

Attachment 11 – Terrestrial/Estuarine Flora and Fauna Species Likely to Occur within the project area.

The following table provides the listed terrestrial/estuarine flora and fauna species identified from desktop studies that are moderately or highly likely to occur within the project area. The flora and fauna species listed here are to be further evaluated in targeted ecology field surveys underway at the time of this referral and scheduled for Spring 2019/Summer 2020.

- **Highly likely to occur** - Known or likely to maintain resident populations in the local area (<5 km), previously recorded on the site or frequently recorded in the local area (<5 years), preferred habitat present within the site.
- **Moderately likely to occur** - Previous records in the local area (<5 km, <10 years), likely to move through the site or visit seasonally, unlikely to maintain a population within the site but may contribute to the home range of individual animals, some characteristics of preferred habitat are present although may have been modified.

	<i>Conservation status under EPBC Act 1999:</i>		<i>Conservation status under FFG Act 1988:</i>		<i>Victoria Rare or Threatened Species (VROT) (DEPI 2014):</i>
EX	extinct	L	listed	x	presumed extinct
CR	critically endangered	N	nominated	e	endangered
EN	endangered	R	rejected	V	vulnerable
VU	vulnerable	D	delisted	R	rare
CD	conservation dependent	I	invalid	k	poorly known

Scientific name	Common Name	Listed Under:			Likelihood of Occurrence	Habitat Requirements
		EPBC	FFG	VROTS		
FAUNA SPECIES						
<i>Botaurus poiciloptilus.</i>	Australasian Bittern	EN	L	e	mod	<p>This species is part nocturnal and forages over water in dense cover, sometimes from platforms in wetland vegetation. Habitat is usually tall reedbeds, sedges, rushes, cumbungi or lignum. Also occurs on rice fields, drains in tussocky paddocks and occasionally on saltmarshes and brackish wetlands. Nests are shallow saucers on trampled water plants (Pizzey and Knight 2007).</p> <p>Most likely to occur in reedland around Dutson Downs treatment ponds.</p>
<i>Calidris ferruginea,</i> Curlew Sandpiper	Shorebirds	CR	-	e	mod	<p>Summer migrants to Victoria from Arctic breeding grounds (Aug-April). This species is found in a range of wetland habitats: tidal mudflats, saltmarsh, saltfields, fresh to saline wetlands, both coastal (most) and inland. Also visits sewage ponds (Pizzey and Knight 2007).</p> <p>Most likely to occur around Dutson Downs treatment ponds and Lake Reeve (when inundated).</p>
<i>Cercartetus nanus</i>	Eastern Pygmy Possum (EPP)	-	R	n,t	high	<p>Sparse to locally common in wide range of vegetation on the Great Dividing Range, including western slopes and coastal plains. Found in wet and dry eucalypt forest, subalpine woodland, coastal banksia woodland and wet heath (Menkhorst and Knight 2001).</p> <p>Suitable woodland/shrubland/heathland present, particularly within Coast Banksia habitat.</p>
<i>Dromaius novaehollandiae</i>	Emu	-	-	n,t	high	<p>Found in plains, scrublands, open woodlands, coastal heaths, alpine pastures, semi-deserts, margins of lakes, pastoral and cereal growing areas. Mostly absent from closely settled parts, common in pastoral and cropping regions, state forests and national parks (Pizzey and Knight 2007).</p> <p>PRESENT: Recorded at Dutson Downs. Likely to move through project area.</p>

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<i>Galaxiella pusilla</i>	Eastern Dwarf Galaxias	VU	L	e	low	<p>Typically occur in slow flowing and still, shallow, permanent and temporary freshwater waterways including swamps, the backwaters of streams and creeks, drains and ditches, usually with dense aquatic, emergent or flooded vegetation. Ephemeral sites require seasonal flooding and linkages to other more permanent populations for population replenishment, therefore wetland connectivity may be critical to survival. They occur across most of southern Victoria, however are sparse in the landscape and more abundant in the southeast of the state, most specifically in Mornington Peninsula & Western Port areas (Allen, Midgley and Allen 2002; Museum Victoria 2006).</p> <p>Not recorded during initial targeted surveys. Suboptimal habitat with most waterbodies being currently dry.</p>
<i>Isodon obesulus obesulus</i>	Southern Brown Bandicoot (SBB)	ED	L	n, t	mod	<p>The Southern Brown Bandicoot is active during both the day and night. It is found in forest, heath and shrub communities. It shelters in a nest of vegetation beneath dense cover; it eats fungi, tubers and arthropods (Menkhorst and Knight 2001; Paull 2008).</p> <p>Not recorded within 5 km but suitable habitat is present in the project area.</p>
<i>Lissolepis coventryi</i>	Swamp Skink	-	L	v	mod	<p>The Swamp Skink can be found in cool temperate, low-lying wetlands including swamp margins, tea-tree thickets and tidal saltmarshes. The freshwater wetlands are typically dominated by <i>Leptospermum</i> or <i>Melaleuca</i> spp. It typically occurs in or adjacent to dense sedge and tussock life-form vegetation without a dense canopy, allowing it to bask in the sun on logs or in open patches of the vegetation. It shelters in burrows (Wilson and Swan 2008).</p> <p>Not recorded within 5 km but suitable habitat is present in the north of the project area outside the preferred pipeline route.</p>
<i>Litoria aurea</i>	Green and Golden Bell Frog	VU	R	v	mod	<p>Usually found close to, or in water or very wet areas in forests, woodlands shrublands and open or disturbed areas. The eggs and tadpoles can be found in permanent lakes, swamps and dams with still water.</p> <p>Recent records from wetlands at Dutson Downs. May also occur in farm dams in the region.</p>

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<i>Litoria raniformis</i>	Growling Grass Frog	VU	L	e	high	<p>The species often inhabits water bodies with a diverse assemblage of aquatic vegetation, including emergent species such as sedges (<i>Gahnia</i> spp.), submergent species such as curly pondweed (<i>Potamogeton</i> spp.), floating species such as water ribbon (<i>Triglochin</i> spp.) and filamentous algae (Hamer and Organ 2006; Heard, Robertson and Scroggie 2004). The aquatic vegetation provides sites for male frogs to call from, sites for eggs to be deposited and relatively safe development, and food and shelter for tadpoles. Dense submergent vegetation is especially important to protect eggs and tadpoles from predation (Heard, Robertson and Scroggie 2004). However, it is also known to occur in ditches, dams and swamps or sheltering under discarded debris near those sites (Tyler and Knight 2009, pp. 38-39).</p> <p>Recent records from wetlands at Dutson Downs.</p>
<i>Numenius madagascariensis</i> , Eastern Curlew	Shorebirds	CR	-	v	low	<p>Common summer migrant to Australia (Aug-May) (Pizzey and Knight 2007). Found in sheltered coasts, especially estuaries, embayments, harbours, inlets and coastal lagoons with large intertidal mudflats or sandflats. Mainly forages on soft sheltered intertidal sandflats or mudflats, open and without vegetation, also on saltflats and in saltmarsh (Higgins and Davies 1996).</p> <p>Only one old record, limited suitable habitat present; estuarine habitat of Lake Reeve.</p>
<i>Oxyura australis</i> , Blue-billed Duck	Waterbirds	-	L	e	high	<p>This species inhabits deep, permanent, well-vegetated swamps, but at times (especially in winter) may occur in large numbers on large open wetlands. The Blue-billed Duck catches food while diving or occasionally by feeding from the water surface. Their nests are built on trampled swamp vegetation around the base of established stands of reeds/rushes, often over water or on small islands (Marchant and Higgins 1990; Pizzey and Knight 2007).</p> <p>Most likely to occur at Dutson Downs treatment ponds.</p>
<i>Pseudemoia rawlinsoni</i>	Glossy Grass Skink	-	-	v	high	<p>Inhabits swamp and lake edges, salt-marshes and boggy creeks with dense vegetation (Wilson and Swan 2008).</p> <p>Recorded at Dutson Downs.</p>
<i>Pseudomys novaehollandiae</i>	New Holland Mouse (NHM)	VU	L	v	high	<p>Occurs in heathlands, woodlands, open forest and paperbark swamps and on sandy, loamy or rocky soils. Coastal populations show a preference for sandy substrates with a heath understorey, leguminous shrubs less than 1m high and sparse ground litter. Habitat for burrowing is likely to be an important factor in species distribution (Van Dyck and Strahan 2008).</p> <p>Recorded recently at Dutson Downs. May occur in other options in woodland/shrubland.</p>

Scientific name	Common Name	Listed Under:			Likelihood of Occurrence	Habitat Requirements
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<i>Pseudophryne semimarmorata</i>	Southern Toadlet	-	-	v	high	<p>The Southern Toadlet can be found in dry forest, woodland, shrubland, grassland and heaths. It shelters under leaf litter and other debris in moist soaks and depressions. Their eggs are spawned in shallow burrows under organic litter in low areas close to water (Hero, Littlejohn and Marantelli 1991).</p> <p>Suitable ephemeral wetland habitat present in all three options, but quality is higher around Dutson Downs.</p>
<i>Stictonetta naevosa</i> , Freckled Duck	Waterbirds	-	L	e	mod	<p>Found in terrestrial wetlands with shallow productive waters or soft mud at wetland edges. In breeding range (Lake Eyre and Murray-Darling Basin) found in densely vegetated waters, particularly flood water swamps and creeks vegetated with lignum. In coastal region, prefers swamps and lakes with dense thickets of Melaleuca, Casuarina or Leptospermum (Marchant and Higgins 1990).</p> <p>Most likely to occur at Dutson Downs treatment ponds.</p>
<i>Thinornis cucullatus</i> , Hooded Plover	Shorebirds	VU	L	v	mod	<p>The Hooded Plover is endemic to south-eastern and western Australia. This species is mainly a bird of open sandy ocean beaches, and is occasionally found on bay beaches and coastal/inland saltlakes. It prefers broad, flat beaches with wide wash zone, with seaweed wrack and jetsam, and backed by sparsely vegetated dunes. It sometimes uses tidal flats and estuaries, rocky or sand-covered platforms and reefs, generally those near sandy beaches. In Victoria, it is widespread through all coastal areas (Marchant and Higgins 1993; Pizzey and Knight 2007).</p> <p>May occasionally forage and roost along Golden Beach and Lake Reeve.</p>
<i>Uperoleia martini</i>	Martin's Toadlet	-	L	c,e	high	<p>Found in dry forest, woodlands, shrublands, grasslands, open and disturbed areas. They are most common near water, but can be found in dry depressions that flood in winter or spring. Eggs are unknown. Tadpoles are aquatic but otherwise unknown.</p> <p>Suitable ponds and wetlands are present, but larger wetlands present at Dutson Downs.</p>
<i>Varanus varius</i>	Lace Monitor	-	-	e	high	<p>Occurs in well-timbered areas, from dry woodlands to cool temperate southern forests. Species is arboreal, ascending large trees when disturbed; forages widely. Clutches of eggs are laid in arboreal or terrestrial termite mounds (Wilson and Swan 2008).</p> <p>Suitable woodland habitat (particularly with logs and/or hollows) is present. Recorded at Lake Reeve Bluff.</p>
FLORA SPECIES						

Scientific name	Common Name	Listed Under:			Likelihood of Occurrence	Habitat Requirements
		EPBC	FFG	VROTS		
<i>Bossiaea heterophylla</i>	Variable Bossiaea	-	-	r	mod	Uncommon in Victoria and now confined to Gippsland east of Rosedale. Favours sandy soils in a variety of habitats including heath and open woodland. Medium – Heathlands
<i>Commersonia prostrata</i>	Dwarf Kerrawang	EN	L	e	high	Very rare, confined in Victoria to swampy land and lake margins in the Rosedale-Stradbroke-Providence Ponds area. High- found within study area
<i>Dodonea procumbens</i>	Trailing Hop-bush	VU	-	v	high	Largely confined in Victoria to the south-west (Penola-Dergholm area, Grampians, Lake Fyans) with disjunct occurrences near Castlemaine, Avoca, Skipton and Camperdown. A 1900 record from near Sale in the east has not been confirmed by recent collections. Grows in low-lying, often winter wet areas in woodland, low open-forest and grassland on sands and clays. Flowers Summer. (Walsh and Entwisle 1999). High - high number of records in Heathy Woodland
<i>Eucalyptus arenicola</i>	Gippsland Lakes Peppermint	-	-	r	high	Occurs in coastal and near-coastal areas in the Gippsland Lakes region in sandy soils. Distinguished from <i>Eucalyptus willisii</i> by its narrower juvenile leaves, somewhat broader and glossy adult leaves, and slightly larger fruits. High- found within study area
<i>Eucalyptus willisii</i> s.s.	Promontory Peppermint	-	-	r	high	Apparently restricted to sandy areas and granite hills in Wilsons Promontory. Plants previously included in this species from the Gippsland Lakes region are now recognised as a distinct species (see <i>E. arenicola</i>). High- found within study area
<i>Lomandra glauca</i> s.s.	Blue Mat-rush	-	-	k	mod	Recorded from heathland and heathy woodland in the Yarram–Sale area and from dryish, rocky sites inland and further to the east (e.g. Avon Wilderness, Buchan and Orbost areas, Howe Range). Low-medium found in heathlands. Low records.
<i>Prasophyllum frenchii</i> , Maroon Leek-orchid	Orchids	EN	L	e	high	Infrequent, widespread populations in south western Victoria. Grasslands heathlands and grassy woodlands on moist well drained soils, including roadsides or rail reserves (Jeanes and Backhouse 2006). High- found within study area.

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<i>Prostanthera galbraithiae</i>	Wellington Mintbush	VU	L	v	high	Endemic in the Holey Hill-Dutson area (south of Sale), in heathy open-forest, usually on gravelly sand. High- found within study area.
<i>Thelymitra epipactoides</i> , Metallic Sun-orchid	Orchids	EN	L	e	mod	Heath, grassland and woodland. Flowering enhanced by summer fires. Highly endangered (Jeanes and Backhouse 2006). Medium - Found in Deep Sands Woodlands parallel to coastline.
<i>Thelymitra planicola</i> , Shy Sun-Orchid	Orchids	-	-	k	low	Distribution mainly in the Gippsland Lakes area, growing in grassland, woodland, and heath (Jeanes and Backhouse 2006, p. 206). Low -found in deep sand woodlands. Low records.
<i>Thryptomene micrantha</i>	Ribbed Thryptomene	-	-	r	high	In Victoria found mostly in heath or heathy woodland on sandy soils near the Gippsland Lakes (e.g. Sperm Whale Head), but with isolated occurrences in low shrubland on exposed rocky slopes north of Licola. Old records from the Grampians, and a 2003 collection from the lower Glenelg River area link the eastern Victorian occurrences to those of South Australia, but the status of these intervening populations requires further investigation. High- found within study area
<i>Zieria veronicea subsp. veronicea</i>	Pink Zieria	-	-	r	low	Widespread in sandy mallee and mallee-heath communities of western Victoria with a southerly outlier near Casterton, and disjunct populations in sandy lowland heaths around the Gippsland Lakes. Often cryptic unless recently after fires or other disturbance when flowering may be prolific. Low - low number of records.