Site 61. Coppelia Street Bushland, Wantirna South

Public park (formerly a clay pit and rubbish tip) with regrowth of native vegetation.

Summary of significant features:

- State significance: a large population of the spear-grass, *Austrostipa rudis* subspecies *australis*, which is listed as Endangered in Victoria;
- State significance: a remarkable example of regeneration of the regionally-endangered vegetation type, Swampy Woodland, after having been completely destroyed;
- Regionally significant: site of long-term monitoring and study of the regenerative capacity of Swampy Woodland and how this may be used to help this vegetation type to recover from its endangered status in the biogeographic region;
- Locally significant: viable populations of many locally-threatened plant species.

Aerial photograph: See page 411, which covers this site and Site 60.

Boundaries

This 1.20-hectare site is the whole of a single parcel of land, outlined with red dashes and marked 'Site 61 – Coppelia St Bushland' on the aerial photograph.

Land use & tenure: Council reserve zoned Public Park and Recreation Zone, managed for nature conservation, pedestrian thoroughfare and management of leachate from the former rubbish tip.

Site description

The Coppelia Street Bushland lies on the floodplain of Blind Creek. It is a remarkable example of natural regeneration of a regionally-endangered vegetation type, complete with rare plants, following complete destruction.

A 1946 aerial photograph shows the site and its surroundings to have been treeless apart from a narrow gallery of scattered trees along a minor tributary where Coppelia St now lies. Along with most of the abutting Llewellyn Reserve (Site 60), approximately 60% of Site 61 was part of a pit used for extraction of clay until 1974. The remainder of Site 61 (strips along the northern and eastern edges) was completely cleared at that time. The strip along the eastern edge was covered with an elongated mound of overburden from the pit.

The clay pit was used as a rubbish tip from 1974 until the mid- to late 1980s, eventually becoming fully capped with clay. A 1979 aerial photograph shows that at the time, the mound and the strip along the northern edge of Site 61 had regrown, including trees with crowns up to 9 or 10 m diameter. The rest of Site 61 in 1979 had very sparse, low vegetation, while the land to the west had scattered trees and a full cover of understorey. A 1983 aerial photograph shows little sign of change, with Coppelia St still not constructed.

A 1992 aerial photograph shows Coppelia St had been built and the land west of Site 61 almost fully developed. At Llewellyn Reserve, the two ovals had been constructed and part of the Knox waste transfer station was operating north of the ovals. A bare, clay slope had been created from just north of the eastern oval to an elevation several metres lower, just inside Site 61's southern boundary. Regrowth had developed over the part of Site 61 that had sparse, low vegetation in 1983 but by 1992, that regrowth had been scarred by a firebreak, a track and a path in which a pipe had been laid underground. There is still a depression above the pipe.

The origin of the clay in which the natural regeneration has occurred is unknown, but for practical reasons, it would have been nearby, e.g. the land to the west that was being developed around that time. The profusion of swamp-loving plants that germinated indicates that the clay came from somewhere that once had Swampy Woodland vegetation (a regionally-endangered Ecological Vegetation Class). Remnants of Swampy Woodland remain today in the abutting Site 60 and it can be inferred that it would have occurred in Site 61 and the land to its west. The plant species present prior to the excavation of the clay pit would have been more or less the same as those present now.

No effort was made to encourage the natural regeneration until its significance was recognised around 1997. At that stage, there was a moderate cover of environmental weeds, but these have since been progressively reduced. There was also a large number of plants whose species are rare in Knox or the whole Melbourne area; e.g. hundreds of Salmon Sun-orchids (*Thelymitra rubra*). Part of the area was regularly mown and part had developed into dense regrowth. The dense and open areas each contained significant plants; e.g. the sun-orchids were in open areas whereas the Leafless Globe-pea (*Sphaerolobium minus*) and the Horned Orchid (*Orthoceras strictum*) were in the dense vegetation. (All these species subsequently died out).

The peak density of regrowth occurred partway through the Millennium Drought. The vegetation has variously thickened or thinned since then, the thickening being greatest in a strip where slashing has ceased. Many of the site's most significant plant species have died out slowly since 2005 – some during the Millennium Drought and some since. One explanation for the slow disappearance of those rare species is that they were quite capable of germinating in disturbed, bare ground but could not thrive in the eventual conditions against competition from other species. Another possible factor is that small parts of the bushland have been periodically excavated for management of leachate from the former rubbish tip. (Leachate is contaminated water and gas seeping from the buried rubbish.)

Despite the loss of some significant plant species, others have flourished (e.g. the spear-grass, *Austrostipa rudis* subsp. *australis*, which is listed as endangered in Victoria) and the total number of indigenous plant species has increased.

The progress of development of the regrowth has been the subject of a monitoring program by Dr Lorimer for Knox City Council since 1998. It serves as an important case study, showing how Swampy Woodland can regenerate under the right circumstances, even after it was totally destroyed. This sort of information could be important for helping the regional representation of this vegetation type to recover from its present endangered condition. For example, the demonstration that the vegetation has a remarkable ability to regenerate from subsoil may provide a clue about how to facilitate regeneration without allowing introduced species to take over. The decline and eventual loss of some of the significant plant species is also instructive.

Relationship to other land

Land use to the north, west and east of the Coppelia Street Bushland is urban residential, with negligible indigenous vegetation. The strip of immature regrowth along the northern edge of Llewellyn Reserve (Site 60) may facilitate movement of some fauna between the Coppelia Street Bushland and the Blind Creek habitat corridor. Certain birds, lizards, frogs and invertebrates are the most likely species to undertake such movements.

Exchange of pollen and seeds by birds and insects should avoid most of the inbreeding problems that would otherwise occur in a bushland block as small as the Coppelia Street bushland.

Bioregion: Gippsland Plain

Habitat types

Swampy Woodland (EVC 937, **regionally Endangered**) in various stages of regrowth and subject to varying history. The total area of native understorey is estimated to be 0.8 ha, comprising 0.20 ha in good ecological condition (rating B), 0.5 ha in fair ecological condition (rating C) and 0.1 ha in poor ecological condition (rating D).

Canopy trees: Dominated by *Eucalyptus ovata* with fewer *E. cephalocarpa*, *E. viminalis* and hybrids between all these. There are also some *Acacia dealbata* as tall as most of the eucalypts.

Sub-canopy trees: Dominated by *Acacia melanoxylon* and *Exocarpos cupressiformis*.

Shrubs: Variable in density from very dense to very sparse, depending on the history of regeneration and slashing. There is a tall shrub layer dominated by *Acacia paradoxa, Kunzea* or *Melaleuca ericifolia* and a lower shrub layer dominated by *Goodenia ovata*.

Vines: The light twiner, *Billardiera mutabilis*, is moderately abundant.

Ferns: Absent.

Groundcover: Dominated by *Microlaena stipoides, Lomandra longifolia, Austrostipa rudis, Rytidosperma* species, *Lepidosperma gunnii* and *Schoenus apogon*. Characteristic species of Swampy Woodland include *Goodenia humilis, Hemarthria uncinata, Patersonia occidentalis, Rytidosperma semiannulare* and (formerly) *Sphaerolobium minus*.

Plant species

The author has recorded the following plant species growing wild in Site 61. Indigenous species not seen in the 2020s are indicated by superscripts showing the year of the most recent record. 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. In addition, *Austrostipa rudis* subsp. *australis* is listed as Endangered under Victorian law.

Indigenous mosses and liverworts

Campylopus ?*clavatus*, Broody Swan-neck Moss
Campylopus introflexus, Heath Star Moss
Chiloscyphus semiteres, Green Worms
Hypnum cupressiforme, Common Hypnum
Rosulabryum billarderi, Common Thread-moss
Sematophyllum homomallum, a moss
Thuidiopsis furfurosa, Golden Weft-moss

Risk	Wild indigenous vascular species
	Acacia dealbata, Silver Wattle [2013]
V	*Acacia mearnsii*, Black Wattle
V	*Acacia melanoxylon*, Blackwood
	Acacia paradoxa, Hedge Wattle
V	*Acacia verticillata*, Prickly Moses
	Acaena novae-zelandiae, Bidgee-widgee [2007]
	Anthosachne scabra, Common Wheat-grass
	Arthropodium strictum, Chocolate Lily
	Austrostipa pubinodis, Tall Spear-grass
V	*Austrostipa rudis* subsp. *australis*, Veined Spear-grass
	Austrostipa rudis subsp. *rudis*, Veined Spear-grass
	Billardiera mutabilis, Common Apple-berry
N	*Bossiaea prostrata*, Creeping Bossiaea
	Burchardia umbellata, Milkmaids [2007]
	Bursaria spinosa, Sweet Bursaria
	Carex breviculmis, Short-stem Sedge
C	*Carex iynx*, Sedge
	Carex inversa, Knob Sedge
E	*Centella cordifolia*, Centella
	Clematis decipiens, a small-leafed clematis
V	*Coprosma quadrifida*, Prickly Currant-bush
	Cotula australis, Common Cotula [2007]
	Crassula decumbens, Spreading Crassula [2007]
C	*Daviesia latifolia*, Hop Bitter-pea [1998]
	Deyeuxia quadriseta, Reed Bent-grass
	Dianella revoluta, Black-anther Flax-lily
V	*Drosera auriculata*, Tall Sundew
C	*Epacris impressa*, Common Heath
	Eragrostis brownii, Common Love-grass [2013]
E	*Eucalyptus cephalocarpa*, Mealy Stringybark
E	*Eucalyptus melliodora*, Yellow Box
V	*Eucalyptus ovata*, Swamp Gum
	Eucalyptus hybrids
C	*Eucalyptus viminalis* subsp. *viminalis*, Manna Gum

Risk	Wild indigenous vascular species
V	*Exocarpos cupressiformis*, Cherry Ballart
C	*Gahnia radula*, Thatch Saw-sedge [2013]
V	?*Glyceria australis*, Australian Sweet-grass
	Gonocarpus tetragynus, Common Raspwort
C	*Goodenia humilis*, Swamp Goodenia
	Goodenia ovata, Hop Goodenia
V	*Hemarthria uncinata*, Mat Grass
E	*Isolepis hookeriana*, Grassy Club-rush
V	*Isolepis platycarpa*, a club-rush
	Juncus amabilis, Hollow Rush
C	*Juncus australis*, Austral Rush
	Juncus bufonius, Toad Rush
	Juncus gregiflorus, Green Rush
C	*Juncus holoschoenus*, Joint-leaf Rush
	Juncus pallidus, Pale Rush
E	*Juncus planifolius*, Broad-leaf Rush
E	*Juncus procerus*, Tall Rush
	Juncus sarophorus, Broom Rush
E	*Juncus subsecundus*, Finger Rush [2013]
	Kunzea ericoides group, Burgan*
	Lachnagrostis filiformis, Common Blown-grass
V	*Lagenophora sublyrata*, Slender Bottle-daisy [2007]
C	*Lepidosperma filiforme*, Common Rapier-sedge [1999]
	Lepidosperma gunnii, Slender Sword-sedge
V	*Lepidosperma laterale*, Variable Sword-sedge
C	*Leptorhynchos tenuifolius*, Wiry Buttons
	Leptospermum scoparium, Manuka
	Lomandra filiformis subsp. *coriacea*, Wattle Mat-rush
	Lomandra filiformis subsp. *filiformis*, Wattle Mat-rush
	Lomandra longifolia subsp. *longifolia*, Spiny-headed Mat-rush
	Lythrum hyssopifolia, Lesser Loosestrife
C	*Machaerina acuta*, Pale Twig-rush
E	*Melaleuca ericifolia*, Swamp Paperbark
	Microlaena stipoides, Weeping Grass
V	*Microtis parviflora*, Slender Onion-orchid
V	*Opercularia ovata*, Broad-leaf Stinkweed [2013]
V	*Opercularia varia*, Variable Stinkweed
C	*Orthoceras strictum*, Horned Orchid [2004]
	Oxalis exilis/perennans, Wood-sorrel
V	*Ozothamnus ferrugineus*, Tree Everlasting [2007]

* Under the National Herbarium of Victoria's current tentative guidelines for distinguishing *Kunzea leptospermoides* from *Kunzea* sp. (Upright form), the *Kunzea* population in Site 61 spans both, without any clear disjunction.

Risk	Wild indigenous vascular species
C	*Patersonia occidentalis*, Long Purple-flag
E	*Platylobium obtusangulum*, Common Flat-pea 2013
	Poa morrisii, Soft Tussock-grass
	Poranthera microphylla, Small Poranthera
E	*Rytidosperma* ?*caespitosum*, Common Wallaby-grass[3]
C	*Rytidosperma* cf. *duttonianum*, Brown-back Wallaby-grass[4]
	Rytidosperma fulvum, Leafy Wallaby-grass
	Rytidosperma laeve, Smooth Wallaby-grass
	Rytidosperma racemosum, Clustered Wallaby-grass
E	*Rytidosperma semiannulare*, Tasmanian Wallaby-grass
	Rytidosperma setaceum, Bristly Wallaby-grass
C	*Rytidosperma* cf. *setaceum*, a wallaby -grass[5]
	Rytidosperma tenuius, Purplish Wallaby-grass
	Schoenus apogon, Common Bog-rush
	Senecio hispidulus, Rough Fireweed
	Senecio minimus, Shrubby Fireweed
	Senecio quadridentatus, Cotton Fireweed
V	*Solanum laciniatum*, Large Kangaroo Apple
C	*Sphaerolobium minus*, Globe-pea 2007
V	*Spyridium parvifolium*, Australian Dusty Miller
C	*Thelymitra* ?*arenaria*, Forest Sun-orchid
E	*Thelymitra peniculata*, Trim Sun-orchid
C	*Thelymitra rubra*, Salmon Sun-orchid 2001
	Themeda triandra, Kangaroo Grass
	Tricoryne elatior, Yellow Rush-lily
V	*Veronica gracilis*, Slender Speedwell
V	*Xanthosia dissecta*, Cut-leaf Xanthosia 2013

Introduced species
Acacia baileyana, Cootamundra Wattle
Acacia floribunda, White Sallow-wattle 2013
Acacia longifolia subsp. *longifolia*, Sallow Wattle
Agrostis capillaris, Brown-top Bent
Aira sp., Hair Grass
Allium triquetrum, Angled Onion 2007
Anthoxanthum odoratum, Sweet Vernal-grass
Arctotheca calendula, Cape Weed 2013
Avena barbata, Bearded Oat
Briza maxima, Large Quaking-grass
Briza minor, Lesser Quaking-grass
Bromus catharticus, Prairie Grass
Cassinia sifton, Sifton Bush
Cenchrus clandestinus, Kikuyu Grass
Centaurium erythraea, Common Centaury
Cerastium glomeratum s.l., Common Mouse-ear Chickweed 2007
Cicendia filiformis, Slender Cicendia 1999
Cirsium vulgare, Spear Thistle
Coprosma repens, Mirror-bush
Cortaderia selloana, Pampas Grass 2002
Corymbia maculata, Spotted Gum 2007
Cotoneaster glaucophyllus, Cotoneaster
Cotoneaster pannosus, Cotoneaster
Cynodon dactylon, Couch
Ehrharta erecta, Panic Veldt-grass
Ehrharta longiflora, Annual Veldt-grass
Erica lusitanica, Spanish Heath
Erigeron sumatrensis, Fleabane
Eriobotrya japonica, Loquat 2013
Eucalyptus sp., a eucalypt
Fraxinus angustifolia, Desert Ash
Fumaria muralis subsp. *muralis*, Wall Fumitory
Galium aparine, Cleavers
Genista linifolia, Flax-leafed Broom
Genista monspessulana, Montpellier Broom 2013
Gladiolus undulatus, Wild Gladiolus
Hakea salicifolia, Willow-leaf Hakea
Hedera helix/hibernica, Ivy
Holcus lanatus, Yorkshire Fog
Hypochaeris radicata, Cat's Ear
Isolepis levynsiana, Tiny Flat-sedge
Juncus articulatus, Jointed Rush
Juncus pallescens, a rush
Lactuca serriola, Prickly Lettuce
Leontodon saxatilis, Lesser Hawkbit
Ligustrum lucidum, Large-leafed Privet
Lolium perenne, Perennial Rye-grass 2007
Lonicera japonica, Japanese Honeysuckle 1999
Lotus subbiflorus, Hairy Bird's-foot Trefoil 2013
Lysimachia arvensis, Pimpernel 2013
Olea europaea, Olive
Oxalis pes-caprae, Soursob 2007
Pandorea pandorana, Wonga Vine
Paspalum dilatatum, Paspalum
Pelargonium × *domesticum*, Garden Geranium 2013
Phalaris aquatica, Toowoomba Canary-grass
Pittosporum tenuifolium, Kohuhu
Pittosporum undulatum, Sweet Pittosporum
Plantago lanceolata, Ribwort
Poa annua/infirma, a meadow-grass
Polygonum aviculare, Hogweed 2007
Prunella vulgaris, Self-heal
Prunus cerasifera, Cherry-plum
Romulea rosea, Common Onion-grass

[3] The plants treated here as *Rytidosperma* ?*caespitosum* differ from that species in their paleas scarcely exceeding the lemma sinuses. They are also unusually robust for the species.

[4] A large wallaby-grass has the golden lemmas of *R. duttonianum* and lemma indumentum approaching *R. semiannulare*. It is quite fertile and does not appear to be a hybrid.

[5] A wallaby-grass taxon outwardly resembles *R. setaceum* but has long paleas and lemma indumentum intermediate between *R. semiannulare* and *R. longifolium*. It may be the same undescribed species as grows in similarly swampy habitat in southwest Victoria, from where specimens have been variously misidentified as any of those species.

Introduced species

Rosa rubiginosa, Sweet Briar
Rubus anglocandicans, Blackberry
Salix sp., unidentified willow [2013]
Setaria parviflora, Slender Pigeon Grass [2007]
Sisyrinchium micranthum, Blue Pigroot [2007]
Solanum nigrum, Black Nightshade
Sonchus oleraceus, Sow-thistle
Stellaria media, Chickweed [2013]

Introduced species

Symphyotrichum subulatum, Aster-weed
Taraxacum sect. *Taraxacum*, Garden Dandelion
Trifolium dubium, Suckling Clover
Trifolium repens, White Clover [2013]
Vicia hirsuta, Tiny Vetch [1999]
Vulpia bromoides, Squirrel-tail Fescue
Watsonia meriana var. *bulbillifera*, Bulbil Watsonia

Notes concerning some of the locally-threatened plant species

Listed as Endangered under Victorian law

Austrostipa rudis subsp. *australis* (a subspecies of Veined Spear-grass): In 2020 (the last thorough botanical survey of the site), hundreds of individuals were seen scattered widely, a significant increase on the previous (2014) survey.

Locally threatened

Carex iynx (a sedge): The species has never been known to occur elsewhere in Knox. On its discovery during a botanical survey in 2013, approximately fifteen plants were found. In the next (and most recent) thorough survey (in 2020), only three could be found, somewhat emaciated. The area had been sprayed for blackberries, which may have caused the decline in the *Carex*.

Goodenia humilis (Swamp Goodenia): Many (perhaps over 100) were seen up to 2013 but only 22 could be found in 2020.

Lepidosperma filiforme (Common Rapier-sedge): Small numbers were seen by the author in 1998 & 1999 but they have not been found in subsequent botanical surveys.

Orthoceras strictum (Horned Orchid): The species has never been known to occur elsewhere in Knox. Two individuals were discovered in 2004. They died out within at most a few years.

Patersonia occidentalis (Long Purple-flag): 6 plants found in 1999; 5 in 2002 (the sixth one quite possibly overlooked in the dense scrub); 1 in 2007; none in 2013, 2 in 2020.

Sphaerolobium minus (Globe-pea): In spring 1998, approximately 17 were found. In 2002, only 10 were seen (perhaps because of the time of year and obscuration by teatree scrub). In 2007, only one individual could be found. None were found in 2013 or 2020. A burn might regenerate the species but burning would be very difficult in such proximity to houses.

Thelymitra peniculata. Many dozens in some years, fewer in other years.

Thelymitra rubra (Salmon Sun-orchid): Approximately 100 plants were found in 1998, declining rapidly in subsequent years until none were seen in a 2007 botanical survey or since.

Fauna of special significance

None detected.

Fauna habitat features

- The high density and diversity of shrubs in the reserve significantly improves the habitat for native insects and birds. The prickliness of many of the shrubs helps protect birds from cats. The combination of dense and sparse vegetation suits lizards;
- Fragmentation of the site's native vegetation is to some degree offset by the diversity of habitat (dense to open, damp to dry).

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).

Endangered Vegetation Types

The native vegetation west of the north-south path through the site meets the definition of a 'remnant patch' adopted by the standard criteria, i.e. at least 0.25 ha in which the cover of native understorey is at least 10%

throughout. The path interrupts the native understorey, stranding 0.20 ha on the eastern side and therefore not meeting the definition of a 'remnant patch'. Any 'remnant patch' of a regionally-endangered EVC, as in the case of the Swampy Woodland west of the north-south path, is of 'High' or 'Very High' conservation significance under Appendix 3 of *'Victoria's Native Vegetation Management – A Framework for Action'* (NRE 2002a). Standard criterion 3.2.3 translates this to **State** significance.

Threatened Plants

The site has a large population of the spear-grass, *Austrostipa rudis* subsp. *australis*, which is listed under the *Flora and Fauna Guarantee Act* as Endangered in Victoria. The species also occurs interstate. Any known habitat for such a species meets criterion 3.1.2 for **State** significance.

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

Scientific and Educational Value

The site is of **Regional** significance under criterion 5.1.3 because of its importance as a site for studying and monitoring the regenerative capacity of a regionally-endangered EVC and the ways that this may be encouraged, with application to other sites in the region.

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). Swampy Woodland and nearly all of its characteristic plant species are critically dependent on seasonally-saturated soils and extremely vulnerable to protracted drought, as demonstrated during the Millennium Drought. Eucalypts are also sensitive to long droughts;
- A falling water table, brought about by climate change and/or drainage works for managing the rubbish tip leachate (as happened in 2024);
- Clearing of rare plants during earthworks to manage the leachate;
- Displacement of indigenous flora and fauna by environmental weeds, exacerbated by debilitation of the native vegetation by the impacts of climate change and potentially a falling water table. The introduced plant species that appear to pose the highest threat of ecological deterioration are Kikuyu Grass (*Cenchrus clandestinus*), Couch (*Cynodon dactylon*), Jointed Rush (*Juncus articulatus*) and Paspalum (*Paspalum dilatatum*); perhaps also Spanish Heath (*Erica lusitanica*);
- Potential suppression or elimination (perhaps temporary) of some low indigenous plant species by out-competition from dense scrub-forming shrubs such as burgan (*Kunzea* species);
- Ongoing garden waste dumping by neighbours;
- Continuing 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), based on the same matters as listed under the heading 'Significance ratings' above except regarding the endangered spear-grass. Since 2010, the only material change affecting the original basis for applying ESO2 is that the spear-grass has been found in the site and then listed as Endangered under Victorian law. That change does not affect the appropriateness of ESO2 for the site, so no recommendation arises for amending ESO2;
- The site is zoned Public Park and Recreation Zone (PPRZ).

Information sources used in this assessment

- The 1997 report, *'Vegetation Survey of Linear Reserves – A Management Strategy for Riparian and Flood Plain Vegetation'*, by Reid, Moss and Lorimer for Knox City Council, along with the supporting field data. This included descriptions of vegetation composition, compilation of a list of indigenous and introduced plant species, incidental fauna observations, and checks for fauna habitat, ecological threats and management issues. The fieldwork was conducted by Dr Lorimer in March and April 1997 and data from the Coppelia Street Bushland were partly aggregated with data from Llewellyn Reserve;

- Site surveys by Dr Lorimer on 17/10/98, 24/10/98 and 25/6/99 for *'A Management Plan for Coppelia Street Bushland, Wantirna South'* and *'Monitoring of Bushland Reserves in Knox'*, both for Knox City Council in 1999. This included:
  - Compilation of lists of indigenous and introduced plants within each of five parts of the reserve;
  - Detailed mapping and documentation of rare species populations and the ecological condition of the vegetation;
  - A description of the vegetation's structural and floristic composition;
  - Compilation of detailed data from a quadrat;
  - Incidental fauna observations;
  - Checks for fauna habitat, ecological threats and management issues;
  - Recommendations for the care and maintenance of the vegetation, including weed control; and
  - Taking six photographs of scenes that capture the main ecological features of the reserve for long-term monitoring of the reserve;
- A brief visit to the reserve to inspect the newly-discovered *Orthoceras strictum* on 14/1/04;
- Vegetation monitoring data, as described in the Dr Lorimer's reports in the series, *'Monitoring of Bushland Reserves in Knox'*, in 1999, 2002, 2007, 2014 and 2020. The reports were prepared for Knox City Council and each one contains:
  - For two monitoring plots (quadrats), a list of indigenous and introduced vascular plants accompanied by their abundances on a Braun-Blanquet scale;
  - Lists of plant species (indigenous and introduced) observed in the site as a whole;
  - Maps and assessments of the population sizes and distributions of plant species that are scarce or significant;
  - An assessment of environmental weed impacts and other matters affecting vegetation management;
  - A list of fauna observed incidentally; and
  - A series of photographs from six fixed points, highlighting aspects of the reserve's vegetation;
- Brief visits by Dr Lorimer in November of several other years since 1998 to examine the sun-orchids;
- A brief inspection of the site by Dr Lorimer on 31st August 2024, checking for changes in features relevant to this report compared with pre-existing information;
- Records of flora and fauna observations stored in the Knox City Council's biodiversity database;
- A search for records of flora and fauna observations stored in the Atlas of Living Australia (only finding nine records, all of very common urban bird species);
- 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.