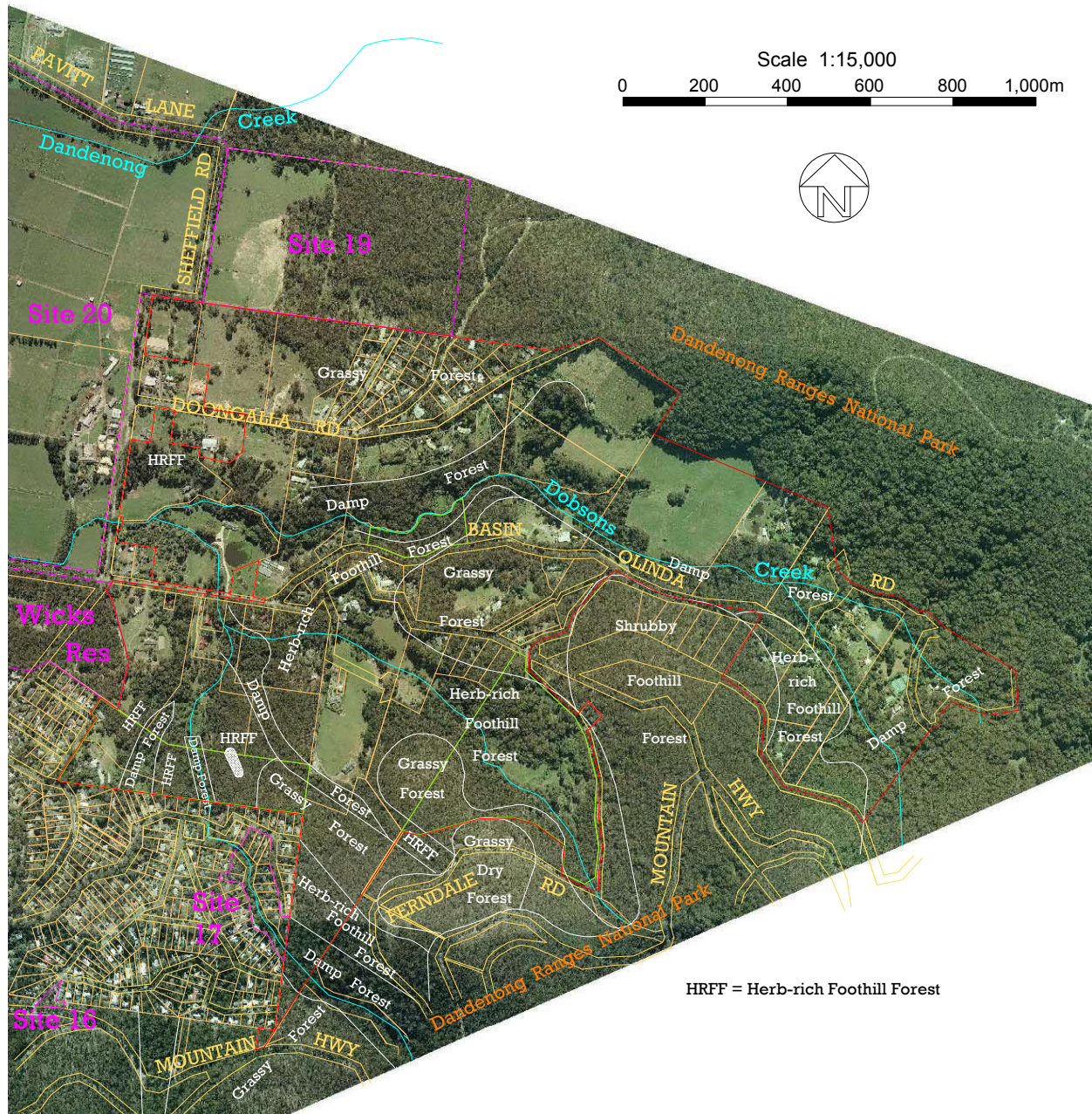


Site 18. The Basin - Sassafras Forest Precinct

A small section of Dandenong Ranges National Park along with larger private properties neighbouring the park. with native forest and clearings. Centred on Melway reference 66A8.

Site Significance Level: State

- The largest and most spatially complex area of native habitat in Knox, with by far the largest areas in good or excellent ecological condition;
- Six Ecological Vegetation Classes are represented. This includes approximately 26ha of Grassy Forest, which is regionally Vulnerable
- 187 indigenous plant species were found overall, a very large number by Knox standards. This includes numerous species that are rare or threatened locally, regionally or at State level;
- Dobsons Creek and its tributaries support rare fauna, including Platypus and the Dandenong Freshwater Amphipod.



Aerial photograph taken April 2003

Boundaries

This 182.2 ha site is outlined in red on the aerial photograph above. The eastern two-thirds (approximately) of the site is bounded by the municipal boundary. The remaining site boundary coincides with property boundaries. The boundary was drawn to include all properties that contribute to the canopy of indigenous trees that is contiguous (more or less) with the Dandenong Ranges National Park, as well as one property with stream habitat used by Platypus.

Other sites from this report are outlined in magenta, labelled with their site numbers. White curves delineate different Ecological Vegetation Classes, as labelled in white (with 'HRFF' meaning Herb-rich Foothill Forest). Bright green outlines mark the three properties chosen for particularly intensive survey (see below).

Land use & tenure: A small section of the Dandenong Ranges National Park in the southern tip, otherwise private. There is residential land in the vicinity of Doongalla Rd, low density residential properties along the Basin-Olinda Rd, a church conference centre and small farms with clearings.

Site description

This site is Knox's eastern extremity, extending well up the Dandenong Ranges into the outskirts of Sassafras. The Dandenong Ranges National Park abuts most of the boundary. Dobsons Creek and its tributaries flow through the site, with mostly well-defined, steep-sided gullies. Elevations are in the approximate range 150-350 m and the slope varies from slight to steep, including aspects from north, through west, to south. This topography generates a strong rise in annual average rainfall from west to east through the site.

The bedrock of this site is from the Dandenong Ranges volcanic flows, overlaid with deposits of silty alluvium or colluvium on valley floors toward the western edge of the site.

Because this is the largest site in this report, with the greatest variation in topography, it also has the most complex spatial pattern of vegetation types. Ecological Vegetation Classes have been mapped on top of the aerial photograph on the previous page. The mapping was done by the author from visual inspection of every property within the site, but many properties had to be inspected from their perimeters because their owners did not grant permission to enter.

The size of the site precluded intensive surveys of every part of every property where access was granted. Three large, representative properties were chosen for intensive survey that met all the fieldwork specifications described in Volume 1, and they are outlined in bright green on the aerial photograph.

The ecological condition of some of the native vegetation could only be estimated from a distance, impairing the precision of statistics for the whole site.

A substantial part of the native vegetation in the site is in excellent ecological condition, which is very rare in the rest of Knox but much less so in the Dandenong Ranges. There are also numerous plant species that are rare or threatened in Knox or more widely, but a significant proportion of these are much less rare when viewed in the context of the whole Dandenong Ranges.

Relationship to other land

This site is contiguous with the Dandenong Ranges National Park. There is undoubtedly extensive movement of seeds, pollen and fauna between the park and the properties within the site, thereby contributing to a healthier and more robust ecosystem.

Environmental weeds are among the plants that cross each way between the site and the national park. Those species spread by water or with the aid of gravity will not move rapidly from the site into the park because the park is uphill from the site.

Bioregion: Highlands Southern Fall, except for a small part of the Gippsland Plain on the flats just north and east of the corner of Basin-Olinda Rd and Sheffield Rd.

Habitat types

Farm dams (wetland EVC 74, but not remnants of a natural habitat): Six indigenous plant species found growing in water or mud.

Herb-rich Foothill Forest (EVC 23, conservation status listed as of 'Least Concern' in the bioregion): Estimated as 42 ha, comprising 6.2 ha in excellent ecological condition (rating A), 10.2 ha in good ecological condition (rating B), 16.3 ha in fair ecological condition (rating C) and 9.3 ha in poor ecological condition (rating D). 128 indigenous plant species recorded.

Canopy trees: Dominated by *Eucalyptus cypellocarpa* and *E. obliqua* with fewer *E. radiata*.

Lower trees: Dominated by *Acacia melanoxylon* and sometimes *Exocarpos cupressiformis*. *Acacia dealbata* is locally abundant. *Pomaderris aspera* or *Bedfordia arborescens* sometimes appear near Damp Forest.

Shrubs: Very variable in density and composition. Sometimes there are few shrubs other than scattered *Coprosma quadrifida* and *Cassinia aculeata* (usually draped with climbers). In proximity to Shrubby Foothill Forest, there may be dense shrubs including those just mentioned, along with *Acacia verticillata*, *Acacia leprosa* (Dandenong Range variant), *Goodenia ovata*, *Ozothamnus ferrugineus*, *Pimelea axiflora*, *Polyscias sambucifolia*, *Prostanthera lasianthos* and *Spyridium parvifolium*.

Vines: Abundant, including the light twiners *Billardiera mutabilis*, *Comesperma volubile* and *Glycine clandestina* and the vigorous vines, *Calystegia marginata*, *Clematis aristata* and *Pandorea pandorana*. *Rubus parvifolius* is often abundant and sometimes also the parasite *Cassytha pubescens*.

Ferns: Abundant. *Pteridium esculentum* is nearly always present and *Calochlaena dubia* is mostly present, often densely. *Adiantum aethiopicum* is often present and there are typically scattered tree ferns (usually *Cyathea australis*).

Ground flora: Along with the ferns, the dominant species are usually *Poa ensiformis* and *Tetrarrhena juncea*. The richness of herbs suggested by the name of this EVC is variable, depending on past management and recency of fire. Other species that are usually abundant are *Acaena novae-zelandiae*, *Carex breviculmis*, *Gonocarpus tetragynus*, *Microlaena stipoides*, *Oxalis perennans* and *Viola hederacea*.

Damp Forest (EVC 29, conservation status listed as of 'Least Concern' in the bioregion), tending toward Wet Forest in the east: Estimated as 34 ha, comprising 4 ha in excellent ecological condition (rating A), 6 ha in good ecological condition (rating B), 18 ha in fair ecological condition (rating C) and 6 ha in poor ecological condition (rating D). 79 indigenous plant species recorded.

Dominant canopy trees: *Eucalyptus obliqua* and/or *E. cypellocarpa*, sometimes with a few *E. radiata*.

Dominant lower trees: Abundant *Acacia melanoxylon* to 20 m tall; smaller numbers of *Pomaderris aspera* and/or *Bedfordia arborescens*.

Shrubs: The range of visibility through the shrub layer is typically 30 m, but may be much less where the soil has been disturbed. The most common species are *Coprosma quadrifida*, *Ozothamnus ferrugineus* and *Prostanthera lasianthos*. The ecological indicator species, *Sigesbeckia orientalis* and *Urtica incisa* are sometimes present.

Vines: Abundant, dominated by *Pandorea pandorana* and *Clematis aristata*. *Rubus parvifolius* is often abundant and sometimes also the parasite *Cassytha pubescens*.

Ferns: Ferns are one of the dominant parts of the understorey. Tree ferns (mostly *Cyathea australis*) are abundant and consistently present. *Calochlaena dubia* or one of several *Blechnum* species is also abundant, representing a high foliage cover. Unlike Herb-rich Foothill Forest, *Pteridium esculentum* is not a significant part of the understorey.

Ground flora: Apart from the ferns, the ground flora is heavily dominated by *Lepidosperma elatius*, *Poa ensiformis* and/or *Tetrarrhena juncea*. Forbs are not rich due to suppression by the dominant species.

Shrubby Foothill Forest (EVC 45, conservation status listed as of 'Least Concern' in the bioregion): Estimated as 1.5 ha, comprising 1 ha in excellent ecological condition (rating A), 0.3 ha in good ecological condition (rating B) and 0.2 ha in fair ecological condition (rating C). 68 indigenous plant species recorded.

Dominant canopy trees: *Eucalyptus radiata* with fewer *E. obliqua* and often various other eucalypt species.

Dominant lower trees: *Acacia melanoxylon* and sometimes *Exocarpos cupressiformis* are present.

Shrubs: There is most commonly a dense layer of shrubs in the height range 1.5 - 3 metres, largely made up of shrubby wattles (characteristically including *Acacia mucronata* and *Acacia verticillata*), *Spyridium parvifolium*, *Pultenaea scabra* and/or *Pultenaea gunnii*. This may eventually thin out somewhat if fire does not occur for many years. The smaller shrub, *Goodenia ovata*, is usually also abundant.

Ferns: *Pteridium esculentum* and *Adiantum aethiopicum* may be scattered beneath the shrubs.

Ground flora: Grassy but not densely so due to suppression by the dense shrubs. The species present are those found commonly in the adjacent EVCs, including *Gonocarpus tetragynus* and *Stylidium armeria*.

Grassy Forest (EVC 128, regionally Vulnerable), grading into the Endangered EVC, Valley Heathy Forest (EVC 127), along the western third of Doongalla Rd. Estimated as 25.7 ha, comprising 6.0 ha in excellent ecological condition (rating A), 5.7 ha in good ecological condition (rating B), 7.6 ha in fair ecological condition (rating C) and 6.4 ha in poor ecological condition (rating D). 130 indigenous plant species recorded.

Dominant canopy trees: Usually dominated by a mixture of *Eucalyptus goniocalyx*, *E. macrorhyncha*, *E. obliqua* and *E. radiata*, but with *E. melliodora* replacing *E. macrorhyncha* along the western third of Doongalla Rd (where the vegetation grades into Valley Heathy Forest). *E. cypellocarpa* or *E. cephalocarpa* are sparingly present in some places.

Dominant lower trees: *Exocarpos cupressiformis*, *Acacia melanoxylon*.

Shrubs: Low to moderate density and rich in species, the most common of which are *Acacia mucronata*, *A. stricta*, *Bursaria spinosa*, *Cassinia aculeata*, *Goodenia ovata*, *Pultenaea scabra* and *Spyridium parvifolium*.

Vines: The light twiners *Billardiera mutabilis*, *Comesperma volubile* and *Glycine clandestina* are rather abundant. There are fewer of the vigorous vines, *Clematis aristata* and *Pandorea pandorana*. The parasite *Cassytha pubescens* is also present in places.

Ferns: *Pteridium esculentum* is usually quite conspicuous and other ferns are scarce.

Ground flora: Fairly rich and densely grassy with many species of graminoids, of which the most commonly present are *Gahnia radula*, *Rytidosperma pallidum*, *Lomandra filiformis* and *Poa morrisii*. The numbers of species of creepers and forbs are high. *Drosera peltata* subsp. *auriculata*, *Gonocarpus tetragynus* and *Stylidium armeria* are typically abundant.

Swampy Woodland (EVC 937, **regionally Endangered**) in the form of a small strip beside the Basin-Olinda Rd just east of Wicks Rd, in the Gippsland Plain bioregion. Estimated to occupy 1,500 m², comprising 100 m² in fair ecological condition (rating C) and 1,400 m² in poor ecological condition (rating D). 14 indigenous plant species recorded.

Dominant canopy trees: *Eucalyptus ovata*.

Lower trees: *Acacia melanoxylon* and *Exocarpos cupressiformis*.

Shrubs: *Acacia mucronata*, *Goodenia ovata*.

Vines: None found.

Ferns: None found. This is not a natural condition.

Ground flora: Grassy, with *Gahnia radula*, *Microlaena stipoides*, *Austrostipa rudis*, *Poa ensiformis*, *Rytidosperma pilosum*, *Lomandra filiformis*, *Lomandra longifolia* and *Gonocarpus tetragynus*.

Shrubby Gully Forest (EVC 938, **regionally Vulnerable**): A small drainage line in the Clevedon Camp property shown cross-hatched on the aerial photograph on p. 94. The area is estimated as 300 m², in fair ecological condition (rating C). 15 indigenous plant species recorded.

Dominant canopy trees: Scarce *Eucalyptus obliqua*.

Lower trees: *Melaleuca squarrosa* 6 m tall and fewer *Acacia melanoxylon*.

Shrubs: *Acacia verticillata*, *Prostanthera lasianthos*, plus a *Pomaderris aspera*.

Vines: The parasite, *Cassytha pubescens* is present.

Ferns: The tree fern, *Cyathea australis*, is dense in the shrub layer. *Calochlaena dubia* and fewer *Blechnum minus* are in the ground flora.

Ground flora: Dominated by the ferns above and *Lepidosperma elatius*.

Plant species

The following plant species were observed in various years and the author believes that few if any would have died out since. Additional species are bound to have escaped detection, particularly orchids. 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, *Acacia leprosa* (Dandenong Range variant) is rare nationally and the species with names in bold are rare throughout the Melbourne region.

Risk	Indigenous Species	Risk	Indigenous Species
	<i>Acacia dealbata</i>	E	<i>Blechnum cartilagineum</i>
C	<i>Acacia genistifolia</i>	C	<i>Blechnum minus</i>
V	<i>Acacia leprosa</i> (Dandenong Range variant)	E	<i>Blechnum nudum</i>
V	<i>Acacia melanoxylon</i>		<i>Bossiaea prostrata</i>
E	<i>Acacia mucronata</i>		<i>Burchardia umbellata</i>
E	<i>Acacia myrtifolia</i>		<i>Bursaria spinosa</i>
E	<i>Acacia stricta</i>	C	<i>Caladenia carnea</i>
V	<i>Acacia verticillata</i>	V	<i>Calochlaena dubia</i>
	<i>Acaena novae-zelandiae</i>	E	<i>Calystegia marginata</i>
V	<i>Acrotriche prostrata</i>		<i>Carex appressa</i>
	<i>Acrotriche serrulata</i>		<i>Carex breviculmis</i>
V	<i>Adiantum aethiopicum</i>		<i>Cassinia aculeata</i>
C	<i>Amyema pendula</i>	E	<i>Cassytha pubescens</i>
	<i>Arthropodium strictum</i>	E	<i>Centella cordifolia</i>
C	<i>Asperula conferta</i>	V	<i>Chiloglottis valida</i>
C	<i>Australina pusilla</i>	V	<i>Clematis aristata</i>
E	<i>Austrocynoglossum latifolium</i>	V	<i>Comesperma volubile</i>
	<i>Austrostipa rudis</i> subsp. <i>rudis</i>	C	<i>Coprosma hirtella</i>
E	<i>Banksia marginata</i>	V	<i>Coprosma quadrifida</i>
C	<i>Bedfordia arborescens</i>	E	<i>Correa reflexa</i>
	<i>Billardiera mutabilis</i>	E	<i>Cryptostylis leptochila</i>

Risk	Indigenous Species	Risk	Indigenous Species
E	<i>Cyathea australis</i>	E	<i>Juncus pauciflorus</i>
C	Cyperus lucidus	E	<i>Juncus procerus</i>
E	<i>Desmodium gunnii</i>		<i>Juncus sarophorus</i>
	<i>Deyeuxia quadriseta</i>	E	<i>Juncus subsecundus</i>
C	Deyeuxia rodwayi		<i>Kunzea ericoides</i> spp. agg.
	<i>Dianella admixta</i>	C	<i>Lachnagrostis aemula</i> s.l.
V	<i>Dianella tasmanica</i>		<i>Lachnagrostis filiformis</i>
	<i>Dichelachne rara</i>	V	<i>Lagenophora gracilis</i>
	<i>Dichondra repens</i>	E	<i>Lagenophora stipitata</i>
E	Dicksonia antarctica	C	Lastreopsis acuminata
E	<i>Dipodium roseum</i>		<i>Lepidosperma elatius</i>
V	<i>Drosera peltata</i> subsp. <i>auriculata</i>		<i>Lepidosperma gunnii</i>
E	<i>Echinopogon ovatus</i>	V	<i>Lepidosperma laterale</i>
	<i>Elymus scaber</i>		<i>Leptospermum continentale</i>
V	<i>Epacris impressa</i>	E	<i>Leptospermum scoparium</i>
V	<i>Epilobium billardierianum</i> subsp. <i>cinereum</i>	V	<i>Lindsaea linearis</i>
	<i>Epilobium hirtigerum</i>		<i>Lomandra filiformis</i> subsp. <i>coriacea</i>
V	<i>Eucalyptus cephalocarpa</i>		<i>Lomandra filiformis</i> subsp. <i>filiformis</i>
V	<i>Eucalyptus cypellocarpa</i>		<i>Lomandra longifolia</i>
	<i>Eucalyptus goniocalyx</i>	C	Lomatia ilicifolia
E	<i>Eucalyptus macrorhyncha</i>	V	<i>Luzula meridionalis</i>
V	<i>Eucalyptus melliodora</i>	C	<i>Melaleuca squarrosa</i>
V	<i>Eucalyptus obliqua</i>		<i>Microlaena stipoides</i>
V	<i>Eucalyptus ovata</i>	C	<i>Muellerina eucalyptoides</i>
E	<i>Eucalyptus radiata</i>	E	Olearia argophylla
E	<i>Eucalyptus viminalis</i> subsp. <i>viminalis</i>	V	<i>Olearia lirata</i>
V	<i>Euchiton collinus</i>	E	<i>Olearia myrsinoides</i>
E	<i>Euchiton involucratus</i>		<i>Olearia</i> ?sp. nov. (aff. <i>argophylla</i>)
V	<i>Exocarpos cupressiformis</i>	V	<i>Opercularia varia</i>
E	<i>Exocarpos strictus</i>		<i>Oxalis exilis/perennans</i>
	<i>Gahnia radula</i>	E	<i>Ozothamnus ferrugineus</i>
E	<i>Gahnia sieberiana</i>		<i>Pandorea pandorana</i>
E	<i>Galium gaudichaudii</i>		<i>Persicaria decipiens</i>
E	<i>Galium propinquum</i>	C	Pimelea axiflora
C	<i>Gastrodia sesamoides</i>	V	<i>Pimelea humilis</i>
V	<i>Geranium potentilloides</i>	C	Pittosporum bicolor
V	<i>Geranium</i> ?sp. 2	C	Plantago debilis
V	<i>Glycine clandestina</i>	V	<i>Plantago varia</i>
E	<i>Gonocarpus humilis</i>	V	<i>Platylobium formosum</i>
	<i>Gonocarpus tetragynus</i>		<i>Poa ensiformis</i>
	<i>Goodenia lanata</i>		<i>Poa morrisii</i>
	<i>Goodenia ovata</i>	E	<i>Poa tenera</i>
C	Goodia lotifolia	E	<i>Polyscias sambucifolia</i>
E	<i>Gynatrix pulchella</i>	E	Polystichum proliferum
V	<i>Hardenbergia violacea</i>	E	<i>Pomaderris aspera</i>
C	Hedycarya angustifolia		<i>Poranthera microphylla</i>
V	<i>Helichrysum scorpioides</i>	E	<i>Prostanthera lasianthos</i>
V	<i>Hovea heterophylla</i>		<i>Pteridium esculentum</i>
E	Hydrocotyle geraniifolia	E	Pteris tremula
V	<i>Hydrocotyle hirta</i>	E	<i>Pterostylis melagramma</i>
E	<i>Hypericum gramineum</i>	V	<i>Pultenaea gunnii</i>
C	Hypolepis glandulifera	C	<i>Pultenaea scabra</i>
C	Hypolepis muelleri	E	<i>Rubus parvifolius</i>
C	Hypolepis rugosula		<i>Rytidosperma linkii</i> var. <i>fulvum</i>
E	<i>Imperata cylindrica</i>		<i>Rytidosperma pallidum</i>
V	<i>Isolepis inundata</i>		<i>Rytidosperma penicillatum</i>
	<i>Juncus amabilis</i>	V	<i>Rytidosperma pilosum</i>
	<i>Juncus gregiflorus</i>		<i>Rytidosperma racemosum</i>
C	<i>Juncus holoschoenus</i>		<i>Rytidosperma setaceum</i>
	<i>Juncus pallidus</i>	C	Sambucus gaudichaudiana

Risk	Indigenous Species	Risk	Indigenous Species
	<i>Schoenus apogon</i>	E	<i>Styloidium armeria/graminifolium</i>
C	<i>Schoenus maschalinus</i>		<i>Tetrarrhena juncea</i>
	<i>Senecio glomeratus</i>	E	<i>Tetralthea ciliata</i>
	<i>Senecio hispidulus</i>	C	<i>Thelymitra ?media</i>
C	<i>Senecio linearifolius</i>		<i>Themeda triandra</i>
E	<i>Senecio minimus</i>	E	<i>Typha domingensis</i>
E	<i>Senecio prenanthoides</i>	C	<i>Urtica incisa</i>
	<i>Senecio quadridentatus</i>	E	<i>Veronica calycina</i>
C	<i>Sigesbeckia orientalis</i>	E	<i>Viola hederacea</i>
C	<i>Solanum prinophyllum</i>	E	<i>Wahlenbergia gracilis</i>
E	<i>Spyridium parvifolium</i>	E	<i>Wahlenbergia stricta</i>
E	<i>Stackhousia monogyna</i>	V	<i>Xanthorrhoea minor</i>
C	<i>Stellaria flaccida</i>	E	<i>Xanthosia dissecta</i>
Introduced Species			
	<i>Acacia elata</i>		<i>Cyperus eragrostis</i>
	<i>Acer pseudoplatanus</i>		<i>Cytisus scoparius</i>
	<i>Agapanthus praecox</i>		<i>Dactylis glomerata</i>
	<i>Agrostis capillaris</i>		<i>Delairea odorata</i>
	<i>Allium triquetrum</i>		<i>Dodonaea viscosa</i>
	<i>Anthoxanthum odoratum</i>		<i>Ehrharta erecta</i>
	<i>Arundo donax</i>		<i>Erica lusitanica</i>
	<i>Asparagus scandens</i>		<i>Erigeron karvinskianus</i>
	<i>Berberis darwinii</i>		<i>Freesia alba</i> × <i>leichtlinii</i>
	<i>Billardiera heterophylla</i>		<i>Galium aparine</i>
	<i>Briza maxima</i>		<i>Genista linifolia</i>
	<i>Callitriche stagnalis</i>		<i>Genista monspessulana</i>
	<i>Centaurium erythraea</i>		<i>Hedera helix</i>
	<i>Cestrum elegans</i>		<i>Holcus lanatus</i>
	<i>Cirsium vulgare</i>		<i>Hypericum androsaemum</i>
	<i>Conyza sumatrensis</i>		<i>Hypericum tetrapterum</i>
	<i>Coprosma repens</i>		<i>Hypochoeris radicata</i>
	<i>Coprosma robusta</i>		<i>Ilex aquifolium</i>
	<i>Cortaderia selloana</i>		<i>Jasminum</i> sp.
	<i>Cotoneaster glaucophyllus</i>		<i>Leycesteria formosa</i>
	<i>Cotoneaster pannosus</i>		<i>Ligustrum lucidum</i>
	<i>Cotoneaster simonsii</i>		<i>Lilium formosanum</i>
	<i>Crataegus monogyna</i>		<i>Lonicera japonica</i>
	<i>Crocsmia</i> × <i>crocsmiiflora</i>		<i>Mentha</i> sp.
			<i>Myosotis sylvatica</i>
			<i>Oxalis incarnata</i>
			<i>Passiflora tarminiana</i>
			<i>Pinus radiata</i>
			<i>Pittosporum undulatum</i>
			<i>Plantago lanceolata</i>
			<i>Potentilla indica</i>
			<i>Prunella vulgaris</i>
			<i>Prunus cerasifera</i>
			<i>Ranunculus repens</i>
			<i>Rubus anglocandicans</i>
			<i>Salix</i> sp.
			<i>Selaginella kraussiana</i>
			<i>Senecio jacobaea</i>
			<i>Sisyrinchium iridifolium</i>
			<i>Solanum nigrum</i>
			<i>Sonchus oleraceus</i>
			<i>Taraxacum officinale</i> spp. agg.
			<i>Tradescantia fluminensis</i>
			<i>Ulex europaeus</i>
			<i>Vicia ?hirsuta</i>
			<i>Vicia sativa</i>
			<i>Vinca major</i>
			<i>Zantedeschia aethiopica</i>

Notes concerning some of the locally threatened plant species

Olearia ?sp. nov. (aff. *argophylla*). Two plants found and others possibly overlooked. Taxonomic and genetic research is required to clarify this taxon's status.

Melaleuca squarrosa (Scented Paperbark). The dominant shrub in a small patch of Shrubby Gully Forest on the Clevedon property.

Fauna of special significance

Vulnerable in Victoria

Powerful Owl. The comparatively large population of this species in the Dandenong Ranges uses this site as part of their habitat, for feeding and roosting.

Suspected of being Rare or Threatened in Victoria

Dandenong Freshwater Amphipod. Repeatedly detected by stream ecologists from the Arthur Rylah Institute at the eastern extremity of this site, including in recent years.

Uncommon in the Port Phillip and Westernport Region

Platypus. Trapped in this site in Dobsons Ck in 2002 (Williams 2002).

Rare or Threatened in suburban Melbourne

Broadfin Galaxias. Trapped in this site in Dobsons Ck in 2001 (Williams 2002).

The site is probably also regularly visited by other significant fauna such as Koala, Tree Goanna or Wedge-tailed Eagle, but there has been too little investigation to provide evidence.

Fauna habitat features

The comparatively large areas of mature, high quality native vegetation, contiguous with the Dandenong Ranges National Park, make good habitat for many forest species, including gliders, other possums, koalas, bats, forest birds and insects.

Waterbirds use the dams within the site and probably the streams. Frogs also use the dams.

Dobsons Creek provides habitat for Platypus, Water Rat, Broadfin Galaxias and Shortfin Eel, as demonstrated by observations of these species by the Australian Platypus Conservancy in 2001. Other native fish may exist, undetected. Aquatic invertebrates are also present (as indicated by repeated observations of the Dandenong Freshwater Amphipod at the upstream end).

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

Criterion 1.1.1 attributes **Local** significance to 'All parts of riparian systems with riparian vegetation present', which applies to sections of this site along Dobsons Ck and its tributaries.

Regionally Threatened Ecological Vegetation Classes

According to the criteria of 'Victoria's Native Vegetation Management – A Framework for Action' (NRE 2002a), areas of native vegetation belonging to a regionally Vulnerable EVC (such as the Grassy Forest in this site) have a conservation significance rating of High or Very High provided their ecological condition is at least fair (with a habitat score of at least 0.3). A large part of the Grassy Forest in this site is in better ecological condition than this. As a result, it follows from criterion 3.2.3 that the site is of **State** significance.

The tiny, degraded patch of the regionally Endangered Swampy Woodland may or may not achieve State significance under criterion 3.2.3, depending on whether it will qualify as a 'remnant patch' under a definition of this term that is being devised by the Department of Sustainability & Environment.

The highest quality patches of the other EVCs within the site (with habitat scores of at least 0.6) each confer **Regional** significance on the site under criterion 3.2.3. Lower quality patches represent **Local** significance.

Rare or Threatened Flora

The Dandenong Range variant of *Acacia leprosa* is listed as 'rare' in Victoria. This site makes a modest contribution to the large and viable population that spreads across the Dandenong Ranges. This represents **Regional** significance under criterion 3.1.2 of the standard criteria.

The site's less abundant species include an *Olearia* which may belong to a rare, undescribed taxon related to *Olearia argophylla* but distinguished by the smaller stature, drier habitat and different chemical composition of its leaves (as determined by flavonoid analysis of plants from 1½ km to the northeast). This would be of State significance if the identity is confirmed.

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.

Rare or Threatened Fauna

The Powerful Owl is a vulnerable species in Victoria. It is known to frequent the nearby parts of the Dandenong ranges National Park, and the vegetation in the site seems suitable as habitat for Powerful Owls. Criterion 3.1.3 confers **Regional** significance upon sites such as this.

Threats

- Invasion by environmental weeds, including:
 - Square-stemmed St John's Wort (*Hypericum tetrapterum*), a weed that is Regionally Prohibited under the *Catchment & Land Protection Act* and which is infesting the stream flowing through, and downstream from, 121 Ferndale Rd;
 - Very serious: Sweet Pittosporum (*Pittosporum undulatum*), Ivy (*Hedera helix*), Blackberry (*Rubus discolor*), Karamu (*Coprosma robusta*), Red Cestrum (*Cestrum elegans*), Wandering Jew (*Tradescantia albiflora*);
 - Serious: Montpellier Broom (*Genista monspelliensis*), Montbretia (*Crocasmia × crocosmiiflora*), Cape Ivy (*Delairea odorata*), Sycamore (*Acer pseudoplatanus*), Pale Wood-sorrel (*Oxalis incarnata*), Giant Reed (*Arundo*

donax), Japanese Honeysuckle (*Lonicera japonica*), Creeping Buttercup (*Ranunculus repens*), Garden Selaginella (*Selaginella kraussiana*), Arum Lily (*Zantedeschia aethiopica*);

- Ongoing residential development;
- Inappropriate fire prevention works involving clearing of shrubs and ground flora;
- Grazing;
- Nutrient pollution in the streams, from fertiliser, manure and unsewered properties.

Management issues

- There is plenty of scope for most landowners to improve their control of environmental weeds, particularly Sweet Pittosporum, Ivy and those species that they are legally required to control under the *Catchment and Land Protection Act*;
- It would be very desirable to fence the high quality remnant vegetation at 4B and 6A Doongalla Rd to prevent access by horses from adjoining pasture.

Administration matters

- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of the attributes discussed under the heading 'Significance ratings' above, as well as (in parts of the site) the riparian habitat and the potential for ongoing subdivision;
- This site is presently covered by Schedule 1 of the Vegetation Protection Overlay in the Knox Planning Scheme, except for some lots on the north side of Doongalla Rd;
- The site is outside the Urban Growth Boundary and is mostly zoned Rural Conservation Zone - Schedule 1 (RCZ1).

Information sources used in this assessment

- Several days of site survey undertaken during this study by Dr Lorimer between July and December 2002, using this study's standard procedures discussed in Section 2.4 of Volume 1. For at least part of each patch of each vegetation type, this included descriptions of the vegetation composition, compilation of a list of indigenous and introduced plant species, incidental fauna observations, and checks for fauna habitat, ecological threats and management issues;
- Vegetation field data and mapping along many roads in the site, gathered by Dr Lorimer in spring 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.);
- From the two studies just mentioned, a total of 38 lists of plant species were compiled, each with descriptions of dominant species and other information about vegetation composition;
- Spotlighting observations for approximately one hour on the night of 10th July 2002 (Common Brushtail Possum, roosting Wood Duck, *Crinia signifera*), including unsuccessful attempts to lure owls by playing taped owl calls;
- '*Distribution of Platypus along Upper Dandenong and Dobsons Creeks. Results of Live Trapping Surveys, October 2001 - February 2002*', a report by G.A. Williams of the Australian Platypus Conservancy to Knox City Council, April 2002.
- Discussions with invertebrate expert, Nick Papas, in 2002 about the population of Dandenong Freshwater Amphipod;
- Aerial photography from February 2001 and April 2003;
- Satellite imagery of the district;
- A map of EVCs within the adjoining Dandenong Ranges National Park prepared by Mr Doug Frood for Parks Victoria in 2002;
- The Department of Sustainability & Environment's BioMaps of the area;
- Maps of geology and topography produced by agencies of the Victorian government.

Acknowledgment

Thank you to the owners of 141 Basin-Olinda Rd, 121 Ferndale Rd and the Clevedon Camp for permission to survey their land.