

Site 19. Hillside above Sheffield Road, The Basin

Salvation Army land east of Sheffield Rd, mostly forested. Melway ref. 65 A6 & 66 A5-6.

Site Significance Level: *State*

- Contains extensive areas of intact Grassy Forest with a moderately high diversity of indigenous ground flora;
- Supports several significant plant species, including a substantial population of the Small Tongue-orchid *Cryptostylis leptochila*, which is rare in the Melbourne area;
- Provides relatively undisturbed habitat for native wildlife in conjunction with the adjoining Dandenong Ranges National Park, particularly for forest birds, butterflies and ground-dwelling fauna;
- Includes remnant trees containing natural hollows suitable for hollow-dependent fauna;
- Functions as an ecological buffer to the Dandenong Ranges National Park and the habitat corridor along Dandenong Creek.



Aerial photograph taken April 2003

Boundaries

The site boundaries are as shown in red on the aerial photograph, and encompass a whole parcel of land (part of the Salvation Army's farm). The northern and eastern edges abut the Dandenong Ranges National Park. To aid the discussion below, the site is divided into the four sections labelled above. Section 4 has negligible native vegetation but is included within the site because it is still environmentally important, particularly in the sense that any development or change in land use there may impact on either the rest of the site, the National Park or Site 20.

Land use & tenure: Part of a Salvation Army farm, used for grazing of cattle and horses.

Site description

The native vegetation in this 22.94 ha site is located on gently sloping land near the base of a west-facing slope in the Dandenong Ranges (approx. 160-200m elevation). A few drainage lines extend down the slope through the site. The soil is shallow loam over clay subsoil, derived from decay of the underlying Mt Evelyn rhyodacite formation (part of the Mt Dandenong volcanic flows).

The western, pastoral section of the site (Section 4) extends onto the alluvial flats of Dandenong Ck and Dobsons Ck. It has negligible native vegetation other than a few remnant trees.

The upper, most easterly section of the site (Section 1 on the aerial photograph) supports predominantly intact forest with moderately high quality understorey vegetation. This area has been fenced to exclude livestock access until relatively recently, however the fence has become dilapidated and no longer restricts access by cattle from intensively grazed pastures on the western side. Several informal vehicle tracks occur within this section of the site. Substantial recent clearing of remnant trees has occurred in a strip approximately 50 m wide along the southern boundary of this land, particularly adjacent to the end of Milleara St (presumably for the establishment of a firebreak, with collection of firewood also apparent).

Sections 2 & 3 support a fair to good cover of remnant trees, however understorey vegetation has been substantially depleted by cattle grazing except for scattered prickly shrubs such as Sweet Bursaria and Prickly Moses. Dieback and death of remnant trees is apparent from ringbarking by cattle and altered natural drainage. Moderate to severe infestations of pasture weeds occur in this area, particularly of Blackberry and Spear Thistle, with some Ragwort.

Relationship to other land

The site adjoins the extensive, intact forest vegetation and wildlife habitat in the Doongalla Forest section of the Dandenong Ranges National Park, which is a site of National significance. The southern edge abuts Site 18 and the western edge abuts Site 20. There is no doubt extensive movement of native fauna, as well as the pollen and seeds that they carry, between these sites.

Many residential properties in the surrounding area to the south and east (along Milleara St, Simpsons Rd and Doongalla Rd) support a fair to good cover of remnant trees and some indigenous understorey vegetation. The treed areas on 4B and 6A Doongalla Rd, adjoining the southern edge of the site, also contain some understorey in good ecological condition. Taken as a whole, the site and its neighbours provide an effective extension of the habitat in the National Park, and act as an ecological buffer. However, they also function as a source of environmental weeds entering the park.

The site is located near the headwaters of Dandenong Creek, forming a component of the wildlife corridor along the creek.

Bioregion: The native vegetation practically all lies in the Highlands Southern Fall bioregion. The alluvial flats of Dandenong Ck and Dobsons Ck are taken here to be part of the Gippsland Plain, although this differs from the interim boundary of the Department of Sustainability & Environment.

Habitat types

Grassy Forest (EVC 128, **regionally Vulnerable**) in Sections 1 and 2, grading into Swampy Woodland (also regionally vulnerable) on poorly drained lower sections of the slope.

Section 1: Area 12.4 ha, of which 10% (1.2 ha) is in good ecological condition (rating B) and 90% (11.2 ha) is in fair ecological condition (rating C). 57 indigenous plant species recorded, and likely to support additional seasonal species.

Canopy trees: Intact cover of remnant trees up to 30m tall dominated by *Eucalyptus obliqua* and *E. radiata*, with some *E. gonicalyx* and *E. ovata*. Trees are of ages up to around 100 years old.

Lower trees: Scattered specimens of *Acacia melanoxylon* and *Exocarpos cupressiformis*.

Shrubs: Patchy shrub layer, including *Leptospermum scoparium*, *Bursaria spinosa*, *Acacia verticillata* and several other species. Density reduced by clearing and grazing activities.

Vines: Some *Clematis aristata*, *Pandorea pandorana*, *Billardiera mutabilis* and *Hardenbergia violacea*.

Ferns: Widespread *Pteridium esculentum* and a few small specimens of *Cyathea australis*.

Ground flora: Dominated by a mix of indigenous herbs and grasses, including *Tetrarrhena juncea*, *Platylobium formosum*, *Rytidosperma penicillatum*, *Acrotriche prostrata*, *Goodenia lanata* and a range of additional ground layer species. Includes substantial populations of *Cryptostylis leptochila* and *Dipodium roseum* and is likely to support additional terrestrial orchids and lilies in some locations. Species diversity is reduced by grazing to some extent, however the ground layer is remarkably weed-free, with excellent potential for rehabilitation. No recent fire apparent.

Section 2: Area 1.7 ha, all in poor ecological condition (rating D). 13 indigenous plant species recorded.

Canopy trees: A fair cover of remnant trees up to 30m tall. Mainly dominated by *Eucalyptus obliqua*, with some *E. radiata*, *E. gonicalyx*, *E. cephalocarpa* and *E. ovata*. Moderate to severe foliage dieback and tree death from ringbarking by cattle and altered natural drainage (cleared understorey). No regeneration apparent.

Lower trees: A few scattered specimens of *Acacia melanoxylon*.

Shrubs: Scattered prickly shrubs that have tolerated grazing, including *Bursaria spinosa* and *Acacia verticillata*.

Vines and ferns: Absent.

Ground flora: Heavily depleted by grazing.

Swampy Woodland (EVC 937, **regionally Vulnerable**) in Section 3, grading into Grassy Forest uphill. Area 1.3 ha, all in poor ecological condition (rating D). 7 indigenous plant species recorded.

Canopy trees: A fair to good cover of *Eucalyptus cephalocarpa* trees up to 20m tall, with some *E. obliqua* and *E. radiata*. Moderate to severe foliage dieback and tree death from ringbarking by cattle and altered natural drainage (cleared understorey). No regeneration apparent.

Lower trees: Absent.

Shrubs: Scattered prickly shrubs that have tolerated grazing, including *Bursaria spinosa* and *Acacia verticillata*.

Vines and ferns: Absent.

Ground flora: Depleted by grazing, except for some *Microlaena stipoides*.

Plant species

The following plant species were observed by Mr Rik Brown on 8th April 2002. The column headed 'Risk' indicates the indigenous species' risk of extinction in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; and 'V'=Vulnerable. In addition, *Lomatia ilicifolia* and *Cryptostylis leptochila* are rare throughout the Melbourne region. More than a dozen additional wild indigenous species would no doubt be found in other seasons.

Risk	Indigenous Species	Risk	Indigenous Species
V	<i>Acacia melanoxylon</i>	V	<i>Hydrocotyle hirta</i>
V	<i>Acacia verticillata</i>		<i>Juncus</i> sp.
	<i>Acaena novae-zelandiae</i>		<i>Lepidosperma elatius</i>
V	<i>Acrotriche prostrata</i>	E	<i>Leptospermum scoparium</i>
	<i>Austrostipa rudis</i>	E	<i>Lobelia anceps</i>
	<i>Billardiera mutabilis</i>		<i>Lomandra filiformis</i> subsp. <i>coriacea</i>
V	<i>Brunonia australis</i>	C	<i>Lomatia ilicifolia</i>
	<i>Bursaria spinosa</i>		<i>Microlaena stipoides</i>
	<i>Cassinia aculeata</i>		<i>Microtis ?unifolia</i>
E	<i>Centella cordifolia</i>	V	<i>Olearia lirata</i>
V	<i>Clematis aristata</i>	E	<i>Olearia myrsinoides</i>
V	<i>Coprosma quadrifida</i>	E	<i>Ozothamnus ferrugineus</i>
E	<i>Cryptostylis leptochila</i>		<i>Pandorea pandorana</i>
E	<i>Cyathea australis</i>	V	<i>Pimelea humilis</i>
	<i>Dianella admixta</i>	V	<i>Platylobium formosum</i>
	<i>Dichondra repens</i>		<i>Poa ensiformis</i>
E	<i>Dipodium roseum</i>		<i>Poa morrisii</i>
V	<i>Epacris impressa</i>	E	<i>Poa tenera</i>
V	<i>Eucalyptus cephalocarpa</i>	E	<i>Pomaderris aspera</i>
	<i>Eucalyptus goniocalyx</i>		<i>Poranthera microphylla</i>
V	<i>Eucalyptus obliqua</i>		<i>Pteridium esculentum</i>
V	<i>Eucalyptus ovata</i>	V	<i>Pultenaea gunnii</i>
E	<i>Eucalyptus radiata</i>		<i>Rytidosperma pallidum</i>
V	<i>Exocarpos cupressiformis</i>		<i>Rytidosperma penicillatum</i>
	<i>Gahnia radula</i>	E	<i>Stylidium armeria/graminifolium</i>
	<i>Gonocarpus tetragynus</i>		<i>Tetrarrhena juncea</i>
	<i>Goodenia lanata</i>		<i>Themeda triandra</i>
	<i>Goodenia ovata</i>	E	<i>Veronica calycina</i>
V	<i>Hardenbergia violacea</i>	E	<i>Viola hederacea</i>
V	<i>Hovea heterophylla</i>	V	<i>Xanthorrhoea minor</i>
Introduced Species			
	<i>Cirsium vulgare</i>		<i>Ilex aquifolium</i>
	<i>Hedera helix</i>		<i>Pittosporum undulatum</i>
			<i>Rubus anglocandicans</i>
			<i>Senecio jacobaea</i>

Notes concerning some of the locally threatened plant species

Cryptostylis leptochila (Small Tongue-orchid): Substantial population (>100 plants) scattered throughout the eastern section of the Salvation Army land (Section 1).

Lomatia ilicifolia (Holly Lomatia): A few plants along the eastern boundary of the Salvation Army land (section 1), more numerous in the adjacent National Park.

Microtis ?unifolia (Common Onion-orchid): A few plants along the eastern boundary of Section 1.

Veronica calycina (Hairy Speedwell): Scattered occurrence (>30 plants) throughout Section 1.

The substantial population of Rosy Hyacinth-orchid (*Dipodium roseum*) scattered within higher quality ground layer vegetation in Section 1 is notable for its size and extent.

Additional significant terrestrial orchids and lilies potentially occur within the least-disturbed areas. They were not likely to be visible during the field surveys.

Fauna of special significance

None recorded during field surveys, although significant fauna occurring within the adjoining Dandenong Ranges National Park are bound to visit the site frequently (e.g. Tree Goanna and Powerful Owl).

Fauna habitat features

The extensive cover of remnant trees within the site provides substantial habitat for forest birds, including extensive foraging habitat for parrots and potential owl roosting sites. A substantial population of Crimson Rosellas was apparent during field surveys and a diverse range of small forest birds was present, including the Eastern Spinebill, Grey Fantail, Striated Thornbill, Superb Fairy-wren, White-eared Honeyeater and White-throated Treecreeper. A Southern Boobook owl feather was also found.

A number of the larger remnant trees (around 100 years old) scattered within the site contain natural hollows suitable as shelter and breeding locations for birds, possums and bats.

Substantial habitat is provided for butterflies by Sweet Bursaria shrubs and remnant ground layer vegetation within much of the site, particularly Sections 1 & 4 on the aerial photograph.

Thickets of Manuka (*Leptospermum scoparium*) within properties on the southern side are likely to provide nesting habitat and shelter for smaller forest birds (section 4).

Higher quality ground layer vegetation and fallen branches within the properties fronting Doongalla Rd (Section 4) provide good habitat for lizards and other ground-dwelling fauna.

Significance ratings

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

Ecological Integrity & Viability

Section 1 of the site is part of an extensive area of contiguous, intact native vegetation on the western slopes of the Dandenong Ranges, within an otherwise heavily fragmented landscape. As the combined area is above 100 ha, the site has at least **Local** conservation significance under criterion 1.1.2.

The site forms a component of a buffer to more extensive habitat within the adjoining Dandenong Ranges National Park, and a link between the park and other sites such as the Dandenong Creek wildlife corridor. This represents **Local** significance under criterion 1.2.6.

Regionally Threatened Ecological Vegetation Classes

According to 'Victoria's Native Vegetation Management – A Framework for Action' (NRE 2002a), remnants of a regionally vulnerable EVC (including Grassy Forest) have a conservation significance rating of Medium to Very High, depending on their habitat score (Volume 1, Section 2.4.4). The most intact Grassy Forest vegetation in this site would have a habitat score well above 0.3 (although it has not been measured), and this would put the conservation significance as High or Very High according to the Framework. In either case, criterion 3.2.3 of criterion 3.2.3 confers **State** significance on the site as a whole.

Swampy Woodland is also listed as regionally vulnerable, but the quality of the vegetation within this EVC is poorer than the Grassy Forest and its extent is smaller. Therefore, the presence of the Swampy Woodland does not alter the site's significance rating.

Rare or Threatened Flora

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

Rare or Threatened Fauna

The Powerful Owl is a vulnerable species in Victoria. It is known to frequent nearby parts of the Dandenong ranges National Park, and the vegetation in the site seems suitable as habitat for Powerful Owls. Criterion 3.1.3 confers **Regional** significance upon sites such as this.

Threats

- Impacts on remnant vegetation associated with grazing by livestock, particularly the apparent recent increase in grazing intensity within relatively intact forest areas in Section 1;
- Clearing of native trees and understorey vegetation for fire prevention and firewood;
- Physical disturbances associated with uncontrolled vehicle access and the dumping of rubbish and fill within the Salvation Army land;
- Invasion by environmental weeds, of which Blackberry rates 'Very serious' and Spear Thistle rates 'Serious'.

Management issues

- Further clearing of native vegetation should be resisted.
- Grazing should be excluded within areas supporting remnant understorey vegetation, particularly through the repair or replacement of the fence along the western boundary of Section 1.
- The site is becoming weedier and needs greater weed control to maintain condition and reduce the invasion of weeds into the adjoining national park.
- Ecological burning may be suitable in some areas if appropriately undertaken.
- Remnant trees within paddock areas would ideally be fenced to prevent further dieback and ringbarking by cattle, and to provide opportunities for regeneration.

Administration matters

- This site is suited to inclusion under the proposed ESO2 overlay because of its State significance and because of the various significant attributes discussed above;
- It was included within Site 12 in the report of sites of biological significance by Water Ecoscience (1998), but it has not been included under any of the Vegetation Protection Overlays in the Knox Planning Scheme;
- The planning scheme zoning is 'Special Use Zone 1' for 'Community, Recreation, Education and Religious Purposes', under which agriculture is subject to a permit;
- There may be government assistance or incentives to support fencing and rehabilitation of areas supporting remnant vegetation;
- Relevant people should be informed of permit requirements for removal or destruction of native vegetation on the site.

Information sources used in this assessment

- A site survey undertaken during this study by Rik Brown on 8th April 2002, following this study's standard procedures discussed in Section 2.4 of Volume 1. This included vegetation mapping, descriptions of the composition and condition of the vegetation types, compilation of a list of indigenous and introduced plant species in each of Sections 1-3 on the aerial photograph, incidental fauna observations, and checks for fauna habitat, ecological threats, management issues and populations of scarce or threatened plant species;
- Aerial photography from February 2001 and April 2003;
- Satellite imagery of the district;
- A map of EVCs within the adjoining Dandenong Ranges National Park prepared by Mr Doug Frood for Parks Victoria in 2002;
- The Department of Sustainability & Environment's BioMaps of the area;
- Maps of geology and topography produced by agencies of the Victorian government.

Acknowledgment

Thanks to the Salvation Army for granting permission to inspect their land.