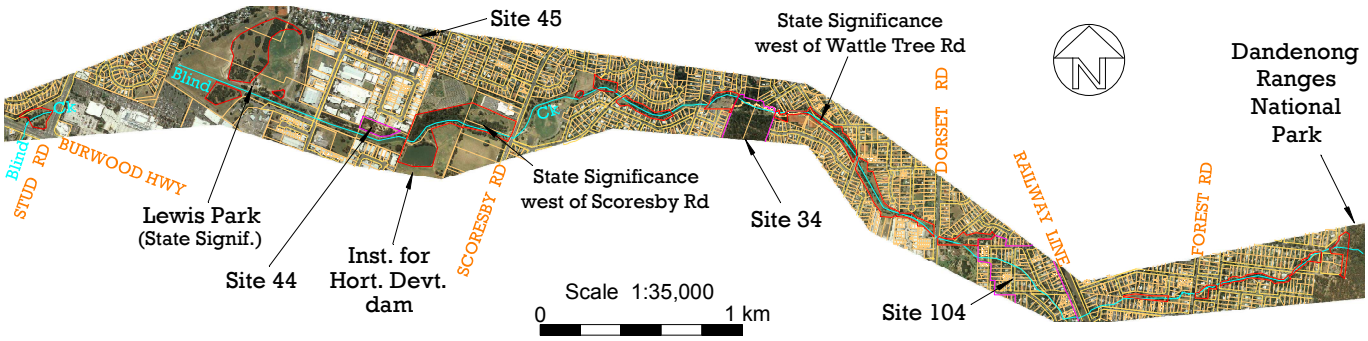
Site 33. Blind Creek Corridor

Disjoint patches or strips of habitat along one of Knox's three main streams. Melway map references 63 J11 to 74 F1.

Site Significance Level: *variously State and Local*

- All the native vegetation in this site belongs to Ecological Vegetation Classes that are regionally Endangered or Vulnerable;
- While most of the native vegetation is fragmented and has little understorey, there are some patches in fair ecological condition and a tiny fraction that is in good ecological condition;
- Blind Ck is a corridor for daily and seasonal movements of birds and insects, which may also transport pollen and plant propagules;
- The site includes a dam at the Knoxfield Institute of Horticultural Development that is visited by a wealth of waterbirds, including threatened species.



Boundaries

The 24·62 ha site comprises the sixteen separate strips and patches shown above, between the Dandenong Ranges National Park and Burwood Hwy.

Land use & tenure: Public land, part of the Knoxfield Institute for Horticultural Development and one private residential lot (Lot 7, LP7735, Cathay St, Ferntree Gully).

Site description

The segments of this site represent stretches of the waterway with native vegetation or open water, excluding sites described separately in their own right. Lewis Park and the segment immediately west of Scoresby Rd are of State significance and could reasonably be treated as separate sites, but all the segments are treated collectively here because they are unified by their collective role in forming a stream corridor for passage of fauna, pollen and plant propagules.

The channel of Blind Creek has been straightened or replaced by a barrel drain or underground pipe in parts of the site, such as through Lewis Park. Other reaches retain the natural channel.

The gradient of the stream is shallow downstream from the railway line crossing. The native vegetation along the natural route of the stream in this section is mainly Swampy Riparian Woodland flanked by Swampy Woodland. The exceptions are:

- A stretch of degraded Riparian Forest just upstream from Scoresby Rd;
- Some patches of Swamp Scrub in Lewis Park (probably regrowth from what was once Swampy Woodland); and
- A strip of Valley Heathy Forest flanking the Swampy Riparian Woodland on a hillside just downstream of Scoresby Rd.

Upstream from the railway line, the stream gradient becomes progressively steeper and the natural channel (where it has not been destroyed) has a progressively deeper channel with less alluvium. The steeper gradient is not compatible with the EVCs found further downstream and there is instead Valley Heathy Forest or Grassy Forest. The location of the transition between these two EVCs is not clearly distinguishable from the substantially modified native vegetation in that vicinity. The Valley Heathy Forest belongs to the Gippsland Plain bioregion and it is Endangered. The Grassy forest belongs to the Highlands Southern Fall bioregion, where it is regionally Vulnerable.

The site's ecological significance would be substantially greater if the native vegetation were not so fragmented or if more understorey was present. Knox City Council has been working to correct these limitations.

In addition to areas of native vegetation, the dam at the Knoxfield Institute of Horticultural Development is included in the site because of the important habitat that it represents for waterbirds moving along the corridor, including threatened species that are periodically observed there. The dam has fringing native vegetation and may have submerged aquatic vegetation, but the latter could not be investigated in this study.

More detailed descriptions of the segments of this site can be found in the 1997 report, *'Vegetation Survey of Linear Reserves – A Management Strategy for Riparian and Flood Plain Vegetation'*, by Reid, Moss and Lorimer for Knox City Council.

Relationship to other land

One of the site's main ecological attributes is the role that it is believed to play in facilitating movement of fauna along the corridor, and the consequent transport of pollen and plant propagules. Such movements are corroborated by the regular observations along the corridor of nomadic or highly mobile waterbirds (e.g. egrets and ducks) and forest birds such as Eastern Rosellas.

The eastern end of the site abuts the Dandenong Ranges National Park, which represents a large reservoir of forest birds and insects that can move westward along the corridor. West of the site, there is a substantial gap before the next patch of habitat along Blind Ck, in Site 59.

Sites 34 (the Blind Ck Billabong site), 44 (Wadhurst Drive Park) and 45 (Roselyn Crescent Reserve) represent ecological stepping-stones along the Blind Creek habitat corridor. The lake at the Lakewood Nature Reserve (Site 43), just over 1km south of the corridor, probably acts as another stepping-stone for waterbirds. Treed residential neighbourhoods along the corridor probably also improve the corridor's ecological function.

Bioregion: Highlands Southern Fall upstream of Forest Rd, Ferntree Gully (approximately) and Gippsland Plain elsewhere.

Habitat types

Open Water (no EVC number or conservation status available): 1·45 ha at the Knoxfield Institute for Horticultural Development.

Riparian Forest (EVC 18, **regionally Vulnerable**) between Scoresby Rd and Site 34 (the Blind Ck Billabong): Estimated to occupy 6,450 m², comprising 500 m² in fair ecological condition (rating C) and 5,950 m² in poor ecological condition (rating D). 20 indigenous plant species recorded.

Swamp Scrub (EVC 53, **regionally Endangered**): The dominant vegetation type at Lewis Park, probably as a disclimax from prior Swampy Woodland vegetation that was cleared many years ago. Total area 24,400 m², comprising 22,900 m² in fair ecological condition (rating C) and 1,500 m² in poor ecological condition (rating D). 20 indigenous plant species recorded.

Swampy Riparian Woodland (EVC 83, **regionally Endangered**) along most of the creek downstream from the railway line: Estimated to occupy 30,800 m², comprising 18,400 m² in fair ecological condition (rating C) and 12,400 m² in poor ecological condition (rating D). 41 indigenous plant species recorded.

Valley Heathy Forest (EVC 127, **regionally Endangered**) next to the Knox Community Garden and Vineyard, as well as upstream from the railway line as far as Moore St: Estimated to occupy 12,600 m², comprising 100 m² in good ecological condition (rating B), 9,800 m² in fair ecological condition (rating C) and 2,700 m² in poor ecological condition (rating D). 39 indigenous plant species recorded collectively between this EVC and Grassy Forest.

Grassy Forest (EVC 128, **regionally Vulnerable**) upstream from Moore St (in the Highlands Southern Fall bioregion): Estimated to occupy 16,600 m², comprising 12,200 m² in fair ecological condition (rating C) and 4,400 m² in poor ecological condition (rating D).

Swampy Woodland (EVC 937, **regionally Endangered**) between Scoresby Rd and Burwood Hwy: Estimated to occupy 11,800 m², comprising 5,300 m² in good ecological condition (rating B), 4,700 m² in fair ecological condition (rating C) and 1,800 m² in poor ecological condition (rating D). 29 indigenous plant species were found.

Plant species

In the following plant list, the column headed 'Risk' indicates the indigenous species' risk of extinction in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; and 'V'=Vulnerable. In addition, *Acacia leprosa* (Dandenong Range variant) is rare nationally, *Austrostipa rudis* subsp. *australis* is rare in Victoria and species with names in bold are rare throughout the Melbourne region.

Risk	Indigenous Species
	Acacia dealbata
V	***Acacia leprosa* (Dandenong Range variant)**
V	*Acacia mearnsii* (wild & planted)
V	*Acacia melanoxylon* (wild & planted)
E	*Acacia stricta*
V	*Acacia verticillata* (wild & planted)
	Acaena novae-zelandiae
	Alisma plantago-aquatica
V	*Allocasuarina littoralis* (wild & planted)
V	*Alternanthera denticulata*
C	*Amyema pendula*
V	*Amyema quandang*
V	***Austrostipa rudis* subsp. *australis***
	Austrostipa rudis subsp. *rudis*
	Billardiera mutabilis
	Bursaria spinosa
	Campylopus clavatus
	Campylopus introflexus
	Carex appressa
	Carex breviculmis
	Cassinia aculeata
	Cassinia arcuata
E	*Cassytha melantha*
E	*Cassytha pubescens*
V	*Clematis aristata*
	Clematis decipiens
V	*Coprosma quadrifida*
E	*Cyathea australis*
	Deyeuxia quadriseta
	Dichelachne rara
	Dianella admixta
V	*Dianella longifolia* s.l.
V	*Dianella tasmanica*
V	*Dianella tasmanica*
	Dichelachne rara
V	*Dillwynia cinerascens*
	Eleocharis sphacelata
	Elymus scaber
V	*Epacris impressa*
	Epilobium hirtigerum
	Eragrostis brownii
V	*Eucalyptus cephalocarpa*
	Eucalyptus goniocalyx
E	*Eucalyptus macrorhyncha* (planted & ?wild)
V	*Eucalyptus melliodora*
V	*Eucalyptus obliqua*
V	*Eucalyptus ovata* (wild & planted)
E	*Eucalyptus radiata* (wild & planted)
E	*Eucalyptus viminalis* (wild & planted)
V	*Euchiton collinus*
V	*Exocarpos cupressiformis*
E	*Gahnia sieberiana*
C	*Geranium* sp. 5
	Gonocarpus tetragynus
	Goodenia ovata (wild & planted)
E	*Gynatrix pulchella*
V	*Hardenbergia violacea*
V	*Helichrysum luteoalbum*
V	*Hemarthria uncinata*
E	*Hypericum gramineum*

Risk	Indigenous Species
	Hypnum cupressiforme
C	***Hypolepis glandulifera***
V	*Isolepis inundata*
	Juncus amabilis
C	***Juncus ?australis***
	Juncus bufonius
	Juncus gregiflorus
	Juncus pallidus
E	*Juncus pauciflorus*
E	*Juncus procerus*
	Juncus sarophorus
E	*Juncus subsecundus*
	Kunzea ericoides spp. agg.
	Lachnagrostis filiformis
	Lepidosperma ?elatius
	Lepidosperma gunnii
V	*Lepidosperma laterale*
	Leptospermum continentale
E	*Leptospermum scoparium* (wild & planted)
E	*Lobelia anceps*
	Lomandra filiformis subsp. *coriacea*
	Lomandra filiformis subsp. *filiformis*
	Lomandra longifolia
V	*Lythrum hyssopifolia*
E	*Melaleuca ericifolia*
C	*Melaleuca parvistaminea* (planted)
E	*Melicytus dentatus*
	Microlaena stipoides
	Microtis parviflora
C	*Microtis unifolia*
V	*Olearia lirata*
V	*Opercularia varia*
	Oxalis exilis/perennans
E	*Ozothamnus ferrugineus*
E	*Ozothamnus ferrugineus*
	Pandorea pandorana
	Persicaria decipiens
E	***Persicaria praetermissa***
C	***Persicaria subsessilis***
E	*Phragmites australis*
V	*Pimelea humilis*
	Poa ensiformis
E	*Poa labillardierei* var. *labillardierei*
	Poa morrisii
E	*Polyscias sambucifolia*
	Poranthera microphylla
V	*Potamogeton ochreatus*
E	*Prostanthera lasianthos*
	Pteridium esculentum
E	***Pteris tremula***
V	*Pultenaea gunnii*
E	*Rubus parvifolius*
E	*Rytidosperma caespitosum*
	Rytidosperma geniculatum
	Rytidosperma laeve
	Rytidosperma linkii var. *fulvum*
	Rytidosperma penicillatum
	Rytidosperma racemosum
E	*Rytidosperma semiannulare*
	Rytidosperma setaceum

Risk	Indigenous Species
	Schoenus apogon
E	*Senecio campylocarpus*
	Senecio glomeratus
	Senecio hispidulus
E	*Senecio minimus*
E	*Senecio prenanthoides*
	Senecio quadridentatus
V	*Solanum laciniatum*
	Tetrarrhena juncea
V	*Thelymitra peniculata*
	Themeda triandra
	Thuidiopsis furfurosa
E	*Typha orientalis*
V	*Veronica gracilis*

Introduced Species

Acacia baileyana	*Cynara cardunculus*	*Pinus radiata*
Acacia decurrens	*Cynodon dactylon*	*Pittosporum undulatum*
Acacia elata	*Cyperus eragrostis*	*Plantago coronopus*
Acacia floribunda	*Dactylis glomerata*	*Plantago lanceolata*
Acacia longifolia subsp. *longifolia*	*Delairea odorata*	*Plantago major*
Acacia prominens	*Echinochloa crus-galli*	*Poa annua*
Acer negundo	*Echium plantagineum*	*Prunella vulgaris*
Agapanthus praecox	*Ehrharta erecta*	*Psoralea pinnata*
Agrostis capillaris	*Ehrharta longiflora*	*Prunus cerasifera*
Aira sp.	*Erigeron karvinskianus*	*Ranunculus repens*
Allium triquetrum	*Festuca arundinacea*	*Raphanus raphanistrum*
Anthoxanthum odoratum	*Foeniculum vulgare*	*Rumex crispus*
Araujia sericifera	*Fraxinus angustifolia*	*Romulea rosea*
Arundo donax	*Fumaria bastardii*	*Rosa rubiginosa*
Aster subulatus	*Fumaria muralis* subsp. *muralis*	*Rubus anglocandicans*
Atriplex prostrata	*Galium aparine*	*Rumex conglomeratus*
Billardiera heterophylla	*Genista linifolia*	*Rumex crispus*
Briza maxima	*Genista monspessulana*	*Salix* sp.
Briza minor	*Hedera helix*	*Solanum mauritianum*
Bromus catharticus	*Helminthotheca echioides*	*Solanum nigrum*
Bromus diandrus	*Holcus lanatus*	*Solanum pseudocapsicum*
Calystegia silvatica	*Hypochoeris radicata*	*Sonchus oleraceus*
Centaurium erythraea	*Ipomoea indica*	*Taraxacum officinale*
Centaurium tenuiflorum	*Juncus* ?*articulatus*	*Tradescantia fluminensis*
Chamaecytisus palmensis	*Leontodon taraxacoides*	*Trifolium dubium*
Chrysanthemoides monilifera monilifera	*Ligustrum lucidum*	*Tragopogon porrifolius*
Cirsium vulgare	*Lolium perenne*	*Tropaeolum majus*
Conyza sumatrensis	*Lonicera japonica*	*Verbena bonariensis* s.l.
Coprosma repens	*Lotus subbiflorus*	*Vicia hirsuta*
Cordyline australis	*Malus pumila*	*Vicia sativa*
Cortaderia selloana	*Modiola caroliniana*	*Vinca major*
Cotoneaster glaucophyllus	*Oxalis incarnata*	*Vulpia bromoides*
Cotoneaster pannosus	*Paraserianthes lophantha*	*Vulpia myuros*
Crassula multicava	*Paspalum dilatatum*	*Watsonia meriana bulbillifera*
Crataegus monogyna	*Paspalum distichum*	*Zantedeschia aethiopica*
Crepis capillaris	*Pennisetum clandestinum*	
Crocosmia × *crocosmiiflora*	*Phalaris aquatica*	

Notes concerning some of the locally threatened plant species

Acacia leprosa (Cinnamon Wattle), Dandenong Range variant – up to about a dozen in the site's eastern extremity. One just west of Scoresby Rd has probably been planted there.

Austrostipa rudis subsp. *australis* – hundreds of plants at Lewis Park each side of the Blind Ck channel, west of the skate park.

Poa labillardierei (Common Tussock-grass) – 5 or 6 tussocks at Lewis Park.

Persicaria subsessilis (Hairy Knotweed) – a small amount in the creek next to the Knoxfield Institute for Horticultural Development.

Gynatrix pulchella (Hemp Bush) – two plants just downstream from Scoresby Rd.

Fauna of special significance

The following observations all appear in the Atlas of Victorian Wildlife.

Knoxfield Institute for Horticultural Development

Vulnerable in Victoria

Australasian Shoveller – observations from 1990 and 1991. Probably only occasional visitors.

Hardhead – multiple observations from 1988 to 1990. The birds move between the dam and Lakewood Nature Reserve (where Hardhead are resident) and may be more common at the dam than records suggest.

Musk Duck – recorded on the basis of a species list up to 1988. This species probably visits infrequently.

Great Egret – there is a 1999 record, but the site is probably visited periodically by Great Egret moving along the Blind Ck corridor.

Near Threatened in Victoria

Pied Cormorant – a 1988 observation.

Lewis Park

Vulnerable in Victoria

Powerful Owl – a record from 1998. The observation may be a vagrant. If not, the bird probably moves along the Blind Ck corridor.

Great Egret – multiple records up to at least 1999. Lewis Park would be only a small part of a Great Egret's range, but perhaps not insignificant in the context of such a bird's usage of habitat corridors.

Fauna habitat features

- There are some very large old trees, particularly Manna Gums (*Eucalyptus viminalis*) with tree hollows, providing what is now a highly depleted kind of habitat for arboreal fauna with specialised needs;
- Patches of scrub provide habitat for small insect-eating birds such as wrens;
- The dam at the Knoxfield Institute for Horticultural Development supports a wealth of waterbirds and acts as an important substitute for the natural wetlands that would once have occurred along Blind Ck;
- The dam and the waters of the creek provide habitat for aquatic invertebrates, including larvae of flying insects.

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 all the segments of this site. Criterion 1.2.6 might also be taken to accord Local significance to each segment because they fit the description, 'Important at local scale - Link between individual remnant habitat blocks or within subcatchment'.

Regionally Threatened Ecological Vegetation Class

According to *'Victoria's Native Vegetation Management – A Framework for Action'* (NRE 2002a), remnant patches of native vegetation belonging to an endangered EVC (including most of the vegetation in this site) have a conservation significance rating of either High or Very High, depending on their ecological condition. In either case, any site containing a remnant patch of such vegetation is of State significance under criterion 3.2.3.

There are three areas of native vegetation in the site that belong to an endangered EVC and clearly meet the definition of a 'remnant patch', thereby qualifying for **State** significance:

- Lewis Park;
- in the segment immediately west of Scoresby Rd; and
- in the segment between Site 34 and Wattle Tree Rd.

It also seems likely that native vegetation upstream from Little Opie St in Ferntree Gully qualifies as a remnant patch. The vegetation there is Grassy Forest (a regionally Vulnerable EVC) and is likely to have a habitat score (Vol.1, Section 2.4.4) of at least 0·3, which would give this segment **State** significance.

It is somewhat doubtful whether the threatened EVCs represented in the remaining segments of the Blind Ck corridor site described meet the definition for a 'remnant patch'.

Rare or Threatened Fauna

Criterion 3.1.2 confers at least **Local** significance on sites that provide habitat for species that are threatened in Victoria. This applies to Lewis Park and the dam at the Knoxfield Institute for Horticultural Development, on the basis of the observations of vulnerable species listed under the heading, 'Fauna of special significance' above. The significance does not rise above Local because neither of these sites would meet the requirement of being among 'the

minimum number of sites estimated to capture 75% of populations in the bioregion, or believed to be a viable population in its own right'.

Rare or Threatened Flora

Acacia leprosa (Dandenong Range variant) is listed as Rare in Victoria. It occurs upstream of Perra St, at the site's eastern extremity. The population is probably viable, taking into account that it is an extension of a large population in the adjoining Dandenong Ranges National Park. It follows that this area is of **State** significance under criterion 3.1.2.

The statewide-rare *Austrostipa rudis* subsp. *australis* has a population of hundreds in this site, thereby representing an important contribution to the taxon's conservation. This taxon is not endemic to Victoria (occurring also in Tasmania). These characteristics give the site **State** significance according to criterion 3.1.2.

Many of the other locally threatened plant species listed above have viable populations, thereby meeting criterion 3.1.5 for a site of **Local** significance.

Threats

- Invasion by the environmental weeds, particularly woody weeds (e.g. Sweet Pittosporum) and grass weeds (e.g. Cocksfoot and Kikuyu Grass). Blackberries would also be a serious problem if they were not subjected to repeated control;
- Loss or decline of plant species that are present in dangerously small numbers, due to inbreeding, poor reproductive success or vulnerability to localised chance events;
- Foxes, which kill wildlife and spread woody weeds and blackberries.

Management issues

- The site's ecological significance would be substantially greater if the native vegetation were not so fragmented or if more understorey was present. Knox City Council has been working to correct this.

Administration matters

- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of the riparian habitat, the threatened EVCs and the other attributes discussed under the heading 'Significance ratings' above;
- Some segments of the site are presently covered by Schedules 1 or 3 of the Vegetation Protection Overlay in the Knox Planning Scheme. This includes the segments of State significance other than the one immediately downstream of Wattle Tree Rd.

Information sources used in this assessment

- The 1997 report, *'Vegetation Survey of Linear Reserves – A Management Strategy for Riparian and Flood Plain Vegetation'*, by Reid, Moss and Lorimer for Knox City Council, along with the supporting field data. This included descriptions of vegetation composition, compilation of lists of indigenous and introduced plant species for each of fifteen parts of the site, incidental fauna observations, and checks for fauna habitat, ecological threats and management issues;
- A reinspection of parts of the site by Dr Lorimer on 12/4/02 to seek any changes from the data listed above and to fill any gaps in the pre-existing data;
- A major study by Dr Lorimer of the section of the corridor between Burwood Hwy and Scoresby Rd, titled *'Blind Creek and Lewis Parklands Ecological Assessment'* . Completed in September 2009, the study included approximately forty hours of fieldwork during October 2008 to March 2009 to thoroughly document the area's natural assets;
- 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.