avian diseases Note that Blackbirds and Common Starling are currently uncommon throughout the site	Revegetate the understorey to provide a mixture of shrubby vegetation and large tussock grasses (i.e. refuge for small birds) and minimise the area of treed/treeless mown lawns (i.e. preferred Noisy Miner habitat). Monitor nest boxes/hollows; remove nests of pest birds if observed and humanely destroy eggs and chicks. Remove exotic plants that provide berries for Blackbirds. Monitor for seedlings of these species introduced by Blackbirds over time and remove them as they crop up. Avoid creating roosting habitat for Common Starling in the form of artificial structures or exotic palms. Monitor for overnight roost sites and exclude/remove pest birds accordingly Discourage feeding of wildlife.
Pest invertebrates (European Honeybee and European Wasp)	Competition for nesting hollows (honeybees) Health risks to public (particularly people with sting allergies) Impaired amenity for users	Removal of European Honeybee hives identified in nesting boxes or hollows by a qualified apiarist. These may then be used by apiarists for honey-production off-site. Eradicate European Wasp nests if identified

Threat	Key impacts at Elsternwick Park	Management recommendations
Weed invasion	Competition with indigenous plant species for light, water, nutrients pollinators and seed dispersers Changed structure and/or destruction of vegetation and fauna habitats Potential increased fuel loads and fire risk Amenity impacts	Remove priority weeds as soon as possible (refer to Table 3). Ensure appropriate vehicle, equipment and personnel hygiene protocols are followed to reduce the risk of spreading weeds to/from/around the site. Care must be taken to ensure soil surrounding the English Broom infestation is not transported around/from the site. Adult Desert Ash trees can be killed using ringbarking or drill-and-fill. Once killed, they should however be retained on site as habitat until revegetation has established some height (provided they do not pose a safety risk to reserve users). Juvenile Desert Ash trees should be actively killed and removed.
Death of wildlife due to avian botulism	Paralysis and death of wildlife (particularly water birds) due to ingestion of toxins produced by the soil bacterium *Clostridium botulinum*	Install signage to discourage feeding of wildlife (particularly waterbirds) and not to touch dead animals. This will help limit organic inputs that would produce favourable environmental conditions for the soil bacterium *Clostridium botulinum.* Another way to limit organic inputs is to remove carcasses from the site. Design waterbodies to provide sufficient water aeration, circulation, and depth to help keep water temperatures stable, hence reducing habitat suitability for the bacterium that causes avian botulism (Wildlife Health Australia, 2019). Some waterbody edges may be deep sided, particularly in Primary User Areas (see Section 5.4 for definition) where ducks are most likely to be fed and hypoxia (limited oxygen) due to nutrient pollution (eutrophication) is most likely to occur. Ensure appropriate vehicle, equipment and personnel hygiene protocols are followed to reduce the risk of spreading the soil bacterium *Clostridium botulinum* to/from/around the site.
Common Reed *Phragmites australis* and Cumbungi *Typha* spp. encroachment	Outcompeting other wetland species and vegetation types Simplification of habitat diversity Potential prevention of downstream passage by native fish and eels to allow relocation to breeding habitat	Monitor the distribution and abundance of Common Reed and Cumbungi across the site. Aim for these species to occupy less than 30-40% of the wetland areas Investigate appropriate management methods in consultation with Melbourne Water who have undertaken trails of Common Reed management at Edithvale-Seaford Wetland. A planning permit may be required as these species are native vegetation

Threat	Key impacts at Elsternwick Park	Management recommendations
Fire	Death or injury to people and/or wildlife Destruction of infrastructure Potential impacts to adjoining property	Ensure plantings and vegetation management around the boundary of the reserve maintains a relatively open structure with low fuel loads (i.e. no dense plantings of shrubs, grassy areas regularly mown)
Possum browsing of trees	Damage or death of indigenous trees, particularly eucalypts Reduced leaf, flower and seed outputs by affected trees	Monitor tree health and signs of possum browsing. If required, investigate ways to minimise possum impacts (e.g. temporary banding of over-browsed trees to allow them to recover) When installing nest boxes, limit the number of boxes large enough to be inhabited by possums to avoid an overabundance of the species.

5.3.1 Weeds of management concern

Weeds of management concern are listed in Table 3 below. They include environmental weeds that pose a significant threat to biodiversity. Many of these weeds are restricted to a small area on the eastern boundary where Elster Creek intersects New Street (opposite Rusden Street). Priority should be given to managing these species prior to works commencing to minimise the risk of their spread into the vulnerable newly establishing vegetation. This is particularly important for Wandering Trad **Tradescantia fluminensis*, as species that flourishes in riparian areas.

Table 3. High Priority weed species of management concern identified during the brief site visit

Key:
CaLP *Catchment and Land Protection Act 1994*
C Regionally Controlled under the CaLP Act, requiring management by land managers
R Restricted under the CaLP Act, trade or movement of seed/propagules is prohibited

Control method(s)
H Herbicide applied to foliage with spray, wick applicator, etc.; annuals must be sprayed well before seed ripening.
CP Cut down and concentrated herbicide immediately applied to stump or stems, or bark "frilled" and herbicide applied.
DF Stem drilled and injected with concentrated herbicide.
PR Physical removal – most plants can be physically removed by hand-weeding or with tools when small and/or isolated but soil disturbance is kept to a minimum.
CG Cut off at ground level (species that will not resprout from basal buds).

Taxon Name	Common Name	CaLP Status	Control Strategy	Control Method
**Allium triquetrum*	Angled Onion		Contain	H
**Coprosma repens*	Mirror Bush		Eradicate	CP, DF
**Cotoneaster spp.*	Cotoneaster		Eradicate	CP, DF
**Cytisus scoparius*	English Broom	C	Eradicate	CP, PR

Taxon Name	Common Name	CaLP Status	Control Strategy	Control Method
**Fraxinus angustifolius* subsp. *angustifolius*	Desert Ash		Eradicate	CP, DF Eradicate all recruits, and kill adult trees leaving them standing as habitat
**Hedera helix*	English Ivy		Eradicate	H, CP, PR
**Oxalis pes-caprae*	Soursob	R	Contain	H
**Phoenix canariensis*	Canary Island Date-palm		Eradicate	CG
**Pittosporum undulatum*	Sweet Pittosporum		Eradicate	CP, DF, PR
**Tradescantia flumensis*	*Wandering Trad*		*Eradicate*	*H, PR*
**Ulmus spp.*	*Elm*		*Eradicate*	*CP, DF*

5.4 Accommodating competing pressures and reserve objectives

To accommodate the competing pressures of public use and nature conservation, it is recommended that the site be split into two main areas when designing the layout.

- The **Primary User Area** will accommodate the main access routes around the perimeter of the reserve with shared paths and dogs permitted on-leash (noting that an off-leash park adjoins the Reserve immediately south of Bent Avenue). If a café, restaurant or community space is incorporated into the site, this would be best located in the north east corner within the Primary User Area. The vegetation in this area can be enhanced with amenity plantings of indigenous species and accommodate sightlines for public safety. Views of some adjoining wetlands within the internal, fenced Nature Conservation Area can also be provided.
- The **Nature Conservation Area** should encompass the majority of the Nature Reserve and be focused on conserving biodiversity. Public access could be accommodated through a network of nature trails with interpretive signage and a bird hide to educate and enhance user appreciation. This area should be fenced and designated as a No-Dogs zone in order to protect disturbance and predation of wildlife.

5.4.1 Acceptable levels of disturbance

The wetland system needs to accommodate both disturbance sensitive fauna with buffers and path set-backs, as well as public amenity access for pedestrians. Depending on the designed layout of the reserve, it is recommended that the majority, if not all of the wetland system be included in the fenced conservation area with no dog access.

For pedestrian access within the Conservation Area, approximately one third of the wetland system should be set aside for disturbance sensitive fauna with buffers and setbacks for

paths, one third or more allowing low intensity public access (no dogs) through minor nature trails and a bird hide, and one third or less allowing for high intensity public access (dogs on-lead as a minimum) with board walks and wetland viewing areas. If a café, restaurant or community space is incorporated into the site, it should adjoin the high intensity public access area.

5.4.2 Addressing other reserve objectives

With the primary focus of habitat creation addressing the environmental objective of the reserve, it's important to ensure that the other reserve objectives are also accommodated:

- Public amenity:
  - Wetland environs: some wetlands can be accessible via boardwalks and walking paths to provide pedestrian access. It is important however, that other wetlands be distanced from human disturbance to accommodate sensitive fauna species (e.g. Latham's Snipe).
  - Terrestrial environs: walking trails and shared paths through the terrestrial woodland and grassy environments will provide access routes through the reserve and guided nature walks through the Nature Conservation Area. The Primary Access Area will accommodate shared paths and be revegetated to provide appropriate sightlines for user safety.
- Flood mitigation:
  - Wetland environs: The creation of large expanses of open water can accommodate additional volumes of water, and with the use of flow gates and potentially also pumps, the water levels of these wetlands can be modified to accommodate additional flows prior to expected significant rainfall events. Planting of River Red Gums will also act, eventually when large enough, as natural pumps which will reduce water levels.
  - Terrestrial environs: Though not desirable for long or frequent durations, flooding of the terrestrial vegetation can be provided as a back up retarding zone
- Water quality:
  - Wetland environs: The wetland system will slow the flow along Elster Creek to Port Phillip Bay, allowing sediments to settle out and nutrients to be absorbed.
  - Terrestrial environs: The grassy and woodland vegetation adjoining the wetlands provide a protective buffer to erosion of the waterway and trees areas also provide shade to reduce water temperatures. The adjoining vegetation can also act as a filter for overland flows, intercepting sediments, nutrients and rubbish before they enter the waterway and eventually the ocean.

5.5 Zones of habitat

Provided below is an overview for the zone of habitat recommended to be incorporated into the reserve design. This includes a description of the habitat structure requirements, the flora and fauna species targeted including ways to augment habitat, design and layout considerations, potential threats, irrigation requirements and ongoing management. The zones are primarily ordered based on water requirements as follows:

1. Open Water (permanent open water)
2. Tall Marsh (more or less permanent water)
3. Shallow wetlands (permanent shallow water to ephemeral)
4. Swamp Scrub (ephemeral)
5. Damp Sands Herb-rich Woodland (tolerates damp sediments and drying)
6. Grassy Woodland (primarily dryland)

7. Grassland and lawn (primarily dryland, though there is potential in lower-lying areas to mimic the EPBC Act listed Natural Damp Grassland ecological community that tolerates damp soils)

Zone 1 - Open water

Zone 1	Open Water
Brief description and structural requirements	Large expanses of open water with or without submerged vegetation; emergent vegetation sparse or absent. Depth of water to vary from shallow (potentially exposing mudflats during periods of drawdown) to quite deep accommodating diving species such as grebes, Blue Billed Duck *Oxyura australis* and Hardhead *Aythya australis* that feed on microorganisms, fish and submerged vegetation.
Overview of species targeted for habitat	Waterbirds including ducks, swans and pelicans, fish, reptiles including skinks and turtles, invertebrates (insects, yabbies and freshwater snails and mussels) and bats. Open water will provide foraging and or breeding habitat for a range of these species.
Recommended size and adjoining zones	Once adjoining emergent wetland vegetation has established, open water should comprise up to 20% of the wetland system. To accommodate swans and pelicans taking flight, several expanses of open water measuring a minimum 40 m long should be provided (some much larger if possible). These segmented wetlands should be connected to other areas of open water and often have shallow gradients leading into vegetated shallow wetland margins and Tall Marsh. Depths should vary from less than 1 m to several metres deep and this will likely be dependent on the underlying soil type (i.e. would be difficult to achieve on sandy sediments without a clay lining). Design waterbodies to provide sufficient water aeration, circulation, and depth (some waterbody edges may be deep sided) to help keep water temperatures stable, hence reducing habitat suitability for the bacterium that causes avian botulism.
Revegetation and supplementary plantings	Submerged, fully aquatic vegetation could be planted in this zone, including Curly Pondweed *Potamogeton crispus*, Fennel Pondweed *Stuckenia pectinata*, Red Water-milfoil *Myriophyllum verrucosum* and Eel Grass *Vallisneria australis*. The water level will need to be drawn down to mud to revegetate these areas, and then slowly refilled over the several weeks once established. The location and suitability of species will be best determined once the water depths and inundation durations are known. See Appendix B for a list of suitable species.
Habitat augmentation opportunities	Large logs and/or boulders should be placed in some areas of open water where practicable (being mindful of Swan/Pelican flight paths) to provide perching spots for water birds and basking Eastern Long-necked Turtles. Nest boxes could also be placed in the wetlands targeting Australian Wood Duck, Chestnut and Grey Teals, however they will need to be accessible to allow for the removal of Common Myna nests.
Potential threats	• Disturbance by humans and their pets (particularly dogs) pose a significant threat to wildlife through direct predation and indirect reduced foraging efficiencies (particularly important for migratory birds preparing to travel long distances). • Predation by Mosquitofish • Encroachment by Tall Marsh vegetation, particularly Common Reed and Cumbungi • Spread of avian botulism See Section 5.3 for management recommendations to address these threats.
Irrigation requirements	This area requires permanent water in the deeper areas, with some low gradient areas that may be drawn down to expose mud flats and to assist management of encroaching Common Reed and Cumbungi.
Ongoing management	• Ensure dogs are kept on leash in areas where dogs are allowed and enforce No-Dog zones where they are to be excluded • Maintain fencing and repair if required

Zone 1	Open Water
	• Maintain 'no feeding' signs and ensure people do not feed wildlife. This will reduce health implications to wildlife, limit organic inputs and eutrophication of the waterway, and minimise the risk of avian botulism. • Remove carcasses around the site to limit organic inputs and minimise the risk of avian botulism. • Host occasional community nights to engage and inform the public about the importance of keeping dogs on leads and staying on designated paths to maintain a safe place for wildlife to retreat • Install interpretive signage at strategic locations and maintain as necessary • Undertake weed management and monitoring as appropriate, particularly for the exotic Lesser Reed-mace **Typha latifolia* • Monitor nest boxes and remove if box becomes inhabited by pest species such as Common Myna or bees • To maintain biodiversity, it is important to control Common Reed, Cumbungi and/or Swamp Paperbark if necessary. Monitor areas where these species naturally expand and remove if they become over abundant, outcompeting other habitat types • To maintain the depth of open water areas, occasional de-silting may be required. This should be undertaken in consultation with Melbourne Water.

Zone 2 - Tall Marsh

Zone 2	Tall Marsh
Brief description and structural requirements	Tall reedbeds dominated by Tall Spike-rush *Eleocharis sphacelata*, Narrow-leaf Cumbungi *Typha domingensis*, Common Reed *Phragmites australis*. Clumps occur in more or less permanent water, often with open water visible within and between the reedbeds.
Overview of fauna species targeted for habitat	Waterbirds which includes but is not limited to Australasian Reedwarbler, Little Grassbird, Purple Swamp Hens, Dusky Morehens and Eurasian Coots. Tall Marsh will also provide habitat for frogs and reptiles such as Southern Water Skink. Tall Marsh will provide foraging habitat, refuge and or nesting habitat for a range of these species.
Recommended size and adjoining zones	Tall Marsh vegetation occurs in permanent water up to a depth of approximately 1 m. To avoid Cumbungi or Common Reed encroaching into surrounding wetland zones, Tall Marsh should be limited to approximately 30-40% of the wetland area. Management of these two species may be required if they excessively expand in abundance. Adjoining Zones will primarily be open water and shallow wetland vegetation. Where possible, areas of Tall Marsh should be established around islands to reduce predation and disturbance of wildlife.
Revegetation and supplementary plantings	Tall Spike-rush can be planted in deeper water to re-create Tall Marsh vegetation, with natural recruitment being employed for Cumbungi and Common Reed establishment given their vigour and propensity to outcompete other native species. River Club-sedge #*Schoenoplectus tabernaemontani* has been widely planted and now naturalised in many constructed and natural wetlands in the past c. 20 years, vastly increasing its distribution and abundance across the region. This naturally infrequent species of major streams and rivers (e.g. Yarra River) should be avoided during revegetation at the site. The location and suitability of species will be best determined once the water depths and inundation durations are known. See Appendix B for a list of suitable species.
Habitat augmentation opportunities	Large logs and/or boulders should be placed in some areas around the edges of tall marsh/ open water to provide basking areas (for reptiles), perches for birds, foraging habitat, and refuge (for frogs). Some logs and/or rocks should also be submerged in the water to support algal growth to provide food for invertebrates and tadpoles. Nest boxes could be placed in the wetlands targeting Australian Wood Duck, Chestnut and Grey Teals, however they will need to be accessible to allow for the removal of Common Myna nests.
Potential threats	• Disturbance by humans and their pets (particularly dogs) pose a significant threat to wildlife through direct predation and indirect reduced foraging efficiencies (particularly important for migratory birds preparing to travel long distances). • Predation by introduced foxes, rats and mosquitofish • Weed invasion particularly from Wandering Trad and Desert Ash in drier areas See Section 5.3 for management recommendations to address these threats.
Irrigation requirements	This area requires permanent water, with some low gradient areas. The ability to artificially alter the water level may assist Common Reed and Cumbungi management.

Zone 2	Tall Marsh
Ongoing management	• Ensure dogs are kept on leash in areas where dogs are allowed and enforce No-Dog zones where they are to be excluded • Maintain fencing and repair if required • Host occasional community nights to engage and inform the public about the importance of keeping dogs on leads and staying on designated paths to maintain a safe place for wildlife to retreat • Install interpretive signage at strategic locations and maintain as necessary • Monitor and manage the potential creation of unauthorised paths, particularly within the Nature Conservation Area • Undertake weed management and monitoring as appropriate, particularly for the exotic Lesser Reed-mace **Typha latifolia* • Monitor nest boxes and remove if box becomes inhabited by pest species such as Common Myna's or bees • To maintain biodiversity, it is important to control Common Reed, Cumbungi and/or Swamp Paperbark if necessary. Monitor areas where these species naturally expand and remove if they become over abundant, outcompeting other habitat types.

Zone 3 – Shallow wetlands

Zone 3	Shallow wetlands
Brief description and structural requirements	Shallow permanent or intermittent wetlands with low gradients to provide dense wetland vegetation cover for water bird foraging habitat, pondlife (water beetles, tadpoles, etc.), and biofilms for water purification. Vegetation should comprise low herblands through to open rushlands and sedgelands that provide a diversity of habitat structures and plant species.
Overview of species targeted for habitat	Waterbirds, frogs, skinks and Rakali. Vegetated shallow wetlands will provide foraging habitat, occasional refuge, and potential breeding habitat for a range of these species.
Recommended size and adjoining zones	Shallow wetlands provide some of the most effective fauna habitat and biofiltration so should comprise a large proportion of the wetlands (c. 30-40%). They can include the shallow gradient margins of the waterway and deeper wetlands varying from 2 m to many meters wide, as well as expansive shallow wetlands with widths of 20 m or more. Adjoining zones down slope will be Tall Marsh and/or open water, with Swamp Scrub and Damp Sands Herb-rich Woodlands occurring upslope. Where possible, shallow wetland vegetation should be established bordering islands, separated by open water, to reduce predation and disturbance of wildlife. If possible, some ephemeral wetlands that are disconnected from the permanent water sources containing Mosquitofish, should be incorporated into the landscape design. These areas will be ideal from frog breeding habitat.
Revegetation and supplementary plantings	Robust graminoids and herbaceous species should be used to establish vegetation within the shallow wetlands. Low herblands can be dominated by, for example, Slender Knotweed *Persicaria decipiens* and Angled Lobelia *Lobelia anceps,* while open sedgelands and rushlands can be dominated by Twig-sedges *Baumea* spp., Common Spike-sedge *Eleocharis acuta*, Bog-sedges *Schoenus* spp., and rushes *Juncus* spp. The location and suitability of species will be best determined once the water depths and inundation durations are known. See Appendix B for a list of suitable species.
Habitat augmentation opportunities	Large logs and/or boulders should be placed in shallow wetlands to provide basking areas (for reptiles), perches for birds, foraging habitat, and refuge (for frogs). Some logs and/or rocks should also be submerged in the water to support algal growth to provide food for invertebrates and tadpoles. Nest boxes could be placed in the wetlands targeting Chestnut and Grey Teals, however they will need to be accessible to allow for the removal of Common Myna nests.
Potential threats	• Disturbance by humans and their pets (particularly dogs) pose a significant threat to wildlife through direct predation and indirect reduced foraging efficiencies (particularly important for migratory birds preparing to travel long distances). • Predation by introduced Mosquitofish • Predation by introduced foxes, cats and rats • Weed invasion, particularly Wandering Trad, Desert Ash and lawn grass species (e.g. Couch **Cynodon dactylon* var. *dactylon*, Kikuyu **Cenchrus clandestinum*) • Encroachment by Swamp Paperbark, Common Reed and Cumbungi, reducing floristic and habitat diversity See Section 5.3 for management recommendations to address these threats.

Zone 3	Shallow wetlands
Irrigation requirements	This area requires shallow permanent to ephemeral water. The ability to artificially alter the water level may assist Common Reed and Cumbungi management if they begin to encroach excessively.
Ongoing management	• Ensure dogs are kept on leash in areas where dogs are allowed and enforce No-Dog zones where they are to be excluded • Maintain fencing and repair if required • Host occasional community nights to engage and inform the public about the importance of keeping dogs on leads and staying on designated paths to maintain a safe place for wildlife to retreat • Install interpretive signage at strategic locations and maintain as necessary • Monitor and manage the potential creation of unauthorised paths, particularly within the Nature Conservation Area • Undertake weed management and monitoring as appropriate • Monitor nest boxes and remove if box becomes inhabited by pest species such as Common Myna's or bees • To maintain biodiversity, it is important to control Common Reed, Cumbungi and/or Swamp Paperbark if necessary. Monitor areas where these species naturally expand and remove if they become over abundant, outcompeting other habitat types.

Zone 4 - Swamp Scrub

Zone 4	Swamp Scrub
Brief description and structural requirements	Swamp Paperbark *Melaleuca ericifolia* dominated tall scrub of intermittently inundated areas, particularly lining Elster Creek and/or some adjoining wetlands.
Overview of species targeted for habitat	Small insectivorous birds and some waterbirds such as Nankeen Night Heron and reptiles such as skinks and geckos. Swamp Scrub will provide foraging habitat for a range of these species and nesting opportunities for some species such as Brown Thornbill.
Recommended size and adjoining zones	As Swamp Paperbark can become invasive and outcompete shallow wetland vegetation, Swamp Scrub should be restricted in its distribution. It could occupy up to 20% of the wetland area and should be concentrated to one or two locations rather than scattered thinly across the entire wetland. Shallow wetlands and Tall Marsh will adjoin the Swamp Scrub downslope, while Damp Sands Herb-rich Woodland and potentially vegetation replicating Common Tussock dominated Natural Damp Grassland would occur upslope. Where possible, shallow wetlands should be only a minor component of adjoining vegetation as these areas are at greater risk of Swamp Paperbark invasion.
Revegetation and supplementary plantings	Elsternwick Park NR no longer supports Swamp Scrub vegetation, so this community will need to be recreated. Swamp Paperbark will form the tall scrub canopy and amphibious wetland species will dominate the understorey. See Appendix B for a list of suitable species.
Habitat augmentation opportunities	The Swamp Paperbark will provide feeding resources and shelter for a variety of birds and insects. Large logs and/or rocks can be scattered through Swamp Scrub vegetation to provide basking areas (for reptiles), perches for birds, foraging habitat, and refuge (for frogs). Some logs and/or rocks should also be submerged in the water to support algal growth to provide food for invertebrates and tadpoles.
Potential threats	• Disturbance by humans and their pets (particularly dogs) pose a significant threat to wildlife through direct predation and indirect reduced foraging efficiencies (particularly important for migratory birds preparing to travel long distances). • Predation by introduced foxes, cats and rats • Weed invasion, particularly Wandering Trad in wet areas and English Broom, Soursob, Desert Ash and lawn grass species (e.g. Couch, Kikuyu) in drier areas • Encroachment by Tall Marsh vegetation, particularly Common Reed and Cumbungi, reducing floristic and habitat diversity See Section 5.3 for management recommendations to address these threats.
Irrigation requirements	This area requires damp soils, and can tolerate low to moderate levels of inundation. Swamp Paperbark can spread via underground rhizomes, so the use of slightly steeper gradients within the wetland will assist inhibiting spread. The ability to artificially alter the water level may assist Common Reed, Cumbungi and Swamp Paperbark management. Note that the water should be artificially altered to maintain damp soils if the water dependent species are noticeably water stressed, (e.g. during prolonged drought).
Ongoing management	• Ensure dogs are kept on leash in areas where dogs are allowed and enforce No-Dog zones where they are to be excluded • Maintain fencing and repair if required

Zone 4	Swamp Scrub
	• Host occasional community nights to engage and inform the public about the importance of keeping dogs on leads and staying on designated paths to maintain a safe place for wildlife to retreat • Install interpretive signage at strategic locations and maintain as necessary • Monitor and manage the potential creation of unauthorised paths, particularly within the Nature Conservation Area • Undertake weed management and monitoring as appropriate • Monitor nest boxes and remove if box becomes inhabited by pest species such as Common Myna's, bees or possums • To maintain biodiversity, it is important to control Common Reed, Cumbungi and/or Swamp Paperbark if necessary. Monitor areas where these species naturally expand and remove if they become over abundant, outcompeting other habitat types.

Zone 5 - Damp Sands Herb-rich Woodland

Zone 5	Damp Sands Herb-rich Woodland (shrubby)
Brief description and structural requirements	Low-lying terrestrial woodland tolerating damp soils, with a Manna Gum *Eucalyptus viminalis* subsp. *pryoriana* canopy over a variably understorey including areas dominated by grasses and graminoids, Bracken *Pteridium esculentum*, small shrubs and large shrubs. The shrubby areas should be clustered and interconnected to provide habitat and refuge for small birds.
Overview of species targeted for habitat	A range of bird species including insectivorous birds, parrots and owls, Skinks and geckos. Damp Sands Herb-rich Woodland will provide foraging habitat for a range of these species listed above.
Recommended size and adjoining zones	This EVC should dominate the dryland areas, comprising approximately 50-70% of terrestrial habitats. It should be expansive across the reserve, infilling many of the existing fairways that won't be converted to wetland or grassland. Damp Sands Herb-rich Woodland may adjoin Grassy Woodland and potentially grassland vegetation communities in upslope areas, while downslope areas will primarily adjoin Swamp Scrub and shallow wetlands. Natural Damp Grasslands may also adjoin in the similar damp environs. Where possible, an island of woodland and grassland vegetation should be established to provide potential breeding habitat with reduced predation for ground dwelling birds such as the Masked Lapwing.
Revegetation and supplementary plantings	Though some existing Manna Gums have been planted between the fairways, this woodland EVC will largely need to be re-created. The understorey will be variable from low open areas to dense shrubby area to establish a diversity of fauna habitats. See Appendix B for a list of suitable species.
Habitat augmentation opportunities	Logs and/or rocks should be scattered throughout the woodlands to provide foraging habitat and refuge for birds, reptiles and insects. Logs can be sourced from within the reserve as they naturally drop from mature trees or could be moved on site from permitted clearing sites elsewhere. Eucalypts, and many of the species recommended for revegetation provide feeding resources for birds and insects, and the clusters of shrubs provide cover for small birds. Installation of log nest boxes for microbats, smaller birds (i.e. Eastern Rosellas, Musk Lorikeets, Pardalotes, red-rumped parrots and Kookaburras) and owls (Southern Boobook and Powerful Owls) can be undertaken in established trees.
Potential threats	• Disturbance to wildlife by humans and their pets (particularly dogs) through direct predation and indirect reduced foraging efficiencies. • Predation by introduced foxes, cats and rats • Competition and aggressive behaviour by Noisy Miners and introduced birds • Competition for hollows by European Honeybees • Health risks and reduced amenity due to introduced stinging bees and wasps • Weed invasion from English Broom, Soursob, Desert Ash and lawn grass species (e.g. Couch, Kikuyu) • Uncontrolled fire posing safety risks to people, property and wildlife • Browsing of eucalypt foliage by Ringtail Possums potentially resulting in tree dieback See Section 5.3 for management recommendations to address these threats.
Irrigation requirements	Irrigation of plantings may be required for the first few years of establishment depending of seasonal conditions. This EVC persists with damp soils (particularly over winter) and can also include dryland areas. Irrigation may

Zone 5	Damp Sands Herb-rich Woodland (shrubby)
	benefit this EVC, though the cost-benefits of this should be carefully considered before pursuing this. Water should otherwise only be artificially altered if the vegetation is noticeably drought stressed.
Ongoing management	• Ensure dogs are kept on leash in areas where dogs are allowed and enforce No-Dog zones where they are to be excluded • Maintain fencing and repair if required • Host occasional community nights to engage and inform the public about the importance of keeping dogs on leads and staying on designated paths to maintain a safe place for wildlife to retreat • Install interpretive signage at strategic locations and maintain as necessary • Monitor and manage the potential creation of unauthorised paths, particularly within the Nature Conservation Area • Undertake weed management and monitoring as appropriate • Tree maintenance near high activity areas may be required, with efforts being made to retain existing and planted eucalypts for as long as possible, lopping branches as a priority over felling. • Monitor nest boxes and remove if box becomes inhabited by pest species such as Common Myna's, bees or possums

Zone 6 - Grassy Woodland

Zone 6	Grassy Woodland
Brief description and structural requirements	As per the Ecological Vegetation Class benchmark (DELWP 2019a) and distribution modelling (DELWP 2019b), Grassy Woodland vegetation should primarily be located around the north-east corner of the reserve and comprise a River Red-gum canopy over a primarily open grassy understorey. Yellow Box *Eucalyptus melliodora* may also be suitable as occurs in other locations around Bayside City Council (e.g. the former CSIRO site in Highett). Dense plantings of shrubs can be provided in interconnected locations to provide protective cover for small birds and reduce habitat suitability for Noisy Miners. River Red-gums from nearby culturally significant adult specimen can be used to recreate the Grassy Woodland canopy and entice important spiritual connection to the land.
Overview of species targeted for habitat	A range of bird species including insectivorous birds, parrots, owls and Mistletoebirds, skinks, geckos, butterflies/moths and bats. Grassy Woodland will provide foraging, nesting and or breeding habitat for a range of these species. The area could also provide potential roosting habitat for Powerful Owl.
Recommended size and adjoining zones	Grassy Woodland can comprise up to 10-30% of the terrestrial area. To reflect the likely pre-European distribution of Grassy Woodland, it could be restricted to the north-east corner of the Reserve and be provided in one large patch. However, expanding beyond that is not considered unreasonable given the extensive soil and hydrology modifications that have and will occur. The adjoining vegetation will primarily be Damp Sands Herb-rich Woodland, though Grassy Woodland could also abut wetland vegetation as well.
Revegetation and supplementary plantings	The River Red-gum canopy will need to be enhanced to recreate this EVC, though the placements of future River Red-gums should avoid former sand bunkers, as the species does not prefer sandy soils. Consideration for adjoining infrastructure and high-traffic paths is also required due to their propensity to occasionally drop limbs. As this EVC will be focussed in the north-east corner of the site, it is likely that the understorey may be restricted to garden bed type arrangements. Robust grasses and graminoids should dominate the understorey, with the additional provision of interconnected shrubby clusters for small bird habitat. Mistletoes can also be incorporated to provide food for Mistletoebirds and butterflies.
Habitat augmentation opportunities	Logs and/or rocks should be scattered throughout the woodlands to provide foraging habitat and refuge for birds, reptiles and insects. Logs can be sourced from within the reserve as they naturally drop from mature trees or could be moved on site from permitted clearing sites elsewhere. Eucalypts, and many of the species recommended for revegetation provide feeding resources for birds and insects, and the clusters of shrubs provide cover for small birds. Installation of log nest boxes for microbats, smaller birds (i.e. Eastern Rosellas, Musk Lorikeets, Pardalotes, Red-rumped parrots and Kookaburras) and owls (Southern Boobook and Powerful Owls) can be undertaken in established trees.
Potential threats	• Disturbance to wildlife by humans and their pets (particularly dogs) through direct predation and indirect reduced foraging efficiencies • Predation by introduced foxes, cats and rats • Competition and aggressive behaviour from Noisy Miners and introduced birds • Competition for hollows by possums and European Honeybees • Health risks and reduced amenity due to introduced stinging bees and wasps

Zone 6	Grassy Woodland
	• Weed invasion English Broom, Soursob, Desert Ash and lawn grass species (e.g. Couch , Kikuyu) • Safety risks (to humans and wildlife) and potential death of vegetation associated with uncontrolled fire • Browsing of eucalypt foliage by Ringtail Possums potentially resulting in tree dieback. See Section 5.3 for management recommendations to address these threats.
Irrigation requirements	Irrigation of plantings may be required for the first few years of establishment depending of seasonal conditions. Though River Red-gum grow under a variety of hydrology regimes, this EVC should be relatively easily established without the need for ongoing irrigation. Note that the water should only be artificially altered if the vegetation is noticeably drought stressed.
Ongoing management	• Ensure dogs are kept on leash in areas where dogs are allowed and enforce No-Dog zones where they are to be excluded • Maintain fencing and repair if required • Host occasional community nights to engage and inform the public about the importance of keeping dogs on leads and staying on designated paths to maintain a safe place for wildlife to retreat • Install interpretive signage at strategic locations and maintain as necessary • Monitor and manage the potential creation of unauthorised paths, particularly within the Nature Conservation Area • Undertake weed management and monitoring as appropriate • Tree maintenance near high activity areas may be required, with efforts being made to retain existing and planted River Red-gums for as long as possible, lopping branches as a priority over felling. • Monitor nest boxes and remove if box becomes inhabited by pest species such as Common Myna's, bees or possums

Zone 7 – Grassland and lawn

This zone includes the potential to revegetate the floristic structure of the EPBC Act listed critically endangered *Natural Damp Grasslands of the Victorian Coastal Plains* ecological community in lower-lying area. More information on this community can be found of the Department of Environment and Energy's website (DoEE 2019b)

Zone 7	Grassland and lawn
Brief description and structural requirements	Retain some of the existing fairways, currently dominated by exotic grass lawns, as treeless vegetation with a long-term goal to transition to indigenous grasses if feasible. Depending on the hydrology, there may be an opportunity to attempt to recreate the vegetation structure of the EPBC Act listed *Natural Damp Grasslands of the Victorian Coastal Plains* ecological community. However, it should be noted that the revegetated form would be unlikely to reflect the full natural floristic composition, geology and hydrology to qualify as the EPBC Act listed community. Instead it should be viewed as a recreated representation of the listed community.
Overview of species targeted for habitat	Butterflies, Parrots, lapwings, small insectivorous ground foraging birds and occasionally waterbirds if the area floods. Grassland and Lawn will provide foraging habitat for birds and insects as well as nesting habitat for Masked Lapwings.
Recommended size and adjoining zones	The grassland areas can be quite large, and overall occupy approximately anywhere between 10% - 30% of the terrestrial habitat. They will adjoin the woodland vegetation and potentially also the Swamp Scrub or shallow wetlands downslope. Where possible, an island of woodland and grassland vegetation should be established to provide potential breeding habitat with reduced predation for ground dwelling birds such as the Masked Lapwing. These areas should be fully revegetated in the short term after soil disturbance, and will require ongoing maintenance likely accessed via boat (ensure provision of shallow/moderate gradient for boat/kayak landing).
Revegetation and supplementary plantings	If feasible, the long-term goal will be to transition some of the exotic lawn areas to swaths of indigenous grass. Areas disturbed during excavation can be transitioned in the short term, while other areas should be prioritised as a low priority once weed management is under control across the rest of the reserve and other areas of remnant vegetation across the municipality. Direct seeding into well-prepared beds after excavation works are complete will require large quantities of seed; ordering this early will be essential to ensure supply. To transition non-excavated areas from exotic to indigenous lawn, these areas should be kept treeless, with exotic grasses replaced with near-monoculture swards of varying indigenous grass species. Suitable species include Weeping Grass *Microlaena stipoides* var. *stipoides*, Wallaby-grasses *Rytidosperma* spp., Spear-grasses *Austrostipa* spp., Kangaroo Grass *Themeda triandra*, and in the lower lying areas Common Tussock-grass *Poa labillardierei* var. *labillardierei* and Mat Grass *Hemarthria uncinata* var. *uncinata*. Additional diversity can be added to these areas following a period of maintenance, when ongoing weed management becomes minor requirement.
Habitat augmentation opportunities	Logs and/or rocks should be scattered throughout the grassland and lawns to provide foraging habitat and refuge for birds, reptiles and insects. Logs can be sourced from within the reserve as they naturally drop from mature trees or could be moved on site from permitted clearing sites elsewhere. Artificial terracotta roof 'tiles' could also be used to provide shelter habitat and to facilitate monitoring surveys for small terrestrial frogs and reptiles.

Zone 7	Grassland and lawn
Potential threats	• Disturbance to wildlife by humans and their pets (particularly dogs) through direct predation and indirect reduced foraging efficiencies • Predation by introduced foxes, cats and rats • Competition and aggressive behaviour from Noisy Miners and introduced birds • Competition for hollows by Noisy Miners and European Honeybees • Health risks and reduced amenity due to introduced stinging bees and wasps • Weed invasion English Broom *_Cytisus scoparius_, Soursob *_Oxalis pes-caprae_, Desert Ash and lawn grass species (e.g. Couch *_Cynodon dactylon_ var. _dactylon_, Kikuyu *_Cenchrus clandestinum_). Thorough site preparation will be required before revegetation can occur. • Safety risks (to humans and wildlife) and potential death of vegetation associated with uncontrolled fire See Section 5.3 for management recommendations to address these threats.
Irrigation requirements	Common Tussock-grass and Mat Grass can tolerate low levels of soil saturation, while most other grasses will not benefit from irrigation. Additional irrigation is likely to favour weed species so water should only be artificially altered if the vegetation is noticeably drought stressed.
Ongoing management	• Maintain exotic lawns with frequent regular mowing to reduce biomass and seed set. Areas transitioned to indigenous grass will require ongoing weed management and mowing to reduce biomass and fuel loads, occurring less frequently, ideally well before or after the native grasses flower or set seed, and only when the ground is dry. • Ensure dogs are kept on leash in areas where dogs are allowed and enforce No-Dog zones where they are to be excluded • Maintain fencing and repair if required • Host occasional community nights to engage and inform the public about the importance of keeping dogs on leads and staying on designated paths to maintain a safe place for wildlife to retreat • Install interpretive signage at strategic locations and maintain as necessary • Monitor and manage the potential creation of unauthorised paths, particularly within the Nature Conservation Area • Undertake weed management and monitoring as appropriate • Tree maintenance near high activity areas may be required, with efforts being made to retain existing and planted River Red-gums for as long as possible, lopping branches as apriority over felling.
Important considerations and limitations	It must be acknowledged that transitioning exotic lawns to indigenous species is usually a costly and time-consuming activity. Prioritising weed management across other areas of the reserve and remnant vegetation across the municipality by maintaining regular mowing/slashing of exotic lawn areas will likely yield better ecological outcomes across Bayside.

6 RECOMMENDATIONS

The conversion of Elsternwick Park golf course into a nature reserve presents a excellent opportunity to conserve and enhance biodiversity values in Bayside, and connect people with nature. Key to providing habitat for a diverse array of flora and fauna, is to provide a diverse array of habitat types. This includes wetlands of differing depths and frequency of inundation, and terrestrial areas with varying canopy, midstorey and ground layer structure as outlines in the Habitat and Flora Strategy. Other considerations and recommendations for the transition include:

Planning and design phase

- Ensure the reserve is designed to minimise disturbance to wildlife and vegetation from reserve users and their dogs by concentrating their access to a small number of locations and providing a fenced internal Nature Conservation Area with islands and habitats away from all paths.

  As a guide, at least one third of the site should be set aside for highly sensitive species with design considerations providing low levels of pedestrian access and hence disturbance to wildlife, one third allowing for moderate levels of disturbance, and a maximum of one third of the reserve with high levels of pedestrian access, as illustrated in Figure 2 below.

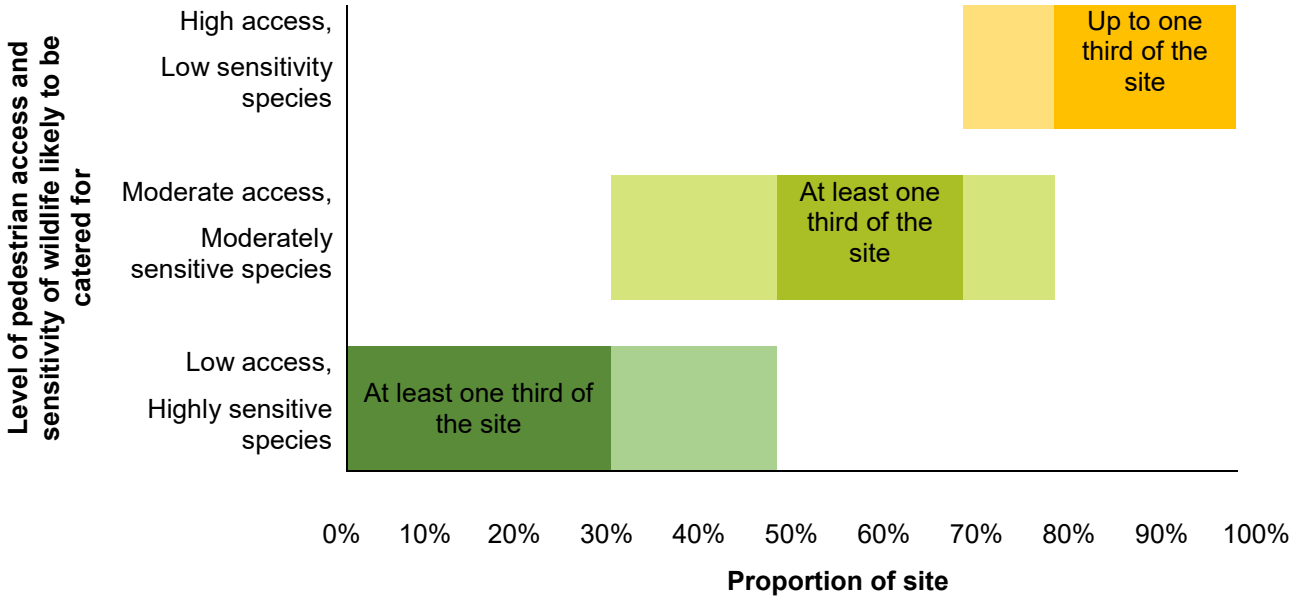

Figure 2. Recommended proportion of the site for pedestrian access and sensitive wildlife values, Elsternwick Park Nature Reserve.

- Maximise the percentage of wetland cover across the site depending on the availability of water
- Liaise with Melbourne Water regarding the design and feasibility assessment of the proposed wetland system and ongoing maintenance requirements
- If possible, design the reserve to avoid impacts to existing native vegetation. If impacts to existing native vegetation cannot be avoided, a planning permit will be required and an assessment under the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017b) undertaken to quantify losses and offset requirements
- Ensure the landscape design includes the retention of existing trees and shrubs where possible unless specified for management in Table 3.

- Once the landscape design is finalised, develop an environmental management plan to:
  - minimise potential impacts to the environment and waterway during construction
  - detail site rehabilitation works including revegetation (planting zonation, densities, etc.), habitat augmentation, weed control and pest animal control works

Construction phase

- Control English Broom prior to works, and avoiding spreading the soil from the immediate vicinity of plants as this will likely contain soil-stored seed
- Have wildlife handlers present to remove/aid wildlife during tree felling and install nest boxes onto nearby trees that are to be retained to assist displaced wildlife
- Ensure the water quality of Elster Creek is maintained via protection from sediments entering the waterway, etc.
- Focus construction works to smaller portions of the Reserve at any one time, rather than spread across the entire reserve, to allow wildlife to retreat to other areas away from machinery and people

Post construction and ongoing management

- Undertake appropriate site preparation then revegetation of disturbed areas as soon as possible upon completion of construction works
- Once disturbed areas have been revegetated, expand revegetation (with adequate site preparation) into other areas of the reserve
- Stage the removal of weedy tree species (e.g. Desert Ash) to allow replacement vegetation to establish as a feeding/habitat resource prior to their removal, and where appropriate retain dead trees standing as habitat.
- Install and maintain fences to ensure dogs are restricted from the central Nature Conservation Area and host occasional community nights to engage and inform the public of the ecological values being protected highlighting the importance of keeping dogs out
- Install interpretive signage at strategic locations across the reserve and maintain as required
- Update the environmental management plan each year for the first five years when the establishing vegetation is at its most vulnerable. This plan would include:
  - Monitoring the distribution of Common Reed, Cumbungi and Swamp Paperbark ensuring they do not become over abundant, simplifying habitat diversity
  - Monitoring and control of weeds and pest animals (including Noisy Miners),
  - An adaptive management program to identify and mitigate threats to the ecological values and should be considerate of the management resourcing requirements of other ecological values across Bayside City Council.

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APPENDIX A TARGETED SPECIES HABITAT PREFERENCES AND ASSIGNED ZONE

Summary of target species which may occur within each target zone based on habitat preferences

Target Zone	Summary of target species that may occur				
Zone 1- Open Water	Australasian Bittern	Hardhead	Eastern Long-necked Turtle	Tupong	Damselflies (various species)
	Black Swan	Masked Lapwing	Southern Water Skink	Yabbies	Dragonflies
	Black-winged Stilt	Nankeen Night Heron	Common Galaxias	Fresh Water snails	Rakali
	Eastern Great Egret	White-faced Heron	Short-finned Eel	Fresh Water Mussels	Large-footed Myotis
Zone 2- Tall Marsh	Australasian Bittern	Masked Lapwing	Striped Marsh Frog	Fresh Water snails	Rakali
	Black Swan	Nankeen Night Heron	Eastern Long-necked Turtle	Fresh Water Mussels	
	Eastern Great Egret	White-faced Heron	Southern Water Skink	Damselflies (various species)	
	Hardhead	Southern Brown Tree Frog	Yabbies	Dragonflies	
Zone 3- Shallow wetlands	Australasian Bittern	Masked Lapwing	Striped Marsh Frog	Fresh Water snails	
	Black Swan	Nankeen Night Heron	Eastern Long-necked Turtle	Damselflies (various species)	
	Black-winged Stilt	White-faced Heron	Southern Water Skink	Dragonflies	
	Eastern Great Egret	Southern Brown Tree Frog	Yabbies	Rakali	
Zone 4- Swamp Scrub	Brown Thornbill	Nankeen Night Heron	Southern Brown Tree Frog	Southern Water Skink	Rakali
	Eastern Spinebill	Southern Boobook	Striped Marsh Frog	Damselflies (various species)	Little Forest Bat

Target Zone	Summary of target species that may occur				
	Golden Whistler Eastern Great Egret	White-faced Heron Willie Wagtail	Eastern Blue-tongue Lizard Marbled gecko	Dragonflies Native Bees	Lesser Long-eared Bat
Zone 5- Damp Sands Herb-rich Woodland	Brown Thornbill Eastern Rosella Eastern Spinebill Golden Whistler Laughing Kookaburra	Mistletoebird Musk Lorikeet Nankeen Night Heron Pardalotes (spotted and striated) Red-rumped Parrot	Southern Boobook Willie Wagtail Southern Brown Tree Frog Eastern Blue-tongue Lizard Marbled gecko	Imperial Jezebel Native Bees Red-spotted Jezebel Common Brown Grey-headed Flying Fox	Little Forest Bat Lesser Long-eared Bat
Zone 6- Grassy Woodland	Eastern Rosella Eastern Spinebill (if suitable understorey is present) Golden Whistler Laughing Kookaburra Mistletoebird	Mistletoebird Musk Lorikeet Pardalotes (spotted and striated) Powerful Owl Red-rumped Parrot	Southern Boobook Willie Wagtail Eastern Blue-tongue Lizard Marbled gecko Imperial Jezebel	Native Bees Rain Moth Red-spotted Jezebel Common Brown Grey-headed Flying Fox	Little Forest Bat Lesser Long-eared Bat
Zone 7- Grassland and lawn	Eastern Rosella Eastern Great Egret (if flooded) Masked Lapwing Red-rumped Parrot	White-faced Heron (if flooded) Striped Marsh Frog (after heavy rainfall) Eastern Blue-tongue Lizard	Imperial Jezebel Red-spotted Jezebel Common Brown		

Targeted species and habitat preferences

Key: Zone 1= Open Water, Zone 2 = Tall Marsh, Zone 3= Shallow wetlands, Zone 4= Swamp Scrub, Zone 5= Damp Sands Herb-rich Woodland, Zone 6= Grassy Woodland, Zone 7= Grassland and lawn

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
Birds						
Australasian Bittern	*Botaurus poiciloptilus*	No VBA or ALA records exists within Elsternwick Park. Historical records exists from the broader Bayside Region	• Feeds on fish, frogs, crustaceans, snails, insects and mice (PPEI, 2019) • Frequents reedbeds, and other vegetation in water such as cumbungi, lignum and sedges. (Birdlife, 2019a) • Nests within a clump of reeds in water or a swamp and is built on a platform of bent-over reeds. (Birdlife, 2019a)	n/a	Keeps to the cover of dense reed beds. Known to range reasonable widely to feed, breed and roost- but not necessarily all in the one place. Important to consider when establishing feeding habitat that may deter other species	Zone 1 Zone 2 Zone 3
Black Swan	*Cygnus atratus*	Known to occur within Elsternwick Park NR	• Feeds on Algae and weeds (Birdlife Australia, 2019a) • Favours larger salt, brackish or fresh waterways and permanent wetlands (Birdlife Australia, 2019a) • Nests are built with reeds and grasses on islands or on floating vegetation (Birdlife Australia, 2019a)	n/a	Requires 40m or more of clear water to take off (runaway). Likely to prefer soft sediments around water's edge (rather that rocky) for their feet.	Zone 1 Zone 2 Zone 3
Black-winged Stilt	*Himantopus himantopus*	Recorded frequently in Albert Park Reserve	• Feeds mainly on small invertebrates at the waters surface, but will also take molluscs and crustaceans (Birdlife Australia, 2019b) • Favours freshwater and saltwater marshes, mudflats and the shallow edges of lakes and rivers (Birdlife Australia, 2019b)	n/a	Social species, would need to accommodate for a small flock	Zone 1 Zone 3

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
			• Nests may be anything from a simple shallow scrape on the ground to a mound of vegetation. Nests in small colonies (Birdlife Australia, 2019b)			
Brown Thornbill	*Acanthiza pusilla*	Common across the Bayside area but is currently absent from Elsternwick Park NR	• Feeds mainly on insects (PPEI, 2019) • Favours bushlands or bushy gardens (PPEI, 2019), but can be found in a range of habitats such as wet and dry forests, woodlands, shrublands, heathlands, rainforests and along watercourses (Birdlife Australia, 2019a) • Have been recorded breeding annually near Elsternwick Park NR (PEEI, 2019). Nests usually low down, in low prickly bushes, grass clumps or ferns (Birdlife Australia, 2019a)	n/a		Zone 4 Zone 5
Eastern Rosella	*Platycercus eximius*	Known to occur within Elsternwick Park NR	• Feeds mainly on seeds, fruits, buds, flowers, nectar and insects on the ground (Birdlife Australia, 2019a) • Favours open woodlands, grasslands, farmlands and remnant bushland, but is often found in urban habitats such as parks, gardens and golf courses (Birdlife Australia, 2019a) • Nest in hollows of Eucalypt species. Has been recorded breeding within Elsternwick Park NR in current nest boxes (Birdlife Australia, 2019a)	Yes	Current population of 10-15 birds. They are known to avoid feeding on the ground in high foot-traffic.	Zone 5 Zone 6 Zone 7
Eastern Spinebill	*Acanthorhynchus tenuirostris*	Common across the Bayside area but is currently absent from	• Feeds mainly on nectar and insects, foraging in shrubs in forest understoreys and taller heaths, mostly a metre or two above ground (PPEI, 2019) • Favours heath, forest and woodland (Birdlife Australia, 2019a)	n/a		Zone 4 Zone 5 Zone 6 – if suitable

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
		Elsternwick Park NR	• Nests built in tree forks, generally between 1 to 5 meters above the ground (Birdlife Australia, 2019a)			understore y is present
Golden Whistler	*Pachycephala pectoralis*	Known to occur infrequently within Elsternwick Park NR	• Feeds on insects in tree canopies, occasionally from mid-air, or from leaf litter on the ground (Birdlife Australia, 2019a) • Favours denser wooded habitat, but can be found in almost any wooded habitat (Birdlife Australia, 2019a) • Nests built in forks in bushes or trees up to 6 meters above the ground (Birdlife Australia, 2019a)	n/a	Nests are bounded together with spider web	Zone 4 Zone 5 Zone 6
Eastern Great Egret	*Ardea alba*	Known to occur within Elsternwick Park NR	• Feeds on fish and frogs (PEEI, 2019) • Favours shallow water, particularly when flowing, but is known to occur in any watered area (Birdlife Australia, 2019a) • Nests in trees over hanging water. Breeds in colonies, often in association with cormorants, ibises and other egrets (Birdlife Australia, 2019a).	n/a	Known to range reasonable widely to feed, breed and roost- but not necessarily all in the one place. Important to consider when establishing feeding habitat that may deter other species	Zone 1 Zone 2 Zone 3 Zone 4 Zone 7- if flooded and sufficiently distanced from disturbance
Hardhead	*Aythya australis*	Known to occur within Elsternwick Park NR	• Feeds on aquatic insects, molluscs, shrimps, yabbies and small fish. Feeds exclusively in water (PEEI, 2019) • Favours deep, fresh open water and densely vegetated wetlands for breeding (Birdlife Australia, 2019b)	n/a	Would benefit from improved deeper wetland habitat (PEEI, 2019)	Zone 1 Zone 2

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
			• Nests are built on a platform of trampled reeds, sticks and vegetation. Breeds in low, thick vegetation, in or near the water, along rivers and channels and around billabong and dams (Birdlife Australia, 2019b)			
Laughing Kookaburra	*Dacelo novaeguineae*	Known to occur infrequently within Elsternwick Park NR	• Feed mainly on insects, worms and crustaceans (Birdlife Australia, 2019b) • Inhabits most areas where trees are suitable (Birdlife Australia, 2019b) • Nest in tree hollows or in a burrow excavated in an arboreal (tree-dwelling) termite mound (Birdlife Australia, 2019b). Few breed in the broader Bayside City Region (PEEI, 2019)	Yes	Need suitable perch where they can easily see the ground to seize prey	Zone 5 Zone 6
Masked Lapwing	*Vanellus miles*	Known to occur within Elsternwick Park NR	• Feeds on insects and their larvae and earthworms. Most food is obtained from just below the surface of the ground (Birdlife Australia, 2019a) • Inhabitants marshes, mudflats, beaches and grasslands (Birdlife Australia, 2019a) • Nest is built in open areas away from ground cover (Birdlife Australia, 2019a). Has been recorded breeding within ENR (PEEI, 2019), though not successfully (Marcus Gwynne, pers. comm.)	n/a	They are noted as using wetland areas but more known from grassland areas. Known to tolerate human presence, often defensive of their nest.	Zone 1 Zone 2 Zone 3 Zone 7
Mistletoebird	*Dicaeum hirundinaceum*	Known to occur infrequently within	• Feeds on mistletoe fruits (PEEI, 2019) • Occurs anywhere mistletoe grows (Birdlife Australia, 2019a)	n/a	Species could benefit from the planting of mistletoe. Absence of browsing possums help the establishment of mistletoe and	Zone 5 Zone 6

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
		Elsternwick Park NR	• Nests are built with matted plant down and spider webs, suspended from a twig in the outer foliage of a tree (Birdlife Australia, 2019a)		help the species return (PEEI, 2019)	
Musk Lorikeet	*Glossopsitta concinna*	Known to occur within Elsternwick Park NR	• Feed mainly on pollen and nectar from eucalypts, but will also eat seeds, fruits and insects (Birdlife Australia, 2019a) • Inhabit tall, open, dry forest and woodland, dominated by eucalypts. Known to occur in suburban areas, parks and street trees (Birdlife Australia, 2019a) • Nest in hollows of living eucalypts, often near watercourses (Birdlife Australia, 2019a)	Yes	Entrance holes to hollows are usually very small. Will be attracted by profuse flowering trees and shrubs	Zone 5 Zone 6 Other zones may be relevant if it intended to plant flowering plants
Nankeen Night Heron	*Nycticorax caledonicus*	Known to occur within Elsternwick Park NR	• Feeds on fish, frogs, yabbies and insects. Already known to forage in Elsternwick Park NR (PEEI, 2019) • Frequents well-vegetated wetlands, and is found along shallow river margins, mangroves, floodplains, swamps, parks and gardens (Birdlife Australia, 2019a) • Nests in a loose stick platform over water (Birdlife Australia, 2019a).	n/a	Known to range reasonable widely to feed, breed and roost- but not necessarily all in the one place. Important to consider when establishing feeding habitat that may deter other species. A secretive bird that likes lots of cover for roosting.	Zone 1 Zone 2 Zone 3 Zone 4 Zone 5- potentially
Pardalotes (spotted and striated)	Various species includes *Pardalotus punctatus*	Known to occur within Elsternwick Park NR	• Feed on insects in the foliage of trees (Birdlife Australia, 2019a)	Yes	Nest box requires a tunnel shaped entrance which can be fashioned out of PVC piping	Zone 5 Zone 6

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
			• Favours eucalypt forests and woodlands but are known to occur in parks and gardens with well-established eucalypt canopies (Birdlife Australia, 2019a) • Nest in tunnels excavated in an earth bank, and sometimes in tree hollows and occasionally in artificial structures (Birdlife Australia, 2019a)			
Powerful Owl	*Ninox strenua*	Anecdotal evidence (reported sightings by the public) suggest Powerful Owls may occur in the broader Bayside area	• Feed on large tree-dwelling mammals, particularly Common Ringtail Possum and the Great Glider, but has been known to also feed on ground-dwelling mammals such as rabbits or small marsupials (Birdlife Australia 2019a). Has been known to prey on other birds species as well, including other owls. • Inhabits open forest and woodlands, as well as along sheltered gullies in wet forests with dense understoreys, especially along watercourses (Birdlife Australia, 2019). Is thought to be highly driven by food and roosting opportunities so therefore has been known to inhabit urbanised area where there is an abundance of food (possums), and where there is a safe place to roost. • Nest in large old tree hollows	Yes- requires large nest box (1m in depth) with a large opening (30cm)	Likes to nest near wetlands. Capable of foraging more widely, but is known to stick to vegetated riparian passageways when foraging over urbanised areas. Very territorial.	Zone 6
Red-rumped Parrot	*Psephotus haematonotus*	Known to occur within Elsternwick Park NR	• Prefers to feed on seeds and leaves of grasses, however is also known to feed on seeds, fruits and flowers in trees (Birdlife Australia, 2019a) • Inhabits open grasslands or lightly timbered plains, as well as along watercourses and in mallee farmlands with access to water (Birdlife Australia, 2019a)	Yes- has been known to sometimes use a nest box	Will feed with other parrots, including Eastern Rosellas and Galahs	Zone 5 Zone 6 Zone 7

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
			• Nest in eucalypt hollows (Birdlife Australia, 2019a)			
Southern Boobook	*Ninox boobook*	Known to occur within Elsternwick Park NR	• Feeds on moths and mice (PEEI, 2019) • Inhabit a variety of habitats from dense forest to open desert (Birdlife Australia, 2019a) • Nest in tree hollows (Birdlife Australia, 2019a)	Yes- May breed in a nest box	Is likely to be feeding on House mice (*Mus musculus*) currently in Elsternwick Park NR	Zone 4 Zone 5 Zone 6
White-faced Heron	*Ardea novaehollandiae*	Known to occur within Elsternwick Park NR	• Feeds on crustaceans, fish, frogs, spiders, snails and worms (PEEI, 2019) • Inhabits any environment where there is water, from tidal mudflats and coastal reefs to moist grasslands and gardens (Birdlife Australia, 2019a) • Nest in trees (Birdlife Australia, 2019a). Already breeding near the park (PEEI, 2019)	n/a		Zone 1 Zone 2 Zone 3 Zone 4 Zone 7- if flooded
Willie Wagtail	*Rhipidura leucophrys*	Known to occur within Elsternwick Park NR	• Feeds on insects on the ground or in mid-air (PEEI, 2019) • Favours open grassy areas with low vantage perches from which to spot prey (PEEI, 2019) • Nests normally on a horizontal branch of a tree and is made of grass and spider's web (Birdlife Australia, 2019). Nests nearby but not within Bayside. Has been recorded breeding within Elsternwick Park NR (PEEI, 2019)	n/a	Noisy miners are thought to be a major contributor to the decline in numbers of Wille Wagtail within Elsternwick Park NR	Zone 4 Zone 5 Zone 6 Zone 7
Frogs						

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
Southern Brown Tree Frog	*Litoria ewingii*	Recorded upstream of Elsternwick Park NR	• Feeds on invertebrates amongst marginal vegetation (PEEI, 2019) • Inhabits a wide range of habitats, including forests, farmland, heathland, semiarid areas, alpine regions, and suburban areas. Found on the ground or damp vegetation near the ground, in urban areas and around streams, lakes and ponds (ALA, 2019) • Breed in large aggregations around waterbodies. Eggs are laid around submerged grass stems, aquatic vegetation, and sticks (ALA, 2019)	n/a	Threatened by Mosquitofish. Very adaptable species	Zone 2 Zone 3 Zone 4 Zone 5
Striped Marsh Frog	*Limnodynastes peroni*	Have previously (2013) been known to occur within Elsternwick Park NR	• Feeds on insects (ALA, 2019) • Restricted to wetlands, common in urban areas (ALA, 2019). • Males call whilst floating in the water hidden by vegetation. Eggs are laid in a foamy nest (ALA, 2019)	n/a	Threatened by Mosquitofish. Tolerate of polluted water.	Zone 2 Zone 3 Zone 4 Zone 7 (after heavy rainfall)
Reptiles						
Eastern Blue-tongue Lizard	*Tiliqua scincoides*	No VBA or ALA records exists within Elsternwick Park. Historical records exists from the broader Bayside Region	• Feed on invertebrates, including garden snails (PEEI, 2019) • Inhabit coastal regions, montane areas and sclerophyll forests. Can often be found in urban and suburban areas (ALA, 2019) • Breeds anywhere where the is sufficient food available (Australian Museum, 2019)	n/a	Vulnerable to dog attacks	Zone 4 Zone 5 Zone 6 Zone 7

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
Eastern Long-necked Turtle	*Chelodina longicollis*	Known to occur within Elsternwick Park NR	• Feed a range of species including pest species such as Mosquitofish (PEEI, 2019) • Inhabits freshwater swamps, billabongs and slow-flowing rivers and creeks (ALA, 2019) • Nests are dug in soil on the land (ALA, 2019)	n/a	Needs to be provided with opportunities to bask – ie. semi-submerged logs. Fox predation on eggs is thought to limit successful breeding- could benefit from an island wetland.	Zone 1 Zone 2 Zone 3
Marbled gecko	*Christinus marmoratus*	Known to occur within close proximity to Elsternwick Park NR, throughout the Elster Creek area	• Feeds on insects (ALA, 2019) • Inhabits variety of habitats including open shrubland, sclerophyll forest, riverine woodland and urban regions. Often found in woodpiles, fallen timber or logs, in trees and urban areas (ALA, 2019)	n/a		Zone 4 Zone 5 Zone 6
Southern Water Skink	*Eulamprus tympanum*	Known to occur within Elsternwick Park NR	• Feeds on insects (PEEI, 2019) • Occurs beneath rocks and logs in moist areas and near small creeks (ALA, 2019)		Could install rocks and more logs around wetland edges as basking habitat for this species	Zone 1 Zone 2 Zone 3 Zone 4
Fish						
Common Galaxias	*Galaxias maculatus*	Known to occur within close proximity to Elsternwick Park NR, throughout the Elster Creek	• Feeds on eat insects, crustaceans, and molluscs (ALA, 2019) • Inhabits still or slow-moving water. Generally freshwater, but tolerates a range of habitats. It is able to withstand salinity levels above that of seawater (ALA, 2019)	n/a	Ensure downstream passage is facilitated as they breed in estuaries. Be sure that Cumbungi at west end doesn't choke the creekline	Zone 1

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
			• Eggs are laid *en masse* amongst flooded riparian vegetation by females (ALA, 2019). Benefit from 'fish ladders' to enable breeding (PEEI, 2019)			
Short-finned Eel	*Anguilla australis*	Known to occur within Elsternwick Park NR	• Feeds on various fish species, worms, insects, small crustaceans, molluscs and water plants (PEEI, 2019) • Inhabits a wide variety of habitats it is essentially a still-water species, preferring low-lying swampy streams and lagoons (PEEI, 2019) • The reproductive biology of these eels has remained elusive during the marine phase (ALA, 2019)	n/a	Ensure downstream passage is facilitated so they can get to Port Phillip Bay and onwards to the Coral Sea, New Caledonia to breed. Be sure that Cumbungi at west end doesn't choke the creekline.	Zone 1
Tupong	*Pseudaphritis urvilli*	Known to occur in small numbers within close proximity to Elsternwick Park NR, throughout the Elster Creek	• Feeds on freshwater invertebrates (PEEI, 2019) • Species has distinct habitat preferences at difference life stages- needs to be able to movement between these habitats (PEEI, 2019) • Adults migrate south downstream to reproduce (ALA, 2019) •	n/a	Would benefit from 'fish ladders' and improved water quality to allow movement upstream	Zone 1
Crustaceans						
Yabbies	Various species including *Cherax destructor*		• *Cherax destructor* mostly feeds on plant matter (ALA, 2019) • *Cherax destructor* is known to inhabit ponds, farm dams, lakes and small creeks (ALA, 2019)	n/a	In areas that dry up, Yabbies dig and hide in a burrow, re-emerging when water returns.	Zone 1 Zone 2 Zone 3
Molluscs						

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
Fresh Water snails	Various species		• Depending on the species freshwater snails can be predatory, scavengers or grazers (Melbourne Water, 2017) • Occur in a broad variety of aquatic environments living on muddy streambeds, aquatic vegetation and attached plant debris (Melbourne Water, 2017)	n/a	Native fresh water snails can survive in temporary bodies of water that dry up during drought	Zone 1 Zone 2 Zone 3
Fresh Water Mussels	Various species		• Filter feeders, feeding on microscopic organisms within the water (Melbourne Water, 2017) • Prefer to sit in mud at the bottom of lakes, streams and pools (Melbourne Water, 2017)	n/a		Zone 1 Zone 2- if water is continuously present
Insects						
Damselflies (various species)	Various species, including *Austrolestes cingulatus*		• Larvae feed on other insect larvae (Melbourne Water, 2017) • Occur in a diverse range of habitats such as rivers, lakes, swamps, ponds and wetlands (Melbourne Water, 2017) • Lives within vegetation (Melbourne Water, 2017)	n/a		Zone 1 Zone 2 Zone 3 Zone 4
Dragonflies	Various species, including *Hemicordulia tau*	Rare within Elsternwick Park NR	• Larvae feed on other insect larvae (Melbourne Water, 2017) • Occur in a diverse range of habitats within close range of water	n/a		Zone 1 Zone 2 Zone 3 Zone 4
Imperial Jezebel	*Delias harpalyce*	Known to occur within the	• Caterpillars fee on mistletoe (PEEI, 2019)	n/a		Zone 5 Zone 6 Zone 7

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
		broader Bayside Region	• Occur in forest and urban areas where mistletoe vines grow (ALA, 2019) • Breed on mistletoe vines that often grow near the top of tall trees (ALA, 2019)			
Native Bees	Various species	Several species are known to occur at Elster Creek	• Require pollen laden plants to survive (Houston, 2011) • Most native bees are solitary and do not live in hives, instead many burrow in the ground, a few bore into dead, rotting wood or pithy stems and most others utilise existing hollows in dead wood, hollow stems and abandoned burrows of other bees and wasps. Some even will utilise man-made cavities such as nail and bolt holes, pipes and cut bamboo (Houston, 2011)	n/a		Zone 4 Zone 5 Zone 6
Rain Moth	*Trictena atripalpis*	Known to occur within Elsternwick Park NR	• Older larvae feed on roots of trees (ALA, 2019) • Occurs in wooded areas bordering creeks and gullies, especially where Eucalyptus are found (ALA, 2019) • Females scatter eggs wile flying near Eucalyptus trees (ALA, 2019)	n/a		Zone 6
Red-spotted Jezebel	*Delias aganippe*	Thought to occur in the broader Bayside Region	• Caterpillars feed on Cherry Ballart (PEEI, 2019) • Occur on hilltops and areas with mistletoe vine (ALA, 2019) • Breed on mistletoe vine (ALA, 2019)	n/a		Zone 5 Zone 6 Zone 7
Common Brown	*Heteronympha merope*		• Feed on native grasses (PEEI, 2019) • Occurs in forests, urban areas and grasslands (ALA, 2019)	n/a	Easily encouraged by planting native grasses	Zone 5 Zone 6 Zone 7

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
			• Lay eggs amongst native grasses (PEEI, 2019)			
Mammals						
Rakali	*Hydromys chrysogaster*	Known to occur within Elsternwick Park NR	• Feeds on aquatic life including yabbies, crabs, mussels and small fish (PEEI, 2019) • Occurs in fresh, salt and brackish wetlands (ALA, 2019) • Ideally nests in constructed burrows dug into river banks but have also been documented building nests within sunken logs and reeds, in areas surrounded by roots and dense riparian vegetation for cover from predators (ALA, 2019). The species is also highly adaptable and have been known to nest in drains (PEEI, 2019)	n/a	Currently lack nesting sites within Elsternwick Park NR	Zone 1 Zone 2 Zone 3 Zone 4
Grey-headed Flying Fox	*Pteropus poliocephalus*	Known to occur within Elsternwick Park NR	• Feed on a wide variety of flowering trees (PEEI, 2019) • Prefer to forage in parks and are more likely to choose areas with higher tree cover (PEEI, 2019) • Roost in large camps near rivers. (ALA, 2019)	n/a		Zone 5 Zone 6
Little Forest Bat	*Vespadelus vulturnus*	Know to occur within close proximity to EP, at the Elsternwick Club	• Forages above tree canopies (PEEI, 2019) • Found in a variety of habitats including Eucalypt woodlands and forests as well as in rural, semi-rural and some urban areas (ALA, 2019) • Roosts in tree hollows (ALA, 2019)	Yes		Zone 4 Zone 5 Zone 6

Common Name Species	Species Name	Local Occurrence	Preferred food and breeding habitat/conditions	Known to use artificial nest boxes / tree hollows?	Other Comments	Target Zones
Lesser Long-eared Bat	*Nyctophilus geoffroyi*	Known to occur around EP	• Forages on insects (PEEI, 2019) • Inhabits forests, woodlands, mallee, farmland and urban areas (ALA, 2019) • hollows of old Eucalypts as roosts (PEEI, 2019)	Yes		Zone 4 Zone 5 Zone 6
Large-footed Myotis	*Myotis macropus*	Has apparently previously been known to occur within EP, though needs confirmation as seems unlikely	• Feed on insects and small fish (PEEI, 2019) • Inhabit areas near permanent water (PEEI, 2019) • Roosts in a number of different habitats including caves and hollow bearing trees, the extent to which the species relies upon, and selects roosts within, riparian habitat is unknown (Campbell, 2009)	Yes		Zone 1

APPENDIX B FLORA SPECIES SUITABLE FOR REVEGETATION WITHIN THE RESERVE

The following is a list of species suitable for revegetation within Elsternwick Park Nature Reserve. They have been selected for their habitat values, indigenous use values and/or intrinsic values. Once the landscape design for the reserve has been finalised, a detailed revegetation plan can be developed.

Key:

FFG	Victorian *Flora and Fauna Guarantee Act 1988*	
	F	Listed as threatened under the FFG Act
EPBC	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*	
	E	Listed as Endangered under the EPBC Act
	V	Listed as Vulnerable under the EPBC Act
VROTS	Victorian Rare or Threatened Species as classified in the Advisory List of Rare or Threatened Plants in Victoria – 2014 (DEPI 2014)	
	e	Classified as endangered in DEPI 2014
	v	Classified as vulnerable in DEPI 2014
Fauna Resource		
	F	Feeding, particularly for birds
	H	Habitat, including shelter, roots, nest material
	I	Insect attractant
	B	Butterfly and caterpillar attractant
	A	Amphibian attractant

Parenthesis ()	Canopy species can occur sparsely (i.e. should not be the dominant canopy species).
Indigenous use	Sources of information include: (Yarra Ranges Shire Council, 2019), (Williams, A & Sides, T, 2008), (Kensington Residents Association Incorporated, 2019) (ABC, 2019), (Greening Australia Victoria Inc. 2003)

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Canopy Tree	**Composition cover (approx)**			**0%**	**0%**	**0%**	**<5%**	**15%**	**15%**	**0%**	
			Eucalyptus camaldulensis subsp. camaldulensis	River Red-gum	F, H, I						(✓)	✓		
			Eucalyptus mellidora	Yellow Box	F, H, I						(✓)	✓		
			Eucalyptus ovata var. ovata	Swamp Gum	F, H, I					✓	✓	✓		Sparse plantings in Swamp Scrub
			Eucalyptus viminalis subsp. pryoriana	Coast Manna-gum	F, H, I						✓	(✓)		
			Understorey Tree	**Composition cover (approx)**			**0%**	**0%**	**0%**	**<5%**	**5%**	**10%**	**0%**	
			Acacia dealbata subsp. dealbata	Silver Wattle	F, B, I	Food - seeds & gum; glue, waterproofing & ointment - gum; timber - axe handles				✓	✓			
			Acacia implexa	Lightwood	F, B, I	Food - seeds; fibre - twine; bark - medicine					✓	✓		
			Acacia mearnsii	Black Wattle	F, B, I	Wood - weapons; bark - twine, medicine; gum - food, drink, glue					✓	✓		

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Acacia melanoxylon	Blackwood	F, H, I	Weapons, medicine, fishing lines from fibre; fish poison from pounded leaves					✓	✓		
			Acacia pycnantha	Golden Wattle	F, B, I	Food (seed), containers, medicine, glue						✓		
			Allocasuarina littoralis	Black Sheoak	F, B, I	Food - shoots and young cones; Wood - weapons						✓		
			Allocasuarina verticillata	Dropping Sheoak	F, B	Wood - weapon handles for stone axes					✓	✓		
			Exocarpos cupressiformis	Cherry Ballart	F, B, I	Timber used locally for spear throwers. Food - fruit stalks. Sap - medicine					✓	✓		Root parasite - difficult to propagate
			Tall Shrub	**Composition cover (approx)**			**0%**	**0%**	**0%**	**50%**	**25%**	**15%**	**0%**	
			Acacia paradoxa	Hedge Wattle	F, H						✓	✓		
			Acacia verticillata subsp. verticillata	Prickly Moses	F, H	Fibre - fishing line				✓	✓			

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Allocasuarina paludosa	Scrub Sheoak	F, B, I	Food - shoots and young cones; Wood - weapons					✓			
			Banksia marginata	Silver Banksia	F, I	Food - nectar					✓	✓		
			Bursaria spinosa subsp. spinosa (the non-spiny tree version formerly Bursaria spinosa subsp. macrophylla)	Sweet Bursaria	I, B	Food - honey; wood - sticks (waddy)					✓	✓		
			Cassinia aculeata	Common Cassinia	H						✓			
			Coprosma quadrifida	Prickly Currant-bush	F, H	Food & medicine - fruit				✓	✓			
			Daviesia latifolia	Hop Bitter-pea	H	Medicine - leaves						✓		
			Daviesia leptophylla	Narrow-leaf Bitter-pea	H							✓		
			Goodenia ovata	Hop Goodenia	B						✓			
			Leptospermum continentale	Prickly Tea-tree	I, B	Wood - spears, pegs					✓	✓		
			Leptospermum myrsinoides	Heath Tea-tree	I, B	Wood - spears, pegs					✓			

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Leucopogon virgatus var. virgatus	Common Beard-heath	F	Food - fruit					✓			
			Melaleuca ericifolia	Swamp Paperbark	F, H, B, A	Paper bark - paintings, wrapping for babies, blankets, bandages, roofing; oil from leaves - medicine, stem and root - clubs, nectar - drink.	✓			✓				
			Melaleuca squarrosa	Scented Paperbark	F, I, B	Paper bark - wrapping for babies, blankets, bandages, roofing; food - nectar				✓	✓			Wetter soaks
			Olearia ramulosa var. ramulosa	Twiggy Daisy-bush	H						✓	✓		
			Ozothamnus ferrugineus	Tree Everlasting	H						✓			
			Ricinocarpos pinifolius	Wedding Bush	B, I						✓			
			Viminaria juncea	Golden Spray	H					✓	✓			

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Small Shrub	**Composition cover (approx)**			**0%**	**0%**	**<1%**	**1%**	**5%**	**5%**	**0%**	
			Acrotriche serrulata	Honey-pots	F	Food - suck nectar from flowers, honey flavoured.					✓	✓		
			Aotus ericoides	Common Aotus							✓	▪		
			Astroloma humifusum	Cranberry Heath	F	Food					✓	✓		
			Atriplex semibaccata	Berry Saltbush	F, B	Fruits used as a dye and for food						✓		
			Boronia parviflora	Swamp Boronia							✓			
			Comesperma ericinum	Heath Milkwort							✓			
			Correa reflexa var. reflexa	Common Correa	F						✓			
			Dillwynia cinerascens	Grey Parrot-pea							✓	✓		
			Dillwynia glaberrima	Smooth Parrot-pea							✓			
			Dillwynia sericea	Showy Parrot-pea							✓			
			Einadia nutans subsp. nutans	Nodding Saltbush	F	Food- berries when ripe, leaves boiled					✓	✓		

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Epacris impressa	Common Heath	F, B						✓			
			Epacris obtusifolia	Blunt-leaf Heath	F, B				✓		✓			Wetter soaks and wetland margins
			Hibbertia fasciculata var. prostrata	Bundled Guinea-flower	B						✓			
			Hibbertia riparia	Erect Guinea-flower	B						✓	✓		
			Hibbertia sericea var. sericea	Silky Guinea-flower	B						✓			
			Persoonia juniperina	Prickly Geebung	F	Food - fruit					✓			
			Pimelea curviflora	Curved Rice-flower	F							✓		
			Pimelea humilis	Common Rice-flower	B						✓	✓		
			Platylobium obtusangulum	Common Flat-pea							✓			
			Pultenaea dentata	Clustered Bush-pea					✓	✓	✓			Wetter soaks and wetland margins
			Pultenaea tenuifolia	Slender Bush-pea							✓			

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Sprengelia incarnata	Pink Swamp-heath	F				✓	✓	✓			Wetter soaks and wetland margins
			Grasses or Graminoids	**Composition cover (approx)**			**0%**		**35%**	**40%**	**35%**	**50%**	**60-80%**	
			Anthosachne scabra	Common Wheat-grass	B							✓	✓	
			Arthropodium strictum	Chocolate Lily		Food - tubers, raw or roasted					✓	✓	✓	
			Austrostipa mollis	Supple Spear-grass	F						✓	✓	✓	
			Austrostipa pubinodis	Tall Spear-grass	F						✓	✓	✓	
			Austrostipa rudis subsp. rudis	Veined Spear-grass	F						✓	✓	✓	
			Austrostipa scabra	Rough Spear-grass	F							✓	✓	
			Austrostipa semibarbata	Fibrous Spear-grass	F, B						✓	✓	✓	
			Baloskion tetraphyllum subsp. tetraphyllum	Tassel Cord-rush	H, F				✓	✓				
			Baumea juncea	Bare Twig-sedge	B, A				✓	✓	✓			

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Bulbine bulbosa	Bulbine Lily		Food - tubers, roasted					✓	✓	✓	
			Burchardia umbellata	Milkmaids		Food - tubers, raw or roasted					✓	✓	✓	
			Caesia calliantha	Blue Grass-lily		Food - tubers						✓	✓	Ornamental use in high maintenance areas
			Caesia parviflora var. parviflora	Pale Grass-lily		Food - tubers					✓	✓	✓	Ornamental use in high maintenance areas
			Carex breviculmis	Common Grass-sedge	A						✓	✓	✓	
			Carex inversa	Knob Sedge	A							✓	✓	
			Chamaescilla corymbosa var. corymbosa	Blue Stars							✓	✓	✓	Ornamental use in high maintenance areas
			Chloris truncata	Windmill Grass	F, H	Food - seeds are used as food when plentiful.						✓	✓	
			Deyeuxia quadriseta	Reed Bent-grass							✓	✓	✓	

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Dianella amoena	Matted Flax-lily	F, I	Food - berries when ripe, seeds chewed; Leaves - basket making, plaiting into cords						✓	✓	
			Dianella brevicaulis	Small-flower Flax-lily	F, I	Food - berries when ripe, seeds chewed; Leaves - basket making, plaiting into cords					✓		✓	
			Dianella laevis var. laevis	Smooth Flax-lily	F, I	Food - berries, when ripe, seeds chewed; leaves - basket making, plaiting into cords; roots - medicine						✓	✓	Name reverted back to *Dianella longifolia* var. l ongifolia
			Dianella sp. aff. admixta	Eastern Flax-lily	F, I	Food - berries, when ripe, seeds chewed; blue dye; leaves - basket making, plaiting into cords						✓	✓	Name reverted back to *Dianella revoluta* var. *revoluta*
			Dianella sp. aff. longifolia (Benambra)	Pale Flax-lily	F, I	Food - berries, when ripe, seeds chewed; leaves - basket					✓	✓	✓	Name reverted back to *Dianella*

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
						making, plaiting into cords; roots - medicine								*longifolia* var. *grandis*
			Dianella sp. aff. revoluta (Coastal)	Coast Flax-lily	F, I	Food - berries, when ripe, seeds chewed; blue dye; leaves - basket making, plaiting into cords					✓		✓	Name reverted back to *Dianella revoluta* var. *revoluta*
			Dichelachne crinita	Long-hair Plume-grass							✓	✓	✓	
			Eleocharis acuta	Common Spike-sedge	H, A				✓	✓				
			Eleocharis sphacelata	Tall Spike-sedge	H, A	Weaving - stems, whole for mat making, split for bags.		✓						
			Eragrostis brownii	Common Love-grass					✓	✓	✓	✓	✓	Wetter soaks in terrestrial vegetation
			Ficinia nodosa	Knobby Club-sedge	F, B	Weaving				✓	✓			Wetter soaks
			Gahnia radula	Thatch Saw-sedge	B	Food - nuts ground					✓	✓		Difficult to propagate

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Hemarthria uncinata var. uncinata	Mat Grass	A				✓		✓	✓	✓	Wetter soaks in terrestrial vegetation
			Hypoxis hygrometrica var. villosisepala	Golden Weather-glass		Food - corm					✓		✓	Ornamental use in high maintenance areas
			Pauridia vaginata var. vaginata	Yellow Star		Food - corm					✓	✓	✓	Ornamental use in high maintenance areas
			Isolepis inundata	Swamp Club-sedge	A				✓	✓				Difficult to propagate
			Juncus homalocaulis	Wiry Rush	F, A					✓	✓	✓		Wetter soaks
			Juncus pallidus	Pale Rush	F, A					✓	✓		✓	Wetter soaks
			Juncus planifolius	Broad-leaf Rush	F, A				✓	✓				Wetter soaks
			Juncus subsecundus	Finger Rush	F, A						✓	✓	✓	
			Lachnagrostis aemula	Leafy Blown-grass						✓		✓	✓	Wetter soaks
			Lachnagrostis filiformis	Common Blown-grass					✓	✓		✓	✓	Wetter soaks
			Lepidosperma gunnii	Slender Sword-sedge	F						✓	✓	✓	Wetter soaks, difficult to propagate

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Lepidosperma laeve	Clustered Sword-sedge	F						✓	✓	✓	Difficult to propagate
			Lepidosperma laterale	Variable Sword-sedge	F, A	Lower leaves - fibre for basket making, red bases used for contrast.					✓	✓	✓	Difficult to propagate
			Lepidosperma longitudinale	Pithy Sword-sedge	F				✓	✓	✓			Wetter soaks, difficult to propagate
			Lepidosperma semiteres	Wire Rapier-sedge	F						✓			Difficult to propagate
			Lomandra filiformis subsp. coriacea	Wattle Mat-rush	F, B	Food - nectar; Leaves - basket-making					✓	✓	✓	
			Lomandra filiformis subsp. filiformis	Wattle Mat-rush	F, B	Food - nectar; Leaves - basket-making					✓	✓	✓	
			Lomandra longifolia subsp. longifolia	Spiny-headed Mat-rush	F, B, A	Food - nectar; Leaves - basket-making					✓	✓	✓	
			Lomandra multiflora subsp. multiflora	Many-flowered Mat-rush	F, B	Food - nectar; Leaves - basket-making					✓	✓	✓	
			Lomandra nana	Dwarf Mat-rush	Bird, B						✓	✓	✓	

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Luzula meridionalis var. meridionalis	Common Wood-rush							✓	✓	✓	
			Microlaena stipoides var. stipoides	Weeping Grass	F, B					✓	✓	✓	✓	
			Patersonia fragilis	Short Purple-flag	A						✓			
			Patersonia occidentalis	Long Purple-flag	A						✓	✓	✓	
			Pentapogon quadrifidus var. quadrifidus	Five-awned Spear-grass							✓	✓	✓	
		v	*Philydrum lanuginosum*	Woolly Waterlily		Clothing- women used the leaves for girdles			✓					Origin in Bayside uncertain
			Poa clelandii	Noah's Ark	F, B	Leaves - string and basket-making					✓	✓	✓	
			Poa labillardierei var. labillardierei	Common Tussock-grass	F, H, B, A	Leaves - string and basket-making				✓	✓	✓	✓	
			Poa morrisii	Soft Tussock-grass	F, H, B							✓	✓	
			Poa sieberiana var. sieberiana	Grey Tussock-grass	F, H, B	Leaves - string and basket-making					✓	✓	✓	

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Rytidosperma caespitosum	Common Wallaby-grass	F						✓	✓	✓	
			Rytidosperma duttonianum	Brown-back Wallaby-grass	F				✓		✓	✓	✓	Wetter soaks
			Rytidosperma erianthum	Hill Wallaby-grass	F							✓	✓	
			Rytidosperma fulvum	Copper-awned Wallaby-grass	F							✓	✓	
			Rytidosperma geniculatum	Kneed Wallaby-grass	F						✓	✓	✓	
			Rytidosperma laeve	Smooth Wallaby-grass	F						✓	✓	✓	
			Rytidosperma pilosum var. pilosum	Velvet Wallaby-grass	F						✓	✓	✓	
			Rytidosperma racemosum var. racemosum	Slender Wallaby-grass	F						✓	✓	✓	
			Rytidosperma semiannulare	Wetland Wallaby-grass	F				✓	✓	✓		✓	Wetter soaks of terrestrial areas
			Rytidosperma setaceum var. setaceum	Bristly Wallaby-grass	F, H, B						✓	✓	✓	

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Schoenus apogon	Common Bog-sedge	A				✓		✓	✓	✓	Wetter soaks of terrestrial areas
			Schoenus brevifolius	Zig-zag Bog-sedge	A				✓	✓	✓			Wetter soaks of terrestrial areas
			Schoenus maschalinus	Leafy Bog-sedge	A				✓	✓				
			Stackhousia monogyna s.l.	Creamy Stackhousia	B						✓	✓	✓	Ornamental use in high maintenance areas
			Stuckenia pectinata	Fennel Pondweed	A		✓	✓						
			Stylidium graminifolium s.s.	Grass Triggerplant	I						✓	✓	✓	Ornamental use in high maintenance areas
			Stylidium armeria subsp. armeria	Common Triggerplant	I							✓	✓	Ornamental use in high maintenance areas
			Thelionema caespitosum	Tufted Lily	A					✓	✓			
			Themeda triandra	Kangaroo Grass	F, H, B	Leaves - string for net-making; Food - seeds					✓	✓	✓	

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
						ground to make flour								
			Thysanotus tuberosus subsp. tuberosus	Common Fringe-lily		Food - tubers, leaves, flowers					✓			Ornamental use in high maintenance areas
			Tricoryne elator	Yellow Rush-lily							✓	✓	✓	
			Cycnogeton procerum	Water Ribbons	A	Food - tubers (roasted or raw)		✓	✓					
			Triglochin striata	Streaked Arrowgrass	A				✓	✓				
			Vallisneria australis	Eel Grass	A		✓	✓						
			Xanthorrhoea minor subsp. lutea	Small Grass-tree	F, I, B	Food - nectar, young leaves and roots; stems - light weapons					✓	✓		
			Robust Dicot Herb	**Composition cover (approx)**					**30%**	**20%**	**20%**	**15%**	**10%**	
			Acaena echinata	Sheep's Burr								✓	✓	
			Acaena novae-zelandiae	Bidgee-widgee	F, A					✓	✓	✓	✓	
			Allittia cardiocarpa	Swamp Daisy	B					✓	✓		✓	

FFG	EPBC	VROTS	Scientific Name	Common Name	Fauna resource	Indigenous use	Zone 1 Open Water	Zone 2 Tall Marsh	Zone 3 Shallow wetlands	Zone 4 Swamp Scrub	Zone 5 Damp Sands Herb-rich Woodland	Zone 6 Grassy Woodland	Zone 7 Grassland and lawn	Notes
			Chrysocephalum apiculatum	Common Everlasting	B						✓	✓	✓	
			Chrysocephalum semipapposum	Clustered Everlasting	B							✓	✓	
			Coronidium scorpioides	Button Everlasting	B						✓	✓	✓	
			Dysphania pumilio	Clammy Goosefoot	B						✓	✓		
			Epilobium billardiereanum subsp. cinereum	Grey Willow-herb	B, A						✓	✓	✓	
			Epilobium billardiereanum subsp. intermedium	Variable Willow-herb	B, A				✓	✓				
			Eryngium ovinum	Blue Devil								✓	✓	
			Eryngium vesiculosum	Prickfoot					✓	✓		✓	✓	Wetter soaks
f	E	e	*Euphrasia collina subsp. muelleri*	Purple Eyebright							✓			Ornamental use in high maintenance areas
			Gonocarpus tetragynus	Common Raspwort							✓	✓	✓	

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			Leptorhynchos squamatus subsp. squamatus	Scaly Buttons								✓	✓	
			Leptorhynchos tenuifolius	Wiry Buttons							✓	✓	✓	
			Lobelia anceps	Angled Lobelia					✓	✓	✓			Wetter soaks
			Lobelia gibbosa	Tall Lobelia							✓		✓	Ornamental use in high maintenance areas
			Lycopus australis	Australian Gipsywort	A				✓					
			Myriophyllum crispatum	Upright Water-milfoil	A			✓	✓					
			Myriophyllum simulans	Amphibious Water-milfoil	A			✓	✓					
			Myriophyllum verrucosum	Red Water-milfoil	A		✓	✓	✓					
			Pelargonium australe	Austral Stork's-bill							✓	✓	✓	Ornamental use in high maintenance areas
			Pelargonium inodorum	Kopata							✓			Ornamental use in high

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														maintenance areas
			Persicaria decipiens	Slender Knotweed	F, H, A				✓	✓				Wetter soaks
			Potamogeton crispus	Curly Pondweed	F, A		✓	✓						
			Rumex brownii	Slender Dock								✓	✓	
			Senecio biserratus	Jagged Fireweed	B						✓			
			Senecio glomeratus subsp. glomeratus	Annual Fireweed	B						✓	✓	✓	
			Senecio hispidulus s.s.	Rough Fireweed	B						✓	✓	✓	
			Senecio minimus	Shrubby Fireweed	B					✓	✓			
			Senecio quadridentatus	Cotton Fireweed	B						✓	✓	✓	
			Senecio squarrosus s.s.	Leafy Fireweed	B						✓			
			Stellaria pungens	Prickly Starwort								✓	✓	
			Trachymene composita var. composita	Parsnip Trachymene		Food- root likely to be a common meal					✓			

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			Veronica gracilis	Slender Speedwell								✓	✓	
			Ornduffia reniformis	Running Marsh-flower	A				✓	✓				
			Wahlenbergia capillaris	Tufted Bluebell	B	Food - flowers						✓	✓	
			Wahlenbergia multicaulis	Branching Bluebell	B	Food - flowers						✓	✓	
			Wahlenbergia stricta subsp. stricta	Tall Bluebell	B	Food - flowers					✓	✓	✓	
			Small Dicot Herb	**Composition cover (approx)**					**15%**	**5%**	**10%**	**5%**	**5%**	
			Brachyscome decipiens	Field Daisy	B							✓		Ornamental use in high maintenance areas
			Brunonia australis	Blue Pincushion	B							✓		Ornamental use in high maintenance areas
			Centella cordifolia	Centella	A				✓	✓	✓	✓	✓	Wetter soaks
f		v	*Comesperma polygaloides*	Small Milkwort								✓		Ornamental use in high

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														maintenance areas
f		e	*Craspedia canens*	Grey Billy-buttons	B				✓			✓	✓	Wetter soaks of terrestrial vegetation, ornamental use in high maintenance areas
			Craspedia paludicola	Swamp Billy-buttons	B				✓			✓	✓	Wetter soaks of terrestrial vegetation, ornamental use in high maintenance areas
			Craspedia variabilis	Variable Billy-buttons	B							✓	✓	Ornamental use in high maintenance areas
			Crassula helmsii	Swamp Crassula	H, A				✓	✓				
			Cymbonotus preissianus	Austral Bear's-ear	B	Food - roots (other species and possibly this species)						✓		Ornamental use in high maintenance areas
			Cynoglossum suaveolens	Sweet Hound's-tongue								✓		

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			Dichondra repens	Kidney-weed						✓	✓	✓	✓	
f	V	v	*Glycine latrobeana*	Clover Glycine	B							✓	✓	Ornamental use in high maintenance areas
			Goodenia geniculata	Bent Goodenia							✓	✓	✓	
			Goodenia humilis	Swamp Goodenia					✓	✓			✓	
			Goodenia pinnatifida	Cut-leaf Goodenia								✓	✓	
			Haloragis heterophylla	Varied Raspwort							✓	✓	✓	
			Hydrocotyle hirta	Hairy Pennywort	A					✓	✓			
			Hydrocotyle laxiflora	Stinking Pennywort	A						✓	✓	✓	
			Hypericum gramineum	Small St John's Wort							✓	✓	✓	Ornamental use in high maintenance areas
			Linum marginale	Native Flax		Fibre - cord, fish nets; Food - seeds						✓	✓	

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			Lythrum hyssopifolia	Small Loosestrife	A				✓	✓	✓	✓	✓	Wetter soaks
			Microseris scapigera	Murnong	B	Food - yams were a staple part of the diet						✓	✓	Ornamental use in high maintenance areas
			Opercularia ovata	Broad-leaf Stinkweed							✓	✓	✓	
			Opercularia varia	Variable Stinkweed							✓			
			Oxalis exilis	Shady Wood-sorrel							✓	✓	✓	
			Oxalis perennans	Grassland Wood-sorrel		Food - tubers						✓	✓	
			Plantago varia	Variable Plantain	B							✓	✓	
			Poranthera microphylla s.s.	Small Poranthera							✓	✓	✓	
			Selliera radicans	Shiny Swamp-mat					✓	✓				
			Solenogyne dominii	Smooth Solenogyne								✓	✓	Ornamental use in high maintenance areas

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			Utricularia dichotoma s.s.	Fairies' Aprons					✓					Ornamental use in high maintenance areas
			Velleia paradoxa	Spur Velleia								✓	✓	
			Veronica gracilis	Slender Speedwell							✓	✓	✓	
			Viola hederacea	Ivy-leaf Violet	A	Food - flowers					✓		✓	Ornamental use in high maintenance areas
			Vittadinia gracilis	Woolly New Holland Daisy	B, I							✓		
			Robust Fern	**Composition cover (approx)**			**0%**	**0%**	**<5%**	**5%**	**15%**	**5%**	**0%**	
			Gleichenia microphylla	Scrambling Coral-fern	H, A					✓				Difficult to propagate
			Pteridium esculentum	Austral Bracken		Rhizome - roasted and pulped; medicine - new fronds (stinging ant remedy)				✓	✓	✓		Difficult to propagate
			Small Fern	**Composition cover (approx)**			**0-20%**	**0-20%**	**0-10%**	**0%**	**<1%**	**0%**	**0%**	

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			Azolla rubra	Pacific Azolla			✓	✓						No need to plant, should establish naturally
			Lindsaea linearis	Screw Fern							✓			
			Selaginella uliginosa	Swamp Selaginella					✓		✓			Wetter soaks of terrestrial vegetation
			Scrambler / Climber	**Composition cover (approx)**			**0%**	**0%**	**0%**	**0%**	**<1%**	**5%**	**<1%**	
			Billardiera mutabilis	Common Apple-berry	F	Food - berry					✓			Ornamental use in high maintenance areas
			Bossiaea prostrata	Creeping Bossiaea	F						✓	✓	✓	Ornamental use in high maintenance areas
			Clematis microphylla s.s.	Small-leaved Clematis	H	Food - tap root (roasted), medicine - leaves, fibre - string					✓			
			Comesperma volubile	Love Creeper							✓		✓	Ornamental use in high maintenance areas

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			Convolvulus angustissimus subsp. angustissimus	Blushing Bindweed		Medicine-treatment for diarrhoea						✓	✓	
			Glycine tabacina	Variable Glycine	B	Food - taproot chewed						✓	✓	
			Hardenbergia violacea	Purple Coral-pea	B	Drink - leaves brewed; flowers - dye						✓		
			Hovea heterophylla	Common Hovea		Food - young pods					✓	✓	✓	Ornamental use in high maintenance areas
			Kennedia prostrata	Running Postman	F, I, B	Food - nectar in flowers; Twine - stems					✓	✓	✓	Ornamental use in high maintenance areas
			Thysanotus patersonii	Twining Fringe-lily							✓	✓	✓	Ornamental use in high maintenance areas
			Mistletoe	**Composition cover (approx)**			**0%**	**0%**	**0%**	**0%**	**<1%**	**<1%**	**0%**	
			Amyema pendula subsp. pendula	Drooping Mistletoe	F, I, B	Food - berry					✓	✓		Host: mostly *Eucalyptus*, occasionally *Acacia*

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			Muellerina eucalyptoides	Creeping Mistletoe	F, I, B	Food - berry					✓	✓		Host: *Eucalyptus camaldulensis* ssp. *camaldulensis* and *Acacia melanoxylon*