

Site 24. St Bernadette's Primary School, The Basin

Treed playground area and a small school sanctuary. Melway ref. 65 F7.

Site Significance Level: *State*

- Contains representations of two vegetation types that are regionally Endangered, albeit with substantial modification by humans and weeds;
- Two of the indigenous plant species present are rare (but not threatened) in Knox.

Aerial photograph and plan: See page 137, which covers this site and Site 25.

Boundaries

Three sides of the site boundary coincide with the school's property boundary, and the fourth (northeastern) side is parallel to, and 65.5 m from, the southwestern property boundary. The total area is 6,835 m².

Land use & tenure: Primary school playground and sanctuary.

Site description

This site comprises a treed playground for the school's children and a small, fenced sanctuary (marked on the aerial photograph) with young regrowth along a drainage line.

The site is within a narrow transition zone between the Gippsland Plain bioregion and the Highlands - Southern Fall bioregion. The vegetation types are intermediate between those that one would expect to find in similar topography in each of these bioregions. In particular, the main vegetation in the playground is intermediate between the Valley Heathy Forest that one would associate with the Gippsland Plain and Grassy Forest that one would associate with the Highlands Southern Fall.

The school sanctuary's vegetation is mostly young Swampy Woodland, with a narrow strip of the intermediate Grassy Forest / Valley Heathy Forest just inside the western edge. The ecological condition of vegetation in the sanctuary is patchy, with localised serious infestations of environmental weeds. This is a common problem along drainage lines, due to the good growing conditions for weeds.

Native vegetation in the playground is less affected by weeds and more affected by trampling and other effects of children playing. The number of indigenous plant species outside the sanctuary is actually higher than inside, despite the comparable area. This probably reflects a worse history of vegetation degradation along the drainage line prior to creation of the sanctuary.

Relationship to other land

The site abuts Site 25 and there would no doubt be substantial traffic of fauna, seeds and pollen between the two sites. Other treed properties in the neighbourhood help to keep native birds in the area.

Bioregion: Gippsland Plain, on the edge where it abuts the Highlands Southern Fall.

Habitat types

Intermediate Valley Heathy Forest / Grassy Forest (EVCs 127 and 128, both regionally **Endangered**): Estimated to cover 2,500 m², comprising 50 m² in good ecological condition (rating B), 150 m² in fair ecological condition (rating C) and 2,300 m² in poor ecological condition (rating D). 38 indigenous plant species were recorded by the author on 3/4/02.

Dominant canopy trees: *Eucalyptus obliqua*, with fewer *E. radiata* and even fewer *E. cephalocarpa*.

Dominant lower trees: *Exocarpos cupressiformis* and *Acacia melanoxylon* dominate, and *Acacia mearnsii* is also present.

Shrubs: Dominated by *Bursaria spinosa* (typical of Valley Heathy Forest), and also with abundant *Kunzea ericoides* and smaller numbers of other species.

Vines: None found.

Ferns: *Pteridium esculentum* is present but not abundant.

Ground flora: Grassy, with 80% ground coverage. Dominated by *Austrostipa rudis*. Other abundant species include *Rytidosperma penicillatum*, *Microlaena stipoides*, *Lomandra filiformis*, *L. longifolia*, *Tetrarrhena juncea*, *Gonocarpus tetragynus* and *Platylobium formosum*. *Gahnia radula*, *Rytidosperma pallidum*, *Dianella admixta*,

Dipodium roseum, *Pimelea humilis* and *Hypericum gramineum* are present, as they usually are in Grassy Forest and Valley Heathy Forest locally.

Swampy Woodland (EVC 937, **regionally Endangered**): Estimated to cover 1,500 m², all in fair ecological condition (rating C). 21 indigenous plant species were recorded by the author on 3/4/02.

Dominant canopy trees: Young *Eucalyptus obliqua* to 12 m tall and 150 mm trunk diameter, indicating regeneration after clearing some years ago. *E. ovata* is usually dominant in local Swampy Woodland, but not in this case.

Dominant lower trees: *Acacia melanoxylon* is dense, with approximately 70% cover.

Shrubs: Patchy in density due to uneven natural regeneration. *Leptospermum scoparium*, *Kunzea ericoides* and *Ozothamnus ferrugineus* are the main species.

Vines: *Billardiera mutabilis* is present.

Ferns: *Pteridium esculentum* is dense among blackberries, beneath gaps in the tree canopy.

Ground flora: Dominated by *Gahnia sieberiana* and *Lepidosperma elatius*. The characteristic species, *Centella cordifolia* and *Lobelia alata* are present.

Plant species

The following plant species were observed on 3rd April 2002. The column headed 'Risk' indicates the indigenous species' risk of extinction in Knox with 'E'=Endangered and 'V'=Vulnerable. Additional wild indigenous species would no doubt be found in other seasons.

Risk	Indigenous Species	Risk	Indigenous Species
V	<i>Acacia mearnsii</i>		<i>Kunzea ericoides</i> spp. agg.
V	<i>Acacia melanoxylon</i>		<i>Lepidosperma elatius</i>
V	<i>Acacia verticillata</i>	E	<i>Leptospermum scoparium</i>
	<i>Austrostipa rudis</i> subsp. <i>rudis</i>	E	<i>Lobelia anceps</i>
	<i>Billardiera mutabilis</i>		<i>Lomandra filiformis</i> subsp. <i>coriacea</i>
	<i>Bursaria spinosa</i>		<i>Lomandra filiformis</i> subsp. <i>filiformis</i>
E	<i>Centella cordifolia</i>		<i>Lomandra longifolia</i>
	<i>Deyeuxia quadriseta</i>		<i>Microlaena stipoides</i>
	<i>Dianella admixta</i>		<i>Microtis ?parviflora</i>
V	<i>Dianella tasmanica</i> (perhaps planted)	V	<i>Opercularia varia</i>
E	<i>Dipodium roseum</i>	E	<i>Ozothamnus ferrugineus</i>
V	<i>Epacris impressa</i>	V	<i>Pimelea humilis</i>
	<i>Eragrostis brownii</i>	V	<i>Platylobium formosum</i>
V	<i>Eucalyptus cephalocarpa</i>		<i>Poa morrisii</i>
V	<i>Eucalyptus obliqua</i>	E	<i>Poa tenera</i>
E	<i>Eucalyptus radiata</i>		<i>Pteridium esculentum</i>
V	<i>Euchiton collinus</i>		<i>Rytidosperma pallidum</i>
V	<i>Exocarpos cupressiformis</i>		<i>Rytidosperma penicillatum</i>
	<i>Gahnia radula</i>	E	<i>Rytidosperma semiannulare</i>
E	<i>Gahnia sieberiana</i>		<i>Schoenus apogon</i>
	<i>Gonocarpus tetragynus</i>		<i>Senecio quadridentatus</i>
	<i>Goodenia ovata</i>	E	<i>Stylidium armeria/graminifolium</i>
E	<i>Hypericum gramineum</i>		<i>Tetrarrhena juncea</i>
V	<i>Isolepis inundata</i>		<i>Themeda triandra</i>

Introduced Species

<i>Agrostis capillaris</i>	<i>Hakea salicifolia</i>	<i>Paspalum dilatatum</i>	<i>Ranunculus repens</i>
<i>Crocospmia</i> × <i>crocospmiiflora</i>	<i>Holcus lanatus</i>	<i>Pinus radiata</i>	<i>Rubus anglocandicans</i>
<i>Dactylis glomerata</i>	<i>Hypochoeris radicata</i>	<i>Pittosporum undulatum</i>	

Notes concerning some of the locally threatened plant species

Gahnia sieberiana (Red-fruit Saw-sedge). A dominant species in the Swampy Woodland of the fenced sanctuary.

Microtis ?parviflora (Slender Onion-orchid). Found in the Grassy Forest of the fenced sanctuary, numbers unclear.

Fauna of special significance

None found.

Fauna habitat features

- The substantial numbers of *Gahnia sieberiana* would provide good habitat for the locally uncommon Swordgrass Brown butterfly, whose conservation has been made a priority by Knox City Council and the Knox Environment Society;

- The ground layer of dense grasses and sedges in much of the site is excellent habitat for insects that rely on such habitat, including butterflies and probably skippers (insects that are intermediate between butterflies and moths). A survey for skippers would be worthwhile;
- The trees would attract a reasonable diversity of forest birds, and probably also bats;
- The damp vegetation along the drainage line, and its proximity to drier vegetation, are ideal for the Southern Brown Tree Frog, which was observed at the site.

Significance ratings

Vegetation Type and Condition

Grassy Forest, Valley Heathy Forest and Swampy Woodland are all regionally endangered EVCs. The Department of Sustainability & Environment's significance criterion 3.2.3 (Amos 2004) assigns **State** significance to any site containing a remnant patch of an Endangered EVC, which applies to the patch extending from this site into George Grumont Reserve.

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 the environmental weeds listed below:
 - Serious: Monterey Pine (*Pinus radiata*), Sweet Pittosporum (*Pittosporum undulatum*), Blackberry (*Rubus discolor*);
 - Moderate: Montbretia (*Crocasmia × crocosmiiflora*), Cocksfoot (*Dactylis glomerata*), Willow Hakea (*Hakea salicifolia*), Yorkshire Fog (*Holcus lanatus*), Cat's Ear (*Hypochoeris radicata*), Paspalum (*Paspalum dilatatum*) and Creeping Buttercup (*Ranunculus repens*);
- Loss or decline of plant species that are present in dangerously small numbers, due to inbreeding, poor reproductive success or vulnerability to localised chance events;
- Potentially trampling in the playground, but the vegetation appears to have reached a stable state with the current level of trampling and other play activities.

Management issues

- The sanctuary's vegetation is rather young regrowth and its condition suggests recovery from a less natural state, for which the school is to be congratulated. A little more effort on Sweet Pittosporum, blackberry and pines around the drainage line would substantially help, and perhaps stave off serious deterioration (and consequent harder work) over the next few years.

Administration matters

- It would be desirable to have an expert on skippers (insects that are intermediate between butterflies and moths) survey the site in spring and summer, due to the possibility that rare species are present;
- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of the endangered EVCs;
- The site is included under the existing Vegetation Protection Overlay Schedule 1 of the Knox Planning Scheme. This is partly on the basis of the investigation by Water Ecoscience (1998), in which this is part of their Site 34;
- The whole school is zoned R1Z, like the abutting residential properties.

Information sources used in this assessment

- A site survey undertaken during this study by Dr Lorimer for 1 hour 30 minutes on 3/4/02 using this study's standard procedures discussed in Section 2.4 of Volume 1. This included a description of the vegetation composition, compilation of lists of indigenous and introduced plant species for three separate parts of the site, incidental fauna observations, and checks for fauna habitat, ecological threats and management issues;
- 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.

Acknowledgment

Thank you to the school for permission to inspect the site.