

## Site 77. Waverley Golf Club, Rowville

The 50 ha golf course contains patches of remnant vegetation in some of the roughs, interlinked by corridors of remnant trees and planted 'native' trees with no understorey. The abutting road reservations also have native vegetation. Five dams provide complementary habitat. There is a residential subdivision proposal for the golf course and a road construction proposal for the extension of Police Rd.

Melway ref. 81 J6.

### Site Significance Level: *State*

- The remnant vegetation belongs to two regionally endangered Ecological Vegetation Classes;
- There is rich wildlife, including the nationally protected Grey-headed Flying-fox and several species rare in Knox;
- Ninety-five indigenous plant species were found overall, a good number for such vegetation by Knox standards;
- These plants include several species or subspecies that are threatened in Knox or the Melbourne region generally;
- An arborist has identified fourteen large remnant eucalypts as significant to the site, with dimensions to 20 m high and 22 m spread;
- The site augments habitat corridors along the Lysterfield Hills and (to a lesser extent) the Dandenong Creek valley, which explains the rich wildlife.



Scale (metres)  
0 100 200

*Aerial photograph taken April 2003*

### Boundaries

The site comprises the golf course and adjacent road verges along Bergins Rd, Churchill Park Drive and the extension of Police Rd, as outlined in red on the above aerial photograph (taken in April 2003). This includes remnant vegetation on the roadside abutting the Rowville East Electricity Terminal Station. The site's southern boundary follows the municipal

boundary. The features that make the site a significant one are the hatched areas (which have remnant trees and understorey), coupled with the wildlife habitat provided by the dams, remnant trees and smaller plants scattered around the golf course.

**Land status:** The golf course is zoned 'Special Use (Golf Course)'. The rest of the site comprises road reservations. There is a proposal to extend Police Rd to Churchill Park Drive.

### Note

Permission was not obtained to enter the golf course, so the inspection was done from the fence and aerial photographs. Heavy reliance has been placed on consultants' reports written for the golf club in its consideration of residential development of the site.

### Site description

The site has a general, gentle slope to the southwest, with elevations varying from just under 50 m to just over 70 m (Australian Height Datum). This is interrupted by a minor drainage line flowing in the same direction, with the large dam on it just north of the Rowville East Electricity Terminal Station. The soils of the western and central parts of the site are derived from weathering of the Lower Devonian 'Humevale' siltstone deposits, except for some alluvium in the minor drainage line. The southeastern end of the site is within the metamorphic zone between the Humevale formation and the Upper Devonian 'Lysterfield' granodiorite.

The 50 ha golf course contains patches of remnant vegetation in some of the roughs, interlinked by corridors of remnant trees and planted 'native' trees with no understorey. The road verges around the site support remnant tree cover, and the Police Rd extension has native understorey as well. All the remnant native vegetation belongs to endangered Ecological Vegetation Classes, mainly Valley Heathy Forest.

Waters (2002), an arborist, examined over 2,200 trees on the golf course (not the roadsides). Of these, over 550 are remnant indigenous trees and most of the remainder are planted specimens from other parts of Australia. Waters mentions fourteen large remnant eucalypts as being particularly significant, with dimensions to 20 m high and 22 m diameter. Such large trees are very likely to have some hollows used by wildlife, although few were detected.

Nearly all the understorey has been cleared at least once. In some areas, dense stands of Burgan (*Kunzea ericoides*) have regrown, and in other areas (particularly near the maintenance shed), many indigenous grasses and other ground flora persist.

The hatched areas on the aerial photograph above show the largest areas that contain native vegetation with continuous tree cover and some understorey. There are other indigenous plants scattered around the roughs and the fringes of dams.

The tree cover generally, both indigenous and otherwise, provides significant habitat for birds. The dams and areas with understorey provide habitat for other species of birds, including waterfowl and scrub birds like White-browed Scrubwrens.

The forty-five native bird species that were recorded by Timewell and Costello on one September day at the site, plus two additional species observed by the present author in November, indicate quite rich bird life. This, along with records of the locally rare Eastern Grey Kangaroo, Sugar Glider and Verraux's Tree Frog, no doubt reflect the presence of the trees, understorey and dams, and the proximity of the site to other land with very high habitat value.

There is a residential subdivision proposal for the golf course and a road construction proposal for the extension of Police Rd.

Electricity transmission lines pass over the site, supported by large pylons within the site (just visible on the aerial photograph above). This may explain why aerial photography in February 2007 shows that most woody plants had been removed beneath the transmission lines within the patch of vegetation visible southeast of the green dam on the 2003 aerial photograph above.

### Relationship to other land

The site is contiguous with the Dandenong Police Paddocks reserve, and across the road from Churchill National Park and native vegetation that extends from there to Lysterfield Lake Park and into the Dandenong Ranges. The Rowville Electricity Terminal Station (Site 72) provides further habitat just over the other side of Stud Rd. There is only a short gap between the native vegetation canopy of these sites and that of the Dandenong Creek riparian habitat corridor. The site is therefore on the edge of a major habitat corridor between the Dandenong Ck and the southern Dandenong Ranges.

**Bioregion:** Gippsland Plain.

**Habitat types** derived from brief inspection and referral to Waters (2002) and Timewell & Costello (2002)

**Wetland** (EVC 74): 18,500 m<sup>2</sup> of water surface in five dams partly fringed with indigenous vegetation, apparently in ecological condition D (poor), based on the comments of Timewell and Costello (2002).

**Swampy Woodland** (EVC 937, **regionally Endangered**): roughly 0.5 ha, nearly all badly degraded (ecological condition rating D) and largely represented by weedy regrowth scrub around the dam north of the Rowville East Electricity Terminal Station.

Dominant canopy trees: *Eucalyptus ovata* and *Acacia mearnsii*.

Dominant lower trees: *Acacia melanoxylon*.

Shrubs: Very depleted by past clearing and infested with dense Gorse (*Ulex europaeus*), but the characteristic species *Ozothamnus ferrugineus* and *Melaleuca ericifolia* are present.

Vines: None seen.

Ferns: None seen.

Ground flora: Hard to detect from the fenceline, but the indigenous ground flora is apparently reduced to very hardy species such as *Microlaena stipoides*.

**Valley Heathy Forest** (EVC 127, **regionally Endangered**): roughly 5 ha, of which it is estimated that 80% is in fair ecological condition (rating C) and 20% is in poor ecological condition (rating D). 55 indigenous plant species were recorded on the Police Rd extension by the author on 28/11/02.

Dominant canopy trees: *Eucalyptus cephalocarpa* (over 260 trees), *E. radiata* (over 200 trees), *E. goniocalyx* (at least 66 trees) and smaller numbers of *E. macrorhyncha* and *E. melliodora*.

Dominant lower trees: *Acacia mearnsii*, *A. implexa* and *Exocarpos cupressiformis*, with some *Acacia melanoxylon* and *Allocasuarina littoralis*.

Shrubs: Severely depleted in the golf course except for *Kunzea ericoides* regrowth in patches. Other species that remain dominant in more intact patches (particularly the Police Rd extension) are *Acacia paradoxa* and *Leptospermum scoparium*.

Vines: The light twiners *Billardiera mutabilis* and *Comesperma volubile* are fairly common in the more intact areas.

Ferns: The only ferns detected are thinly scattered patches of bracken.

Ground flora: Densely grassy with *Austrostipa rudis*, *Microlaena stipoides* and *Rytidosperma setaceum* dominant. *Lomandra filiformis coriacea* and *Lomandra longifolia* are both abundant, but not dominant.

### Plant species

The following plant list comprises mostly records from Timewell and Costello (2002), minus a few dubious records. 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 in Victoria and *Wahlenbergia multicaulis* is rare in the Melbourne region.

Risk	Indigenous Species	Risk	Indigenous Species
V	<i>Acacia implexa</i>		<i>Cassinia arcuata</i>
V	<i>Acacia mearnsii</i>	V	<i>Cassinia longifolia</i>
V	<i>Acacia melanoxylon</i>	E	<i>Centella cordifolia</i>
	<i>Acacia paradoxa</i>	V	<i>Comesperma volubile</i>
	<i>Acaena novae-zelandiae</i>	V	<i>Coprosma quadrifida</i>
	<i>Acrotriche serrulata</i>	E	<i>Crassula helmsii</i>
V	<i>Allocasuarina littoralis</i>		<i>Deyeuxia quadriseta</i>
C	<i>Amyema pendula</i>		<i>Dianella admixta</i>
V	<i>Amyema quandang</i>	V	<i>Dianella longifolia</i> s.l.
	<i>Arthropodium strictum</i>		<i>Dichelachne ?rara</i>
	<i>Austrostipa pubinodis</i>		<i>Dichondra repens</i>
V	<i>Austrostipa rudis</i> subsp. <i>australis</i>	V	<i>Dillwynia cinerascens</i>
	<i>Austrostipa rudis</i> subsp. <i>rudis</i>	E	<i>Drosera peltata</i> subsp. <i>peltata</i>
	<i>Billardiera mutabilis</i>	V	<i>Drosera whittakeri</i>
	<i>Bossiaea prostrata</i>		<i>Eleocharis sphacelata</i>
	<i>Bursaria spinosa</i>	V	<i>Epilobium billardierianum</i> subsp. <i>cinereum</i>
V	<i>Caesia parviflora</i>		<i>Eragrostis brownii</i>
	<i>Carex inversa</i>	V	<i>Eucalyptus cephalocarpa</i>
	<i>Cassinia aculeata</i>		

Risk	Indigenous Species	Risk	Indigenous Species
	<i>Eucalyptus goniocalyx</i>	V	<i>Opercularia varia</i>
E	<i>Eucalyptus macrorhyncha</i>		<i>Oxalis exilis/perennans</i>
V	<i>Eucalyptus melliodora</i>	E	<i>Ozothamnus ferrugineus</i>
V	<i>Eucalyptus ovata</i>	V	<i>Platylobium obtusangulum</i>
E	<i>Eucalyptus radiata</i>		<i>Poa morrisii</i>
V	<i>Euchiton collinus</i>		<i>Poa ?sieberiana</i> var. <i>sieberiana</i>
V	<i>Exocarpos cupressiformis</i>		<i>Poranthera microphylla</i>
	<i>Gahnia radula</i>		<i>Pteridium esculentum</i>
V	<i>Geranium</i> sp. 2		<i>Pterostylis nutans</i>
	<i>Gonocarpus tetragynus</i>		<i>Rytidosperma geniculatum</i>
E	<i>Goodenia humilis</i>		<i>Rytidosperma pallidum</i>
E	<i>Hypericum gramineum</i>		<i>Rytidosperma penicillatum</i>
	<i>Juncus amabilis</i>	V	<i>Rytidosperma pilosum</i>
	<i>Juncus gregiflorus</i>		<i>Rytidosperma racemosum</i>
	<i>Juncus pallidus</i>		<i>Rytidosperma setaceum</i>
E	<i>Juncus procerus</i>		<i>Rytidosperma tenuius</i>
	<i>Juncus sarophorus</i>		<i>Schoenus apogon</i>
E	<i>Juncus subsecundus</i>		<i>Senecio glomeratus</i>
	<i>Kunzea ericoides</i> spp. agg.	E	<i>Senecio minimus</i>
	<i>Lachnagrostis filiformis</i>		<i>Senecio quadridentatus</i>
	<i>Lepidosperma gunnii</i>	V	<i>Solenogyne dominii</i>
V	<i>Lepidosperma laterale</i>		<i>Themeda triandra</i>
V	<i>Leptorhynchos tenuifolius</i>	V	<i>Thysanotus patersonii</i>
E	<i>Leptospermum scoparium</i>		<i>Tricoryne elatior</i>
	<i>Lomandra filiformis</i> subsp. <i>coriacea</i>	E	<i>Typha</i> sp.
	<i>Lomandra longifolia</i>	V	<i>Veronica gracilis</i>
V	<i>Lythrum hyssopifolia</i>	E	<i>Viola hederacea</i>
	<i>Microlaena stipoides</i>	C	<i>Wahlenbergia multicaulis</i>
V	<i>Opercularia ovata</i>		
<b>Introduced Species</b>			
	<i>Acacia longifolia</i> subsp. <i>longifolia</i>		<i>Dactylis glomerata</i>
	<i>Agrostis capillaris</i>		<i>Ehrharta erecta</i>
	<i>Anthoxanthum odoratum</i>		<i>Erica lusitanica</i>
	<i>Briza maxima</i>		<i>Holcus lanatus</i>
	<i>Centaurium erythraea</i>		<i>Leontodon taraxacoides</i>
	<i>Chrysanthemoides monilifera monilifera</i>		<i>Melaleuca armillaris</i>
	<i>Cirsium vulgare</i>		<i>Oxalis corniculata</i>
	<i>Cynodon dactylon</i>		<i>Paspalum dilatatum</i>
			<i>Pennisetum clandestinum</i>
			<i>Phalaris aquatica</i>
			<i>Pitiosporum undulatum</i>
			<i>Plantago lanceolata</i>
			<i>Rubus anglocandicans</i>
			<i>Solanum nigrum</i>
			<i>Ulex europaeus</i>

#### Notes concerning some of the locally threatened plant species

*Austrostipa rudis* subsp. *australis* (a subspecies of Veined Spear-grass) – a large population along the Police Rd extension, the biggest in Knox. This population was discovered by Dr Lorimer. All other species below were listed by Timewell and Costello (2002) without further information.

*Crassula helmsii* (Swamp Crassula)

*Drosera peltata* subsp. *peltata* (Pale Sundew)

*Geranium* sp. 2 (Variable Cranesbill)

*Goodenia humilis* (Swamp Goodenia)

*Poa ?sieberiana* var. *sieberiana* (Grey Tussock-grass) – somewhat dubious, given the habitat

*Rytidosperma geniculatum* (Knead Wallaby-grass)

*Thysanotus patersonii* (Twining Fringe-lily)

*Wahlenbergia multicaulis* (Tadgell's Bluebell)

#### Fauna of special significance

The following species were observed by Timewell and Costello (2002):

##### Nationally Vulnerable

Grey-headed Flying-fox – listed under federal legislation, but the observation at the Waverley Golf Club is possibly no more significant than the nightly visits of this species to gardens all around Melbourne.



#### Rare in Knox

Sugar Glider  
 Eastern Grey Kangaroo  
 Brush Bronzewing  
 Verraux's Tree Frog

Note that Timewell and Costello (2002, p. 14) expect that the golf course provides habitat for wallabies, echidnas and antechinus. These animals are all significant in Knox.

The reliable naturalist, Mr Darren Wallace, reports that Grey-crowned Babblers were once seen on this site, but there is no significant chance that this will be repeated in the foreseeable future.

#### Fauna habitat features

- Large remnant eucalypts that probably have hollows used by wildlife;
- Indigenous understorey that supports small birds and possums (including Sugar Gliders);
- Dense patches of Burgan (*Kunzea ericoides*) that are favoured by wrens;
- Dams for waterfowl.

#### Significance ratings

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

##### *Ecological Integrity and Viability*

The site is part of a habitat corridor connecting the southern Dandenong Ranges with the Rowville Electricity Terminal Station and (with a small gap) the Dandenong Creek riparian habitat corridor. The corridor is taken here to be locally important. This represents **Local** significance under criterion 1.2.6 of Amos (2004).

##### *Regionally Threatened Ecological Vegetation Class*

This site contains at least one 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 the native vegetation of such a patch is 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*

*Austrostipa rudis* subsp. *australis* is listed as 'rare' in Victoria. Its population in this site is perhaps the largest one known to the author in Victoria, and it appears quite viable (although its genetic stability relative to subspecies *rudis* (with which it is growing) is not known). The presence of such a large population of a statewide-rare subspecies represents **State** significance under criterion 3.1.2 of the standard criteria.

At least some of the other locally threatened plant species listed above, such as eucalypts and *Exocarpos*, have viable populations, thereby meeting criterion 3.1.5 for a site of **Local** significance.

##### *Rare or Threatened Fauna*

It is not clear from the report by Timewell and Costello (2002) whether the observation of a Grey-headed Flying-fox fits the description of an 'opportunistic record of an individual in transit' that is used in the standard criteria. If so, the observation confers no significance on the site; otherwise, it gives the site State significance.

The remaining species listed above under the heading, 'Fauna of special significance', are sufficiently rare and threatened locally that their presence confers at least **Local** significance upon the site as a whole under criterion 3.1.5.

#### Threats

- Proposed residential development for the part of the site north of the electricity transmission lines;
- Proposed development of a new golf course generally beneath the transmission lines;
- Proposed road construction along the extension of Police Rd
- Eucalypt dieback;
- Invasion by environmental weeds, particularly grass weeds and gorse;
- Loss or decline of plant species whose populations are so small that they are vulnerable to inbreeding, poor reproductive success or elimination by incidents such as cubby house construction or digging by dogs.

#### Management issues

The site's vegetation appears to be mostly in a stable state, based on the report of Timewell and Costello (2002) and external observations by the present author. The only significant change in management that appears warranted is better control of weeds below the largest dam and lower parts of the Police Rd periphery (where adjoining highly significant

habitat is being affected). Management will have to be reviewed in the event that residential development and a smaller golf course are constructed, as mentioned above.

### Planning issues

- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of its biological significance (known and potential) and the possibility of future subdivision. Note that the overlay is proposed to exempt maintenance of the golf course and associated assets;
- The golf course is within a Special Use Zone and parts of it are covered by Vegetation Protection Overlay VPO1 of the Knox Planning Scheme. It is outside the Urban Growth Boundary;
- There is a residential subdivision proposal for the golf course and a road construction proposal for the extension of Police Rd;
- The Victorian government's policy for native vegetation management (NRE 2002a; Victoria Planning Provisions) places great importance on retaining all remnants of regionally endangered EVCs. This will considerably restrain residential development or road construction within the site. All of the site's native vegetation that has a habitat score of 0.4 or above falls into a category for which permitted removal can only occur under exceptional circumstances of state significance. All the site's remaining native vegetation would have to be retained to the maximum possible extent.

### Information sources used in this assessment

- An arborist's assessment of over 2,200 trees on the golf course north of the transmission lines, including species, size, health, structural soundness and retention value: see Waters G. (2002). "*Arboricultural Assessment and Report for Waverley Golf Club – 'Bergins Green'*". Report on behalf of Treelogic (4/21 Eugene Tce, Ringwood) for the golf club, dated September 2002. 62 pp.;
- A single list of indigenous and introduced plant species on the golf course (not the roadsides), compiled during August and September 2002, corrected and augmented by the present author: see Timewell C. and Costello C. (2002). '*Ecological Assessment of the Proposed Bergins Green Development, Rowville, Victoria*'. Report on behalf of Biosis Research, 322 Bay St, Port Melbourne for Waverley Golf Club, dated September 2002;
- Additional lists of flora for the golf course, the neighbouring Police Rd extension, the 'Syrena' Polish House (Swampy Woodland and Valley Heathy Forest separately) and the Stud Rd nursery abutting the course's largest dam, compiled by Dr Lorimer on 28th November 2002;
- Incidental bird observations by Dr Lorimer on the same day;
- 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.