

## Site 45. Roselyn Crescent Reserve, Boronia

Council park with extensive cover of native vegetation. Melway ref. 64 D10.

### Site Significance Level: *State*

- Despite clearing of part of the park and a history of slashing and drainage works in some other parts, a substantial part of the reserve supports rich native ground flora in two regionally Endangered EVCs (Valley Heathy Forest and Swampy Woodland);
- There are many species (notably orchids) that are threatened in Knox or the Melbourne area generally, and records from the 1980s of orchids that are threatened in the whole of Victoria.



### Boundaries

This site is as outlined in red above, comprising two lots. The total area is 2.52 ha.

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

### Site description

This site lies on a shallow drainage line that flows southwest, at elevations of 85-90 m and with slopes of 2% to 4%. The Lower Devonian sedimentary bedrock is part of the Humevale formation, which decays to a heavy clay subsoil and shallow, poorly draining, light grey loam topsoil. This is shallowly covered with silt along the drainage line, where Swampy Woodland grows.

The park's vegetation varies from open lawn of introduced species through to rather natural forest. The aerial photograph shows a long slippery-dip on a large mound of soil in the largest treeless area of the park. The rest of the playground

facilities are just east of the mound, beneath some trees. This eastern corner has very little native understorey, which is also true of most of the smaller lot that provides pedestrian access between Roselyn Crescent and Wadhurst Drive.

The rest of the park retains native understorey whose ecological condition is patchy due to the history of slashing and pedestrian traffic. The more intact areas are rich in species, and particularly orchids, as is characteristic of Valley Heathy Forest. There are several records of orchid species that are very rare in Knox and the Melbourne area generally, as well as one listed nationally and one listed in Victoria.

Unfortunately, most of the populations of rare orchids were apparently destroyed in the late 1980s or early 1990s, according to orchid experts, Jeff and John Jeanes. Optimistically, one or more of these may reappear, perhaps after fire. The Knox Environment Society promoted an 'orchid regeneration project' to stem the losses in the reserve (discussed in a KES brochure from 1986), which resulted in a reduction in Council's mowing of the reserve and a subsequent partial recovery of the understorey.

The park's two vegetation types, Valley Heathy Forest and Swampy Woodland, are regionally Endangered. There is not a clear transition between them and the overstorey displays a different pattern than the ground flora. This might be due to the shallowness of the drainage line and the silt deposited in it, because plants of the ground flora are more likely to reflect topsoil conditions whereas larger plants are more affected by subsoil conditions.

Knox City Council has revegetated parts of the reserve with indigenous species.

### Relationship to other land

300 m south of Roselyn Crescent Reserve is Site 44 (Wadhurst Drive Park), which is part of the Blind Creek habitat corridor (see also Site 33). The birdlife in Roselyn Crescent Reserve, and particularly the abundance of parrots, is likely to be considerably reliant on the presence of the Blind Ck corridor and, to a small extent, Wadhurst Drive Park.

**Bioregion:** Gippsland Plain

### Habitat types

**Valley Heathy Forest (EVC 127, regionally Endangered):** Estimated to occupy 6,200 m<sup>2</sup>, comprising 2,300 m<sup>2</sup> in good ecological condition (rating B), 1,900 m<sup>2</sup> in fair ecological condition (rating C) and 2,000 m<sup>2</sup> in poor ecological condition (rating D). 59 indigenous plant species recorded by the author, plus one other recorded by Mr Andrew Paget in May 1985. Approximately 61 indigenous plant species were recorded in this EVC by the author, but the number is uncertain due to the indistinct boundary between EVCs. Mr John Jeanes in 2001 reported another four orchid species as recent observations and five more as having been present in the 1980s but apparently since destroyed.

**Canopy trees:** Dominated by *Eucalyptus obliqua* and *E. cephalocarpa* with fewer *E. radiata* and very few *E. goniocalyx* and *E. macrorhyncha*.

**Lower trees:** Scattered *Acacia mearnsii*.

**Shrubs:** Scarce due to past slashing, but *Bursaria spinosa* and *Acacia verticillata* are conspicuous.

**Vines:** *Billardiera mutabilis* is fairly abundant.

**Ferns:** There are patches of *Pteridium esculentum*.

**Ground flora:** Densely grassy and dominated variously by *Themeda triandra*, *Poa tenera* or *Platylobium formosum*.

**Swampy Woodland (EVC 937, regionally Endangered):** Estimated to occupy 10,000 m<sup>2</sup> (excluding areas of trees over exotic lawn), comprising 2,500 m<sup>2</sup> in good ecological condition (rating B), 1,000 m<sup>2</sup> in fair ecological condition (rating C) and 6,500 m<sup>2</sup> in poor ecological condition (rating D). Approximately 65 indigenous plant species were recorded in this EVC by the author, but the number is uncertain due to the indistinct boundary between EVCs.

**Dominant canopy trees:** *Eucalyptus cephalocarpa* approx. 18m tall, along with *E. ovata* in damper areas.

**Dominant lower trees:** *Acacia melanoxydon* and *Acacia mearnsii* with rather less *Exocarpos cupressiformis*.

**Shrubs:** Reduced in density by past slashing. *Bursaria spinosa* and *Acacia verticillata* are most abundant. Other species include *Cassinia arcuata*, *Kunzea ericoides*, *Leptospermum scoparium* and *Pultenaea gunnii*. *Goodenia ovata* is absent, which is not a natural situation in such vegetation.

**Vines:** *Billardiera mutabilis* is fairly abundant.

**Creepers:** Creepers are represented by no fewer than seven species, including the ecological indicator species, *Goodenia elongata*.

**Ferns:** *Lindsaea linearis* was the only fern species found.

**Ground flora:** Patchy in density, composition and ecological condition due to past slashing and drainage works. The dominant species are not significantly different from the Valley Heathy Forest, but the non-dominant species include such ecological indicator species as *Allittia cardiocarpa*, *Diuris chryseopsis*, *Drosera peltata* subsp. *peltata*, *Goodenia elongata* and *Hypoxis vaginata*.

## Plant species

The following plant species were observed by the author except for the asterisked orchid species, which were reported by Mr John Jeanes and are likely to have died out. The column headed 'Risk' indicates the indigenous species' risk of extinction in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; 'V'=Vulnerable; and 'X'=extinct. In addition, *Pterostylis* × *ingens* is rare nationally and species with names in bold are rare throughout the Melbourne region.

Risk	Indigenous Species	Risk	Indigenous Species
E	<i>Acacia aculeatissima</i>	V	<i>Helichrysum scorpioides</i>
V	<i>Acacia mearnsii</i>	E	<i>Hibbertia riparia</i>
V	<i>Acacia melanoxylon</i>	E	<i>Hydrocotyle foveolata</i>
V	<i>Acacia verticillata</i>	E	<i>Hypericum gramineum</i>
	<i>Acaena novae-zelandiae</i>	E	<i>Hypoxis vaginata</i>
	<i>Acrotriche serrulata</i>		<i>Kunzea ericoides</i> spp. agg.
C	<b><i>Allittia cardiocarpa</i></b>		<i>Lachnagrostis filiformis</i>
C	<i>Amyema pendula</i>	V	<i>Lagenophora gracilis</i>
C	<b><i>Aphelia pumilio</i></b>		<i>Lepidosperma gunnii</i>
	<i>Arthropodium strictum</i>	V	<i>Leptorhynchos tenuifolius</i>
	<i>Austrostipa pubinodis</i>		<i>Leptospermum continentale</i>
	<i>Austrostipa rudis</i> subsp. <i>rudis</i>	E	<i>Leptospermum scoparium</i>
	<i>Billardiera mutabilis</i>	V	<i>Lindsaea linearis</i>
	<i>Bossiaea prostrata</i>		<i>Lomandra filiformis</i> subsp. <i>coriacea</i>
	<i>Burchardia umbellata</i>		<i>Lomandra filiformis</i> subsp. <i>filiformis</i>
	<i>Bursaria spinosa</i>		<i>Lomandra longifolia</i>
V	<i>Caesia parviflora</i>	V	<i>Luzula meridionalis</i>
X	<b><i>Caladenia clavigera</i></b> *		<i>Microlaena stipoides</i>
	<i>Carex breviculmis</i>		<i>Microtis parviflora</i>
	<i>Cassinia arcuata</i>	C	<i>Muellerina eucalyptoides</i>
V	<i>Cassinia longifolia</i>	V	<i>Opercularia ovata</i>
C	<b><i>Corunastylis despectans</i></b> *	V	<i>Opercularia varia</i>
V	<i>Cotula australis</i>		<i>Oxalis exilis/perennans</i>
C	<i>Craspedia variabilis</i>	V	<i>Pimelea humilis</i>
V	<i>Crassula decumbens</i>	V	<i>Platylobium formosum</i>
	<i>Deyeuxia quadriseta</i>		<i>Poa morrisii</i>
	<i>Dianella admixta</i>		<i>Poranthera microphylla</i>
	<i>Dichondra repens</i>		<i>Pteridium esculentum</i>
V	<i>Dillwynia cinerascens</i>	C	<i>Pterostylis curta</i>
E	<i>Dipodium roseum</i>		<i>Pterostylis nutans</i>
C	<b><i>Diuris chryseopsis</i></b>	C	<i>Pterostylis pedunculata</i> *
C	<i>Diuris orientis</i> *	X	<b><i>Pterostylis</i> × <i>ingens</i></b> *
V	<i>Drosera peltata</i> subsp. <i>auriculata</i>	V	<i>Pultenaea gunnii</i>
E	<i>Drosera peltata</i> subsp. <i>peltata</i>		<i>Rytidosperma pallidum</i>
V	<i>Drosera whittakeri</i>		<i>Rytidosperma</i> sp.
V	<i>Epacris impressa</i>		<i>Schoenus apogon</i>
V	<i>Eucalyptus cephalocarpa</i>		<i>Senecio quadridentatus</i>
	<i>Eucalyptus goniocalyx</i>	V	<i>Solenogyne dominii</i>
E	<i>Eucalyptus macrorhyncha</i>	V	<i>Thelymitra peniculata</i>
V	<i>Eucalyptus obliqua</i>		<i>Themeda triandra</i>
V	<i>Eucalyptus ovata</i>		<i>Tricoryne elatior</i>
E	<i>Eucalyptus radiata</i>	E	<i>Viola hederacea</i>
	<i>Gonocarpus tetragynus</i>	E	<i>Wahlenbergia gracilis</i>
C	<b><i>Goodenia elongata</i></b>	E	<i>Wurmbea dioica</i>
	<i>Goodenia lanata</i>	E	<i>Xanthosia dissecta</i>

### Introduced Species

<i>Agrostis capillaris</i>	<i>Cordyline australis</i>	<i>Plantago lanceolata</i>
<i>Aira</i> sp.	<i>Cotoneaster glaucophyllus</i>	<i>Prunella vulgaris</i>
<i>Allium triquetrum</i>	<i>Ehrharta erecta</i>	<i>Prunus cerasifera</i>
<i>Anthoxanthum odoratum</i>	<i>Festuca arundinacea</i>	<i>Romulea rosea</i>
<i>Arctotheca calendula</i>	<i>Grevillea rosmarinifolia</i>	<i>Rubus anglocandicans</i>
<i>Briza maxima</i>	<i>Hedera helix</i>	<i>Taraxacum officinale</i> spp. agg.
<i>Centaurium erythraea</i>	<i>Hypochoeris radicata</i>	<i>Trifolium dubium</i>
<i>Cerastium glomeratum</i>	<i>Paspalum dilatatum</i>	<i>Vulpia bromoides</i>

**Notes concerning some of the locally threatened plant species**

- Acacia aculeatissima* (Thin-leaf Wattle). Very scarce, perhaps only one or two plants.
- Allittia cardiocarpa* (Swamp Daisy). Five flowered in 2009, but others could easily have escaped detection.
- Aphelia pumilio* (Dwarf Aphelia). Hundreds were observed in one small area in 2001, not since.
- Caladenia clavigera* (Plain-lip Spider-orchid). Last seen in the 1980s, before it was squashed beneath tractor wheels.
- Corunastylis* (= *Genoplesium*) *despectans* (Sharp Midge-orchid). Last seen in the mid 1980s, and suspected to be no longer present.
- Cotula australis* (Common Cotula). Many growing opportunistically in the Roselyn Crescent nature strip.
- Craspedia variabilis* (Variable Billy-buttons). Several regenerated after fire several years ago but only one was seen in 2009.
- Crassula decumbens* var. *decumbens* (Spreading Crassula). One patch found.
- Diuris chryseopsis* (Golden Moths). Thirteen were flowering in September 2001, none on 3/9/09.
- Diuris corymbosa* (Wallflower Orchid). Reported by Mr John Jeanes, who suspects this species is no longer in the reserve.
- Drosera peltata* ssp. *peltata* (Pale Sundew). Scattered in the Swampy Woodland.
- Goodenia elongata* (Lanky Goodenia). Only one found.
- Hydrocotyle foveolata* (Yellow Pennywort). Hundreds were observed in one small area
- Hypoxis vaginata* (Sheath Star). Seven individuals were found, and others could easily have escaped detection.
- Luzula meridionalis* (Common Woodrush). Several found.
- Pterostylis* × *ingens* (Sharp Greenhood). Last seen in the mid 1980s, and believed to be no longer present.
- Pterostylis curta* (Blunt Greenhood). Seen recently by Mr John Jeanes, number not stated.
- Pterostylis pedunculata* (Maroon-hood). Reported by Mr John Jeanes, who suspects this species is no longer in the reserve.

**Fauna of special significance**

None recorded.

**Fauna habitat features**

- There is a high density of hollows in the trees, many of them occupied by galahs, rosellas, possums or honey bees;
- There is a small number of logs on the ground;
- There is at least one nest box.

**Significance ratings**

The following is an assessment of the site's significance against the Department of Sustainability & Environment's standard criteria (Amos 2004).

*Endangered Vegetation Types*

Both vegetation types present are listed as regionally Endangered. It follows from Appendix 3 of *Victoria's Native Vegetation Management - a Framework for Action* (NRE 2002a) that Roselyn Crescent Reserve's native vegetation is of at least High conservation significance. This, in turn, gives the site **State** significance under criterion 3.2.3 of Amos (2004).

*Locally Threatened Plant Species*

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

**Threats**

- Invasion by Sweet Vernal-grass (*Anthoxanthum odoratum*) – medium-level threat;
- Critically small population sizes of some plant species, particularly in the cases of *Acacia aculeatissima*, *Allittia cardiocarpa*, *Craspedia variabilis*, *Eucalyptus macrorhyncha*, *Goodenia elongata* and *Pimelea humilis*;
- Fragmentation of habitat, leading to reduced visitation by small insect-eating birds and hence a risk of plant pests and diseases;
- Galahs that have completely ringbarked two trees and threaten some others;
- Dog faeces and scratching – medium-level threat;
- Trampling – medium-level threat.

**Management issues**

- Fire may regenerate one or more of the various rare orchid species that have disappeared from the reserve. Fire is discussed in the report, '*Fire in Knox Bushland Reserves 2001*' by Dr Lorimer for Knox City Council;

- Because of the reserve's importance for its endangered vegetation type and the richness of species (particularly orchids), it is important that the vegetation be managed as intensely as any other in Knox, including regular hand removal of weeds among the ground flora;
- The shrub layer should be enriched by planting some of the species that are uncharacteristically missing, such as *Acacia myrtifolia* and *Goodenia ovata*;
- Species whose population sizes are dangerously small should also be planted (see 'Threats' above);
- Tree hollows should be monitored in spring to detect nesting by undesirable species (e.g. Common Mynas) or discourage galahs from ringbarking trees.

#### **Administration matters**

- This site is highly worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of its State significance, the endangered EVCs, the large number of significant plant species, the richness of the site's native vegetation and the habitat that it provides for fauna;
- The Planning Scheme zoning is Public Park and Recreation Zone (PPRZ);
- The park's larger lot is included under the existing Vegetation Protection Overlay Schedule 1 of the Knox Planning Scheme.

#### **Information sources used in this assessment**

- A site survey by Dr Lorimer, mainly on 19/9/01 and 1/10/01, principally for the report, '*Fire in Knox Bushland Reserves 2001*' by Lorimer (2001). This followed nearly all of this study's standard procedures discussed in Section 2.4 of Volume 1 including mapping, descriptions of the vegetation composition, compilation of lists of indigenous and introduced plant species, incidental fauna observations, and checks for fauna habitat, ecological threats, management issues and populations of scarce or threatened plant species;
- A quadrat record (N04069) collected by Mr John Reid on 12/6/97;
- A letter about the park's orchid conservation from Mr John Jeanes to Knox City Council, dated 8/10/01;
- Discussions with orchid experts Messrs John and Jeff Jeanes in 2001 and 2004 respectively, about the history of orchids in the reserve;
- A brochure about the park by the Knox Environment Society dated 1986;
- Aerial photography from February 2001 and April 2003;
- Satellite imagery of the district;
- The Department of Sustainability & Environment's BioMaps of the area;
- Maps of geology and topography produced by agencies of the Victorian government.