

Site 46. Bayswater Park

Woodland sections of a recreation reserve beside Dandenong Creek. Melway ref. 64 F2.

Site Significance Level: *State*

- Three regionally Endangered vegetation types are represented: Wetland, Swamp Scrub and Swampy Woodland;
- One of the dominant species of the ground layer is the statewide-rare grass, *Austrostipa rudis* subsp. *australis*;
- Being on Dandenong Creek, the site is on a major corridor for daily and seasonal movements of birds and insects (particularly waterbirds, several species of which are threatened);
- The site was a floral wonderland until at least the 1930s, as indicated by a series of historical reports since 1906.



Aerial photograph taken April 2003



Scale 1:4,000
0 20 40 60 80 100m

Boundaries

This site is as outlined in red above, comprising two separate parts of the park that total 4.14 ha.

Land use & tenure: Public park with picnic facilities, bushland and paths.

Site description

This site lies on the floodplain of Dandenong Creek, at elevations of 93-97 m. It is flat except for two wetland depressions and two drains that have been excavated, as marked on the aerial photograph. The Lower Devonian sedimentary bedrock is part of the Humevale formation, which produces heavy clay subsoil. This is covered with silty clay alluvium of variable depth.

The contours of the wetland depressions have been modified by excavation, and part of the wetland next to the car park has been planted with indigenous species. However, both wetlands contain substantial amounts of naturally occurring wetland flora and fauna, so they should be regarded as significant natural features.

Swampy Woodland with a canopy of Swamp Gums (*Eucalyptus ovata*) is well developed where the alluvium is deepest and the soil most prone to waterlogging. In other patches, the vegetation approaches Valley Heathy Forest, as reflected by the presence of a Red Stringybark tree (*Eucalyptus macrorhyncha*).

The ground flora has a history of slashing for decades, which has been reduced in recent years to allow indigenous plants to regenerate. An ecological burn was conducted for the same purpose on 12th May 2002. There has also been extensive revegetation over at least two or three decades, initially using 'Australian native' species such as Red Ironbarks and Willow Hakeas, then with indigenous species.

The park's natural history through the first half of the twentieth century has fortunately been well documented contemporaneously in *Victorian Naturalist*, the journal of the Field Naturalists Club of Victoria. The proximity of the park to Bayswater Railway Station and the wonderful flora that once grew there attracted many field excursions to the park by the Club, and reports were documented in *Victorian Naturalist* for trips in 1906, 1909, 1916, 1918, 1929, 1931 and 1936. The descriptions indicate that what we now know as Bayswater Park had spectacular, rich native vegetation with numerous species that are now very threatened or extinct in the Melbourne area or the whole state.

Some of the rarer species mentioned were *Brachyscome decipiens*, *Caesia vittata*, *Caladenia cardiochila*, *Caladenia oenochila*, several *Diuris* species, *Euphrasia collina* (probably subsp. *trichocalycina*), *Hakea decurrens*, four *Hibbertia* species (perhaps not all properly identified), *Lobelia rhomboidea*, *Phylloglossum drummondii*, *Microseris scapigera*, *Microtis atrata*, *Prasophyllum frenchii*, *Sphaerolobium minus*, *Thelionema caespitosum*, *Thelymitra antennifera*, *Thelymitra aristata*, *Thelymitra carnea*, *Thelymitra flexuosa* and *Viminaria juncea*.

Some of these records may superficially seem far-fetched from a modern-day perspective, but even the most unexpected species were sometimes supported by herbarium specimens or were well known among reliable orchid enthusiasts to have been in the Bayswater-Heathmont area. On the other hand, some species reported have not been listed here because they appear to be certain misidentifications. Only those with very high credibility have been included in the inventory of plant species in Knox that appears in Appendix B of Volume 1.

The reports over the years in *Victorian Naturalist* also document the decline in this vegetation. Blackberries had become rampant by 1931, and in 1936, 'Reaching the Dandenong Creek we were disappointed to find that many of the Silver Wattles, which formerly lined its banks, had been destroyed...'

Today, the blackberries are under control, the creek has been replaced by a barrel drain and not a single Silver Wattle remains. The shrub layer has been decimated by decades of slashing and the ground flora appears to retain none of the vast number of orchids originally there, nor the rare plants.

Nevertheless, the native vegetation in the park is still a remnant of Endangered Ecological Vegetation Classes, and with vision and effort, some of its former glory can be regained.

The historical documentation in *Victorian Naturalist* gives the park a unique value in Knox as a reference site for the changes that have occurred to native vegetation, and how vegetation may be assisted to rehabilitate toward a known prior condition.

Relationship to other land

Being on Dandenong Creek, Bayswater Park is 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).

It is also very close to the Belgrave Railway Line corridor (Site 88), which may further facilitate movements of fauna to and from the park.

There are several substantial bushland areas north of Dandenong Creek, in Heathmont, that are believed to serve as additional ecological stepping-stones for fauna that visit Bayswater Park. These sites are documented by Lorimer *et al.* (1997): '*Sites of Biological Significance in Maroondah*', Volume 2.

Bioregion: Gippsland Plain

Habitat types

Wetland (EVC 74, regionally Endangered): Two depressions, estimated to cover 1,200 m², all in fair ecological condition (rating C). 19 indigenous plant species recorded.

Trees, vines and ferns: Absent.

Shrubs: Some *Melaleuca ericifolia* extend into the wetlands.

Aquatic and semi-aquatic flora: Dominated in different areas by rushes (*Juncus* species), *Centella cordifolia*, *Eleocharis acuta* or *Glyceria australis*. *Alisma plantago-aquatica* is characteristically present.

Swamp Scrub (EVC 53, **regionally Endangered**): 300 m² in poor ecological condition (rating D). 7 indigenous plant species were found.

Dominant canopy trees: *Melaleuca ericifolia*. There are also overhanging *Eucalyptus ovata*, *Acacia mearnsii* and *Acacia melanoxylon*.

Shrubs, vines and ferns: No indigenous species.

Ground flora: *Carex appressa*, *Juncus gregiflorus* and *Lepidosperma ?elatius*.

Swampy Woodland (EVC 937, **regionally Endangered**): Estimated to occupy 21,000 m², comprising 50 m² in good ecological condition (rating B), 1,000 m² in fair ecological condition (rating C) and 20,000 m² in poor ecological condition (rating D). 55 indigenous plant species were recorded by the author.

Dominant canopy trees: *Eucalyptus ovata*.

Lower trees: *Acacia melanoxylon* dominates. *Acacia mearnsii* and *Exocarpos cupressiformis* are also present. The *Acacia dealbata* that used to be so abundant along the creek until the 1930s are absent.

Shrubs: The shrub layer is greatly depleted due to past slashing. *Bursaria spinosa*, *Cassinia aculeata*, *Coprosma quadrifida*, *Goodenia ovata* and *Ozothamnus ferrugineus* are present.

Vines: *Clematis aristata* and *Comesperma volubile* are present.

Ferns: No ferns were found. This is not a natural condition.

Ground flora: Densely grassy, dominated variously by *Microlaena stipoides*, *Austrostipa rudis*, *Themeda triandra* or *Poa morrisii* to very dense, dominated by *Gahnia radula*, *Microlaena stipoides* and *Rytidosperma* species (including the ecological indicator species, *Rytidosperma semiannulare*).

Plant species

The following plant species were observed by the author in 2001. Numerous others were reported in the *Victorian Naturalist* articles discussed under the heading 'Site description'. Some species not seen in the fieldwork for this study may have re-emerged since then in response to the ecological burn in 2002. The column headed 'Risk' indicates the indigenous species' risk of extinction in Knox with 'E'=Endangered and 'V'=Vulnerable. In addition, *Austrostipa rudis* subsp. *australis* is rare throughout Victoria.

Risk	Indigenous Species	Risk	Indigenous Species
V	<i>Acacia mearnsii</i>	E	<i>Eucalyptus viminalis</i> subsp. <i>viminalis</i>
V	<i>Acacia melanoxylon</i>	E	<i>Euchiton involucratus</i>
	<i>Acaena novae-zelandiae</i>	V	<i>Exocarpos cupressiformis</i>
	<i>Alisma plantago-aquatica</i>		<i>Gahnia radula</i>
	<i>Arthropodium strictum</i>	V	<i>Glyceria australis</i>
V	<i>Austrostipa rudis</i> subsp. <i>australis</i>		<i>Gonocarpus tetragynus</i>
	<i>Austrostipa rudis</i> subsp. <i>rudis</i>		<i>Goodenia ovata</i>
	<i>Burchardia umbellata</i>	E	<i>Hypericum gramineum</i>
	<i>Bursaria spinosa</i>	E	<i>Isolepis cernua</i> var. <i>platycarpa</i>
	<i>Carex appressa</i>	V	<i>Isolepis inundata</i>
	<i>Carex inversa</i>		<i>Juncus amabilis</i>
	<i>Cassinia arcuata</i>		<i>Juncus bufonius</i>
E	<i>Centella cordifolia</i>		<i>Juncus gregiflorus</i>
V	<i>Clematis aristata</i>		<i>Juncus sarophorus</i>
V	<i>Comesperma volubile</i>		<i>Lachnagrostis filiformis</i>
V	<i>Coprosma quadrifida</i>		<i>Lepidosperma ?elatius</i>
	<i>Deyeuxia quadriseta</i>		<i>Lomandra filiformis</i> subsp. <i>coriacea</i>
	<i>Dianella admixta</i>		<i>Lomandra longifolia</i>
V	<i>Dianella longifolia</i> s.l.	E	<i>Melaleuca ericifolia</i>
	<i>Dichondra repens</i>		<i>Microlaena stipoides</i>
V	<i>Drosera peltata</i> subsp. <i>auriculata</i>	V	<i>Opercularia ovata</i>
V	<i>Eleocharis acuta</i>		<i>Oxalis exilis/perennans</i>
	<i>Elymus scaber</i>	E	<i>Ozothamnus ferrugineus</i>
V	<i>Epilobium billardierianum</i> ssp. <i>cinereum</i>	E	<i>Pentapogon quadrifidus</i>
	<i>Eragrostis brownii</i>		<i>Persicaria decipiens</i>
V	<i>Eucalyptus cephalocarpa</i>		<i>Poa morrisii</i>
E	<i>Eucalyptus macrorhyncha</i>	E	<i>Poa tenera</i>
V	<i>Eucalyptus melliodora</i> (perhaps planted)	E	<i>Pomaderris aspera</i>
V	<i>Eucalyptus obliqua</i>		<i>Poranthera microphylla</i>
V	<i>Eucalyptus ovata</i>		<i>Rytidosperma geniculatum</i>
E	<i>Eucalyptus radiata</i>		<i>Rytidosperma laeve</i>

Risk	Indigenous Species	Risk	Indigenous Species
	<i>Rytidosperma penicillatum</i>		<i>Schoenus apogon</i>
	<i>Rytidosperma racemosum</i>		<i>Senecio quadridentatus</i>
E	<i>Rytidosperma semiannulare</i>		<i>Themeda triandra</i>
	<i>Rytidosperma setaceum</i>		<i>Tricoryne elatior</i>
	<i>Rytidosperma tenuius</i>	V	<i>Veronica gracilis</i>
Introduced Species			
	<i>Acacia longifolia</i> subsp. <i>longifolia</i>	<i>Dactylis glomerata</i>	<i>Paspalum dilatatum</i>
	<i>Agrostis capillaris</i>	<i>Ehrharta erecta</i>	<i>Paspalum distichum</i>
	<i>Aira</i> sp.	<i>Ehrharta longiflora</i>	<i>Phalaris aquatica</i>
	<i>Anagallis arvensis</i>	<i>Erigeron karvinskianus</i>	<i>Pittosporum undulatum</i>
	<i>Anthoxanthum odoratum</i>	<i>Galium aparine</i>	<i>Plantago lanceolata</i>
	<i>Briza maxima</i>	<i>Genista monspessulana</i>	<i>Poa annua</i>
	<i>Briza minor</i>	<i>Hedera helix</i>	<i>Prunus cerasifera</i>
	<i>Bromus catharticus</i>	<i>Holcus lanatus</i>	<i>Ranunculus repens</i>
	<i>Callitriche stagnalis</i>	<i>Hypochoeris radicata</i>	<i>Romulea rosea</i>
	<i>Centaurium erythraea</i>	<i>Isolepis levynsiana</i>	<i>Rubus anglocandicans</i>
	<i>Cerastium glomeratum</i> s.l.	<i>Juncus articulatus</i>	<i>Rumex crispus</i>
	<i>Cirsium vulgare</i>	<i>Leontodon taraxacoides</i>	<i>Sonchus oleraceus</i>
	<i>Conyza ?sumatrensis</i>	<i>Lolium perenne</i>	<i>Tradescantia fluminensis</i>
	<i>Cotoneaster pannosus</i>	<i>Lonicera japonica</i>	<i>Trifolium dubium</i>
	<i>Cynodon dactylon</i>	<i>Lotus subbiflorus</i>	<i>Vulpia bromoides</i>
	<i>Cyperus eragrostis</i>	<i>Oxalis incarnata</i>	<i>Watsonia meriana</i> var. <i>bulbillifera</i>

Notes concerning some of the locally threatened plant species

Austrostipa rudis subsp. *australis* (a subspecies of Veined Spear-grass). Abundant; possibly Knox's largest population.
Rytidosperma geniculatum (Knead Wallaby-grass). A patch of ½ m² was found in the northeastern corner near the creek.

Glyceria australis (Australian Sweet-grass). A dominant species in the wetland.

Isolepis platycarpa (a Club-rush). Reasonable numbers were found in one of the wetlands.

Pentapogon quadrifidus (Five-awned Spear-grass). Only one plant found, but others are bound to appear from time to time.

Fauna of special significance

Peaceful Dove was recorded by the Knoxfield U3A birdwatching group in 1996. This is apparently the only record of the species in Knox. The species was listed as regionally rare and of restricted distribution in the Land Conservation Council's Melbourne Area District 2 Review in 1991.

The Dandenong Freshwater Amphipod was first discovered in or near Bayswater Park and this is the type locality (i.e. the location of the specimens from which the species was originally defined). However, any habitat for this rare invertebrate was destroyed when Dandenong Creek was replaced by a barrel drain.

Fauna habitat features

- Some of the mature eucalypts have hollows suitable for nesting or roosting by native birds, bats, possums or insects. However, some of them are occupied by feral bees or Common Mynas, to the exclusion of native fauna;
- The many planted eucalypts provide a diversity of blossom for the abundant lorikeets. In other respects, the birdlife is mediocre due to absence of a shrub layer.
- The wetlands are being used for breeding by large numbers of frogs.

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 1.2.6 attributes **Local** significance to sites described as 'Important at local scale - Link between individual remnant habitat blocks or within subcatchment', which applies to this site. Criterion 1.1.1 attributes **Local** significance to 'All parts of riparian systems with riparian vegetation present', which might also be taken to apply to Bayswater Park, although the fact that the creek has been replaced by a barrel drain detracts substantially from this significance.

Endangered Vegetation Types

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

Rare or Threatened Plants

The statewide-rare *Austrostipa rudis* subsp. *australis* is abundant and clearly a viable population, thereby representing an important contribution to the taxon's conservation. This taxon is not endemic to Victoria (occurring also in Tasmania). These characteristics give the site **State** significance according to criterion 3.1.2.

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

Scientific and Educational Value

The series of reports about the site in *Victorian Naturalist* from 1906 to 1936, combined with more recent ecological surveys and efforts to rehabilitate the site's ecology, make Bayswater Park unique in Knox. This represents at least Local significance under criterion 5.1, and arguably Regional.

Threats

- Critically small population sizes of some plant species;
- Feral bees and introduced birds occupying tree hollows to the exclusion of native fauna;
- Invasion by environmental weeds (none presently very serious);
- Trampling.

Management issues

- Fire may regenerate one or more of the various rare orchid species that have disappeared from the reserve. Fire is discussed in the report, '*Fire in Knox Bushland Reserves 2001*' by Dr Lorimer for Knox City Council;
- The historical records from *Victorian Naturalist* provide good guidance about what plant species used to grow in the park and which ones would be desirable to re-establish (e.g. the original masses of *Patersonia occidentalis*, a very attractive wildflower);
- In particular, the shrub layer should be enriched by planting;
- Careful records of planting and rehabilitation works should be kept to maximise the benefit of the park's long historical records;
- Tree hollows should be monitored in spring to detect and evict nesting by undesirable species (e.g. Common Mynas).

Administration matters

- A post-fire botanical survey should be conducted to determine the effects of the ecological burn of 12/5/02;
- Visitors might appreciate a sign describing the historical Field Naturalists Club of Victoria visits and the floral wonders they encountered last century;
- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of its State significance, the endangered EVCs, the significant plant species and the importance of the park's vegetation in an educational and historical context;
- The Planning Scheme zoning is Public Park and Recreation Zone (PPRZ);
- The site is included under the existing Vegetation Protection Overlay Schedule 1 of the Knox Planning Scheme, albeit with slightly different boundaries obtained from Site 32 of the report by Water Ecoscience (1998).

Information sources used in this assessment

- A site survey by Dr Lorimer, mainly on 21/11/01, principally for the report, '*Fire in Knox Bushland Reserves 2001*' by Lorimer (2001). This followed nearly all of this study's standard procedures discussed in Section 2.4 of Volume 1 including mapping, descriptions of the vegetation composition, compilation of lists of indigenous and introduced plant species, incidental fauna observations, and checks for fauna habitat, ecological threats, management issues and populations of scarce or threatened plant species;
- A similar survey by Dr Lorimer and J.C. Reid in March and April 1997 for the 1997 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;
- Articles in *Victorian Naturalist* Volumes 23, 24, 26, 35, 46, 48 and 53 (from years 1906, 1907, 1909, 1918, 1929 and 1936 respectively) about field excursions to the site, as summarised in Andrew Paget's 1985 thesis for Bachelor of Applied Science (Landscape Architecture) at RMIT;
- A 1957 map of the area;

- 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.