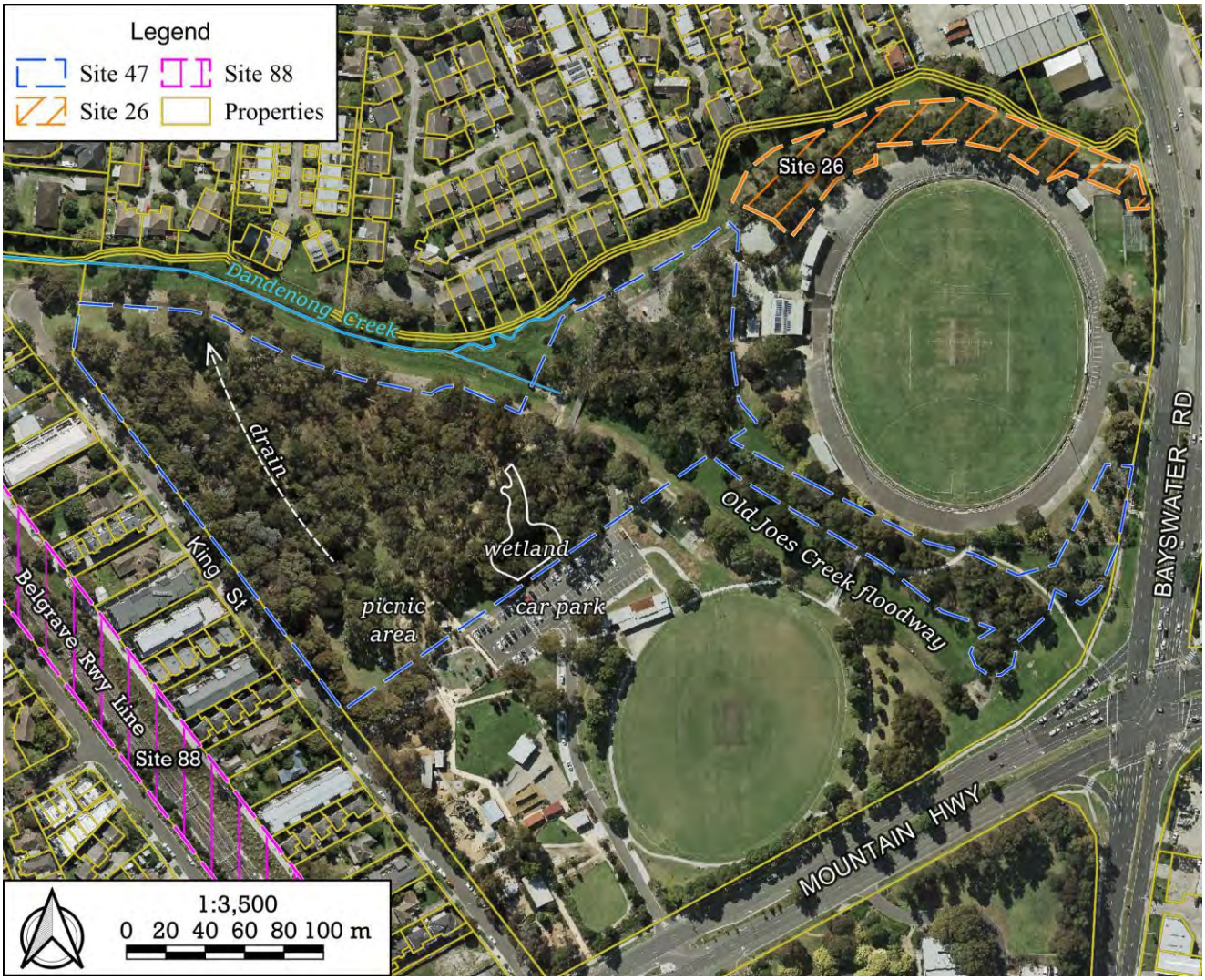
Site 46. Bayswater Park

Forested sections of a recreation reserve beside Dandenong Creek.

Summary of significant features:

- State significance: a patch of the regionally-endangered vegetation type, Swampy Woodland;
- State significance: an abundance of the spear-grass, *Austrostipa rudis* subspecies *australis*, which is listed as Endangered under Victorian law;
- Locally significant: viable populations of plant species threatened with dying out in Knox.
- Locally significant: Being on Dandenong Creek, the site is on a major corridor for daily and seasonal movements of birds and insects (particularly waterbirds).



Boundaries

This site is as outlined with blue dashes above, measuring 4.46 ha. The previous (2010) edition of this report did not include the (then rudimentary) strip of revegetation beside the Old Joes Creek floodway. It did include some trees in the southeast that have since died without replacement, resulting in a contraction of the boundary.

Land use & tenure: Forested part of a public park that also contains sporting and recreational facilities.

Site description

This site lies on the floodplain of Dandenong Creek, at elevations of 93–97 m. The natural land surface is almost flat but excavations have created the Old Joes Creek floodway, a drain for treating urban stormwater, a wetland next to the car park and two former ponds that have dried up near King St. The bedrock of Lower Devonian siltstone is part of the Humevale formation and has weathered to produce a heavy clay subsoil. The subsoil is covered with silty clay alluvium of variable depth, as well as clay fill in places due to the historical excavations.

No ponds or wetlands appear in a 1946 aerial photograph but a 1979 colour-infrared aerial photograph shows that three had been constructed by then: the current-day wetland next to the car park and two smaller ponds near King St that have since dried up. Today, the wetland near the car park contains a mixture of planted and natural plants, the latter having arrived by wind or on waterbirds. That wetland provides habitat for fauna from waterbirds and frogs to microscopic pondlife. One of the two ponds next to King St provided similar habitat until the Millennium Drought but the only signs of that today are a few rushes and three sickly leaves that look tantalisingly like one or other of the locally-threated twig-rushes, *Machaerina arthrophylla* or *Machaerina rubiginosa*. The other pond near King St dried up by the end of the 20th Century.

The drain marked on the aerial photograph above has been heavily planted to aid stormwater treatment, providing further wetland habitat – including for a pair of Buff-banded Rails in 2024.

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 four Red Stringybark trees (*Eucalyptus macrorhyncha*). Both Swampy Woodland and Valley Heathy Forest are regionally-endangered vegetation types. Many trees native to other parts of Australia have been planted since the 1970s, particularly beside the Dandenong Creek Trail and between the drain and King St.

The groundcover has a history of slashing for decades, which was reduced around the turn of the century to allow indigenous plants to regenerate. An ecological burn northeast of the drain was conducted for the same purpose in May 2002. The burn area has since deteriorated in ecological condition but there remains a large population of the spear-grass, *Austrostipa rudis* subsp. *australis*, which is listed as Endangered in Victoria. Conversely, approximately 0.2 ha between the drain and King St has significantly improved in ecological condition since the previous botanical survey in 2001, due to regeneration following reduced mowing.

The park's natural history through the first half of the twentieth century has fortunately been well documented contemporaneously in *The 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 *The 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 walteri, Microtis atrata, Prasophyllum frenchii, Sphaerolobium minus, Thelionema caespitosum, Thelymitra antennifera, Thelymitra aristata, Thelymitra carnea, Thelymitra flexuosa* and *Viminaria juncea*. (Some of these species were known under different names at the time.)

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 list above and in the inventory of Knox's plant species in Appendix B of Volume 1.

The reports over the years in *The 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 pipe beneath a floodway and not a single Silver Wattle remains. The shrub layer has been decimated by decades of slashing and the groundcover

appears to retain none of the vast number of orchids originally there, nor other rare plants except the abovementioned spear-grass.

The historical documentation in *The 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).

Bayswater Park 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 (2020): *'Biodiversity in Maroondah'*, Volume 2.

Bioregion: Gippsland Plain

Habitat types

Wetland (EVC 74, regionally Endangered but in this case, artificial): 0.1 ha in the wetland beside the car park and 0.1 ha along the drain; all in fair ecological condition (rating C).

Canopy trees: *Melaleuca ericifolia* forms thickets. There are also overhanging *Eucalyptus ovata, Acacia mearnsii* and *Acacia melanoxylon*.

Shrubs, vines and ferns: No indigenous species.

Groundcover: *Carex appressa*, *Glyceria australis*, *Persicaria decipiens* and (in places) *Phragmites australis* are fairly abundant. Some of the other species that have been recorded include *Alisma plantago-aquatica*, *Centella cordifolia, Eleocharis acuta, Juncus gregiflorus*, *J. sarophorus, Lepidosperma* ?*elatius* and *Schoenus apogon*.

Swampy Woodland (EVC 937, **regionally Endangered**): Estimated to occupy 2 ha, comprising 1 ha in fair ecological condition (rating C) and 1 ha in poor ecological condition (rating D).

Canopy trees: *Eucalyptus ovata* dominates, followed by *E. radiata* and small numbers of *E. obliqua* and *E. macrorhyncha*.

Sub-canopy 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 is 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.

Groundcover: 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 wild, indigenous plant species were recorded in the site by the author, during either his brief inspection in early August 2024 (an adverse time of year) or his intensive surveys in April 1997 and November 2001. Those not seen in 2024 are indicated by asterisks. Numerous other indigenous species were reported in *The Victorian Naturalist* articles from the early 20th Century, as discussed under the heading 'Site description' above. The column headed 'Risk' indicates the species' risk of dying out in Knox, with 'C'=Critically endangered, 'E'=Endangered, 'V'=Vulnerable and 'N'=Near threatened. In addition, *Austrostipa rudis* subsp. *australis* is Endangered throughout Victoria.

Indigenous mosses and liverworts
Calliergonella cuspidata, a moss
Campylopus introflexus, Heath Star Moss
Chiloscyphus semiteres, Green Worms
Eurhynchium praelongum, Common Feather-moss

Risk	Wild indigenous vascular species
V	*Acacia mearnsii*, Black Wattle
V	*Acacia melanoxylon*, Blackwood
	Acaena novae-zelandiae, Bidgee-widgee
N	*Alisma plantago-aquatica*, Water Plantain
	Anthosachne scabra, Common Wheat-grass*
	Arthropodium strictum, Chocolate Lily
V	*Austrostipa rudis* subsp. *australis*, Veined Spear-grass
	Austrostipa rudis subsp. *rudis*, Veined Spear-grass
	Burchardia umbellata, Milkmaids
	Bursaria spinosa, Sweet Bursaria
	Carex appressa, Tall Sedge
	Carex breviculmis, Short-stem Sedge
	Carex inversa, Knob Sedge*
	Cassinia aculeata, Common Cassinia
E	*Centella cordifolia*, Centella*
V	*Clematis aristata*, Mountain Clematis
	Clematis decipiens, a small-leafed clematis
E	*Comesperma volubile*, Love Creeper*
V	*Coprosma quadrifida*, Prickly Currant-bush
	Cotula australis, Common Cotula
	Deyeuxia quadriseta, Reed Bent-grass*
	Dianella longifolia var. *longifolia*, Pale Flax-lily
	Dianella revoluta, Black-anther Flax-lily*
	Dichondra repens, Kidney-weed
V	*Drosera auriculata*, Tall Sundew*
V	*Eleocharis acuta*, Common Spike-rush*
V	*Epilobium billardiereanum* subsp. *cinereum*, Variable Willow-herb*
	Eragrostis brownii, Common Love-grass*
E	*Eucalyptus cephalocarpa*, Mealy Stringybark*
V	*Eucalyptus goniocalyx*, Bundy
C	*Eucalyptus macrorhyncha*, Red Stringybark
E	*Eucalyptus obliqua*, Messmate Stringybark
V	*Eucalyptus ovata*, Swamp Gum
E	*Eucalyptus radiata*, Narrow-leaved Peppermint
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

Risk	Wild indigenous vascular species
E	*Hypericum gramineum*, Small St John's Wort*
	Isolepis inundata, Swamp Club-rush
V	*Isolepis platycarpa*, a club-rush*
	Juncus amabilis, Hollow Rush*
	Juncus bufonius, Toad Rush*
	Juncus gregiflorus, Green Rush
	Juncus sarophorus, Broom Rush
	Lachnagrostis filiformis, Common Blown-grass*
	Lepidosperma ?*elatius*, Tall Sword-sedge*
	Lomandra filiformis subsp. *coriacea*, Wattle Mat-rush
	Lomandra longifolia subsp. *longifolia*, Spiny-headed Mat-rush
E	*Melaleuca ericifolia*, Swamp Paperbark
	Microlaena stipoides, Weeping Grass
V	*Opercularia ovata*, Broad-leaf Stinkweed*
	Oxalis exilis/perennans, Wood-sorrel
V	*Ozothamnus ferrugineus*, Tree Everlasting
C	*Pentapogon quadrifidus* var. *quadrifidus*, Five-awned Spear-grass*
	Persicaria decipiens, Slender Knotweed
E	*Persicaria hydropiper*, Water-pepper*
E	*Persicaria lapathifolia*, Pale Knotweed*
E	*Phragmites australis*, Common Reed
	Poa morrisii, Soft Tussock-grass
E	*Poa tenera*, Slender Tussock-grass*
V	*Pomaderris aspera*, Hazel Pomaderris*
	Poranthera microphylla, Small Poranthera
E	*Potamogeton ochreatus*, Blunt Pondweed*
	Pteridium esculentum, Austral Bracken
	Rytidosperma geniculatum, Kneed Wallaby-grass*
	Rytidosperma laeve, Smooth Wallaby-grass*
	Rytidosperma penicillatum, Slender Wallaby-grass*
	Rytidosperma racemosum, Clustered Wallaby-grass
E	*Rytidosperma semiannulare*, Tasmanian Wallaby-grass*
	Rytidosperma setaceum, Bristly Wallaby-grass*
	Rytidosperma tenuius, Purplish Wallaby-grass*
	Schoenus apogon, Common Bog-rush
	Senecio quadridentatus, Cotton Fireweed*
	Themeda triandra, Kangaroo Grass
	Tricoryne elatior, Yellow Rush-lily
	Typha sp., a cumbungi
V	*Veronica gracilis*, Slender Speedwell

Notes concerning some of the plant species

Listed as Endangered under Victorian law

Austrostipa rudis subsp. *australis* (a subspecies of Veined Spear-grass) – abundant; possibly Knox's largest population.

Locally threatened

Rytidosperma geniculatum (Kneed Wallaby-grass) – A patch of ½ m² was found in the northeastern corner near the creek in 2001. The winter 2024 inspection was at the wrong time of year to detect this species.

Glyceria australis (Australian Sweet-grass) – abundant in the wetland.

Fauna of special significance

Listed as Critically Endangered under Victorian law

Dandenong Freshwater Amphipod – 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 pipe beneath a floodway.

Locally uncommon

Buff-banded Rails – uncommon in Knox; The author saw a pair near the picnic shelters in August 2024.

Sugar Glider (or Krefft's 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;
- 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 biological significance against the Department of Energy, Environment & Climate Action'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

The Swampy Woodland on the northeast side of the drain meets the definition of a 'remnant patch' adopted by the standard criteria, i.e. a continuous area of at least 0.25 ha that has a minimum of 10% cover of native understorey throughout. Swampy Woodland is a regionally-endangered EVC. According to *'Victoria's Native Vegetation Management – A Framework for Action'* (NRE 2002a), remnant patches of native vegetation belonging to a regionally-endangered EVC have a conservation significance rating of either High or Very High, depending on their ecological condition. In either case, standard criterion 3.2.3 of Amos (2004) translates the significance level to **State**.

Threatened Plant Species

The spear-grass, *Austrostipa rudis* subsp. *australis*, is listed under the *Flora and Fauna Guarantee Act* as Endangered in Victoria. (It was not listed at the time of the previous edition of this report.) It also occurs interstate. Any known habitat for such a species (as at Bayswater Park) meets criterion 3.1.2 for **State** significance.

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

Scientific and Educational Value

The series of reports about the site in *The 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

- Human-induced climate change, which is predicted to cause more severe droughts, heatwaves and storms, as well as substantially lower rainfall (particularly in winter);
- Decline of tree health, particularly the stringybarks (which are already in poor health). Possum browsing appears to be a major part of the trees' current ill-health. In addition, eucalypts are quite vulnerable to the abovementioned droughts and storms;
- Displacement of indigenous flora by environmental weeds, particularly Kikuyu Grass (*Cenchrus clandestinus*) and Cocksfoot (*Dactylis glomerata*);
- 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 scratched out buy a dog or struck by a falling tree limb;
- Trampling.

Management

- The historical records from *The 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 made, to maximise the benefit of the park's long historical records;
- It would be desirable to investigate whether measures can be taken to reduce the damage done to eucalypts by possums.

Strategic planning

- The previous (2010) edition of this report led to its smaller version of this site being covered by Schedule 2 of the Environmental Significance Overlay (ESO2). That edition justified the overlay by reference to the site's 'State significance, the endangered EVCs, the significant plant species and the importance of the park's vegetation in an educational and historical context'. The EVC and its condition are not significantly changed other than by changes to the site boundaries adopted here. The listing of the spear-grass, *Austrostipa rudis* subsp. *australis* as Endangered in Victoria has increased the site's biological significance. The site's historical aspects remain unchanged. The only recommended amendment to the overlay is to change its boundaries to match the ones adopted here;
- Schedule 1 of the Vegetation Protection Overlay (VPO1) covers a tiny part of the site delineated here. If the recommended changes to the ESO2 boundary are adopted, it would be appropriate to amend the VPO1 boundary so the two do not overlap;
- The park is zoned Public Park and Recreation Zone (PPRZ).

Information sources used in this assessment

- Articles in *The 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;
- An ecological survey by Dr Lorimer, mainly on 21/11/01, principally for the report, *'Fire in Knox Bushland Reserves 2001'* by Lorimer (2001). This included 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;
- An inspection of the reserve by Dr Lorimer on 1st & 10th August 2024 for this report;
- Records of flora and fauna observations stored in the Atlas of Living Australia;

- A 1957 map of the area;
- 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.