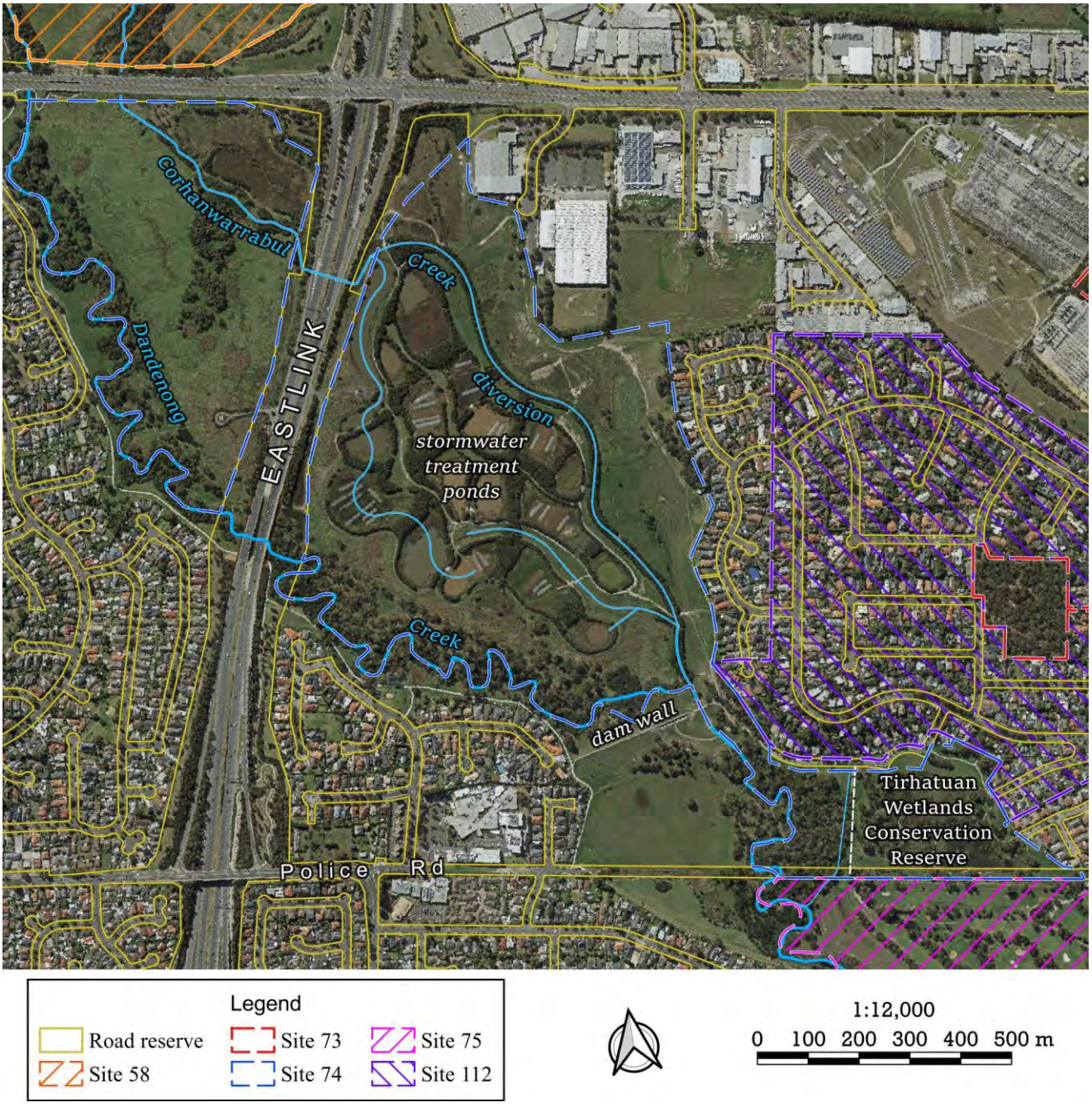
Site 74. Police Road Retarding Basin and Tirhatuan Wetlands

A section of Dandenong Creek's floodplain with a retarding basin and conservation wetlands.

Summary of significant features:

- State significance: patches of Floodplain Riparian Woodland and Floodplain Wetland Complex, which are regionally-endangered vegetation types;
- State significance: habitat known to have supported the nationally-endangered Dwarf Galaxias fish up to the 1980s, and into which captive Dwarf Galaxias were released in 2017;
- State significance: a large population of Latham's Snipe, which is Vulnerable under Commonwealth law;
- Regionally significant: habitat of the Eastern Great Egret, which is Vulnerable under Victorian law;
- Regionally significant: riparian habitat on the Dandenong Creek habitat corridor;
- Locally significant: viable populations of many locally-threatened plant species.



Boundaries

The site has a section each side of EastLink, as outlined with blue dashes 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 coincides with property boundaries except next to the northbound off-ramp of EastLink and beside Illawarra Avenue, where it follows a fence.

Compared with the first edition of this report, the second (2010) edition reduced the total area from 111.2 ha (in one polygon) to 100.7 ha (split in two) due to construction of EastLink. This edition has increased the area to 101.8 ha in response to revegetation at Ashbrooke Reserve, east of Illawarra Avenue.

Land use & tenure: Entirely public land, variously used for flood management, drainage, stormwater treatment ponds, recreation or nature conservation.

Site description

Almost the entire 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. Prior to the diversion, the natural course of Corhanwarrabul Ck met Dandenong Ck just north of Wellington Rd.

The whole floodplain is sometimes inundated. Floodwaters are retarded by the dam wall marked on the aerial photograph toward the southern end of the site.

The two small parts of the site not on the floodplain are on the eastern edge, where there are slopes with two tiny areas that have vestiges of the regionally-endangered Ecological Vegetation Class (EVC), Valley Heathy Forest. One of these areas is east of the dam wall and the other is east of the middle of the stormwater treatment system.

Within the site, Dandenong Ck is mostly lined with native vegetation except around the dam wall and in some small gaps upstream (west) of EastLink. The naturally-dominant Manna Gums (*Eucalyptus viminalis*) have been cleared 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 EVCs are listed as regionally endangered, although a disclimax community is not as ecologically significant as a naturally occurring one.

The area upstream of EastLink also contains a matrix of seasonal wetlands, disused pasture and revegetation. The wetlands are dominated by indigenous plant species such as Broom Rush (*Juncus sarophorus*), Common Reed (*Phragmites australis*), Common Spike-rush (*Eleocharis acuta*) and Slender Knotweed (*Persicaria decipiens*). The wetlands fall into the regionally-endangered EVC, Floodplain Wetland Complex, and they are used by Latham's Snipe – a vulnerable species. The disused pasture has few indigenous plants but it is foraged by native birds such as White-necked Heron, ibis and Golden-headed Cisticola. Birds of prey such as Black-shouldered Kites hunt in the pasture.

Between EastLink and the dam wall, most of the site is occupied by a system of stormwater treatment ponds that replaced wetlands and disused pasture in 2002. The ponds attract many waterbirds, resulting in regular sightings of species listed as Vulnerable under state or federal legislation. The pale stripes across the ponds that can be seen on the aerial photograph above are nets erected to protect plants from waterbirds.

The most biologically-significant part of the site is downstream of the dam wall; specifically: (a) the largest and shallowest wetland in Tirhatuan Wetlands Conservation Reserve; and (b) the large expanse of Floodplain Riparian Woodland seen on the aerial photograph above as tree cover west of the Conservation Reserve. The wetland is partly artificial due to excavations and planting; Aerial photographs as far back as 1946 show that wetland vegetation persisted through the land's pastoral era. There has been so much planting in the wetland that it is unclear whether some of the rarer species (e.g. Austral Lady's Tresses, *Spiranthes australis*) are natural or not. The vulnerable bird species, Eastern Great Egret and Latham's Snipe, are regularly recorded at the wetlands in the Conservation Reserve.

The Floodplain Riparian Woodland west of the Conservation Reserve is in fairly good ecological condition. It contains large populations of Muttonwood (*Myrsine howittiana*), which is rare elsewhere in and near Knox. The

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

Muttonwood is present naturally as well as from planting. Small birds such as wrens are fairly abundant in the woodland.

A drain along the road reservation for Police Rd (at the site's southern edge) is notable for its population of dozens of Woolly Tea-tree (*Leptospermum lanigerum*) – more than half Knox's entire known population.

Revegetation and amenity plantings have occurred within this site since the 1970s. Older plantings were mostly not indigenous species, e.g. River Red Gum (*Eucalyptus camaldulensis*). Even recent plantings have sometimes included species that were mistaken for indigenous species, e.g. *Ficinia nodosa* (Knobby Club-rush), *Schoenoplectus tabernaemontani* (River Club-rush) and *Melaleuca viminea*.

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, Rowville 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 sites. The same is true of birds such as waterbirds and birds of prey that move seasonally or nomadically along the corridor.

The industrial and residential estates that flank Site 74 are not conducive to lateral faunal movements, 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 above.

Bioregion: Gippsland Plain

Habitat types

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

Floodplain Wetland Complex (EVC 172, **regionally Endangered**) in numerous patches: Estimated as 7.0 ha in total area.

Trees, shrubs, vines and ferns: Some *Melaleuca ericifolia* encroaches from the surrounding vegetation.

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 4 ha in total area.

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

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

Vines: Indigenous vines are absent but the introduced Japanese Honeysuckle (*Lonicera japonica*) is abundant.

Ferns: Absent.

Groundcover: There are some 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 12 ha in total area. Note that wetlands are often incorporated within this EVC for coarse-scale mapping, but are here segregated into Floodplain Wetland Complex.

Canopy trees: Dominated by *Eucalyptus viminalis* subsp. *viminalis*, with small numbers of *E. ovata*.

Sub-canopy trees: *Melaleuca ericifolia* and *Myrsine howittiana* are abundant. *Acacia mearnsii, A. melanoxylon* and *A. dealbata* are less numerous.

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

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

Ferns: Absent.

Groundcover: Dominated by environmental weeds. The most abundant indigenous species are *Carex appressa, Poa ensiformis* and *Lomandra longifolia*.

Valley Heathy Forest (EVC 127, **Endangered**): Estimated to cover 0.3 ha, all in poor ecological condition (rating D).

Canopy trees: Small numbers of *Eucalyptus cephalocarpa* and *E. radiata* among planted non-indigenous trees.

Sub-canopy trees: One or two *Acacia melanoxylon* and *Exocarpos cupressiformis*; formerly with a few *Acacia mearnsii* and *A. dealbata*.

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

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

Ferns: Absent.

Groundcover: Densely grassy and dominated by *Microlaena stipoides* and *Rytidosperma racemosum*; also with plenty of *Dichondra repens*. The characteristic species, *Dianella longifolia*, was present in 2002 but scarce.

Plant species

The following wild plant species have been recorded in the site. Those indigenous species not seen in this study's inexhaustive site inspection in September 2024 are indicated by superscripts showing the year of the most recent record. 2002 refers to the survey by Rik Brown and Dr Lorimer for the first edition of this report; other years refer to various information sources. The column headed 'Risk' indicates the indigenous species' risk of dying out in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; 'V'=Vulnerable; and 'N'=Near threatened. In addition, the species with names in bold are rare throughout the Melbourne region.

Risk	Wild indigenous species
	Acacia dealbata, Silver Wattle
V	*Acacia mearnsii*, Black Wattle
V	*Acacia melanoxylon*, Blackwood
	Acacia paradoxa, Hedge Wattle [2002]
V	*Acacia verticillata*, Prickly Moses (probably all planted)
	Acaena novae-zelandiae, Bidgee-widgee
N	*Alisma plantago-aquatica*, Water Plantain
V	*Alternanthera denticulata*, Lesser Joyweed
E	*Amyema quandang*, Grey Mistletoe
V	*Azolla pinnata*, Ferny Azolla
V	*Azolla rubra*, Pacific Azolla
	Bursaria spinosa, Sweet Bursaria
	Carex appressa, Tall Sedge
E	*Carex fascicularis*, Tassel Sedge (probably all planted) [2017]
E	*Carex gaudichaudiana*, Fen Sedge
E	*Cassytha melantha*, Coarse Dodder-laurel
E	*Centella cordifolia*, Centella (perhaps all planted)
V	*Coprosma quadrifida*, Prickly Currant-bush
	Crassula decumbens, Spreading Crassula
V	*Crassula helmsii*, Swamp Crassula (perhaps all planted)
	Cycnogeton procerum, Water-ribbons (perhaps all planted)
	Dianella longifolia var. *longifolia*, Pale Flax-lily [2002]
	Dichondra repens, Kidney-weed
V	*Eleocharis acuta*, Common Spike-rush
	Eleocharis sphacelata, Tall Spike-rush (perhaps all planted)
	Epilobium billardiereanum subsp. *intermedium*, Robust Willow-herb
	Epilobium hirtigerum, Hairy Willow-herb [2022]
	Eragrostis brownii, Common Love-grass (perhaps all planted)
C	*Eryngium vesiculosum*, Prickfoot (probably planted) [2021]
E	*Eucalyptus cephalocarpa*, Mealy Stringybark
V	*Eucalyptus ovata*, Swamp Gum
E	*Eucalyptus radiata*, Narrow-leaved Peppermint
C	*Eucalyptus viminalis* subsp. *viminalis*, Manna Gum
V	*Exocarpos cupressiformis*, Cherry Ballart
C	*Gahnia radula*, Thatch Saw-sedge [2002]
C	*Geranium* sp. 5, Naked Crane's-bill [2002]
	Goodenia ovata, Hop Goodenia (perhaps all planted)
E	*Gynatrix pulchella*, Hemp Bush [2002]
V	*Hemarthria uncinata*, Mat Grass [2021]
E	*Hypericum gramineum*, Small St John's Wort
C	*Isotoma fluviatilis*, Swamp Isotome (probably planted) [2023]
	Juncus amabilis, Hollow Rush
	Juncus bufonius, Toad Rush
	Juncus gregiflorus, Green Rush
E	*Juncus procerus*, Tall Rush
	Juncus sarophorus, Broom Rush
	Lachnagrostis filiformis, Common Blown-grass
	Lemna disperma, Common Duckweed [2022]

Risk	Wild indigenous species
C	*Leptospermum lanigerum*, Woolly Tea-tree (wild and planted)
	Leptospermum scoparium, Manuka (perhaps all planted) [2018]
E	*Lobelia anceps*, Angled Lobelia [2002]
	Lobelia pratioides, Poison Lobelia (probably planted)
	Lomandra filiformis subsp. *coriacea*, Wattle Mat-rush [2002]
	Lomandra longifolia, Spiny-headed Mat-rush [2002]
E	*Lycopus australis*, Australian Gipsywort [2022]
	Lythrum hyssopifolia, Lesser Loosestrife [2022]
C	***Machaerina arthrophylla*, Fine Twig-rush** (perhaps planted)
E	*Melaleuca ericifolia*, Swamp Paperbark
V	*Melicytus dentatus*, Tree Violet
	Microlaena stipoides, Weeping Grass
V	*Microtis parviflora*, Slender Onion-orchid
C	***Montia australasica*, White Purslane** (perhaps planted)
C	*Myriophyllum crispatum*, Upright Water-milfoil (perhaps all planted)
C	***Myrsine howittiana*, Muttonwood (wild & planted)**
	Oxalis exilis/perennans, Wood-sorrel [2022]
V	*Ozothamnus ferrugineus*, Tree Everlasting
	Persicaria decipiens, Slender Knotweed
E	*Persicaria hydropiper*, Water-pepper [2022]
V	*Persicaria praetermissa*, Spotted Knotweed
E	*Persicaria subsessilis*, Hairy Knotweed [2002]
E	*Phragmites australis*, Common Reed
	Poa ensiformis, Sword Tussock-grass
	Poa morrisii, Soft Tussock-grass [2022]
E	*Poa tenera*, Slender Tussock-grass [2022]
C	*Pomaderris racemosa*, Cluster Pomaderris (perhaps all planted)
C	*Potamogeton cheesemanii*, Small-fruit Pondweed (probably planted) [2018]
E	*Potamogeton crispus*, Curly Pondweed [2002]
E	*Potamogeton ochreatus*, Blunt Pondweed [2002]
C	*Ranunculus inundatus*, River Buttercup (perhaps planted)
	***Ricciocarpos natans*, Fringed Heartwort**
E	*Rubus parvifolius*, Small-leaf Bramble [2002]
	Rytidosperma penicillatum, Slender Wallaby-grass [2002]
	Rytidosperma racemosum, Clustered Wallaby-grass
E	*Rytidosperma semiannulare*, Tasmanian Wallaby-grass (perhaps all planted)
	Schoenus apogon, Common Bog-rush
	Senecio hispidulus, Rough Fireweed [2017]
	Senecio minimus, Shrubby Fireweed
	Senecio quadridentatus, Cotton Fireweed [2017]
V	*Solanum laciniatum*, Large Kangaroo Apple
C	***Spiranthes australis*, Austral Ladies' Tresses** (perhaps planted) [2021]
	Thelymitra ?*peniculata*, a sun-orchid [2006]
V	*Triglochin striata*, Streaked Arrow-grass
	Typha domingensis, Cumbungi
	Typha orientalis, Cumbungi
E	*Veronica plebeia*, Trailing Speedwell [2002]

Introduced species
Acacia longifolia subsp. *longifolia*, Sallow Wattle
Agapanthus praecox, Agapanthus
Allium triquetrum, Angled Onion
Alternanthera philoxeroides, Alligator Weed
Anthoxanthum odoratum, Sweet Vernal-grass
Arctotheca calendula, Cape Weed
Atriplex prostrata, Hastate Orache
Bellis perennis, English Daisy
Briza maxima, Large Quaking-grass
Briza minor, Lesser Quaking-grass
Bromus catharticus, Prairie Grass
Callitriche stagnalis, Pond Water-starwort
Calystegia silvatica, Greater Bindweed
Cassinia sifton, Sifton Bush
Cenchrus clandestinus, Kikuyu Grass
Centaurium erythraea, Common Centaury
Centaurium tenuiflorum, Branched Centaury
Cirsium vulgare, Spear Thistle
Conium maculatum, Hemlock
Cordyline australis, New Zealand Cabbage Tree
Cotoneaster pannosus, Cotoneaster
Cotula coronopifolia, Water Buttons
Crataegus monogyna, Hawthorn
Cynodon dactylon, Couch
Cyperus eragrostis, Drain Flat-sedge
Dactylis glomerata, Cocksfoot
Daucus carota, Carrot
Delairea odorata, Cape Ivy
Dittrichia graveolens, Stinkweed
Ehrharta longiflora, Annual Veldt-grass
Epilobium hirsutum, Great Willow-herb
Erigeron sumatrensis, Fleabane
Euphorbia peplus, Petty Spurge
Festuca arundinacea, Tall Fescue
Foeniculum vulgare, Fennel
Fraxinus angustifolia, Desert Ash
Fumaria muralis, Wall Fumitory
Galium aparine, Cleavers
Genista monspessulana, Montpellier Broom
Geranium dissectum, Cut-leaf Crane's-bill
Gladiolus undulatus, Wild Gladiolus
Hedera helix/hibernica, Ivy
Helminthotheca echioides, Ox-tongue
Holcus lanatus, Yorkshire Fog
Hypochaeris radicata, Cat's Ear
Juncus articulatus, Jointed Rush
Lactuca serriola, Prickly Lettuce

Introduced species

Lolium ?*rigidum*, a rye-grass
Lonicera japonica, Japanese Honeysuckle
Lotus uliginosus, Greater Bird's-foot Trefoil
Lysimachia arvensis, Pimpernel
Lythrum junceum, Mediterranean Loosestrife
Mentha pulegium, Pennyroyal
Modiola caroliniana, Carolina Mallow
Myriophyllum aquaticum, Parrot's-feather
Oxalis purpurea, Large-flower Wood-sorrel
Paspalum dilatatum, Paspalum
Paspalum distichum, Water Couch
Phalaris aquatica, Toowoomba Canary-grass
Phalaris arundinacea, Reed Canary-grass
Pittosporum undulatum, Sweet Pittosporum
Plantago lanceolata, Ribwort
Plantago major, Greater Plantain
Polygonum aviculare, Hogweed
Prunella vulgaris, Self-heal
Prunus cerasifera, Cherry-plum
Ranunculus repens, Creeping Buttercup
Raphanus raphanistrum, Wild Radish
Romulea rosea, Common Onion-grass
Rosa rubiginosa, Sweet Briar
Rubus anglocandicans, Blackberry
Rumex conglomeratus, Clustered Dock

Introduced species

Rumex crispus, Curled Dock
Salix × *rubens*, White Crack Willow
Salix babylonica / sepulcralis, Weeping Willow
Salix fragilis, Crack Willow
Sisyrinchium micranthum, Blue Pigroot
Solanum mauritianum, Tobacco-bush
Solanum nigrum, Black Nightshade
Solanum pseudocapsicum, Madeira Winter-cherry
Sonchus asper, Rough Sow-thistle
Sonchus oleraceus, Sow-thistle
Sporobolus africanus, Rat-tail Grass
Symphyotrichum subulatum, Aster-weed
Taraxacum sect. *Taraxacum*, Garden Dandelion
Tradescantia fluminensis, Wandering Trad
Trifolium dubium, Suckling Clover
Trifolium repens, White Clover
Typha latifolia, Great Reedmace
Ulex europaeus, Gorse (Furze)
Utricularia gibba, Floating Bladderwort
Verbena bonariensis s.l., Purple-top Verbena
Vicia sativa, Common Vetch
Viola odorata, Common Violet
Watsonia meriana var. *bulbillifera*, Bulbil Watsonia
Zantedeschia aethiopica, White Arum Lily

Notes concerning some of the significant plant species

Listed as Endangered under Victorian law

Utricularia gibba (Floating Bladderwort): Found in the largest wetland in the Conservation Reserve in 2024, probably corresponding to a 2018 unvouchered record of *U. australis*. *Utricularia gibba* is regarded by the National Herbarium of Victoria as unlikely to have occurred in the Melbourne region at the time of colonisation. It is rapidly spreading among wetlands in the region and therefore not regarded here as needing conservation.

Locally-threatened species

Carex fascicularis (Tassel Sedge): When first recorded in 2002, this species was convincingly growing wild in wetlands in the retarding basin and the Conservation Reserve. Today, at least some of the plants have been planted.

Carex gaudichaudiana (Fen Sedge): There were hundreds or thousands of square metres of this species in 2002 and some of the plants present today appear not to have been planted.

Crassula helmsii (Swamp Crassula): Recorded in 2002 as being scattered around wetlands near Dandenong Creek in the retarding basin. The plants in the Conservation Reserve today may be either wild, planted or a mixture of the two.

Gynatrix pulchella (Hemp Bush): In 2002, a few were found along Dandenong Ck, one beside Corhanwarrabul Ck and one near the Conservation Reserve. The species was not seen in the 2024 site inspection but could easily have escaped detection.

Lemna disperma (Common Duckweed): Fairly abundant in the waterways when inspected in 2002 and extremely likely to reappear from time to time.

Leptospermum lanigerum (Woolly Tea-tree): Substantial numbers along a drainage channel along the site's southern boundary, in the road reservation for Police Rd.

Lycopus australis (Australian Gipsywort): At least one was destroyed by construction of the stormwater treatment system. None were seen elsewhere in the site up to that time and the next record was in 2020, which may refer to either a wild or planted plant.

Melicytus dentatus (Tree Violet): Abundant in the Floodplain Riparian Woodland, as both wild and planted plants.

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

Montia australasica (White Purslane): The site's earliest record found in this study found was in 2021. The species may have been among the many wetland plants planted in the largest wetland in the Conservation Reserve but the possibility of wild origin is raised by the presence of the species at nearby Site 76, where apparently wild.

Persicaria praetermissa (Spotted Knotweed): Thousands of square metres dominated by this species were destroyed by the stormwater treatment system in 2002 but it is still widespread in other parts of the site.

Persicaria subsessilis (Hairy Knotweed): In 2002, at least a few dozen were destroyed by construction of the stormwater treatment system. None have been recorded in the site since then.

Pomaderris racemosa (Cluster Pomaderris): In 2002, several were found along Dandenong Ck south of the retarding basin and beside the drain along the site's southern boundary. Most or all of the plants present today have been planted.

Potamogeton crispus (Curly Pondweed): In 2002, recorded as scattered along the Corhanwarrabul Ck diversion and common in Dandenong Ck. Water levels were too high at the time of this study's site inspection to be able to detect this species.

Potamogeton cheesemanii (Floating Pondweed): Abundant in the large wetland in the Conservation Reserve, where the 2002 survey concluded that it may have been planted.

Ranunculus inundatus (River Buttercup): as for *Potamogeton cheesemanii*.

Myrsine 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 the eastern and southeastern suburbs.

Spiranthes australis (Austral Lady's Tresses): The site's earliest record this study found was in 2011. The species may have been among the many wetland plants planted in the largest wetland in the Conservation Reserve but the species tends to volunteer itself fairly freely in the right habitat, so it could be wild.

Veronica plebeia (Trailing Speedwell): Scattered beside Dandenong Ck south of the retarding basin in 2002.

Fauna of special significance

Listed as Endangered under Commonwealth and Victorian law

Dwarf Galaxias: Twenty 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 is believed to have died out during the Millennium Drought but 600 individuals were released into the Tirhatuan Wetlands Conservation Reserve in 2017.

Listed as Vulnerable under Commonwealth law

Latham's (or Japanese) Snipe: There are 115 records of the species in the site, reflecting the substantial area of excellent habitat.

Listed as Vulnerable under Victorian law

Eastern Great Egret: Frequently seen in the site, mostly as solitary individuals.

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;
- Trees and shrubs provide habitat for native birds, bats, possums and invertebrates. In particular, the trees downstream of the dam wall 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 biological significance against the Department of Energy, Environment & Climate Action'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.

Regionally-endangered Ecological Vegetation Classes

All of the EVCs present are regionally endangered. Most of the wetlands and most of the Floodplain Riparian Woodland meet the definition of a 'remnant patch' adopted by the standard criteria, i.e. a continuous area of at least 0.25 ha in which the cover of native understorey is at least 10% throughout. Under Appendix 3 of *Victoria's Native Vegetation Management – a Framework for Action* (NRE 2002a), any remnant patch of a regionally-endangered EVC has a conservation significance rating of at least High. This translates to **State** significance under criterion 3.2.3 of Amos (2004).

Threatened Plants

Many of the locally-threatened plant species seen in 2024 have viable populations, thereby meeting criterion 3.1.5 for **Local** significance.

Threatened Fauna

The nationally-endangered Dwarf Galaxias was found in the site's south in 1985 but it is believed to have died out in the whole catchment during the Millennium Drought. Melbourne Water released 600 captive individuals into the Tirhatuan Wetlands in 2017. The standard criteria do not specifically consider a situation like this but the following part of criterion 3.1.3 for **State** significance represents a reasonably applicable parallel: 'Apparently high-quality habitat'… 'though taxon has not been recorded from the site which is'…'within the range of a nationally critically endangered or endangered taxon, but in an area less likely to be occupied'.

Latham's Snipe is listed as Vulnerable under Commonwealth law and this site has a substantial area of known, high-quality habitat for it, with a high frequency of observations of the species. The species is not confined to Victoria. Criterion 3.1.1 attributes **State** significance to known habitat for such species, other than 'important sites' (which does not appear to apply here).

The Eastern Great Egret is listed as Vulnerable under Victorian law and Site 74 has a substantial area of known, high-quality habitat for it. The species occurs interstate as well as Victoria. Criterion 3.1.2 attributes **Regional** significance to known habitat for such species, other than 'important sites' (which does not apply here).

Threats

- Human-induced climate change, which is predicted to cause more severe droughts, heatwaves, floods and storms, as well as substantially lower rainfall (particularly in winter);
- Decline of tree health, partly due to the abovementioned droughts and storms, as well as the associated falling of the water table;
- Displacement of indigenous flora and fauna by environmental weeds, exacerbated by debilitation of the native vegetation by the impacts of climate change. The introduced plant species with the most adverse ecological impact appear to be Wandering Trad (*Tradescantia albiflora*) and Creeping Buttercup (*Ranunculus repens*);
- Loss or decline of plant species whose populations are so small that they are vulnerable to inbreeding, poor reproductive success or chance events;
- Disturbance to wildlife and their habitat by recreational visitors to the Conservation Reserve, as well as by dogs being walked.

Strategic planning

The previous (2010) edition of this report led to this site being covered by Schedule 2 of the Environmental Significance Overlay (ESO2), on the basis of essentially the same matters as identified in the 'Significance ratings' section above. Since 2010, the only change relevant to the applicability of ESO2 is the change to the site boundary at and near Ashbrooke Reserve on Illawarra Avenue. The only strategic planning recommendation is to amend the ESO2 boundaries to match the two polygons delineated here.

Information sources used in this assessment

- A 1938 specimen of *Pomaderris racemosa* collected from the site by T.S. Hart, now kept at the National Herbarium of Victoria (specimen MEL 55583);
- 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;
- An initial survey of the Corhanwarrabul Ck diversion and retarding basin sections of the site by Dr Lorimer on 13th January 2002 for the first edition of this report, 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 for Dwarf Galaxias), ecological threats and management issues;
- Further site surveys for the first edition of this report by Rik Brown on 5/6/02, 10/6/02 and 15/7/02, including:
  - 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 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;
- An inspection of most of the site by Dr Lorimer on 17th September 2024, compiling lists of wild indigenous plant species for four different parts of the site and checking for changes in features relevant to this report compared with pre-existing information;
- Records of flora and fauna observations stored in the Atlas of Living Australia;
- Aerial and satellite imagery from between 1946 and 2025;
- The Victorian Government's 'NatureKit' website;
- Maps of geology, topography and strategic planning information produced by agencies of the Victorian Government.