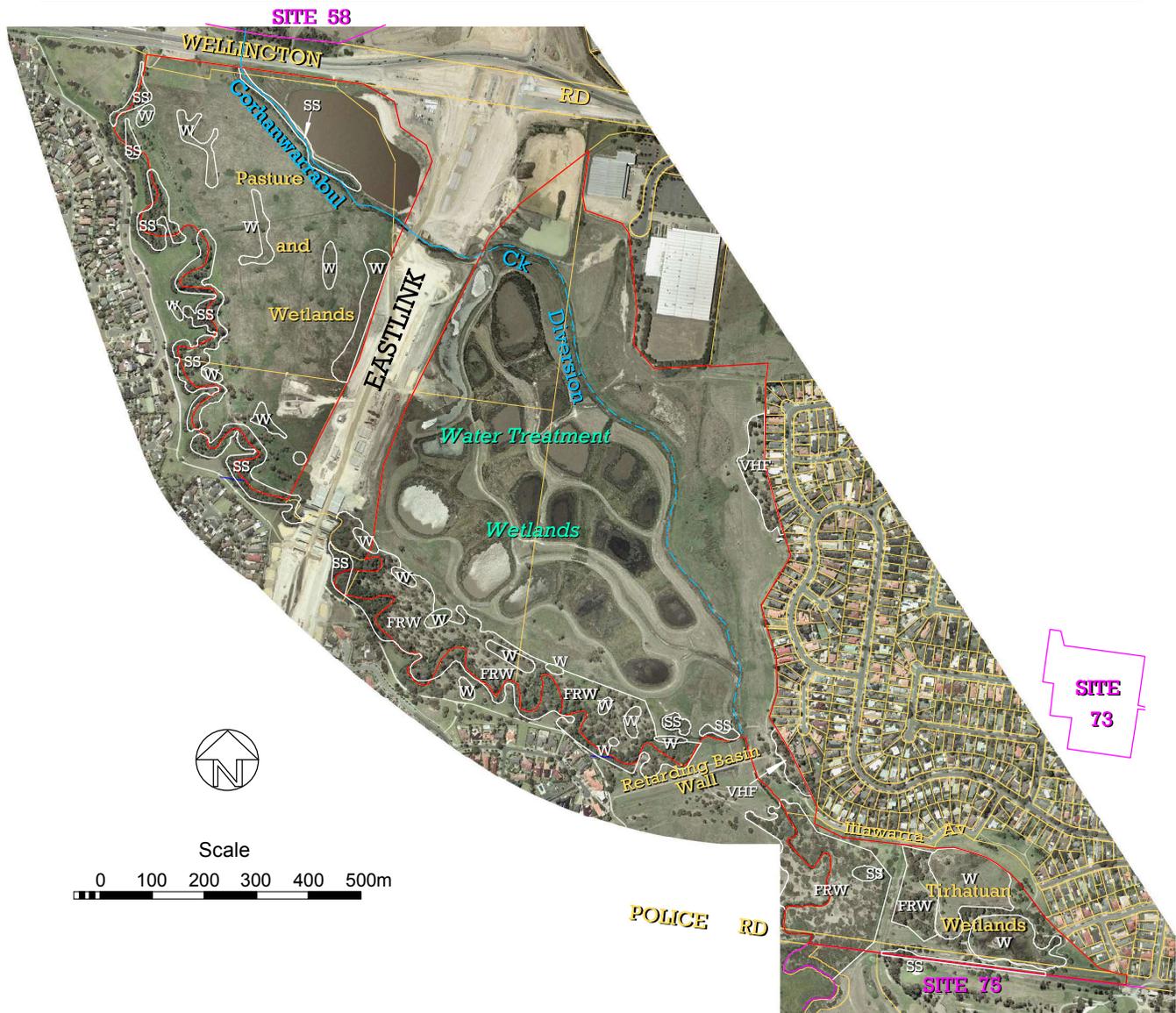


## Site 74. Police Road Retarding Basin and Tirhatuan Wetlands

A section of Dandenong Creek's floodplain with a retarding basin and conservation wetlands. Centred on Melway ref. 81 E5.

### Site Significance Level: *State*

- All the native vegetation belongs to Ecological Vegetation Classes that are regionally endangered;
- Nine species of plants are rare or threatened throughout the Melbourne area, and seven more are threatened in Knox;
- Being on Dandenong Creek, the site is on a major corridor for daily and seasonal movements of fish, birds, frogs and insects (particularly waterbirds, several species of which are threatened);
- The site is known to have supported the nationally vulnerable fish, Dwarf Galaxias, at least until 1985.



Markings in white indicate Ecological Vegetation Classes as follows: FRW=Floodplain Riparian Woodland; SS=Swamp Scrub; VHF=Valley Heathy Forest; and W=Floodplain Wetland Complex. The aerial photograph was taken in February 2007.

### Boundaries

The site has one section each side of the EastLink road, each outlined in red on the aerial photograph above. The western boundary is Dandenong Creek, solely because that is the edge of Knox and hence the limit of this report. The rest of the

boundary mostly coincides with property boundaries, except where it skirts wetlands at the northern edge of Tirhatuan Wetlands Reserve and next to the northbound off-ramp of EastLink. Sections of neighbouring sites are outlined in magenta.

Compared with the first edition of this report, the total area has been reduced from 111.2 ha (in one polygon) to 100.7 ha due to construction of EastLink.

### Note

Due to the effects of very serious drought over recent years, along with the newness of the water treatment wetlands marked on the aerial photograph and the construction of EastLink through the site, the information below may become out of date very quickly. The site's biologically significant features and significance rating should be reassessed as soon as the wetlands and associated fauna have a chance to settle into the new landscape, hopefully without the effects of drought.

**Land use & tenure:** Entirely public land, being floodplain required for drainage purposes. Part is used as pasture, part is used for water treatment wetlands, and Tirhatuan Wetlands is used as a conservation reserve.

### Site description

The site is on the floodplain of Dandenong Ck, with a southward gradient of 0.3% and little variation in elevation either side of 40 m. Dandenong Ck meanders within its natural channel near the western edge of the floodplain, and a drain has been dug close to the eastern edge of the floodplain to divert the waters of Corhanwarrabul Ck during times of low flow. The natural course of Corhanwarrabul Ck meets Dandenong Ck just north of Wellington Rd.

In times of flood, the whole floodplain is inundated and the waters are held back by a retarding basin wall toward the southern end of the site (marked on the aerial photograph).

Upstream (north) of the retarding basin wall, Dandenong Ck is lined by a good cover of native vegetation, mostly fenced to exclude cattle from adjacent pasture. The naturally dominant Manna Gums (*Eucalyptus viminalis*) have been removed from part of this corridor, creating thickets of Swamp Paperbark (*Melaleuca ericifolia*). This represents a transition from the naturally occurring Floodplain Riparian Woodland to an artificial disclimax\* of Swamp Scrub. Both of these vegetation types are listed as regionally endangered, although a disclimax community is not as ecologically significant as a naturally occurring one.

Some native trees have been planted along this corridor, including species such as River Red Gum (*Eucalyptus camaldulensis*) that do not occur naturally in this site.

The pasture areas in the north of the site have thinly scattered Swamp Gums (*Eucalyptus ovata*) that serve as perching sites for birds of prey, and possibly as roosting sites by native bats.

There are patches of seasonal wetlands within the pasture. There are also billabongs beside Dandenong Ck that extend into the pasture, but that are now mostly fenced to exclude cattle. The billabongs and seasonal wetlands have predominantly native vegetation (at least, when they have not dried out from drought), belonging to the regionally endangered Ecological Vegetation Class, Floodplain Wetland Complex.

A large system of artificial wetlands was excavated for water treatment in 2002, as marked on the aerial photograph. This has the potential to provide important breeding and foraging habitat for significant waterbirds. The excavations caused the destruction of some Swamp Scrub and wetland habitat, including locally rare plants and potential habitat for the nationally vulnerable fish, Dwarf Galaxias. However, the site has suffered major ecological upset before, when it was originally cleared and dissected with agricultural drains, which suggests that there are reasonable prospects for it to recover from the 2002 works.

On the downstream (southern) side of the retarding basin wall, Dandenong Ck flows through more Floodplain Riparian Woodland and past the Tirhatuan Wetlands Conservation Reserve. The reserve has two shallow floodplain depressions supporting high quality wetland vegetation.

Drains have been dug through the area, and these support native vegetation dominated by Swamp Paperbark. The drain along the site's southern boundary is also lined with many specimens of Woolly Tea-tree (*Leptospermum lanigerum*).

The slope behind houses near the Illawarra Avenue entrance to the Police Road Retarding Basin supports some remnant trees and understorey vegetation of the endangered Valley Heathy Forest.

### Relationship to other land

This site is separated from the Dandenong Valley Parklands (Site 58) only by Wellington Rd. Downstream, there is a continuum of biologically significant sites including Tirhatuan Park, Tirhatuan Lakes Golf Course (Site 75) and the Dandenong Police Paddocks Reserve (Site 76). Aquatic fauna such as fish and invertebrates can move freely between these

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\* A disclimax is a stable ecological state that differs from the natural stable state due to disturbance, usually by humans.

sites. The same is true of birds such as waterbirds and birds of prey that move seasonally or nomadically along the corridor. The movements of some birds may be disrupted by the construction of EastLink.

The industrial and residential estates that flank the sites are not conducive to fauna movements laterally from the site, except perhaps that the more treed neighbourhood along Illawarra Av provides some additional habitat for less sensitive wildlife. However, birds such as Eastern Rosellas can be seen daily moving between the site and nearby Starlight Reserve (Site 73), whose location is marked on the aerial photograph.

**Bioregion:** Gippsland Plain

### Habitat types

**Perennial Stream** (No EVC number available). Includes aquatic species such as *Potamogeton crispus*, *P. ochreatus* and *Triglochin procerum*.

**Floodplain Wetland Complex** (EVC 172, **regionally Endangered**) in numerous patches: Estimated as 7.0 ha in total area (excluding two small wetlands west of Dandenong Ck), comprising 3.2 ha in excellent ecological condition (rating A), 1.7 ha in good ecological condition (rating B) and 2.1 ha in fair ecological condition (rating C). 31 indigenous plant species were found.

Trees, shrubs, vines and ferns: Some *Melaleuca ericifolia* encroaches from the surrounding vegetation and some *Cassinia arcuata* has established at the edge of one wetland.

Aquatic and semi-aquatic flora: Different areas are dominated by *Eleocharis sphacelata*, *Eleocharis acuta*, *Phragmites australis*, or various species of *Typha*, *Juncus*, *Carex* or *Persicaria*. *Myriophyllum crispatum* and *Alisma plantago-aquatica* are also dense in some areas.

**Swamp Scrub** (EVC 53, **regionally Endangered** but in this case a disclimax community): Estimated as 5.3 ha in total area (including the western bank of Dandenong Ck), comprising 0.5 ha in good ecological condition (rating B), 4.3 ha in fair ecological condition (rating C) and 0.5 ha in poor ecological condition (rating D). 40 indigenous plant species were found.

Canopy: Dominated by *Melaleuca ericifolia* to 8 m tall. There are also emergent *Eucalyptus ovata* and *Acacia melanoxylon*, and some *Rapanea howittiana*.

Shrubs: Variable in density, comprising *Coprosma quadrifida*, *Leptospermum lanigerum*, *Ozothamnus ferrugineus* and small numbers of *Gynatrix pulchella*, *Melicytus dentatus*, *Pomaderris racemosa* and *Solanum laciniatum*.

Vines: Indigenous vines absent, but the weed Japanese Honeysuckle is a serious problem.

Ferns: Absent.

Ground flora: There are patches of *Phragmites australis* and other patches of low-growing wetland plants such as *Triglochin striatum* and species of *Juncus* and *Persicaria*.

**Floodplain Riparian Woodland** (EVC 56, **regionally Endangered**): Estimated as 10.5 ha in total area, comprising 0.8 ha in good ecological condition (rating B), 5.1 ha in fair ecological condition (rating C) and 4.6 ha in poor ecological condition (rating D). 38 indigenous plant species were found. Note that wetlands are often incorporated within this EVC for coarse-scale mapping, but are here segregated into Floodplain Wetland Complex.

Dominant canopy trees: *Eucalyptus viminalis* with smaller numbers of *E. ovata*. Some trees would be over 100 years old.

Dominant lower trees: *Melaleuca ericifolia* is abundant. *Rapanea howittiana* is less abundant, but still with substantial numbers. *Acacia melanoxylon* and *A. dealbata* are less numerous.

Shrubs: Dominated by *Melicytus dentatus*, *Bursaria spinosa* and *Coprosma quadrifida*. The ecological indicator species, *Gynatrix pulchella*, is present.

Vines: The parasitic twiner, *Cassytha melantha*, is present.

Ferns: Absent.

Ground flora: Heavily invaded by weeds. The dominant indigenous species are *Carex appressa*, *Poa ensiformis* and *Lomandra longifolia*.

**Valley Heathy Forest** (EVC 127, **Endangered**): Estimated to cover 0.3 ha, excluding areas with negligible native understorey. The more northerly of the two mapped patches is excluded from this total because it has negligible understorey. All in poor ecological condition (rating D). 13 indigenous plant species were found.

Canopy trees: Dominated by *Eucalyptus cephalocarpa* with smaller numbers of *E. radiata*.

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

Shrubs: Small numbers of *Bursaria spinosa* and *Acacia paradoxa*.

Vines: The parasitic twiner, *Cassytha melantha*, is present.

Ferns: Absent.

Ground flora: Densely grassy and dominated by *Microlaena stipoides*. Also with plenty of *Dichondra repens*. The characteristic species, *Dianella longifolia*, is present but scarce.

### Plant species

The following plant species were observed by Mr Rik Brown and the author in June 2002. Additional species would no doubt be detectable in other seasons. The column headed 'Risk' indicates the indigenous species' risk of extinction in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; and 'V'=Vulnerable. In addition, the species with names in bold are rare throughout the Melbourne region.

Risk	Indigenous Species	Risk	Indigenous Species
	<i>Acacia dealbata</i>		<i>Kunzea ericoides</i> spp. agg.
V	<i>Acacia mearnsii</i>	E	<i>Lemna disperma</i>
V	<i>Acacia melanoxydon</i>		<i>Leptospermum continentale</i>
	<i>Acacia paradoxa</i>	E	<i>Leptospermum lanigerum</i>
	<i>Acaena novae-zelandiae</i>	E	<i>Leptospermum scoparium</i>
	<i>Alisma plantago-aquatica</i>	E	<i>Lobelia anceps</i>
V	<i>Alternanthera denticulata</i>		<i>Lomandra filiformis</i> subsp. <i>coriacea</i>
	<i>Bursaria spinosa</i>		<i>Lomandra longifolia</i>
C	<b><i>Calystegia sepium</i></b>	C	<b><i>Lycopus australis</i></b>
	<i>Carex appressa</i>	E	<i>Melaleuca ericifolia</i>
E	<b><i>Carex fascicularis</i></b>	E	<i>Meliclytus dentatus</i>
E	<b><i>Carex gaudichaudiana</i></b>		<i>Microlaena stipoides</i>
	<i>Cassinia arcuata</i>	C	<b><i>Myriophyllum crispatum</i></b>
E	<i>Cassytha melantha</i>	C	<b><i>Myrsine howittiana</i></b>
E	<i>Centella cordifolia</i>	E	<i>Ozothamnus ferrugineus</i>
V	<i>Coprosma quadrifida</i>		<i>Persicaria decipiens</i>
E	<i>Crassula helmsii</i>	E	<i>Persicaria hydropiper</i>
V	<i>Dianella longifolia</i> s.l.	E	<b><i>Persicaria praetermissa</i></b>
	<i>Dichondra repens</i>	C	<b><i>Persicaria subsessilis</i></b>
V	<i>Eleocharis acuta</i>	E	<i>Phragmites australis</i>
	<i>Eleocharis sphacelata</i>		<i>Poa ensiformis</i>
	<i>Epilobium hirtigerum</i>		<i>Poa morrisii</i>
V	<i>Eucalyptus cephalocarpa</i>	E	<i>Poa tenera</i>
V	<i>Eucalyptus ovata</i>	C	<b><i>Pomaderris racemosa</i></b>
E	<i>Eucalyptus radiata</i>	V	<b><i>Potamogeton crispus</i></b>
E	<i>Eucalyptus viminalis</i> subsp. <i>viminalis</i>	V	<i>Potamogeton ochreateus</i>
V	<i>Exocarpos cupressiformis</i>	C	<b><i>Potamogeton tricarinatus</i> s.l.</b>
	<i>Gahnia radula</i>	C	<b><i>Ranunculus inundatus</i></b>
C	<i>Geranium</i> sp. 5	E	<i>Rubus parvifolius</i>
	<i>Goodenia ovata</i>		<i>Rytidosperma penicillatum</i>
E	<i>Gynatrix pulchella</i>	E	<i>Senecio minimus</i>
V	<i>Hemarthria uncinata</i>	V	<i>Solanum laciniatum</i>
	<i>Juncus amabilis</i>	C	<i>Triglochin procera</i>
	<i>Juncus bufonius</i>	E	<i>Typha domingensis</i>
E	<i>Juncus procerus</i>	E	<i>Typha orientalis</i>
	<i>Juncus sarophorus</i>	E	<i>Veronica plebeia</i>
	<i>Juncus</i> sp.		

### Introduced Species

<i>Acacia longifolia longifolia</i>	<i>Conyza sumatrensis</i>	<i>Galium aparine</i>	<i>Phalaris aquatica</i>
<i>Acanthus mollis</i>	<i>Cordyline australis</i>	<i>Genista monspessulana</i>	<i>Pittosporum undulatum</i>
<i>Agapanthus praecox</i>	<i>Crataegus monogyna</i>	<i>Hedera helix</i>	<i>Plantago lanceolata</i>
<i>Allium triquetrum</i>	<i>Cynodon dactylon</i>	<i>Helminthotheca echioides</i>	<i>Plantago major</i>
<i>Arctotheca calendula</i>	<i>Cyperus eragrostis</i>	<i>Hypochoeris radicata</i>	<i>Prunella vulgaris</i>
<i>Aster subulatus</i>	<i>Dactylis glomerata</i>	<i>Juncus articulatus</i>	<i>Prunus persica</i>
<i>Bellis perennis</i>	<i>Daucus carota</i>	<i>Lonicera japonica</i>	<i>Ranunculus repens</i>
<i>Briza maxima</i>	<i>Delairea odorata</i>	<i>Oxalis corniculata</i>	<i>Raphanus raphanistrum</i>
<i>Bromus catharticus</i>	<i>Euphorbia peplus</i>	<i>Oxalis purpurea</i>	<i>Romulea rosea</i>
<i>Centaurium tenuiflorum</i>	<i>Festuca arundinacea</i>	<i>Paspalum dilatatum</i>	<i>Rosa rubiginosa</i>
<i>Cirsium vulgare</i>	<i>Foeniculum vulgare</i>	<i>Paspalum distichum</i>	<i>Rubus anglocandicans</i>
<i>Conium maculatum</i>	<i>Fraxinus angustifolia</i>	<i>Pennisetum clandestinum</i>	<i>Rumex crispus</i>

<i>Salix babylonica</i> s.l.	<i>Solanum nigrum</i>	<i>Tradescantia fluminensis</i>	<i>Vicia sativa</i>
<i>Salix fragilis</i>	<i>Solanum pseudocapsicum</i>	<i>Trifolium dubium</i>	<i>Viola odorata</i>
<i>Salix × rubens</i>	<i>Sonchus asper</i> s.l.	<i>Trifolium repens</i>	<i>Watsonia meriana</i>
<i>Solanum mauritianum</i>	<i>Sonchus oleraceus</i>	<i>Ulex europaeus</i>	<i>Zantedeschia aethiopica</i>

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

*Calystegia sepium* (Large Bindweed). Scattered along Dandenong Creek. Only significant if it can be shown not to be the weed, *Calystegia silvatica*, or a hybrid between the two (which is the usual case in the Melbourne area);

*Carex fascicularis* (Tassel Sedge). Scattered around wetlands in the retarding basin and Tirhatuan Wetlands.

*Carex gaudichaudiana* (Fen Sedge). There were hundreds or thousands of square metres of this species prior to the construction of the water treatment wetland, and it is likely that at least some were unaffected.

*Crassula helmsii* (Swamp Crassula). Scattered around wetlands near Dandenong Creek in the retarding basin.

*Gynatrix pulchella* (Hemp Bush). A few found along Dandenong Ck, one beside Corhanwarrabul Ck and one near Tirhatuan Wetlands.

*Lemna disperma* (Common Duckweed). Fairly abundant in the waterways when inspected in 2002.

*Leptospermum lanigerum* (Woolly Tea-tree). Substantial numbers along a drainage channel along the site's southern boundary.

*Lycopus australis* (Australian Gipsywort). At least one was destroyed by construction of the water treatment wetlands. None were seen elsewhere in the site.

*Melicytus dentatus* (Tree Violet). Abundant along Dandenong Ck, and a single specimen was found beside Corhanwarrabul Ck in June 2002.

*Myriophyllum crispatum* (Upright Milfoil). Abundant in wetlands within the retarding basin and at Tirhatuan Wetlands.

*Persicaria praetermissa* (Spotted Knotweed). Thousands of square metres dominated by this species were destroyed during wetland destruction in 2002, but it is still widespread in other parts of the retarding basin.

*Persicaria subsessilis* (Hairy Knotweed). At least a few dozens were destroyed by construction of the water treatment wetlands. None were seen elsewhere in the site.

*Pomaderris racemosa* (Cluster Pomaderris). Several were found along Dandenong Ck south of the retarding basin, and beside the drain along the site's southern boundary.

*Potamogeton crispus* (Curly Pondweed). Scattered along Corhanwarrabul Ck and common in Dandenong Ck.

*Potamogeton tricarlinatus* (Floating Pondweed). Some patches were found in the Tirhatuan Wetlands (perhaps planted).

*Ranunculus inundatus* (River Buttercup). Several patches were found in the Tirhatuan Wetlands (perhaps planted).

*Rapanea howittiana* (Muttonwood). A few hundred plants were found along Dandenong Ck, including a large number of mature trees. This is the only stronghold of the species in Knox or the southeastern suburbs.

*Veronica plebeia* (Trailing Speedwell). Scattered beside Dandenong Ck south of the retarding basin.

#### Fauna of special significance

##### Vulnerable Nationally

Dwarf Galaxias. 20 were found at the Police Rd bridge on 15/10/85 and others were found close to that location on 12/11/85. Some were also found in a pond just outside the site on Corhanwarrabul Ck in December 1986. The population in this catchment has crashed since those recordings.

##### Vulnerable in Victoria

Australasian Shoveller. Multiple records from 1999 appear in the Atlas of Victorian Wildlife.

Great Egret. Frequently seen (including in this study), mostly as solitary individuals.

Royal Spoonbill. One was seen at Tirhatuan Wetlands and there are multiple, recent records in the Atlas of Victorian Wildlife.

Baillon's Crake. A 1999 record appears in the Atlas of Victorian Wildlife.

##### Near Threatened in Victoria

Pied Cormorant. 1999 records from the retarding basin and the wetlands appear in the Atlas of Victorian Wildlife.

Latham's (or Japanese) Snipe. Seen in c.1998, as reported in the Environment Effects Statement for the Scoresby Transport Corridor.

Nankeen Night Heron. Records from 1999 appear in the Atlas of Victorian Wildlife, and the Environment Effects Statement for the Scoresby Transport Corridor indicates that they could be affected by the construction of the EastLink bridge across Dandenong Ck.

##### Rare in the Melbourne Area

Buff-banded Rail. One bird was flushed from a wetland in the retarding basin.

Pouched Lamprey. Caught and released near Police Rd in 1985, but unlikely to be extant.

##### Uncommon in the Melbourne Area

Whistling Kite. One bird was seen flying over the floodplain.

Australian Hobby. One bird was observed close to Dandenong Ck, south of the retarding basin.

Musk Lorikeet. A flock was seen in eucalypts.

### Fauna habitat features

- The stream is used by ducks, fish and aquatic invertebrates, and probably Water Rats;
- The wetlands are used extensively by frogs, waterbirds, aquatic invertebrates (including many yabbies) and probably snakes;
- The wetlands were occupied (at least until 1985) by Dwarf Galaxias;
- Trees and shrubs provide some habitat for native birds, bats, possums and insects. In particular, the trees downstream of the retarding basin appear to provide a major roosting location for waterbirds (including ibis) and some trees contain stick nests likely to be made by birds of prey;
- Fragmentation of the native vegetation is to some degree offset by the diversity of habitat (scrubby to open, aquatic to dry), which is beneficial to some native fauna.

### 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 this site.

The site is also a component of the Dandenong Creek habitat corridor. The corridor is important at a Regional scale. It follows from criterion 1.2.6 that the site is of **Regional** significance.

#### *Endangered Vegetation Types*

All of the EVCs present are regionally Endangered. It follows from Appendix 3 of *Victoria's Native Vegetation Management - a Framework for Action* (NRE 2002a) that the site's native vegetation is of at least High conservation significance. This, in turn, gives the site **State** significance under criterion 3.2.3 of Amos (2004).

#### *Rare or Threatened Flora*

Many 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 nationally vulnerable Dwarf Galaxias was found in a pond in the site's south in 1985. More recent surveys suggest that the species has declined drastically in numbers in the catchment. It is not certain whether this species will recover from this decline, but it may conceivably do so after the current period of many years of drought.

Criterion 3.1 regards all known habitat of nationally listed threatened fauna such as Dwarf Galaxias as being of at least State significance. In this case, however, the significance is treated here as **Regional** in view of the time since the last observation of Dwarf Galaxias and the real possibility that the fish will never again use the site for habitat.

The Great Egret and Royal Spoonbill are listed as threatened in Victoria and this site has a substantial area of suitable habitat for them. The frequency of recorded observations in this site and elsewhere on the floodplain suggest that these birds are part of a wider ranging, viable population. These conditions represent **Regional** significance under criterion 3.1.2.

### Threats

- Invasion by environmental weeds, of which the ones rated 'Very Serious' or 'Serious' are:
  - Very Serious: Drain Flat-sedge (*Cyperus eragrostis*), Creeping Buttercup (*Ranunculus repens*), Blackberry (*Rubus discolor*), Madeira Winter-cherry (*Solanum pseudocapsicum*), Wandering Jew (*Tradescantia albiflora*), Gorse (*Ulex europaeus*);
  - Serious: Angled Onion (*Allium triquetrum*), Hawthorn (*Crataegus monogyna*), Jointed Rush (*Juncus articulatus*), Japanese Honeysuckle (*Lonicera japonica*), Paspalum (*Paspalum dilatatum*), Kikuyu (*Pennisetum clandestinum*), Toowoomba Canary-grass (*Phalaris aquatica*), Curled Dock (*Rumex crispus*), White Crack Willow (*Salix × rubens*), Bulbil Watsonia (*Watsonia meriana* var. *bulbillifera*);
- Disturbance to wildlife and their habitat by recreational uses of the land and dogs;
- Slashing of some areas, which is preventing regeneration of indigenous trees and shrubs;
- Grazing, causing degradation of wetland habitat, damage to remnant trees and suppression of natural regeneration of flora;

- Fragmentation of habitat connectivity associated with depletion of indigenous trees along some sections of the creek, particularly close to Wellington Road;
- Dumping of garden waste along Dandenong Ck, resulting in the introduction and spread of weeds (mainly on the western side, not in Knox);
- European Carp, which have already caused serious ecological damage in nearby Jells Lake and could do so in this site if they were to arrive there;

### Management issues

- Removal of silt from the water treatment wetlands should not occur during breeding seasons for waterbirds, and only after referral to the Federal Minister for Environment (see 'Administration matters' below). A botanist should check for rare plants that may need to be avoided or transplanted;
- A management plan for the Police Road Retarding Basin and adjoining Tirhatuan Wetlands Conservation Reserve has been in preparation concurrently with this Sites of Biological Significance study;
- Continuation of recent weed control work should be a high priority;
- More wetlands within the pasture should be fenced to exclude cattle;
- Slashing should be reduced or cease in areas with native understorey in the southern part of the site;
- Revegetation should be used to fill gaps in the corridor of vegetation along Dandenong Ck, particularly near Wellington Rd;
- Populations of waterbirds, frogs and fish should be monitored as the new water treatment wetlands become vegetated;
- Signs might help to discourage rubbish dumping, mainly on the western side of Dandenong Ck (not in Knox).

### Administration matters

- Because the site is known to have supported the nationally listed Dwarf Galaxias until at least the mid 1980s, any proposed works in future should be referred to the Federal Minister for Environment under the *Environment Protection and Biodiversity Conservation Act 1999*. This includes road construction, removal of silt from wetlands or any other actions that might conceivably affect Dwarf Galaxias;
- Dogs should be banned from the site because of the importance of its wildlife;
- Recreational facilities should not be constructed near the areas of native vegetation or wetlands, except perhaps for environmentally benign facilities such as a bird hide;
- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of the riparian location and the matters considered under the heading, 'Significance ratings';
- Strips of riparian vegetation within this site are presently covered by Vegetation Protection Overlay Schedule 1 of the Knox Planning Scheme, based on their recognition by Water Ecoscience (1998) as their Sites 81 and 278;
- The Planning Scheme zoning of the EastLink corridor is Road Zone Category 1 (RDZ1). The unused reservation for Police Rd, and an embankment below the back fences of houses overlooking the retarding basin wall, are zoned Residential 1 Zone (R1Z). A section of land from near the retarding basin wall to the site's southwestern corner is zoned Public Use Zone - Other Public Use (PUZ7). The rest of the site is zoned Public Use Zone - Service and Utility (PUZ1).

### Information sources used in this assessment

- An initial survey of the Corhanwarrabul Ck diversion and retarding basin sections of the site for the present study by Dr Lorimer on 13th January 2002, discovering bulldozers moving into areas of Swamp Scrub and seasonal wetlands. The work included:
  - Compilation of lists of indigenous and introduced plants within each of four vegetation types in the vicinity of the new water treatment wetlands;
  - Mapping and documentation of rare species populations in that area;
  - Checks for fauna habitat (including Dwarf Galaxias), ecological threats and management issues;
- Site surveys undertaken during this study by Mr Rik Brown on 5/6/02, 10/6/02 and 15/7/02, following this project's standard procedures discussed in Section 2.4 of Volume 1. This included:
  - Compilation of lists of indigenous and introduced plants within each of ten sections the site;
  - A description of each vegetation type's structural and floristic composition;
  - Mapping and documentation of rare species populations and the ecological condition of the vegetation;
  - Incidental fauna observations;
  - Checks for fauna habitat, ecological threats and management issues;
- Discussions in 2003 about Dwarf Galaxias in the catchment with Mr John McGuckin of Streamline Research Pty Ltd;
- A report, *'Assessment of Native Vegetation on the Mitcham to Frankston Freeway Alignment in Knox'*, by Dr Lorimer in July 2003 for Knox City Council;

- The report, '*Indigenous Reserve Corridors Conservation & Management Plan*' by Quin, D.G., Carr, G.W., Flann, C.M. and Silveira, C.E. (2000) for City of Monash, noting that the vegetation classification is inaccurate and fauna records are not all of scientific reliability;
- A 1938 specimen of *Pomaderris racemosa* collected by T.S. Hart, now kept at the National Herbarium of Victoria (specimen MEL 55583);
- The Atlas of Victorian Wildlife;
- Aerial photography from February 2001, April 2003 and February 2008;
- 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.