

Site 82. Lysterfield Park

Part of a public park with eucalypt plantations and areas of native vegetation.

Summary of significant features:

- **National significance:** known habitat of the Dandenong Range Cinnamon Wattle (*Acacia stictophylla*), which is listed as Endangered in Victoria and has a very small geographic range;
- **State significance:** known habitat of the Southern Toadlet, which is listed as Endangered in Victoria;
- **State significance:** patches of several regionally-threatened vegetation types;
- **Regionally significant:** part of a large habitat corridor;
- **Regionally significant:** known habitat of the Powerful Owl, which is listed as Vulnerable in Victoria;
- **Regionally significant:** known habitat of two plant species that are threatened within the Highlands Southern Fall bioregion: Sickie Greenhood (*Pterostylis falcata*) and Rough Crane's-bill (*Geranium gardneri*);
- **Locally significant:** viable populations of plant species threatened with dying out in Knox.
- Due to incomplete botanical surveying, there is a strong possibility that further rare or threatened plant species are present.

Note

The amount of fieldwork conducted during this study to assess Lysterfield Park was substantially less intensive than other sites. This is because:

- The conservation and management of the park is within the jurisdiction of the State government and Parks Victoria;
- The park spans three municipalities and less than half of it is within Knox;
- There is no apparent benefit from assessing or considering only the Knox part of the park in isolation from the whole park, or in isolation from the contiguous Churchill National Park (City of Casey), Dandenong Police Paddocks Reserve (City of Casey) and 'ZA Land' (north of Wellington Rd, in the Shire of Yarra Ranges); and
- The park has the protection of the National Parks Act and is therefore less in need of planning protection.

While the treatment below is believed to be adequate for the purposes of a municipal biodiversity study like this, it is not intended to support management or administration of the park by Parks Victoria.

Aerial photograph and plan: See page 532.

Boundaries

The site boundary is outlined in magenta and marked '82' on the aerial photograph. It follows the park boundary and the municipal boundary, the latter solely because this study is confined to the municipality of Knox.

Land use & tenure: Public park for recreation and nature conservation.

Site description

Lysterfield Park, also sometimes called Lysterfield Lake Park, is one component of a large area of public park extending from the Dandenong Police Paddocks Reserve in Dandenong North to Birdsland Reserve in Belgrave Heights. Only roads interrupt the continuity of the habitat. Most parts of this public land have previously been privately owned, then bought back by government at various times. They are now nearly all managed by Parks Victoria.

The part of Lysterfield Park that lies within Knox includes most of the southeastern slopes of the Lysterfield Hills, extending into a natural basin immediately upstream of Lysterfield Lake. There are steep-sided gullies, moderate undulations and many granitic boulders. The sandy to gravelly soil has low fertility, providing generally harsh growing conditions for plants. Elevations vary from approximately 70 m near Lysterfield Lake in the southeast to 220 m in the Lysterfield Hills.

Most of the land was cleared and grazed until it was reserved to provide a water catchment for the Mornington Peninsula, which it did from 1936 to 1975. The catchment was fenced to exclude cattle, and the pasture was replaced with eucalypt plantations to protect the catchment. The eucalypts are not of local species.

The part of the site lying northwest of the dashed white curve on the aerial photograph (p. 532) has not been planted, according to vegetation mapping by botanist, Damien Cook. It corresponds fairly closely with the area that does not appear as pasture on a 1946 aerial photograph. Unfortunately, this most natural part of the site has been (and is being) very seriously impacted by the neighbouring Boral quarry. The quarry's expansion in recent years has reduced the catchment area and lowered the water table, thereby making less soil moisture available to plants. That has resulted in complete destruction of the eucalypt canopy over a large area, along with deaths of most or all Soft Tree-ferns in the gullies and ecological collapse of substantial areas of forest.

The site's western extremity is outside the catchment of Lysterfield Lake. It was sparsely-treed pasture until it was reserved in the late 20th Century but most of it now has a substantial cover of woody indigenous plants.

Some of the eucalypt plantations are mixed with naturally occurring flora. Confusion between natural, semi-natural and artificial vegetation is probably why there is a great deal of discordance between attempts to map the site's vegetation, namely:

- The Victorian Government's mapping of Ecological Vegetation Classes (EVCs);
- Vegetation maps of Lysterfield Park prepared for Parks Victoria by botanist, Damien Cook, in 1994; and
- A National Parks Service vegetation map prepared from a vegetation survey by P.G. Smith in 1978 with updating by P. Debicki in 1986.

All of these maps have inaccuracies. The habitat types listed below for the site are the author's best estimate of the site's EVCs based on incomplete and conflicting data.

The native vegetation inspected by the author is in fair ecological condition (rating C) but it is not possible to extrapolate to the whole park or the part of it that lies within Knox.

Numerous species of flora and fauna that are threatened at local, regional or state level have been recorded in Lysterfield Park but in most cases the author cannot tell whether they occur specifically within the part of the park that lies within Knox. Even though the author only spent several hours in the park, he found plant species not previously recorded anywhere in the park. It appears that the park's flora is not well known, with the prospect that a thorough investigation would detect even more significant plant species.

Relationship to other land

Lysterfield Park is effectively part of a larger site of biological significance in combination with the Dandenong Police Paddocks Reserve, Heany Park (Site 80), Churchill National Park, the Lysterfield Hills (Site 81), the 'ZA Land' (north of Wellington Rd) and Birds Land. Many species of fauna undoubtedly move between these sites and some must do so in order to have enough habitat. Some fauna carry pollen or seeds, thereby linking plant populations across the area.

Bioregion: Highlands Southern Fall

Habitat types

Herb-rich Foothill Forest (EVC 23, conservation status rated 'Least Concern' in the bioregion)

Damp Forest (EVC 29, conservation status listed as of 'Least Concern' in the bioregion)

Swamp Scrub (EVC 53, **regionally Endangered**)

Grassy Forest (EVC 128, **regionally Vulnerable**) – the kind that is associated with the Gippsland Plain, not the Highlands Southern Fall.

Swampy Woodland (EVC 937, **regionally Vulnerable**)

Swampy Riparian Complex (EVC 126, **regionally Endangered**)

Wetland (EVC 74, listed as regionally Endangered but in this case the wetlands are artificial waterbodies)

Plant species

The following plant species have been recorded as growing wild in the site by various observers. Those species not seen in the 2020s are indicated by superscripts showing the year of the most recent record. Additional species would no doubt be detectable if the park were to be systematically surveyed, which was outside this project's scope. The column headed 'Risk' indicates the indigenous species' risk of dying out in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; 'V'=Vulnerable; and 'N'=Near threatened.

Indigenous mosses and liverworts

Achrophyllum dentatum, a moss
Atrichum androgynum, a moss
Camptochaete deflexa, a moss
Fissidens asplenioides, a pocket-moss
Frullania clavata, a liverwort
Thuidiopsis furfurosa, Golden Weft-moss
Wijkia extenuata, Spear Moss

Risk Wild indigenous vascular speciesFern species

V *Adiantum aethiopicum*, Common Maidenhair
E *Blechnum cartilagineum*, Gristle Fern
V *Calochlaena dubia*, Common Ground-fern
C *Cyathea australis*, Rough Tree-fern
C *Dicksonia antarctica*, Soft Tree-fern
E *Polystichum proliferum*, Mother Shield-fern
Pteridium esculentum, Austral Bracken
Pteris tremula, Tender Brake

Flowering species

Acacia dealbata, Silver Wattle ²⁰⁰⁴
V *Acacia implexa*, Lightwood
V *Acacia mearnsii*, Black Wattle
V *Acacia melanoxylon*, Blackwood
Acacia paradoxa, Hedge Wattle
V *Acacia stictophylla*, Dandenong Range
Cinnamon Wattle
V *Acacia verticillata*, Prickly Moses ²⁰⁰⁴
V *Acaena echinata*, Sheep's Burr ²⁰⁰³
Acaena novae-zelandiae, Bidgee-widgee
C *Arthropodium milleflorum*, Pale Vanilla-lily
C *Asperula conferta*, Common Woodruff
N *Bossiaea prostrata*, Creeping Bossiaea
Burchardia umbellata, Milkmaids
Bursaria spinosa, Sweet Bursaria ²⁰⁰³
V *Callitriche muelleri*, Round Water-starwort
Carex appressa, Tall Sedge
Cassinia aculeata, Common Cassinia
Cassinia longifolia, Shiny Cassinia
E *Centella cordifolia*, Centella ¹⁹⁸⁵
C *Centrolepis strigosa*, Hairy Centrolepis ¹⁹⁸⁰
V *Chiloglottis valida*, Common Bird-orchid
V *Clematis aristata*, Mountain Clematis
Clematis decipiens, a small-leafed clematis
E *Comesperma volubile*, Love Creeper
V *Coprosma quadrifida*, Prickly Currant-bush
V *Crassula helmsii*, Swamp Crassula ¹⁹⁸⁰
V *Crassula sieberiana* s.l., Sieber Crassula
E *Desmodium gunnii*, Southern Tick-trefoil
Dianella longifolia var. *longifolia*, Pale Flax-lily ²⁰⁰³
Dichondra repens, Kidney-weed
V *Drosera auriculata*, Tall Sundew
N *Drosera hookeri*, Branched Sundew
V *Eleocharis acuta*, Common Spike-rush
Eleocharis sphacelata, Tall Spike-rush ¹⁹⁸⁶

Risk Wild indigenous vascular species

C *Epacris impressa*, Common Heath ¹⁹⁸⁵
V *Eucalyptus goniocalyx*, Bundy
E *Eucalyptus obliqua*, Messmate Stringybark
V *Eucalyptus ovata*, Swamp Gum
E *Eucalyptus radiata*, Narrow-leaved
Peppermint
C *Eucalyptus viminalis* subsp. *viminalis*, Manna
Gum
V *Exocarpos cupressiformis*, Cherry Ballart
C *Gahnia radula*, Thatch Saw-sedge
E *Gahnia sieberiana*, Red-fruit Saw-sedge
E *Galium leiocarpum*, Maori Bedstraw
E *Geranium gardneri*, Rough Crane's-bill ²⁰⁰³
Geranium homeanum, Rainforest Crane's-bill
E *Geranium potentilloides*, Soft Crane's-bill ²⁰⁰⁴
V *Geranium* sp. 2, Variable Crane's-bill
E *Glycine clandestina*, Twining Glycine
E *Glycine microphylla*, Small-leaf Glycine ²⁰⁰³
Gonocarpus tetragynus, Common Raspwort
¹⁹⁸⁵
Goodenia ovata, Hop Goodenia
C *Gratiola peruviana*, Austral Brooklime
C *Hakea decurrens*, Bushy Needlewood ²⁰¹⁴
C *Hibbertia australis*, Upright Guinea-flower
E *Hydrocotyle foveolata*, Yellow Pennywort
V *Hydrocotyle hirta*, Hairy Pennywort
E *Hypericum gramineum*, Small St John's Wort
C *Imperata cylindrica*, Blady Grass ²⁰⁰³
C *Indigofera australis*, Austral Indigo ²⁰⁰³
Isolepis inundata, Swamp Club-rush
Juncus bufonius, Toad Rush ¹⁹⁸⁶
C *Juncus holoschoenus*, Joint-leaf Rush ¹⁹⁸⁶
Juncus pallidus, Pale Rush
E *Juncus pauciflorus*, Loose-flower Rush
E *Juncus planifolius*, Broad-leaf Rush ¹⁹⁸⁶
Kunzea sp. (Upright form), Forest Burgan
V *Lagenophora sublyrata*, Slender Bottle-daisy
Lepidosperma elatius, Tall Sword-sedge ¹⁹⁸⁵
V *Lepidosperma laterale*, Variable Sword-sedge
²⁰⁰⁴
C *Leptospermum continentale*, Prickly Tea-tree
Leptospermum scoparium, Manuka ²⁰⁰⁴
Lomandra filiformis subsp. *coriacea*, Wattle
Mat-rush ²⁰⁰³
Lomandra longifolia subsp. *longifolia*, Spiny-
headed Mat-rush
C *Mazus pumilio*, Swamp Mazus
E *Melaleuca ericifolia*, Swamp Paperbark ¹⁹⁸⁶
Microlaena stipoides, Weeping Grass
E *Olearia argophylla*, Musk Daisy-bush
E *Olearia lirata*, Snowy Daisy-bush
V *Opercularia varia*, Variable Stinkweed ¹⁹⁸⁵
Oxalis exilis/perennans, Wood-sorrel
V *Ozothamnus ferrugineus*, Tree Everlasting
Pandorea pandorana, Wonga Vine
C *Patersonia occidentalis*, Long Purple-flag

Risk Wild indigenous vascular species

- C *Pelargonium inodorum*, Kopata ²⁰⁰⁴
 E *Phragmites australis*, Common Reed
Poa ensiformis, Sword Tussock-grass ²⁰⁰³
 E *Poa labillardierei*, Common Tussock-grass ²⁰⁰⁴
Poa morrisii, Soft Tussock-grass ²⁰⁰⁴
 E *Poa tenera*, Slender Tussock-grass
 V *Pomaderris aspera*, Hazel Pomaderris
Poranthera microphylla, Small Poranthera
 C *Pterostylis falcata*, Large Sickle Greenhood ²⁰¹⁹
Pterostylis nutans, Nodding Greenhood
 C *Pterostylis pedunculata*, Maroonhood
 E *Rubus parvifolius*, Small-leaf Bramble
 C *Rumex brownii*, Slender Dock ²⁰⁰³
Schoenus apogon, Common Bog-rush ²⁰⁰⁴
 V *Senecio glomeratus*, Annual Fireweed
Senecio hispidulus, Rough Fireweed
Senecio minimus, Shrubby Fireweed
Senecio quadridentatus, Cotton Fireweed
 V *Sigesbeckia orientalis*, Indian Weed
 C *Solanum aviculare*, Kangaroo Apple ²⁰⁰⁴
 V *Solanum laciniatum*, Large Kangaroo Apple
 C *Solanum prinophyllum*, Forest Nightshade
 C *Stellaria pungens*, Prickly Starwort
 C *Thelymitra ixioides*, Dotted Sun-orchid
Themeda triandra, Kangaroo Grass ¹⁹⁸⁵
Tricoryne elatior, Yellow Rush-lily
 V *Triglochin striata*, Streaked Arrow-grass ¹⁹⁸⁶
 V *Veronica gracilis*, Slender Speedwell
 E *Veronica plebeia*, Trailing Speedwell
 E *Viola hederacea*, Ivy-leaf Violet
Wahlenbergia gracilis, Sprawling Bluebell ²⁰⁰³
 E *Wurmbea dioica*, Common Early Nancy
 E *Xanthorrhoea minor*, Small Grass-tree

Introduced species

- Acacia longifolia* subsp. *longifolia*, Sallow Wattle
Acetosella vulgaris, Sheep Sorrel
Agapanthus praecox, Agapanthus
Agrostis capillaris, Brown-top Bent ²⁰⁰⁴
Allium triquetrum, Angled Onion ¹⁹⁸⁶
Amaryllis belladonna, Naked Ladies
Anthoxanthum odoratum, Sweet Vernal-grass
Araujia sericifera, White Bladder-flower
Arctotheca calendula, Cape Weed
Arum italicum, Arum
Arundo donax, Giant Reed
Asparagus asparagoides, Bridal Creeper
Briza maxima, Large Quaking-grass
Briza minor, Lesser Quaking-grass
Callitriche stagnalis, Pond Water-starwort
Carduus tenuiflorus, Slender Thistle
Cassinia sifton, Sifton Bush
Centaurium erythraea, Common Centaury
Cerastium glomeratum s.l., Common Mouse-ear
 Chickweed

Introduced species

- Chrysanthemoides monilifera* subsp. *monilifera*,
 Boneseed
Cicendia filiformis, Slender Cicendia
Cirsium vulgare, Spear Thistle
Cordyline australis, New Zealand Cabbage Tree
Cortaderia selloana, Pampas Grass
Corymbia ficifolia, Flowering Gum
Crataegus monogyna, Hawthorn
Crocasmia × *crocosmiiflora*, Montbretia
Cynodon dactylon, Couch ¹⁹⁸⁶
Echium plantagineum, Paterson's Curse
Erica lusitanica, Spanish Heath
Erigeron sumatrensis, Fleabane ²⁰⁰⁴
Ficus carica, Fig
Galium aparine, Cleavers
Grevillea hybrids and cultivars
Holcus lanatus, Yorkshire Fog
Hypochaeris radicata, Cat's Ear ²⁰⁰⁴
Isolepis levynsiana, Tiny Flat-sedge ¹⁹⁸⁶
Leontodon saxatilis, Lesser Hawkbit ¹⁹⁸⁶
Leucanthemum vulgare, Ox-eye Daisy
Lotus subbiflorus, Hairy Bird's-foot Trefoil ¹⁹⁸⁶
Lycium ferocissimum, African Box-thorn
Lysimachia arvensis, Pimpernel
Lythrum junceum, Mediterranean Loosestrife
Marrubium vulgare, Horehound
Modiola caroliniana, Carolina Mallow
Oxalis incarnata, Pale Wood-sorrel
Oxalis purpurea, Large-flower Wood-sorrel
Paspalum dilatatum, Paspalum ¹⁹⁸⁶
Passiflora cinnabarina, Red Passion-flower
Petroselinum crispum, Parsley ¹⁹⁸⁶
Phytolacca octandra, Red-ink Weed
Pittosporum undulatum, Sweet Pittosporum
Plantago lanceolata, Ribwort ¹⁹⁸⁶
Prunella vulgaris, Self-heal
Pseudoscleropodium purum, Neat Feather-moss
Ranunculus muricatus, Sharp Buttercup
Rosa rubiginosa, Sweet Briar ¹⁹⁸⁶
Rubus anglocandicans, Blackberry ¹⁹⁸⁶
Senecio jacobaea, Ragwort
Silybum marianum, Variegated Thistle ¹⁹⁸⁶
Sisyrinchium micranthum, Blue Pigroot
Solanum nigrum, Black Nightshade ²⁰⁰⁴
Torilis arvensis, Spreading Hedge-parsley
Trifolium dubium, Suckling Clover
Trifolium glomeratum, Cluster Clover ²⁰⁰⁴
Trifolium repens, White Clover ¹⁹⁸⁶
Trifolium subterraneum, Subterranean Clover ²⁰⁰⁴
Ulex europaeus, Gorse (Furze)
Verbascum thapsus, Great Mullein ¹⁹⁸⁶
Vicia sativa, Common Vetch
Watsonia meriana, Bugle Lily
Zantedeschia aethiopica, White Arum Lily

Notes concerning some of the significant plant species

Listed as Endangered under Victorian law

Acacia stictophylla (Dandenong Range Cinnamon Wattle): Moderately abundant on the upper slopes.

Threatened in the South East Coastal Plain biogeographic region

Geranium gardneri (Rough Crane's-bill): The author found a substantial number of immature individuals in 2003, in an area recently burned.

Pterostylis falcata (Sickle Greenhood): [Photographed within the site in 2019](#), the only record of the species in Knox since 1926.

Locally threatened

Callitriche muelleri (Round Water-starwort): Abundant in the Damp Forest gullies in the park's northwest.

Crassula sieberiana s.l. (Sieber Crassula): Substantial numbers grow among rocks near the Glen Rd entrance.

Geranium sp. 2 (Variable Cranesbill): Scattered near the Glen Rd entrance.

Glycine microphylla (Small-leaf Glycine): Reasonable numbers of immature plants were found in 2003 in an area recently burned.

Pelargonium inodorum (Kopata): Reasonable numbers were found in 2003 in an area recently burned.

Rumex brownii (Slender Dock): Substantial numbers.

Veronica plebeia (Trailing Speedwell): Scattered.

Fauna of special significance

The following species are only a small fraction of the total for the park, being just those the author is confident about occurring within the Knox part of the park.

Listed as Endangered under Victorian law

Southern Toadlet – reported almost every year from up to five locations within the site.

Listed as Vulnerable under Victorian law

Powerful Owl – reported repeatedly from the site.

Locally threatened

Spotted Brown Butterfly – The Lysterfield Hills area is one of the strongholds of this generally localised species.

Fauna habitat features

This list is likely to be incomplete:

- The tree canopy provides habitat for insects, bats, possums and forest birds;
- Fallen timber provides the sort of cover required by many reptiles and invertebrates;
- The grassy ground flora provides fodder for butterfly caterpillars and other invertebrates, including Spotted Brown butterflies;
- It is likely that butterflies congregate on the hilltops in the site (which is what many butterflies do on hilltops);
- Swampy vegetation probably provides habitat for frogs and aquatic invertebrates.

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

Lysterfield Park meets criterion 1.1.2 for **Local** significance because it contains '100 ha or more of contiguous native vegetation in a heavily fragmented landscape'.

This park is also a substantial part of a large habitat corridor extending from Dandenong Ck in the Dandenong Police Paddocks Reserve to Birdsland Reserve in Belgrave Heights, and beyond. Criterion 1.2.6 attributes **Regional** significance to any corridor that meets the description 'Important at regional scale (link within bioregion or catchment)', which is a reasonable description of the corridor of interest here.

Regionally Threatened Ecological Vegetation Classes

Swampy Riparian Complex is a regionally-endangered EVC. Any 'remnant patch' of a regionally-endangered EVC is of **State** significance under criterion 3.2.3. For these purposes, a 'remnant patch' is defined as a continuous area of at least 0.25 ha in which the cover of native understorey is at least 10% throughout. Mapping by the Department of Energy, Environment and Climate Action shows over 30 ha of Swampy Riparian Complex within the site, i.e. over 100 times the minimum size of a 'remnant patch'. If there is indeed such a large area, it seems very likely that there is at least 1% of it that meets the definition of a 'remnant patch' and therefore qualify as **State** significance under criterion 3.2.3. However, the mapping within the park is very unreliable.

Swamp Scrub is another regionally-endangered EVC and the department's mapping shows an area of 11 ha of it extending from this site into the part of the park in the Shire of Yarra Ranges. On the same basis as above, it seems quite likely that within Knox, at least one part of the 11 ha is a 'remnant patch' and therefore qualifies as **State** significance under criterion 3.2.3 (again, with the proviso that the mapping is unreliable).

Any remnant patch of the site's regionally-vulnerable EVCs (Grassy Forest, Swampy Woodland and Swampy Riparian Complex), would also meet criterion 3.2.2 for State significance if it were determined that it has a habitat score of 0.3 or above (i.e. not severely degraded). This seems quite likely. Note that the current 'EVC benchmark' for Grassy Forest in the Gippsland Plain is for a quite different vegetation community than the corresponding benchmark for the Highlands Southern Fall; The former community is the one found in Lysterfield Park despite the park being generally mapped as part of the other bioregion.

Threatened Plants

The Herb-rich Foothill Forest on the upper slopes contains a sizeable population of Dandenong Range Cinnamon Wattle (*Acacia stictophylla*). That species is listed as Endangered under the *Flora and Fauna Guarantee Act* and it does not occur outside Victoria. Any known habitat for such a species meets criterion 3.1.2 for **National** significance.

The author saw a substantial population of Rough Crane's-bill (*Geranium gardneri*) near the northern park boundary in 2003 and there is a good chance the species persists. Australasian herbaria hold only three specimens of this species from anywhere else in the Highlands Southern Fall bioregion in the past 30 years. This indicates that the species is rare regionally. These conditions meet criterion 3.1.4 for **Regional** significance.

The size of the site's population of Sickie Greenhood (*Pterostylis falcata*) is unknown but its presence was very reliably recorded in 2019. Australasian herbaria hold no specimens of the species from the whole Highlands Southern Fall bioregion since 1995 (and only one since 1989), indicating the species' great regional rarity and decline from much larger numbers in prior decades. These conditions meet criterion 3.1.4 for **Regional** significance.

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

Threatened Fauna

The Southern Toadlet is reported almost every year from up to five locations within the site. The species is listed as Endangered under the *Flora and Fauna Guarantee Act* and it is not confined to Victoria. Any known habitat for such a species meets criterion 3.1.2 for **State** significance.

The Powerful Owl is a vulnerable species in Victoria. It is known to frequent and roost in the Lysterfield Hills and there is evidently good quality habitat for it in Lysterfield Park. The population in the area is a small fraction of the bioregional total but it would be viable as part of the wider ranging population around the Dandenong Ranges. This represents **Regional** significance under criterion 3.1.2.

Threats

- Continuing tree deaths and consequent habitat collapse due to the hydrological effects of extending the edges of the adjacent Boral quarry pit into lower terrain (i.e. reduced catchment size and a falling water table), affecting the Damp Forest and Herb-rich Foothill Forest in the park's northwest;
- Displacement of indigenous flora and fauna by environmental weeds. The species of greatest concern within the part of the park inspected for this report are Boneseed (*Chrysanthemoides monilifera* subsp. *monilifera*),

Sweet Pittosporum (*Pittosporum undulatum*), Gorse (*Ulex europaeus*), Arum Lily (*Zantedeschia aethiopica*), broom species (*Genista*) and the white-flowered form of Dolichos Pea (*Dipogon lignosus*);

- Human-induced climate change, which is predicted to cause more severe droughts, heatwaves, floods, fires and storms, as well as substantially lower rainfall (particularly in winter);
- Continuing decline in the health of eucalypts, which are quite vulnerable to the abovementioned droughts and storms and many are already suffering water stress from the abovementioned hydrological effects of adjacent quarrying;
- Loss or decline of plant species that have such small populations that they are vulnerable to inbreeding, poor reproductive success or chance events such as being struck by a falling tree limb.

Strategic planning

The previous (2010) edition of this report led to this site being covered by Schedule 2 of the Environmental Significance Overlay (ESO2), on the basis of: (a) much the same matters of biological significance discussed above except for the presence of the Dandenong Range Cinnamon Wattle (which was not listed as endangered at the time); and (b) the likelihood that features of biological significance have gone undetected due to a dearth of investigation. The only material change since 2010 in this regard is that the rationale for ESO2 has been slightly strengthened by the recognition of the Dandenong Range Cinnamon Wattle as endangered. The current application of ESO2 to the park does not need to change.

Information sources used in this assessment

- A National Parks Service vegetation map prepared from a vegetation survey by P.G. Smith in 1978 with updating by P. Debicki in 1986;
- Field data and plant specimens collected by celebrated naturalist, the late Cliff Beauglehole, from his visit to the park on 18/11/82 with L.K.M Elmore. The most significant specimen is of the globally-vulnerable River Swamp Wallaby-grass (*Amphibromus fluitans*), kept at the National Herbarium of Victoria (specimen number MEL 119352);
- A plant list and data from nine quadrats (DSE numbers N13242-N13250) compiled by Andrew Paget in April and May 1985;
- Cook D. (1994). '*Vegetation Community Survey for Lysterfield Lake Park, Churchill National Park, ZA Land and Link Land*', a report and associated maps for the Department of Conservation and Natural Resources;
- Parks Victoria's 'Park Notes', the 1998 management plan, fauna lists and several vegetation maps for the park;
- An ecological survey by Dr Lorimer for one hour on 7th August 2003 (following a fire the previous summer) within a 40 m-wide strip around the park perimeter, from Glen Rd to the edge of the Boral Quarry land. This included :
 - Compilation of a list of indigenous and introduced plant species;
 - Description of the structural and floristic composition of the native vegetation;
 - Documentation of rare species populations and the ecological condition of the vegetation;
 - Incidental fauna observations;
 - Checks for fauna habitat, ecological threats and management issues;
- Brief inspections of the northern fringe of the site by Dr Lorimer on 21st October 2023 and 2nd October 2024 to search for some significant plant species and check for any changes in features relevant to this report compared with pre-existing information;
- Information provided in November 2023 by ranger Ema Newton and vegetation management contractor Roger Shaw about uncommon plant species and ecological stresses on the park;
- Records of flora and fauna observations stored in the Atlas of Living Australia;
- Aerial and satellite imagery from between 1946 and 2024;
- The Victorian Government's 'NatureKit' website;
- Maps of geology, topography and strategic planning information produced by agencies of the Victorian Government.

Acknowledgments

Thanks to Parks Victoria, and particularly Michael Van de Vreede, for providing documentation about the park.

Thanks to Ema Newton (Ranger) and Roger Shaw (vegetation contractor) for information about weed management and uncommon plant species in the site.