

Site 23. Sugarloaf Hill, Boronia

A prominent, treed hill near the foot of the Dandenong Ranges, with the floodplain of Dandenong Creek at its base. The site includes parts of Miller Park and the Salvation Army's 'Boronia Corps' property, and some private residential properties.

Summary of significant features:

- Nationally significant: known habitat for the flat-pea, *Platylobium infecundum*, which is critically endangered globally;
- State significance: patches of five Ecological Vegetation Classes that are regionally endangered and one that is regionally vulnerable, in good condition;
- Regionally significant: apparently high-quality habitat for Powerful Owl, which has been observed nearby and is listed as vulnerable in Victoria;
- Locally significant: habitat for viable populations of some locally-threatened plant species.

Aerial photograph and plan: See page 159, which covers this site, Liverpool Road Retarding Basin and Dobson's treed paddock.

Note: Permission was not obtained to enter the private properties for this edition, so they were inspected from public land, assisted by aerial photographs. Some native understorey would have gone undetected.

Boundaries

The site comprises the area outlined in magenta on the aerial photograph of p. 159, measuring 17.3 ha. Removal of native vegetation since the first edition of this report has led this edition to excise four small lots at the corner of Tolhurst Av and Torresdale Dr, as well as the western end of 69 Torresdale Dr. The boundary follows cadastral boundaries or fences wherever feasible, but this is not reasonable along the site's southern edge, where a boundary is drawn to circumscribe all the crowns of trees within the continuous area of native vegetation. Each lot contains a section that is not biologically significant in itself, but whole lots are included within the site boundary wherever reasonable because the welfare of the significant habitat is strongly linked to what occurs elsewhere on the properties.

Land use & tenure: Several private residential lots, the adjoining edge of a Council sports reserve and the treed part of a Salvation Army property.

Site description

Sugarloaf Hill is a small but prominent foothill to the Dandenong Ranges. It is formed from 'Coldstream rhyolite', which is the result of a Devonian upwelling of magma. At an elevation of 179 m (Australian Height Datum), its summit rises 50 m above the surrounding floodplain of Dandenong Creek. The areas marked on the aerial photograph as 'Swampy Woodland' correspond to places where the floodplain extends into the site around its perimeter.

The soil of the floodplain is alluvium that has been deposited there by Dandenong Creek in flood. It supports quite different vegetation from the stonier, less friable and more freely drained loam and clay of the hill slopes. Tree stature and vegetation composition on the hill also varies from the sunnier northern slopes to the southern slopes.

Most of the site has been subject to past grazing and clearing of vegetation, after which the native vegetation has regenerated. The most sensitive plant species that would once have occurred there (particularly orchids) have been lost through clearing, grazing, slashing and reduced fire frequency, but there is still a fairly high number of indigenous plant species and some uncommon ones.

It is quite possible that the vegetation marked on the aerial photograph as 'Bundy Woodland' was substantially different prior to European settlement. It may once have been partly Box-Stringybark Woodland (part of EVC 22) and then lost most of the characteristic Red Stringybark (*Eucalyptus macrorhyncha*) because that species is much less capable of regenerating after clearing and grazing than the Bundy (*Eucalyptus goniocalyx*) which dominates today. It is shown on the Victorian Government's 'NatureKit' website as partly 'Grassy Forest' (EVC 128) even though it does not conform to the published descriptions of Grassy Forest. As explained in Appendix

A of Volume 1, the name 'EVC 128a – Grassy Forest variant' has been coined in this report for such vegetation to distinguish it from typical Grassy Forest.

The area marked on the aerial photograph (and the Victorian Government's 'NatureKit' website) as Valley Heathy Forest may once have been very similar to the hilltop vegetation, but it differs now in the presence of a dense layer of the prickly shrub, *Bursaria spinosa*. This layer may not have been present 200 years ago but its presence is typical of previously grazed Valley Heathy Forest.

The Salvation Army property contains some of the most significant vegetation of the whole site, including viable populations of some plant species threatened with local extinction in Knox. It also has localised areas of ecological degradation. Some areas of bushland have been used for campfires, tree climbing and other outdoor activities, which has caused slight to moderate damage to the vegetation. There has been extensive dumping of soil and rubbish to the east of the main north-south track where it enters the forest, initiating a problem of environmental weeds spreading into the surrounding significant vegetation. A garden at the northern end of the property was abandoned at the end of the 20th Century and by 2002, it was being colonised mostly by blackberry in the west and native vegetation in the east (particularly by *Ozothamnus ferrugineus*, *Pteridium esculentum* and *Melaleuca ericifolia*). The former garden was not inspected for this edition.

The properties that front Tolhurst Avenue and Torresdale Drive have been subjected to widely varying levels of recent grazing, clearing, excavation, slashing and planting. The degree of ecological degradation increases down the slope, so that the Swampy Woodland is represented by little more than trees and some rushes. These properties were only inspected from their boundaries, but in 2002, the author still found fifty indigenous plant species at a poor time of year. Some of these species are threatened with dying out in Knox.

The northeastern end of Miller Park is periodically slashed, but with a degree of sensitivity so that indigenous ground flora can survive (and flourish in some patches). It contains substantial populations of sun-orchids, greenhood orchids, bird-orchids and onion-orchids, as well as small populations of many local wildflowers. Fifty-eight indigenous plant species were found there in 2023 (compared with fifty in 2002) and about ten more would probably be found in a summer inspection. There has also been revegetation on the embankment of the oval, which complements the adjacent remnant habitat.

Despite past clearing, the site supports a substantial number of large old trees. This is significant because of the importance of such trees for nesting and roosting of wildlife (bats, birds, possums) and their severe depletion in Knox and the metropolitan area as a whole.

Relationship to other land

The site is treated in this report as separate from Liverpool Road Retarding Basin (Site 21) only because of the difference between the two sites' land uses and ownership. Ecologically, the two sites function as one and the conservation values of one cannot be considered in isolation from the other.

There are few ecological barriers for birds, bats, insects and pollen to travel between these sites and the large area of contiguous native vegetation in the Dandenong Ranges. The trees along Dandenong Creek and Pavitt Lane provide an almost continuous corridor. Dobson's treed paddock (Site 21) is nearby on the other side of Liverpool Rd, and it is close to vegetated corridors along Dobson's Creek (Site 20) and Mountain Hwy (Site 92). There are also patches of remnant vegetation downstream along the Dandenong Creek drain and other patches every few hundred metres to the north of the site, in Maroondah municipality (see Lorimer 2020).

There are some mature remnant trees (but no understorey) adjacent to the site in the backyards of several houses on Beresford Dr and Paloma Ct. These are included within Site 99.

Bioregion: Gippsland Plain (although in some respects, the Lowland Forest might be regarded as having greater affinity with the nearby Highlands Southern Fall).

Habitat types

The following descriptions have only been updated from the previous (2010) edition of this report by the addition of a few species that the author saw from public land in 2023–2024. Some of the area sizes are likely to be out of date.

Lowland Forest (EVC 16, regionally Vulnerable): 4 hectares in total, comprising approximately 8,600 m² in good ecological condition (rating B), 16,400 m² in fair ecological condition (rating C) and 15,000 m² in poor

ecological condition (rating D). At least 98 indigenous plant species found, including 2 subspecies of one species.

Canopy trees: Dominated by *Eucalyptus obliqua* typically 22–25 m tall, with far fewer *E. radiata*. In places, there are also some *E. cephalocarpa*, *E. ovata* or *E. goniocalyx* that might be construed as outliers of adjacent EVCs.

Sub-canopy trees: *Acacia melanoxylon* and *Exocarpos cupressiformis* are present in varying density, mostly less than 10 m tall.

Shrubs: Moderately dense where allowed to accumulate, but thin where suppressed by grazing or manual removal. Dominated by various combinations of *Cassinia aculeata*, *Bursaria spinosa* and *Leptospermum scoparium*, and with substantial numbers of *Acacia verticillata* and *Pultenaea gunnii*. *Melaleuca ericifolia* intrudes from adjoining Swampy Woodland. Members of the Proteaceae family are uncharacteristically absent, perhaps due to past clearing.

Ferns: Bracken is abundant almost throughout, except where it is suppressed by slashing.

Groundcover: At maturity, dense, ferny, knee-deep and with an abundance of the wiry grass *Tetrarrhena juncea*, often sharing dominance with *Gahnia radula* or *Pteridium esculentum*. Other abundant species are *Lomandra* species, *Acrotriche prostrata* and *Goodenia lanata*. Tufted grasses, particularly *Austrostipa rudis* and *Themeda triandra*, are present but in low density except where slashing or mowing suppresses the bracken and *Tetrarrhena juncea* (as in Miller Park).

Swamp Scrub (EVC 53, regionally Endangered): A small amount extends into the southeast of the site from Liverpool Rd Retarding Basin. Total area 640 m², equally divided between ecological conditions C (fair) and D (poor). 18 indigenous plant species found.

Canopy trees: Dominated by 8 m-tall *Melaleuca ericifolia* dominates, reaching up to 70% cover but with gaps. There are also emergent *Eucalyptus ovata* and *Acacia melanoxylon*.

Sub-canopy trees: *Pittosporum undulatum* is conspicuous beneath the canopy.

Shrubs: Sparse, comprising *Coprosma quadrifida* and *Senecio minimus*.

Vines: None.

Ferns: *Cyathea australis* and *Blechnum minus* occur in clusters and are the most prominent features of the ground flora.

Groundcover: Apart from the ferns, there are sparse patches of *Triglochin striatum*, *Juncus*, *Isolepis inundata*, grasses and *Lobelia anceps*.

Wetland (EVC 74, listed as regionally Endangered, but artificially created in this case): A small dam within Lowland Forest on the Salvation Army property, apparently not holding much water in recent years. Dimensions not recorded, but estimated at roughly 100 m². In fair ecological condition (rating C). Four indigenous species found: *Isolepis inundatus*, *Juncus greigiflorus*, *J. holoschoenus*, *J. procerus*.

Valley Heathy Forest (EVC 127, regionally Endangered): 8,000 m² in total, comprising approximately 7,000 m² in good ecological condition (rating B) and 1,000 m² in poor ecological condition (rating D). 90 indigenous plant species found. Two other species (*Cassinia trinerva* and *Ranunculus lappaceus*) were recorded by Andrew Paget in 1985.

Canopy trees: Dominated by *Eucalyptus goniocalyx*, 10–15 m tall, 30–40% foliage cover.

Sub-canopy trees: Scattered *Exocarpos cupressiformis*, 12 m tall and fewer *Acacia melanoxylon*.

Shrubs: Mostly up to 2–3 m tall, dense (typically 60% foliage cover), with abundant *Bursaria spinosa* and *Acacia stricta*.

Vines: *Pandorea pandorana* is quite common, as are the light twiners *Billardiera mutabilis* and *Glycine clandestina*.

Creepers: Fairly abundant, including *Dichondra repens*, *Goodenia lanata*, *Oxalis perennans* and *Platylobium infecundum*.

Ferns: *Adiantum aethiopicum* is abundant. *Pteridium esculentum* is very scarce.

Groundcover: A layer typically 20–30 cm deep with a foliage cover of approximately 80% in mature vegetation. Dominated by *Themeda triandra*, with *Austrostipa rudis* also abundant. The grasses *Poa morrisii* and *Microlaena stipoides* are not abundant, as they are in the adjoining Grassy Forest variant, and *Gahnia radula* is very scarce. The most abundant other species are *Adiantum aethiopicum*, *Dichondra repens*, *Opercularia varia* and *Pimelea humilis*. The groundcover species are a subset of those in the Grassy Forest variant, perhaps lower in diversity due to the density of *Bursaria*.

EVC 128a – Grassy Forest variant (Bundy Woodland) (treated by the Department of Energy, Environment & Climate Action as part of EVC 128, which is **regionally Endangered**): Total area 8.0 hectares, of which approximately 5.0 ha is in good ecological condition (rating B), 1.5 ha is in fair ecological condition (rating C) and 1.5 ha is in poor ecological condition (rating D). 71 indigenous plant species were found, including 6 that are rare or threatened in Knox. One other (*Ranunculus lappaceus*) was found by AN Paget in 1985.

Canopy trees: Dominated by *Eucalyptus goniocalyx* and very few *E. macrorhyncha*, to 15 m tall, 25% foliage cover, with plenty of open sky between the tree crowns.

Sub-canopy trees: *Exocarpos cupressiformis* 12 m tall, liberally scattered.

Shrubs: Mostly up to 2–3 m tall and sparse, allowing visibility up to 100 m. In most of the area, *Acacia stricta* dominates with fewer *Cassinia aculeata*. *Bursaria spinosa* is not dense, as it is in the Valley Heathy Forest.

Vines: *Pandorea pandorana* is quite common in localised patches. Light twiners are common: *Billardiera mutabilis*, *Comesperma volubile*, *Glycine clandestina* and *Hardenbergia violacea*. Creepers are also abundant, particularly *Dichondra repens*, *Goodenia lanata* and (after fire) *Kennedia prostrata*.

Ferns: Scarce. *Adiantum aethiopicum* occurs around some rocks. *Pteridium esculentum* is notably absent.

Groundcover: A layer typically less than 30 cm deep with a foliage cover of nearly 100% in mature vegetation. Dominated in patchwise fashion by different species, *Themeda triandra* being most common, then *Austrostipa rudis* and *Lomandra filiformis* subsp. *coriacea*, and locally *Goodenia lanata*. The grasses *Poa morrisii* and *Microlaena stipoides* are abundant but not dominant, as is *Carex breviculmis*. There are numerous small wildflowers, the most frequent being *Arthropodium strictum*, *Brunonia australis*, *Gonocarpus tetragynus*, *Goodenia lanata*, *Hovea heterophylla*, *Hypericum gramineum*, *Pimelea humilis* and *Poranthera microphylla*. Notably, *Gahnia radula* is completely absent.

Swampy Woodland (EVC 937, **regionally Endangered**): Total area 16,000 m², of which approximately 50 m² is in fair ecological condition (rating C, in the southeastern patch) and the remainder is in poor ecological condition (rating D). 35 indigenous plant species found.

Canopy trees: Almost pure *Eucalyptus ovata*, 20–25 m tall, fairly sparse.

Sub-canopy trees: *Acacia melanoxydon* 10–12 m tall and fewer *Melaleuca ericifolia* 10 m tall.

Tall Shrubs: Dominated by *Ozothamnus ferrugineus* up to 6 m tall in the north, and by *Leptospermum scoparium* and *Bursaria spinosa* 3–4 m tall in the southeast. *Cassinia aculeata* is common but not dominant. The density of tall shrubs is variable, becoming high in regrowth several years old. *Coprosma quadrifida* is uncharacteristically scarce.

Lower Shrubs: *Senecio minimus* is abundant in the northern patch. *Goodenia ovata* is uncharacteristically scarce.

Vines: Sparse *Pandorea pandorana*; patches of *Rubus anglocandicans* and *Lonicera japonica*.

Ferns: *Pteridium esculentum* is very dense in one patch of the abandoned garden but ferns are otherwise absent.

Groundcover: Variable due to human modification, and almost totally destroyed on the residential properties. On the Salvation Army property, *Phragmites australis* dominates one patch and other conspicuous species are *Gonocarpus tetragynus*, *Lepidosperma elatius*, *Microlaena stipoides* and *Austrostipa rudis*.

Plant species

The following plant species have been recorded as growing wild in Site 23. Indigenous species names with asterisks were seen in the author's brief inspection from public land in 2023; the other species were recorded between 2000 and 2003 (or in 1985, in a few cases). For indigenous ferns and flowering species, the column headed 'Risk' indicates their risk of dying out in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; 'V'=Vulnerable; 'N'=Near threatened. In addition, species with names in bold are rare throughout the Melbourne area.

Indigenous mosses & liverworts

Chiloscyphus semiteres, Green Worms*
Campylopus introflexus, Heath Star Moss*
Thuidiopsis furfurosa, Golden Weft-moss*

Risk Indigenous vascular species

Fern species

V *Adiantum aethiopicum*, Common Maidenhair
 C ***Blechnum minus***, Soft Water-fern
 C *Cyathea australis*, Rough Tree-fern
 C ***Histiopteris incisa***, Bat's Wing Fern

Risk Indigenous vascular species

- V *Lindsaea linearis*, Screw Fern
Pteridium esculentum, Austral Bracken*
- Flowering species
- V *Acacia mearnsii*, Black Wattle*
V *Acacia melanoxylon*, Blackwood*
Acacia paradoxa, Hedge Wattle
V *Acacia pycnantha*, Golden Wattle
E *Acacia stricta*, Hop Wattle*
V *Acacia verticillata*, Prickly Moses*
V *Acaena echinata*, Sheep's Burr
Acaena novae-zelandiae, Bidgee-widgee
V *Acrotriche prostrata*, Trailing Ground-berry*
E *Acrotriche serrulata*, Honey-pots
C *Amyema pendula*, Drooping Mistletoe
E *Amyema quandang*, Grey Mistletoe
Arthropodium strictum, Chocolate Lily
Austrostipa rudis subsp. *rudis*, Veined Spear-grass*
Billardiera mutabilis, Common Apple-berry*
N *Bossiaea prostrata*, Creeping Bossiaea
V *Brunonia australis*, Blue Pincushion
Burchardia umbellata, Milkmaids
Bursaria spinosa, Sweet Bursaria*
V *Caesia parviflora*, Pale Grass-lily*
Carex breviculmis, Short-stem Sedge*
Cassinia aculeata, Common Cassinia*
Cassinia longifolia, Shiny Cassinia
C *Cassinia trinerva*, Three-nerved Cassinia
E *Centella cordifolia*, Centella
V *Chiloglottis valida*, Common Bird-orchid*
V *Clematis aristata*, Mountain Clematis
E *Comesperma volubile*, Love Creeper
C *Coprosma hirtella*, Rough Coprosma (doubtful)
V *Coprosma quadrifida*, Prickly Currant-bush*
C *Coronidium scorpioides*, Button Everlasting*
C *Correa reflexa* var. *reflexa*, Common Correa
C *Daviesia latifolia*, Hop Bitter-pea*
Deyeuxia quadriseta, Reed Bent-grass
Dianella longifolia var. *longifolia*, Pale Flax-lily
Dianella revoluta, Black-anther Flax-lily
Dichelachne rara, Common Plume-grass
Dichondra repens, Kidney-weed*
V *Dillwynia cinerascens*, Grey Parrot-pea*
E *Dipodium roseum*, Rosy Hyacinth-orchid
V *Drosera auriculata*, Tall Sundew*
C *Epacris impressa*, Common Heath
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*

Risk Indigenous vascular species

- Euchiton japonicus*, Creeping Cudweed
E *Euchiton ?sphaericus*, Star Cudweed
V *Exocarpos cupressiformis*, Cherry Ballart*
E *Exocarpos strictus*, Pale-fruit Ballart
C *Gahnia radula*, Thatch Saw-sedge*
E *Gahnia sieberiana*, Red-fruit Saw-sedge
E *Glycine clandestina*, Twining Glycine
V *Gonocarpus humilis*, Shade Raspwort
Gonocarpus tetragynus, Common Raspwort*
N *Goodenia lanata*, Trailing Goodenia*
Goodenia ovata, Hop Goodenia*
C *Hackelia suaveolens*, Sweet Hound's-tongue
E *Hardenbergia violacea*, Purple Coral-pea*
V *Hemarthria uncinata*, Mat Grass*
C *Hookerchloa hookeriana*, Hooker Fescue
C *Hovea heterophylla*, Common Hovea*
E *Hydrocotyle foveolata*, Yellow Pennywort
V *Hydrocotyle hirta*, Hairy Pennywort
E *Hypericum gramineum*, Small St John's Wort
C *Indigofera australis*, Austral Indigo
Isolepis inundata, Swamp Club-rush
Juncus amabilis, Hollow Rush
Juncus bufonius, Toad Rush*
Juncus gregiflorus, Green Rush
C *Juncus fockei/holoschoenus*, a joint-leaf rush
Juncus pallidus, Pale Rush*
E *Juncus planifolius*, Broad-leaf Rush
E *Juncus procerus*, Tall Rush
E *Juncus subsecundus*, Finger Rush
C *Kennedia prostrata*, Running Postman
Kunzea ericoides group, Burgan
Lachnagrostis filiformis, Common Blown-grass
E *Lagenophora adenosa/stipitata*, a bottle-daisy
V *Lagenophora sublyrata*, Slender Bottle-daisy
Laphangium luteoalbum, Jersey cudweed
Lepidosperma elatius, Tall Sword-sedge
V *Lepidosperma laterale*, Variable Sword-sedge
C *Leptospermum continentale*, Prickly Tea-tree*
Leptospermum scoparium, Manuka
E *Linum marginale*, Native Flax
E *Lobelia anceps*, Angled Lobelia
Lomandra filiformis subsp. *coriacea*, Wattle Mat-rush*
Lomandra filiformis subsp. *filiformis*, Wattle Mat-rush*
Lomandra longifolia subsp. *exilis*, Cluster-headed Mat-rush*
Lomandra longifolia subsp. *longifolia*, Spiny-headed Mat-rush*
C *Lomandra multiflora*, Many-flowered Mat-rush*
V *Luzula meridionalis*, Common Woodrush
Lythrum hyssopifolia, Lesser Loosestrife
E *Melaleuca ericifolia*, Swamp Paperbark
Microlaena stipoides, Weeping Grass*

Risk Indigenous vascular species

- V *Microtis parviflora*, Slender Onion-orchid
 C *Muellerina eucalyptoides*, Creeping Mistletoe
 E *Olearia lirata*, Snowy Daisy-bush*
 V *Opercularia ovata*, Broad-leaf Stinkweed
 V *Opercularia varia*, Variable Stinkweed
Oxalis exilis/perennans, Wood-sorrel*
 V *Ozothamnus ferrugineus*, Tree Everlasting
Pandorea pandorana, Wonga Vine*
 E *Phragmites australis*, Common Reed
 E *Pimelea humilis*, Common Rice-flower
 E ***Platylobium infecundum*, a flat-pea***
 E *Poa labillardierei*, Common Tussock-grass
Poa morrisii, Soft Tussock-grass*
 E *Poa tenera*, Slender Tussock-grass
 V *Polyscias sambucifolia*, Elderberry Panax
Poranthera microphylla, Small Poranthera*
Pterostylis nutans, Nodding Greenhood
 V *Pultenaea gunnii*, Golden Bush-pea*
 C *Pultenaea hispidula*, Rusty Bush-pea (doubtful)
 C *Ranunculus lappaceus*, Australian Buttercup
 E *Rubus parvifolius*, Small-leaf Bramble
Rytidosperma laeve, Smooth Wallaby-grass*
 E *Rytidosperma pallidum*, Red-anther (or
 Silvertop) Wallaby-grass
Rytidosperma penicillatum, Slender Wallaby-
 grass
Rytidosperma racemosum, Clustered Wallaby-
 grass
Rytidosperma setaceum, Bristly Wallaby-grass
Rytidosperma tenuius, Purplish Wallaby-grass
Schoenus apogon, Common Bog-rush
Senecio hispidulus, Rough Fireweed
Senecio minimus, Shrubby Fireweed
 V *Senecio prenanthoides*, Common Fireweed
Senecio quadridentatus, Cotton Fireweed
 V *Solanum laciniatum*, Large Kangaroo Apple*
 V *Spyridium parvifolium*, Australian Dusty
 Miller*
 E *Stackhousia monogyna/subterranea*, Candles
 E *Stylidium armeria*, Common Triggerplant*
Tetrarrhena juncea, Forest Wire-grass*
 C *Tetralochea ciliata*, Pink-bells
 E *Thelymitra ?peniculata*, Trim Sun-orchid*
Themeda triandra, Kangaroo Grass
 V *Triglochin striata*, Streaked Arrow-grass
 C *Veronica calycina*, Hairy Speedwell*
 E *Veronica plebeia*, Trailing Speedwell
 E *Viola hederacea*, Ivy-leaf Violet*
 E *Xanthorrhoea minor*, Small Grass-tree
 V *Xanthosia dissecta*, Cut-leaf Xanthosia

Wild introduced species

- Acacia baileyana*, Cootamundra Wattle
Acacia longifolia subsp. *longifolia*, Sallow Wattle
Acetosella vulgaris, Sheep Sorrel
Agrostis capillaris, Brown-top Bent

Wild introduced species

- Aira elegantissima*, Delicate Hair-grass
Anthoxanthum odoratum, Sweet Vernal-grass
Arbutus unedo, Irish Strawberry Tree
Asparagus scandens, Asparagus Fern
Briza maxima, Large Quaking-grass
Bromus catharticus, Prairie Grass
Cassinia sifton, Sifton Bush*
Cenchrus clandestinus, Kikuyu
Centaurium erythraea, Common Centaury
Chenopodium album, Fat Hen
Cirsium vulgare, Spear Thistle
Conium maculatum, Hemlock
Coprosma repens, Mirror-bush
Cordyline australis, New Zealand Cabbage Tree
Cortaderia selloana, Pampas Grass
Cotoneaster glaucophyllus, Cotoneaster
Cotoneaster pannosus, Cotoneaster
Cotoneaster simonsii, Himalayan Cotoneaster
Crataegus monogyna, Hawthorn
Crepis capillaris, Smooth Hawksbeard
Cynodon dactylon, Couch
Cyperus eragrostis, Drain Flat-sedge
Dactylis glomerata, Cocksfoot
Delairea odorata, Cape Ivy
Ehrharta erecta, Panic Veldt-grass
Erica lusitanica, Spanish Heath
Erigeron sumatrensis, Fleabane
Galium aparine, Cleavers
Genista linifolia, Flax-leafed Broom
Genista monspessulana, Montpellier Broom
Hedera helix/hibernica, Ivy
Helminthotheca echioides, Ox-tongue
Holcus lanatus, Yorkshire Fog
Hypochaeris radicata, Cat's Ear
Ilex aquifolium, Holly
Isolepis levynsiana, Tiny Flat-sedge
Leontodon saxatilis, Lesser Hawkbit
Ligustrum vulgare, European Privet
Linum trigynum, French Flax
Lolium sp., a rye-grass
Lonicera japonica, Japanese Honeysuckle
Lotus uliginosus, Greater Bird's-foot Trefoil
Lysimachia arvensis, Pimpernel
Malva parviflora, Small-flowered Mallow
Modiola caroliniana, Carolina Mallow
Oxalis sp., a wood-sorrel
Paspalum dilatatum, Paspalum
Phalaris aquatica, Toowoomba Canary-grass
Pinus radiata, Monterey Pine
Pittosporum undulatum, Sweet Pittosporum
Plantago lanceolata, Ribwort
Plantago major, Greater Plantain
Prunella vulgaris, Self-heal
Pseudoscleropodium purum, Neat Feather-moss*
Ranunculus repens, Creeping Buttercup
Raphanus raphanistrum, Wild Radish

Wild introduced species

Romulea rosea, Common Onion-grass
Rubus anglocandicans, Blackberry
Rumex crispus, Curled Dock
Rumex obtusifolius, Broad-leaf Dock
Setaria parviflora, Slender Pigeon Grass
Sisymbrium orientale, Indian Hedge Mustard
Sisyrinchium micranthum, Blue Pigroot
Solanum mauritianum, Tobacco-bush
Solanum nigrum, Black Nightshade
Sonchus oleraceus, Sow-thistle

Wild introduced species

Sporobolus africanus, Rat-tail Grass
Symphotrichum subulatum, Aster-weed
Taraxacum sect. *Taraxacum*, Garden Dandelion
Tradescantia fluminensis, Wandering Trad
Trifolium fragiferum, Strawberry Clover
Trifolium repens, White Clover
Vicia sp., a vetch
Vinca major, Blue Periwinkle
Watsonia marginata, Bordered Watsonia

Notes concerning some of the plant species

Blechnum minus (Soft Water-fern). Twelve plants found in the Swamp Scrub in 2002.

Cassinia trinerva (Three-nerved Cassinia). Recorded by AN Paget in 1985 on the Salvation Army property in Valley Heathy Forest.

Correa reflexa (Common Correa). Seen at Miller Park in 2003 but unable to be found there in 2023.

Hackelia suaveolens (Sweet Hound's-tongue). Three plants found in the Grassy Forest variant in 2002.

Gonocarpus humilis (Shade Raspwort). Eight plants found in 2002 in the east of the Salvation Army property, where unable to be checked in this study.

Histiopteris incisa (Bat's Wing Fern). One plant found at the site's northern extremity in 2003, probably a transient occurrence of this opportunistic species in the young regenerating vegetation at that time.

Hydrocotyle foveolata (Yellow Pennywort). One patch found on private land next to Miller Park; probably still present.

Juncus fockei/holoschoenus (a joint-leaf rush). Four plants found in the dam in 2002; unable to be checked in this study.

Kennedia prostrata (Running Postman). Numerous in recently-burnt patches in the Grassy Forest variant in 2002; unable to be checked in this study.

Lagenophora adenosastipitata (Common Lagenophora). One large patch found in Miller Park in 2003; not found in 2023.

Linum marginale (Native Flax). Found in Lowland Forest slightly south of the Valley Heathy Forest in 2002; unable to be checked in this study.

Lomandra multiflora (Many-flowered Mat-rush). Three plants were discovered at Miller Park in this study's 2023 inspection. Several neighbouring plants may also be this species but their identity could not be confirmed due to absence of fertile material. The only other wild occurrence of this species in Knox since 2002 is of two plants at Wicks East Nature Reserve (Site 15b), last confirmed in 2021.

Platylobium infecundum (a flat-pea). Critically endangered, globally; Abundant and widespread within the site.

Ranunculus lappaceus (Australian Buttercup). Recorded by AN Paget in 1985 on the Salvation Army property.

Tetratheca ciliata (Pink-bells). Two plants found in the Grassy Forest variant on the Salvation Army property in 2002; unable to be checked in this study.

Triglochin striatum (Streaked Arrow-grass). A patch of 1 m² grew in the Swamp Scrub and is probably still there.

Veronica calycina (Hairy Speedwell). A few plants seen in and north of Miller Park, including in 2023.

Veronica plebeia (Trailing Speedwell). Thriving patches were seen in the northeast of the Lowland Forest in 2002; unable to be checked in this study.

Fauna of special significance

The Powerful Owl is listed as vulnerable under Victorian law. It is very likely to visit occasionally (but not actually observed). It was observed to roost in nearby Site 20 in 2002 but there has been no follow-up search.

In addition, the habitat features suggest the likelihood of rich wildlife that may well include significant species such as Swamp Skinks, which have been seen in the adjacent Liverpool Road Retarding Basin property.

Fauna habitat features

- A substantial sized area of bushland with diverse composition, from swampy ground to tall, moist forest and low, grassy woodland, and much of it in good condition;
- The site is part of a major stepping-stone on the Dandenong Creek habitat corridor;
- Well connected to the large area of contiguous native vegetation in the Dandenong Ranges;
- There are many large, old trees with hollows;
- In parts of the Salvation Army property, there is good cover for wrens and ground-dwelling fauna such as reptiles, including logs and dense undergrowth;
- The dam is habitat for pondlife, including frogs;
- Fauna on this site never need to travel further than the dam or the neighbouring wetlands in Liverpool Road Retarding Basin to obtain water, even during drought.

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

Together with Liverpool Road Retarding Basin, the site is a major 'stepping stone' on the Dandenong Creek habitat corridor. It follows from criterion 1.2.6 that this attribute of the site is of **Regional** significance.

Vegetation Type and Condition

According to the criteria of '*Victoria's Native Vegetation Management – A Framework for Action*' (NRE 2002a), a 'remnant patch' of a regionally-endangered EVC has a conservation significance rating of High or Very High, depending on its habitat score. Standard criterion 3.2.3 translates both the 'High' and 'Very High' ratings to **State** significance. All the EVCs in Site 23 except Lowland Forest and Wetland are represented by 'remnant patches' that fall into this category. Lowland Forest is regionally vulnerable and its habitat score in part of this site is clearly above the threshold of 0.3 for it, too, to be of **State** significance.

Threatened Plants

Even when viewed from public land in 2023, it was clear that Site 23 contains a substantial population of the flat-pea, *Platylobium infecundum*. That species is listed under the *Flora and Fauna Guarantee Act* as Critically Endangered and it does not occur outside Victoria. As a result, the habitat provided for *Platylobium infecundum* in the site qualifies as **National** significance under criterion 3.1.2.

Platylobium infecundum had not been scientifically described in 2010 when the previous edition of this report was written. As a result, the site's significance level has risen from State to National.

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

Threatened Fauna

The Powerful Owl is listed as a vulnerable species under Victorian law and it occurs beyond Victoria's borders. Site 23 contains apparently high-quality habitat for the Powerful Owl and it is 'adjacent to or in proximity to known habitat' (in the words of criterion 3.1.3). That criterion treats such habitat as significant at the **Regional** level.

Threats

The following appear to be the main threats to the site's conservation significance, in roughly decreasing order of severity or urgency:

- Displacement of indigenous flora and fauna by environmental weeds, exacerbated by debilitation of the native vegetation by the impacts of climate change. The environmental weed species that is having the greatest impact (as seen from public land) is Sweet Pittosporum but many other species are also serious;
- Incremental excavations and removal of native vegetation on residential properties, e.g. as has been happening just northeast of Miller Park;
- Potential site development that could lead to loss of habitat (which may be partly redressed if weed control improves);

- Human-induced climate change, which is predicted to cause more severe droughts, heatwaves, fires and storms, as well as substantially lower rainfall (particularly in winter);
- Loss or decline of plant species that are present in such precariously small numbers that they are vulnerable to inbreeding, poor reproductive success, the other threats in this list or localised chance events;
- Eucalypt dieback, exacerbated by climate change;
- Slashing or mowing at the wrong time, frequency or height;
- Predation of fauna (particularly birds) by cats and foxes.

Management

- There is little if any control of serious environmental weeds on most of the private properties, even though many of them are listed as ‘Regionally Controlled’ under the *Catchment and Land Management Act 1994*;
- There are signs of illegal clearing of native vegetation on some residential properties;
- Mowing or slashing of indigenous groundcover is not intrinsically bad (as shown by Miller Park) but the timing and frequency on some of the residential properties is adverse for biodiversity and fire hazard, taking into account the plant species growing there;
- The abundance of plant species such as *Kennedia prostrata* after fire on the Salvation Army property shows the value of fire in recovering plant species that have suffered massive decline in Knox. It is ecologically desirable for Council to support periodic use of fire on these properties provided that safety is properly assured and neighbours are properly informed. However, climate change is reducing the frequency of days on which burning can safely be done.

Strategic planning

- This site is covered by Schedule 2 of the Environmental Significance Overlay (ESO2) as a result of the previous (2010) edition of this report. That edition cited subdivision potential and the matters of biological significance that were known at that time. Since then, *Platylobium infecundum* has been scientifically described as a species and recognised to be critically endangered, raising the site’s biological significance to the National level. Despite this change, ESO2 remains an appropriate protective instrument. The ESO2 boundary differs from the site boundary shown on p. 159 in that the latter omits the western end of 69 Torresdale Drive. The boundary difference has little if any consequence, so there is no urgency to amend the ESO2 boundary;
- Miller Park and the Salvation Army property are covered by schedule 4 of the Significant Landscape Overlay (SLO4). The rest of the site is covered by SLO2. The whole site is covered by the Bushfire Management Overlay (BMO);
- Miller Park is zoned Public Park and Recreation’ (PPRZ). The Salvation Army land is zoned ‘Special Use Zone 1’ for ‘Community, Recreation, Education and Religious Purposes’. The rest of the site is zoned ‘Low Density Residential’ (LDRZ);
- The Salvation Army land is outside the Urban Growth Boundary for Melbourne. The rest of the site is inside;
- All properties in the site are larger than 0.4 ha and therefore do not qualify for the size-based exemption from the state-wide baseline planning controls over removal of native vegetation (clause 52.17);
- It is recommended that any permit application for development within the site should include the results of a survey of birds, reptiles and nocturnal mammals, preferably conducted over at least two days in late spring. The vegetation may well be important as habitat for significant fauna not recorded so far.

Information sources used in this assessment

- Data from eleven quadrats on the Salvation Army property, compiled by Andrew Paget in May 1985 and two quadrats by Amanda Hills on 9th February 2000;
- An ecological survey undertaken for the first edition of this report by Dr Lorimer on 8–9 April 2002 (Salvation Army land) and 24th September 2003 (remainder of the site). This included a description of the vegetation composition of each EVC, compilation of thirteen lists of indigenous and introduced plant species for different parts of the site, incidental fauna observations, and checks for fauna habitat, ecological threats and management issues;
- A survey of the indigenous vegetation of Miller Park by Dr Lorimer on 1st November 2023 to update the site analysis for the second edition, finding several additional plant species;
- An inspection of the remainder of the site from public land on 19th October and 1st November 2023;

- Records of flora and fauna observations stored in the Atlas of Living Australia;
- The Victorian Government's 'NatureKit' website;
- Aerial and satellite imagery from between 1946 and 2024;
- Maps of geology, topography and strategic planning information produced by agencies of the Victorian Government.

Acknowledgment

Thanks to the Salvation Army for granting permission to inspect its property in 2002.