

Site 44. Wadhurst Drive Park, Boronia

Remnant ground flora and tree regrowth surrounding dumped soil and a BMX track. Melway ref. 64 C11 and D11.

Site Significance Level: *State*

- The site was once almost fully cleared and at least one third of it has been smothered with clay fill, but there are still fifty indigenous plant species present, distributed between two EVCs that are both regionally Endangered;
- Vegetation in the least-disturbed northeastern corner is in good ecological condition with rather rich ground flora.



Boundaries

The site is outlined in bold red above and is bordered by the shared path to the south and cadastral boundaries on the other sides. It measures 9,420 m². There are patches within this area that have no native vegetation, and these patches are included because they should be managed and administered as part of the whole site.

Land use & tenure: Council reserve used by BMX and motorbike riders, zoned 'Public Park and Recreation Zone'.

Site description

There is a fence around most of the site, with openings that provide access from Wadhurst Dr and from two points on the shared path. The site includes the narrow strip of ground flora between the shared path and the parallel fence, where species such as Slender Speedwell (*Veronica gracilis*) and *Thelymitra ?holmesii* occur within a layer dominated by native grasses.

The site is on a south-facing slope above Blind Ck between elevations of 75 m and 83 m. The natural soil surface slopes down toward the creek with a typical slope of 1:7 (14%), and there is also a shallow drainage line along the western boundary. Although the site is next to Blind Ck, it is well elevated above the creek and its vegetation is not riparian in character.

The lower slopes were excavated long ago for the shared path and barrel-draining of the original watercourse. At least one third of the site has been covered with local clay fill, which now provides an undulating surface on which the BMX track is formed. The track is visible as the bone-coloured areas on the aerial photograph.

The natural soil is shallow, poorly draining, light grey loam over clay subsoil, derived from decomposition of the underlying Lower Devonian sedimentary rocks of the Humevale formation.

Because of the history of excavation, most of the site's native vegetation is regrowth on a topography that is modified by various depths of clay fill. The main exception is in the northwestern corner and in a narrow band near the western boundary, where there are some large, old Swamp Gums (*Eucalyptus ovata*) and some rich ground flora and an apparently natural soil surface level. The native vegetation on the rest of the site is regrowth, and the original composition would have

been somewhat different from today. However, the regrowth is still identifiable as regrowth of Valley Heathy Forest, even though the diversity is reduced and the density of Yellow Box trees (*Eucalyptus melliodora*) is higher than would ever occur in a pristine state.

The Department of Sustainability & Environment's BioMap of pre-1750 EVCs concurs that there is Valley Heathy Forest on the site, but the BioMap of extant EVCs shows Valley Grassy Forest instead. The latter may be because of confusion about the high density of Yellow Box on the site, which might indeed suggest Valley Grassy Forest in more natural sites further to the north, but in the present case it is believed here to reflect the vegetation's chequered history. Valley Grassy Forest would be out of its normal ecological, topographic and geological context on this site.

Weeds are strongly concentrated on the south-facing slopes of clay fill. The area of the aerial photograph marked 'Weeds' is on the steep slope of a large mound of clay. It was burned by vandals in March 2004, a year since the previous fire, and robust grass weeds were seen regenerating in the following month. There was a fire in the east of the site in approximately 1996 and again in autumn 2003 and March 2004. The 1996 fire regenerated some indigenous plant species as well as some weeds and the outcome of the latter fire could not yet be discerned at the most recent inspection in April 2004. There is an outbreak of Bulbil *Watsonia* on the batter to the southeast of the area marked 'Weeds' on the aerial photograph.

Relationship to other land

The site is part of the quite fragmented corridor of native vegetation along Blind Creek, with one of the larger nodes of vegetation immediately to the east (see the aerial photograph and the description of Site 33 commencing on p. 173).

Roselyn Crescent Reserve (Site 45) lies 300 m to the north. The native birdlife in that reserve, and particularly the abundance of parrots, is no doubt considerably reliant on the presence of the Blind Ck corridor and, to a small extent, Wadhurst Drive Park.

Bioregion: Gippsland Plain

Habitat type

Valley Heathy Forest (EVC 127, regionally Endangered): 0.56 ha in total, comprising approximately 450 m² in good ecological condition (rating B), 4,500 m² in fair ecological condition (rating C) and 650 m² in poor ecological condition (rating D). 46 indigenous plant species recorded, of which all but four were seen on 12/4/04.

Dominant canopy trees: *Eucalyptus melliodora* with fewer *E. goniocalyx* and even fewer *E. radiata*, 12-15 m tall and yet to reach their full height.

Dominant lower trees: *Acacia melanoxydon*, *A. mearnsii* and *Exocarpos cupressiformis* are fairly dense.

Shrubs: There is a large shrub layer that is mostly approximately 2 m tall, which is dense in patches that are variously dominated by *Acacia stricta*, *Bursaria spinosa*, *Cassinia arcuata*, *Leptospermum continentale* or *Kunzea ericoides*. There are also the smaller shrubs *Epacris impressa* and *Dillwynia cinerascens* in substantial numbers.

Vines: One plant each of the parasites *Cassytha melantha* and *Cassytha pubescens*.

Ferns: None.

Ground flora: Densely grassy but with scattered sub-shrubs. Typically 20-30 cm deep with a foliage cover of approximately 80%. There are patches dominated variously by *Themeda triandra*, *Austrostipa rudis* and several *Rytidosperma* species. Other abundant species are *Lomandra filiformis*, *Bossiaea prostrata*, *Gonocarpus tetragynus*, *Goodenia ovata*, *Microlaena stipoides* and *Poa morrisii*. *Oxalis perennans* s.l. and *Dianella admixta* are characteristically present. *Gahnia radula* is absent.

Swampy Woodland (EVC 937, regionally Endangered): 0.13 ha in total, estimated to comprise 100 m² in fair ecological condition (rating C) and 0.12 ha in poor ecological condition (rating D). 13 indigenous plant species were seen on 12/4/04.

Dominant canopy trees: *Eucalyptus ovata*, rather dense in places, approximately 15 m tall and mostly fairly young (but with a few exceptions).

Dominant lower trees: *Acacia melanoxydon* is dense in places along the western fence.

Tall Shrubs: *Acacia paradoxa* and *Bursaria spinosa* are fairly sparse and may simply reflect the history of disturbance and the proximity to Valley Heathy Forest. There is also one plant of the characteristic species, *Ozothamnus ferrugineus*. All shrubs are approximately 4 m tall.

Lower Shrubs: A few *Goodenia ovata*, recently burned when inspected on 12/4/04.

Vines: No indigenous vines.

Ferns: None.

Ground flora: Grassy but not faithfully representing the natural composition. Dominated by *Austrostipa rudis* and the weeds *Dactylis glomerata* and *Agrostis capillaris*. *Microlaena stipoides* is also abundant, but not dominant. *Gonocarpus tetragynus* and *Veronica gracilis* are both present.

Plant species

The following plant species were observed by the author in 2008. 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, *Austrostipa rudis* subsp. *australis* is listed by Walsh and Stajic (2007) as rare throughout Victoria. There are approximately forty plants of that taxon close to the bend in the adjacent shared path.

Risk	Indigenous Species	Risk	Indigenous Species
V	<i>Acacia mearnsii</i>		<i>Gonocarpus tetragynus</i>
V	<i>Acacia melanoxylon</i>		<i>Goodenia ovata</i> (wild & planted)
	<i>Acacia paradoxa</i>	E	<i>Hypericum gramineum</i>
E	<i>Acacia stricta</i>		<i>Juncus amabilis</i>
V	<i>Acaena echinata</i>		<i>Juncus bufonius</i>
	<i>Acaena novae-zelandiae</i> (planted)		<i>Kunzea ericoides</i> spp. agg.
V	<i>Amyema quandang</i>		<i>Lepidosperma gunnii</i>
V	<i>Austrostipa rudis</i> subsp. <i>australis</i>	V	<i>Leptorhynchus tenuifolius</i>
	<i>Austrostipa rudis</i> subsp. <i>rudis</i>		<i>Leptospermum continentale</i>
	<i>Bossiaea prostrata</i>	E	<i>Leptospermum scoparium</i>
E	<i>Bulbine bulbosa</i>		<i>Lomandra filiformis</i> subsp. <i>coriacea</i> (wild & planted)
	<i>Bursaria spinosa</i> (wild & planted)		<i>Lomandra filiformis</i> subsp. <i>filiformis</i>
	<i>Carex breviculmis</i>		<i>Lomandra longifolia</i> (wild & planted)
	<i>Cassinia arcuata</i>	E	<i>Melaleuca ericifolia</i>
E	<i>Cassutha melantha</i>		<i>Microlaena stipoides</i>
E	<i>Cassutha pubescens</i>	V	<i>Opercularia ovata</i>
C	<i>Chrysocephalum semipapposum</i> (planted)		<i>Oxalis exilis/perennans</i>
	<i>Clematis decipiens</i>	E	<i>Ozothamnus ferrugineus</i> (wild & planted)
C	<i>Craspedia variabilis</i> (planted)		<i>Poa ensiformis</i> (planted)
	<i>Daviesia latifolia</i> (planted)		<i>Poa morrisii</i>
	<i>Deyeuxia quadriseta</i>	C	<i>Pomaderris lanigera</i> (planted)
	<i>Dianella admixta</i>		<i>Poranthera microphylla</i>
	<i>Dichelachne rara</i>	E	<i>Rytidosperma caespitosum</i>
	<i>Dichondra repens</i> (planted)		<i>Rytidosperma laeve</i>
V	<i>Dillwynia cinerascens</i>		<i>Rytidosperma pallidum</i>
V	<i>Drosera peltata</i> subsp. <i>auriculata</i>		<i>Rytidosperma penicillatum</i>
	<i>Elymus scaber</i>		<i>Rytidosperma racemosum</i>
V	<i>Epacris impressa</i>		<i>Rytidosperma setaceum</i> (wild & planted)
	<i>Epilobium hirtigerum</i>		<i>Rytidosperma tenuius</i>
	<i>Eragrostis brownii</i>		<i>Schoenus apogon</i>
	<i>Eucalyptus goniocalyx</i>		<i>Senecio quadridentatus</i>
V	<i>Eucalyptus melliodora</i>	V	<i>Thelymitra peniculata</i>
V	<i>Eucalyptus ovata</i>		<i>Themeda triandra</i> (wild & planted)
E	<i>Eucalyptus radiata</i>	V	<i>Veronica gracilis</i>
V	<i>Exocarpos cupressiformis</i>		
	<i>Geranium</i> sp.		
Introduced Species			
	<i>Agrostis capillaris</i>		<i>Phalaris aquatica</i>
	<i>Aira</i> sp.		<i>Pinus radiata</i>
	<i>Allium triquetrum</i>		<i>Plantago lanceolata</i>
	<i>Anthoxanthum odoratum</i>		<i>Prunella vulgaris</i>
	<i>Billardiera heterophylla</i>		<i>Prunus cerasifera</i>
	<i>Briza maxima</i>		<i>Romulea rosea</i>
	<i>Bromus catharticus</i>		<i>Rubus anglocandicans</i>
	<i>Bromus diandrus</i>		<i>Sonchus oleraceus</i>
	<i>Centaurium erythraea</i>		<i>Ulex europaeus</i>
	<i>Cirsium vulgare</i>		<i>Vicia hirsuta</i>
	<i>Cynodon dactylon</i>		<i>Vicia sativa</i>
	<i>Dactylis glomerata</i>		<i>Watsonia meriana</i> var. <i>bulbillifera</i>
	<i>Ehrharta erecta</i>		
	<i>Galium aparine</i>		
	<i>Genista monspessulana</i>		
	<i>Gladiolus undulatus</i>		
	<i>Grevillea rosmarinifolia</i>		
	<i>Hedera helix</i>		
	<i>Holcus lanatus</i>		
	<i>Hypochoeris radicata</i>		
	<i>Lolium perenne</i>		
	<i>Malus pumila</i>		
	<i>Mentha pulegium</i>		
	<i>Oxalis incarnata</i>		
	<i>Paspalum dilatatum</i>		
	<i>Pennisetum clandestinum</i>		

Fauna of special significance

None recorded.

Fauna habitat features

The fair cover of remnant trees within the site provides some habitat for forest and woodland birds. The few large Swamp Gums may well have hollows suitable for nesting or roosting of certain birds or bats.

Significance ratings

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

Regionally Endangered Ecological Vegetation Class

Under the Department of Sustainability & Environment's criteria, this site contains a 'remnant patch' of an endangered EVC. According to 'Victoria's Native Vegetation Management – A Framework for Action' (NRE 2002a), remnant patches of native vegetation belonging to an endangered EVC have a conservation significance rating of either High or Very High, depending on their ecological condition. In either case, any site containing a remnant patch of such vegetation is of **State** significance under the Department of Sustainability & Environment's standard criteria (Amos 2004 – criterion 3.2.3).

The author has misgivings about such a high rating for such a small and heavily modified site, but these misgivings are overridden by the importance of consistency with the standard criteria.

Rare or Threatened Plant Species

The statewide-rare *Austrostipa rudis* subsp. *australis* has a population of approximately forty in this site, which represents a modest contribution to the taxon's conservation. This taxon is not endemic to Victoria (occurring also in Tasmania). These characteristics give the site **Regional** significance according to criterion 3.1.2.

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

Threats

- Invasion by environmental weeds:
 - Serious: Brown-top Bent (*Agrostis capillaris*), Cocksfoot (*Dactylis glomerata*), Montpellier Broom (*Genista monspessulana* – a small number of seedlings that could explode in numbers);
 - Moderate: Sweet Vernal-grass (*Anthoxanthum odoratum*), Large Quaking-grass (*Briza maxima*), Prairie Grass (*Bromus catharticus*), Centaury (*Centarurium erythraea*), Panic Veldt-grass (*Ehrharta erecta*), Cleavers (*Galium aparine*) along the western fence, Cat's Ear (*Hypochoeris radicata*), Paspalum (*Paspalum dilatatum*), Kikuyu Grass (*Pennisetum clandestinum*), Toowoomba Canary-grass (*Phalaris aquatica*), Monterey Pine (*Pinus radiata*), Ribwort (*Plantago lanceolata*), Cherry Plum (*Prunus cerasifera*), Onion Grass (*Romulea rosea*), Blackberry (*Rubus discolor*), W.A. Bluebell Creeper (*Sollya heterophylla*), Gorse (*Ulex europaeus*), Bulbil Watsonia (*Watsonia meriana*);
- Riding of bikes (particularly motorbikes) off the track;
- Loss or decline of plant species such as *Hypericum gramineum* and *Opercularia ovata* whose populations are so small that they are vulnerable to inbreeding, poor reproductive success or elimination by incidents such as being run over by a bike;
- Tree cutting by children.

Management issues

- A young pine near the northern boundary should be removed soon to avoid the high cost of removing it at maturity;
- The rather intact area in the northwestern corner is well deserving of at least a few person-hours per year of expert bushland maintenance to keep it in good condition;
- The rest of the site deserves periodic rubbish removal and control of the weeds listed above, with particular attention to Blackberry, Gorse, Watsonia and the incipient outbreak of Montpellier Broom.

Administration matters

- Arrangements should be made to check the identity and conservation requirements of the sun-orchids that appear to be related to *Thelymitra holmesii*. An expert in sun-orchids would be required;
- This site is suited to inclusion under the proposed ESO2 overlay because it contains a remnant of an endangered EVC, some of it in good ecological condition;
- The site is not presently covered by any planning scheme overlay to protect its vegetation.

Information sources used in this assessment

- A site survey of just over one hour undertaken during this study by Dr Lorimer (24/5/02) using this study's standard procedures discussed in Section 2.4 of Volume 1. This included descriptions and mapping of the two vegetation types, compilation of lists of indigenous and introduced plant species within each vegetation type, incidental fauna observations, and checks for fauna habitat, ecological threats and management issues;
- Additional notes and a field map, collected similarly to the above by Ms Helen Moss on 11/4/97;
- Data from a quadrat (DSE number N04071) in the northwestern corner, surveyed by J.C. Reid on 12/6/97;
- Site description in '*Vegetation Survey of Linear Reserves – A Management Strategy for Riparian and Floodplain Vegetation*' by Reid *et al.* (1997);
- Verbal information from Knox City Council's Mr John Erwin about when fires occurred;
- 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.