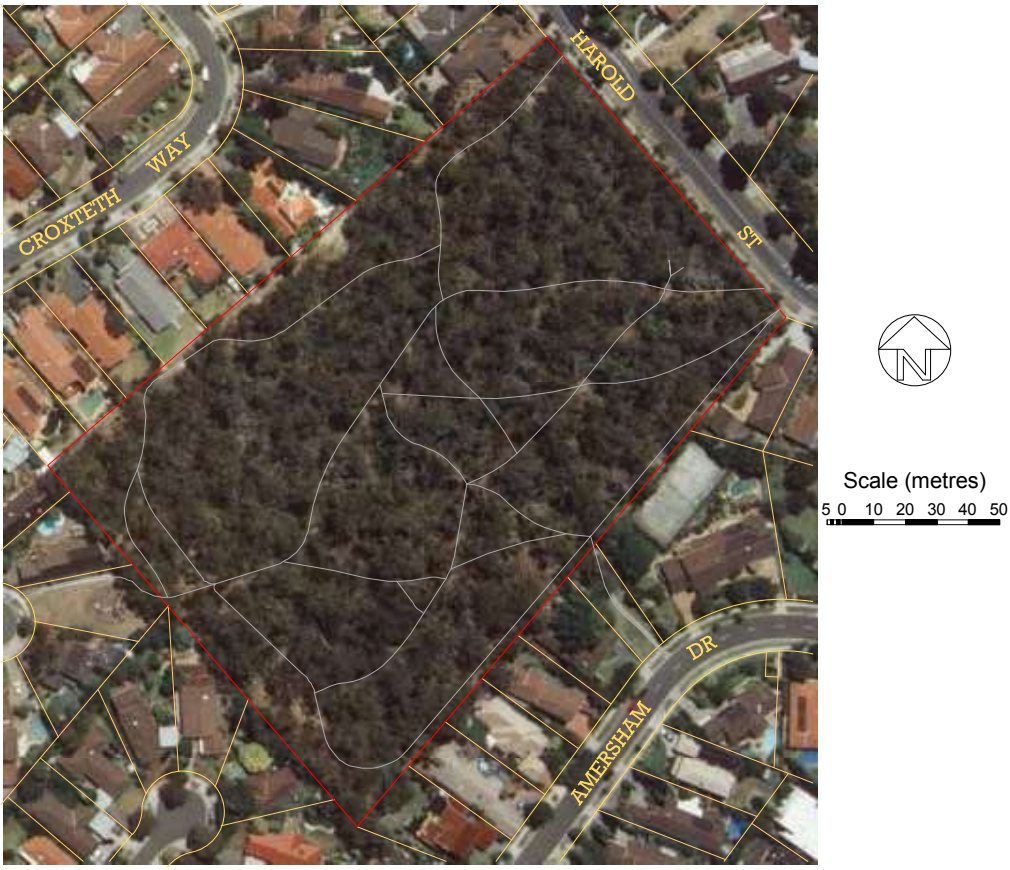
Site 55. W.G. Morris Reserve, Wantirna

2.8 ha Council bushland reserve. Melway ref. 63 G7.

Site Significance Level: *State*

- The site is covered with Valley Heathy Forest (an endangered Ecological Vegetation Community), and some of it is in excellent ecological condition;
- Over ninety indigenous flora species have been recorded;
- Ten of the plant species are threatened in Knox, and two of them are Critically Endangered in Knox.



Boundaries

This site coincides exactly with a single lot and is outlined in red above.

Land use & tenure: Owned by Knox City Council and managed as a bushland reserve for passive recreation.

Site description

This 2·8-hectare bushland reserve site lies on a gentle south-facing slope. Elevations vary from 107 m to 121 m approximately. The soil is light grey loam over clay subsoil, derived from Upper Silurian sedimentary deposits of the Dargile formation.

There is a rather dense network of paths through the reserve, shown on the aerial photograph with grey lines.

Apart from some firebreak strips, the whole reserve supports native vegetation of Valley Heathy Forest, which is an endangered Ecological Vegetation Class.

The density of large old trees is lower than would be expected in a pristine example of Valley Heathy Forest. Eucalypt dieback has seriously affected many mature eucalypts, but the consequent gaps that have formed in the canopy are starting to be filled by healthy, younger trees.

The understorey appears to show signs of clearing long ago. Weeds are also seriously affecting some parts of the reserve, no doubt exacerbated by the unnaturally high amount of sunlight beneath the dieback-affected tree canopy.

Despite these environmental pressures, the reserve retains a rich range of indigenous plant species, of which five are vulnerable to extinction from Knox, and a sixth (*Acacia genistifolia*), has only been recorded from one other site in Knox, very near the Dandenong Ranges National Park.

Council's recent management of the reserve's vegetation has included manual weeding, herbicide application, planting of tubestock and fire management. Council's revegetation work near Harold St, where eucalypt dieback has been most severe, has been very successful in suppressing weeds and forming a healthy, young canopy. A neighbour to the northwest on Harold St has also played a very useful role in controlling weeds in the northern corner of the reserve, which is in excellent ecological condition.

Parts of the reserve have been set alight by vandals in recent years. Such fires pose a risk to the community that is unacceptable and the risk is being addressed by Council. Controlled burning is planned for fire safety and proper ecological management of the reserve. Knox City Council performed a fire risk assessment in 2004 and has put in place a fire hazard management program.

Relationship to other land

The site is ecologically rather isolated from other native habitat. The closest area of any size is the Dandenong Valley Parklands approximately one kilometre away, with the small Stringybark Reserve midway between them. The more mobile bird and insect species can traverse such distances, but there would be very little infusion of seeds or pollen into the reserve from other areas. This leaves some of the less numerous plant species in the reserve vulnerable to inbreeding or disappearance due to chance events.

Bioregion: Gippsland Plain

Habitat type

Valley Heathy Forest (EVC 127, **regionally Endangered**): 2.8 ha of native vegetation, of which 1·57 ha is in ecological condition B (good), 0·99 ha is in ecological condition C (fair) and 0·26 ha is in ecological condition D (poor).

Dominant canopy trees: *Eucalyptus goniocalyx, E. macrorhyncha* and *E. obliqua*, with fewer *E. melliodora* and *E. radiata*. The tree crowns overlap slightly where dieback has not thinned the canopy.

Dominant lower trees: *Exocarpos cupressiformis* and *Acacia implexa* are rather abundant, and *Allocasuarina littoralis* is characteristically present in considerable numbers at the southern corner of the reserve.

Shrubs: Mostly 2-3 m tall and rather dense, but thinner in areas of very mature vegetation or very young regrowth after fire. *Acacia paradoxa, Cassinia aculeata* and *Cassinia longifolia* are dominant in the denser areas (along with *Ozothamnus ferrugineus* in some areas).

Vines: Only the light climbers, *Billardiera mutabilis, Comesperma volubile* and *Hardenbergia violacea*; not dense.

Ferns: *Pteridium esculentum* becomes locally dense after disturbance, and *Lindsaea linearis* is scarce.

Ground flora: Rather rich. Densely grassy but with characteristic heathy elements such as *Hibbertia riparia*. Overall, the dominant indigenous species are *Rytidosperma pallidum* and *Gahnia radula*. The weed *Ehrharta erecta* is dominant in some patches, where it represents very serious ecological degradation. *Lepidosperma gunnii, Lomandra filiformis* and *Poa morrisii* are also abundant. Characteristic species include *Acacia aculeatissima, Rytidosperma racemosum, R. tenuius, Dillwynia cinerascens, Drosera whittakeri, Epacris impressa, Gonocarpus tetragynus, Hibbertia riparia, Microlaena stipoides, Platylobium formosum*, *P. obtusangulum, Poa morrisii, Pterostylis nutans, Themeda triandra* and *Xanthorrhoea minor*.

Plant species

In the following plant list, 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, *Austrostipa rudis* subsp. *australis* is rare throughout Victoria and species with names in bold are rare throughout the Melbourne region.

Risk	Indigenous Species
E	*Acacia aculeatissima*
	Acacia dealbata
C	*Acacia genistifolia*
V	*Acacia implexa*
V	*Acacia mearnsii*
V	*Acacia melanoxylon*
E	*Acacia myrtifolia*
	Acacia paradoxa
E	*Acacia pycnantha*
E	*Acacia stricta*
V	*Acacia verticillata*
	Acaena novae-zelandiae (wild & planted)
	Acrotriche serrulata
V	*Allocasuarina littoralis* (wild & ?planted)
C	*Amyema pendula*
V	*Amyema quandang*

Risk	Indigenous Species
	Arthropodium strictum
	Austrostipa pubinodis
V	***Austrostipa rudis* subsp. *australis***
	Austrostipa rudis subsp. *rudis*
	Billardiera mutabilis
	Bossiæa prostrata
V	*Brunonia australis*
	Burchardia umbellata
	Bursaria spinosa
V	*Caesia parviflora*
	Campylopus clavatus
	Campylopus introflexus
	Carex breviculmis
	Cassinia aculeata
	Cassinia arcuata
V	*Cassinia longifolia*
C	***Cassinia trinerva***
C	*Chamaescilla corymbosa*
	Chiloscyphus semiteres
	Clematis decipiens
V	*Comesperma volubile*
V	*Coprosma quadrifida*
E	*Correa reflexa* var. *reflexa*
C	*Corybas* sp. (a questionable record)
V	*Cotula australis*
V	*Crassula decumbens*
C	*Cryptostylis subulata*
E	*Daviesia leptophylla*
	Deyeuxia quadriseta
	Dianella admixta
V	*Dianella longifolia* s.l. (wild & planted)
	Dichelachne rara
	Dichondra repens
V	*Dillwynia cinerascens*
E	*Dipodium roseum*
V	*Drosera peltata* subsp. *auriculata*
E	*Drosera peltata* subsp. *peltata*
V	*Drosera whittakeri*
V	*Epacris impressa*
V	*Eucalyptus cephalocarpa*
	Eucalyptus goniocalyx
E	*Eucalyptus macrorhyncha*
	Eucalyptus macrorhyncha × *obliqua*
V	*Eucalyptus melliodora*
V	*Eucalyptus obliqua*
E	*Eucalyptus radiata*
E	*Euchiton involucratus*
V	*Exocarpos cupressiformis*
	Gahnia radula
	Gonocarpus tetragynus
	Goodenia ovata
V	*Hardenbergia violacea*
V	*Helichrysum scorpioides*
E	*Hibbertia riparia*
V	*Hovea heterophylla*
V	*Hydrocotyle hirta*
E	*Hypericum gramineum*
	Hypnum cupressiforme
E	*Indigofera australis*
E	*Juncus planifolius*

Risk	Indigenous Species
C	*Kennedia prostrata*
	Kunzea ericoides spp. agg.
	Lachnagrostis filiformis
V	*Lagenophora gracilis*
	Lepidosperma elatius
	Lepidosperma gunnii
	Leptospermum continentale
E	*Leptospermum scoparium*
V	*Lindsaea linearis*
	Lomandra filiformis subsp. *coriacea*
	Lomandra filiformis subsp. *filiformis*
	Lomandra longifolia (wild & planted)
E	*Melaleuca ericifolia*
	Microlaena stipoides
C	*Microtis unifolia*
C	*Muellerina eucalyptoides*
V	*Olearia lirata*
E	*Olearia myrsinoides*
V	*Opercularia varia*
E	*Ozothamnus ferrugineus*
	Pandorea pandorana
V	*Pimelea humilis* (wild & planted)
V	*Plantago varia*
V	*Platylobium formosum*
V	*Platylobium obtusangulum*
E	*Poa labillardierei* (planted)
	Poa morrisii (wild & planted)
	Poranthera microphylla
	Pteridium esculentum
E	*Pterostylis melagramma*
	Pterostylis nutans
C	*Pterostylis pedunculata*
	Ptychomnion aciculare
V	*Pultenaea gunnii*
	Rytidosperma linkii var. *fulvum*
	Rytidosperma pallidum
	Rytidosperma penicillatum
V	*Rytidosperma pilosum*
	Rytidosperma racemosum
E	*Rytidosperma semiannulare*
	Rytidosperma setaceum
	Rytidosperma tenuius
	Schoenus apogon
	Senecio glomeratus
	Senecio hispidulus
E	*Senecio minimus*
	Senecio quadridentatus
V	*Solanum ?laciniatum* (wild & planted)
E	*Stackhousia monogyna*
E	*Stylidium armeria/graminifolium*
V	*Thelymitra* sp.
	Themeda triandra
	Thuidiopsis furfurosa
V	*Thysanotus patersonii*
E	*Viola hederacea*
E	*Wahlenbergia gracilis* (planted)
E	*Wurmbea dioica*
V	*Xanthorrhoea minor*
E	*Xanthosia dissecta*

Introduced Species

Acacia baileyana	*Cotoneaster glaucophyllus*	*Plantago lanceolata*
Acacia floribunda	*Cotoneaster pannosus*	*Poa annua*
Acacia iteaphylla	*Dactylis glomerata*	*Polycarpon tetraphyllum*
Acacia longifolia subsp. *longifolia*	*Dipogon lignosus*	*Prunella vulgaris*
Acer negundo	*Ehrharta erecta*	*Prunus cerasifera*
Agapanthus praecox	*Ehrharta longiflora*	*Quercus robur*
Agrostis capillaris	*Eriobotrya japonica*	*Romulea rosea*
Aira caryophyllea	*Euphorbia peplus*	*Rubus anglocandicans*
Anagallis arvensis	*Freesia alba × leichtlinii*	*Solanum nigrum*
Anthoxanthum odoratum	*Galium aparine*	*Soliva sessilis*
Arbutus unedo	*Gamochaeta purpurea*	*Sonchus oleraceus*
Arctotheca calendula	*Genista monspessulana*	*Sporobolus africanus*
Asparagus scandens	*Grevillea rosmarinifolia*	*Stellaria media*
Avena barbata	*Hakea salicifolia*	*Syzygium smithii*
Billardiera heterophylla	*Hedera helix*	*Taraxacum officinale* spp. agg.
Briza maxima	*Holcus lanatus*	*Tradescantia fluminensis*
Briza minor	*Hypochoeris radicata*	*Trifolium dubium*
Bromus catharticus	*Lactuca serriola*	*Trifolium repens*
Cardamine hirsuta s.l.	*Ligustrum lucidum*	*Ulex europaeus*
Centaurium erythraea	*Medicago polymorpha*	*Veronica persica*
Cerastium glomeratum	*Oxalis incarnata*	*Vicia sativa*
Chlorophytum comosum	*Pennisetum clandestinum*	*Vulpia bromoides*
Conyza sumatrensis	*Pinus radiata*	*Vulpia myuros f. myuros*
Coprosma repens	*Pittosporum tenuifolium*	*Zantedeschia aethiopica*
Correa ?glabra	*Pittosporum undulatum*	

Notes concerning some of the locally threatened plant species

Acacia aculeatissima (Thin-leaf Wattle). Nine plants were found.
Acacia genistifolia (Spreading Wattle). Eight appeared after a fire in c. 2000, of which two have since died.
Austrostipa rudis subsp. *australis* (a subspecies of Veined Spear-grass). At least eight plants; probably a viable population.
Cassinia trinerva (Three-nerved Cassinia). A small population, showing no signs of decline over 20 years.
Chamaescilla corymbosa (Blue Stars). Last recorded prior to 1984.
Correa reflexa var. *reflexa* (Common Correa). Fairly numerous and apparently secure.
Cryptostylis subulata (Large Tongue-orchid). Last recorded prior to 1984.
Daviesia leptophylla (Narrow-leaf Bitter-pea). Population details were not recorded.
Eucalyptus obliqua × macrorhyncha (An uncommon hybrid). Several specimens were found.
Hypoxis vaginata (Sheath Star). Last recorded prior to 1984.
Kennedia prostrata (Running Postman). Seven plants were recorded when most recently checked (2006).
Pterostylis longifolia (=*P. melagramma*) (Tall Greenhood). Moderate numbers.
Pterostylis pedunculata (Maroon-hood). Two healthy plants were found in 2006.
Thysanotus ?patersonii (Twining Fringe-lily). Last recorded prior to 1984.

Fauna habitat features

- There are large eucalypts (including dead ones) with hollows that would suit habitation by birds, bats, possums or insects;
- There are some logs on the ground, providing cover for ground-dwelling native fauna;
- The dense shrub layer suits many species of small birds (but the reserve's size and relative isolation from other habitat are not so suitable).

Significance ratings

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

Regionally Threatened Ecological Vegetation Class

Valley Heathy Forest listed as regionally Endangered. In addition, the habitat scores determined by the author for most of the reserve put the conservation significance of the vegetation in the Very High category under Appendix 3 of *Victoria's Native Vegetation Management - a Framework for Action* (NRE 2002a). This, in turn, gives the site **State** significance under criterion 3.2.3 of Amos (2004).

Rare or Threatened Flora

Austrostipa rudis subsp. *australis* is listed as 'rare' in Victoria. The population in this site is small but quite likely viable, although its genetic stability relative to subspecies *rudis* (with which it is growing) is not known. The presence of such a subspecies represents **Regional** significance under criterion 3.1.2 of the standard criteria.

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

- Environmental weeds;
- Eucalypt dieback disease (which has been severe, but appears not to be preventing a new canopy of younger trees);
- Damage such as trampling from recreational activities;
- Loss or decline of plant species that are present in such small numbers that they are vulnerable to inbreeding, poor reproductive success or random events such as cubby house construction or digging by dogs;
- Fires lit by vandals at too high a frequency or at a time of year that favours weeds and suppresses indigenous plants;
- Deliberate cutting down of shrubs and trees;
- Predation of birds by cats.

Administration matters

- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of its biological significance – particularly the presence of some Valley Heathy Forest in excellent ecological condition (discussed above);
- The site is included within Vegetation Protection Overlay VPO1 of the Knox Planning Scheme.

Information sources used in this assessment

- Vegetation monitoring data, as described in the reports, *'Monitoring of Bushland Reserves in Knox'* (Lorimer 1999), *'Monitoring of Bushland Reserves in Knox – 2002 Review'* (Lorimer 2002) and *'Monitoring of Bushland Reserves in Knox – 2007 Review'* (Lorimer 2007a) for Knox City Council, comprising:
  - Lists of plant species (indigenous and introduced) observed in the reserve by Dr Lorimer in 1999 and 2002;
  - Maps and assessments of the population sizes and distributions of ten scarce plant species in each of 1999 and 2002;
  - Data from a single quadrat, surveyed by the author in 1999, 2002 and 2006;
  - A list of fauna observed during the above botanical surveys; and
  - A series of seven photographs highlighting aspects of the reserve's vegetation, taken in 1999 and repeated in 2002;
- More detailed data, including habitat scores and fine-scale vegetation condition mapping, compiled for *'2007 Bushland Management Plan for W.G. Morris Reserve, Wantirna'* (Lorimer 2007b);
- Data from twenty-five quadrats, compiled by Mr Andrew Paget in March 1985;
- A list of plant species compiled by Mr Gary Cheers, as reported by Paget (1985);
- A slightly different list presented by Western (1985) that was stated to be also based on Mr Cheers's observations;
- Aerial photography from February 2001 and April 2003 and 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.