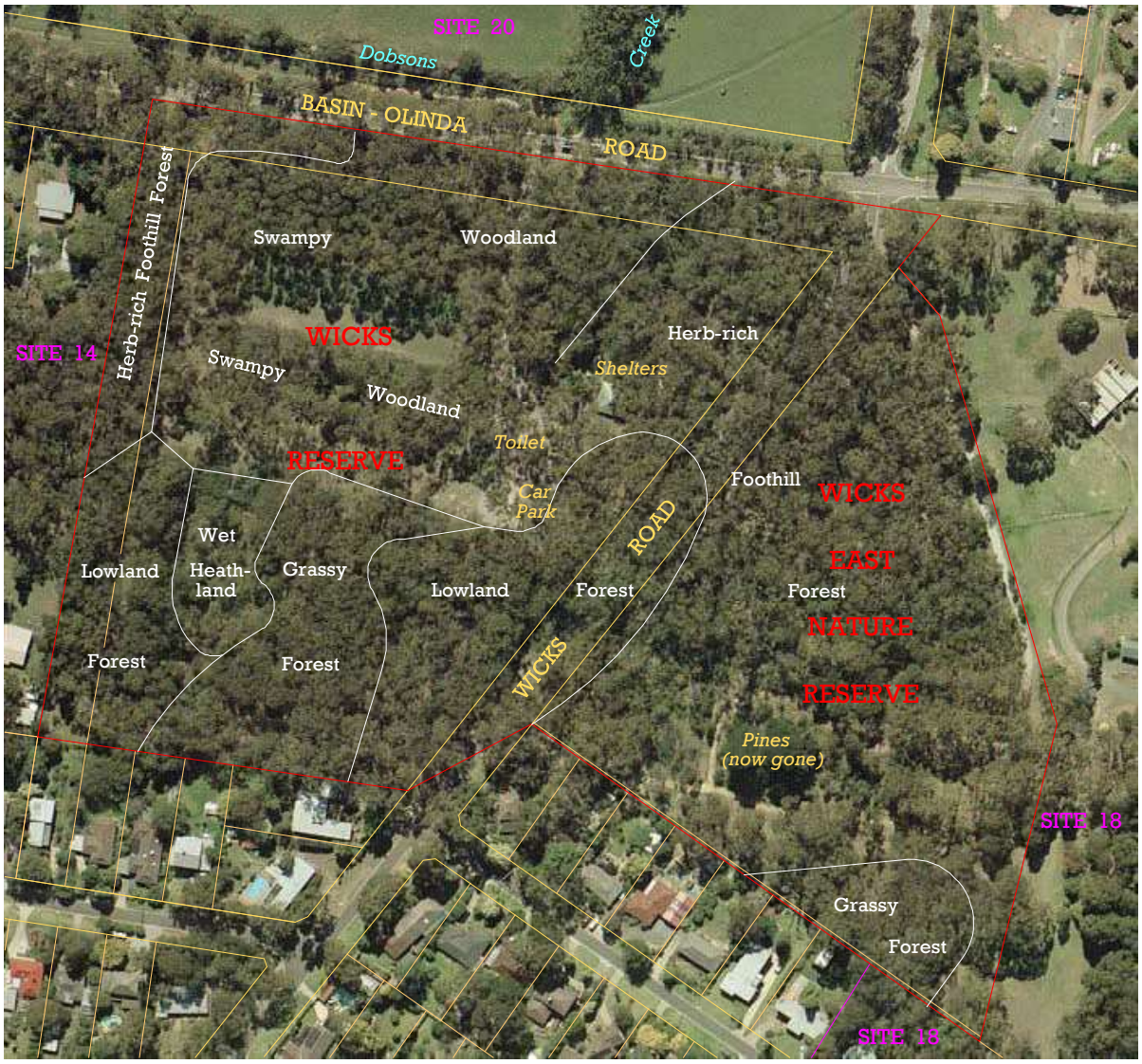
Site 15. Wicks Reserve & Wicks East Nature Reserve, The Basin

Council reserve with picnic facilities and lawns in a bushland environment with rich birdlife. Melway ref. 65 J8.

Site Significance Level: *State*

- Contains Knox's only occurrence of Wet Heathland, an Ecological Vegetation Class listed as regionally Depleted;
- The regionally Vulnerable Ecological Vegetation Classes, Swampy Woodland and Grassy Forest, are present;
- There are at least twenty-seven plant species that are threatened with extinction in Knox, of which ten are rare or threatened throughout the Melbourne area and six are found nowhere else in Knox;
- There is a large, breeding population of the Swordgrass Brown butterfly, which is locally rare;
- There is excellent birdlife.



Boundaries

This 8·33 ha site is outlined in red above. It includes all of Wicks Reserve (4·42 ha, west of Wicks Rd), Wicks East Nature Reserve (2·86 ha east of Wicks Rd) and adjoining roadside verges.

Land use & tenure: Council reserves and roadside verges. Wicks Reserve has a car park, picnic shelters, barbecues, public toilets, park benches, a playground and lawns, all in a bushland setting. Wicks East Nature Reserve is only for nature conservation and walking, although horse riders also use it.

Site description

This site is at the foot of a northern slope of the Dandenong Ranges, with the valley floor of Dobsons Creek along the northern margin of Wicks Reserve. Elevations vary from 158 m to 195 m. The slope is less than 5% on the valley floor, and approximately 10% in the rest of Wicks Reserve (except where excavations have created a level lawn area west of the picnic shelters. The slope of Wicks East Nature Reserve increases steadily from 10% in the north to 16% in the south.

The site's bedrock is the Kalorama Rhyodacite formation, which is part of the Dandenong Ranges volcanic group. This weathers to an acidic, yellowish clay loam soil, but this has been buried in two places:

- Shallow alluvium has been deposited on the valley floor at the northern edge of Wicks Reserve; and
- Soil and rock has slipped downhill to fill an ancient gully that ran north-northeast through the area marked on the aerial photograph above as Wet Heathland. (This is inferred by the author from geological maps, topographic maps, soil moisture levels and vegetation.)

Groundwater seeping out of the soil deposited in the ancient gully has given rise to the Wet Heathland, a unique occurrence in Knox. Wet Heathland would once have continued further north prior to the clearing of a swathe through the vegetation (now partly under revegetation). There are many plant species within and close to the Wet Heathland that are very rare or absent in the rest of Knox.

There are many patches and strips of land within the reserves that have been cleared for tracks, pipes, recreational facilities and apparently a house (east of Wicks Rd). Most of the site must have been denuded of trees many years ago, judging from the paucity of large, old trees. A substantial proportion of the land has regenerated naturally, while other areas are under revegetation. Some planted native and exotic ornamental species persist around the reserves, and there are even some planted bottlebrushes in the otherwise-natural Wet Heathland.

The history of clearing, gardening, revegetation and natural regeneration confounds the delineation of vegetation types near the centre of Wicks Reserve and through the southern half of Wicks East Nature Reserve. A canopy of Swamp Gums (*Eucalyptus ovata*) is usually associated in Knox with the Ecological Vegetation Classes called Swampy Woodland or Swampy Riparian Woodland, but the excellent regenerative capacity of this species has allowed it to proliferate vigorously in areas where it would once have been very scarce.

Despite the history of clearing, the vegetation retains a very high number of indigenous plant species for such an area, and many of them are rare or threatened in Knox or more widely. Certain weed species such as brooms had become well established by the 1990s, but Council has brought them under control except for wood-sorrels (*Oxalis incarnata* and/or *Oxalis pes-caprae*).

Relationship to other land

From the southeastern corner of this site, the Clevedon Camp property and the rear of properties facing the Basin-Olinda Rd provide a continuous tree canopy (mostly with associated understorey) that extends right through Site 18 into the Dandenong Ranges National Park. The national park is of high National significance for its native vegetation and wildlife and Site 18 is of State significance for similar reasons. Wicks Reserve and Wicks East Nature Reserve undoubtedly function ecologically as extensions to the habitat of Site 18 and the national park, with extensive traffic of fauna, seeds and pollen between the sites. This explains why the site is so good for birdwatching.

Grazing land to the east of the site provides fodder for rabbits, some of which have a warren in Wicks East Nature Reserve. The proximity of pasture and forest cover favours these pests. Rabbit control would require cooperation between the public and private landowners.

Site 14, to the west of Wicks Reserve, provides a small extension to the reserve's habitat, but the habitat in Site 14 is inferior because the canopy is more fragmented and the understorey is mostly decimated or absent.

There is even less habitat to the south of Wicks Reserve and Wicks East Nature Reserve (in Site 99), but still enough to entice some birdlife such as Australian King-Parrots out of the aforementioned sites and into residential and civic areas where they contribute to the natural atmosphere of life in The Basin. Unfortunately, some of the residences neighbouring the reserves harbour environmental weeds that spread into the reserves, particularly Sweet Pittosporum.

Bioregion: Highlands Southern Fall

Habitat types

Wet Heathland (EVC 8, **regionally Depleted**): Estimated to cover 1,800 m², equally divided between ecological condition ratings A and B (i.e. very good and good). 56 indigenous plant species were found by the author since 2002, including a few that may be interpreted as outliers from the adjacent Lowland Forest.

Eucalypts: Sparse, young *Eucalyptus ovata*, not forming a canopy.

Lower trees: Small numbers of *Acacia melanoxylon*. There is also a solitary, unexpected, *Pomaderris aspera*.

Shrubs: Dominated by *Leptospermum scoparium*, forming dense patches of scrub 3-4 m tall. There are also substantial numbers of *Allocasuarina paludosa, Epacris impressa, Goodenia ovata, Kunzea ericoides* and *Pultenaea gunnii*. *Hakea nodosa* and *Polyscias sambucifolia* are scarce.

Vines: Represented only by *Billardiera mutabilis* and very sparse *Cassytha pubescens*.

Scramblers: *Empodisma minus* is very dense and *Tetrarrhena juncea* is abundant. *Lobelia anceps* is also present.

Ferns: *Lindsaea linearis* is abundant. There are patches of *Adiantum aethiopicum* and scattered *Cyathea australis*. The fern ally, *Selaginella uliginosa*, is present in substantial numbers, as expected in this EVC.

Ground flora: Very dense outside the patches of scrub (particularly due to the scramblers just mentioned) and less dense where the scrub blocks out the sunlight. Sedges are well represented, including *Gahnia radula, Gahnia sieberiana, Lepidosperma filiforme, Schoenus apogon* and *Tetraria capillaris*. The characteristic species, *Centella cordifolia, Cryptostylis subulata, Drosera pygmaea, Gonocarpus micranthus, Lobelia anceps* and *Patersonia occidentalis* are all present. Grasses are scarce, and include *Eragrostis brownii*, *Hemarthria uncinata, Poa tenera, Tetrarrhena juncea*, plus occasional outliers of species such as *Deyeuxia quadriseta* from the adjacent Lowland Forest.

Lowland Forest (EVC 16, conservation status rated 'Least Concern' in the bioregion): Estimated to cover 1·2 ha, comprising 1·1 ha in good ecological condition (rating B) and 0·1 ha in fair ecological condition (rating C). 72 indigenous plant species have been recorded by the author.

Dominant canopy trees: *Eucalyptus obliqua* with far fewer *E. ovata*.

Dominant lower trees: *Acacia melanoxylon* and *Exocarpos cupressiformis*, moderately dense.

Shrubs: Moderate density and fairly rich in species. *Goodenia ovata* is most abundant and other conspicuous species are *Allocasuarina paludosa, Coprosma quadrifida, Epacris impressa, Kunzea ericoides, Leptospermum scoparium, Ozothamnus ferrugineus*, *Polyscias sambucifolia* and *Pultenaea gunnii*. *Bursaria spinosa* is present but sparse. The usual abundance of members of the Protea family is missing, the only representation being three *Hakea ulicina* plants at the interface with Grassy Forest.

Vines: *Billardiera mutabilis* and *Pandorea pandorana* are fairly abundant.

Ferns: There are patches of *Pteridium esculentum* (bracken) but the overall average foliage cover is small. *Lindsaea linearis* is present, a characteristic species for Lowland Forest. *Cyathea australis* is sparse.

Ground flora: Very dense, tangled and knee-deep, not tussocky. Rather heathy with *Gahnia radula* and *Tetrarrhena juncea* dominant and patches of dense *Empodisma minus*. The following species are abundant but with too little foliage cover to be dominant: *Burchardia umbellata, Gahnia sieberiana, Gonocarpus tetragynus, Poa tenera, Austrostipa rudis, Stylidium armeria*, *Tetraria capillaris* and *Viola hederacea*. Less abundant species that are good ecological indicators include *Centella cordifolia, Cryptostylis leptochila, Cryptostylis subulata, Selaginella uliginosa* and *Xanthorrhoea minor*.

Herb-rich Foothill Forest (EVC 23, conservation status rated 'Least Concern' in the bioregion), tending toward Damp Forest at the foot of the slope: Estimated to cover 3·7 ha, comprising 0·4 ha in good ecological condition (rating B), 2·9 ha in fair ecological condition (rating C) and 0·4 ha in poor ecological condition (rating D). 100 indigenous plant species have been recorded by the author.

Canopy trees: Dominated by *Eucalyptus obliqua* and *E. ovata*, the latter quite possibly a result of the more vigorous regeneration of that species following clearing. Most *E. ovata* in Wicks East Nature Reserve are fairly young trees with trunk diameters of approximately 0·3 m, indicating a large regeneration event some years ago, whereas the old trees are overwhelmingly *E. obliqua*. *E. radiata* is absent in most of the Herb-rich Foothill Forest but becomes common toward the interface with Grassy Forest.

Lower trees: Rather dense, dominated by *Acacia melanoxylon* and a smaller number of *Exocarpos cupressiformis*. *Acacia dealbata* is present but sparse.

Shrubs: Moderately dense and rather rich in species. Dominated by *Coprosma quadrifida, Olearia lirata* and *Polyscias sambucifolia*. Other shrubs include *Acacia verticillata, Cassinia aculeata, Epacris impressa, Goodenia ovata, Leptospermum scoparium, Ozothamnus ferrugineus, Prostanthera lasianthos* and *Pultenaea gunnii*. Other shrub species occur in small numbers. The presence of two *Cassinia trinerva* and one *Olearia argophylla* reflects the tendency toward Damp Forest in the wettest areas and the close proximity to fully developed Damp Forest on Dobsons Creek in Site 18.

Vines: *Pandorea pandorana* is abundant. There are also substantial numbers of *Billardiera mutabilis, Clematis aristata* and *Glycine clandestina*.

Ferns: Patches of *Pteridium esculentum* are widespread. Patches of *Calochlaena dubia* and occasional small *Cyathea australis* are scattered at the foot of the slope.

Ground flora: Very variable in density due to different stages of recovery from clearing. Aside from the ferns, the ground flora is dominated by *Dianella tasmanica* and *Poa ensiformis*. The following species are abundant but with too little foliage cover to be dominant: *Gahnia radula*, *Austrostipa rudis*, *Tetrarrhena juncea, Themeda triandra* and *Viola hederacea*, as well as *Lepidosperma elatius* at the foot of the slope in Wicks East Nature Reserve.

Grassy Forest (EVC 128, **regionally Vulnerable**): Estimated to cover 0·85 ha, comprising 0·5 ha in good ecological condition (rating B), 0·25 ha in fair ecological condition (rating C) and 0·10 ha in poor ecological condition (rating D). 90 indigenous plant species have been recorded by the author.

Dominant canopy trees: *Eucalyptus obliqua, E. macrorhyncha* and *E. radiata*. *E. ovata* is sparingly present due to proximity of other EVCs.

Dominant lower trees: *Acacia melanoxylon* is abundant and *Exocarpos cupressiformis* is somewhat less so.

Shrubs: Mostly rather sparse, leaving clear visibility for a radius of typically 50 m. *Epacris impressa* is abundant, and the other conspicuous species are *Bursaria spinosa, Cassinia aculeata, Goodenia ovata, Leptospermum continentale, Leptospermum scoparium* and *Pultenaea gunnii*.

Vines: The light twiner, *Billardiera mutabilis*, is abundant and other climbers are scarce.

Ferns: There are patches of *Pteridium esculentum* and scattered *Lindsaea linearis* close to the Lowland Forest.

Ground flora: 80% ground coverage. Dominated by *Rytidosperma pallidum*, followed by *Gahnia radula, Microlaena stipoides, Poa morrisii* and *Austrostipa rudis*. There are also abundant *Burchardia umbellata, Gonocarpus tetragynus, Goodenia lanata, Lepidosperma gunnii, Microlaena stipoides, Platylobium formosum, Stylidium armeria* and *Tetrarrhena juncea*. *Dipodium roseum* is present in reasonable numbers, as is typically the case in Grassy Forest in the Dandenong Ranges. Other species whose presence helps confirm the EVC identity as Grassy Forest are *Acrotriche serrulata, Helichrysum scorpioides, Pimelea humilis* and *Themeda triandra*.

Swampy Woodland (EVC 937, **regionally Vulnerable**): Estimated to cover 1·6 ha, comprising 1·1 ha in good ecological condition (rating B) and 0·5 ha in fair ecological condition (rating C). 71 indigenous plant species have been recorded by the author.

Dominant canopy trees: *Eucalyptus ovata* to c.25 m tall and mostly slender, indicating regeneration after clearing some years ago.

Dominant lower trees: *Acacia melanoxylon* is dense and there are fewer *Melaleuca ericifolia*.

Shrubs: Dense to rather sparse, depending on the stage of natural regeneration. *Leptospermum scoparium* dominates areas that have regenerated greatly in the past 5-10 years but is sparse in older regrowth. Other conspicuous species are *Acacia verticillata, Cassinia aculeata, Coprosma quadrifida* and *Goodenia ovata*.

Vines: *Billardiera mutabilis*, *Glycine clandestina* and *Pandorea pandorana* are present.

Ferns: *Pteridium esculentum* and *Cyathea australis* are scattered thinly.

Ground flora: Moderately to very dense, dominated by *Gahnia radula, Gahnia sieberiana, Lepidosperma elatius* and *Lomandra longifolia*. Other abundant species are *Acaena novae-zelandiae, Gonocarpus tetragynus, Patersonia occidentalis, Poa tenera, Austrostipa rudis, Tetrarrhena juncea* and *Viola hederacea*.

Plant species

Separate plant lists follow for Wicks Reserve and Wicks East Nature Reserve. The years in the right-hand columns indicate when each indigenous species was last recorded. The columns headed 'Risk' indicate the indigenous species' risk of extinction in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; and 'V'=Vulnerable. Species with names in bold are rare throughout the Melbourne region.

Wicks Reserve Indigenous Species

Risk	Species name	Year
	Acacia dealbata	2007
V	*Acacia melanoxylon*	2007
E	*Acacia mucronata* subsp. *longifolia*	2007
E	*Acacia stricta*	2007
V	*Acacia verticillata*	2007
	Acaena novae-zelandiae	2007
V	*Acrotriche prostrata*	2007
	Acrotriche serrulata	2007
V	*Adiantum aethiopicum*	2007
C	***Allocasuarina paludosa***	2007
	Arthropodium strictum	2004

Wicks Reserve Indigenous Species

Risk	Species name	Year
E	***Austrocynoglossum latifolium***	2007
	Austrostipa pubinodis	2007
	Austrostipa rudis subsp. *rudis*	2007
	Billardiera mutabilis	2007
	Bossiæa prostrata	2004
	Burchardia umbellata	2007
	Bursaria spinosa	2007
V	*Caesia parviflora*	2007
V	*Calochlaena dubia*	2007
	Campylopus introflexus	2007
	Cassinia aculeata	2007

Wicks Reserve Indigenous Species

Risk	Species name	Year
C	***Cassinia trinerva***	2007
E	*Cassytha pubescens*	2007
E	*Centella cordifolia*	2007
C	*Centrolepis strigosa*	2003
C	***Chiloglottis reflexa***	2007
	Chiloscyphus semiteres	2007
V	*Clematis aristata*	2007
V	*Comesperma volubile*	2007
C	***Coprosma hirtella***	1999
V	*Coprosma quadrifida*	2007
E	***Cryptostylis leptochila***	2007
C	*Cryptostylis subulata*	2007
E	*Cyathea australis*	2007
E	*Daviesia leptophylla*	2007
	Deyeuxia quadriseta	2007
	Dianella admixta	2007
V	*Dianella longifolia* s.l.	1999
V	*Dianella tasmanica*	2007
	Dichondra repens	2007
E	*Dipodium roseum*	2007
V	*Drosera peltata* subsp. *auriculata*	2004
C	***Drosera pygmaea***	2002
V	***Empodisma minus***	2007
V	*Epacris impressa*	2007
	Eragrostis brownii	2007
E	*Eucalyptus macrorhyncha*	2007
V	*Eucalyptus obliqua*	2007
V	*Eucalyptus ovata*	2007
E	*Eucalyptus radiata*	2007
E	*Euchiton involucratus*	1999
V	*Exocarpos cupressiformis*	2007
E	*Exocarpos strictus*	2007
	Gahnia radula	2007
E	*Gahnia sieberiana*	2007
E	*Galium* ?*gaudichaudii*	1999
C	*Gastrodia sesamoides*	1999
C	***Geranium homeanum***	2004
V	*Geranium* ?sp. 2	2007
V	*Glycine clandestina*	2007
C	*Gonocarpus micranthus*	1999
	Gonocarpus tetragynus	2007
	Goodenia lanata	2007
	Goodenia ovata	2007
C	*Hakea nodosa*	2007
C	*Hakea ulicina*	2004
V	*Helichrysum scorpioides*	2004
V	*Hemarthria uncinata*	1999
V	*Hydrocotyle hirta*	2007
E	*Hypericum gramineum*	2007
E	*Indigofera australis* (planted)	2007
V	*Isolepis inundata*	2002
	Juncus gregiflorus	1997
	Juncus pallidus	2007
	Juncus sarophorus	1997
	Kunzea ericoides spp. agg.	2007
V	*Lagenophora gracilis*	2007
	Lepidosperma elatius	2007
E	***Lepidosperma filiforme***	2007

Wicks Reserve Indigenous Species

Risk	Species name	Year
V	*Lepidosperma laterale*	2007
	Leptospermum continentale	2007
E	*Leptospermum scoparium*	2007
V	*Lindsaea linearis*	2007
E	*Lobelia anceps*	1999
	Lomandra filiformis ssp. *coriacea*	2007
	Lomandra filiformis ssp. *filiformis*	2007
	Lomandra longifolia	2007
V	*Lythrum hyssopifolia*	2002
E	*Melaleuca ericifolia*	2007
	Microlaena stipoides	2007
C	*Muellerina eucalyptoides*	2004
V	*Olearia lirata* (wild & planted)	2007
V	*Opercularia varia*	2007
	Oxalis exilis/perennans	2007
E	*Ozothamnus ferrugineus*	2007
	Pandorea pandorana	2007
C	*Patersonia occidentalis*	2007
V	*Pimelea humilis*	2004
V	*Platylobium formosum*	2007
	Poa ensiformis	2007
	Poa morrisii	2007
E	*Poa tenera*	2007
E	*Polyscias sambucifolia*	2007
E	*Pomaderris aspera*	2007
	Poranthera microphylla	1999
E	*Prostanthera lasianthos* (wild & planted)	2007
	Pteridium esculentum	2007
E	*Pterostylis melagramma*	2007
	Pterostylis nutans	2007
	Ptychomnion aciculare	2007
V	*Pultenaea gunnii*	2007
	Rytidosperma laeve	1999
	Rytidosperma pallidum	2007
	Rytidosperma penicillatum	2007
	Rytidosperma racemosum	2007
E	*Rytidosperma semiannulare*	1999
	Rytidosperma setaceum	1999
	Schoenus apogon	2004
C	***Selaginella uliginosa***	2007
	Senecio hispidulus	2007
E	*Senecio minimus*	2007
V	*Solanum laciniatum*	2007
E	*Spyridium parvifolium*	2007
E	*Stylidium armeria/graminifolium*	2007
C	***Tetraria capillaris***	2007
	Tetrarrhena juncea	2007
C	***Thelymitra media***	1999
V	*Thelymitra peniculata*	1999
	Themeda triandra	2007
	Thuidiopsis furfurosa	2007
E	*Thysanotus tuberosus*	2007
	Tricoryne elatior	2004
E	*Viola hederacea*	2007
E	*Wahlenbergia gracilis*	2007
V	*Xanthorrhoea minor*	2007
E	*Xanthosia dissecta*	2007

Wicks Reserve Introduced Species

Acacia floribunda	*Ehrharta erecta*	*Paspalum dilatatum*
Acacia longifolia subsp. *longifolia*	*Erica lusitanica*	*Paspalum distichum*
Acacia ?prominens	*Euphorbia peplus*	*Passiflora tarminiana*
Agapanthus praecox	*Fraxinus angustifolia*	*Pinus radiata*
Agrostis capillaris	*Freesia alba × leichtlinii*	*Pittosporum undulatum*
Allium triquetrum	*Fumaria officinalis* spp. agg.	*Plantago lanceolata*
Anagallis arvensis	*Galium aparine*	*Plantago major*
Anthoxanthum odoratum	*Genista linifolia*	*Prunella vulgaris*
Arrhenatherum elatius	*Genista monspessulana*	*Prunus cerasifera*
Asparagus scandens	*Grevillea hybrids*	*Ranunculus repens*
Briza maxima	*Grevillea robusta*	*Romulea rosea*
Centaurium erythraea	*Hakea salicifolia*	*Rosa rubiginosa*
Cirsium vulgare	*Hedera helix*	*Rubus anglocandicans*
Conyza ?sumatrensis	*Holcus lanatus*	*Solanum nigrum*
Coprosma repens	*Hypericum androsœmum*	*Sonchus oleraceus*
Cortaderia selloana	*Hypochoeris radicata*	*Stellaria media*
Cotoneaster glaucophyllus	*Ilex aquifolium*	*Tradescantia fluminensis*
Cotoneaster simonsii	*Juncus tenuis*	*Trifolium repens*
Crassula multicava	*Lactuca serriola*	*Vicia disperma*
Crataegus monogyna	*Ligustrum lucidum*	*Vicia sativa*
Crepis capillaris	*Lonicera japonica*	*Vulpia bromoides*
Crocosmia × crocosmiiflora	*Lotus subbiflorus*	*Watsonia meriana* var. *bulbillifera*
Cytisus scoparius	*Lotus uliginosus*	*Zantedeschia aethiopica*
Dactylis glomerata	*Myosotis ?sylvatica*	
Delairea odorata	*Oxalis incarnata*	

Wicks East Nature Reserve Indigenous Species

Risk	Species name	Year
V	*Acacia melanoxylon* (wild & planted)	2007
E	*Acacia mucronata*	1999
E	*Acacia stricta*	2007
V	*Acacia verticillata*	2007
	Acaena novae-zelandiae	2007
V	*Acrotriche prostrata*	2007
V	*Amyema quandang*	1999
C	*Asperula conferta*	2007
E	***Austrocynoglossum latifolium***	2007
	Austrostipa rudis subsp. *rudis*	2007
	Billardiera mutabilis	2007
E	***Blechnum cartilagineum***	2007
	Bursaria spinosa	2007
	Campylopus clavatus	2007
	Campylopus introflexus	2007
	Carex breviculmis	2007
	Cassinia aculeata	2007
C	***Cassinia trinerva***	2007
V	*Chiloglottis valida*	1999
	Chiloscyphus semiteres	2007
V	*Clematis aristata*	2007
V	*Comesperma volubile*	2007
C	*Coprosma hirtella*	2007
V	*Coprosma quadrifida*	2007
V	*Crassula decumbens*	2007
E	***Cryptostylis leptochila***	2007
E	*Cyathea australis*	2007
E	*Cynoglossum suaveolens*	2002
	Deyeuxia quadriseta	2002
	Dianella admixta	2007
V	*Dianella tasmanica*	2007
	Dichelachne rara	2007

Wicks East Nature Reserve Indigenous Species

Risk	Species name	Year
E	*Dipodium roseum*	1999
V	*Epacris impressa*	2007
	Epilobium hirtigerum	2002
	Eragrostis brownii	2009
V	*Eucalyptus cypellocarpa*	2007
E	*Eucalyptus macrorhyncha*	2007
V	*Eucalyptus obliqua* (wild & planted)	2007
V	*Eucalyptus ovata*	2007
E	*Eucalyptus radiata*	2007
E	*Eucalyptus viminalis* ssp. *viminalis* (probably planted)	2007
E	*Euchiton involucratus*	2007
V	*Exocarpos cupressiformis*	2007
E	*Exocarpos strictus*	2007
	Gahnia radula	2007
E	*Gahnia sieberiana* (wild & planted)	2007
E	*Galium gaudichaudii*	2007
E	***Geranium gardneri***	2007
V	*Geranium potentilloides*	2002
V	*Glycine clandestina*	2007
E	*Gonocarpus ?humilis*	2007
	Gonocarpus tetragynus	2007
	Goodenia ovata	2007
V	*Helichrysum scorpioides*	2007
V	*Hemarthria uncinata*	2007
E	***Hydrocotyle geraniifolia***	2007
V	*Hydrocotyle hirta*	2007
E	*Hypericum gramineum*	2007
V	*Isolepis* sp.	1999
	Juncus bufonius	1999
	Juncus pallidus	2007
	Kunzea ericoides spp. agg.	2007

Wicks East Nature Reserve Indigenous Species

Risk	Species name	Year
E	*Lagenophora stipitata*	2007
	Lepidosperma elatius	2007
V	*Lepidosperma laterale*	2007
E	*Leptospermum scoparium* (wild & planted)	1999
	Lomandra filiformis subsp. *coriacea*	2007
	Lomandra filiformis subsp. *filiformis*	2007
	Lomandra longifolia	2007
V	*Luzula meridionalis*	2007
V	*Lythrum hyssopifolia*	1999
E	*Melaleuca ericifolia*	2007
	Microlaena stipoides	2007
	Microtis parviflora	2002
C	*Muellerina eucalyptoides*	2007
E	***Olearia argophylla***	2007
V	*Olearia lirata*	2007
V	*Opercularia varia*	2007
	Oxalis exilis/perennans	2007
E	*Ozothamnus ferrugineus*	2007
	Pandorea pandorana	2007
V	*Platylobium formosum*	2007
	Poa ensiformis (wild and planted)	2007
	Poa morrisii	2007
E	*Poa tenera*	2007
E	*Polyscias sambucifolia*	2007
	Polytrichum juniperinum	2007
E	*Pomaderris aspera*	2007
	Poranthera microphylla	2007

Wicks East Nature Reserve Indigenous Species

Risk	Species name	Year
E	*Prostanthera lasianthos*	1999
	Pteridium esculentum	2007
E	*Pterostylis melagramma*	2007
	Pterostylis nutans	2007
	Ptychomnion aciculare	2007
V	*Pultenaea gunnii*	2007
	?*Rosulabryum billarderi*	2007
	Rytidosperma laeve	1999
	Rytidosperma pallidum	2007
	Rytidosperma penicillatum	2007
	Rytidosperma racemosum	2007
	Schoenus apogon	1999
	Senecio glomeratus	2007
	Senecio hispidulus	2007
E	*Senecio minimus*	2007
E	*Senecio prenanthoides*	2007
	Senecio quadridentatus	1999
V	*Solanum laciniatum*	1999
E	*Spyridium parvifolium*	2002
E	*Stackhousia monogyna*	2007
E	*Stylidium armeria/graminifolium*	2007
	Tetrarrhena juncea	2007
	Themeda triandra	2007
	Thuidiopsis furfurosa	2007
E	*Veronica calycina*	2007
E	*Viola hederacea*	2007
E	*Wahlenbergia gracilis*	1999
V	*Xanthorrhoea minor*	2007

Wicks East Nature Reserve Introduced Species

Acacia floribunda	*Crocosmia* × *crocosmiiflora*	*Paspalum dilatatum*
Acacia ?*prominens*	*Dactylis glomerata*	*Pennisetum clandestinum*
Acetosella vulgaris	*Ehrharta erecta*	*Pinus radiata*
Agapanthus praecox	*Erica lusitanica*	*Pittosporum undulatum*
Agrostis capillaris	*Fraxinus angustifolia*	*Plantago lanceolata*
Aira sp.	*Fumaria* ?*officinalis* spp. agg.	*Potentilla indica*
Allium triquetrum	*Galium aparine*	*Prunella vulgaris*
Anagallis arvensis	*Gamochaeta purpurea*	*Prunus cerasifera*
Anthoxanthum odoratum	*Hedera helix*	*Pseudoscleropodium purum*
Asparagus scandens	*Holcus lanatus*	*Romulea rosea*
Aster subulatus	*Homalanthus populifolius*	*Rubus anglocandicans*
Briza maxima	*Hypochoeris radicata*	*Solanum nigrum*
Bromus catharticus	*Ilex aquifolium*	*Solanum nigrum*
Centaurium erythraea	*Juncus capitatus*	*Sonchus oleraceus*
Cerastium glomeratum s.l.	?*Kniphofia uvaria*	*Sporobolus africanus*
Cirsium vulgare	*Leontodon taraxacoides*	*Stellaria media*
Coleonema pulchellum	*Lonicera japonica*	*Taraxacum officinale* spp. agg.
Conyza ?*sumatrensis*	*Lotus corniculatus*	*Tradescantia fluminensis*
Coprosma robusta	*Lotus subbiflorus*	*Trifolium repens*
Cotoneaster glaucophyllus	*Lotus uliginosus*	*Viburnum tinus*
Cotoneaster pannosus	*Myosotis sylvatica*	*Vicia hirsuta*
Crepis capillaris	*Oxalis incarnata*	

Notes concerning some of the locally threatened plant species

Acacia mucronata (Narrow-leaf Wattle). Scarce; confined to the verge of the Basin-Olinda Rd.

Acianthus ?caudatus (Mayfly Orchid). A record attributed to Gary Cheers (date unknown) by Andrew Paget in 1985.

Allocasuarina paludosa (Scrub Sheoak). Dozens of plants were found in Wicks Reserve, concentrated in the south. Only one other plant has been found in the whole of Knox.

Asperula conferta (Common Woodruff). Several plants were found in the south of Wicks East Nature Reserve.

Austrocynoglossum latifolium (Forest Hound's-tongue). A single, thriving specimen was found in Wicks East.
Blechnum cartilagineum (Gristle Fern). One clump of about 3 individuals was found in Wicks East Nature Res.
Cassinia trinerva (Three-nerved Cassinia). Two mature plants in Wicks East Nature Reserve and one in Wicks Reserve next to Wicks Rd. This is one of only three known occurrences of the species in Knox.
Centrolepis strigosa (Hairy Centrolepis). Small numbers germinate each year in a mown part of Wicks Reserve.
Chiloglottis reflexa (Autumn Bird-orchid) – two thriving colonies at Wicks Reserve. The only known occurrence in Knox.
Chiloglottis valida (Common Bird-orchid). Many were found in Wicks East Nature Reserve.
Coprosma hirtella (Rough Coprosma). Five plants were found in Wicks Reserve.
Cryptostylis leptochila (Small Tongue-orchid). Approximately 60 plants were found, mostly in Wicks East.
Cryptostylis subulata (Large Tongue-orchid). Six plants were found, but others are probably present in Wicks Res.
Cynoglossum suaveolens (Sweet Hound's-tongue). Scarce; only found in the south of Wicks East Nature Res.
Drosera pygmaea (Tiny Sundew). Twelve plants observed in the Wet Heathland. The only occurrence in Knox.
Empodisma minus (Spreading Rope-rush). Abundant in the south of Wicks Reserve.
Epacris impressa pink-flowered form (pink Common Heath) – The only stronghold in Knox. Fifteen were counted but there may well be over two dozen, mostly in or near the Grassy Forest in Wicks Reserve.
Gahnia sieberiana (Red-fruit Saw-sedge). A large population, mainly in the north of Wicks Reserve.
Galium gaudichaudii (Rough Bedstraw). A few plants seen in each of the two reserves.
Gastrodia sesamoides (Cinnamon Bells). Many, concentrated southwest of the car park in Wicks Reserve.
Geranium gardneri (Rough Cranesbill). Small numbers found scattered in Wicks Reserve and Wicks East Nature Reserve.
Gonocarpus micranthus (Creeping Raspwort). Fifteen plants found, mainly in the Wet Heathland.
Hakea nodosa (Yellow Hakea). Two plants only were found.
Hakea ulicina (Furze Hakea). Three individuals in the southeastern corner of Wicks Reserve.
Hydrocotyle geraniifolia (Forest Pennywort). Approximately 20 plants are found each year in Wicks East Nature Res.
Lagenophora stipitata (Common Lagenophora). Only found in the south of Wicks East Nature Reserve, numbers not recorded.
Lepidosperma filiforme (Common Rapier-sedge). Over 20 plants were found in the Wet Heathland.
Microtis ?*parviflora* (Slender Onion-orchid). A few individuals appeared in a revegetation plot near the centre of Wicks East Nature Reserve.
Olearia argophylla (Musk Daisy-bush). A solitary individual in Wicks East Nature Reserve.
Patersonia occidentalis (Long Purple-flag). Approximately fifty plants are in Wicks Reserve, mostly near the Wet Heathland.
Pterostylis longifolia (=*P. melagramma*) (Tall Greenhood). Scarce; only found south of the car park.
Pterostylis parviflora (Tiny Greenhood). A record attributed to Gary Cheers (date unknown) by Mr Andrew Paget in 1985.
Selaginella uliginosa (Swamp Selaginella) – more than 25 plants found, mostly in the south of Wicks Reserve. The only known occurrence in Knox.
Spyridium parvifolium (Australian Dusty Miller). Very scarce, found only near the uphill (southern) boundary, in both reserves.
Tetraria capillaris (Hair-sedge). The only known occurrence in Knox.
Thelymitra media (Tall Sun-orchid). Four plants were found in the south of Wicks Reserve.
Thysanotus tuberosus (Common Fringe-lily). Only a few seen, in the Herb-rich Foothill Forest and Grassy Forest in Wicks Reserve.
Veronica calycina (Hairy Speedwell). Many were found in the south of Wicks East Nature Reserve.

Fauna of special significance

Australian King-Parrots are rather abundant. This species is listed by the Land Conservation Council (1991) as uncommon in the 'Melbourne Area District 2', which extends eastwards slightly beyond Walhalla.

The large numbers of *Gahnia sieberiana* plants support a large, breeding population of the locally rare Swordgrass Brown butterfly.

Because of the proximity to the large area of habitat in Dandenong Ranges National Park and Site 18, the reserves are bound to be occasionally visited by rare or threatened fauna from the park; e.g. Powerful Owl. The site provides only a small extension to the native habitat available for such species, by comparison with the national park.

Fauna habitat features

- There are large eucalypts with hollows that provide suitable roosting or nesting sites for certain fauna;
- The ground layer of dense grasses and sedges in much of the site is excellent habitat for butterflies and probably skippers that rely on such plants. A survey for skippers would be worthwhile;
- Nest boxes have been installed;

- A bird-feeding table is provided for picnickers to attract birds, but this is of questionable benefit to native birdlife.

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 1.1.2 attributes **Local** significance to 'Areas of 100 ha or more of contiguous native vegetation in a heavily fragmented landscape', which applies to the contiguous native vegetation of which this site is part.

Vegetation Type and Condition

Grassy Forest and Swampy Woodland are regionally vulnerable EVCs and the representation of them in the reserve is in fair to good ecological condition. Habitat scores in the reserve determined by Cropper (2006) were above the threshold of 0·3 for 'High' conservation significance almost. It follows that the site **State** significance under criterion 3.2.3.

Similarly, Cropper (2006) found habitat scores to be in the range 0·54-0·58 within the regionally depleted EVC, Wet Heathland. This gives the site Regional significance. The other EVCs would lead to Local or Regional significance.

Rare or Threatened Plants

Most of the 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 and is known to roost within several hundred metres of the site. It is also known to frequent nearby parts of the Dandenong ranges National Park and the vegetation in the site seems quite suitable as habitat for Powerful Owls. Criterion 3.1.3 confers **Regional** significance upon sites such as this.

Threats

- Damage to the Wet Heathland by trampling and breaking down of the tea-tree scrub;
- Decay of the Wet Heathland due to climate change and consequent drought;
- Invasion by environmental weeds as listed below, with asterisks marking those that are controlled under the *Catchment and Land Protection Act 1994*:
  - Serious: English Broom* (*Cytisus scoparius*), Sweet Pittosporum (*Pittosporum undulatum*);
  - Moderate: African Lily or Agapanthus (*Agapanthus praecox*), Brown-top Bent (*Agrostis capillaris*), Sweet Vernal-grass (*Anthoxanthum odoratum*), Pampas Grass (*Cortaderia selloana*), Cotoneaster (*Cotoneaster glaucophyllus*), Montbretia (*Crocosmia ×crocosmiiflora*), Spanish Heath* (*Erica lusitanica*), Cleavers (*Galium aparine*), Montpellier Broom* (*Genista monspessulana*), Ivy (*Hedera helix*), Cat's Ear (*Hypochoeris radicata*), Japanese Honeysuckle (*Lonicera japonica*), Pale Wood-sorrel (*Oxalis incarnata*), Blackberry* (*Rubus discolor*) and Tiny Vetch (*Vicia hirsuta*);
- Damage to native vegetation and spread of *Oxalis* weeds due to slashing in the Grassy Forest of Wicks East Nature Reserve;
- Rabbits in Wicks East Nature Reserve;
- Horses, causing trampling of vegetation and spread of weeds in Wicks East Nature Reserve.

Management issues

- Knox City Council's current management regimen is part of a regular monitoring program; see *'Monitoring of Bushland Reserves in Knox'* and *'Monitoring of Bushland Reserves in Knox – 2002 Review'*, both by Dr Lorimer for Knox City Council;
- Revegetation is required in the area around the recently removed large pines marked on the aerial photograph (p. 74);
- Slashing should cease in and near the dense colony of *Cryptostylis leptochila* in the Grassy Forest of Wicks East Nature Reserve;
- It appears that the continual trampling and damage which has been done to the Wet Heathland may be abating due to police patrols. In case this does not solve the problem, a fence should be erected to deter the perpetrators;
- The identity of the dense and widespread *Oxalis incarnata* and/or *Oxalis pes-caprae* (particularly in Wicks East Nature Reserve) should be established during flowering time (spring), and options should be explored for its control;
- The feasibility, cost and likely efficacy of rabbit control should be investigated, including consideration of cooperative action with neighbours to the east;

- A strip along the western margin of Wicks Reserve was burned in 2003 or early 2004. Many brooms are germinating and it will be very important to kill them before they reach reproductive maturity. Other weeds may also need attention.

Administration matters

- It would be desirable to have an expert on skippers (insects that are intermediate between butterflies and moths) survey the site in spring and summer, due to the distinct possibility that rare species are present;
- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of its State significance, the threatened EVCs, the intact areas of native vegetation with all strata present, the large number of significant plant species, the richness of the site's native vegetation and the habitat that it provides for fauna;
- The reserves are zoned 'Public Park and Recreation Zone' (PPRZ), the Basin-Olinda Rd reservation is zoned Road Zone Category 1 (RDZ1) and the Wicks Rd reservation is zoned 'Low Density Residential Zone' (LDRZ) like the abutting residential properties;
- The Wicks Rd reservation is inside the Urban Growth Boundary and the rest of the site is outside (but bordering) the Urban Growth Boundary;
- The site is included under the existing Vegetation Protection Overlay Schedule 1 of the Knox Planning Scheme and the Significant Landscape Overlay Schedule 2 covers the narrow strip along the western edge. The latter seems anomalous;
- The site was recognised by Water Ecoscience (1998) as their Site 2, but the report seems to have mixed up features of this site with their Site 1 (W.G. Morris Reserve, Wantirna).

Information sources used in this assessment

- A report on the reserves' flora and fauna by Cropper (2006), including habitat scores;
- An investigation of the roadside verge of the Basin-Olinda Rd by Dr Lorimer on 12/9/97 to delineate vegetation communities, assess their ecological condition, compile lists of flora and fauna, document populations of rare plants and assess management issues, as reported by Lorimer G.S. (1998), *'A Survey and Management Strategy for Significant Roadsides in Knox'*, for Knox City Council;
- Detailed flora data compiled during several days of fieldwork between November 1998 and February 1999 by Dr Lorimer for the report, *'Monitoring of Bushland Reserves in Knox'* (for Knox City Council), including (in part) compilation of lists of indigenous and introduced plant species in each of six parts of the sites (based mainly on vegetation types), population details of uncommon plants, four quadrats and a set of photographs;
- A reinspection of the site by Dr Lorimer lasting five hours on 16/7/04 to fill gaps between the above data and this study's standard data-gathering specifications discussed in Section 2.4 of Volume 1. This particularly focused on delineation of EVCs, determination of the vegetation's ecological condition and the severity of weeds;
- Surveys of the site by Dr Lorimer for *'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;
- Teaching visits to Wicks Reserve by Dr Lorimer and groups of students each December for approximately eight years;
- Incidental fauna records (birds and butterflies) from the above projects;
- Data from eight quadrats (DSE numbers N13234-N13241) compiled by Mr Andrew Paget in March and April 1985, in which all species have been recorded recently by Dr Lorimer;
- A list of plant species compiled by Mr Gary Cheers, as reported by Paget (1985);
- A Deakin University student's project report by Kath Davies in 1996 titled *'Wicks Reserve Draft Management Plan'*;
- 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.