

Site 54. Stringybark Reserve, Wantirna

Small Council bushland reserve in two sections separated by Petalnina Dr. Melway ref. 63 F7.

Site Significance Level: *State*

- The native vegetation is young regrowth of the endangered Valley Heathy Forest, partly in quite good condition;
- There are three plant species that are locally threatened, with small populations.



Aerial photograph taken April 2003



Scale 1:2,000
10 0 20 40 60 80 100m

Boundaries

This 4,962 m² site is in two parcels, as outlined in red above. The edges coincide with property boundaries. The magenta lines indicate the boundaries of parts of Site 91, for reference.

Land use & tenure: Council reserve, principally for conservation purposes. Both parts of the reserve are presently fenced, with locked gates.

Site description

Council obtained these two remnants of a formerly larger area of bushland as part of the subdivision of the adjoining residential estate, several years ago. Council is rehabilitating the native vegetation by intensive management. The reserve is not open to the public while this is occurring.

The bedrock is Upper Silurian sandstone of the Dargile formation, which has weathered to form clay subsoil and light grey loam topsoil. The Dargile formation forms a low ridge, and the reserve is situated on the northwestern side, 200 m from the ridge top. Elevations are approximately 107-113 m and the shallow slope (6% gradient) faces west.

The native vegetation is Valley Heathy Forest, which is endangered. Its ecological condition is quite variable due to localised damage during the area's residential development (vehicle tracks, dumped soil) and due to grazing and weed infestations prior to the subdivision. The section of the reserve that lies south of Petalnina Dr is much richer in species than to the north, which appears to have suffered substantial damage from past grazing.

The form of Valley Heathy Forest on this site is the same as at nearby W.G. Morris Reserve (Site 55) and different from the form dominated by Mealy Stringybark (*Eucalyptus cephalocarpa*) at the Bateman Street Bush (Site 49). The latter has greater soil moisture.

The intensive management of the vegetation in Stringybark Reserve is successfully fostering natural regeneration of many indigenous plants. The vegetation is far from maturity and more species are likely to appear in coming years. Some existing species, such as the disturbance-loving Running Postman (*Kennedia prostrata*), may dwindle or disappear as dominant plants suppress the more opportunistic species. To limit this effect, Council's bush crew has selectively cut some particularly dense stands of dominant indigenous plants.

Interestingly, some of the neighbouring vacant housing lots supported young regrowth of indigenous flora at the time of the site inspection for this report (17th June 2002). For example, 31 indigenous plant species were found at 15 Petalnina Dr, including the *Kennedia prostrata* and *Indigofera australis*. Probably no indigenous plant species will remain in the whole estate once all the properties have houses.

Relationship to other land

Stringybark Reserve is fairly isolated from other bushland. Birds and insects would generally be able to fly between Stringybark Reserve, Morris Reserve (Site 55, 350 m to the southeast) and Koomba Park (part of Site 58, 850 m west). Native vegetation along neighbouring parts of Mountain Hwy (part of Site 91) can be seen on the aerial photograph and may assist fauna movements to and from Stringybark Reserve. The great diversity of eucalypts may attract certain nectar-loving birds during flowering times, but overall, Stringybark Reserve's small size detracts substantially from its attractiveness to most birds, as indicated by the poor range of species observed during the fieldwork.

Bioregion: Gippsland Plain

Habitat types

Valley Heathy Forest (EVC 127, Endangered): 0.5 ha, estimated to comprise 925 m² in good ecological condition (rating B), 3,500 m² in fair ecological condition (rating C) and 575 m² in poor ecological condition (rating D).

Canopy trees: Dominated by *Eucalyptus melliodora*, *E. macrorhyncha*, *E. radiata*, *E. goniocalyx* and *E. obliqua*.

Lower trees: *Exocarpos cupressiformis*, *Acacia mearnsii*, *Acacia implexa* and *Acacia dealbata*.

Shrubs: The shrub layer is prickly and is dense in patches. The most abundant species are *Bursaria spinosa*, *Acacia paradoxa* and *Cassinia aculeata*. *Goodenia ovata* is dense in patches.

Vines: *Billardiera mutabilis* is abundant.

Ferns: Patches of *Pteridium esculentum* cover less than 10% south of Petalnina Dr, and ferns are absent to the north.

Ground flora: Characteristically rich in species, densely grassy and with scattered plants of rather infertile soils, such as *Hibbertia riparia* and *Platylobium obtusangulum*. The dominant species are variously *Poa morrisii*, *Microlaena stipoides*, *Austrostipa rudis*, *Themeda triandra*, *Rytidosperma* species or *Gahnia radula*. Other notable species include *Acacia aculeatissima*, *Bossiaea prostrata*, *Dillwynia cinerascens*, *Drosera whittakeri*, *Epacris impressa*, *Hardenbergia violacea*, *Rytidosperma pallidum*, *Kennedia prostrata*, *Lepidosperma gunnii*, *Lomandra filiformis*, *Lomandra longifolia*, *Viola hederacea*, *Xanthorrhoea minor* and many lily species.

Plant species

The following plant species were observed by the author on 14-17th June 2002. 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.

| Risk | Indigenous Species | Risk | Indigenous Species |
|------|-----------------------------|------|------------------------------|
| E | <i>Acacia aculeatissima</i> | E | <i>Acacia myrtifolia</i> |
| | <i>Acacia dealbata</i> | | <i>Acacia paradoxa</i> |
| V | <i>Acacia implexa</i> | E | <i>Acacia pycnantha</i> |
| V | <i>Acacia mearnsii</i> | C | <i>Amyema ?pendula</i> |
| V | <i>Acacia melanoxylon</i> | | <i>Arthropodium strictum</i> |

| Risk | Indigenous Species | Risk | Indigenous Species |
|------|---|------|---|
| | <i>Austrostipa pubinodis</i> | E | <i>Indigofera australis</i> |
| | <i>Austrostipa rudis</i> subsp. <i>rudis</i> | | <i>Juncus pallidus</i> |
| | <i>Billardiera mutabilis</i> | C | <i>Kennedia prostrata</i> |
| | <i>Bossiaea prostrata</i> | | <i>Kunzea ericoides</i> spp. agg. |
| | <i>Burchardia umbellata</i> | | <i>Lachnagrostis filiformis</i> |
| | <i>Bursaria spinosa</i> | V | <i>Lagenophora ?gracilis</i> |
| V | <i>Caesia parviflora</i> | | <i>Lepidosperma gunnii</i> |
| | <i>Carex breviculmis</i> | | <i>Lomandra filiformis</i> subsp. <i>coriacea</i> |
| | <i>Cassinia aculeata</i> | | <i>Lomandra longifolia</i> |
| | <i>Cassinia arcuata</i> | | <i>Microlaena stipoides</i> |
| V | <i>Comesperma volubile</i> | | <i>Microtis parviflora</i> |
| E | <i>Correa reflexa</i> | C | <i>Muellerina eucalyptoides</i> |
| | <i>Deyeuxia quadriseta</i> | V | <i>Opercularia varia</i> |
| | <i>Dianella admixta</i> | | <i>Oxalis exilis/perennans</i> |
| V | <i>Dillwynia cinerascens</i> | V | <i>Platylobium obtusangulum</i> |
| V | <i>Drosera peltata</i> subsp. <i>auriculata</i> | | <i>Poa morrisii</i> |
| V | <i>Drosera whittakeri</i> | | <i>Poranthera microphylla</i> |
| V | <i>Epacris impressa</i> | | <i>Pteridium esculentum</i> |
| | <i>Eragrostis brownii</i> | | <i>Rytidosperma pallidum</i> |
| | <i>Eucalyptus goniocalyx</i> | | <i>Rytidosperma penicillatum</i> |
| E | <i>Eucalyptus macrorhyncha</i> | | <i>Rytidosperma racemosum</i> |
| V | <i>Eucalyptus melliodora</i> | | <i>Rytidosperma tenuius</i> |
| V | <i>Eucalyptus obliqua</i> | | <i>Schoenus apogon</i> |
| E | <i>Eucalyptus radiata</i> | | <i>Senecio glomeratus</i> |
| V | <i>Euchiton collinus</i> | | <i>Senecio hispidulus</i> |
| V | <i>Exocarpos cupressiformis</i> | | <i>Senecio quadridentatus</i> |
| | <i>Gahnia radula</i> | E | <i>Spyridium parvifolium</i> |
| | <i>Gonocarpus tetragynus</i> | E | <i>Stackhousia monogyna</i> |
| | <i>Goodenia ovata</i> | V | <i>Thelymitra</i> sp. |
| V | <i>Hardenbergia violacea</i> | | <i>Themeda triandra</i> |
| E | <i>Hibbertia riparia</i> | E | <i>Viola hederacea</i> |
| V | <i>Hovea heterophylla</i> | V | <i>Xanthorrhoea minor</i> |
| E | <i>Hypericum gramineum</i> | | |

Introduced Species

| | | |
|---|--|--------------------------------|
| <i>Acacia baileyana</i> | <i>Cotoneaster pannosus</i> | <i>Lotus corniculatus</i> |
| <i>Agapanthus praecox</i> | <i>Cytisus scoparius</i> | <i>Oxalis incarnata</i> |
| <i>Agrostis capillaris</i> | <i>Dactylis glomerata</i> | <i>Oxalis ?purpurea</i> |
| <i>Anthoxanthum odoratum</i> | <i>Ehrharta erecta</i> | <i>Paspalum dilatatum</i> |
| <i>Briza maxima</i> | <i>Freesia alba</i> × <i>leichtlinii</i> | <i>Pennisetum clandestinum</i> |
| <i>Centaurium erythraea</i> | <i>Galium aparine</i> | <i>Pinus radiata</i> |
| <i>Chrysanthemoides monilifera</i> ssp. <i>monilifera</i> | <i>Galium lanatus</i> | <i>Pittosporum undulatum</i> |
| <i>Cirsium vulgare</i> | <i>Holcus lanatus</i> | <i>Plantago lanceolata</i> |
| <i>Conyza sumatrensis</i> | <i>Hypochoeris radicata</i> | <i>Rubus anglocandicans</i> |
| | <i>Linum trigynum</i> | |

Notes concerning some of the locally threatened plant species

Acacia aculeatissima (Thin-leaf Wattle). Two patches were found, comprising a total of several individuals.

Correa reflexa (Common Correa). A solitary individual was found.

Kennedia prostrata (Running Postman). A solitary individual was found. Several more were found on a nearby vacant house lot.

Spyridium parvifolium (Australian Dusty Miller). A solitary individual was found.

Fauna of special significance

None found.

Fauna habitat features

- The high density and diversity of shrubs significantly improves the habitat for native insects and birds. The prickliness of many of the shrubs helps protect birds from cats at large. Birds' nests were found in *Acacia paradoxa*;
- There is some fallen timber, which is beneficial for the lizards seen during the site inspection (as well as invertebrate fauna);

- Despite the reserve's small size, it supports Southern Brown Tree Frogs (which presumably breed in water nearby).

Significance ratings

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

Endangered Vegetation Types

This site contains a remnant patch of a regionally endangered EVC (Valley Heathy Forest). It follows from Appendix 3 of *Victoria's Native Vegetation Management - a Framework for Action* (NRE 2002a) that Stringybark Reserve'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 Plants

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

Threats

- Invasion by environmental weeds, of which *Oxalis incarnata* is rated Very Serious and the following are rated Serious: Brown-top Bent (*Agrostis capillaris*), Sweet Vernal-grass (*Anthoxanthum odoratum*), Large Quaking-grass (*Briza maxima*) and Sweet Pittosporum (*Pittosporum undulatum*). These are included in Council's weed control program for the reserve;
- Dumping of rubbish and garden waste by neighbours;
- Critically small population sizes of some plant species;
- Cats and foxes killing wildlife;
- Rabbit grazing (particularly if foxes are removed).

Management issues

- Weed control at the time of the site inspection (June 2002) was found to be quite effective;
- The plight of species that are present in critically small populations should be improved by planting more individuals after propagating them from seeds collected from nearby W.G. Morris Reserve. This includes *Acacia aculeatissima*, *Correa reflexa*, *Hovea linearis*, *Indigofera australis*, *Kennedia prostrata* and *Spyridium parvifolium*. All plantings should be documented in Council's files about the reserve.
- The dynamic, immature nature of the vegetation means that management practices needs more monitoring and review than most other bushland reserves in Knox. In particular, rabbit numbers may need to be controlled once foxes are removed, and care will need to be taken not to over-thin the dominant indigenous plants while trying to benefit indigenous opportunist species.

Administration matters

- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of its State significance and the endangered EVC;
- The Planning Scheme zoning is Residential 1 Zone (R1Z);
- The site and the adjoining residential estate are included under the existing Vegetation Protection Overlay Schedule 1 of the Knox Planning Scheme, based on the description of Site 21 of the report by Water Ecoscience (1998). The site described here is much smaller than the area in the present overlay as a result of recent residential development in the estate.

Information sources used in this assessment

- A site survey totalling three hours and twenty minutes, undertaken on 14th and 17th June 2002 by Dr Lorimer using this study's standard procedures discussed in Section 2.4 of Volume 1. This included separate descriptions and mapping of the vegetation on each side of Petalnina Dr, compilation of lists of indigenous and introduced plant species on each side of Petalnina Dr, incidental fauna observations, and checks for fauna habitat, ecological threats and management issues;
- On-site discussions with Mr John Erwin (Knox City Council) about the reserve's management and recent history;
- 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.