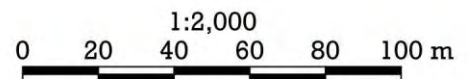


Site 44. Wadhurst Drive Park, Boronia

Regrowth of native vegetation supplemented by revegetation on dumped clay.

Summary of significant features:

- **State significance:** a patch of the regionally-endangered vegetation type, Valley Heathy Forest;
- **State significance:** dozens of the spear-grass, *Austrostipa rudis* subspecies *australis*, which is listed as Endangered under Victorian law;
- **Locally significant:** viable populations of plant species threatened with dying out in Knox.



Boundaries

The site boundary is outlined in blue dashes above, unchanged from the previous (2010) edition of this report. It abuts the Blind Creek Trail to the south and the other sides follow cadastral boundaries except that the narrow-rectangular accessway to Wadhurst Drive is excluded. The site measures 0.94 hectares.

Land use & tenure: Council reserve, formerly used by BMX and motorbike riders but now used for nature conservation, amenity, recreation and pedestrian paths.

Site description

The site is on a south-facing slope above Blind Ck between elevations of 76 m and 84 m. The natural soil surface slopes down toward the creek with a typical slope of 1:7 (14%) and there is a shallow drainage line along the western boundary, labelled above as 'Swampy Woodland'. Although the site is next to Blind Ck, it is well elevated above the creek and its vegetation is not riparian in character.

The natural soil is shallow, poorly draining, clay loam over clay subsoil, derived from weathering of the underlying Lower Devonian siltstone of the Humevale formation.

Aerial photographs from 1976 and 1979 show only grass in the lowest (and steepest) third of the site and in the current-day Swampy Woodland. The rest of the site had a fragmented tree canopy with few if any shrubs. In 1976, the current-day Swampy Woodland had been recently excavated, perhaps for pipes associated with the Wadhurst Drive subdivision that was being developed. A 1981 aerial photograph shows bare earth over more

than half the site, with signs of dumping of clay fill from factory sites that were being constructed along Wadhurst Drive. A 1984 aerial photograph shows that a serpentine bike track had been constructed in the site. Motorbikes and BMX bikes were still using the track at the time of the previous (2010) edition of this report, suppressing regeneration of indigenous vegetation.

Since then, bike usage has ceased and much of the site has been revegetated.

At the time of the author's botanical surveys of the site in 1996–1997, the grassy slope next to the Blind Creek Trail had recently been burnt, resulting in abundant Trim Sun-orchids (*Thelymitra peniculata*), Slender Onion-orchids (*Microtis parviflora*) and Slender Speedwell (*Veronica gracilis*) within a matrix of native grasses. The grasses included (and still includes) a colony of *Austrostipa rudis* subspecies *australis*, which is listed as Critically Endangered in Victoria. That area was burnt again in autumn 2003 and March 2004. The main change since then is that the orchids are less abundant, consistent with the twenty-year interval since the grass cover was thinned.

In the rest of the site, some of the eucalypts have died (particularly during the Millennium Drought) and others have matured, with little regeneration. Remnant shrubs are mostly sparse but many shrubs have been planted. The only part of the site that retains remnant plants in all the vegetation strata (eucalypts, subcanopy trees, shrubs and groundcovers) is in the site's northwest.

In 2010, the Victorian Government's mapping of pre-1750 EVCs correctly showed Valley Heathy Forest on the site prior to colonisation but that mapping has since been changed to show Swampy Riparian Woodland, which is clearly wrong. The Victorian Government's vegetation mapping has also been wrongly changed to show that there is no remaining native vegetation on the site.

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. 244).

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**): 0.65 ha in total, comprising approximately 0.5 ha in fair ecological condition (rating C) and 0.15 ha in poor ecological condition (rating D).

Canopy trees: Dominated by *Eucalyptus melliodora*, with fewer *E. goniocalyx* and even fewer *E. radiata*.

Sub-canopy trees: *Acacia melanoxylon*, *A. mearnsii* and *Exocarpos cupressiformis* are fairly dense.

Shrubs: There is a large shrub layer that is mostly approximately 2 m tall, dominated in 2024 by *Bursaria spinosa*. In decades past, *Acacia stricta*, *Leptospermum continentale* and *Kunzea leptospermoides* have been fairly abundant but they are scarcer now. The smaller shrubs *Epacris impressa* and *Dillwynia cinerascens* have also reduced in numbers over the years.

Vines: *Cassytha melantha* is abundant and there is one plant of *Cassytha pubescens*.

Ferns: None.

Groundcover: Grassy, typically 20–30 cm deep. There are patches dominated variously by *Themeda triandra*, *Austrostipa rudis* and several *Rytidosperma* species. Other abundant species are *Lomandra filiformis*, *Bossiaea prostrata*, *Gonocarpus tetragynus*, *Microlaena stipoides* and *Poa morrisii*. *Oxalis exilis/perennans* and *Dianella revoluta* are characteristically present. *Gahnia radula* is absent.

Swampy Woodland (EVC 937, **regionally Endangered**): 0.1 ha in total, estimated to comprise 100 m² in fair ecological condition (rating C) and the rest in poor ecological condition (rating D).

Canopy trees: *Eucalyptus ovata*.

Dominant sub-canopy trees: *Acacia melanoxylon* and *A. mearnsii*.

Shrubs: Represented only by *Bursaria spinosa* and a few *Goodenia ovata*, the latter perhaps now represented only by planted individuals.

Vines: No indigenous vines.

Ferns: None.

Groundcover: Reduced to scattered *Austrostipa rudis* and *Microlaena stipoides*.

Plant species

The following plant species have been recorded in the site. Those indigenous species not seen by the author on 5th August 2024 are indicated by superscripts showing the year of his most recent record. The column headed 'Risk' indicates the indigenous species' risk of dying out in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; and 'V'=Vulnerable. In addition, *Austrostipa rudis* subsp. *australis* is listed as Endangered under Victorian law.

Indigenous mosses and liverworts	Risk Wild indigenous vascular species
<i>Breutelia affinis</i> , Common Breutelia	E <i>Hypericum gramineum</i> , Small St John's Wort ²⁰⁰⁴
<i>Campylopus introflexus</i> , Heath Star Moss	<i>Juncus amabilis</i> , Hollow Rush
<i>Chiloscyphus semiteres</i> , Green Worms	<i>Juncus bufonius</i> , Toad Rush ²⁰⁰⁸
<i>Thuidiopsis furfurosa</i> , Golden Weft-moss	<i>Kunzea leptospermoides</i> , Yarra Burgan
	<i>Lepidosperma gunnii</i> , Slender Sword-sedge
	C <i>Leptorhynchus tenuifolius</i> , Wiry Buttons ²⁰⁰⁸
	C <i>Leptospermum continentale</i> , Prickly Tea-tree
	<i>Leptospermum scoparium</i> , Manuka
	<i>Lomandra filiformis</i> subsp. <i>coriacea</i> , Wattle Mat-rush
	<i>Lomandra filiformis</i> subsp. <i>filiformis</i> , Wattle Mat-rush
	<i>Lomandra longifolia</i> subsp. <i>exilis</i> , Cluster-headed Mat-rush
	<i>Lomandra longifolia</i> subsp. <i>longifolia</i> , Spiny-headed Mat-rush
	E <i>Melaleuca ericifolia</i> , Swamp Paperbark ²⁰⁰⁸
	<i>Microlaena stipoides</i> , Weeping Grass
	V <i>Opercularia ovata</i> , Broad-leaf Stinkweed
	<i>Oxalis exilis/perennans</i> , Wood-sorrel
	V <i>Ozothamnus ferrugineus</i> , Tree Everlasting ²⁰⁰⁴
	<i>Pandorea pandorana</i> , Wonga Vine
	<i>Poa morrisii</i> , Soft Tussock-grass
	<i>Poranthera microphylla</i> , Small Poranthera ²⁰⁰⁴
	E <i>Rytidosperma caespitosum</i> , Common Wallaby-grass ²⁰⁰⁸
	<i>Rytidosperma ?fulvum</i> , Leafy Wallaby-grass ²⁰⁰⁴
	<i>Rytidosperma laeve</i> , Smooth Wallaby-grass ²⁰⁰⁸
	E <i>?Rytidosperma pallidum</i> , Red-anther (or Silvertop) Wallaby-grass ¹⁹⁹⁷
	<i>Rytidosperma penicillatum</i> , Slender Wallaby-grass ²⁰⁰⁸
	<i>Rytidosperma racemosum</i> , Clustered Wallaby-grass
	<i>Rytidosperma setaceum</i> , Bristly Wallaby-grass
	<i>Rytidosperma tenuius</i> , Purplish Wallaby-grass ²⁰⁰⁸
	<i>Schoenus apogon</i> , Common Bog-rush ²⁰⁰⁸
	<i>Senecio quadridentatus</i> , Cotton Fireweed
	E <i>Thelymitra peniculata</i> , Trim Sun-orchid
	<i>Themeda triandra</i> , Kangaroo Grass
Risk Wild indigenous vascular species	
V <i>Acacia mearnsii</i> , Black Wattle	
V <i>Acacia melanoxylon</i> , Blackwood	
<i>Acacia paradoxa</i> , Hedge Wattle ²⁰⁰⁸	
E <i>Acacia stricta</i> , Hop Wattle	
V <i>Acaena echinata</i> , Sheep's Burr	
E <i>Amyema quandang</i> , Grey Mistletoe ²⁰⁰⁴	
<i>Anthosachne scabra</i> , Common Wheat-grass	
V <i>Austrostipa rudis</i> subsp. <i>australis</i> , Veined Spear-grass	
<i>Austrostipa rudis</i> subsp. <i>rudis</i> , Veined Spear-grass	
N <i>Bossiaea prostrata</i> , Creeping Bossiaea	
E <i>Bulbine bulbosa</i> , Yellow Bulbine-lily	
<i>Burchardia umbellata</i> , Milkmaids ^{2019, iNaturalist}	
<i>Bursaria spinosa</i> , Sweet Bursaria	
<i>Carex breviculmis</i> , Short-stem Sedge ²⁰⁰⁸	
<i>Cassinia longifolia</i> , Shiny Cassinia	
E <i>Cassytha melantha</i> , Coarse Dodder-laurel	
E <i>Cassytha pubescens</i> , Downy Dodder-laurel	
<i>Clematis decipiens</i> , a small-leaved clematis	
<i>Deyeuxia quadriseta</i> , Reed Bent-grass ²⁰⁰⁸	
<i>Dianella revoluta</i> , Black-anther Flax-lily	
<i>Dichelachne rara</i> , Common Plume-grass ²⁰⁰⁴	
V <i>Dillwynia cinerascens</i> , Grey Parrot-pea	
V <i>Drosera auriculata</i> , Tall Sundew ²⁰⁰⁸	
C <i>Epacris impressa</i> , Common Heath	
<i>Epilobium hirtigerum</i> , Hairy Willow-herb ²⁰⁰⁸	
<i>Eragrostis brownii</i> , Common Love-grass ²⁰⁰⁴	
V <i>Eucalyptus goniocalyx</i> , Bundy	
E <i>Eucalyptus melliodora</i> , Yellow Box	
V <i>Eucalyptus ovata</i> , Swamp Gum	
E <i>Eucalyptus radiata</i> , Narrow-leaved Peppermint	
V <i>Exocarpos cupressiformis</i> , Cherry Ballart	
<i>Geranium</i> sp., a crane's-bill ¹⁹⁹⁷	
<i>Gonocarpus tetragynus</i> , Common Raspwort	
<i>Goodenia ovata</i> , Hop Goodenia	
<i>Goodenia ovata</i> , Hop Goodenia	

Risk Wild indigenous vascular species

- V *Veronica gracilis*, Slender Speedwell

Risk Planted species

- Acaena novae-zelandiae*, Bidgee-widgee
Bursaria spinosa, Sweet Bursaria
 C *Chrysocephalum semipapposum*, Clustered Everlasting
 C *Craspedia variabilis*, Variable Billy-buttons²⁰⁰⁸
 C *Daviesia latifolia*, Hop Bitter-pea
Dichondra repens, Kidney-weed
Goodenia ovata, Hop Goodenia
 C *Goodia lotifolia*, Common Golden-tip
 E *Hardenbergia violacea*, Purple Coral-pea
Kunzea sp. (Upright form), Forest Burgan
Lomandra filiformis subsp. *coriacea*, Wattle Mat-rush
Lomandra longifolia subsp. *longifolia*, Spiny-headed Mat-rush
 V *Ozothamnus ferrugineus*, Tree Everlasting²⁰⁰⁸
Poa ensiformis, Sword Tussock-grass
 E *Pomaderris lanigera*, Woolly Pomaderris²⁰⁰⁸
Rytidosperma setaceum, Bristly Wallaby-grass
Themeda triandra, Kangaroo Grass

Wild introduced species

- Agrostis capillaris*, Brown-top Bent
Aira sp., Hair Grass
Allium triquetrum, Angled Onion
Anthoxanthum odoratum, Sweet Vernal-grass
Billardiera fusiformis, Bluebell Creeper
Briza maxima, Large Quaking-grass
Bromus catharticus, Prairie Grass

Wild introduced species

- Bromus diandrus*, Great Brome
Cassinia sifton, Sifton Bush
Cenchrus clandestinus, Kikuyu Grass
Centaurium erythraea, Common Centaury
Cirsium vulgare, Spear Thistle
Cynodon dactylon, Couch
Dactylis glomerata, Cocksfoot
Ehrharta erecta, Panic Veldt-grass
Galium aparine, Cleavers
Genista monspessulana, Montpellier Broom
Gladiolus undulatus, Wild Gladiolus
Grevillea hybrids and cultivars
Hedera helix/hibernica, Ivy
Holcus lanatus, Yorkshire Fog
Hypochaeris radicata, Cat's Ear
Lolium perenne, Perennial Rye-grass
Malus pumila, Domestic Apple
Mentha pulegium, Pennyroyal
Oxalis incarnata, Pale Wood-sorrel
Paspalum dilatatum, Paspalum
Phalaris aquatica, Toowoomba Canary-grass
Pinus radiata, Monterey Pine
Plantago lanceolata, Ribwort
Prunella vulgaris, Self-heal
Prunus cerasifera, Cherry-plum
Romulea rosea, Common Onion-grass
Rubus anglocandicans, Blackberry
Sonchus oleraceus, Sow-thistle
Ulex europaeus, Gorse (Furze)
Vicia hirsuta, Tiny Vetch
Vicia sativa, Common Vetch
Watsonia meriana var. *bulbillifera*, Bulbil Watsonia

Notes concerning some of the significant plant species

Listed as Endangered under Victorian law

Austrostipa rudis subsp. *australis* – listed as Endangered in Victoria. A colony grows close to the bend in the adjacent shared path, population size estimated as 40 in 2008. The author's survey on 5th August 2024 found the colony and confirmed the identity but population size cannot be reliably determined at that time of year.

Locally threatened

Bulbine bulbosa (Yellow Bulbine-lily) – only one plant was seen in August 2024 but others might be detected during spring flowering.

Epacris impressa (Common Heath) – a cluster of approximately five plants in the northwest of the Valley Heathy Forest.

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, bats or invertebrates.

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).

Regionally Endangered Ecological Vegetation Class

Wadhurst Drive Park's Valley Heathy Forest meets the definition of a 'remnant patch' adopted by the standard criteria, i.e. a continuous area of at least 0.25 ha that has a minimum of 10% cover of native understorey throughout. Valley Heathy Forest is a regionally-endangered EVC. According to '*Victoria's Native Vegetation Management – A Framework for Action*' (NRE 2002a), remnant patches of native vegetation belonging to a regionally-endangered EVC have a conservation significance rating of either High or Very High, depending on their ecological condition. In either case, standard criterion 3.2.3 of Amos (2004) translates the significance level to **State**.

Threatened Plant Species

The spear-grass, *Austrostipa rudis* subsp. *australis*, is listed under the *Flora and Fauna Guarantee Act* as Endangered in Victoria. (It was not listed at the time of the previous edition of this report.) It also occurs interstate. There is a colony in Wadhurst Drive Park with a population of approximately forty, at last estimate. That many plants are not enough to be regarded as an 'important population' for the purposes of the standard criteria. In this situation, criterion 3.1.2 assigns **State** significance to the habitat.

Some of the other locally-threatened plant species listed above (e.g. *Veronica gracilis*) have viable populations, thereby meeting criterion 3.1.5 for **Local** significance.

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);
- Decline of tree health. Eucalypts are quite vulnerable to the abovementioned droughts and storms, as evidenced by the site's Swamp Gums during the Millennium Drought;
- Displacement of indigenous flora by environmental weeds;
- 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 scratched out by a dog or struck by a falling tree limb.

Strategic planning

- The previous (2010) edition of this report led to Wadhurst Drive Park being covered by Schedule 2 of the Environmental Significance Overlay (ESO2). That edition cited the State significance of the regionally-endangered EVC, Valley Heathy Forest. The EVC and its condition are not significantly changed except for supplementation with planting and removal of some of the most serious environmental weed species. The recent listing of *Austrostipa rudis* subsp. *australis* as Endangered in Victoria has added an extra recognition of State significance for the park. Those changes are not enough to justify amending the application of ESO2 to the park;
- The park is larger than 0.4 ha and therefore does not qualify for the size-based exemption from the state-wide baseline planning controls over removal of native vegetation (clause 52.17);
- Approximately one-third of the site is zoned Urban Floodway (UFZ) and the rest is zoned Public Park and Recreation (PPRZ).

Information sources used in this assessment

- A herbarium specimen (wet collection) of *Thelymitra peniculata* collected by Dr Lorimer on 13th November 1996 (MEL 2038391A);
- An ecological survey of just over one hour undertaken during this study by Dr Lorimer (24/5/02) for the first edition of this report. 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 Dr Lorimer and Helen Moss in March and April 1997;
- Data from a quadrat (DEECA number N0407100) 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 John Erwin about when fires occurred;
- A fairly intensive botanical survey by Dr Lorimer on 5th August 2024 for this edition;
- Records of flora and fauna observations stored in the Atlas of Living Australia;
- 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.