

## Site 95. Kelleets Rd Roadside east of Napoleon Rd

A total of 2.6 kilometres of road verge (summed over both sides of the road), in seven segments. Melway maps 73 and 82.

### Site Significance Level: *State*

- The native vegetation all belongs to endangered Ecological Vegetation Classes, mainly Valley Heathy Forest;
- The site is a linear oasis of native vegetation in an increasingly urbanised neighbourhood;
- The vegetation is ecologically stable or improving in condition through Council action, but some species still have too few individuals for long-term viability in the absence of intervention.

**Aerial photograph and plan:** See page 476.

### Boundaries

The seven sections of this site are outlined in magenta on the aerial photograph on p. 476, totalling 5.75 ha (reduced from 5.90 ha since the first edition, due to clearing for roadwork at the northwestern end in 2007). Where the edges of the site follow Kelleets Rd's gutter, it is not intended to enclose any part of the gutter that is subject to periodic grading.

Major roadwork around the intersection of Kelleets Rd and Napoleon Rd were completed shortly before this report was finalised. It included substantial vegetation removal and possible damage to some retained trees, not visible on any aerial photograph that was available. The site boundary in that vicinity may not precisely circumscribe the surviving vegetation.

**Land use & tenure:** Verge of a secondary road.

### Site description

This linear site extends from Wellington Rd on the lower slope of the Lysterfield Hills (elevation 123 m), to Napoleon Rd at an elevation of 76 m. The site's lowest elevation is 73 m at the Lakesfield Drive intersection, which was once a crossing over Corhanwarrabul Ck (now replaced by a pipe). The slope faces north-northwest and the gradient increases steadily from Lakesfield Drive to Wellington Rd.

There is a deposit of alluvial soil along the natural course of Corhanwarrabul Ck (within the white lines marked on the aerial photograph on p. 476). The soil elsewhere is a pale, poorly draining clay loam, with clay subsoil. The underlying bedrock is Lower Devonian siltstone of the Humevale formation, but this has been buried in the southeastern half of the site by earth that has slipped or washed downhill from the Lysterfield Hills.

The alluvium near Lakesfield Drive supports vestiges of Swampy Riparian Complex, badly degraded by the earthworks that replaced Corhanwarrabul Ck with a pipe. Native vegetation in the rest of the site belongs to the endangered Ecological Vegetation Class called Valley Heathy Forest. However, the vegetation abutting the Fruitful Vine Melbourne Church property (Site 84) is close to the interface (or 'ecotone') with Valley Grassy Forest.

Overall, there is a nearly continuous canopy of indigenous trees except near intersections. Native understorey, and particularly shrubs, had been heavily suppressed by regular roadside slashing for many years until the mid-1990s. Since then, some areas have been relieved from slashing and native understorey has recovered. Roughly half of the native vegetation in the site has a substantial cover of native understorey, some of it in good ecological condition (rating B). Knox City Council has signposted two strips with moderately rich native understorey as Significant Roadsides KN8 and KN10 (as marked on the aerial photograph). There is similarly rich native understorey directly opposite the strip designated as KN10.

### Relationship to other land

Some species of birds and insects are likely to move between this site, Napoleon Rd (Site 94) and the more expansive habitat in the Lysterfield Hills (Sites 81 and 82) and the Lysterfield Valley (Site 83). Some of these fauna would carry pollen, which would reduce the risk of inbreeding of some plants within the site.

**Bioregion:** Gippsland Plain

### Habitat types

Valley Heathy Forest (EVC 127, **Endangered**): Estimated as 2.67 ha, comprising 0.12 ha in good ecological condition (rating B), 0.97 ha in fair ecological condition (rating C) and 1.58 ha in poor ecological condition (rating D). 82 indigenous plant species were found.

**Canopy trees:** Dominated by *Eucalyptus cephalocarpa*, *E. goniocalyx* and *E. radiata*. There are also some *E. melliodora* around the Fruitful Vine Melbourne Church, near the ecotone with Valley Grassy Forest.

**Lower trees:** Dominated by *Acacia melanoxydon* and slightly fewer *Exocarpos cupressiformis*.

**Shrubs:** Depleted in density and richness by past clearing and slashing. The most abundant and widespread species within the site are *Bursaria spinosa* and *Leptospermum continentale*. The other characteristic species of Valley Heathy Forest, *Acacia paradoxa*, *Cassinia arcuata* and *Daviesia latifolia* are also present.

**Vines:** The light twiner, *Billardiera mutabilis*, is fairly abundant.

**Ferns:** *Pteridium esculentum* is the only species, confined to one small area.

**Ground flora:** Densely grassy, and rich in forbs where least degraded. Areas that retain a substantial amount of indigenous ground flora are dominated variously by *Gahnia radula*, *Austrostipa rudis*, *Rytidosperma racemosum*, *Microlaena stipoides* or *Poa morrisii*. Lilies are particularly abundant.

**Swampy Riparian Complex (EVC 126, regionally Endangered):** Estimated as 0.06 ha, all in poor ecological condition (rating D). Seven indigenous plant species were found.

**Canopy trees:** A near-pure stand of *Eucalyptus ovata*, with *E. cephalocarpa* on the ecotone with Valley Heathy Forest.

**Lower trees:** *Acacia melanoxydon*.

**Shrubs:** *Melaleuca ericifolia* persists, but other shrubs have been destroyed by clearing.

**Vines and ferns:** None.

**Ground flora:** Weedy, but in part, dominated by the indigenous *Phragmites australis*. The only other indigenous ground flora observed were *Juncus sarophorus* and *Lomandra longifolia*.

### Plant species

The following plant species were observed by the author on 27/11/97 and/or Mr Damien Cook on 30/11/92, as indicated in the 'Year' column. Additional species would probably be detectable in other seasons. 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, *Acacia leprosa* (Dandenong Range variant) is rare nationally

Risk	Indigenous Species	Year	Risk	Indigenous Species	Year
V	<i>Acacia implexa</i>	1992		<i>Elymus scaber</i>	1997
V	<b><i>Acacia leprosa</i> (Dandenong Range variant) (perhaps questionable)</b>	1992		<i>Epilobium hirtigerum</i>	1997
V	<i>Acacia mearnsii</i>	1997	V	<i>Eucalyptus cephalocarpa</i>	1997
V	<i>Acacia melanoxydon</i>	1997		<i>Eucalyptus goniocalyx</i>	1997
E	<i>Acacia myrtifolia</i>	1992	V	<i>Eucalyptus melliodora</i>	1997
	<i>Acacia paradoxa</i>	1997	V	<i>Eucalyptus ovata</i>	1997
E	<i>Acacia pycnantha</i>	1997	V	<i>Eucalyptus radiata</i>	1997
V	<i>Acaena echinata</i>	1997	V	<i>Euchiton collinus</i>	1992
	<i>Acrotriche serrulata</i>	1992	V	<i>Exocarpos cupressiformis</i>	1997
V	<i>Allocasuarina littoralis</i>	1997		<i>Gahnia radula</i>	1997
C	<i>Amyema pendula</i>	1997		<i>Gonocarpus tetragynus</i>	1997
V	<i>Amyema quandang</i>	1997		<i>Goodenia ovata</i>	1997
	<i>Arthropodium strictum</i>	1997	E	<i>Hibbertia riparia</i>	1992
	<i>Austrostipa pubinodis</i>	1997	E	<i>Hypericum gramineum</i>	1992
	<i>Austrostipa rudis</i> subsp. <i>rudis</i>	1997	C	<i>Hypoxis hygrometrica</i>	1992
	<i>Billardiera mutabilis</i>	1997	E	<i>Isolepis cernua</i> var. <i>platycarpa</i>	1992
	<i>Bossiaea prostrata</i>	1997		<i>Juncus bufonius</i>	1992
	<i>Burchardia umbellata</i>	1992		<i>Juncus sarophorus</i>	1997
	<i>Bursaria spinosa</i>	1997	C	<i>Kennedia prostrata</i>	1997
V	<i>Caesia parviflora</i>	1992		<i>Kunzea ericoides</i> spp. agg.	1997
	<i>Carex breviculmis</i>	1992		<i>Lachnagrostis filiformis</i>	1997
	<i>Cassinia arcuata</i>	1997		<i>Lepidosperma gunnii</i>	1997
E	<i>Daviesia latifolia</i>	1997	V	<i>Lepidosperma laterale</i>	1992
	<i>Deyeuxia quadriseta</i>	1992		<i>Leptospermum continentale</i>	1997
	<i>Dianella admixta</i>	1997		<i>Lomandra filiformis</i> subsp. <i>coriacea</i>	1997
V	<i>Dianella longifolia</i> s.l.	1997		<i>Lomandra filiformis</i> subsp. <i>filiformis</i>	1997
	<i>Dichelachne rara</i>	1992		<i>Lomandra longifolia</i>	1997
	<i>Dichondra repens</i>	1997	V	<i>Luzula meridionalis</i>	1992
V	<i>Dillwynia cinerascens</i>	1992	E	<i>Melaleuca ericifolia</i>	1997
V	<i>Drosera whittakeri</i>	1992		<i>Microlaena stipoides</i>	1997
V	<i>Eleocharis acuta</i>	1997		<i>Microtis parviflora</i>	1992
			C	<i>Microtis unifolia</i>	1992

Risk	Indigenous Species	Year	Risk	Indigenous Species	Year
V	<i>Opercularia ovata</i>	1992		<i>Rytidosperma penicillatum</i>	1997
V	<i>Opercularia varia</i>	1992	V	<i>Rytidosperma pilosum</i>	1997
	<i>Oxalis exilis/perennans</i>	1997		<i>Rytidosperma racemosum</i>	1997
E	<i>Ozothamnus ferrugineus</i>	1997		<i>Rytidosperma setaceum</i>	1997
E	<i>Phragmites australis</i>	1997		<i>Rytidosperma tenuius</i>	1997
	<i>Poa morrisii</i>	1997		<i>Schoenus apogon</i>	1997
	<i>Poranthera microphylla</i>	1997		<i>Senecio hispidulus</i>	1997
	<i>Pteridium esculentum</i>	1997		<i>Senecio quadridentatus</i>	1997
	<i>Pterostylis nutans</i>	1992		<i>Themeda triandra</i>	1997
	<i>Rytidosperma geniculatum</i>	1997	V	<i>Thysanotus patersonii</i>	1997
	<i>Rytidosperma laeve</i>	1997		<i>Tricoryne elatior</i>	1997
	<i>Rytidosperma linkii</i> var. <i>fulvum</i>	1997	E	<i>Viola hederacea</i>	1992
	<i>Rytidosperma pallidum</i>	1992	E	<i>Wurmbea dioica</i>	1992

#### Introduced Species

<i>Acacia floribunda</i>	<i>Chrysanthemoides monilifera monilifera</i>	<i>Medicago polymorpha</i>
<i>Acacia longifolia</i> subsp. <i>longifolia</i>	<i>Cirsium vulgare</i>	<i>Pinus radiata</i>
<i>Agrostis capillaris</i>	<i>Dactylis glomerata</i>	<i>Pittosporum undulatum</i>
<i>Aira caryophyllea</i>	<i>Ehrharta erecta</i>	<i>Plantago lanceolata</i>
<i>Allium triquetrum</i>	<i>Festuca rubra</i>	<i>Romulea rosea</i>
<i>Anthoxanthum odoratum</i>	<i>Holcus lanatus</i>	<i>Rubus anglocandicans</i>
<i>Asparagus asparagoides</i>	<i>Hypochoeris radicata</i>	<i>Sisyrinchium iridifolium</i>
<i>Briza maxima</i>	<i>Isolepis levynsiana</i>	<i>Sonchus oleraceus</i>
<i>Briza minor</i>	<i>Leontodon taraxacoides</i>	<i>Sporobolus africanus</i>
<i>Centaurium erythraea</i>	<i>Lolium perenne</i>	<i>Trifolium repens</i>
<i>Cerastium glomeratum</i>	<i>Lotus</i> sp.	<i>Vulpia bromoides</i>

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

*Acacia leprosa* (Cinnamon Wattle), Dandenong Range variant. Not present in the most recent survey (1997) but recorded in substantial numbers within the signposted 'Significant Roadside KN10' by Mr Damien Cook in 1992. However, he also stated 'Shrubs – Absent', which is contradictory unless the plants were only seedlings. The habitat is also abnormal for this species and the location is several kilometres outside the range of all other records of this species. In combination, these considerations suggest that the record may have been either a misidentification or the result of planting.

*Hypoxis hygrometrica* (Golden Weather-glass). Recorded in substantial numbers within the signposted 'Significant Roadside KN8' by Mr Damien Cook in 1992. Not detected in the more recent survey (27/11/97), perhaps because the species is extremely hard to detect when it is not flowering.

*Isolepis cernua* var. *platycarpa* (a Club-rush). Recorded in 1992 and not in 1997, probably due to seasonal factors.

*Kennedia prostrata* (Running Postman). One plant was found by the author in 1997 within the signposted 'Significant Roadside KN10'.

*Microtis ?parviflora* (Slender Onion-orchid). Recorded in 1992 and not in 1997, probably due to seasonal factors.

*Rytidosperma ?caespitosum* (Common Wallaby-grass). This is the taxon which combines some characteristics of *R. caespitosum* and some of *R. setaceum*, found in moderate numbers around Melbourne's eastern suburbs and perhaps best represented at Wattle Park. Very few plants were found by the author in the signposted 'Significant Roadside KN10' on 27/11/97.

*Rytidosperma geniculatum* (Knead Wallaby-grass). There are small numbers in at least two places. At least one of the populations appears viable.

*Thysanotus patersonii* (Twining Fringe-lily). Found in very small numbers (perhaps only one plant) within the signposted 'Significant Roadside KN8'.

*Wurmbea dioica* (Common Early Nancy). Recorded in 1992 and not in 1997, probably due to seasonal factors.

#### Fauna of special significance

None found, but the Superb Fairy-Wrens and Black-faced Cuckoo-Shrike that were seen indicate that the site supports species other than just hardy urban wildlife.

#### Fauna habitat features

Some of the larger eucalypts have hollows that would suit habitation by native birds, bats, possums or insects.

## Significance ratings

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

### *Endangered Ecological Vegetation Class*

Valley Heathy Forest is endangered. It follows from Appendix 3 of *Victoria's Native Vegetation Management - a Framework for Action* (NRE 2002a) that the site's native vegetation is necessarily of at least High conservation significance. This, in turn, gives the site **State** significance under criterion 3.2.3 of Amos (2004).

### *Rare or Threatened Flora*

The 1992 record of *Acacia leprosa* is regarded as open to question and, being not present in the most recent survey, it is not indicative of the site's current ecological values. It is therefore not regarded as significant.

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, of which the main ones are grass weeds, particularly Sweet Vernal-grass (*Anthoxanthum odoratum*) and Panic Veldt-grass (*Ehrharta erecta*);
- Eucalypt dieback disease, particularly near Wellington Rd, associated in part with Bell Miners;
- Loss or decline of plant species whose populations are so small and isolated that they are vulnerable to inbreeding, poor reproductive success or elimination by incidents such as disease or mower damage.

## Administration matters

- The Planning Scheme zoning of the road reservation is Road Zone Category 2 (RDZ2). The narrow strips between the road reservation and the adjacent residential fences are zoned Residential 1 Zone (R1Z);
- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of the endangered Valley Heathy Forest and the rare species present;
- Most of the site is covered by the existing Vegetation Protection Overlay Schedule 1 of the Knox Planning Scheme. It appears that the area covered by the overlay was intended to match the area mapped by Water Ecoscience (1998) as their Site 86, but part of the polygon that appears on the Planning Scheme maps has been displaced into adjacent pasture and residential development. There is also an erroneous mapping discontinuity at the join between VPO1 maps 6 and 7 in the Planning Scheme.

## Information sources used in this assessment

- Vegetation mapping showing vegetation communities and vegetation quality, and six lists of plant species (indigenous and introduced), observed by Dr Lorimer on 27th November 1997, as described in the report, '*A Survey and Management Plan for Significant Vegetation of Roadsides in Knox*' by G.S. Lorimer for Knox City Council (May 1998, 137 pp.);
- A brief inspection of the whole roadside by Dr Lorimer on 10/3/08 to update any obsolete information from the first edition of this report, with particular attention to roadwork at the intersection of Kelleets Rd and Napoleon Rd;
- Data from two 150 m<sup>2</sup> quadrats (numbers N01904 and N01905 in the Victorian Flora Information System), gathered by Mr Damien Cook on 24/11/92 and 30/11/92, as described by Mark Allaway and Associates in '*Indigenous Vegetation survey to Major Road Reserves – Phase 2 – A Management Strategy for Remnant Roadside Vegetation*' for City of Knox (1993). The *Microtis unifolia* records are treated here as possible misidentifications of the more common *M. parviflora*, and the duplication of some species in the list for quadrat N01905 (and other lists in the same report) suggests that the preparation of species lists was imperfect;
- Aerial photography from February 2001, April 2003 and February 2007;
- 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.