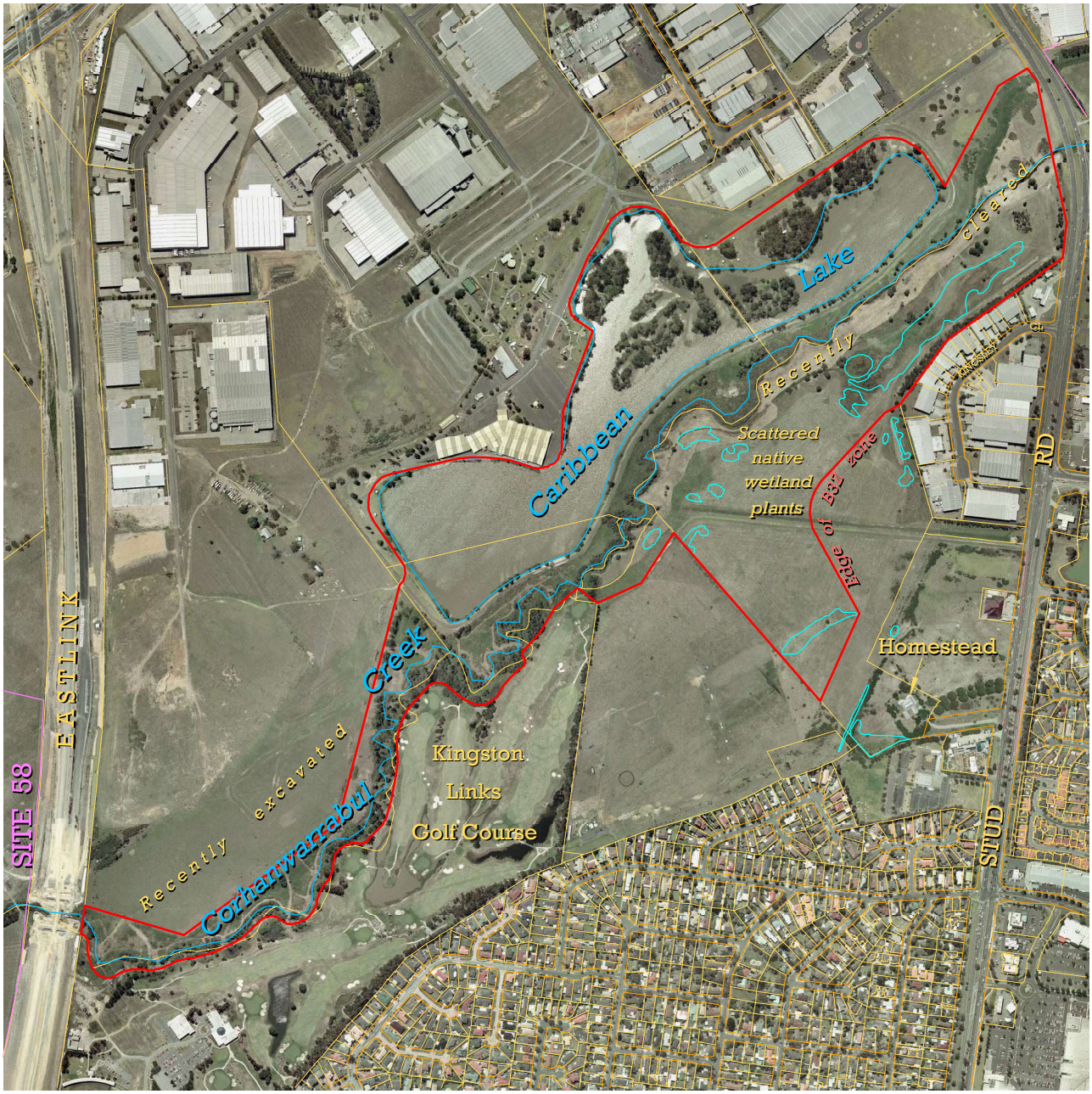
Site 65. Stamford Park, Rowville and Caribbean Lake

A section of Corhanwarrabul Creek and its floodplain immediately downstream of Stud Rd. Melway ref. 72 G10.

Site Significance Level: *State*

- Being on Corhanwarrabul Creek, the site is on a corridor for nomadic and migratory movements of birds, insects and fish;
- There are substantial areas of wetland and small areas of Floodplain Riparian Woodland, and both of these vegetation types are regionally endangered;
- Six species of plants are rare or threatened locally or throughout the Melbourne area;
- Seven species of wetland fauna recorded from the site are threatened throughout Victoria (and the whole nation, in the case of the fish, Dwarf Galaxias).



= seasonal wetland

Scale 0 100 200 300 400m

Aerial photograph taken February 2007

Boundaries

The site is outlined in red above. None of the playable area of Kingston Links Golf Course is included within the site. Compared with the first edition of this report, the site has been reduced in area from 90·1 ha to 71·1 ha due to EastLink construction, the recent excavation of an adjoining section of floodplain (marked on the aerial photograph) and the initiation of industrial development in the new B3Z zone north of the Stamford Park homestead.

Note

Permission was not obtained to enter the Caribbean Gardens property to conduct a survey, so some features of this site may have escaped detection.

At the time this report is being prepared (late 2008), parts of the site generally in the vicinity to the Stamford Park homestead have been recently bulldozed. It is not clear how well the site's conservation values will recover.

Land use & tenure: Mixed public and private land. Parts of the site close to the Stamford Park homestead are the subject of a concept plan involving residential, industrial and recreational development and some artificial wetlands.

Site description

This 71·1 ha site is on the floodplain of Corhanwarrabul Ck at elevations of 45-57 m. The slope is very slight throughout, except for the bank of Corhanwarrabul Ck.

The creek retains its natural channel. It supports native fish and (until at least 1997) Platypus. The presence of these species means that their food sources (other aquatic fauna) must also be present.

The banks of Corhanwarrabul Ck retain vestiges of the original native vegetation. One feature that is rare in Knox is that Tree Violets (*Melicytus dentatus*) make up a substantial part of the shrub layer (or at least, they did until extensive clearing of riparian vegetation occurred recently, which may have removed a substantial number of Tree Violets). This clearing has exposed the channel and banks of the creek to sunlight, upsetting the stream ecology by increasing the fluctuations in water temperature, changing the nutrient input and removing cover for aquatic fauna.

The floodplain has natural depressions that form seasonal wetlands. Wetlands that the author has identified and surveyed are marked on the aerial photograph, and the most ecologically intact one is the largest. There are additional wetlands in the southwest that were investigated for the Environment Effects Statement for the Scoresby Transport Corridor (that has since become the EastLink road).

Wetlands are probably the most biologically important feature of the site and they are the only parts of the site with predominantly native vegetation. Wetlands are regarded as regionally endangered and they are critical for most of the fauna, including fish, frogs, snakes, yabbies and waterbirds in the site.

Among the fauna recorded in the wetlands of the site is the Dwarf Galaxias, a small native fish listed as vulnerable in Victoria. The record is from 1986, before this species suffered a drastic population crash in the catchment in the last decade, according to fish expert, Mr John McGuckin of Streamline Research Pty Ltd. It is quite possible that Dwarf Galaxias are no longer present in the Corhanwarrabul Ck catchment, but even if this is so, they may one day return, and this site could be important to their re-establishment because of the seasonal wetlands that are critical habitat.

As well as the natural wetlands, Caribbean Lake has been constructed on the north side of the creek. It is included within this site because it is frequented by a wealth of waterbirds, some of the more frequent ones being rare or threatened. Treed areas around the lake are also included in the site for the value that they may provide to birds, but this could not be checked because permission was not obtained to do so.

A large part of the site is pasture with a mixture of exotic pasture species and indigenous wetland species, plus thinly scattered remnant trees. A total of twenty indigenous plants species was found in the pasture. Areas near the creek that are no longer grazed and not periodically slashed tend to be densely covered with a deep, nearly impenetrable layer of very tall grass. The indigenous Common Reed (*Phragmites australis*) is the main grass in these areas, sometimes accompanied by the introduced Toowoomba Canary-grass (*Phalaris aquatica*) where grazing and slashing have ceased only recently.

More details about the part of the site upstream from the golf course can be obtained from *'Flora and Fauna Study of Stamford Park, Corhanwarrabul Creek, Rowville'* by G.S. Lorimer, M. Belvedere, D. Lockwood and M. Serena for Knox City Council (1998). Since 1998, some of the wetlands have been very dry due to severe, prolonged drought and they may have temporarily ceased to function as wetlands, but the 1998 report is still relevant to these areas because they are expected to return to their previous ecology when the drought eases.

Relationship to other land

This site is separated from the Dandenong Valley Parklands (Site 58) only by the EastLink corridor, and from the upstream parts of the Corhanwarrabul Creek catchment's habitat corridor (Site 66) only by Stud Rd. Aquatic fauna such as fish,

Platypus 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 movements of some birds may be disrupted by the presence of the EastLink road.

The industrial and residential estates that flank the corridor are not conducive to fauna movements laterally from the site. The Kingston Links Golf Course may provide some effective lateral expansion of habitat for waterbirds, but this was not investigated.

Bioregion: Gippsland Plain

Habitat types

Perennial Stream (No EVC number available).

Floodplain Wetland Complex (EVC 172, **regionally Endangered**) in thirteen patches: Estimated as 2·5 ha in total area, comprising 2·0 ha in fair ecological condition (rating C) and 0·5 ha in poor ecological condition (rating D). 16 indigenous plant species were recorded.

Trees, shrubs, vines and ferns: Absent.

Aquatic and semi-aquatic flora: Different wetlands are dominated by *Carex gaudichaudiana*, *Phragmites australis* or a mixture of *Juncus sarophorus* and *Carex appressa*.

Floodplain Riparian Woodland (EVC 56, **regionally Endangered**): Estimated as 0·5 ha in total area, comprising 0·4 ha in fair ecological condition (rating C) and 0·1 ha in poor ecological condition (rating D). 13 indigenous plant species have been recorded. Note that other reports often incorporate wetlands within this EVC because it is easier to do, but the extra effort has been put in here to separately identify and map the wetlands as Floodplain Wetland Complex.

Dominant canopy trees: *Eucalyptus ovata*.

Dominant lower trees: *Acacia melanoxylon*, *A. mearnsii* and *Melaleuca ericifolia*.

Shrubs: Mostly dense. *Melicytus dentatus* is abundant (suggesting Floodplain Riparian Woodland rather than Swampy Riparian Woodland). *Gynatrix pulchella, Prostanthera lasianthos* and *Ozothamnus ferrugineus* are the other shrub species present.

Vines and ferns: None.

Ground flora: Heavily invaded by weeds. The dominant indigenous species is *Phragmites australis*. Other species are *Glyceria australis, Juncus gregiflorus, Juncus sarophorus* and *Persicaria decipiens*.

Plant species

The following plant species were observed in the years indicated. 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
V	*Acacia mearnsii*	1997
V	*Acacia melanoxylon*	1997
	Acacia paradoxa	1997
	Alisma plantago-aquatica	2005
V	*Alternanthera denticulata*	2007
C	***Amphibromus nervosus***	1997
	Carex appressa	2007
E	***Carex gaudichaudiana***	1997
	Carex inversa	1997
	Cassinia arcuata	1997
V	*Eleocharis acuta*	2005
	Eleocharis sphacelata	2007
	Epilobium hirtigerum	1997
V	*Eucalyptus ovata*	1997
E	*Euchiton involucratus*	1997
V	*Glyceria australis*	1997
E	*Gynatrix pulchella*	1997
	Juncus amabilis	1997
	Juncus bufonius	2005
	Juncus gregiflorus	1997
	Juncus pallidus	1997

Risk	Indigenous Species	Risk
	Juncus sarophorus	2007
	Kunzea ericoides spp. agg.	2007
	Lachnagrostis filiformis	2007
V	*Lythrum hyssopifolia*	2005
E	*Melaleuca ericifolia*	1997
E	*Melicytus dentatus*	1997
E	*Ozothamnus ferrugineus*	1997
	Persicaria decipiens	2007
C	***Persicaria subsessilis***	1997
E	*Phragmites australis*	1997
	Portulaca oleracea	2007
E	*Prostanthera lasianthos*	1997
	Rytidosperma setaceum	1997
	Schoenus apogon	1997
	Senecio glomeratus	2007
E	*Senecio minimus*	2007
	Senecio quadridentatus	1997
	Senecio sp.	2007
C	*Solanum aviculare*	2007
E	*Typha* sp.	1997

Introduced Species

Acer negundo	*Echium plantagineum*	*Phalaris aquatica*
Agrostis capillaris	*Galium aparine*	*Plantago coronopus*
Allium triquetrum	*Geranium dissectum*	*Plantago lanceolata*
Alopecurus pratensis	*Glyceria declinata*	*Polygonum aviculare* s.l.
Anagallis arvensis	*Helminthotheca echioides*	*Prunus* sp.
Anthoxanthum odoratum	*Holcus lanatus*	*Ranunculus repens*
Arctotheca calendula	*Hordeum hystrix*	*Raphanus raphanistrum*
Aster subulatus	*Hypericum tetrapterum*	*Rubus anglocandicans*
Brassica fruticulosa	*Hypochoeris radicata*	*Rumex conglomeratus*
Bromus catharticus	*Juncus articulatus*	*Rumex pulcher*
Callitriche stagnalis	*Leontodon taraxacoides*	*Salix × rubens*
Chenopodium album	*Lolium perenne*	*Solanum nigrum*
Chenopodium murale	*Lolium rigidum*	*Solanum pseudocapsicum*
Cirsium vulgare	*Lotus subbiflorus*	*Sonchus asper* s.l.
Conyza sumatrensis	*Lotus uliginosus*	*Stellaria media*
Cotula coronopifolia	*Malus pumila*	*Tradescantia fluminensis*
Crataegus monogyna	*Malva sylvestris*	*Trifolium repens*
Cynodon dactylon	*Paspalum dilatatum*	*Ulex europaeus*
Cyperus eragrostis	*Paspalum distichum*	*Verbena bonariensis* s.l.
Dactylis glomerata	*Pennisetum clandestinum*	*Vulpia bromoides*

Notes concerning some of the locally threatened plant species

Amphibromus nervosus (Veined Swamp Wallaby-grass). There are many individuals in the largest wetland.
Carex gaudichaudiana (Fen Sedge). Abundant.
Gynatrix pulchella (Hemp Bush). Two plants were found.
Melicytus dentatus (Tree Violet). Abundant along the northern creek bank in the vicinity of the northern tip of the golf course.
Persicaria subsessilis (Hairy Knotweed). Two plants were found and probably more were hidden in dense vegetation.

Fauna of special significance

Vulnerable Nationally

Dwarf Galaxias. Found in a pond near the site's southwestern corner in December 1986.

Critically Endangered in Victoria

Intermediate Egret. Recorded by the Knox U3A Birdwatching Group at the Caribbean Lake on 8th March 2002.

Endangered in Victoria

Blue-billed Duck. Recorded repeatedly and recently in the Caribbean Lake.

Vulnerable in Victoria

Hardhead. Recorded by the Knox U3A Birdwatching Group at the Caribbean Lake on 24th November 2002.
Great Egret. Recorded by the Knox U3A Birdwatching Group at the Caribbean Lake on 6th February 1998.

Lower Risk (Near Threatened) in Victoria

Latham's Snipe. Observed in November 1997 for the report by Lorimer *et al*. (1998, see p. 329).
Nankeen Night Heron. Observed in November 1997 for the report by Lorimer *et al*. (1998, see p. 329).

Uncommon in the Melbourne Region

Great Crested Grebe. Observed in November 1997 for the report by Lorimer *et al*. (1998, see p. 329).
Darter. Observed in November 1997 for the report by Lorimer *et al*. (1998, see p. 329).
Little Grassbird. Observed in November 1997 for the report by Lorimer *et al*. (1998, see p. 329).
Australian Reed-Warbler. Observed in November 1997 for the report by Lorimer *et al*. (1998, see p. 329).
Platypus. Last seen in 1997 and not seen in more recent trap-and-release investigations.
Weasel Skink. Seen in c.1998, as reported in the Scoresby Transport Corridor Environment Effects Statement.

Fauna habitat features

- The stream is used by fish, ducks, Platypus, Water Rats and aquatic invertebrates (although Platypus have not been seen since 1997, despite two trapping campaigns since November 1999);
- The wetlands are used extensively by frogs, waterbirds, snakes, and probably by aquatic invertebrates;
- The wetlands were occupied (at least until 1986) by Dwarf Galaxias;
- Pasture areas support a high density of Lowland Copperhead snakes, probably because of all the frogs in the wetlands;
- Scattered trees (alive and dead) are used as hunting lookouts 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 Corhanwarrabul Creek habitat corridor. The corridor is important at a Local scale. Criterion 1.2.6 takes this to confer **Local** significance to the site.

Endangered Vegetation Types

Both 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 because of the Endangered status of the EVCs. Criterion 3.2.3 assigns **State** significance to any site with a 'remnant patch' of such vegetation. Although much of the native vegetation has too little native understorey to qualify as a 'remnant patch', this cannot be said about many of the wetlands (other than perhaps during extreme drought), nor perhaps a substantial fraction of the Floodplain Riparian Woodland (although this may have changed with recent clearing).

Rare or Threatened Flora

Some 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 southwest in 1986. 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 population crash of Dwarf Galaxias and the real possibility that the fish will never again use the site for habitat.

The site also appears to be good habitat for at least some of the other species listed as 'Fauna of special significance' above. In particular, the state-endangered Blue-billed Duck is known to be there regularly, representing **State** significance under criterion 3.1.2. Observations of Hardhead and Great Egret (both listed as vulnerable in Victoria) suggest that the habitat which the site provides for these species is of **Regional** significance under criterion 3.1.2.

Threats

- Invasion by environmental weeds, of which the greatest threats are Drain Flat-sedge (*Cyperus eragrostis*), Cleavers (*Galium aparine*), Yorkshire Fog (*Holcus lanatus*), Square-stem St John's Wort (*Hypericum tetrapterum*), Toowoomba Canary-grass (*Phalaris aquatica*), Creeping Buttercup (*Ranunculus repens*), Blackberry (*Rubus discolor*), White Crack Willow (*Salix* × *rubens*) and Wandering Jew (*Tradescantia albiflora*). There is also a risk of serious reinfestation of Gorse (*Ulex europaeus*) where it was dense prior to spraying in the last few years;
- Climate change and the effects of drought.
- Slashing of wetlands;
- Dieback disease;
- Rabbits;
- European Carp, which have already caused serious ecological damage in nearby Jells Lake and could do so in Caribbean Lake if they were to arrive there;
- The new EastLink road may create a barrier to faunal movements.

Management issues

- Wetlands should not be slashed except where essential. The slasher operator should be competent to distinguish patches dominated by *Carex* and/or *Juncus* in order to avoid them;
- Other guidance for management is provided in the report, *'Flora and Fauna Study of Stamford Park, Corhanwarrabul Creek, Rowville'* by G.S. Lorimer, M. Belvedere, D. Lockwood and M. Serena for Knox City Council (1998).

Administration matters

- 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';
- A small part of the site, just south of Caribbean Lake, is presently covered by Vegetation Protection Overlay Schedule 1 of the Knox Planning Scheme, based on recognition of that area by Water Ecoscience (1998) as part of their Site 282;
- The Planning Scheme zoning is variously Public Park and Recreation Zone (PPRZ), Urban Floodway Zone (UFZ), Business 3 Zone (B3Z) and Special Use Zone 1 (SUZ1, for the golf course), with boundaries that do not always follow property boundaries.

Information sources used in this assessment

- A study of the parts of the site upstream of the golf course for the report, *'Flora and Fauna Study of Stamford Park, Corhanwarrabul Creek, Rowville'* by G.S. Lorimer, M. Belvedere, D. Lockwood and M. Serena for Knox City Council (1998). Several person-days were spent surveying the site, including:
  - Compilation of lists of indigenous and introduced plants within each of five vegetation types within the site;
  - Detailed mapping and documentation of rare species populations and the ecological condition of the vegetation;
  - A description of each vegetation type's structural and floristic composition;
  - Active fauna searches for birds, reptiles and frogs, including (in part) spotlighting and predator scat analysis;
  - Checks for fauna habitat, ecological threats and management issues; and
  - Recommendations for the preservation of the vegetation;
- Written reports of the Australian Platypus Conservancy about Platypus surveys conducted within the site almost annually from 1994 to 2001. Three Platypus and four fish species were found;
- Discussions in 1997 with stream experts, Mr Vin Pettigrove (Melbourne Water) and Mr Tarmo Raadik (Marine and Freshwater Resources Institute), about fish (and particularly Dwarf Galaxias) in Corhanwarrabul Creek;
- Additional discussions about Dwarf Galaxias in the catchment with Mr John McGuckin of Streamline Research Pty Ltd, in 2003;
- The draft Melbourne Water report, *'Waterway Assessment in the Dandenong Valley: The Health of Corhanwarrabul, Monbulk and Ferny Creeks'* by V. Pettigrove and R. Coleman (1997);
- The 1998 *'Scoresby Transport Corridor Environment Effects Statement'*, including Supplement Volume H: Flora and Fauna by Williams L.M., Yugovic J.V., McGuckin J., Humphrey P. and Larwill S. (1998), in which the area of the proposed bridge over Corhanwarrabul Ck is labelled as 'Site 7';
- The 1996 report, *'Preliminary Flora and Fauna Assessment of the Proposed Water Ski Park, Stud Rd, Rowville'* by K.P. Lampman and A.R.G. McMahon for Maunsell Pty Ltd;
- 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.