Site 95. Kelletts Rd Roadside East of Napoleon Rd

Seven segments of road verge.

Summary of significant features:

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

Aerial photograph and plan: See page 612.

Boundaries

The seven sections of this site are outlined in cyan (light blue) on the aerial photograph on p. 612, totalling 5.3 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 Kelletts Rd's gutter, it is not intended to enclose any part of the gutter that is subject to periodic grading.

Land use & tenure: Verges 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). Northwest of the floodplain at Lakesfield Drive, the site rises obliquely up a south-facing gradient of 1:15. In the other direction, the slope mostly faces north-northwest and the gradient increases steadily to 1:10.

There is a deposit of alluvial soil on the floodplain of Corhanwarrabul Ck (within the white lines marked on the aerial photograph on p. 612). 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 (colluvium) that has gravitated downhill from the Lysterfield Hills.

The alluvium near Lakesfield Drive supports vestiges of the vegetation type, 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 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, were heavily suppressed by regular roadside slashing for many years until the mid-1990s. Since then, much of the site has 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).

Relationship to other land

Some species of birds and flying 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 2.6 ha, comprising 0.1 ha in good ecological condition (rating B), 1 ha in fair ecological condition (rating C) and 1.5 ha in poor ecological condition (rating D).

Canopy trees: Overwhelmingly dominated by *Eucalyptus cephalocarpa* overall but sharing dominance with *E. goniocalyx* near Wellington Rd, where *E. melliodora* is also fairly abundant. *Eucalyptus radiata* is fairly abundant throughout.

Sub-canopy trees: Dominated by *Exocarpos cupressiformis* in much of the site but there are areas dominated by *Acacia mearnsii, A. melanoxylon* or *A. pycnantha*. The number of *A. melanoxylon* has been boosted by planting. *Allocasuarina littoralis* is sparse.

Shrubs: Sparse in 1997 but now dense in part of the site due to proliferation of *'Kunzea* sp. (Upright form)', to a problematic degree. Otherwise, wild shrubs remain depleted in density and (particularly) number of species, the only species with more than one or two individuals being *Acacia paradoxa* and *Bursaria spinosa*. *Leptospermum continentale* was fairly abundant in 1997 but none were found in 2024. *Daviesia latifolia* was also present in 1997 but it appears to be represented only by planted plants in 2024.

Vines: The light twiner, *Billardiera mutabilis*, was fairly abundant in 1997 but is now very scarce. *Clematis decipiens* and *Pandorea pandorana* were absent in 1997 (and are probably not indigenous to this part of Knox) but are now scattered near Wellington Rd.

Ferns: *Pteridium esculentum* was present in 1997 but not detected in 2024.

Groundcover: Densely grassy. Areas that retain a substantial amount of indigenous groundcover are dominated variously by *Gahnia radula* or *Austrostipa rudis*. *Rytidosperma racemosum* and *Microlaena stipoides* are dominant in some areas and *Poa morrisii* was fairly abundant in 1997 (but not now). Lilies are particularly abundant, e.g. *Arthropodium strictum, Burchardia umbellata, Dianella longifolia, D. revoluta, D. tasmanica* and *Tricoryne elatior*.

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

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

Sub-canopy trees: *Acacia mearnsii, A. melanoxylon* and *Allocasuarina littoralis* are present but scarce, the *A. melanoxylon* perhaps only present due to planting. There is a small thicket of *Melaleuca ericifolia* but it seems to be more associated with the Valley Heathy Forest than the Swampy Riparian Woodland.

Shrubs: Absent due to past clearing.

Vines and ferns: None.

Groundcover: Weedy but with small numbers of the indigenous species *Centella cordifolia, Epilobium hirtigerum, Juncus amabilis, J. pallidus, J. sarophorus, Lomandra longifolia, Phragmites australis* and *Persicaria decipiens*.

Plant species

The following plant species have been observed growing wild in the site (not just planted). Indigenous species not seen by the author on 2/10/24 are indicated by asterisks (if seen by him in November 1997) or daggers (†) if only seen by Damien Cook on 30/11/92. The column headed 'Risk' indicates the indigenous species' risk of dying out in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; 'V'=Vulnerable and 'N'=Near threatened. In addition, *Austrostipa rudis* subsp. *australis* is listed as Endangered under Victorian law.

Indigenous mosses and liverworts
Campylopus introflexus, Heath Star Moss
Chiloscyphus semiteres, Green Worms
Fossombronia ?*wondraczekii*, a liverwort
Hypnum cupressiforme, Common Hypnum

Risk	Wild indigenous vascular species
	Acacia dealbata, Silver Wattle (probably from planting)
V	*Acacia implexa*, Lightwood
V	*Acacia mearnsii*, Black Wattle
V	*Acacia melanoxylon*, Blackwood
E	*Acacia myrtifolia*, Myrtle Wattle†
	Acacia paradoxa, Hedge Wattle
V	*Acacia pycnantha*, Golden Wattle
V	*Acacia stictophylla*, Dandenong Range Cinnamon Wattle†
V	*Acaena echinata*, Sheep's Burr*
E	*Acrotriche serrulata*, Honey-pots†

Risk	Wild indigenous vascular species
V	*Allocasuarina littoralis*, Black Sheoak
C	*Amyema pendula*, Drooping Mistletoe
E	*Amyema quandang*, Grey Mistletoe
	Anthosachne scabra, Common Wheat-grass*
	Arthropodium strictum, Chocolate Lily
	Austrostipa pubinodis, Tall Spear-grass*
V	*Austrostipa rudis* subsp. *australis*, Veined Spear-grass
	Austrostipa rudis subsp. *rudis*, Veined Spear-grass
	Billardiera mutabilis, Common Apple-berry
N	*Bossiaea prostrata*, Creeping Bossiaea*
	Burchardia umbellata, Milkmaids
	Bursaria spinosa, Sweet Bursaria
V	*Caesia parviflora*, Pale Grass-lily†
	Carex breviculmis, Short-stem Sedge†
	Cassinia aculeata, Common Cassinia
	Cassinia longifolia, Shiny Cassinia
E	*Centella cordifolia*, Centella
	Clematis decipiens, a small-leafed clematis
	Cotula australis, Common Cotula
	Crassula decumbens, Spreading Crassula
C	*Daviesia latifolia*, Hop Bitter-pea*
	Deyeuxia quadriseta, Reed Bent-grass†
	Dianella longifolia var. *longifolia*, Pale Flax-lily
	Dianella revoluta, Black-anther Flax-lily
	Dichelachne rara, Common Plume-grass†
	Dichondra repens, Kidney-weed
V	*Dillwynia cinerascens*, Grey Parrot-pea†
V	*Drosera aberrans*, Scented Sundew†
V	*Eleocharis acuta*, Common Spike-rush*
	Epilobium hirtigerum, Hairy Willow-herb
E	*Eucalyptus cephalocarpa*, Mealy Stringybark
V	*Eucalyptus goniocalyx*, Bundy
E	*Eucalyptus melliodora*, Yellow Box
V	*Eucalyptus ovata*, Swamp Gum
E	*Eucalyptus radiata*, Narrow-leaved Peppermint
	Euchiton japonicus, Creeping Cudweed
V	*Exocarpos cupressiformis*, Cherry Ballart
C	*Gahnia radula*, Thatch Saw-sedge
	Gonocarpus tetragynus, Common Raspwort*
	Goodenia ovata, Hop Goodenia
E	*Hardenbergia violacea*, Purple Coral-pea
C	*Hibbertia australis*, Upright Guinea-flower†
E	*Hypericum gramineum*, Small St John's Wort†
C	*Hypoxis hygrometrica*, Golden Weather-glass†
V	*Isolepis platycarpa*, a club-rush†
	Juncus amabilis, Hollow Rush
	Juncus bufonius, Toad Rush
	Juncus pallidus, Pale Rush
	Juncus sarophorus, Broom Rush
C	*Kennedia prostrata*, Running Postman* (now apparently all planted)
	Kunzea sp. (Upright form), Forest Burgan
	Lachnagrostis filiformis, Common Blown-grass*
	Lepidosperma gunnii, Slender Sword-sedge
V	*Lepidosperma laterale*, Variable Sword-sedge†
C	*Leptospermum continentale*, Prickly Tea-tree*
	Lomandra filiformis subsp. *coriacea*, Wattle Mat-rush
	Lomandra filiformis subsp. *filiformis*, Wattle Mat-rush
	Lomandra longifolia subsp. *longifolia*, Spiny-headed Mat-rush
V	*Luzula meridionalis*, Common Woodrush†
E	*Melaleuca ericifolia*, Swamp Paperbark
	Microlaena stipoides, Weeping Grass
V	*Microtis parviflora*, Slender Onion-orchid†
E	*Microtis* ?*unifolia*, Common Onion-orchid†
V	*Opercularia ovata*, Broad-leaf Stinkweed†
V	*Opercularia varia*, Variable Stinkweed†
	Oxalis exilis/perennans, Wood-sorrel
V	*Ozothamnus ferrugineus*, Tree Everlasting*
	Pandorea pandorana, Wonga Vine
	Persicaria decipiens, Slender Knotweed
E	*Phragmites australis*, Common Reed
	Poa morrisii, Soft Tussock-grass*
	Poranthera microphylla, Small Poranthera*
	Pteridium esculentum, Austral Bracken*
	Pterostylis nutans, Nodding Greenhood†
E	*Rubus parvifolius*, Small-leaf Bramble
E	*Rytidosperma* ?*caespitosum*, Common Wallaby-grass*
	Rytidosperma fulvum, Leafy Wallaby-grass
	Rytidosperma geniculatum, Kneed Wallaby-grass
	Rytidosperma laeve, Smooth Wallaby-grass*
E	*Rytidosperma pallidum*, Red-anther (or Silvertop) Wallaby-grass
	Rytidosperma penicillatum, Slender Wallaby-grass*
	Rytidosperma pilosum, Velvet Wallaby-grass*
	Rytidosperma racemosum, Clustered Wallaby-grass
	Rytidosperma setaceum, Bristly Wallaby-grass
	Rytidosperma tenuius, Purplish Wallaby-grass*
	Schoenus apogon, Common Bog-rush*
	Senecio hispidulus, Rough Fireweed*
	Senecio quadridentatus, Cotton Fireweed
	Themeda triandra, Kangaroo Grass
E	*Thysanotus patersonii*, Twining Fringe-lily*
	Tricoryne elatior, Yellow Rush-lily
E	*Viola hederacea*, Ivy-leaf Violet†
E	*Wurmbea dioica*, Common Early Nancy†
E	*Xanthorrhoea minor*, Small Grass-tree

Introduced species

Acacia floribunda, White Sallow-wattle
Acacia longifolia subsp. *longifolia*, Sallow Wattle
Agrostis capillaris, Brown-top Bent
Aira caryophyllea, Silvery Hair-grass
Aira sp., Hair Grass
Allium triquetrum, Angled Onion
Anthoxanthum odoratum, Sweet Vernal-grass
Asparagus asparagoides, Bridal Creeper
Briza maxima, Large Quaking-grass
Briza minor, Lesser Quaking-grass
Cassinia sifton, Sifton Bush
Centaurium erythraea, Common Centaury
Cerastium glomeratum s.l., Common Mouse-ear Chickweed
Chrysanthemoides monilifera subsp. *monilifera*, Boneseed
Cirsium vulgare, Spear Thistle
Dactylis glomerata, Cocksfoot
Ehrharta erecta, Panic Veldt-grass
Festuca rubra s.l., Red Fescue

Introduced species

Holcus lanatus, Yorkshire Fog
Hypochaeris radicata, Cat's Ear
Ipheion uniflorum, Spring Starflower (2020)
Isolepis levynsiana, Tiny Flat-sedge
Leontodon saxatilis, Lesser Hawkbit
Lolium perenne, Perennial Rye-grass
Lolium sp., Rye Grass
Lotus sp., a trefoil
Medicago polymorpha, Burr Medic
Pinus radiata, Monterey Pine
Pittosporum undulatum, Sweet Pittosporum
Plantago lanceolata, Ribwort
Romulea rosea, Common Onion-grass
Rubus anglocandicans, Blackberry
Sisyrinchium micranthum, Blue Pigroot
Sonchus oleraceus, Sow-thistle
Sporobolus africanus, Rat-tail Grass
Trifolium repens, White Clover
Vulpia bromoides, Squirrel-tail Fescue

Notes concerning some of the significant plant species

Listed as Endangered under Victorian law

Austrostipa rudis subsp. *australis* (a subspecies of Veined Spear-grass): Scores of plants were seen at frequent intervals from near Lakesfield Drive most of the way to Wellington Rd during this study's survey on 2/10/23. Many more would be expected to be identifiable by December, potentially including northwest of the Corhanwarrabul Ck floodplain. Many of the plants are on, or close to, the batter next to the road's table drains.

Acacia stictophylla (Dandenong Range Cinnamon Wattle): Not present in the most recent survey (1997) but recorded in substantial numbers within the signposted 'Significant Roadside KN10' by 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.

Locally threatened

Amyema pendula (Drooping Mistletoe): Two plants were seen in 2024 on the northeast side of the Wellington Rd intersection and another slightly northwest of the Rosewood Blvd intersection.

Amyema quandang (Grey Mistletoe): Two plants were seen in 2024 on the northeast side of the Wellington Rd intersection.

Hypoxis hygrometrica (Golden Weather-glass): Recorded in substantial numbers within the signposted 'Significant Roadside KN8' by Damien Cook in 1992. (KN8 extends c. 250 m from Wellington Rd on the southwestern side of Kelletts Rd.) It was not detected in 1997 or 2024, perhaps because the species is extremely hard to detect when it is not flowering.

Kennedia prostrata (Running Postman): One plant was found by the author in 1997 within the signposted 'Significant Roadside KN10', which is just southeast of Lakesfield Dr on the northeast side of the road. A cluster of at least five plants seen by the author in 2024 on the opposite side of the road, midway between the two Major Crescent intersections, have probably been planted.

Rytidosperma ?*caespitosum* (Common Wallaby-grass): This is the taxon that 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 (Kneed 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' in 1997.

Wurmbea dioica (Common Early Nancy). Recorded in 1992 and not in 1997 or 2024, perhaps because the species is very hard to detect when not in flower or seed.

Fauna of special significance

No significant fauna have been recorded but the Superb Fairy-Wrens, Black-faced Cuckoo-Shrike and bronze-cuckoo that the author observed during site inspections indicate that the vegetation supports species other than just hardy urban wildlife. That can be attributed to the proximity to extensive habitat in the Lysterfield Hills and Lysterfield Park.

Fauna habitat features

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

Endangered Ecological Vegetation Class

The site's native vegetation all belongs to the EVC, Valley Heathy Forest, which is regionally endangered. Criterion 3.2.3 of Amos (2004) accords State significance to any 'remnant patch' of a regionally-endangered EVC, where 'remnant patch' is defined as a continuous area of at least 0.25 ha in which the cover of native understorey is at least 10% throughout. Most of this site's native understorey is fragmented into strips smaller than 0.25 ha but not in the segment from Rosewood Blvd to the more northwesterly of the two intersections with Major Crescent. Consequently, that segment is of **State** significance under criterion 3.2.3.

Threatened Plants

Austrostipa rudis subsp. *australis* is listed as Endangered under Victorian law. It also occurs outside Victoria. Its population in this site is fairly large. Any known habitat for such a species meets criterion 3.1.2 for **State** significance.

The 1992 record of *Acacia stictophylla* is regarded as open to question and too old to be significant.

Some of the locally-threatened plant species seen in 2024 have viable populations, thereby meeting criterion 3.1.5 for **Local** significance.

Threats

- Possible grader damage to the endangered spear-grass, *Austrostipa rudis* subsp. *australis* in cases where it is growing on the batter next to the road's table drains;
- Human-induced climate change, which is predicted to cause more severe droughts, heatwaves and storms, as well as substantially lower rainfall (particularly in winter);
- Continuing decline of tree health, partly due to the abovementioned droughts and storms;
- Displacement of indigenous flora and fauna by environmental weeds, but that problem is being kept well under control at present;
- Continuation of recent illicit excavations to construct a BMX track beside the Fruitful Vine property, destroying some of the site's most significant vegetation;
- Recurring dumping of truckloads and trailer loads of rubbish at the Wellington Rd corner;
- 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 being struck by a falling tree limb.

Strategic planning

- The previous (2010) edition of this report led to its slightly larger version of this site being covered by Schedule 2 of the Environmental Significance Overlay (ESO2). The reasons given for applying ESO2 were the presence of Valley Heathy Forest and the site's rare plant species. Since 2010, the main changes affecting

ESO2's appropriateness for the site are: (a) the spear-grass *Austrostipa rudis* subsp. *australis* has been discovered in the site and listed as endangered under the *Flora and Fauna Guarantee Act*; (b) the site has been extensively planted with indigenous species to improve the habitat; and (c) this edition has revised the site boundary, principally to exclude land that was cleared of habitat for major roadworks at the Napoleon Rd intersection. The only recommended amendment to ESO2 arising from these changes is to adjust its boundary to match the site boundary adopted here.

Information sources used in this assessment

- Data from two 150 m² quadrats (reference numbers N01904 and N01905), gathered by 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;
- 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 10th March 2008 to update any obsolete information for the second edition of this report, with particular attention to roadwork at the intersection of Kelletts Rd and Napoleon Rd;
- A botanical survey by Dr Lorimer on 2nd October 2024, compiling lists of plant species (one list for the Valley Heathy Forest and the other for the Swampy Riparian Complex), mapping and documenting significant plants, and checking for changes in features relevant to this report compared with pre-existing information;
- Records of flora and fauna observations stored in Knox City Council's biodiversity database;
- Records of flora and fauna observations stored in the Atlas of Living Australia, but note that the some of the records are of planted plants despite not being portrayed as planted;
- Aerial and satellite imagery from between 1976 and 2024;
- The Victorian Government's 'NatureKit' website;
- Maps of geology, topography and strategic planning information produced by agencies of the Victorian Government.