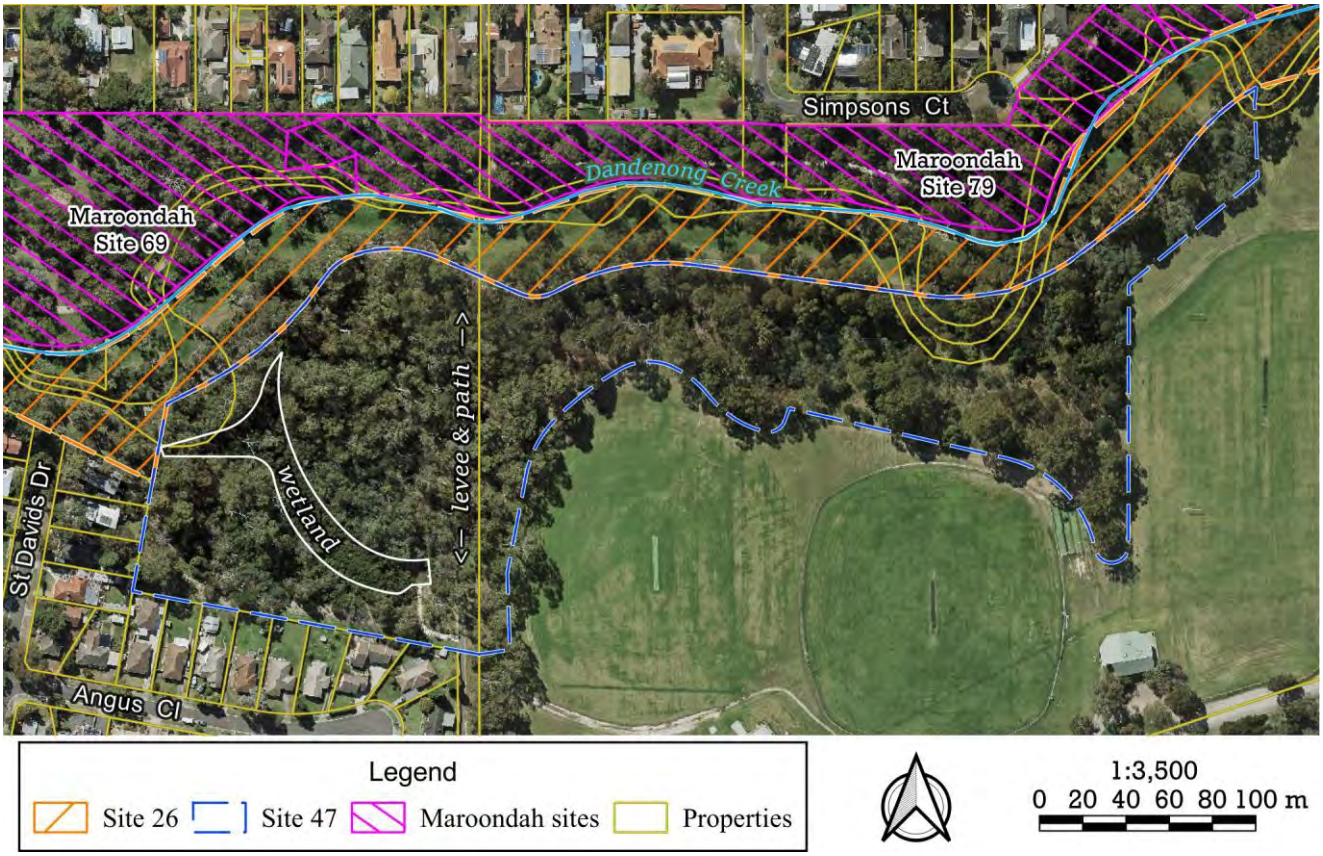
# Site 47. J.W. Manson Reserve, Wantirna

Part of a park that spans Dandenong Creek, including forest and a wetland.

Summary of significant features:

- State significance: patches of the regionally-threatened vegetation types, Riparian Forest and Floodplain Wetland Complex – some in good ecological condition;
- Regionally significant: a major node on the Dandenong Creek habitat corridor;
- Locally significant: riparian (streamside) vegetation;
- Locally significant: viable populations of Sugar Gliders (Krefft's Gliders) and plant species threatened with dying out in Knox.




## Boundaries

This site is as outlined with blue dashes above, unchanged from the previous (2010) edition of this report. 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 4.78 ha.

**Land use & tenure**: Council park. The land east of the north-south property boundary through the site is owned by Maroondah City Council.

## Site description

This site lies on the floodplain of Dandenong Creek, at elevations of 82–85 m. A bend in Dandenong Creek extended into the site's northwest corner until it was filled in and the creek straightened in c. 1970. Otherwise, the natural surface is almost flat but excavations have created a wetland, a levee with a path along its crest and a north-facing slope abutting homes on Angus Close (see the aerial photograph above). The Upper Silurian sandstone bedrock is part of the Melbourne (formerly Dargile) formation, and it is covered with silty clay alluvium except where clay fill has been brought in for flood mitigation.

The wetland is used for stormwater treatment but prior to all the excavations, there may well have been a (rather different) natural wetland or drainage line. Urban stormwater enters the southeast end of the wetland, where there is a sedimentation pond with a concrete access track to allow periodic dredging. The water level is regulated by a structure at the western end. The wetland contains a mixture of wild and planted indigenous species, as well as a planting of the aggressive non-indigenous species, River Club-rush (*Schoenoplectus tabernaemontani*). The wetland has a fairly dense cover of Swamp Paperbark (*Melaleuca ericifolia*) and its margins have a dense cover of Tall Sedge (*Carex appressa*). The wetland's water was turbid and smelly when inspected in 2024 for this report. No waterbirds or duckweeds were present.

The slopes of the levee and to the north of Angus Close have very little wild indigenous vegetation but have been extensively revegetated with mainly woody species over the past two decades. The rest of the site has a eucalypt canopy with a fairly natural density of Manna Gums (*Eucalyptus viminalis*) and a few other eucalypt species typical of Riparian Forest. Some of the eucalypts are large and old, with hollows. There is a patchier cover of sub-canopy trees – particularly Silver Wattle (*Acacia dealbata*) and Black Wattle (*Acacia mearnsii*). Victorian Christmas-bush (*Prostanthera lasianthos*) and Sweet Bursaria (*Bursaria spinosa*) form dense thickets in the vicinity of the wetland. Lower indigenous plants are mostly sparse except for patches dominated by Weeping Grass (*Microlaena stipoides*) or Thatch Saw-sedge (*Gahnia radula*).

A strip typically 15 m wide on the southern side of the Dandenong Creek shared path mostly has a canopy of remnant eucalypts, a sub-canopy of remnant tall wattles, and dense, young revegetation.

So many plants have been planted in the site (including some species that do not occur naturally in Riparian Forest) that the site has lost much of its value as a place to learn which indigenous species grow in local Riparian Forest, their densities and their ecological roles. For quite a few indigenous plant species, it is now difficult or impossible to tell whether any wild individuals remain among the planted ones. That includes locally-rare species such as *Pomaderris racemosa*. It is therefore not possible to assess whether the site is able to sustain wild populations of such significant species.

The inspection of the site for this report in 2024 found that the area west of the north-south levee and path has particularly abundant birdlife by Knox standards but with a quite modest range of bird species, dominated by Rainbow Lorikeets.

### 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 recognised as a biologically significant site (see Lorimer (2020): *'Biodiversity in Maroondah'*, Volume 2, Sites 69 and 79). Fauna such as Krefft's Gliders (aka 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. 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).

Canopy trees: Dominated by *Eucalyptus viminalis* followed by *E. ovata*, also with smaller numbers of *E. melliodora* and *E. radiata*.

Sub-canopy trees: Dominated by *Acacia dealbata* and *Acacia mearnsii*, followed by *Exocarpos cupressiformis* and *Melaleuca ericifolia*. *Acacia melanoxylon* and *Pomaderris aspera* are now scarce and perhaps represented only by planted individuals.

Shrubs: Fairly dense in patches, comprising prickly shrubs (*Bursaria spinosa* and *Coprosma quadrifida*) as well as many species with broader, softer leaves (e.g. *Goodenia ovata* and *Prostanthera lasianthos*).

Vines: *Billardiera mutabilis* was present in 1997 but not found in 2024.

Ferns: There are patches of *Pteridium esculentum* and a small patch of *Adiantum aethiopicum*.

Groundcover: The natural groundcover is tussocky due to species such as *Lepidosperma elatius, Austrostipa rudis, Poa ensiformis, Poa morrisii, Lomandra longifolia, Lomandra filiformis, Dianella longifolia* and

*Dianella revoluta*. The rhizomatous species *Dianella tasmanica* and *Phragmites australis* are also conspicuous, as is the small grass, *Microlaena stipoides*. Scattered plants of *Acaena novae-zelandiae* are the only creepers.

Floodplain Wetland Complex (EVC 172, regionally Endangered) in the wetland: Estimated to cover 2,600 m², comprising approximately equal proportions in good ecological condition (rating B) and fair ecological condition (rating C). 28 indigenous plant species have been found.

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

Aquatic and semi-aquatic flora: Dominated by *Carex appressa*, which may be the result of planting. *Lepidosperma elatius* dominates the northern spur of the wetland, which is more seasonally-wet. Other species include *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

The following list contains species seen growing wild (not just planted) in Site 47. Among the indigenous species, those not seen in this study's inexhaustive winter 2024 survey are indicated by an asterisk for species seen in 1997 or a dagger for species seen only in 1985. The list of introduced species includes those seen in 2024 or that were seen earlier and are likely to still be present (at least seasonally). The column headed 'Risk' indicates the indigenous species' risk of dying out in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; 'V'=Vulnerable; and 'N'=Near threatened.

### Indigenous mosses and liverworts

*Campylopus introflexus,* Heath Star Moss
*Chiloscyphus semiteres,* Green Worms
*Eurhynchium praelongum,* Common Feather-moss
*Ptychomnion aciculare,* Paper Moss, Pipe-cleaners
*Sematophyllum homomallum,* a moss

### Wild indigenous vascular species

| Risk | |
|---|---|
| | *Acacia dealbata,* Silver Wattle |
| V | *Acacia mearnsii,* Black Wattle |
| V | *Acacia melanoxylon,* Blackwood* |
| E | *Acacia stricta,* Hop Wattle* |
| V | *Acacia verticillata,* Prickly Moses* |
| | *Acaena novae-zelandiae,* Bidgee-widgee |
| V | *Adiantum aethiopicum,* Common Maidenhair |
| N | *Alisma plantago-aquatica,* Water Plantain* |
| V | *Alternanthera denticulata,* Lesser Joyweed |
| C | *Amyema pendula,* Drooping Mistletoe* |
| E | *Amyema quandang,* Grey Mistletoe* |
| | *Austrostipa rudis* subsp. *rudis,* Veined Spear-grass |
| | *Billardiera mutabilis,* Common Apple-berry* |
| | *Bursaria spinosa,* Sweet Bursaria |
| C | *Calystegia* ?*sepium,* Large Bindweed* |
| | *Carex appressa,* Tall Sedge (planted and wild) |
| E | *Carex fascicularis,* Tassel Sedge |
| E | *Carex gaudichaudiana,* Fen Sedge |
| | *Cassinia aculeata,* Common Cassinia |
| E | *Cassytha melantha,* Coarse Dodder-laurel† |
| V | *Clematis aristata,* Mountain Clematis |
| V | *Coprosma quadrifida,* Prickly Currant-bush |
| V | *Crassula helmsii,* Swamp Crassula* |
| | *Cycnogeton procerum,* Water-ribbons (2011) |
| | *Deyeuxia quadriseta,* Reed Bent-grass* |
| | *Dianella longifolia* var. *longifolia,* Pale Flax-lily |
| | *Dianella revoluta,* Black-anther Flax-lily* |
| | *Dianella tasmanica,* Tasman Flax-lily |
| E | *Eucalyptus melliodora,* Yellow Box |
| V | *Eucalyptus ovata,* Swamp Gum |
| E | *Eucalyptus radiata,* Narrow-leaved Peppermint* |
| C | *Eucalyptus viminalis* subsp. *viminalis,* Manna Gum |
| E | *Euchiton involucratus,* Common Cudweed* |
| V | *Exocarpos cupressiformis,* Cherry Ballart |
| C | *Gahnia radula,* Thatch Saw-sedge |
| V | *Glyceria australis,* Australian Sweet-grass* |
| | *Gonocarpus tetragynus,* Common Raspwort |
| | *Goodenia ovata,* Hop Goodenia |
| E | *Gynatrix pulchella,* Hemp Bush* |
| E | *Hypericum gramineum,* Small St John's Wort† |
| E | *Isolepis cernua,* Nodding Club-rush† |
| | *Isolepis inundata,* Swamp Club-rush |
| | *Juncus amabilis,* Hollow Rush |
| | *Juncus bufonius,* Toad Rush* |
| | *Juncus gregiflorus,* Green Rush |
| C | *Juncus holoschoenus,* Joint-leaf Rush* |
| E | *Juncus procerus,* Tall Rush |
| | *Kunzea* sp. (Upright form), Forest Burgan |
| | *Lachnagrostis filiformis,* Common Blown-grass* |
| | *Lemna disperma,* Common Duckweed (2011) |
| | *Lepidosperma elatius,* Tall Sword-sedge |
| E | *Lobelia anceps,* Angled Lobelia* |

| Risk | Wild indigenous vascular species |
|---|---|
| | *Lomandra filiformis* subsp. *coriacea,* Wattle Mat-rush* |
| | *Lomandra* ?*filiformis* subsp. *filiformis,* Wattle Mat-rush* |
| | *Lomandra longifolia* subsp. *longifolia,* Spiny-headed Mat-rush |
| E | *Lycopus australis,* Australian Gipsywort* |
| E | *Melaleuca ericifolia,* Swamp Paperbark |
| | *Microlaena stipoides,* Weeping Grass |
| C | *Muellerina eucalyptoides,* Creeping Mistletoe* |
| E | *Olearia lirata,* Snowy Daisy-bush (now all planted?) |
| | *Oxalis exilis/perennans,* Wood-sorrel |
| V | *Ozothamnus ferrugineus,* Tree Everlasting (now all planted?) |
| | *Persicaria decipiens,* Slender Knotweed |
| E | *Persicaria hydropiper,* Water-pepper* |
| V | *Persicaria praetermissa,* Spotted Knotweed* |
| E | *Persicaria subsessilis,* Hairy Knotweed |
| E | *Phragmites australis,* Common Reed |
| | *Poa ensiformis,* Sword Tussock-grass* |
| E | *Poa labillardierei,* Common Tussock-grass† |
| | *Poa morrisii,* Soft Tussock-grass |
| V | *Pomaderris aspera,* Hazel Pomaderris (now all planted?) |
| C | *Pomaderris racemosa,* Cluster Pomaderris (now all planted?) |
| | *Poranthera microphylla,* Small Poranthera* |
| V | *Prostanthera lasianthos,* Victorian Christmas-bush |
| | *Pteridium esculentum,* Austral Bracken |
| V | *Pultenaea gunnii,* Golden Bush-pea† |
| | *Rytidosperma fulvum,* Leafy Wallaby-grass* |
| E | *Rytidosperma pallidum,* Red-anther (or Silvertop) Wallaby-grass† |
| E | *Rytidosperma semiannulare,* Tasmanian Wallaby-grass* |
| | *Rytidosperma setaceum,* Bristly Wallaby-grass* |
| | *Schoenus apogon,* Common Bog-rush* |
| | *Senecio hispidulus,* Rough Fireweed |
| | *Senecio minimus,* Shrubby Fireweed |
| C | *Solanum aviculare,* Kangaroo Apple† |
| V | *Solanum laciniatum,* Large Kangaroo Apple |
| V | *Spirodela punctata,* Thin Duckweed (2011) |
| V | *Spyridium parvifolium,* Australian Dusty Miller† |
| | *Tricoryne elatior,* Yellow Rush-lily* |
| V | *Triglochin striata,* Streaked Arrow-grass* |
| | *Typha orientalis,* Cumbungi |
| V | *Wolffia australiana,* Tiny Duckweed* |

| Introduced species |
|---|
| *Agrostis capillaris,* Brown-top Bent |
| *Allium triquetrum,* Angled Onion |
| *Anthoxanthum odoratum,* Sweet Vernal-grass |
| *Asparagus asparagoides,* Bridal Creeper |
| *Briza minor,* Lesser Quaking-grass |
| *Cassinia sifton,* Sifton Bush |
| *Cenchrus clandestinus,* Kikuyu Grass |
| *Centaurium erythraea,* Common Centaury |
| *Chrysanthemoides monilifera* subsp. *monilifera,* Boneseed |
| *Cirsium vulgare,* Spear Thistle |
| *Cotoneaster glaucophyllus,* Cotoneaster |
| *Cotoneaster pannosus,* Cotoneaster |
| *Cotula coronopifolia,* Water Buttons |
| *Cynodon dactylon,* Couch |
| *Cyperus eragrostis,* Drain Flat-sedge |
| *Dactylis glomerata,* Cocksfoot |
| *Dianella caerulea* var. *producta,* Tall Flax-lily (probably planted) |
| *Ehrharta erecta,* Panic Veldt-grass |
| *Fraxinus angustifolia,* Desert Ash |
| *Galium aparine,* Cleavers |
| *Hedera helix/hibernica,* Ivy |
| *Holcus lanatus,* Yorkshire Fog |
| *Hypochaeris radicata,* Cat's Ear |
| *Lolium perenne,* Perennial Rye-grass |
| *Lonicera japonica,* Japanese Honeysuckle |
| *Paraserianthes lophantha,* Cape Wattle |
| *Paspalum dilatatum,* Paspalum |
| *Paspalum distichum,* Water Couch |
| *Phalaris aquatica,* Toowoomba Canary-grass |
| *Pittosporum undulatum,* Sweet Pittosporum |
| *Plantago lanceolata,* Ribwort |
| *Prunus cerasifera,* Cherry-plum |
| *Ranunculus repens,* Creeping Buttercup |
| *Rorippa palustris,* Yellow Marsh-cress |
| *Rubus anglocandicans,* Blackberry |
| *Rumex conglomeratus,* Clustered Dock |
| *Rumex crispus,* Curled Dock |
| *Salix* × *rubens,* White Crack Willow |
| *Salix cinerea,* Grey Sallow |
| *Solanum nigrum,* Black Nightshade |
| *Sonchus oleraceus,* Sow-thistle |
| *Taraxacum* sect. *Taraxacum,* Garden Dandelion |
| *Torilis arvensis,* Spreading Hedge-parsley |
| *Ulex europaeus,* Gorse (Furze) |
| *Watsonia meriana* var. *bulbillifera,* Bulbil Watsonia |

Notes concerning some of the locally-threatened plant species

Mistletoes (*Amyema pendula, A. quandang* and *Muellerina eucalyptoides*) – These species were present in 1997 but appear to have died out during the Millennium Drought, as happened in most of Knox.

*Calystegia* ?*sepium* (Large Bindweed) – recorded in 1997; 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, now in small numbers due to out-competition by the (mostly planted?) Tall Sedge (*Carex appressa*).

*Carex gaudichaudiana (*Fen Sedge) – One patch grows in the gutter beside the shared path in the site's northeast. Planting cannot be discounted, as that species was not recorded in botanical surveys prior to 2024 and it has been planted in revegetation nearby, but the gutter is not where one would expect planting to have occurred.

*Lycopus australis* (Australian Gipsywort) – Only two plants have been recorded, in the wetland in 1997.

*Persicaria praetermissa* (Spotted Knotweed) – not found in winter 2024, perhaps due to high water.

*Persicaria subsessilis* (Hairy Knotweed) – at least several robust plants in 2024.

*Wolffia australiana* (Tiny Duckweed) – seasonally abundant in the wetland in 1997; not seen since.

## Fauna of special significance

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

Krefft's Glider (aka Sugar Glider) – one of a small number of populations in Knox.

## Fauna habitat features

- Some of the mature eucalypts have hollows suitable for nesting or roosting by native birds, bats, possums or invertebrates;
- 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 Krefft's/Sugar Gliders;
- The juxtaposition of the forest and the open pasture nearby makes good habitat for the Black-Shouldered Kites that live in this stretch of the valley;
- The wetland was observed in 1997 to provide habitat for yabbies, frogs, insects and nesting waterbirds. This study's winter 2024 survey was in the wrong time of year to observe such things other than nesting by Wood Ducks in Manna Gums.

## Significance ratings

The following is an assessment of the site's biological significance against the Department of Energy, Environment & Climate Action'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.

The site is also a major ecological 'stepping stone' on the Dandenong Creek habitat corridor, which is believed to be important at the catchment scale. Criterion 1.2.6 takes this to represent **Regional** significance.

*Threatened Vegetation Types*

J.W. Manson Reserve's wetland meets the standard criteria's definition of a 'remnant patch', i.e. a continuous area of at least 0.25 ha with at least 10% cover of native understorey throughout. The vegetation type is Floodplain Wetland Complex, which is regionally Endangered. It follows from Appendix 3 of *Victoria's Native Vegetation Management – a Framework for Action* (NRE 2002a) that the wetland is of at least High conservation significance. Standard criterion 3.2.3 translates this to **State** significance.

Riparian Forest is regionally Vulnerable. The ecological condition of 1.6 ha of the Riparian Forest around the wetland at Manson Reserve seems certain to have a 'habitat score' of at least 0.3, were a formal assessment to be done. That would put the vegetation in the category of at least 'High' conservation significance according to Appendix 3 of *Victoria's Native Vegetation Management – a Framework for Action*. Standard criterion 3.2.3 translates this to **State** significance.

*Threatened Plants*

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

*Threatened Fauna*

Krefft's Gliders (or Sugar Gliders) are believed to be threatened in the local area but to have a viable population in Site 47, thereby meeting criterion 3.1.5 for **Local** significance.

### Threats

- Human-induced climate change, which is predicted to cause more severe droughts, heatwaves and storms, as well as substantially lower rainfall (particularly in winter);
- Displacement of indigenous flora and fauna by environmental weeds, exacerbated by debilitation of the native vegetation by the impacts of climate change. The most impactful species of environmental weeds appear to be Angled Onion (*Allium triquetrum*), Cocksfoot (*Dactylis glomerata*), Yorkshire Fog (*Holcus lanatus*), Bulbil Watsonia (*Watsonia meriana*), Creeping Buttercup (*Ranunculus repens*) and (planted) River Club-rush. In addition, the indigenous Sweet Bursaria (*Bursaria spinosa*) is much denser than natural in some areas and may need to be thinned to allow other indigenous species to thrive;
- Loss or decline of plant species that have such small populations that they are vulnerable to inbreeding, poor reproductive success or chance events such as being struck by a falling tree limb.

### Strategic planning

- Site 47 is covered by Schedule 2 of the Environmental Significance Overlay (ESO2) as a result of the second edition of this report in 2010. That edition cited the State significance, the threatened EVCs, the significant plant species, the habitat for native fauna and the riparian location. The only material change in these matters is that some (but far from all) of the significant plant species have dwindled or died out, while two others were newly-discovered in 2024. There is no need to alter the application of ESO2 to the site;
- The land is zoned Public Conservation and Resource (PCRZ) except for traces of Rural Living Zone (RLZ) in the south, next to the ovals.

### Information sources used in this assessment

- Data from eleven quadrats (DEECA numbers N1322300-N1323300) compiled by Andrew Paget in April 1985;
- 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 fieldwork 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;
- 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 300 m 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;
- A brief botanical survey of the wetland by Dr Lorimer on 5th March 2011, when the wetland was at an excellent phase in the wet/dry cycle for such a survey;
- A fairly intensive botanical survey by Dr Lorimer on 31st July and 2nd August 2024 for this edition;
- Brief, informal visits to the site by the author over a quarter-century;
- Various historical maps of the area, which show conflicting positions of Dandenong Creek;
- Records of flora and fauna observations stored in the Atlas of Living Australia;
- Aerial and satellite imagery from between 1946 and 2025;
- The Victorian Government's 'NatureKit' website;
- Maps of geology, topography and strategic planning information produced by agencies of the Victorian Government.