

Site 2. Gilmour Park, Upper Ferntree Gully

Public park with a lake in a retarding basin and riparian vegetation along Ferny Creek. Melway ref. 74 F8.

Site Significance Level: *Regional*

- There are many majestic, large, old Manna Gums;
- Many regionally rare fauna species have been observed;
- Powerful Owls are likely to visit, given that they have been observed just over the road, in the Shire of Yarra Ranges.

Aerial photograph and plan: See page 4, which covers this site and Site 1.

Boundaries

This site comprises the Melbourne Water retarding basin reserve and contiguous public land along Ferny Creek, excluding the oval and its surrounding spectator area. It is outlined in red and labelled 'Gilmour Park' on p. 4. Site 1 (Glenfern Road Woodland) abuts to the southwest and Site 99 (Dandenong Ranges Buffer) abuts the remaining boundary.

The property boundaries shown on the Planning Scheme maps around Gilmour Park have not been followed for this site because they differ greatly from the fences and physical features that actually delimit areas of different land management and environmental significance.

Land use & tenure: Public land owned by Melbourne Water, including public parkland and a retarding basin with a lake. Management responsibilities are divided between Melbourne Water and Knox City Council.

Site description

This 4.3-hectare site contains a narrow strip along the natural course of Ferny Ck, plus an adjoining retarding basin and lake that were constructed in 1973. Elevations vary from 120 m to 130 m.

Between them, the creek and the retarding basin occupy the full width of the floodplain of Ferny Ck, and all of the soil is alluvium washed down by the creek. In places, the bed of Ferny Ck exposes the underlying Devonian volcanic rock (rhyodacite), part of the Dandenong Ranges.

The retarding basin fulfils an important drainage function. The lake and the rest of the land are used for public recreation and nature conservation. The City of Knox has placed signs around the park to explain the site's ecological significance and the fauna that is found there. Wildlife, including Platypus, represent a large part of the site's conservation significance.

The remnants of native vegetation on the site are of Riparian Forest. The artificial lake in the retarding basin has become colonised by predominantly indigenous wetland flora. There are substantial numbers of very large, old Manna Gums on the creek banks. Environmental weeds are a serious degrading influence, as usual along creek corridors, but they are being kept in check.

There is a 1997 management plan for the site and the contiguous public land upstream.

Relationship to other land

Ferny Ck no doubt acts to some degree as a habitat corridor through the area, particularly for Platypus and other aquatic fauna. The retarding basin wall would be a barrier to movement of fish other than eels.

Some native birds, mammals and insects that reside in, or visit, the surrounding hills no doubt use the creek corridor and the lake as sources of water and food and as a refuge from hot weather. Therefore, the ecology of this site should be considered in conjunction with the adjoining Site 1, Site 2, Site 99 and the 'Glenfern Valley Bushlands' in the Shire of Yarra Ranges.

Many nomadic and migratory birds have been recorded at the site. Some of these species probably migrate along the fragmented habitat corridor of Dandenong Creek, Corhanwarrabul Ck and Ferny Ck. Others, as well as Koalas, would migrate around the forested areas of the Dandenong Ranges and beyond.

Bioregion: Highlands Southern Fall

Habitat types

Perennial Stream (No EVC number). Includes *Alisma plantago-aquatica* and *Persicaria decipiens*.

Riparian Forest (EVC 18, 'Least Concern' conservation status in the bioregion): 1.3 hectares in total, of which approximately 1.1 ha is in fair ecological condition (rating C) and 0.2 ha is poor ecological condition (rating D). 26 indigenous plant species were found by G.S. Lorimer on 19/12/97 and/or J.C. Reid on 26/3/1997.

Dominant canopy trees: *Eucalyptus viminalis*, with fewer *E. ovata*.

Dominant lower trees: *Acacia melanoxylon*, with fewer *Pomaderris aspera* and *A. mearnsii*.

Shrubs: *Prostanthera lasianthos* and *Gynatrix pulchella* are the most characteristic species. Others include *Acacia paradoxa*, *A. stricta*, *A. verticillata*, *Kunzea ericoides*, *Ozothamnus ferrugineus* and *Senecio minimus*.

Vines: *Calystegia marginata* is present but very scarce.

Ferns: *Pteridium esculentum* is present.

Ground flora: Quite weedy. The dominant indigenous species is *Poa ensiformis*. Other indigenous species include *Rytidosperma setaceum*, *Epilobium hirtigerum*, *Juncus gregiflorus*, *J. pallidus* and *Schoenus apogon*.

Wetland (EVC 74): Wetland is listed as regionally Endangered, but in this case the occurrence is artificial, recent and readily replaceable. It is partly mapped by the Department of Sustainability & Environment as 'Aquatic Herbland', which is a component of EVC 74, and while there is some basis for this identification, the broader category of 'Wetland' is adopted here because of the absence of various species that are typically found in natural occurrences of Aquatic Herbland, such as *Myriophyllums* and *Potamogeton tricarlinatus*. The total area of the lake is 1.2 ha.

10 indigenous plant species were found by J.C. Reid in autumn 1997.

Dominant species: *Typha domingensis*, *T. orientalis*, *Eleocharis sphacelata*, *Juncus* species, *Persicaria* species.

Plant Species

The following 1997 data includes columns for the rarity of species in Knox and the Melbourne area. 'C'=Critically Endangered; 'E'=Endangered; and 'V'=Vulnerable. In addition, *Acacia leprosa* (Dandenong Range variant) is listed as Rare nationally (Walsh & Stajsic 2007) but it may be planted at this site. *Calystegia marginata* is rare throughout the Melbourne area.

Risk	Indigenous Species (alphabetical)	Risk	Indigenous Species (alphabetical)
V	<i>Acacia leprosa</i> (Dandenong Range variant) – possibly planted		<i>Juncus gregiflorus</i>
V	<i>Acacia mearnsii</i>		<i>Juncus pallidus</i>
E	<i>Acacia stricta</i>		<i>Juncus sarophorus</i>
V	<i>Acacia verticillata</i> – possibly planted		<i>Kunzea ericoides</i> spp. agg. (planted?)
	<i>Alisma plantago-aquatica</i>	E	<i>Ozothamnus ferrugineus</i>
V	<i>Alternanthera denticulata</i>		<i>Persicaria decipiens</i>
C	<i>Amyema pendula</i>	E	<i>Persicaria hydropiper</i>
V	<i>Amyema quandang</i>		<i>Poa ensiformis</i>
E	<i>Calystegia marginata</i>	E	<i>Pomaderris aspera</i>
	<i>Eleocharis sphacelata</i>	E	<i>Prostanthera lasianthos</i>
	<i>Epilobium hirtigerum</i>		<i>Rytidosperma setaceum</i>
	<i>Eucalyptus goniocalyx</i>		<i>Rytidosperma</i> sp.
V	<i>Eucalyptus ovata</i>		<i>Schoenus apogon</i>
E	<i>Eucalyptus viminalis</i> subsp. <i>viminalis</i>	E	<i>Senecio minimus</i>
V	<i>Exocarpos cupressiformis</i>	E	<i>Typha domingensis</i>
E	<i>Gynatrix pulchella</i>	E	<i>Typha orientalis</i>
Introduced Species			
	<i>Acacia decurrens</i>		<i>Dactylis glomerata</i>
	<i>Acacia longifolia</i> subsp. <i>longifolia</i>		<i>Delairea odorata</i>
	<i>Agapanthus praecox</i>		<i>Festuca arundinacea</i>
	<i>Agrostis capillaris</i>		<i>Genista monspessulana</i>
	<i>Anthoxanthum odoratum</i>		<i>Hedera helix</i>
	<i>Aster subulatus</i>		<i>Helminthotheca echioides</i>
	<i>Callitriche stagnalis</i>		<i>Holcus lanatus</i>
	<i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i>		<i>Hypericum tetrapterum</i>
	<i>Cirsium vulgare</i>		<i>Leontodon taraxacoides</i>
	<i>Cortaderia selloana</i>		<i>Paspalum dilatatum</i>
	<i>Crataegus monogyna</i>		<i>Paspalum distichum</i>
	<i>Cyperus eragrostis</i>		<i>Persicaria maculosa</i>
			<i>Phalaris aquatica</i>
			<i>Pinus radiata</i>
			<i>Pittosporum undulatum</i>
			<i>Plantago lanceolata</i>
			<i>Quercus robur</i>
			<i>Ranunculus repens</i>
			<i>Rubus anglocandicans</i>
			<i>Rumex crispus</i>
			<i>Salix babylonica</i> s.l.
			<i>Solanum mauritanium</i>
			<i>Sporobolus africanus</i>
			<i>Zantedeschia aethiopica</i>

Fauna of special significance

Vulnerable species listed under the *Flora and Fauna Guarantee Act*

Powerful Owl (in adjacent Glenfern Valley Bushlands)

Rare in the Melbourne Region

Platypus (probably no longer present)	Wedge-tailed Eagle	Australian King-Parrot
Hardhead	Australian Hobby	Little Grassbird
Darter	Peregrine Falcon	Australian Reed Warbler
White-necked Heron	Buff-banded Rail	
Nankeen Night Heron	Black-fronted Dotterel	Peron's Tree Frog
Whistling Kite	Little Corella	

Observed in the adjacent Glenfern Valley Bushlands

Koala	Collared Sparrowhawk	Olive Whistler
	Little Eagle	Satin Flycatcher
	Brush Cuckoo	Fairy Martin

Fauna habitat features

- There are large Manna Gums with hollows that would suit roosting or nesting of certain birds and mammals;
- The stream supports Platypus (or at least, was known to do so until 1997) and hence is likely to have reasonable habitat for stream invertebrates.
- The lake provides approximately one hectare of open water as well as islands and emergent plants that provide food and cover for waterbirds, invertebrates and potentially Platypus.

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.

The site is also an ecological 'stepping stone' on the Ferny Creek habitat corridor. The corridor is probably important at a Local scale. Criterion 1.2.6 takes this to represent **Local** significance.

Richness and Diversity

The richness of recorded fauna is high for Knox, but this type of attribute is not formally recognised in the standard criteria. The site nevertheless stands out within Knox for its richness of fauna – particularly regionally rare or threatened fauna.

Regionally Threatened Ecological Vegetation Class

According to the criteria of '*Victoria's Native Vegetation Management – A Framework for Action*' (NRE 2002a), even quite degraded remnants of native vegetation belonging to an endangered EVC (including Wetland) have a conservation significance rating of High. In the present case, the wetland vegetation is not a remnant, but the result of natural colonisation of an artificial lake. All of its values would be expected to return within a decade if the lake were to be destroyed and rebuilt. It would therefore be unreasonable to confer State significance to the site, as if the lake were a natural wetland. Instead, the **Local** level is adopted here.

Rare or Threatened Flora

Many 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

The site is probable habitat for Powerful Owls, which have been observed on the other side of New Rd (and are locally fairly common). This species is listed under the *Flora and Fauna Guarantee Act 1988* and is regarded by the Department of Sustainability & Environment as a vulnerable species in Victoria (DSE 2003b). Sites like Gilmour Park that are likely to support Powerful Owl and are adjacent to known habitat are accorded **Regional** significance under criterion 3.1.3.

The presence of fauna species that are threatened locally, particularly the resident Peron's Tree Frog, also makes the site significant at the **Local** level under criterion 3.1.5.

Threats

- Environmental weeds in the Riparian Forest, the worst species being: Hawthorn (*Crataegus monogyna*), Montpellier Broom (*Genista monspessulana*), Ivy (*Hedera helix*), Sweet Pittosporum (*Pittosporum undulatum*), Tobacco-bush (*Solanum mauritianum*) and introduced grasses such as Cocksfoot (*Dactylis glomerata*);
- Environmental weeds in the lake, the worst species being Water Couch (*Paspalum distichum*) and Creeping Buttercup (*Ranunculus repens*);
- Eucalypt dieback;
- Potential increases in creek flow fluctuations, water contamination and silt as a result of development upstream;
- An associated risk that the retarding basin will need to be enlarged;
- Predation of wildlife by pets and foxes;
- Displacement or out-competition of native birds by introduced birds, such as Mallards, Blackbirds, Mynas and Bell Miners.

Administration matters

- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of its biological significance (discussed above) and the presence of riparian habitat and a lake;
- The site is included within Vegetation Protection Overlay VPO1 of the Knox Planning Scheme, notwithstanding that it was overlooked as a significant site by Water Ecoscience (1998);
- Knox City Council should maintain and foster cooperation and communication between itself, Melbourne Water, the Department of Primary Industry, the Friends of Glenfern Valley Bushlands and the Shire of Yarra Ranges so that the ecological links between the adjoining parcels of public land are properly reflected in such matters as fire prevention, town planning, weed control and drainage.

Information sources used in this assessment

- A vegetation map showing EVCs and vegetation quality, and two lists of plant species – one for aquatics in the stream and the other for the Riparian Forest – observed by Dr Lorimer on 19th December 1997, as described in the report, 'A Survey and Management Plan for Significant Vegetation of Roadsides in Knox' by G.S. Lorimer for Knox City Council (May 1998, 137 pp.);
- A vegetation map showing EVCs and vegetation quality, and two lists of plant species (indigenous and introduced) observed by Mr John Reid on 6th April 1997, as described in the report 'Vegetation Survey of Linear Reserves – A Management Strategy for Riparian and Flood Plain Vegetation' by J.C. Reid, H. Moss and G.S. Lorimer for Knox City Council (September 1997, 130 pp.);
- A list of fauna observed during each of the above botanical surveys;
- Lists of fauna observed in the area during 2001-2003, carefully compiled by Mark Fanthorpe for this project, based on surveys by him and his fellow members of the Friends of Glenfern Valley Bushlands: I. Rainbow, L. Living & R. Sinclair;
- Lists of flora and fauna, and other information, in 'A Management Plan for Gilmour Park at the Ferny Creek Retarding Basin, Upper Ferntree Gully' by Knox City Council's Landscape Services Unit in collaboration with Melbourne Water (1997);
- 'Status and Habitat Relationships of Platypus in the Dandenong Creek Catchment – II. Results of Surveys and Radio-Tracking Studies, September 1997 - March 1998', a report by Serena, Thomas and Williams of the Australian Platypus Conservancy to Melbourne Water, September 1998;
- 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.

Acknowledgment

Thank you to Mr Mark Fanthorpe and his fellow volunteers in the Friends of Glenfern Valley Bushlands for their fauna list.