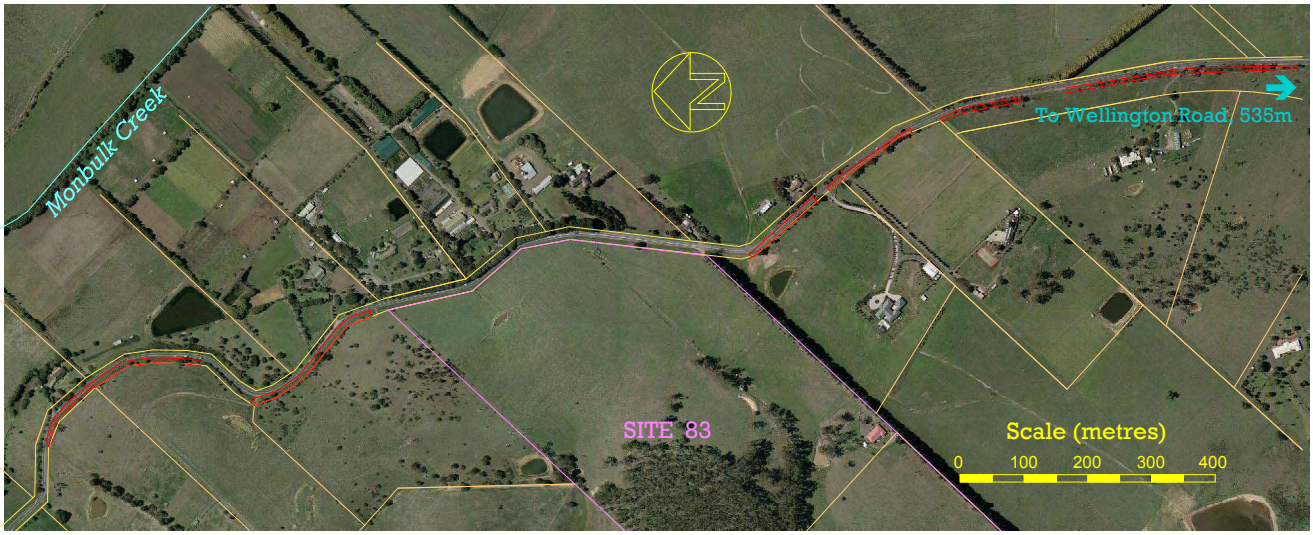
Site 97. Lysterfield Rd Roadside, Lysterfield

A total of 1,300 lineal metres of road verge on one side of the road, in six sections. Melway maps 74 and 83.

Site Significance Level: *Regional*

- A linear oasis of native vegetation in an agricultural landscape;
- Contains remnants of the Endangered EVC, Valley Heathy Forest (and probably also remnants of the Vulnerable EVC, Valley Grassy Forest), but only in fair to poor ecological condition;
- Supports a single individual of the locally rare Scrub Sheoak, *Allocasuarina paludosa*;
- Ecologically stable vegetation with rather modest diversity.



Aerial photograph taken April 2003.

Boundaries

The site is in six segments, defined by the red outlines on the aerial photograph above (taken in April 2003). Its width extends from the gutter of Lysterfield Rd to the property fences. The ends of the six segments are as drawn, and in most cases do not have any landmarks to define them other than a transition from principally introduced vegetation to principally native vegetation. The total area is 0·97 ha. The boundary of Site 83 (p. 422) is shown in pink for reference.

Land use & tenure: Road reservation.

Site Description

This site comprises six sections of road verge with indigenous ground flora, much of it with remnant trees and some of it with indigenous shrubs. The width of the verge is typically 4-5 metres and the total length of all segments is 1,300 metres. There is pasture on the other side of the fences, uphill from the roadside. There is only one short strip of native vegetation on the eastern side of the road, which is in the Shire of Yarra Ranges.

Much of the site is signposted as significant roadside vegetation (labelled KN16, KN17 and KN18), with slashing to be conducted less frequently and with more ecological sensitivity than would otherwise be the case.

The roadside does not represent an important habitat corridor because of the fragmentation of the native vegetation and the size of the separation from the nearest large area of natural tree canopy (Lysterfield Park – Site 82).

Pasture grasses and weeds of pasture have extensively invaded the native vegetation, displacing many of the indigenous plant species that would once have occurred in the site. Some of the large, old trees present have died in recent years from unknown causes. The vegetation's ecological condition varies between ratings D (poor) and C (fair) on the scale explained in Section 2.4.4 of Volume 1.

The road winds along the side of a moderately steep slope, with the floodplain of Monbulk Ck roughly 200 m to the northeast. Close to the centrepoint of the site, there is a geological transition between Kalorama rhyodacite to the north and the less fertile Lysterfield granodiorite to the south.

The patches of vegetation on the granodiorite show strong characteristics of Valley Heathy Forest, particularly the overstorey composition and the presence of characteristic species such as *Dianella longifolia*. On the rhyodacite, the

vegetation type is harder to discern because there are few eucalypts or shrubs remaining and the ground flora composition has been greatly influenced by a history of slashing. There is some indication of a tendency toward Valley Grassy Forest in the northernmost section (e.g. an increase in *Elymus scaber*), consistent with the Department of Sustainability & Environment's BioMaps of pre-European EVCs in this area.

The presence of a solitary plant of the locally rare *Allocasuarina paludosa* (Scrub Sheoak) in the southernmost section indicates rather low fertility in that part of the site. This species has a local stronghold at Baluk Willam Flora Reserve, 3 km to the east, in rather heathier vegetation (particularly Damp Heathy Woodland).

Relationship to other land

The vegetation remnants in this site are so small that most of the flora and fauna must rely on nearby native vegetation for their long-term survival. With the exception of some insects, wildlife would have to move between the site and other vegetation to provide enough habitat and avoid inbreeding. Some plants would also be at risk from inbreeding or complete disappearance if not for infusion of pollen or seeds from other remnants, often carried by fauna. The rather weak ecological connections between this site and other native vegetation are therefore important for the site's long-term viability.

There is a short strip of native roadside vegetation on the eastern side of the road (in the Shire of Yarra Ranges) and there are scattered trees (mostly young) in some of the adjoining pasture. There is a larger area of tree cover 250 m away in Site 83 (seen partly on the aerial photograph above) and much larger areas slightly further away in the Lysterfield Hills (Site 81) and Lysterfield Park (Site 82). There is also substantial habitat in Upwey, just over 1 km to the northeast. Fauna may move through the Lysterfield Rd site *en route* between these sites, but no observations have been made to verify this.

Bioregion: Gippsland Plain, arguably extending into the Highlands Southern Fall bioregion at the southern end.

Habitat types

Valley Heathy Forest (EVC 127, **regionally Endangered**), tending toward Valley Grassy Forest (EVC 47, **regionally Vulnerable**) north of the centrepoint of the site. Total vegetated area approx. 6,000 m², of which approximately equal amounts are in ecological condition rating C (fair) and D (poor).

Dominant canopy trees: *Eucalyptus radiata* in the southern third, *E. cephalocarpa* and *E. goniocalyx* in the central third, and reduced in the northern third to one *E. radiata* and a dead *E. obliqua*.

Dominant lower trees: *Acacia melanoxylon* is dominant overall. *A. implexa* and *A. mearnsii* are also present in the south, and *Melaleuca ericifolia* is rather abundant in the central third. *Exocarpos cupressiformis* is scattered throughout.

Shrubs: *Kunzea ericoides* and fewer *Leptospermum continentale*.

Ground flora: Densely grassy with few small shrubs and with ferns limited to a few patches of bracken. The dominant indigenous species in most of the site is *Themeda triandra*, joined by *Gahnia radula* in the southern third. Various *Rytidosperma* species are collectively abundant. *Veronica gracilis, Lomandra longifolia* and *Dianella longifolia* are abundant in the northern third of the site. The characteristic species *Xanthorrhoea minor* is scattered sparsely along the road verge, and *Tricoryne elatior* is present but scarce.

Plant species

The following plant species were observed by the author on 23rd January 2004. Additional species would no doubt 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, *Allocasuarina paludosa* is rare throughout the Melbourne region.

Risk	Indigenous Species
V	*Acacia implexa*
V	*Acacia mearnsii*
V	*Acacia melanoxylon*
	Acacia paradoxa
	Acrotriche serrulata
V	*Allocasuarina littoralis*
C	***Allocasuarina paludosa***
C	*Amyema pendula*
V	*Amyema quandang*
	Austrostipa rudis subsp. *rudis*
	Bossiæa prostrata
	Dianella admixta
V	*Dianella longifolia* s.l.
	Elymus scaber

Risk	Indigenous Species
	Epilobium hirtigerum
V	*Eucalyptus cephalocarpa*
	Eucalyptus goniocalyx
V	*Eucalyptus obliqua*
V	*Eucalyptus ovata*
E	*Eucalyptus radiata*
V	*Exocarpos cupressiformis*
	Gahnia radula
E	*Imperata cylindrica*
	Kunzea ericoides spp. agg.
	Leptospermum continentale
	Lomandra filiformis subsp. *coriacea*
	Lomandra filiformis subsp. *filiformis*
	Lomandra longifolia

Risk	Indigenous Species
E	*Melaleuca ericifolia*
	Microlaena stipoides
	Pteridium esculentum
	Rytidosperma penicillatum
	Rytidosperma racemosum
	Rytidosperma setaceum
	Rytidosperma tenuius
	Themeda triandra
	Tricoryne elatior
V	*Veronica gracilis*
V	*Xanthorrhoea minor*

Introduced Species		
Acacia baileyana	*Cirsium vulgare*	*Linum trigynum*
Agrostis capillaris	*Crataegus monogyna*	*Lythrum junceum*
Anthoxanthum odoratum	*Dactylis glomerata*	*Paspalum dilatatum*
Brassica sp.	*Ehrharta erecta*	*Phalaris aquatica*
Briza maxima	*Ehrharta longiflora*	*Plantago lanceolata*
Bromus catharticus	*Festuca arundinacea*	*Rubus anglocandicans*
Bromus diandrus	*Holcus lanatus*	*Sporobolus africanus*
Chrysanthemoides monilifera monilifera	*Hypochoeris radicata*	

Notes concerning some of the locally threatened plant species

Allocasuarina paludosa (Scrub Sheoak). A single plant was found in the southernmost third of the site.

Imperata cylindrica (Blady Grass). Two patches were found in the northernmost third of the site.

Fauna habitat features

The grassy ground layer is probably supporting butterfly larvae and small lizards.

Significance ratings

Regionally Threatened Ecological Vegetation Class

Valley Heathy Forest is listed by the Department of Sustainability & Environment as regionally Endangered. Even allowing for the poor ecological condition of the Lysterfield Rd verge, it rates High conservation significance according to Appendix 3 of *Victoria's Native Vegetation Management - a Framework for Action* (NRE 2002a) because the EVC is endangered.

Criterion 3.2.3 of the Department of Sustainability & Environment's standard criteria for significance assessment (Amos 2004) awards State significance to any site that includes a 'remnant patch' of any such vegetation. It is questionable that any of the vegetation beside Lysterfield Rd qualifies as a 'remnant patch' in the sense intended by Amos, because in 2004, there was an unpublished convention of a minimum area of 2,500 m². Because of this, the author has downgraded the significance level to **Regional**.

Locally Threatened Plant Species

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

Threats

- Loss or decline of plant species whose populations are so small that they are vulnerable to inbreeding, poor reproductive success or elimination by random incidents. This applies particularly to *Allocasuarina paludosa* and *Eucalyptus obliqua*;
- Invasion by environmental weeds, which are overwhelmingly grasses. The worst species are as follows:
  - Very serious: Sweet Vernal-grass (*Anthoxanthum odoratum*) and Toowoomba Canary-grass (*Phalaris aquatica*);
  - Serious and widespread in the site: Large Quaking-grass (*Briza maxima*), Cocksfoot (*Dactylis glomerata*) and Panic Veldt-grass (*Ehrharta erecta*);
  - Serious in no more than one third of the site: Annual Veldt-grass (*Ehrharta longiflora*) and Ribwort (*Plantago lanceolata*);
- Reduced visitation of the site by small insect-eating birds due to its isolation from other areas with indigenous understorey, possibly leading to a worsening of plant pests and diseases.

Management issues

Much of this site is signposted as a site of significance, not to be slashed except by special arrangement with Council. It is important that this level of oversight and control be continued, otherwise the adverse effects of indiscriminate slashing would represent a serious additional threat to the site's ecological values.

On the other hand, carefully timed and sensitively executed slashing of the site would cause no harm. Fire hazard reduction may be directed largely or wholly to the abutting private properties. Any slashing that does need to occur on the roadside should be done in the months of October or November. In no circumstances should it occur in autumn, which would cause massive proliferation of weeds.

Administration matters

- This site is suited to an Environmental Significance Overlay because of its biological significance documented above, particularly because the vegetation belongs to threatened Ecological Vegetation Classes.
- Site 284 of Water Ecoscience (1998) and parts of their Site 272 are within the site described here. Schedule 1 of the Vegetation Protection Overlay (VPO1) in the Knox Planning Scheme covers part of Water Ecoscience's Site 272, but most of it has little or no native vegetation. There is only a small overlap between the areas mapped here and VPO1.
- The site is covered by Significant Landscape Overlay Schedule 2 under the Knox Planning Scheme.
- VicRoads has plans to upgrade Lysterfield Rd, and the findings above should be used to help guide the upgrade design.

Information sources used in this assessment

- Three lists of indigenous and introduced plant species for different parts of the site, compiled during this study on 23/1/04, along with mapping of vegetation types and quality in accordance with the standard procedures described in Section 2.4 of Volume 1;
- 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.

Area Recommended for ESO3

The following area is proposed to be covered by the suggested Environmental Significance Overlay Schedule 3 discussed in Section 5.5 of Volume 1.