

APPENDICES

APPENDIX 1

Appendix 1.1 – Rare or Threatened Categories for Listed Victorian Taxa

Table A1.1. Rare or Threatened categories for listed Victorian taxa.

Rare or Threatened Categories
Conservation Status in Australia (Based on the EPBC Act 1999)
EX - Extinct: Extinct is when there is no reasonable doubt that the last individual of the species has died.
CR - Critically Endangered: A species is critically endangered when it is facing an extremely high risk of extinction in the wild in the immediate future.
EN - Endangered: A species is endangered when it is not critically endangered but is facing a very high risk of extinction in the wild in the near future.
VU - Vulnerable: A species is vulnerable when it is not critically endangered or endangered but is facing a high risk of extinction in the wild in the medium-term future.
R* - Rare: A species is rare but overall is not currently considered critically endangered, endangered or vulnerable.
K* - Poorly Known: A species is suspected, but not definitely known, to belong to any of the categories extinct, critically endangered, endangered, vulnerable or rare.
Conservation Status in Victoria (Based on DEPI 2014, DSE 2009 or 2013)
x - Presumed Extinct in Victoria: not recorded from Victoria during the past 50 years despite field searches specifically for the plant, or, alternatively, intensive field searches (since 1950) at all previously known sites have failed to record the plant.
e - Endangered in Victoria: at risk of disappearing from the wild state if present land use and other causal factors continue to operate.
v - Vulnerable in Victoria: not presently endangered but likely to become so soon due to continued depletion; occurring mainly on sites likely to experience changes in land-use which would threaten the survival of the plant in the wild; or, taxa whose total population is so small that the likelihood of recovery from disturbance, including localised natural events such as drought, fire or landslip, is doubtful.
r - Rare in Victoria: rare but not considered otherwise threatened - there are relatively few known populations or the taxon is restricted to a relatively small area.
k - Poorly Known in Victoria: poorly known and suspected, but not definitely known, to belong to one of the above categories (x, e, v or r) within Victoria. At present, accurate distribution information is inadequate.

Appendix 1.2 – Defining Ecological Significance

Table A1.2. Criteria for defining Ecological Significance ratings for significant flora, fauna and communities.

National Significance
<p>Flora: National conservation status is based on the EPBC Act list of taxa considered threatened in Australia (i.e. extinct, critically endangered, endangered, vulnerable).</p>
<p>Fauna: National conservation status is based on the EPBC Act list of taxa considered threatened in Australia (i.e. Extinct, Critically Endangered, Endangered, Vulnerable). Fauna listed as Extinct, Critically Endangered, Endangered, Vulnerable, or Rare under National Action Plans for terrestrial taxon prepared for DoE: mammals (Woinarski <i>et al.</i> 2014), bats (Duncan <i>et al.</i> 1999), birds (Garnett <i>et al.</i> 2011), reptiles (Cogger <i>et al.</i> 1993), amphibians (Tyler 1997) and butterflies (Sands and New 2002).</p>
<p>Communities: Vegetation communities considered critically endangered, endangered or vulnerable under the EPBC Act and considering vegetation condition.</p>
State Significance
<p>Flora: Threatened taxa listed under the provisions of the FFG Act. Flora listed in the State Government's Advisory List of Rare or Threatened Plants in Victoria (DEPI 2014).</p>
<p>Fauna: Threatened taxon listed under Schedule 2 of the FFG Act. Fauna listed as Extinct, Critically Endangered, Endangered and Vulnerable on the State Government's Advisory List of Threatened Vertebrate Fauna in Victoria (DSE 2013). Listed as Lower Risk (Near Threatened, Conservation Dependent or Least concern) or Data Deficient under National Action Plans for terrestrial species prepared for the DoE: mammals (Woinarski <i>et al.</i> 2014), bats (Duncan <i>et al.</i> 1999), birds (Garnett <i>et al.</i> 2011), reptiles (Cogger <i>et al.</i> 1993), amphibians (Tyler 1997) and butterflies (Sands and New 2002).</p>
<p>Communities: Ecological communities listed as threatened under the FFG Act (DELWP 2016g). EVC listed as threatened (i.e. endangered, vulnerable) or rare in a Native Vegetation Plan for a particular bioregion and considering vegetation condition.</p>
Regional Significance
<p>Fauna: Fauna with a disjunct distribution, or a small number of documented recorded or naturally rare in the particular Bioregion in which the study area is located. A particular taxon that is has an unusual ecological or biogeographical occurrence or listed as Lower Risk – Near Threatened, Data Deficient or Insufficiently Known on the State Government's Advisory List of Threatened Vertebrate Fauna in Victoria (DSE 2013).</p>
<p>Communities: EVC listed as depleted or least concern in a Native Vegetation Plan for a particular bioregion) and considering vegetation condition. EVC considered rare by the author for a particular bioregion.</p>
<p>Local Significance Local significance is defined as flora, fauna and ecological communities indigenous to a particular area, which are not considered rare or threatened on a national, state or regional level.</p>

Appendix 1.3 – Defining Site Significance

Table A1.3. Criteria for defining Site Significance ratings.

National Significance
<p>A site is of National significance if:</p> <ul style="list-style-type: none"> It regularly supports, or has a high probability of regularly supporting individuals of a taxon listed as ‘Critically Endangered’ or ‘Endangered’ under the EPBC Act and/or under National Action Plans for terrestrial taxon prepared for the DoE. It regularly supports, or has a high probability of supporting, an ‘important population’ as defined under the EPBC Act of one or more nationally ‘vulnerable’ flora and fauna taxon. It is known to support, or has a high probability of supporting taxon listed as ‘Vulnerable’ under National Action Plans. It is known to regularly support a large proportion (i.e. greater than 1%) of a population of a taxon listed as ‘Conservation Dependent’ under the EPBC Act and/or listed as Rare or Lower Risk (near threatened, conservation dependent or least concern) under National Action Plans. It contains an area, or part thereof designated as ‘critical habitat’ under the EPBC Act, or if the site is listed under the Register of National Estate compiled by the Australian Heritage Commission. It is a site which forms part of, or is connected to a larger area(s) of remnant native vegetation or habitat of national conservation significance such as most National Park, and/or a Ramsar Wetland(s).
State Significance
<p>A site is of State significance if:</p> <ul style="list-style-type: none"> It occasionally (i.e. every 1 to 5 years) supports, or has suitable habitat to support taxon listed as ‘Critically Endangered’ or ‘Endangered’ under the EPBC Act and/or under National Action Plans. It regularly supports, or has a high probability of regularly supporting (i.e. high habitat quality) taxon listed as ‘Vulnerable’, ‘Near threatened’, ‘Data Deficient’ or ‘Insufficiently Known’ in Victoria (DSE 2013; DEPI 2014), or species listed as ‘Data Deficient’ or ‘Insufficiently Known’ under National Action Plans. It contains an area, or part thereof designated as ‘critical habitat’ under the FFG Act. It supports, or likely to support a high proportion of any Victorian flora and fauna taxa. It contains high quality, intact vegetation/habitat supporting a high species richness and diversity in a particular bioregion. It is a site which forms part of, or connected to a larger area(s) of remnant native vegetation or habitat of state conservation significance such as most State Parks and/or Flora and Fauna Reserves.
Regional Significance
<p>A site is of Regional significance if:</p> <ul style="list-style-type: none"> It regularly supports, or has a high probability of regularly supporting regionally significant fauna as defined in Table 1.2. It contains a large population (i.e. greater than 1% or 5%) of flora considered rare in any regional Native Vegetation Plan for a particular bioregion. It supports a fauna population with a disjunct distribution, or a particular taxon that has an unusual ecological or biogeographical occurrence. It is a site which forms part of, or is connected to a larger area(s) of remnant native vegetation or habitat of regional conservation significance such as most Regional Parks and/or Flora and Fauna Reserves.
Local Significance
<p>Most sites are considered to be of at least local significant for conservation, and in general a site of local significance can be defined as:</p> <ul style="list-style-type: none"> An area which supports indigenous flora species and/or a remnant EVC, and habitats used by locally significant fauna species. An area which currently acts, or has the potential to act as a wildlife corridor linking other areas of higher conservation significance and facilitating fauna movement throughout the landscape.

Appendix 1.4 – Vegetation Condition and Habitat Quality

Table A1.4.1 Defining Vegetation Condition ratings.

Criteria for defining Vegetation Condition
High Quality: Vegetation dominated by a diversity of indigenous species, with defined structures (where appropriate), such as canopy layer, shrub layer, and ground cover, with little or few introduced species present.
Moderate Quality: Vegetation dominated by a diversity of indigenous species, but is lacking some structures, such as canopy layer, shrub layer or ground cover, and/or there is a greater level of introduced flora species present.
Low Quality: Vegetation dominated by introduced species, but supports low levels of indigenous species present, in the canopy, shrub layer or ground cover.

Table A1.4.2 Defining Habitat Quality.

Criteria for defining Habitat Quality
High Quality: <ul style="list-style-type: none"> • High degree of intactness (i.e. floristically and structurally diverse), containing several important habitat features such as ground debris (logs, rocks, vegetation), mature hollow-bearing trees, and a dense understorey component. • High species richness and diversity (i.e. represented by a large number of species from a range of fauna groups). • High level of foraging and breeding activity, with the site regularly used by native fauna for refuge and cover. • Habitat that has experienced, or is experiencing low levels of disturbance and/or threatening processes (i.e. weed invasion, introduced animals, soil erosion, salinity). • High contribution to a wildlife corridor, and/or connected to a larger area(s) of high quality habitat. • Provides known, or likely habitat for one or more rare or threatened species listed under the EPBC Act, FFG Act, or species considered rare or threatened according to DEPI 2014; DSE 2009 or 2013.
Moderate Quality: <ul style="list-style-type: none"> • Moderate degree of intactness, containing one or more important habitat features such as ground debris (logs, rocks, vegetation), mature hollow-bearing trees, and a dense understorey component. • Moderate species richness and diversity - represented by a moderate number of species from a range of fauna groups. • Moderate levels of foraging and breeding activity, with the site used by native fauna for refuge and cover. • Habitat that has experienced, or is experiencing moderate levels of disturbance and/or threatening processes. • Moderate contribution to a wildlife corridor, or is connected to area(s) of moderate quality habitat. • Provides potential habitat for a small number of threatened species listed under the EPBC Act, FFG Act, or species considered rare or threatened according to DEPI 2014; DSE 2009 or 2013.
Low Quality: <ul style="list-style-type: none"> • Low degree of intactness, containing few important habitat features such as ground debris (logs, rocks, vegetation), mature hollow-bearing trees, and a dense understorey component. • Low species richness and diversity (i.e. represented by a small number of species from a range of fauna groups). • Low levels of foraging and breeding activity, with the site used by native fauna for refuge and cover. • Habitat that has experienced, or is experiencing high levels of disturbance and/or threatening processes. • Unlikely to form part of a wildlife corridor, and is not connected to another area(s) of habitat. • Unlikely to provide habitat for rare or threatened species listed under the EPBC Act, FFG Act, or considered rare or threatened according to DEPI 2014; DSE 2009 or 2013.

Appendix 1.5 – Offsets and Exemptions

Table A1.5.1. Calculation of Biodiversity Equivalence Scores and General or Specific Offsets (DEPI 2013)

Pathway	Biodiversity Assessment Tools	Information Source
Low Risk-based pathway	Condition Score	Modelled data, NVIM Tool (DELWP 2016c)
	Habitat Hectares	= Condition Score x Extent (ha)
	Strategic Biodiversity Score	Modelled data, NVIM Tool (DELWP 2016c)
	General Biodiversity Equivalence Score	= Habitat Hectares x Strategic Biodiversity Score
Moderate or High Risk-based pathway	Condition Score	Habitat hectare assessment
	Habitat Hectares	= Condition Score x Extent (ha)
	Strategic Biodiversity Score and Habitat Importance Score	Modelled data, determined by DEPI
	Specific Biodiversity Equivalence Score (A)	= Habitat Hectares x Habitat Importance Score
	Sum of Specific Biodiversity Equivalence Scores of remaining habitat (B)	Data gathered during the field assessment is provided to DEPI for analysis and a resulting assessment offset report is provided by the Department.
	Specific Offset Threshold (C)	
	General/Specific Threshold Test: If $A \div B > C$ a Specific offset is required If $A \div B < C$ a General offset required	

Table A1.5.2. Summary of offset requirements (DEPI 2013)

Risk –based Pathway	Offset Type	Offset Amount (Risk adjusted biodiversity equivalence score)	Offset Attributes		
			Habitat for Species	Vicinity	Strategic Biodiversity Score
Low Risk	General offset	1.5 times the general biodiversity equivalence score of the native vegetation to be removed.	No restrictions	In the same Catchment Management Authority or Local Government Area boundary as the native vegetation to be removed.	At least 80 per cent of the strategic biodiversity score of the native vegetation to be removed.
Moderate or High Risk	General offset	1.5 times the general biodiversity equivalence score of the native vegetation to be removed.	No restrictions	In the same Catchment Management Authority or Local Government Area boundary as the native vegetation to be removed.	At least 80 per cent of the strategic biodiversity score of the native vegetation to be removed.
Moderate or High Risk	Specific offset	For each species impacted, 2 times the specific biodiversity equivalence score of the native vegetation to be removed.	Likely habitat for each rare or threatened species that a specific offset is required for, according to the specific-general offset test.	No restrictions	No restrictions

Appendix 1.6 – *Flora and Fauna Guarantee Act 1988* Protected Species

Protected flora and fauna under the *Flora and Fauna Guarantee Act 1988* (FFG Act) are defined as those that have legal protection under the Act. Protected taxa includes plants and animals from three sources:

- plant or animal taxa (species, subspecies or varieties) listed as threatened under the FFG Act;
- plant taxa belonging to communities listed as threatened under the FFG Act; and,
- plant taxa which are not threatened but require protection for other reasons.

Note that representative plants of a given community are protected as well as the community itself (for example scattered Wallaby-grasses *Rytidosperma* spp. are protected in degraded areas previously supporting the listed Western [Basalt] Plains Grassland Community).

Table A1.6 provides a list of plant groups protected under the FFG Act. For threatened plant species likely to occur within the study area refer to Appendix and for listed communities (or representative species) likely to occur within the study area refer to Sections 3.4.1 and 3.4.3.

Table A1.6. Plant groups (Families, Genera and Kingdom Divisions) protected under the FFG Act (DELWP 2015b).

Family/Genera	Common Name	Exclusions
Pteridophyta	Clubmosses, ferns and fern allies	Austral Bracken <i>Pteridium esculentum</i>
Asteraceae	Daisies	N/A
Ericaceae (formerly Epacridaceae)	Heaths	N/A
Orchidaceae	Orchids	N/A
<i>Acacia</i>	Wattles	<i>Acacia dealbata</i> , <i>Acacia decurrens</i> , <i>Acacia implexa</i> , <i>Acacia melanoxylon</i> and <i>Acacia paradoxa</i>
<i>Baeckea</i>	Baeckneas	N/A
<i>Boronia</i>	Boronias	N/A
<i>Calytrix</i>	Fringe-myrtles	N/A
<i>Correa</i>	Correas	N/A
<i>Darwinia</i>	Darwinias	N/A
<i>Eremophila</i>	Emu-bushes	N/A
<i>Eriostemon</i>	Wax-flowers	N/A
<i>Gompholobium</i>	Wedge-peas	N/A
<i>Grevillea</i>	Grevilleas	N/A
<i>Prostanthera</i>	Mint-bushes	N/A
<i>Sphagnum</i>	Sphagnum mosses	N/A
<i>Stylidium</i>	Trigger-plants	N/A
<i>Thryptomene</i>	Thryptomenes	N/A
<i>Thysanotus</i>	Fringe-lilies	N/A
<i>Xanthorrhoea</i>	Grass-trees	N/A

APPENDIX 2 - FLORA

Appendix 2.1 – Flora Results

Legend:

CR Listed as Critically Endangered under the EPBC Act;

I Protected under the FFG Act (DELWP 2015b);

k Listed as poorly known in Victoria under the Advisory List of Rare or Threatened Plants in Victoria (DEPI 2014);

***** Listed as a noxious weed under the CaLP Act;

w Weed of National Significance; and,

Planted Victorian and non-Victorian species.

Table A2.1. Flora recorded within the study area.

Scientific Name	Common Name
Indigenous Species	
<i>Acaena echinata</i>	Sheep's Burr
<i>Anthosachne scabra</i> s.l.	Common Wheat-grass
<i>Arthropodium fimbriatum</i>	Nodding Chocolate-lily
<i>Asperula conferta</i>	Common Woodruff
<i>Austrostipa</i> spp.	Spear Grass
<i>Calocephalus citreus</i> I	Lemon Beauty-heads
<i>Calotis scabiosifolia</i> var. <i>scabiosifolia</i> I	Rough Burr-daisy
<i>Calotis scapigera</i> I	Tufted Burr-daisy
<i>Chloris truncata</i>	Windmill Grass
<i>Chrysocephalum apiculatum</i> s.l. I	Common Everlasting
<i>Convolvulus angustissimus</i> subsp. <i>omnigracilis</i> k	Slender Bindweed
<i>Cotula australis</i> I	Common Cotula
<i>Crassula sieberiana</i> s.l.	Sieber Crassula
<i>Eleocharis acuta</i>	Common Spike-sedge
<i>Enchylaena tomentosa</i>	Ruby Saltbush
<i>Erodium crinitum</i>	Blue Heron's-bill
<i>Eryngium ovinum</i>	Blue Devil
<i>Geranium potentilloides</i>	Soft Crane's-bill

Scientific Name	Common Name
<i>Goodenia pinnatifida</i>	Cut-leaf Goodenia
<i>Juncus</i> spp.	Rush
<i>Oxalis</i> spp.	Wood Sorrel
<i>Pimelea spinescens</i> subsp. <i>spinescens</i> CR	Spiny Rice-flower
<i>Rytidosperma</i> spp.	Wallaby Grass
<i>Senecio quadridentatus</i> l	Cotton Fireweed
<i>Themeda triandra</i>	Kangaroo Grass
<i>Walwhalleya proluta</i>	Rigid Panic
Introduced and Planted Species	
<i>Aira</i> spp.	Hair Grass
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass
<i>Arctotheca calendula</i>	Cape weed
<i>Avena</i> spp.	Oat
<i>Brassica</i> spp.	Turnip
<i>Bromus catharticus</i>	Prairie Grass
<i>Bromus hordeaceus</i> subsp. <i>hordeaceus</i>	Soft Brome
<i>Bromus</i> spp.	Brome
<i>Callistemon</i> spp. #	Bottlebrush
<i>Capsella bursa-pastoris</i>	Shepherd's Purse
<i>Catapodium rigidum</i>	Fern Grass
<i>Cenchrus clandestinus</i>	Kikuyu
<i>Cynara cardunculus</i> subsp. <i>flavescens</i> *	Artichoke Thistle
<i>Cynodon dactylon</i>	Couch
<i>Cupressus</i> spp.	Cypress
<i>Dactylis glomerata</i>	Cocksfoot
<i>Echium plantagineum</i> *	Paterson's Curse
<i>Ehrharta calycina</i>	Perennial Veldt-grass
<i>Eucalyptus camaldulensis</i> #	River Red-gum
<i>Eucalyptus melliodora</i> #	Yellow Box
<i>Euphorbia peplus</i>	Petty Spurge
<i>Fumaria bastardii</i>	Bastard's Fumitory
<i>Galenia pubescens</i> var. <i>pubescens</i>	Galenia
<i>Galium aparine</i>	Cleavers
<i>Gazania linearis</i>	Gazania
<i>Helminthotheca echioides</i>	Ox-tongue
<i>Hordeum</i> spp.	Barley Grass
<i>Hypochaeris radicata</i>	Flatweed

Scientific Name	Common Name
<i>Lactuca serriola</i>	Prickly Lettuce
<i>Lepidium africanum</i>	Common Peppergrass
<i>Lolium perenne</i>	Perennial Rye-grass
<i>Lysimachia arvensis</i> (Blue-flowered variant)	Blue Pimpernel
<i>Malva nicaeensis</i>	Mallow of Nice
<i>Medicago</i> spp.	Medic
<i>Melaleuca ericifolia</i> #	Swamp Paperbark
<i>Moraea setifolia</i>	Thread Iris
<i>Nassella neesiana</i> W *	Chilean Needle-grass
<i>Nassella trichotoma</i> W *	Serrated Tussock
<i>Oxalis</i> spp. (naturalised)	Wood Sorrel
<i>Oxalis pes-caprae</i>	Sour sob
<i>Paronychia brasiliensis</i>	Whitlow Wort
<i>Plantago coronopus</i>	Buck's-horn Plantain
<i>Plantago lanceolata</i>	Ribwort
<i>Poa annua</i>	Annual Meadow-grass
<i>Poa bulbosa</i>	Bulbous Meadow-grass
<i>Polygonum aviculare</i> s.l.	Prostrate Knotweed
<i>Romulea rosea</i>	Onion Grass
<i>Salvia verbenaca</i>	Wild Sage
<i>Sonchus oleraceus</i>	Common Sow-thistle
<i>Sporobolus africanus</i>	Rat-tail Grass
<i>Stellaria media</i>	Chickweed
<i>Taraxacum officinale</i> spp. agg.	Garden Dandelion
<i>Trifolium arvense</i> var. <i>arvense</i>	Hare's-foot Clover
<i>Trifolium repens</i> var. <i>repens</i>	White Clover
<i>Trifolium</i> spp.	Clover
<i>Trifolium subterraneum</i>	Subterranean Clover
<i>Vulpia</i> spp.	Fescue

Appendix 2.2 – Significant Flora Species

Table A2.2 Significant flora recorded within 10 kilometres of the study area

Likelihood: Habitat characteristics of significant flora species previously recorded within 10 kilometres of the study area, or that may potentially occur within the study area were assessed to determine their likelihood of occurrence. The likelihood of occurrence rankings are defined below.

1 - Known occurrence

- Recorded within the study area recently (i.e. within ten years)

2 - High Likelihood

- Previous records of the species in the local vicinity; and/or,
- The study area contains areas of high quality habitat.

3 - Moderate Likelihood

- Limited previous records of the species in the local vicinity; and/or,
- The study area contains poor or limited habitat.

4 - Low Likelihood

- Poor or limited habitat for the species however other evidence (such as a lack of records or environmental factors) indicates there is a very low likelihood of presence.

5 – Unlikely

- No suitable habitat and/or outside the species range.

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	DEPI	Likely occurrence in study area
NATIONAL SIGNIFICANCE							
<i>Amphibromus fluitans</i>	River Swamp Wallaby-grass	3	2008	VU	-	-	4
<i>Dianella amoena</i>	Matted Flax-lily	27	2010	EN	L	E	3
<i>Diuris basaltica</i>	Small Golden Moths	29	2009	EN	L	E	4
<i>Diuris fragrantissima</i>	Sunshine Diuris	22	2006	EN	L	E	4
<i>Pimelea spinescens</i> subsp. <i>spinescens</i>	Spiny Rice-flower	310	2012	CR	L	e	1 (recorded during targeted survey)
<i>Prasophyllum suaveolens</i>	Fragrant Leek-orchid	14	1962	EN	L	e	4
<i>Rutidosis leptorhynchoides</i>	Button Wrinklewort	31	2009	EN	L	e	4
<i>Senecio macrocarpus</i>	Large-headed Fireweed	15	2009	VU	L	e	3 (not detected during targeted survey)

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	DEPI	Likely occurrence in study area
<i>Thesium australe</i>	Austral Toad-flax	1	1904	VU	L	v	4
<i>Glycine latrobeana</i> #	Clover Glycine	-	-	VU	L	v	4
<i>Leucochrysum albicans</i> var. <i>tricolor</i> #	Hoary Sunray	-	-	EN	-	e	4
<i>Prasophyllum frenchii</i> #	Maroon Leek-orchid	-	-	EN	L	e	4
<i>Pterostylis cucullata</i> #	Leafy Greenhood	-	-	VU	L	v	4
STATE SIGNIFICANCE							
<i>Acacia howittii</i>	Sticky Wattle	1	1996	-	-	r	5
<i>Allocasuarina luehmannii</i>	Buloke	1	1996	-	L	e	5
<i>Alternanthera</i> sp. 1 (Plains)	Plains Joyweed	31	2010	-	-	k	4
<i>Amphibromus pithogastrus</i>	Plump Swamp Wallaby-grass	3	2004	-	L	e	4
<i>Austrostipa exilis</i>	Heath Spear-grass	1	1992	-	-	r	4
<i>Bromus arenarius</i>	Sand Brome	1	1984	-	-	r	4
<i>Callitriche palustris</i> var. <i>palustris</i>	Swamp Water-starwort	1	1945	-	-	k	4
<i>Comesperma polygaloides</i>	Small Milkwort	27	2002	-	L	v	4
<i>Convolvulus angustissimus</i> subsp. <i>omnigracilis</i>	Slender Bindweed	40	2011	-	-	k	1
<i>Coronidium gunnianum</i>	Pale Swamp Everlasting	20	2009	-	-	v	4
<i>Corymbia maculata</i>	Spotted Gum	1	1996	-	-	v	5
<i>Cullen parvum</i>	Small Scurf-pea	47	2010	-	L	e	4
<i>Cullen tenax</i>	Tough Scurf-pea	32	2010	-	L	e	4
<i>Desmodium varians</i>	Slender Tick-trefoil	21	2010	-	-	k	4
<i>Dianella</i> sp. aff. <i>longifolia</i> (Benambra)	Arching Flax-lily	242	2010	-	-	v	3

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	DEPI	Likely occurrence in study area
<i>Diuris behrii</i>	Golden Cowslips	1	1900	-	-	v	4
<i>Diuris palustris</i>	Swamp Diuris	8	1934	-	L	v	4
<i>Diuris X fastidiosa</i>	Proud Diuris	1	1926	-	-	e	4
<i>Eleocharis macbarronii</i>	Grey Spike-sedge	4	1993	-	-	k	4
<i>Eleocharis pallens</i>	Pale Spike-sedge	19	2010	-	-	k	4
<i>Eleocharis plana</i>	Flat Spike-sedge	2	2011	-	-	v	4
<i>Eucalyptus leucoxylon</i> subsp. megalocarpa	Large-fruit Yellow-gum	1	1996	-	L	e	5
<i>Geranium solanderi</i> var. <i>solanderi</i> s.s.	Austral Crane's-bill	8	2009	-	-	v	4
<i>Geranium</i> sp. 3	Pale-flower Crane's-bill	20	2011	-	-	r	4
<i>Grevillea rosmarinifolia</i>	Rosemary Grevillea	2	2002	-	-	p	5
<i>Juncus revolutus</i>	Creeping Rush	1	1988	-	-	r	5
<i>Leiocarpa leptolepis</i>	Pale Plover-daisy	1	1912	-	L	e	4
<i>Lepidium pseudohyssopifolium</i>	Native Peppercross	2	2009	-	-	k	4
<i>Maireana aphylla</i>	Leafless Bluebush	3	2002	-	-	k	4
<i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	Giant Honey-myrtle	5	2011	-	-	r	5
<i>Nicotiana suaveolens</i>	Austral Tobacco	4	1989	-	-	r	4
<i>Podolepis</i> sp. 1	Basalt Podolepis	9	2006	-	-	e	4
<i>Pterostylis pedaglossa</i>	Prawn Greenhood	1	1932	-	-	v	4
<i>Pterostylis truncata</i>	Brittle Greenhood	2	1928	-	L	e	4
<i>Ranunculus diminutus</i>	Brackish Plains Buttercup	1	1990	-	-	r	4
<i>Rhagodia parabolica</i>	Fragrant Saltbush	4	2009	-	-	r	4

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	DEPI	Likely occurrence in study area
<i>Rytidosperma setaceum</i> var. <i>brevisetum</i>	Short-bristle Wallaby-grass	1	1996	-	-	r	4
<i>Sclerolaena muricata</i> var. <i>muricata</i>	Black Roly-poly	2	2009	-	-	k	4
<i>Senecio campylocarpus</i>	Floodplain Fireweed	1	1905	-	-	r	4
<i>Senecio cunninghamii</i> var. <i>cunninghamii</i>	Branching Groundsel	1	1921	-	-	r	4
<i>Thelymitra gregaria</i>	Basalt Sun-orchid	1	1929	-	L	e	4
<i>Tripogon loliiformis</i>	Rye Beetle-grass	54	2012	-	-	r	4

Notes: EPBC = *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), FFG = *Flora and Fauna Guarantee Act 1988* (FFG Act), DEPI= Advisory List of Rare or Threatened Plants in Victoria (DEPI 2014), L = Listed, # = Records identified from EPBC Act Protected Matters Search Tool, Data source: Victorian Biodiversity Atlas (DELWP 2016d); Protected Matters Search Tool (DoE 2016). Order: Alphabetical.

Appendix 2.3 – Habitat Hectares

Table A2.3. Habitat Hectares results for remnant vegetation recorded within the study area .

Vegetation Zone		PG1	PG2	PG3	PGWet
Bioregion		Victorian Volcanic Plain	Victorian Volcanic Plain	Victorian Volcanic Plain	Victorian Volcanic Plain
EVC / Tree		Plains Grassland (Heavier Soils)	Plains Grassland (Heavier Soils)	Plains Grassland (Heavier Soils)	Plains Grassy Wetland
EVC Number		132_61	132_61	132_61	125
EVC Conservation Status		Endangered	Endangered	Endangered	Endangered
Patch Condition	Large Old Trees /10				
	Canopy Cover /5				
	Under storey /25	5	5	15	5
	Lack of Weeds /15	6	2	6	6
	Recruitment /10	6	6	6	3
	Organic Matter /5	5	5	5	5
	Logs /5				
	Treeless EVC Multiplier	1.36	1.36	1.36	1.36
	Subtotal =	29.92	24.48	43.52	25.84
Landscape Value /25		2	2	4	4
Habitat Points /100		32	26	48	30
Habitat Score		0.32	0.26	0.48	0.30
Total Area (ha)		0.713	0.129	0.845	0.011

APPENDIX 3 - FAUNA

Appendix 3.2 – Significant Fauna Species

Table A3.2. Significant fauna within 10 kilometres of the study area.

Likelihood: Habitat characteristics of significant fauna species previously recorded within 10 kilometres of the study area, or that may potentially occur within the study area were assessed to determine their likelihood of occurrence. The likelihood of occurrence rankings are defined below.

1 - High Likelihood

- Known resident in the study area based on site observations, database records, or expert advice; and/or,
- Recent records (i.e. within five years) of the species in the local area (DELWP 2016d); and/or,
- The study area contains the species' preferred habitat.

2 - Moderate Likelihood

- The species is likely to visit the study area regularly (i.e. at least seasonally); and/or,
- Previous records of the species in the local area (DELWP 2016d); and/or,
- The study area contains some characteristics of the species' preferred habitat.

3 - Low Likelihood

- The species is likely to visit the study area occasionally or opportunistically whilst en route to more suitable sites; and/or,
- There are only limited or historical records of the species in the local area (i.e. more than 20 years old); and/or,
- The study area contains few or no characteristics of the species' preferred habitat.

4 - Unlikely

- No previous records of the species in the local area; and/or,
- The species may fly over the study area when moving between areas of more suitable habitat; and/or,
- Out of the species' range; and/or,
- No suitable habitat present.

Common Name	Scientific Name	Last Documented Record (VBA)	# Records (VBA)	EPBC Act	FFG ACT	DSE (2013)	National Action Plan	Likely occurrence in study area
NATIONAL SIGNIFICANCE								
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	2010	4	VU	L	VU	VU	4
Greater Glider #	<i>Petauroides volans</i>	-	-	VU	-	VU	-	4
Australasian Bittern	<i>Botaurus poiciloptilus</i>	1976	2	EN	L	EN	VU	4
Plains-wanderer	<i>Pedionomus torquatus</i>	1979	10	CR	L	CR	EN	4
Australian Painted Snipe	<i>Rostratula australis</i>	1977	1	VU	L	CR	VU	4
Swift Parrot	<i>Lathamus discolor</i>	2000	1	EN	L	EN	EN	4

Common Name	Scientific Name	Last Documented Record (VBA)	# Records (VBA)	EPBC Act	FFG ACT	DSE (2013)	National Action Plan	Likely occurrence in study area
Orange-bellied Parrot	<i>Neophema chrysogaster</i>	1977	1	CR	L	CR	CR	4
Regent Honeyeater	<i>Anthochaera phrygia</i>	1905	1	CR	L	CR	EN	4
Striped Legless Lizard	<i>Delma impar</i>	2014	422	VU	L	EN	VU	3
Grassland Earless Dragon #	<i>Tympanocryptis pinguicolla</i>	-	-	EN	L	CR	VU	4
Growling Grass Frog	<i>Litoria raniformis</i>	2010	221	VU	L	EN	VU	4
Dwarf Galaxias #	<i>Galaxiella pusilla</i>	-	-	VU	L	EN	VU	4
Australian Grayling	<i>Prototroctes maraena</i>	2015	6	VU	L	VU	VU	4
Murray Cod	<i>Maccullochella peelii</i>	1981	2	VU	L	VU	-	4
Macquarie Perch	<i>Macquaria australasica</i>	1970	2	EN	L	EN	DD	4
Eltham Copper	<i>Paralucia pyrodiscus lucida</i>	1920	1	-	L	EN	VU	4
Golden Sun Moth	<i>Synemon plana</i>	2010	100	CR	L	CR	-	2
STATE SIGNIFICANCE								
Yellow-bellied Sheath-tail Bat	<i>Saccolaimus flaviventris</i>	2000	2	-	L	DD	LC	4
Musk Duck	<i>Biziura lobata</i>	2007	7	-	-	VU	-	4
Freckled Duck	<i>Stictonetta naevosa</i>	1990	1	-	L	EN	-	4
Australasian Shoveler	<i>Anas rhynchos</i>	1997	7	-	-	VU	-	4
Hardhead	<i>Aythya australis</i>	2001	8	-	-	VU	-	4
Blue-billed Duck	<i>Oxyura australis</i>	1996	2	-	L	EN	-	4
White-throated Needletail	<i>Hirundapus caudacutus</i>	2005	4	-	-	VU	-	4
Little Bittern	<i>Ixobrychus minutus dubius</i>	1980	1	-	L	EN	-	4
Eastern Great Egret	<i>Ardea modesta</i>	2001	8	-	L	VU	-	4
Little Egret	<i>Egretta garzetta nigripes</i>	1987	4	-	L	EN	-	4

Common Name	Scientific Name	Last Documented Record (VBA)	# Records (VBA)	EPBC Act	FFG ACT	DSE (2013)	National Action Plan	Likely occurrence in study area
Black Falcon	<i>Falco subniger</i>	2009	5	-	-	VU	-	4
Brolga	<i>Grus rubicunda</i>	2013	2	-	L	VU	-	4
Lewin's Rail	<i>Lewinia pectoralis pectoralis</i>	1988	3	-	L	VU	NT	4
Baillon's Crake	<i>Porzana pusilla palustris</i>	2003	6	-	L	VU	-	4
Lesser Sand Plover	<i>Charadrius mongolus</i>	1976	1	-	-	CR	-	4
Terek Sandpiper	<i>Xenus cinereus</i>	1986	1	-	L	EN	-	4
Common Sandpiper	<i>Actitis hypoleucos</i>	1980	1	-	-	VU	-	4
Common Greenshank	<i>Tringa nebularia</i>	2008	5	-	-	VU	-	4
Marsh Sandpiper	<i>Tringa stagnatilis</i>	1994	5	-	-	VU	-	4
Great Knot	<i>Calidris tenuirostris</i>	1982	1	-	L	EN	-	4
Red-chested Button-quail	<i>Turnix pyrrhothorax</i>	1990	2	-	L	VU	-	4
Caspian Tern	<i>Hydroprogne caspia</i>	1980	1	-	L	NT	-	4
Brown Treecreeper (south-eastern ssp.)	<i>Climacteris picumnus victoriae</i>	1905	4	-	-	NT	NT	4
Grey-crowned Babbler	<i>Pomatostomus temporalis temporalis</i>	1902	2	-	L	EN	NT	4
Crested Bellbird	<i>Oreoica gutturalis gutturalis</i>	1800	1	-	L	NT	NT	4
Diamond Firetail	<i>Stagonopleura guttata</i>	1898	2	-	L	NT	NT	4
Murray Short-necked Turtle	<i>Emydura macquarii</i>	2008	1	-	-	VU	-	4
Tussock Skink	<i>Pseudemoia pagenstecheri</i>	2008	74	-	-	VU	-	3
Brown Toadlet	<i>Pseudophryne bibronii</i>	2010	2	-	L	EN	DD	4
Freshwater Catfish	<i>Tandanus tandanus</i>	1997	3	-	L	EN	-	4
Southern Pygmy Perch	<i>Nannoperca australis</i>	2000	2	-	-	-	-	4
REGIONAL SIGNIFICANCE								

Common Name	Scientific Name	Last Documented Record (VBA)	# Records (VBA)	EPBC Act	FFG ACT	DSE (2013)	National Action Plan	Likely occurrence in study area
Fat-tailed Dunnart	<i>Sminthopsis crassicaudata</i>	2005	14	-	-	NT	-	3
Pied Cormorant	<i>Phalacrocorax varius</i>	1995	1	-	-	NT	-	4
Nankeen Night Heron	<i>Nycticorax caledonicus hillii</i>	1999	12	-	-	NT	-	4
Royal Spoonbill	<i>Platalea regia</i>	2001	3	-	-	NT	-	4
Spotted Harrier	<i>Circus assimilis</i>	2007	10	-	-	NT	-	3
Latham's Snipe	<i>Gallinago hardwickii</i>	2004	8	-	-	NT	-	4
Sanderling	<i>Calidris alba</i>	1987	5	-	-	NT	-	4
Long-toed Stint	<i>Calidris subminuta</i>	1984	1	-	-	NT	-	4
Pectoral Sandpiper	<i>Calidris melanotos</i>	1990	1	-	-	NT	-	4
Australian Pratincole	<i>Stiltia isabella</i>	1990	2	-	-	NT	-	4
Whiskered Tern	<i>Chlidonias hybridus javanicus</i>	1990	4	-	-	NT	-	4
White-winged Black Tern	<i>Chlidonias leucopterus</i>	1986	2	-	-	NT	-	4
Pacific Gull	<i>Larus pacificus pacificus</i>	1979	1	-	-	NT	-	4
Black-eared Cuckoo	<i>Chrysococcyx osculans</i>	1987	2	-	-	NT	-	4
Red-backed Kingfisher	<i>Todiramphus pyrropygia pyrropygia</i>	1982	2	-	-	NT	-	4
Long-necked Turtle	<i>Chelodina longicollis</i>	2011	13	-	-	DD	-	4
River Blackfish	<i>Gadopsis marmoratus</i>	1981	2	-	-	-	-	4

Notes: EPBC = *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), FFG = *Flora and Fauna Guarantee Act 1988* (FFG Act), DSE = *Advisory List of Threatened Vertebrate Fauna in Victoria* (DSE 2013), # = Records identified from EPBC Act Protected Matters Search Tool, L = Listed. Data sources: Victorian Biodiversity Atlas (DELWP 2016d); Victorian Fauna Database (Viridans 2014b); Protected Matters Search Tool (DoE 2016). Taxonomic order: Mammals (Strahan 1995 in Menkhorst & Knight 2004); Birds (Christidis & Boles, 2008); Reptiles and Amphibians (Cogger *et al.* 1983 in Cogger 1996); Fish (Nelson 1994); Mussels & Crustaceans (Alphabetical); Invertebrates (Alphabetical).