4 March 2021

Preliminary Ecological Assessment for the Glen Waverley Tennis Golf Course Project, 915-917 Waverley Road and 95 Shepherd Road.

Monash City Council commissioned Practical Ecology to determine the ecological values, design considerations and associated legislation to inform the values and constraints of the proposed Glen Waverley Tennis Golf Course Project at 915-917 Waverley Road and 95 Shepherd Road, Glen Waverley. The golf course and driving range are part of the regional open space corridor along Dandenong Creek. They are located between public parks managed by Parks Victoria, including Shepherds Bush occurs to the north of the site and Jells Park occurs to the south .

It is understood that a plan has been developed to construct a regional tennis complex comprising 18 International Tennis Federation (ITF) standard courts. It is proposed to be built in Glen Waverley, at the site of the current Glen Waverley Golf Course driving range. The new tennis centre is a State Government investment in tennis in Victoria tobe delivered by Monash City Council. As well as the courts, the centre will include a new multi-sport pavilion, practice facilities for golf and upgrades to the car park and pedestrian paths and a new intersection at the corner of Waverley Road and Jells Road to improve traffic flow and reduce congestion on these roads.

The proposal is to occur at the 3.4 hectare site of the driving range at the Glen Waverley Golf Course referred to as the Concept Area highlighted in yellow depicted in Map 1. It will include:

- 18 International Tennis Federation (ITF) standard courts
- Multi-use pavilion with change rooms, public amenities, kiosk/café, social space and club storage rooms
- Intersection upgrade at Waverley Rd and Jells Rd to reduce traffic congestion and improve traffic flow
- Drainage infrastructure to the tennis site with consideration to impacts to adjacent residents

The new tennis centre will replace the existing 23-court tennis centre in Boroondara, currently located on land needed for two crucial interchanges for North East Link, connecting the M80 to an upgraded Eastern Freeway.

The broader area surrounding the Concept Area is the 18 hole Glen Waverley Golf Course referred to as the overall Investigation Area highlighted by the red boundary shown in Map 1. This area is also part of the area that may be considered for alternative sites for the proposed tennis centre and is the focus of this report to identify the potential biodiversity values that may occur within this area and to investigate the feasibility of potentially locating the development within the golf course as an alternative option that could include redesign of the course. The results of this preliminary assessment are presented in this report with a discussion surrounding site suitability with reference to biodiversity values.

Project Approach

As part of this Preliminary Ecological Assessment, the following tasks where undertaken:

- a desktop review including a review of site characteristics, planning scheme, biodiversity databases and relevant reports
- a site inspection to consider the ecological values on site
- reparation of a report including methods, results that summarises the results from the desktop review and site inspection
- Provision of a series of maps to show the ecological values across the site and previously recorded significant species.

Site overview

The Investigation Area is approximately 48 ha and comprises an active 18 hole golf course bounded by the Dandenong Creek to the east. The site supports a number of treed corridors of (Indigenous, Victorian and Introduced trees) which provide foraging opportunities for birds and other fauna that utilise the area. A large wetland to the east has associated aquatic and terrestrial vegetation which is an important ecological feature of the Investigation Area and the broader Dandenong Creek catchment area which is located among a residential area.

Private residences border the western portion of the reserve adjacent to an open space area used as a driving range otherwise referred to in this report as the Concept Area. The reserve is surrounded by public land that provides good ecological connectivity through to Jells Park and the Dandenong Creek corridor. The site is actively managed by City of Monash bushland crew for both for conservation and recreational uses.

Historical imagery (1951) shows that it is likely that remnant trees may potentially still occur throughout the Investigation Area and may provide habitat for significant fauna that is known to use the area such as Powerful Owls. However, most of the trees across the Investigation Area were clearly planted after 1951 and the construction of the golf course.

The Investigation Area is zoned Public Park and Recreation Zone (PPRZ) and is subject to the following overlay:

- Land Subject to Inundation Overlay (LSIO) – along the Dandenong Creek

The investigation area is also within, or is affected by, one or more areas of cultural heritage sensitivity as described in the *Aboriginal Heritage Regulations 2007.*

The Proposed Concept Area is approximately 5.8 ha and is zoned Public Park and Recreation Zone (PPRZ) and is not subject to any overlays.

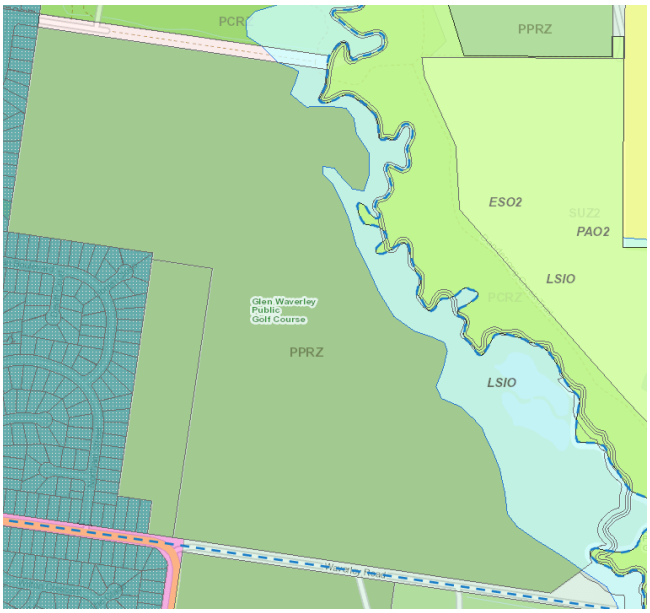


Figure 1. Relevant Zones and Overlays



Figure 2. Area of cultural heritage sensitivity highlighted in purple

ECOLOGICAL ASSESSMENT

Vegetation

A preliminary ecological assessment was undertaken to determine the biodiversity values across the site. It was possible to develop a general understanding of the ecological values of the site through the inspection of the site and review of written information that is available. The results of the vegetation assessment are detailed in Map 3.

The golf course portion of the site supports a number of treed corridors of (indigenous, Victorian and introduced trees) within the roughs of the golf course and extensive revegetation has occurred along the riparian corridors and margins of a large wetland area along the eastern margins of the site. Large remnant trees occur within the eastern boundary and good quality vegetation determined to be the Swampy Riparian Woodland Ecological Vegetation Class (EVC) which occurs along the entire length of the reserve on Dandenong Creek.

Swampy Riparian Woodland

EVC 83 Swampy Riparian Woodland has a Bioregional Conservation Status of 'Endangered' within the Gippsland Plain Bioregion and occurs on Quaternary alluvial soils along low gradient streams and wetland systems. Vegetation is typically characterised by an overstorey of Swamp Gum *Eucalyptus ovata* and a mid-layer of tea-trees and paperbarks and a variety of other shrub species along the stream levees. Reeds, sedges, herbs and grasses occur in the ground layer (Oates and Taranto 2001).

As discussed, Swampy Riparian Woodland occurs along the entire length of the reserve on Dandenong Creek (see Map 3 Figure 4). Good quality vegetation occurs within the far southern extent of the golf course reserve adjacent to Jells Park. Vegetation supports remnant and planted vegetation comprising large remnant Manna Gum *Eucalyptus viminalis* seen to be recruiting. A dense mid-storey layer is present comprising Silver Wattle *Acacia dealbata*, Swamp Paperbark *Melaleuca ericifolia*, Snow Daisy-bush *Olearia lirata* and Sweet Bursaria *Bursaria spinosa* and Tree Violet *Melicytus dentatus*. The ground layer supports Common Tussock-grass *Poa labillardierei* and Spiny-headed Mat-rush *Lomandra longifolia* and Small-leaf Clematis *Clematis microphylla* occurs throughout.

Swampy Woodland

This EVC: 937 Swampy Woodland has a Bioregional Conservation Status of 'Endangered' within the Gippsland Plain Bioregion and occurs on seasonally waterlogged Quaternary alluvial soils along wet flats and valley floors to the rear of stream levees. Vegetation typically consists of an overstorey of Swamp Gum together with a variety of other eucalypt species that can withstand seasonal waterlogging. The mid-layer is generally open with thickets of tea-trees and paperbarks over a ground layer dense with grasses, sedges, herbs and rushes (Oates and Taranto 2001).

Remnants of Swampy Woodland occupy the north western section of the site and is connected to Swampy Woodland present along the Shepherd Road Reserve. Vegetation within the road reserve is Yarra Gum *Eucalyptus yarraensis* and Manna Gum with Blackwood *Acacia melanoxylon*, Tree Violet, Hemp Bush *Gynatrix pulchella* and Common Cassinia *Cassinia aculeata*. The ground layer is Spiny-headed Mat-rush, Common Tussock-grass and Spear Grasses *Austrostipa spp*. and Kidney Weed *Dichondra repens*

Swampy Woodland also occurs within the Waverley Road reserves within the southern sections of the reserve (Figure 3). These remnants have also been revegetated and connects to vegetation within the reserve.



Figure 3. Swampy Woodland



Figure 4. Swampy Riparian Woodland

Treed Corridors

Vegetation within the treed corridors include planted indigenous, Victorian and introduced trees. Indigenous species comprise River Red-gum *Eucalyptus camaldulensis*, Silver-leaf Stringybark *Eucalyptus cephalocarpa*, Swamp Gum *Eucalyptus ovata*, Coast Manna-gum *Eucalyptus viminalis subsp. pryoriana* and Manna Gum *Eucalyptus viminalis subsp. viminalis.* Planted Victorian species are Southern Mahogany *Eucalyptus botryoides* and Southern Blue-gum *Eucalyptus globulus* and Spotted Gum *Corymbia maculata.*

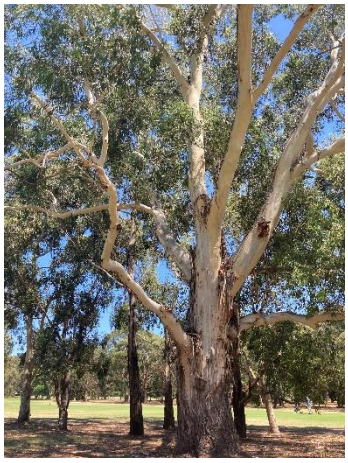


Figure 5. Treed Corridors with large indigenous trees Manna Gum



Figure 6. Indigenous species Coast Manna-gum with hollows for fauna

Native Grasses

Native grasses also occur throughout the ground layer of the treed corridor areas in the golf course comprising Weeping Grass *Microlaena stipoides var. stipoides* and Slender Wallaby-grass *Rytidosperma racemosum var. racemosum.* Grasses are scattered throughout and, in some instances, have more than 25% cover which constitutes a patch of native vegetation according to *the Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017a).

Native grasses occur in two different contexts. Sometimes they occur without trees, particularly on the driving range, or under introduced trees; these areas would be simple habitat zones of groundstorey only. Alternatively,

stands of native grasses occur with indigenous overstorey trees, often planted, occur which would be more intact but still modified habitat zones.



Figure 7. Treed corridors with native grasses within the understorey.



Figure 8. Native grasses Slender Wallaby-grass with more than 25% cover.

Constructed Wetland

Two constructed wetland occur within the reserve. A large wetland occurs to the east and has associated aquatic and terrestrial vegetation which is an important ecological feature of this reserve. Flora species comprise Cumbungi *Typha sp.,* Common Reed *Phragmites australis*, Sedges *Carex spp*. and Prostrate Knotweed *Persicaria decipiens.* A smaller wetland area occurs to the south of the reserve and is a revegetated area comprising Swamp Gum, Variable Willow-herb *Epilobium billardierianum,* Tall Sedge *Carex appressa,* Drooping Cassinia *Cassinia arcuate*, Rush *Juncus spp.* and Common Tussock-grass and Slender Wallaby-grass.



Figure 9. The large wetland in the east of the golf course along Dandenong Creek.



Figure 10. Smaller wetland near hole 1.

Trees

Large Indigenous Trees/Large Trees

Large indigenous trees occur throughout the reserve and there is evidence that some are planted and some are remnant. Remnant Large Trees, as defined under Clause 52.17, are within the Swampy Riparian Woodland along Dandenong Creek and scattered occurrences potentially occur within the Investigation Area. An aerial photo

taken from 1951 indicates that there are a few trees that were present in 1951 still present within the proposed Concept Area , most notably Tree 1 (an 86 cm DBH Silver-leaf Stringybark). Large Trees that are likely to be planted are > 90 cm DBH and are significant for their size because of the likelihood of tree hollows occurring within them as well as higher levels of food resources such as flowers and nectar that support native fauna. These species comprise River Red-gum, Silver-leaf Stringybark and Manna Gum see Map 3.



Figure 11. Large Indigenous Trees Manna Gum



Figure 12. Large Indigenous Trees River Red Gum

EPBC Act Communities

According to the Protected Matters Search Tool (PMST) two threatened communities listed under the EPBC Act were identified as potentially occurring in the Investigation Area through the PMST: *Natural Damp Grassland of the Victorian Coastal Plains* and *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.* Further detail on these communities in relation to the vegetation present within the Investigation Area is provided below.

Natural Damp Grassland of the Victorian Coastal Plains

According to the *Approved Conservation Advice for the Natural Damp Grassland of the Victorian Coastal Plains* (DoE 2015), this EPBC Act listed community generally corresponds to damp expressions of EVC 132: Plains Grassland within the Gippsland Plain bioregion. DoE (2015) goes on to note that the benchmark for EVC 132: Plains Grassland in this bioregion identifies two specific floristic communities, only one of which is equivalent to the Natural Damp Grassland of the Victorian Coastal Plains Community: EVC 132_62: *South Gippsland* Plains Grassland.

In addition to other criteria pertaining to location and vegetation structure of this EPBC Act listed community, a Key Diagnostic Characteristic includes a ground layer that must contain ". . . *four or more ground layer species from the indicative list at Table 2, including at least one of the key grass species Themeda triandra (kangaroo grass) and/or Poa labillardierei (common tussock grass).*"

As EVC 132: Plains Grassland was not recorded within the Investigation Area, and the ground layer species typical of this community are not present, the EPBC Act listed community titled *Natural Damp Grassland of the Victorian Coastal Plains* does not occur within the Investigation Area.

White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

The Threatened Species Scientific Committee (TSSC 2006) document titled, *Commonwealth Listing Advice on White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland*, provides detail descriptions regarding this EPBC Act listed community.

In Victoria, this EPBC Act listed community can be a component of the following EVCs in the Highlands – Northern Fall, Highlands – Southern Fall, Northern Inland Slopes, Riverina and Goldfields Bioregions: EVC 47: Valley Grassy Forest, EVC 55: Plains Grassy Woodland and EVC 175: Grassy Woodland. While additional Victorian bioregions potentially supporting this listed community are documented in DECCW (2010), the Gippsland Plain Bioregion is excluded.

While the Investigation Area is located the Gippsland Plain Bioregion and the EVCs present within the Investigation Area are not those typically associated within this EPBC Act listed community, it is noted that the Investigation Area is relatively close to the boundary with the Highlands – Southern Fall Bioregion. While this is the case, the characteristic dominance or prior dominance of White Box *Eucalyptus albens* and/or Yellow Box *Eucalyptus melliodora* and/or Blakely's Red Gum *Eucalyptus blakelyi* (DECCW 2010) of this community, is not exhibited by the native vegetation or present within the Investigation Area.

The EPBC Act listed community titled White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland does not therefore occur within the Investigation Area.

FFG Act Communities

Two threatened communities listed under the FFG Act are modelled by DELWP as occurring within or close to the Investigation Area. These are the *Herb-rich Plains Grassy Wetland (West Gippsland) Community* and *Sedge-rich Eucalyptus camphora Swamp Community*.

According to the FFG Act Listed community descriptions "*The Herb-rich Plains Grassy (West Gippsland) Community typically occurs in shallow (less than 50 cm deep) seasonal wetlands that fill in winter and spring and are dry by summer. Some may retain water for longer periods, but typically only have surface water for up to six months. The community contains a rich plant association of grasses, sedges and aquatic herbs. This community is characterized by a strong zonation pattern from emergent sedges, grasses and amphibious herbs in the fringing/littoral zone, through to deeper water dominated by submergent species together with a few sedges".*

This community may have occurred with the constructed wetland areas or possibly elsewhere in the Investigation Area prior to European settlement. However, the farming practices implemented after European settlement are likely to destroyed and/or modified wetlands and drainage lines where this community may have occurred and revegetation and/or constructed wetlands have not resulted in re-establishment of this community.

With regard to the *Sedge-rich Eucalyptus camphora Swamp Community*, the characteristic canopy species Mountain Swamp Gum *Eucalyptus camphora*, and shrub layer dominated by Woolly Tea-tree *Leptospermum lanigerum* is again not represented by the native vegetation that is present within the Study Area.

Based on the above, FFG Act threatened communities do not occur within the Investigation Area.

Fauna and fauna Habitat

Good quality fauna habitat is present throughout the reserve in the form of Large Trees with large and small hollows and hollow bearing capacity and dead stags. Dense vegetation, water bodies and habitat linkages provide important foraging and nesting resources also (See Maps 4).



Figure 13. Large Tree with hollows



Figure 14. Dense vegetation



Figure 15. Large Tree with hollows



Figure 16. Large Tree with hollows

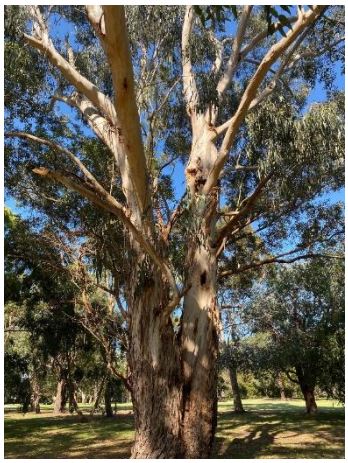


Figure 17. Large Tree with hollows



Figure 18. Remnant Large Tree with hollows 1

EVC 83 Swampy Riparian Woodland and trees within the treed corridor areas that have the potential to support native and exotic fauna species. This includes various woodland birds and some bats, such as the significant fauna species Powerful Owl and Grey-headed Flying-fox that may utilise these areas for foraging. This can also include species of microbats that can roost under the bark of trees or in crevices. Areas of planted Australia/Victorian natives and exotic trees and shrubs located throughout are also to provide suitable habitat for such species.

Note that groundstorey vegetation and leaf litter within EVC's and trees within the tree corridor areas also has the potential to support ground dwelling fauna, particularly small reptiles. Mobile species such as birds that can utilise thick ground groundstorey vegetation for cover. This includes Latham's Snipe – a species listed as migratory under the EPBC Act and Near Threatened in Victoria – that was observed within this area and is likely to forage on site.

Open grassed areas throughout also have the potential to support a range of fauna species, particularly for birds. Raptors may forage over these areas, while waterbirds such as Eastern Great Egret *Ardea alba modesta* and Royal Spoonbill *Platalea regia* could use these damp or seasonally inundated areas for foraging nearer to waterbodies. Further detail regarding these significant fauna species is provided in Table

A number of common frog species are likely to utilise the wetland, wet depressions and drainage lines located throughout the reverse. This includes Common Froglet *Crinia signifera* and Eastern Banjo Frog *Limnodynastes dumerilii*.

Given the presence of records for the Nationally listed Growling Grass Frog *Litoria raniformis*, and State listed Southern Toadlet *Pseudophryne semimarmorata* within 5km of the reserve there is also some potential that these species could occur in association with the aquatic habitat within the Dandenong Creek and possibly adjacent floodplains where intermittent wetlands may occur. They could also use terrestrial areas of the site during dispersal. This is also the case for the State listed Common Long-necked Turtle *Chelodina longicollis* for which there are numerous records within five kilometres.



Figure 19. The large wetland to the east of the golf course along Dandenong Creek.



Figure 20. Smaller wetland near hole 1

A range of bird species are also likely to utilise the aquatic habitat within the Investigation Area. This is likely to include common species such as White-faced Heron *Egretta novaehollandiae* and Straw-necked Ibis *Threskiornis spinicollis*. It could also include Nankeen Night Heron *Nycticorax caledonicus* listed as Near Threatened in

Victoria and previously recorded onsite. There is potential that ducks could also utilise these waterbodies. This could include species such as Hardhead *Aythya australis* (vulnerable in Victoria) also has been previously recorded onsite.

Dwarf Galaxias *Galaxiella pusilla* could also occur within the Dandenong Creek. There are numerous records for this species downstream to the site within the Dandenong Creek, located to the south of the Investigation Area. It has also previously been recorded within Blind Creek to the north. Other native fish species, along with a range of aquatic invertebrates are also likely to be present.

While the local landscape is dominated by residential dwellings and commercial areas, the Investigation Area is located between Jells Park and Shepard Bush and the Dandenong Creek corridor. Due to this there are a range of habitat types that offer good connectivity between the Investigation Area and areas along Dandenong Creek where bushland areas associated with the Dandenong Valley Parklands occur. This includes reserves such as Shepherds Bush to the north, and Jells Park to the south that are known to support a range of flora and fauna species, including those that are listed under the EPBC Act and FFG Act. There are regular sightings of Powerful Owl at Shepherds Bush for example, and records of a number of significant bird species from the Wildlife Lake at Jells Park (refer to Map 2).

While open 'grassland' type vegetation occurs between the bushland areas along the Dandenong Creek and the Investigation Area, it is noted that these open areas add to the available connectivity thought the landscape by providing additional habitat for local fauna beyond that provided by treed areas. This includes, for example, foraging habitat for birds of prey. These Dandenong Creek, Blind Creek and surrounding undeveloped areas have an important linking function throughout the otherwise heavily developed landscape. The Treed Corridors within the Golf Course provide habitat linkages and stepping stones between these areas.

VBA Significant Fauna previously recorded on site

Impacts to these species listed in the table below and those referred to in the above discussion will need to be considered for any future development (See Map 4).

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Last record	No. counts
		L	v	*Lewinia pectoralis*	Lewin's Rail	1982	1
			n	*Phalacrocorax fuscescens*	Black-faced Cormorant	2017	1
			n	*Phalacrocorax varius*	Pied Cormorant	2005	1
C,J		L	n	*Hydroprogne caspia*	Caspian Tern	1998	2
B,R,J,C			n	*Gallinago hardwickii*	Latham's Snipe	2003	12
			n	*Platalea regia*	Royal Spoonbill	2018	5
C,J		L	v	*Ardea alba modesta*	Eastern Great Egret	2017	6
			n	*Nycticorax caledonicus*	Nankeen Night Heron	2009	19
			v	*Spatula rhynchotis*	Australasian Shoveler	1986	2
			v	*Aythya australis*	Hardhead	2017	22
		L	e	*Oxyura australis*	Blue-billed Duck	2018	2
		L	v	*Ninox strenua*	Powerful Owl	2019	13
C,R,J	VU	L	v	*Hirundapus caudacutus*	White-throated Needletail	1972	3

Treaty	EPBC	FFG	VROTS	Scientific name	Common name	Last record	No. counts
	CR	L	cr	*Anthochaera phrygia*	Regent Honeyeater	1972	1

RELEVANT POLICY AND LEGISLATION

The section addressed the permits, approvals, management plans and offset requirements under Commonwealth, State and local government environmental legislation and policy.

Commonwealth

Environment Protection & Biodiversity Conservation Act 1999

The EPBC Act is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places defined in the Act as MNES. There are nine matters of national environmental significance to which the EPBC Act applies, these are:

- World heritage sites
- National heritage places
- Wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed)
- Nationally threatened species and ecological communities
- Migratory species
- Commonwealth marine areas
- Nuclear actions
- The Great Barrier Reef Marine Park
- a water resource, in relation to coal seam gas development and large coal mining development.

If a project is likely to have a significant impact on one of the nine matters of national environmental significance, the action or proposal must be referred to the Commonwealth DoEE. This 'referral' is, then released to the public for comment. A '*significant impact is defined under the EPBC Act as an impact that is important, notable, or of consequence, having regard to its context or intensity'* (DoE 2013).

Under the EPBC Act, actions that are likely to have a significant impact upon MNES require approval from the Environment Minister to undertake those actions. An action includes any project, development, undertaking, activity or series of activities.

Of the nine matters of national environmental significance to which the EPBC Act applies, three are deemed relevant to the Investigation Area and the redevelopment proposal: (1) wetlands of international importance, (2) nationally threatened species and ecological communities, (3) and migratory species. Further detail on each of these matters is provided below.

Threatened Species: Fauna

Five EPBC Act listed fauna species have previously been recorded within the Investigation Area: Latham's Snipe, Caspian Tern, Eastern Great, Egret White-throated Needletail. These species are listed as Migratory under the EBPC Act.

Database searches for significant fauna species likely to occur within a 5-kilometres was also investigated. This includes species listed as Migratory under the EPBC Act and/or as threatened species.

Aside from species listed above that have previously been recorded on site, three additional EPBC Act listed fauna species are considered to have a moderate to high likelihood of utilising the Investigation Area: Dwarf Galaxias, Growling Grass Frog and Grey-headed Flying-fox.

It is likely that there is a low risk of potential impact on their overall use of the site or persistence in the local area as a result of the proposal. An assessment of impacts against the *Matters of National Environmental Significance - Significant Impact Guidelines* (DoE 2013) may be required ed for these species depending on the preferred site for the tennis centre.

It must be noted that while noise and disturbance created during construction may cause these species to avoid the area, the removal of potential foraging and dispersal habitat has some potential to have a significant impact on these species as defined under the EPBC Act.

A full determination of the likely impact on Dwarf Galaxias and Growling Grass Frog will need to take place once a location is decided. At this stage, the overall impact on these species is likely to be moderate at best, however a full analysis including assessment against the *Matters of National Environmental Significance - Significant Impact Guideline*s (DoE 2013) will be required in due course. Impacts on the species could occur through direct habitat loss and impacts associated with sedimentation and runoff to waterways, noise and ecological light pollution.

At this stage, it is unclear whether a referral under the EPBC Act will be recommended for any of the development options being considered based on the potential presence of Dwarf Galaxias and Growling Grass Frog until further information is available regarding the development location.

The habitats for these EPBC-listed fauna species are likely most common along Dandenong Creek and adjacent areas with the habitat value declining as the distance from the creek increases. The driving range is the least likely area for any of the relevant habitat to occur.

State

Environment Effects Act 1978

Under Victoria's Environmental Effects Act 1978, projects that could have a 'significant effect' on Victoria's environment can potentially require an Environmental Effect Statement. This Act applies to works 'reasonably

considered to have or be capable of having a significant effect on the environment'. The Minister for Planning and Environment is the responsible person for assessing whether this Act applies.

Before commencing any public works to which this Act applies, the proponent firstly must undertake a self-assessment to determine if the proposal meets the criteria to trigger an Environmental Effects Statement (EES). If the trigger is met, then the proponent must initiate an EES and submit it to the Minister for the Minister's assessment of the environmental effects of the works.

The criteria for the types of potential effects on the environment that might be of significance and therefore warrant referral of a project include:

- clearing of 10 ha or more of native vegetation (that is of an endangered EVC or of very high conservation significance)
- impacts to matters listed under the *Flora and Fauna Guarantee Act 1988*, including:
    - potential loss of a significant area of a listed ecological community, or
    - potential loss of a genetically important population of an endangered or threatened species (listed or nominated for listing), including as a result of loss or fragmentation of habitats, or
    - potential loss of critical habitat, or
    - potential significant effects on habitat values of a wetland supporting migratory bird species
- potential extensive or major effects on land stability, acid sulphate soils or highly erodible soils over the short or long term
- potential extensive or major effects on beneficial uses of waterbodies over the long-term due to changes in water quality, stream flows or regional groundwater levels.

The above are based on referral criteria in the Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978 (DSE 2006).

Relevance of EE Act to proposed development

It is unknown at this stage what the impacts will be to native vegetation and this is yet to be determined once a preferred location has been selected. However it is likely that the site selected will not impact on any more than the 10 ha threshold of native vegetation clearance required to consider the EE Act for a project unless possibly a site adjacent to the Dandenong Creek is selected for the proposed tennis centre

Flora and Fauna Guarantee Act 1988

The FFG Act was established to provide a legal framework for enabling and promoting the conservation of all Victoria's native flora and fauna, and to enable management of potentially threatening processes. One of the main features of the FFG Act is the listing process, whereby native species and communities of flora and fauna, and the processes that threaten native flora and fauna are listed in the schedules of the FFG Act. This assists in

identifying those species and communities that require management to survive and identifies the processes that require management to minimise the threat to native flora and fauna species and communities within Victoria.

Under the FFG Act a permit from DELWP is also required to 'take' (to kill, injure, disturb or collect) listed flora species that are members of protected taxa from public land (this does not apply to private land unless listed species are present and the land is declared 'critical habitat' for the species). Protected flora are:

- Plants that have been declared to be protected under section 46 of the FFG Act
- Plants that are listed as threatened under section 10 of the FFG Act
- Plants that belong to communities that are listed as threatened under section 10 of the FFG Act.

Protected Flora Species

An Application to Take Protected Flora may be required for the proposed redevelopment for a range of common species listed as Protected Flora if no planning permit is needed. If a permit is obtained under the EE Act or Planning and Environment then the FFG Act is satisfied but in some circumstances a specific permit under the FFG Act may be required depending on the specific impact of the proposed development.

Threatened Species: Fauna

Under the FFG Act identified through database searches, there is a moderate to high likelihood that four species could make use of the habitat within the Investigation Area. These species are Dwarf Galaxia, Eastern Great Egret, Growling Grass Frog, Powerful Owl, Grey-headed Flying-fox, Caspian Tern, Lewin's Rail, Blue-billed Duck and White-throated Needletail.

It is not expected that direct removal of habitat for Dwarf Galaxia will occur as part of the development plan being considered; impacts on the species could occur however through impacts associated with sedimentation and runoff to waterways although can be reduced through appropriate mitigation measures

It is also recommended further consideration be given to Growling Grass Frog for its possible presence within the Investigation Area.

While it is expected that there be removal of habitat suitable for foraging for Eastern Great Egret and other species listed above in the form on open, managed grassed areas, this is of low significance and will not compromise the overall survival of this species.

For Powerful Owl and Grey-headed Flying-fox, impacts are likely to be indirect through noise and ecological light pollution rather than direct removal of large areas of foraging habitat. While the direct removal of these trees is not expected to impact on the species and its use of the Investigation Area, mitigation measures will need to be put in place to avoid indirect impacts. targeted surveys to determine habitat utilisation by Powerful Owl can assist in directing the mitigation measures to be adopted.

As the development may to impact FFG Act listed species habitat, an FFG Act permit to remove protected species may be required.

Flora and Fauna Guarantee Amendment Act 2019

The FFG Act has been amended to provide a modern and strengthened framework for the protection of Victoria's biodiversity. The Flora and Fauna Guarantee Amendment Act 2019 (the Amendment Act) came into effect on June 1, 2020.

The Amendment Act:

- introduces principles to guide the implementation of the FFG Act, including consideration of the rights and interests of Traditional Owners and the impacts of climate change
- requires consideration of biodiversity across government to ensure decisions and policies are made with proper consideration of the potential impacts on biodiversity
- clarifies existing powers to determine critical habitat and improves their protection by encouraging cooperative management
- gives effect to a consistent national approach to assessing and listing threatened species using the Common Assessment Method (CAM), which will reduce duplication of effort between jurisdictions and facilitate the monitoring and reporting of species' conservation status
- modernises the FFG Act's enforcement framework including stronger penalties.

Relevance to project

The Amended Act requires ministers and public authorities to consider the FFG Act when performing functions that might impact biodiversity when exercising their functions (set out in new section 4B).

The act requires that in performing any of their functions that may reasonably be expected to impact on biodiversity, including a function under any act, ministers and public authorities must give proper consideration to the act's objectives, so far as is consistent with the proper exercising of their functions.

Additional matters are also specified to be considered to clarify the objectives, including the Biodiversity Strategy, relevant action statements, management plans or critical habitat determinations. The types of potential impacts on biodiversity that should be considered are also specified, these include:

- long- and short-term impacts
- detrimental and beneficial impacts
- direct and indirect impacts
- cumulative impacts
- potentially threatening processes.

The act establishes tools to provide guidance to public authorities in considering biodiversity, these include:

- **Ministerial guidelines** to clarify the duty and support public authorities with further information.

- **Public authority management agreements** made with the Secretary to DELWP, which can provide certainty that biodiversity impacts are being sufficiently considered and being managed and can streamline approval requirements.

For further information on Public Authority Duty under the Amendment Act, see:

https://www.environment.vic.gov.au/__data/assets/pdf_file/0031/466681/Public-Authority-Duty-factsheet.pdf

A new category of protected flora – 'restricted use protected flora' is being introduced. There are changes to offences related to the take, trade, movement or processing of all protected flora, including revised exemptions. There have also been changes to the penalties for not complying with controls.

For further information on Protected Flora under the Amendment Act, see:

https://www.environment.vic.gov.au/conserving-threatened-species/protected-flora-and-listed-fish

Planning and Environment Act 1987

The Planning and Environment Act 1987 establishes the framework for planning the use, development and protection of land in Victoria in the present and long-term interests of all Victorians. This includes providing the structure for and administering the implementation of Planning Schemes in each municipality through the Victorian Planning Provisions (VPPs). Planning Schemes are legal instruments outlining provisions for land use, development and protection. They are constructed and sourced from the VPPs. The following considers relevant sections of the Planning Scheme.

State Planning Policy Framework

Clause 12 Environmental and Landscape Values

Clause 12 of the planning scheme recognises that planning:

- should help to protect the health of ecological systems and the biodiversity they support (including ecosystems, habitats, species and genetic diversity) and conserve areas with identified environmental and landscape values.
- must implement environmental principles for ecologically sustainable development that have been established by international and national agreements.
- should protect sites and features of nature conservation, biodiversity, geological or landscape value.

Clauses of particular relevance include:

- Clause 12.01-1 Protection of biodiversity
- Clause 12.01-2 Native vegetation management

This clause of the Monash Planning Scheme sets up the broad requirement to protect environmental and landscape values when making planning decisions, which would apply to some degree even when a planning permit is not required. The objectives of these clauses are considered in the body of this report that relate to avoiding and minimising impacts to biodiversity.

Clause 13 Environmental Risks

This clause recognises that planning should adopt a best practice environmental management and risk management approach which aims to avoid or minimise environmental degradation and hazards. This includes consideration of:

- climate change
- floodplains
- soil degradation
- erosion and landslip
- noise and air
- air quality
- bushfire

This clause of the Monash Planning Scheme sets up the broad requirement to prevent environmental risks when making planning decisions, which would apply to some degree even when a planning permit is not required. It

Zoning and Overlays

The Investigation Area and Concept Area is zoned **Public Park and Recreation Zone (PPRZ**) under the Monash Planning Scheme.

The Purpose of **Public Park and Recreation Zone (PPRZ)** is to:

- To implement the Municipal Planning Strategy and the Planning Policy Framework.
- To recognise areas for public recreation and open space.
- To protect and conserve areas of significance where appropriate.
- To provide for commercial uses where appropriate

Relevance to project

Under the regulations of the PPRZ, no planning permit is required for the use of the development if it is conducted by or on behalf of a public land manager. It is understood the tennis and golf facilities would be owned and managed by Council, albeit managed through a single management contract, and Council would maintain the facilities. Therefore no permit is required for the uses.

Furthermore no permit is required to construct a building or construct or carry out works if they are carried out by or on behalf of the public land manager. Therefore no permit is required for the associated buildings and works.

In terms of the car parking provided on site for the facility, the Monash Planning Scheme states that "No permit is required if the parking is provided in accordance with the rate specified in the Scheme. If no rate is stated, then the parking provision is to be to the satisfaction of the Responsible Authority (RA).

Clause 44.04 Land Subject to Inundation (LSIO) applies to eastern boundary of the Investigation Area along the Dandenong Creek

The purpose of this overlay, is to:

- To implement the Municipal Planning Strategy and the Planning Policy Framework.
- To identify land in a flood storage or flood fringe area affected by the 1 in 100 year flood or any other area determined by the floodplain management authority.
- To ensure that development maintains the free passage and temporary storage of floodwaters, minimises flood damage, is compatible with the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity.
- To reflect any declaration under Division 4 of Part 10 of the Water Act, 1989 where a declaration has been made.
- To protect water quality in accordance with the provisions of relevant State Environment Protection Policies, particularly in accordance with Clauses 33 and 35 of the State Environment Protection Policy (Waters of Victoria).
- To ensure that development maintains or improves river and wetland health, waterway protection and flood plain health.

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

- The Municipal Planning Strategy and the Planning Policy Framework.
- Any local floodplain development plan.
- Any comments from the relevant floodplain management authority.
- The existing use and development of the land.
- Whether the proposed use or development could be located on flood-free land or land with a lesser flood hazard outside this overlay.
- The susceptibility of the development to flooding and flood damage.
- The potential flood risk to life, health and safety associated with the development. Flood risk factors to consider include:

  - The frequency, duration, extent, depth and velocity of flooding of the site and accessway.
  - The flood warning time available.
  - The danger to the occupants of the development, other floodplain residents and emergency personnel if the site or accessway is flooded.

- The effect of the development on redirecting or obstructing floodwater, stormwater or drainage water and the effect of the development on reducing flood storage and increasing flood levels and flow velocities.
- The effect of the development on river health values including wetlands, natural habitat, stream stability, erosion, environmental flows, water quality and sites of scientific significance.
- Any other matters specified in a schedule to this overlay

Clause 52.17

Under Clause 52.17 a permit is required to remove, destroy or lop native vegetation on sites greater than 0.4 hectares. Clause 52.17 requires a planning permit for the removal of native vegetation (unless exemptions apply). The purpose of the clause (amongst others) is to minimise impacts on Victoria's biodiversity from the removal of native vegetation and to manage native vegetation to minimise land and water degradation.

The *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017a) have been designed to manage the risk to Victoria's biodiversity associated with the removal of native vegetation and are embedded into Clause 52.17. This risk is determined via an assessment of the location risk and the extent risk of the native vegetation to be removed.

Relevance to the project

Due to the size of the land, a planning permit would be required for the removal of any native vegetation unless exemptions apply, one of these being for planted and not remnant vegetation as discussed below. An assessment following the three step approach in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017a) is required. The biodiversity impacts must be offset, in accordance with the Guidelines, and conditions on the permit would specify the offset requirement and the timing to secure the offset.

Remnant Trees

With review of 1951 aerial photography and in relation to the arborists report there are a few trees still present on the proposed Concept Area site that are clearly present in 1951, most notably Tree 1 (an 86 cm DBH Silver-leaf Stringybark) and potentially Trees 10 and 11 which are River Red Gums. As it is likely that these trees are remnant and Large Trees a Clause 52.17 permit will be required if these trees are to be impacted by the proposal and offsets will apply.

Based on these priorities should be made that these trees be retained for designing around and retaining since they will require permits and represent more habitat and heritage than younger planted trees of any origin.

Planted Indigenous Trees

It is likely that the majority of trees throughout the Treed Corridor areas are planted with planted Indigenous, Victorian and Introduced trees. It is also likely that these trees were planted for amenity purposes funded by council based on this assumption under the State Native Vegetation planning provisions Clause 52.17-7 exemptions apply for planted vegetation within these areas and states:

Planted vegetation	Native vegetation that is to be removed, destroyed or lopped that was either planted or grown as a result of direct seeding. This exemption does not apply to native vegetation planted or managed with public funding for the purpose of land protection or enhancing biodiversity unless the removal, destruction or lopping of the native vegetation is in accordance with written permission of the agency (or its successor) that provided the funding.

Based on this assumption the removal of any planted tree is exempt from a planning permit and offsetting is not required.

Native Grasses

As discussed, there are patches of native grass, predominantly Wallaby and Weeping Grass, scattered within the ground storey of the treed corridor; these species would have regenerated after clearing and do not represent any sort of intact ecosystem. However, the regulations under Clause 52.17 would likely still end up requiring a permit for the removal of these patches. If they are in patches of less than 25% cover they would not qualify as habitat patches but would still strictly need a planning permit for removal (52.17 can apply down to one native grass tussock even if it is impractical) but would not require offsetting. If the patches are more than 25% cover they would be habitat zones and require a permit for removal and need to be offset.

Wildlife Act 1975 and Wildlife Regulations 2013

The Wildlife Act 1975 provides for the protection and conservation of native wildlife (fauna) within Victoria. It also provides the basis for the majority of wildlife permit/licensing requirements within the state. Under the Act a person must not hunt, take or destroy endangered, notable or protected wildlife; this includes all native vertebrate animals, all kinds of deer, non-indigenous quail, pheasants, and partridges, and all terrestrial invertebrate animals listed under the Flora and Fauna Guarantee Act 1988.

The Wildlife Regulations 2013 provide further detail relating to the act, including that a person not to damage, disturb or destroy any wildlife habitat (s42), although this does not apply if the person is authorised to do so under any other Act such as the Planning and Environment Act 1987.

It is unlikely a separate permit is required under this Act as damage should only be to wildlife habitat and not wildlife. However, if any wildlife is located within the habitat proposed for clearing, salvage and translocation of such wildlife may be required as part of the planning permit. This should also ensure wildlife is not damaged during construction works.

Catchment and Land Protection Act 1994

The *Catchment and Land Protection Act 1994* (CaLP Act) intends to manage land degradation including detrimental environmental or economic impacts of declared noxious weeds and pest animals.

Under section 20 of the CaLP Act, all land owners, including the Crown, public authorities and licensees of Crown lands, must, in relation to their land, take all reasonable steps to:

- avoid causing or contributing to land degradation which causes or may cause damage to land of another land owner;
- eradicate regionally prohibited weeds;
- prevent the growth and spread of regionally controlled weeds on their land;
- prevent the spread of, and as far as possible, eradicate established pest animals.

There are also provisions within the Act to prevent the spread of declared noxious weeds, through regulating the purchase, sale, possession for the purposes of sale, display, propagation or transport of these species into or within Victoria. Furthermore, under the Act it is prohibited to bring into Victoria, keep, sell or release declared pest animals without an authority (permit).

Declared noxious weeds are categorised into four groups depending on their known and potential impact and specific circumstances for each region. These categories are:

- State Prohibited Weeds (S) are either currently absent in Victoria or are restricted enough to be eradicated. The Victorian Government is responsible for their control.
- Regionally Prohibited Weeds (P) in the Port Phillip Catchment Management Authority (CMA) area these weeds are not necessarily widespread but have the potential to become widespread. It is expected that weeds that meet this criteria can be eradicated from the region. For weeds considered to be Regionally Prohibited it is the responsibility of the land owner to control these weeds on their land but not on adjacent roadside reserves.
- Regionally Controlled Weeds (C) are usually widespread but it is important to prevent further spread. It is the responsibility of the landowner to control these weeds on their property and on adjacent roadside reserves.
- Restricted Weeds (R) include plants that pose unacceptable risk of spreading in the State or other Australian states and are considered to be a serious threat to primary production, Crown land, the environment and/or community health if they were traded in Victoria. Trade in these weeds and their propagules, either as plants, seeds or contaminants in other material is prohibited.

Area of Aboriginal Cultural Heritage Sensitivity

- The area along Dandenong Creek will be an area of Aboriginal Cultural Heritage Sensitivity and It is recommended that any areas of Aboriginal Cultural Heritage Sensitivity be avoided to avoid the requirement of a Cultural Heritage Management Plan (CHMP) (See Figure 2).

SUMMARY AND RECOMMENDATIONS

The Concept Area from an ecological point of view is the preferred option for this proposal due to the fact that it is mostly cleared of vegetation and supports existing infrastructure. It avoids the broader area of the golf course that has been identified during this investigation and important habitat link between Jells Park, Shepherds Bush and the Dandenong Creek corridor that are known to support a range of flora and fauna species, including several that are listed under the EPBC Act and FFG Act.

The Concept Area is also the preferred location for the development due to the following:

- it avoids areas identified as EVC: 83 Swampy Riparian Woodland and EVC: 937 Swampy Woodland with a Bioregional Conservation Status of 'Endangered' as both of these EVCs were located closer to the Dandenong Creek away from the Concept Area
- It avoids the areas of the Golf Course that have direct connectivity to good quality (likely) remnant vegetation within the Waverley Road and Shepherd Road reserve, with the latter containing State significant Yarra Gum trees
- existing waterbodies that could provide potential habitat for Growling Grass Frog and Dwarf Galaxias, along with other amphibian and fish species plus avifauna, will not be directly impacted by the proposed works, with the Dandenong Creek and associated wetland also less likely to also suffer any indirect impacts from noise, sedimentation and ecological light pollution during construction and operation
- it minimises potential impacts to Powerful Owl and Grey-headed Flying-fox by avoiding the dissection of an important habitat linkages and the removal of foraging habitat values for these species along the Dandenong Creek and the Tree Corridors throughout the Golf Course
- It avoids Areas of Aboriginal Cultural Heritage Sensitivity that encompass the Dandenong Creek line (impacts in this area could require a CHMP)
- it avoids impacts to the water quality of the Dandenong Creek by further distancing the development away from the Creek Corridor and the area subject to inundation

Alternative locations for consideration and implications:

As highlighted above the Concept Area has very minimal ecological values compared to any other part of the golf course and constructing the tennis centre in that area will have significant less environmental impact than any other part of the larger Investigation Area.

Monash City Council has considered a range of sites across the golf course as alternative sites for the tennis centre and evaluated suitability based on this preliminary assessment. Although we are not able to compare all options considered, we can comment on two specific areas that have been identified through community engagement.

An expansion of the Glenvale Tennis Club has been put forward as an important option to consider for the tennis centre. The area surrounding the current tennis courts have significant ecological values that could be impacted significantly. It was found that there are significant numbers of significant native trees to the east and south of the courts with areas of native grass understorey scattered through these areas. The road reserve to the north of the tennis courts that extends east to Dandenong Creek is also an important habitat corridor that could be

impacted. Several threatened species, specifically Powerful Owl and Yarra Gum, has also been recorded in this area and it is in relative closer proximity to the significant habitat along Dandenong Creek than other areas of the golf course. This area of golf course has significant ecological values that would be impacted and potentially lost through any development in this area.

The other specific site discussed was the area around Hole 6 on Waverley Road. This area contains a small wetland and several stands of significant native trees. It is directly along the Waverley Road reserve with its extensive remnant native trees and restored groundstorey acting as a significant habitat corridor. Again, any construction on this site would have significant impacts on significant ecological values.

Avoid and Minimise

An assessment following the three step approach in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation* 2017 (the Guidelines) is required if any native vegetation is cleared that isn't covered by a possible exemption. And an avoid and minimise statement that describes any efforts to avoid the removal of and minimise the impacts on the biodiversity and other values of native vegetation, and how these efforts focussed on areas of native vegetation that have the most value.

The statement should describe:

- any strategic level planning over the site
- what site level planning has been done
- that no feasible opportunities exist to further avoid and minimise impacts on native vegetation without undermining the key objectives of the proposal.

Any loss of native vegetation must be offset, in accordance with the Guidelines, and conditions would specify the offset requirement and the timing to secure the offset.

Design collaboration

The information gathered from this preliminary site assessment is to inform, detailing the existing site conditions and values and how they relate to relevant legislation. The collaboration phase is important to ensure the design and location avoids and minimises the clearing of native vegetation and manages ecological values appropriately. Once a preferred location has been decided then a details assessment will be required to determine the impacts associated with the development.

Detailed development Design

At the detailed design phase, there are opportunities to plan for the ongoing retention of the ecological values across the Study Area identified within this report. This can be achieved by:

- retaining as many existing trees as possible through micro-siting changes and appropriate construction techniques
- Incorporation of planned and strategic revegetation and landscaping

- incorporation of Water Sensitive Urban Design
- retention of removed trees (including logs and other woody debris) on-site for habitat
- retention of fauna habitat elements, such as Large Trees, areas of native vegetation, and waterbodies, and focus around these elements for habitat linkages within the reserve
- incorporation of traffic management measures to minimise fauna injury and morality, and
- ensuring lighting installed minimises ecological light pollution.

Construction and Operation

The recommendations regarding construction and operation of the proposal are based on mitigating a number of key potential impacts from the development as outlined. The mitigation measures recommended for incorporation into the CEMP and OEMP prepared for the development therefore fall under the following main categories:

- management of vegetation, flora species and habitat before, during and after construction
- management of fauna injury and mortality during any tree removal activities
- management of noise and vibration
- management of ecological light pollution
- management of erosion, sedimentation and water pollution
- management of weeds and diseases, and management of rubbish

Appendix 1. Flora recorded at Investigation Area

Glen Waverley Reserve - Summary of Results	
Total No. of Species	150
Indigenous	76
Exotic	69
Victorian non-indigenous	5

Key	
***** Exotic Species (not native to Victoria)	**#** Species native to Victoria but is naturalised outside of natural range.
Collector	

Origin	*Scientific name*	Common name
	Acacia dealbata	Silver Wattle
	Acacia mearnsii	Black Wattle
	Acacia melanoxylon	Blackwood
	Acacia paradoxa	Hedge Wattle
	Acacia pycnantha	Golden Wattle
	Acaena novae-zelandiae	Bidgee-widgee
*	*Agrostis capillaris*	Brown-top Bent
*	*Agrostis stolonifera*	Creeping Bent
*	*Aira spp.*	Hair Grass
	Alisma plantago-aquatica	Water Plantain
*	*Allium triquetrum*	Angled Onion
	Allocasuarina littoralis	Black Sheoak
	Allocasuarina paludosa	Scrub Sheoak
	Amphibromus nervosus	Common Swamp Wallaby-grass
	Amyema pendula	Drooping Mistletoe
*	*Anthoxanthum odoratum*	Sweet Vernal-grass
*	*Arctotheca calendula*	Cape weed
*	*Aster subulatus*	Wild Aster
*	*Atriplex prostrata*	Hastate Orache
*	*Avena fatua*	Wild Oat
	Bellis perennis	English Daisy
*	*Brassica spp.*	Turnip
	Briza maxima	Large Quaking-grass
	Briza minor	Lesser Quaking-grass
*	*Bromus catharticus*	Prairie Grass
*	*Bromus hordeaceus subsp. hordeaceus*	Soft Brome

Origin	*Scientific name*	Common name
	Bursaria spinosa subsp. spinosa	Sweet Bursaria
	Carex appressa	Tall Sedge
	Carex inversa	Knob Sedge
	Cassinia aculeata	Common Cassinia
	Cassinia arcuata	Drooping Cassinia
	Cassinia longifolia	Shiny Cassinia
*	*Cenchrus clandestinus*	Kikuyu
*	*Centaurium erythraea*	Common Centaury
*	*Cerastium glomeratum*	Common Mouse-ear Chickweed
*	*Cirsium vulgare*	Spear Thistle
	Clematis microphylla	Small-leaved Clematis
*	*Conyza spp.*	Fleabane
	Coprosma quadrifida	Prickly Currant-bush
*	*Corymbia citriodora subsp. citriodora*	Lemon-scented Gum
#	*Corymbia maculata*	Spotted Gum
*	*Crataegus monogyna*	Hawthorn
*	*Cynodon dactylon*	Couch
*	*Cyperus eragrostis*	Drain Flat-sedge
*	*Dactylis glomerata*	Cocksfoot
	Dianella admixta	Black-anther Flax-lily
	Dichondra repens	Kidney-weed
*	*Ehrharta erecta var. erecta*	Panic Veldt-grass
*	*Ehrharta longiflora*	Annual Veldt-grass
	Epilobium billardierianum	Variable Willow-herb
#	*Eucalyptus botryoides*	Southern Mahogany
	Eucalyptus camaldulensis	River Red-gum
	Eucalyptus cephalocarpa	Silver-leaf Stringybark
#	*Eucalyptus cladocalyx*	Sugar Gum
	Eucalyptus globulus	Southern Blue-gum
	Eucalyptus ovata	Swamp Gum
	Eucalyptus viminalis subsp. pryoriana	Coast Manna-gum
	Eucalyptus viminalis subsp. viminalis	Manna Gum
	Euchiton sphaericus	Annual Cudweed
	Fraxinus angustifolia	Desert Ash
*	*Fumaria spp.*	Fumitory
	Gahnia radula	Thatch Saw-sedge
*	*Galium aparine*	Cleavers
*	*Geranium dissectum*	Cut-leaf Crane's-bill
	Glyceria australis	Australian Sweet-grass
	Gonocarpus micranthus	Creeping Raspwort

Origin	*Scientific name*	Common name
	Goodenia ovata	Hop Goodenia
	Goodia lotifolia	Golden Tip
*	*Grevillea robusta*	Silky Oak
*	*Grevillea spp.*	Grevillea
	Gynatrix pulchella	Hemp Bush
	Helichrysum luteoalbum	Jersey Cudweed
*	*Helminthotheca echioides*	Ox-tongue
*	*Holcus lanatus*	Yorkshire Fog
*	*Hordeum spp.*	Barley Grass
	Hydrocotyle hirta	Hairy Pennywort
*	*Hypochaeris glabra*	Smooth Cat's-ear
*	*Hypochaeris radicata*	Flatweed
	Indigofera australis	Austral Indigo
	Isolepis cernua var. platycarpa	Broad-fruit Club-sedge
	Juncus amabilis	Hollow Rush
	Juncus gregiflorus	Green Rush
*	*Juncus microcephalus*	Tiny-headed Rush
	Juncus planifolius	Broad-leaf Rush
	Juncus sarophorus	Broom Rush
	Juncus spp.	Rush
	Kunzea ericoides	Burgan
	Lachnagrostis filiformis	Common Blown-grass
	Lactuca serriola	Prickly Lettuce
*	*Lepidium didymum*	Lesser Swine-cress
*	*Lolium perenne*	Perennial Rye-grass
	Lomandra filiformis	Wattle Mat-rush
	Lomandra longifolia	Spiny-headed Mat-rush
*	*Lonicera japonica*	Japanese honeysuckle
*	*Lysimachia arvensis*	Pimpernel
	Lythrum hyssopifolia	Small Loosestrife
*	*Marrubium vulgare*	Horehound
#	*Melaleuca armillaris subsp. armillaris*	Giant Honey-myrtle
	Melaleuca ericifolia	Swamp Paperbark
	Melaleuca squarrosa	Scented Paperbark
*	*Melaleuca styphelioides*	Prickly Paperbark
	Melicytus dentatus	Tree Violet
	Mentha australis	River Mint
	Microlaena stipoides var. stipoides	Weeping Grass
*	*Modiola caroliniana*	Red-flower Mallow
	Olearia lirata	Snowy Daisy-bush

Origin	*Scientific name*	Common name
	Oxalis perennans	Grassland Wood-sorrel
*	*Paspalum dilatatum*	Paspalum
*	*Paspalum distichum*	Water Couch
	Pelargonium inodorum	Kopata
*	*Pennisetum clandestinum*	Kikuyu
	Persicaria decipiens	Slender Knotweed
*	*Phalaris aquatica*	Toowoomba Canary-grass
	Phragmites australis	Common Reed
#	*Pittosporum undulatum*	Sweet Pittosporum
*	*Plantago coronopus*	Buck's-horn Plantain
*	*Plantago lanceolata*	Ribwort
*	*Plantago major*	Greater Plantain
	Poa annua	Annual Meadow-grass
	Poa labillardierei	Common Tussock-grass
	Poa sieberiana	Grey Tussock-grass
	Poa tenera	Slender Tussock-grass
*	*Polygonum aviculare*	Prostrate Knotweed
	Prostanthera lasianthos var. lasianthos	Victorian Christmas- bush
*	*Prunella vulgaris*	Self-heal
*	*Quercus robur*	English Oak
*	*Ranunculus repens*	Creeping Buttercup
*	*Raphanus sativus*	Common Radish
*	*Romulea rosea*	Onion Grass
*	*Rubus fruticosus spp. agg.*	Blackberry
*	*Rumex conglomeratus*	Clustered Dock
*	*Rumex crispus*	Curled Dock
	Rytidosperma racemosum var. racemosum	Slender Wallaby-grass
	Senecio hispidulus	Rough Fireweed
	Senecio minimus	Shrubby Fireweed
	Solanum laciniatum	Large Kangaroo Apple
*	*Solanum nigrum*	Black Nightshade
*	*Solanum pseudocapsicum*	Madeira Winter-cherry
*	*Sonchus asper*	Rough Sow-thistle
*	*Sonchus oleraceus*	Common Sow-thistle
*	*Sporobolus africanus*	Rat-tail Grass
*	*Taraxacum officinale*	Garden Dandelion
	Themeda triandra	Kangaroo Grass
*	*Tradescantia fluminensis*	Wandering Trad
*	*Tragopogon porrifolius subsp. porrifolius*	Salsify
*	*Trifolium subterraneum*	Subterranean Clover
	Utricularia dichotoma	Fairies' Aprons
*	*Vulpia bromoides*	Squirrel-tail Fescue

Origin	*Scientific name*	Common name
*	*Vulpia myuros f. myuros*	Rat's-tail Fescue

Appendix 1.Fauna recorded at Investigation Area

Common name	Scientific name	Observation type
Birds		
Crested Pigeon	*Ocyphaps lophotes*	Seen
Pied Currawong	*Strepera graculina*	Heard
Sulphur-crested Cockatoo	*Cacatua galerita*	Seen
Australian Raven	*Corvus coronoides*	Seen
Noisy Miner	*Manorina melanocephala*	Seen
Rainbow Lorikeet	*Trichoglossus molucannus*	Seen
Musk Lorikeet	*Glossopsitta concinna*	Seen
Little Corella	*Cacatua sanguinea*	Seen
Pied Butcherbird	*Cracticus nigrogularis*	Seen
Common Myna	*Acridotheres tristis**	Seen
Australian King-Parrot	*Alisterus scapularis*	Seen
Australian Magpie	*Gymnorhina tibicen*	Seen
Australian Wood Duck	*Chenonetta jubata*	Seen
Red Wattlebird	*Anthochaera carunculata*	Seen
Superb Fairy-wren	*Malurus cyaneus*	Heard
Grey Shrike-thrush	*Colluricincla harmonica*	Heard
Laughing Kookaburra	*Dacelo novaeguineae*	Heard
Mistletoebird	*Dicaeum hirundinaceum*	Heard
Crimson Rosella	*Platycercus elegans*	Seen
Eastern Rosella	*Platycercus eximius*	Seen
Spotted Pardalote	*Pardalotus punctatus*	Heard
Magpie-lark	*Grallina cyanoleuca*	Seen
Brown Thornbill	*Acanthiza pusilla*	Seen
Eastern Spinebill	*Acanthorhynchus tenuirostris*	Heard
Australian White Ibis	*Threskiornis molucca*	Seen
Spotted Dove	*Spilopelia chinensis**	Seen
Eurasian Coot	*Fulica atra*	Seen
Grey Fantail	*Rhipidura albiscapa*	Heard
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	Heard
Mammals		
Eastern Ring-tailed Possum	*Pseudocheirus peregrinus*	Scats and disuded Drey
Invertebrates		
Common Brown Butterfly	*Heteronympha merope*	Seen
Green Grass-dart Butterfly	*Ocybadistes walkeri*	Seen



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Legend

- Investigation Area
- Preferred Concept Area
- Contours (10m)
- Constructed watercourse
- Natural watercourse

Details

Date: 16/02/2021
Version: 1

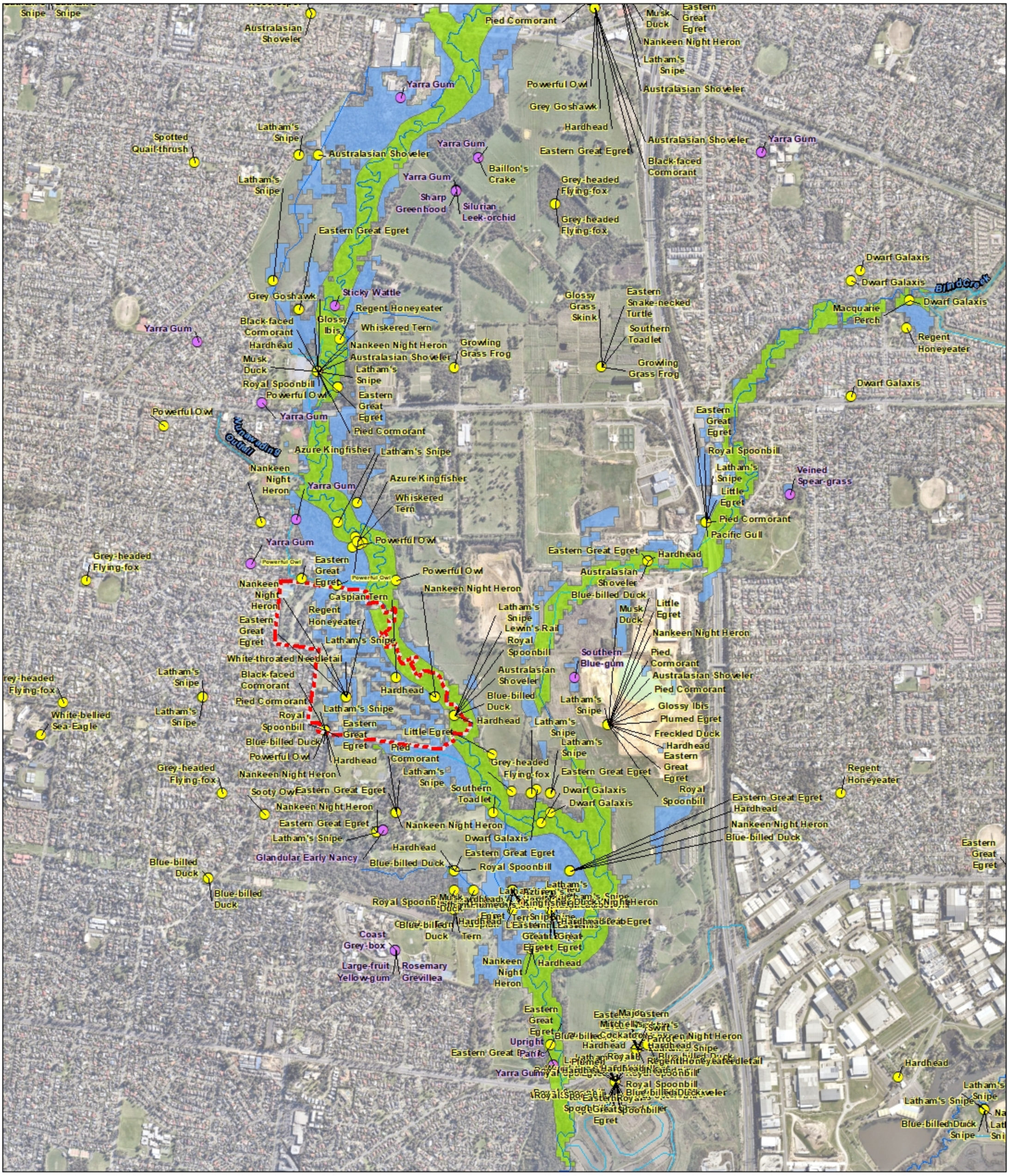
Data Source: Base layers courtesy of VicMap, Copyright © State of Victoria. Aerial photography from Nearmap (January 2021).

Map 1. Investigation Area
Glen WaverleyTennis Golf Course Project

N

0 50 100 m

Scale 1:3,897 (Page size A3)



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Legend

- Investigation Area
- Constructed watercourse
- Natural watercourse

Victorian Biodiversity Atlas significant species records

- Fauna
- Flora

FFG Listed Communities

- Herb-rich Plains Grassy Wetland (West Gippsland)
- Sedge-rich Eucalyptus camphora Swamp

Details

Date: 19/02/2021

Data Source: Base layers courtesy of VicMap, copyright © State of Victoria. Aerial photography from Nearmap (Aug 2019).

Map 2. Significant species and communities

Glen Waverly Tennis Golf Course Project

N

0 150 300 450 m

Scale 1:18,038 (Page size A3)



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Legend

- Investigation Area
- Concept Area
- Remnant Indigenous Trees (Arborist)
- Large Indigenous Trees (Arborist)
- Small Indigenous Trees (Arborist)
- Significant Indigenous Trees/Hollows
- Tree Hollows

Vegetation Description

- Swampy Riparian Woodland
- Swampy Woodland
- Tree Corridor
- Constructed Wetland/Native Vegetation

Details

Date: 31/08/2021
Version: 1

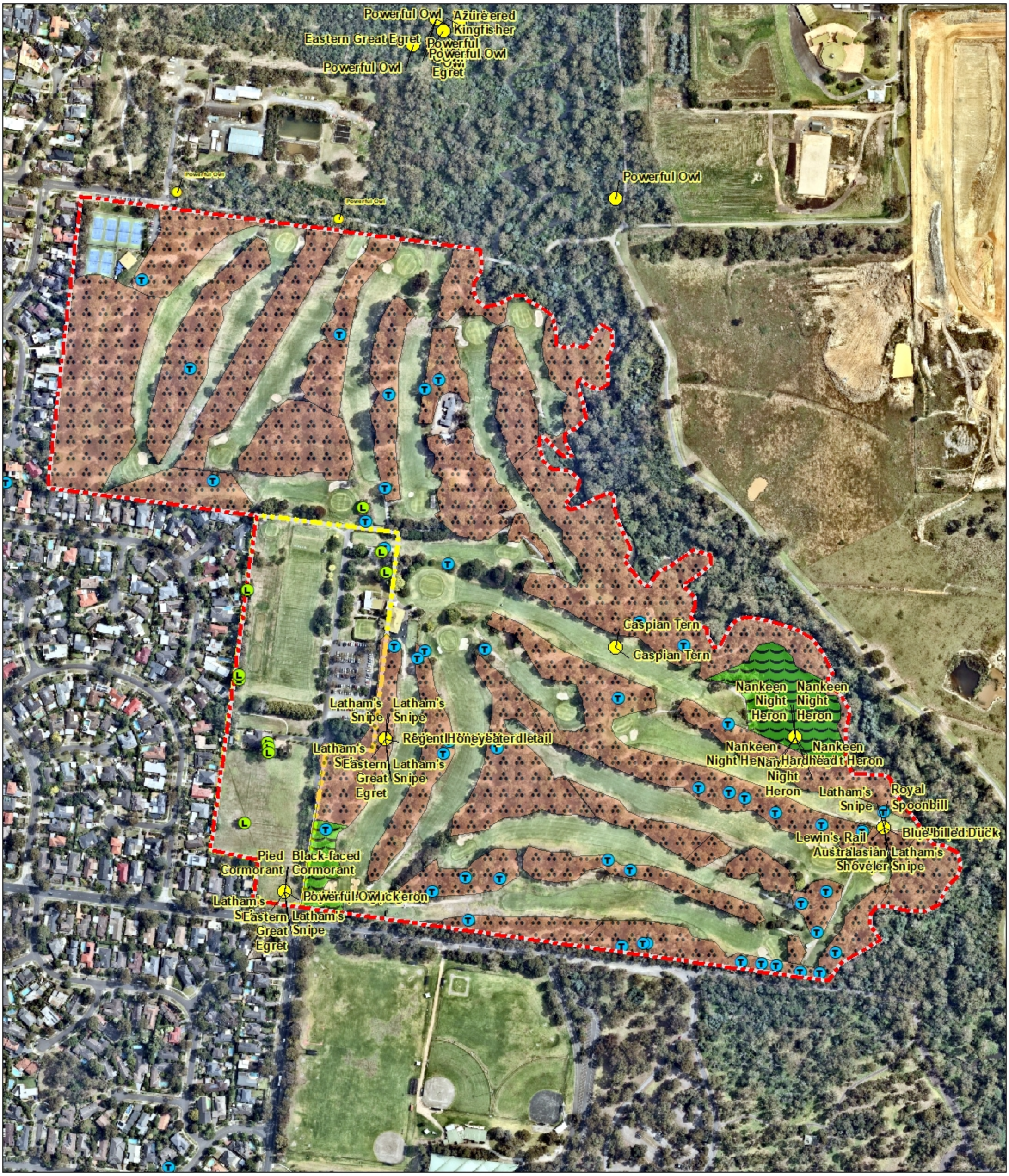
Data Source: Base layers courtesy of VicMap, Copyright © State of Victoria. Aerial photography from Nearmap (January 2021).

Map 3. Vegetation Values
Glen Waverley Tennis
Golf Course Project

N

0 50 100 m

Scale 1:3,897 (Page size A3)



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Legend

- Investigation Area
- Concept Area
- Fauna Habitat Trees (Arborist)
- Large Trees w Hollows
- Victorian Biodiversity Atlas significant Fauna species records
- Frog Habitat
- Fauna Habitat Corridors

Details

Date: 19/02/2021
Version: 1

Data Source: Base layers courtesy of VicMap, Copyright © State of Victoria. Aerial photography from Nearmap (January 2021).

Map 4. Fauna Values

Glen Waverley Tennis Golf Course Project

N

0 50 100 m

Scale 1:3,897 (Page size A3)

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