Site 91. Mountain Hwy Roadside, Wantirna

A total of one kilometre of road verge (summed over both sides of the road), in four segments. Melway ref. 63 F7.

Site Significance Level: *State*

- A linear oasis of native vegetation in a neighbourhood where native vegetation is scarce;
- Contains remnants and regrowth of the endangered Ecological Vegetation Class, Valley Heathy Forest;
- The vegetation's ecological condition is stable or improving and has moderate diversity, but some species have too few individuals for long-term viability in the absence of intervention.

Aerial Photographs – see next page

The upper photograph on the next page is of an area that is separated from the lower one by 300 m. The red lines on the photographs are outlines of the four segments of road verge that make up this site and the magenta lines are outlines of neighbouring sites treated elsewhere in this report.

Boundaries

This site has four sections, outlined in red on the aerial photographs and totalling 2·32 ha. Except for the westernmost segment, the edges closest to the road surface are either title boundaries or the road gutter (but not enclosing any part of a gutter that is subject to periodic grading). The boundary includes a rectangle measuring 18 m × 8 m within a vacant lot (187 Harold St, Wantirna) on the southern corner of Mountain Hwy and Harold St, containing mature indigenous trees (*Eucalyptus radiata, Eucalyptus goniocalyx* and *Acacia melanoxylon*).

Land use & tenure: Verges of a primary road.

Site description

This site is situated on the western flank of the low ridge created by the Dargile geological formation of Upper Silurian sedimentary rock. The site's southeastern extremity, near Burwood Hwy, is at the foot of the ridge with an elevation of approximately 73 m, and Mountain Hwy rises gradually to an elevation of 122 m at the site's northeastern end, near the top of the ridge. The natural slope is typically 4% to 5% and the road is mostly at or slightly below the natural ground level.

The soil is poorly draining, pale loam over clay subsoil. The topsoil is mostly shallow, but the presence of an area dominated by Yellow Box (*Eucalyptus melliodora*) suggests that the topsoil there may be moderately deep.

Knox City Council has signposted two sections of the northwestern side of the road as Significant Roadsides because of their native vegetation. Until the 1990s, this stretch of Mountain Hwy had some of the highest quality roadside vegetation in Knox, with a spectacle of wildflowers in spring. Widening of Mountain Hwy damaged much of the vegetation badly, partly due to necessary removal and mostly due to lack of care. Much of the ground flora left today has regenerated after being flattened or destroyed during or soon after the road widening.

Destruction of the native vegetation continues. In 2003, a section of the highest quality native vegetation remaining at that time was destroyed outside the new medium-density residential development at 105 Mountain Hwy, on the northern roadside immediately east of the EastLink Rd. This section was therefore omitted from the site circumscribed here. Another substantial part of this strip was cleared in 2005-6 for the EastLink road.

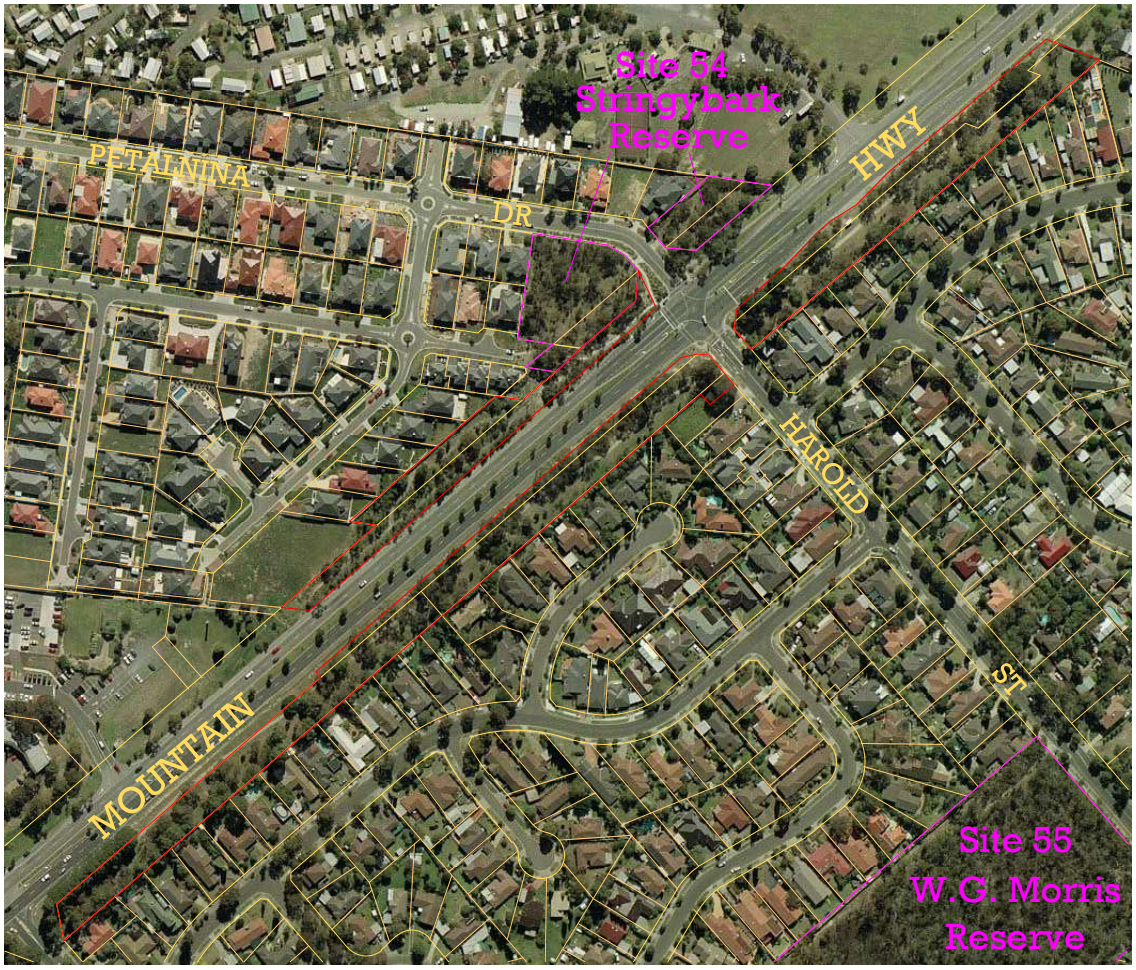
The native vegetation all belongs to the endangered Ecological Vegetation Class (EVC), Valley Heathy Forest (except a tiny patch of another endangered EVC, Swampy Woodland, abutting the Koomba Park tennis courts).

The vegetation is mostly in fair ecological condition (rating C). A fifty-metre-long strip southwest from Harold St is dominated by Yellow Box (*Eucalyptus melliodora*), suggesting a tendency toward Valley Grassy Forest. The remainder is dominated either by Mealy Stringybark (*Eucalyptus cephalocarpa*) or by a mixture of Red Stringybark (*Eucalyptus macrorhyncha*), Bundy (*Eucalyptus goniocalyx*) and Narrow-leafed Peppermint.

Relationship to other land

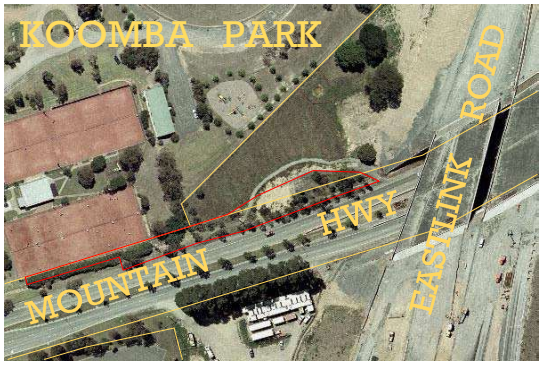
The native vegetation in this site near Petalnina Drive and Harold St augments the native habitat in Stringybark Reserve (Site 54). Flying fauna would also be able to cross to the larger and more intact habitat at W.G. Morris Reserve (Site 55), 260 m away. It seems unlikely that the site functions as a habitat corridor.

Bioregion: Gippsland Plain



Site 91 (outlined in red).
Aerial photographs taken April 2003 (above) and February 2007 (below).

Scale 1:4,000
0 50 100 150 200m



Habitat types

Valley Heathy Forest (EVC 127, **Endangered**): The segment on the northwestern side near the EastLink road is estimated to contain 0·22 ha of native vegetation, comprising 0·20 ha in fair ecological condition (rating C) and 0·02 ha in poor ecological condition (rating D). The remainder of the site is estimated to contain 1·4 ha of native vegetation with native understorey, comprising 0·3 ha in fair ecological condition (rating C) and 1·1 ha in poor ecological condition (rating D).

Canopy trees: Dominated by *Eucalyptus cephalocarpa* and *E. radiata* in the segments on the lower aerial photograph of the previous page; dominated by *E. melliodora* in a fifty-metre-long strip southwest from Harold St; and dominated elsewhere by a mixture of *E. goniocalyx, E. macrorhyncha* and *E. radiata*.

Lower trees: Dominated by *Acacia melanoxylon*, combined with *Exocarpos cupressiformis* in less degraded areas.

Shrubs: Dominated by *Bursaria spinosa* and *Acacia paradoxa*, their density varying according to the history of clearing and regrowth, and becoming very dense near Stringybark Reserve. The other shrubs are *Cassinia arcuata, Coprosma quadrifida, Daviesia latifolia, Goodenia ovata* and *Leptospermum continentale*.

Vines: The light twiner, *Billardiera mutabilis*, is present but scarce.

Ferns: *Pteridium esculentum* is dense in patches.

Ground flora: Dominated variously by *Gahnia radula, Themeda triandra, Microlaena stipoides, Austrostipa rudis* or *Rytidosperma racemosum*. There are also substantial patches dominated by *Platylobium formosum* or *Dianella admixta*. *Rytidosperma pallidum* and *Poa morrisii* are present in less degraded areas. Other species that are abundant in numbers but not dominant in foliage cover include *Arthropodium strictum, Rytidosperma linkii* var. *fulva, Gonocarpus tetragynus, Hibbertia riparia, Lomandra filiformis, Lomandra longifolia* and *Schoenus apogon*. The characteristic species, *Platylobium obtusangulum* and *Tricoryne elatior*, are present but not abundant. *Platylobium formosum* was also present near Burwood Hwy in 2002 but not found in 2008.

Plant species

The following plant species were observed by the author on 13/9/02 and/or 7/3/08, 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, *Eucalyptus yarraensis* is rare nationally.

Risk	Indigenous Species	Year
V	*Acacia mearnsii*	2002
V	*Acacia melanoxylon*	2008
	Acacia paradoxa	2008
	Acaena novae-zelandiae	2002
	Acrotriche serrulata	2002
V	*Allocasuarina littoralis* (wild & planted)	2008
C	*Amyema pendula*	2002
	Arthropodium strictum	2008
	Austrostipa pubinodis	2002
	Austrostipa rudis subsp. *rudis*	2008
	Billardiera mutabilis	2002
	Bursaria spinosa	2002
	Carex ?breviculmis	2002
	Cassinia arcuata	2008
V	*Cassinia longifolia*	2008
	Clematis decipiens (planted)	2008
V	*Coprosma quadrifida*	2008
E	*Daviesia latifolia*	2008
	Dianella admixta	2008
V	*Dillwynia cinerascens*	2002
V	*Epacris impressa*	2002
	Epilobium ?hirtigerum	2002
V	*Eucalyptus cephalocarpa*	2008
	Eucalyptus goniocalyx	2002
E	*Eucalyptus macrorhyncha*	2008
V	*Eucalyptus melliodora*	2002
V	*Eucalyptus obliqua*	2008
V	*Eucalyptus ovata*	2002
E	*Eucalyptus radiata*	2008
C	***Eucalyptus yarraensis* (destroyed 2007)**	2003
V	*Exocarpos cupressiformis*	2008
	Gahnia radula	2008
	Gonocarpus tetragynus	2002
	Goodenia ovata	2008
V	*Hemarthria uncinata*	2002
E	*Hibbertia riparia*	2002
	Juncus pallidus	2002
E	*Juncus subsecundus*	2008
	Kunzea ericoides spp. agg.	2008

Risk	Indigenous Species	Year
	Lachnagrostis filiformis	2008
	Lepidosperma gunnii	2008
V	*Leptorhynchos tenuifolius*	2002
	Leptospermum continentale	2002
E	*Leptospermum scoparium*	2002
E	*Linum marginale*	2008
	Lomandra filiformis subsp. *coriacea*	2008
	Lomandra filiformis subsp. *filiformis*	2008
	Lomandra longifolia	2002
E	*Melaleuca ericifolia*	2008
	Microlaena stipoides	2008
	Microtis ?parviflora	2002
C	*Muellerina eucalyptoides*	2002
C	*Olearia ramulosa* (planted)	2002
V	*Opercularia ovata*	2008
V	*Opercularia varia*	2002
	Oxalis exilis/perennans	2002
E	*Ozothamnus ferrugineus*	2002
V	*Pimelea humilis*	2008
V	*Platylobium formosum*	2002
V	*Platylobium obtusangulum*	2008
	Poa morrisii	2002
	Poranthera microphylla	2002
	Pteridium esculentum	2008
	Rytidosperma linkii var. *fulvum*	2008
	Rytidosperma pallidum	2002
	Rytidosperma penicillatum	2002
V	*Rytidosperma pilosum*	2002
	Rytidosperma racemosum	2008
	Rytidosperma setaceum	2008
	Rytidosperma tenuius	2002
	Schoenus apogon	2002
	Senecio glomeratus	2002
	Senecio quadridentatus	2008
V	*Thelymitra ?peniculata*	2002
	Themeda triandra	2002
	Tricoryne elatior	2002
V	*Veronica gracilis*	2008

Introduced Species

Acacia baileyana	*Ehrharta erecta*	*Pittosporum undulatum*
Agrostis capillaris	*Ehrharta longiflora*	*Plantago lanceolata*
Allium triquetrum	*Erica lusitanica*	*Prunus cerasifera*
Anthoxanthum odoratum	*Galium aparine*	*Quercus robur*
Briza maxima	*Gladiolus undulatus*	*Romulea rosea*
Bromus catharticus	*Holcus lanatus*	*Rubus anglocandicans*
Centaurium erythraea	*Hypochoeris radicata*	*Sporobolus africanus*
Cirsium vulgare	*Linum trigynum*	*Trifolium dubium*
Cotoneaster glaucophyllus	*Oxalis incarnata*	*Ulex europaeus*
Cotoneaster pannosus	*Oxalis pes-caprae*	*Vicia sativa*
Crassula multicava	*Paspalum dilatatum*	*Vulpia bromoides*
Cytisus scoparius	*Pennisetum clandestinum*	*Watsonia meriana* var. *bulbillifera*
Dactylis glomerata	*Pinus radiata*	

Notes concerning two of the locally threatened plant species

Clematis microphylla (Small-leafed Clematis). One apparently wild plant was found for the first time in 2008 near the southwest corner of the Koomba Park tennis courts. It is probably progeny of individuals planted near Harold St.

Eucalyptus yarraensis (Yarra Gum). One mature tree grew near Burwood Hwy until it was felled in 2007, perhaps for road widening.

Linum marginale (Native Flax). Several were found near the Minkell Ct walkway and several more near the Koomba Park tennis courts.

Microtis ?*parviflora* (Slender Onion-orchid). Found northwest of Minkell Ct, numbers not recorded.

Fauna of special significance

Uncommon in the Melbourne Region

Cattle Egret. The author sees flocks regularly in grass on properties adjoining the roadside but not on the road verge itself.

Uncommon in Knox

Imperial White Butterfly. A large colony was found in 2002 on Creeping Mistletoes (*Muellerina eucalyptoides*) on the southeastern road verge, subsequently cleared for the EastLink road. This butterfly species has become uncommon in Knox, probably because of the dearth of the necessary host mistletoes.

Fauna habitat features

- Some large trees have hollows that would suit habitation by native birds, bats, possums or insects;
- Yellow Box trees are known to be good seasonal producers of nectar for birds and insects, so the ones near Harold St may be valuable in that capacity;
- The prickly shrub layer in parts of the site, particularly near Stringybark Reserve, could provide protection for small native birds.

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

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 environmental weeds:
  - Serious: Sweet Vernal-grass (*Anthoxanthum odoratum*), Large Quaking-grass (*Briza maxima*), English Broom (*Cytisus scoparius*), Cocksfoot (*Dactylis glomerata*), Spanish Heath (*Erica lusitanica*), Pale Wood-sorrel (*Oxalis incarnata*), Soursob (*Oxalis pes-caprae*), Kikuyu (*Pennisetum clandestinum*), Ribwort (*Plantago lanceolata*), Common Onion-grass (*Romulea rosea*), Squirrel-tail Fescue (*Vulpia bromoides*), Bulbil Watsonia (*Watsonia meriana* var. *bulbillifera*);

  - Moderate: Brown-top Bent (*Agrostis capillaris*), Angled Onion (*Allium triquetrum*), Prairie Grass (*Bromus catharticus*), Cotoneaster (*Cotoneaster glaucophyllus forma serotinus*), Panic Veldt-grass (*Ehrharta erecta*), Annual Veldt-grass (*Ehrharta longiflora*), Cleavers (*Galium aparine*), Wild Gladiolus (*Gladiolus undulatus*), Yorkshire Fog (*Holcus lanatus*), Cat's Ear (*Hypochoeris radicata*), Paspalum (*Paspalum dilatatum*), Monterey Pine (*Pinus radiata*), Sweet Pittosporum (*Pittosporum undulatum*), Blackberry (*Rubus discolor*), Indian Rat-tail Grass (*Sporobolus indicus* var. *capensis*), Gorse (*Ulex europaeus*), a vetch (*Vicia* ?*hirsuta*), Common Vetch (*Vicia sativa*);
- Overly frequent mowing of native ground flora and seedlings;
- 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. Examples include *Acrotriche serrulata, Amyema pendulum, Dillwynia cinerascens, Leptorhynchos tenuifolius, Muellerina eucalyptoides* and *Veronica gracilis*, each of which was found to have only one or two individuals.

Management issues

- It would be ecologically desirable to remove the small number of photinias that are intermingled with Swamp Paperbarks outside the Koomba Park tennis courts. The paperbarks would soon provide similar visual screening to the photinias;
- Frequent mowing of exotic grass and weeds is desirable, but should not encroach into areas with substantial native ground flora. A skilled mower operator may be required to recognise the appropriate limits;
- The conservation significance of the site could be enhanced by planting of some of the species whose numbers are dangerously small (as listed above). The signposted 'Significant Roadside KN20' would be an appropriate area for planting.

Administration matters

- The Planning Scheme zoning of the road reservation is Road Zone Category 1 (RDZ1), but note that this is flanked by tree reserves that are zoned either Residential 1 Zone (R1Z, on the northwestern side of the road) or Public Park and Recreation Zone (PPRZ, on the opposite side). 187 Harold St, which is a vacant block partly within the site, is zoned R1Z;
- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of the endangered EVC and the rare species present;
- This site is not covered by any of the existing Vegetation Protection Overlay Schedules of the Knox Planning Scheme.

Information sources used in this assessment

- Site surveys by Dr Lorimer for three hours on 13/9/02 and one hour on 7/3/08 following this study's standard procedures discussed in Section 2.4 of Volume 1. This included:
  - Compilation of lists of indigenous and introduced plants for each of five parts of the site;
  - A description of the vegetation's structural and floristic composition within each of the parts;
  - Documentation of the vegetation's ecological condition;
  - Documentation of rare species populations;
  - Incidental observations of fauna; and
  - Checks for fauna habitat, ecological threats and management issues.
- The 1998 *'Scoresby Transport Corridor Environment Effects Statement'*, particularly the indicative road design;
- A report, *'Assessment of Native Vegetation on the Mitcham to Frankston Freeway Alignment in Knox'*, by Dr Lorimer in July 2003 for Knox City Council;
- 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.