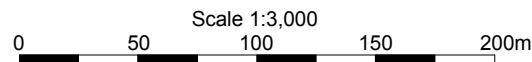


## Site 47. J.W. Manson Reserve, Wantirna

Part of a public park that spans Dandenong Creek, including forest and a billabong. Melway ref. 63 J3.

### Site Significance Level: *State*

- Two regionally threatened vegetation types are represented: Floodplain Wetland Complex and Riparian Forest;
- Locally rare flora and fauna are present, some species of which are abundant when the billabong contains water;
- Being on Dandenong Creek, the site is an ecological stepping-stone on a major corridor for daily and seasonal movements of birds and insects (particularly waterbirds, several species of which are threatened);



Aerial photograph taken April 2003

### Boundaries

This site is as outlined in red above. The northern boundary follows the Dandenong Creek shared pathway. The boundary skirting the ovals is drawn to enclose all the native vegetation. The other edges are straight lines, mostly coinciding with cadastral boundaries. The area measures 4.75 ha.

**Land use & tenure:** Public park. The section east of the path marked above is owned by Maroondah City Council.

## Site description

This site lies on the floodplain of Dandenong Creek, at elevations of 82-85 m. It is flat except for a billabong, as marked on the aerial photograph. The Upper Silurian sandstone bedrock is part of the Dargile formation, and it is covered with silty clay alluvium.

Until the drought of recent years, the site included one of the most ecologically intact and diverse wetlands in Knox, and some of the best Riparian Forest. The billabong has suffered very seriously from drought but may recover if more normal flooding returns. The site is still one of very few sites in Knox that are home to Sugar Gliders. The area west of the north-south pathway is more ecologically intact than to the east. When surveyed in 2002, the ecological condition ratings were A or B to the west and C to the east, on the scale of A to D.

## Relationship to other land

The native vegetation on the opposite side of Dandenong Creek is similarly significant to the site described here. It is not treated in this report because it is in the municipality of Maroondah, where it is already recognised as a biologically significant site (see Lorimer *et al.* (1997): '*Sites of Biological Significance in Maroondah*', Volume 2, Site 79). Fauna such as Sugar Gliders probably rely on the native vegetation on both sides of the creek.

Being on Dandenong Creek, Manson Reserve is an ecological stepping-stone on a major corridor for daily and seasonal movements of birds and insects (particularly waterbirds, several species of which are threatened). This is discussed further in the section of this report for the corridor (Site 26), which includes the strip between the creek and the northern boundary of the Manson Reserve site.

**Bioregion:** Gippsland Plain

## Habitat types

**Riparian Forest** (EVC 18, **Vulnerable** in the Gippsland Plain bioregion): Estimated to cover 3-9 ha, comprising 1-6 ha in good ecological condition (rating B) and 2-3 ha in fair ecological condition (rating C). 57 indigenous plant species were found by John Reid in June 1996 to January 1997. 5 others were credibly reported in quadrats by Andrew Paget in April-May 1985.

Dominant canopy trees: *Eucalyptus viminalis* with smaller numbers of *E. radiata*, *E. ovata* and *E. melliodora*.

Dominant lower trees: *Acacia dealbata*, *Acacia melanoxylon*, *Acacia mearnsii*, *Exocarpos cupressiformis*, *Pomaderris aspera* and *Melaleuca ericifolia*.

Shrubs: Fairly dense, comprising prickly shrubs (*Acacia verticillata*, *Bursaria spinosa* and *Coprosma quadrifida*) as well as many species with broader, softer leaves (e.g. *Goodenia ovata*, *Gynatrix pulchella*, *Olearia lirata*, *Ozothamnus ferrugineus* and *Prostanthera lasianthos*). *Cassinia aculeata*, *Cassinia arcuata* and the shrubby herb, *Senecio minimus*, are also present.

Vines: *Billardiera mutabilis* is present, as is a *Calystegia* that may be the indigenous *C. sepium* or (more likely) part of a hybrid complex between that species and the introduced *C. silvatica*.

Ferns: *Pteridium esculentum* is the only species present, and it is rather abundant.

Ground flora: The natural ground layer is tussocky due to species such as *Lepidosperma elatius*, *Austrostipa rudis*, *Poa ensiformis*, *Poa morrisii*, *Lomandra longifolia*, *Lomandra filiformis*, *Dianella longifolia* and *Dianella admixta*. The rhizomatous species *Dianella tasmanica* and *Phragmites australis* are also conspicuous, as are the small grasses, *Rytidosperma setaceum* and *Microlaena stipoides*. *Persicaria decipiens* and *Persicaria hydropiper* reflect the high level of soil moisture. Scattered plants of *Acaena novae-zelandiae* are the only creepers.

**Floodplain Wetland Complex** (EVC 172, **regionally Endangered**) in the billabong: Estimated to cover 2,600 m<sup>2</sup>, comprising approximately equal proportions in excellent ecological condition (rating A) and good ecological condition (rating B). 27 indigenous plant species were found.

Trees, shrubs, vines and ferns: *Melaleuca ericifolia* encroaches into the edge of the billabong and there are other species of trees and shrubs that overhang to some degree.

Aquatic and semi-aquatic flora: Dominated by patches of *Alternanthera denticulata*, *Carex fascicularis*, *Glyceria australis*, *Persicaria decipiens*, *Persicaria praetermissa* and *Persicaria subsessilis*, as well as the introduced species *Paspalum distichum* and (in season) *Rorippa palustris*.

## Plant species

In the following plant list, the column headed 'Risk' indicates the indigenous species' risk of extinction in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; and 'V'=Vulnerable. In addition, the species with names in bold are rare throughout the Melbourne region.

Risk	Indigenous Species	Risk	Indigenous Species
	<i>Acacia dealbata</i>	C	<i>Juncus holoschoenus</i>
V	<i>Acacia mearnsii</i>		<i>Kunzea ericoides</i> spp. agg.
V	<i>Acacia melanoxylon</i>		<i>Lachnagrostis filiformis</i>
E	<i>Acacia stricta</i>		<i>Lepidosperma elatius</i>
V	<i>Acacia verticillata</i>	E	<i>Lobelia anceps</i>
	<i>Acaena novae-zelandiae</i>		<i>Lomandra filiformis</i> subsp. <i>coriacea</i>
	<i>Alisma plantago-aquatica</i>		<i>Lomandra longifolia</i>
V	<i>Alternanthera denticulata</i>	C	<b><i>Lycopus australis</i></b>
C	<i>Amyema pendula</i>	E	<i>Melaleuca ericifolia</i>
V	<i>Amyema quandang</i>		<i>Microlaena stipoides</i>
	<i>Austrostipa rudis</i>	C	<i>Muellerina eucalyptoides</i>
	<i>Austrostipa rudis</i> subsp. <i>rudis</i>	V	<i>Olearia lirata</i>
	<i>Billardiera mutabilis</i>		<i>Oxalis exilis/perennans</i>
	<i>Bursaria spinosa</i>	E	<i>Ozothamnus ferrugineus</i>
C	<i>Calystegia ?sepium</i>		<i>Persicaria decipiens</i>
	<i>Carex appressa</i>	E	<i>Persicaria hydropiper</i>
E	<b><i>Carex fascicularis</i></b>	E	<b><i>Persicaria praetermissa</i></b>
	<i>Cassinia aculeata</i>	C	<b><i>Persicaria subsessilis</i></b>
	<i>Cassinia arcuata</i>	E	<i>Phragmites australis</i>
E	<i>Cassytha melantha</i>		<i>Poa ensiformis</i>
V	<i>Coprosma quadrifida</i>	E	<i>Poa labillardierei</i> var. <i>labillardierei</i>
E	<i>Crassula helmsii</i>		<i>Poa morrisii</i>
	<i>Deyeuxia quadriseta</i>	E	<i>Pomaderris aspera</i>
	<i>Dianella admixta</i>	C	<b><i>Pomaderris racemosa</i></b>
V	<i>Dianella longifolia</i> s.l.		<i>Poranthera microphylla</i>
V	<i>Dianella tasmanica</i>	E	<i>Prostanthera lasianthos</i>
V	<i>Eucalyptus melliodora</i>		<i>Pteridium esculentum</i>
V	<i>Eucalyptus ovata</i>	V	<i>Pultenaea gunnii</i>
E	<i>Eucalyptus radiata</i>		<i>Rytidosperma linkii</i> var. <i>fulvum</i>
E	<i>Eucalyptus viminalis</i> subsp. <i>viminalis</i>		<i>Rytidosperma pallidum</i>
E	<i>Euchiton involucratus</i>	E	<i>Rytidosperma semiannulare</i>
V	<i>Exocarpos cupressiformis</i>		<i>Rytidosperma setaceum</i>
	<i>Gahnia radula</i>		<i>Rytidosperma</i> sp.
V	<i>Glyceria australis</i>		<i>Schoenus apogon</i>
	<i>Gonocarpus tetragynus</i>		<i>Senecio hispidulus</i>
	<i>Goodenia ovata</i>	E	<i>Senecio minimus</i>
E	<i>Gynatrix pulchella</i>	C	<i>Solanum aviculare</i>
E	<i>Hypericum gramineum</i>	V	<i>Solanum laciniatum</i>
E	<i>Isolepis cernua</i> var. <i>cernua</i>	E	<i>Spyridium parvifolium</i>
V	<i>Isolepis inundata</i>		<i>Tricoryne elatior</i>
	<i>Juncus amabilis</i>	E	<i>Triglochin striata</i> (flat leaf variant)
	<i>Juncus bufonius</i>	V	<b><i>Wolffia australiana</i></b>
	<i>Juncus gregiflorus</i>		

#### Introduced Species

<i>Acacia longifolia</i> subsp. <i>longifolia</i>	<i>Ehrharta erecta</i>	<i>Plantago lanceolata</i>
<i>Agrostis capillaris</i>	<i>Fraxinus angustifolia</i>	<i>Prunus cerasifera</i>
<i>Anthoxanthum odoratum</i>	<i>Galium aparine</i>	<i>Ranunculus repens</i>
<i>Asparagus asparagoides</i>	<i>Hedera helix</i>	<i>Rorippa palustris</i>
<i>Atriplex prostrata</i>	<i>Holcus lanatus</i>	<i>Rubus anglocandicans</i>
<i>Briza minor</i>	<i>Hypochoeris radicata</i>	<i>Rumex conglomeratus</i>
<i>Centaurium erythraea</i>	<i>Lolium perenne</i>	<i>Rumex crispus</i>
<i>Chrysanthemoides monilifera</i>	<i>Lonicera japonica</i>	<i>Salix cinerea</i>
<i>Cirsium vulgare</i>	<i>Paraserianthes lophantha</i>	<i>Salix × rubens</i>
<i>Conyza</i> sp.	<i>Paspalum dilatatum</i>	<i>Solanum nigrum</i>
<i>Cotoneaster glaucophyllus</i>	<i>Paspalum distichum</i>	<i>Sonchus oleraceus</i>
<i>Cotoneaster pannosus</i>	<i>Pennisetum clandestinum</i>	<i>Taraxacum officinale</i> spp. agg.
<i>Cotula coronopifolia</i>	<i>Phalaris aquatica</i>	<i>Tradescantia fluminensis</i>
<i>Cynodon dactylon</i>	<i>Pinus radiata</i>	<i>Ulex europaeus</i>
<i>Cyperus eragrostis</i>	<i>Pittosporum undulatum</i>	<i>Watsonia meriana</i> var. <i>bulbillifera</i>

#### Notes concerning some of the locally threatened plant species

*Calystegia sepium* (Large Bindweed). Only significant if it can be shown not to be part of a hybrid complex with the weed, *C. silvatica*. This would require collection of a specimen with flowers and fruit, to be lodged and identified at the National Herbarium of Victoria.

*Carex fascicularis* (Tassel Sedge) A formerly dominant species in parts of the billabong.

*Lycopus australis* (Australian Gipsywort). Only two plants recorded, in the billabong.

*Persicaria praetermissa* (Spotted Knotweed). Apparently a substantial population.

*Wolffia australiana* (Tiny Duckweed). Seasonally abundant in the billabong.

#### Fauna of special significance

##### Vulnerable in Victoria

Royal Spoonbill, observed by Mr John Reid during a 1997 survey. Frequency of visitation unknown.

##### Rare or Threatened in Knox (but not all of Melbourne)

Sugar Glider, confirmed by spotlighting in 2003. Feeding scars have been seen on trees by Mr John Erwin of Knox City Council in 2004.

#### Fauna habitat features

- Some of the mature eucalypts have hollows suitable for nesting or roosting by native birds, bats, possums or insects;
- Some large Manna Gums (*Eucalyptus viminalis*) may provide nest sites for bird species that only breed in particularly tall trees;
- Silver Wattles (*Acacia dealbata*) provide a staple food source for the Sugar Gliders;
- Mistletoes are being used for food by Mistletoebirds and Imperial White Butterflies;
- The juxtaposition of the forest and the open pasture to the south makes good habitat for the Black-Shouldered Kites that live in this stretch of the valley;
- The billabong was observed to provide habitat for yabbies, frogs, insects and nesting waterbirds.

#### Significance ratings

The following is an assessment of the site's significance against the Department of Sustainability & Environment's standard criteria (Amos 2004).

##### Ecological Integrity and Viability

Criterion 1.1.1 attributes **Local** significance to 'All parts of riparian systems with riparian vegetation present', which applies to this site.

Criterion 1.2.6 accords **Local** significance to sites like Manson Reserve that fit the description, 'Important at local scale - Link between individual remnant habitat blocks or within subcatchment'.

##### Threatened Vegetation Types

Floodplain Wetland Complex is listed as regionally Endangered. It follows from Appendix 3 of *Victoria's Native Vegetation Management - a Framework for Action* (NRE 2002a) that the reserve's native vegetation is necessarily of at least High conservation significance. This, in turn, gives the site **State** significance under criterion 3.2.3.

Riparian Forest is listed as regionally Vulnerable. The quality of 1.6 ha this vegetation at Manson Reserve is rating B, which is certain to put it in the category of at least 'High' conservation significance according to Appendix 3 of *Victoria's Native Vegetation Management - a Framework for Action*. This, in turn, gives the site **State** significance under criterion 3.2.3 of Amos (2004).

##### Rare or Threatened Plants

Some of the locally threatened plant species listed above have viable populations, thereby meeting criterion 3.1.5 for a site of **Local** significance.

##### Rare or Threatened Fauna

Criterion 3.1.2 confers at least Local significance on sites that provide habitat for species that are threatened in Victoria, which includes Royal Spoonbill. Royal Spoonbills appear to be only occasional visitors to Manson Reserve, which gives the site **Local** significance.

#### Threats

- Invasion by environmental weeds. The most serious in the billabong are Water Couch (*Paspalum distichum*) and Creeping Buttercup (*Ranunculus repens*). The most serious in the forest are Boneseed (*Chrysanthemoides monilifera*), Bulbil Watsonia (*Watsonia meriana*) and (if not for periodic use of herbicide) Blackberry (*Rubus discolor*);

- Critically small population sizes of some plant species; e.g. only two *Lycopus australis* were found;
- Feral bees or introduced birds occupying tree hollows to the exclusion of native fauna.

### Management issues

- Knox and Maroondah Councils cooperate to manage the vegetation of Manson Reserve on both sides of the creek;
- Weed control is the highest ecological priority for management of Manson Reserve;
- It would be desirable to plant *Lycopus australis*, *Gahnia sieberiana* and perhaps other species in the billabong to increase the dangerously small numbers present in this section of Dandenong Creek. Such plantings should be spread among Manson Reserve, the Scott Street wetlands and the University Road wetlands;
- Tree hollows should be monitored in spring to detect and evict nesting by undesirable species (e.g. Common Mynas).

### Administration matters

- It would be desirable to have an expert on insects investigate whether the billabong or its margins support any rare invertebrates. Melbourne Water should take an interest in such an investigation;
- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of its State significance, the threatened EVCs, the significant plant species, the habitat for native fauna and the riparian location;
- The Planning Scheme zoning is Public Conservation and Resource Zone (PCRZ);
- The site is included under the existing Vegetation Protection Overlay Schedule 1 of the Knox Planning Scheme, albeit with slightly different boundaries that were obtained from Site 82 of the report by Water Ecoscience (1998).

### Information sources used in this assessment

- Site description and mapping in '*Vegetation Survey of Linear Reserves – A Management Strategy for Riparian and Floodplain Vegetation*' by Reid, Moss and Lorimer (1997), and the underlying field data. The field data included vegetation mapping, compilation of lists of indigenous and introduced plant species for three parts of the reserve, two quadrats, incidental fauna observations, and checks for fauna habitat, ecological threats, management issues and populations of scarce or threatened plant species;
- Data from eleven quadrats (DSE numbers N13223-N13233) compiled by Mr Andrew Paget in April 1985;
- The 2004 report, '*Bushland Management Plan for Scott Street Reserve, Heathmont, 2004*' by G.S. Lorimer for Maroondah City Council, plus the underlying field data and research. Scott Street Reserve is 300m from Manson Reserve and provides useful information about the natural vegetation and hydrology in this stretch of Dandenong Creek, and the potential for various weed species to become problems;
- Brief, informal visits to the site by the author;
- Various historical maps of the area, which show conflicting positions of Dandenong Creek;
- Aerial photography from February 2001 and April 2003;
- Satellite imagery of the district;
- The Department of Sustainability & Environment's BioMaps of the area;
- Maps of geology and topography produced by agencies of the Victorian government.