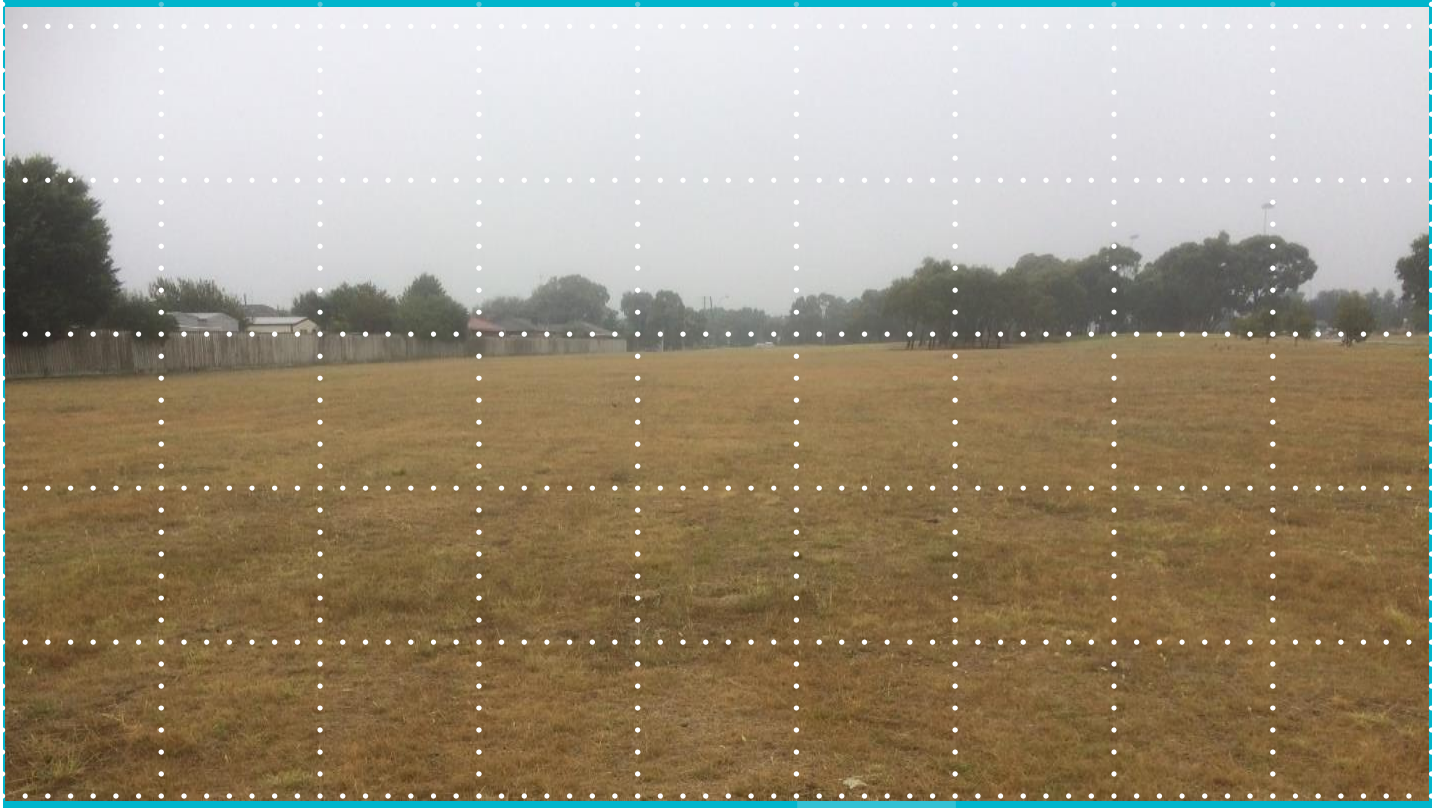
Final Report

Biodiversity Assessment: 700 Barry Road, West Meadows, Victoria

Prepared for

Samoan Independent Seventh-Day Adventist Church (Victorian Division)

May 2017



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Contents

Document Control

Assessment	Biodiversity Assessment
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Client	Samoan Independent Seventh-Day Adventist Church (Victorian Division)
Bioregion	Victorian Volcanic Plain
CMA	Port Philip and Westernport
Council	Hume City Council

SUMMARY OF APPLICATION REQUIREMENTS

Table S1. Application requirements for a permit to remove native vegetation under the Low Risk-based pathway (*Victoria Planning Provisions* Clause 52.17 -3; DEPI 2013)

No.	Application Requirement	Response
1	The location of the site of native vegetation to be removed.	700 Barry Road, West Meadows, Victoria. Hume City Council, Port Philip and Westernport CMA.
2	A description of the native vegetation to be removed, including the area of the patch of native vegetation and/or the number of any scattered trees to be removed.	Total extent to be removed is 0.624 hectares (0.624 hectares remnant patch, and 0 scattered trees). Details provided in Section 0.
3	Maps or plans containing information set out in the Guidelines, (Department of Environment and Primary Industries, September 2013)	Refer to Figures and Biodiversity Assessment Report (BAR) (Appendix 3).
4	Recent dated photographs of the native vegetation to be removed.	Refer to Section 0.
-	Topographic information, highlighting ridges, crests and hilltops, streams and waterways, slopes of more than 20 percent, drainage lines, low lying areas, saline discharge areas, and areas of existing erosion.	Refer to Section 0.
5	The risk-based pathway of the application to remove native vegetation.	Low
6	Where the purpose of removal, destruction or lopping of native vegetation is to create defendable space, a statement is required that explains why removal, destruction or lopping of native vegetation is necessary.	Not applicable.
7	A copy of any property vegetation plan that applies to the site.	Not applicable.
8	Details of any other native vegetation that was permitted to be removed on the same property with the same ownership as the native vegetation to be removed, where the removal occurred in the five year period before the application to remove native vegetation is lodged.	Not applicable.
9	The strategic biodiversity score of the native vegetation to be removed.	0.343
10	The offset requirements should a permit be granted to remove native vegetation.	General: 0.093 Biodiversity Equivalence Units (BEUs) Specific: -

1 INTRODUcTION

Ecology and Heritage Partners Pty Ltd was commissioned by the Samoan Independent Seventh-Day Adventist Church (Victorian Division) to conduct a Biodiversity Assessment at 700 Barry Road, West Meadows, Victoria. The purpose of the assessment was to identify the extent and type of remnant native vegetation present within the study area and to determine the presence of significant flora, fauna and ecological communities. This report presents the results of the assessment and discusses the potential ecological and legislative implications associated with the proposed action. The report also provides recommendations to address or reduce impacts and, where necessary, highlights components that require further investigation, such as targeted surveys.

2 STUDY AREA

The study area is located at 700 Barry Road, West Meadows, Victoria, approximately 18 kilometres north of Melbourne's CBD (Figure 1). The site covers approximately 1.7 hectares and is bound by residential land to the north and open space to the east, south and west. Three narrow, linear parcels of land separate the northern boundary of the study area from adjoining residential land.

The study area slopes gently to the west towards Yuroke Creek, which is approximately 200 metres west of the site. There are no water bodies located in the study area. The study area occurs within the Victorian Volcanic Plain bioregion. It is located within the jurisdiction of the Port Philip and Westernport Catchment Management Authority (CMA) and the Hume City Council municipality.

3 METHODS

3.1 Desktop Assessment

The following literature and biodiversity databases were reviewed to identify biodiversity values likely to occur in the study area:

- The Victorian Department of Environment, Land, Water and Planning (DELWP) Native Vegetation Information Management (NVIM) Tool (DELWP 2017a) and Biodiversity Interactive Map (DELWP 2017c) for:
    - Modelled data for location risk, remnant vegetation patches, scattered trees and habitat for rare or threatened species; and,
    - The extent of historic and current Ecological Vegetation Classes (EVCs).
- EVC benchmarks (DELWP 2017b) for descriptions of EVCs within the Victorian Volcanic Plain bioregion;
- The Victorian Biodiversity Atlas (VBA) for previously documented flora and fauna records within the project locality (DELWP 2017d);
- The Commonwealth Department of the Environment and Energy (DoEE) Protected Matters Search Tool (PMST) for matters of National Environmental Significance (NES) protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (DoEE 2017);
- The Planning Maps Online (DELWP 2017e) and Planning Schemes Online (DELWP 2017f) to ascertain current zoning and environmental overlays in the study area;
- Relevant environmental legislation and policies; and,
- Aerial photography of the study area.

3.2 Field Assessment

A field assessment was undertaken on 21 March 2017 by Thomas Wright (Senior Ecologist, Ecology and Heritage Partners) to obtain information on flora and fauna values within the study area. The study area was walked, with all observed vascular flora and fauna species recorded, any significant records mapped and the overall condition of vegetation and habitats noted. Ecological Vegetation Classes (EVCs) were determined with reference to DELWP pre-1750 and extant EVC mapping and their published descriptions (DELWP 2017b).

3.3 Permitted Clearing Assessment (the Guidelines)

Under the *Planning and Environment Act 1987,* Clause 52.17 of the Planning Schemes requires a planning permit from the relevant local Council to remove, destroy or lop native vegetation. The assessment process for the clearing of vegetation follows the '*Permitted clearing of native vegetation - Biodiversity assessment*

guidelines' (the Guidelines) (DEPI 2013). The '*Biodiversity assessment handbook - Permitted clearing of native vegetation*' (the Handbook) provides clarification regarding the application of the Guidelines (DELWP 2015a).

3.3.1 Risk-based Pathway

The Guidelines manage the impacts on biodiversity from native vegetation removal using a risk-based approach. Two factors – extent risk and location risk – are used to determine the risk associated with an application for a permit to remove native vegetation. The location risk (A, B or C) has been determined for all areas in Victoria and is available on DELWP's NVIM Tool (DELWP 2015a). Determination of the applicable risk-based pathway is summarised in Table 1.

Table 1. Risk-based pathways for applications to remove native vegetation (DEPI 2013)

Extent		Location		
		A	B	C
Native Vegetation	< 0.5 hectares	Low	Low	High
	≥ 0.5 hectares and < 1 hectare	Low	Moderate	High
	≥ 1 hectare	Moderate	High	High
Scattered Trees	< 15 scattered trees	Low	Moderate	High
	≥ 15 scattered trees	Moderate	High	High

Notes: For the purpose of determining the risk-based pathway of an application to remove native vegetation the extent includes any other native vegetation that was permitted to be removed on the same contiguous parcel of land with the same ownership as the native vegetation to be removed, where the removal occurred in the five year period before an application to remove native vegetation is lodged.

3.3.2 Vegetation Assessment

Native vegetation (as defined in Table 2) is assessed using two key parameters: extent (in hectares) and condition. Extent is determined through a field assessment. The condition score for Moderate and High Risk-based pathways must be assessed through a habitat hectare[1] assessment conducted by a qualified ecologist. The condition score for Low Risk-based pathways may be based on either modelled data available on the NVIM Tool (DELWP 2015a), or through a habitat hectare assessment.

In addition, all mapped wetlands (based on the DELWP 'Current Wetlands' layer) must be included as native vegetation, with the modelled condition score assigned to them (DELWP 2015e).

[1] A 'habitat hectare' is a unit of measurement which combines the condition and extent of native vegetation.

Table 2. Determination of remnant native vegetation (DEPI 2013)

Category	Definition	Extent	Condition
Remnant patch of native vegetation	An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native. OR An area with three or more native canopy trees where the canopy foliage cover is at least 20 per cent of the area.	Measured in hectares. Based on hectare area of the remnant patch.	Vegetation Quality Assessment Manual (DSE 2004).
Scattered tree	A native canopy tree that does not form part of a remnant patch.	Measured in hectares. Each scattered tree is assigned an extent of 0.071 hectares (30m diameter).	Scattered trees are assigned a default condition score of 0.2.

Notes: Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses'.

3.3.3 Offsets

Offsets are required to compensate for the permitted removal of native vegetation. The offset requirements for Low risk-based pathway applications are calculated using the NVIM Tool which produces a Biodiversity Assessment Report (BAR).

3.4 Assessment Qualifications and Limitations

The field assessment was undertaken during a sub-optimal season for the identification of flora and fauna species (early-autumn). In addition, the study area had been recently mown making it difficult to identify flora values.

The 'snap shot' nature of a standard biodiversity assessment meant that migratory, transitory or uncommon fauna species may have been absent from typically occupied habitats at the time of the field assessment. In addition, annual or cryptic flora species such as those that persist via underground tubers may also be absent. Targeted flora or fauna surveys were not undertaken, as this was beyond the scope of the project. Nevertheless, the terrestrial flora and fauna data collected during the field assessment and information obtained from relevant desktop sources is considered adequate to provide an accurate assessment of the ecological values present or likely to be present within the study area.

4 RESULTS

4.1 Vegetation Condition

4.1.1 Remnant Patches

Remnant native vegetation in the study area is representative of one EVC: Plains Grassland (EVC 132_61). The presence of this EVC is generally consistent with the modelled pre-1750s native vegetation mapping (DELWP 2017c), although extant EVC mapping does not model remnant vegetation within the study area. Specific details relating to the observed EVC is provided below. The remainder of the study area comprises exotic grasslands and planted trees.

4.1.1.1 Plains Grassland

Plains Grassland is located throughout the central and eastern sections of the study area, and covers approximately 0.6 hectares (Figure 2). The habitat zone has approximately 40% cover of indigenous perennial grasses, with Windmill Grass *Chloris truncata* and Common Wallaby-grass *Rytidosperma caespitosum* the dominant species (Plate 1 and Plate 2). Berry Salt-bush *Atriplex semibaccata* and Wood Sorrel *Oxalis perennans* were the only indigenous herb species recorded in the EVC. Exotic grasses occupy approximately 40% cover within the EVC, with Prairie Grass *Bromus catharticus,* Rye-grass *Lolium perenne,* Paspalum *Paspalum dilatatum,* Kikuyu *Cenchrus clandestinum* and the declared noxious weed Serrated Tussock *Nassella trichotoma* the dominant species.

The study area is regularly mown which would assist in maintaining an open sward, with approximately 5-10% of the EVC covered by bare ground.

Plate 1. Plains Grassland within the study area (Ecology and Heritage Partners Pty Ltd 21/03/2017).

Plate 2. Flowering Common Wallaby-grass (Ecology and Heritage Partners Pty Ltd 21/03/2017).

4.1.2 Scattered Trees

There are no scattered trees within the study area.

4.1.3 Introduced and Planted Vegetation

The western section of the study area is dominated by exotic grasses, especially Kikuyu, Serrated Tussock and Prairie Grass. Other introduced flora recorded in these areas includes Rat-tail Fescue *Vulpia* spp., Bristly Ox-tongue *Helminthotheca echioides,* Fennel *Foeniculum aviculare,* Cocksfoot *Dactylis glomerata,* Phalaris *Phalaris aquatica,* Wireweed *Polygonum aviculare* and Cat's Ear *Hypochoeris radicata*. This section of the study area supports small amounts of native vegetation, and less than the threshold cover to qualify as a remnant patch.

There are several mature Lightwood *Acacia implexa* trees in the west of the study area (Plate 3). These trees may have established naturally, but were not assessed as scattered trees as Lightwood is not considered an overstorey species by DELWP.

There are two clumps of tree plantings in the east of the study area (Plate 4). They contain small to medium sized River Red Gums *Eucalyptus camaldulensis* over a sparsely vegetation ground layer that includes regenerating River Red Gum, Silver Wattle *Acacia dealbata* and Sweet Bursaria *Bursaria spinosa* (age of regeneration less than ten years old), as well as occasional plants of exotic and native origin. While River Red Gum naturally occurs in the local region, the uniformity in size and planting arrangement is indicative of planted trees. As the removal of planted native vegetation that has not received public funds is exempt under the Planning Scheme (s52.17-7), the plantings were not assessed as remnant native vegetation.

Plate 3. Lightwoods (Ecology and Heritage Partners Pty Ltd 21/03/2017).

Plate 4. Tree planting of River Red Gum (Ecology and Heritage Partners Pty Ltd 21/02/2016).

4.2 Fauna Habitat

4.2.1 Grasslands

The majority of the study area consists of native and exotic grasslands which are maintained to a low height as a result of the mowing regime. The grasslands include cracking clays and scattered embedded rock which may provide potential refugia and basking habitat for reptiles (Plate 5 and Plate 6). Although, the lack of large mature grass tussocks as a result of the frequent mowing regime would expose small reptiles to predators and thus may reduce the value of the site as habitat.

Despite regular mowing, the short-tussock habitat of areas of Plains Grassland provides suitable habitat for the nationally significant Golden Sun Moth *Synemon plana,* which has been recorded recently at a number of

locations in the surrounding landscape (Figure 4). Common native bird species would also utilise the open grassland habitat for foraging. Little Raven *Corvus mellori,* Galah *Eolophus roseicapilla* and Australian Magpie *Cracticus tibicen* were all observed during the field assessment.

Plate 5. Embedded rock (Ecology and Heritage Partners Pty Ltd 21/03/2017).

Plate 6. Soil cracks – a defining characteristic of the heavy clay soils that occur in this bioregion (Ecology and Heritage Partners Pty Ltd 21/03/2017).

4.2.2 Planted woodland

The planted areas of woodland in the east of the study area are likely to provide habitat for common native and introduced bird species. Common Starling *Sturnus vulgaris,* Willie Wagtail *Rhipidura leucophrys* and Noisy Miner *Manorina melanocephala* were recorded foraging in this habitat during the field assessment. As a result of the small size of the planted trees, and small area of the plantings, there are limited resources for nesting and roosting for birds and arboreal mammals. As such, the planted woodland areas are unlikely to provide any significant habitat opportunities for native fauna, and would be comparable to planted garden beds in adjoining residential areas in their contribution to local biodiversity.

4.3 Permitted Clearing Assessment (the Guidelines)

4.3.1 Vegetation proposed to be removed

The study area is within Location A, with 0.624 hectares of native vegetation proposed to be removed (0.624 hectares of remnant patches and no scattered trees). As such, the permit application falls under the Low Risk-based pathway.

As the application falls under the Low Risk-based pathway, condition scores for vegetation proposed to be removed are based on modelled scores available on the NVIM Tool (DELWP 2017a).

Table 3. Permitted Clearing Assessment (the Guidelines)

Risk-based pathway	Low
Total Extent (ha)	0.624
Remnant Patch (ha)	0.624
Scattered Trees (no.)	0
Location Risk	A
Strategic Biodiversity Score	0.343

4.3.2 Offset Targets

The offset requirement for native vegetation removal is 0.093 General Biodiversity Equivalence Units (BEU). No specific offsets are required for removing native vegetation.

A summary of proposed vegetation losses and associated offset requirements is presented in Table 4 and the BAR is presented in Appendix 3.

Table 4. Offset targets

General Offsets Required	0.093 General BEUs
Specific Offsets Required	-
Vicinity (catchment / LGA)	Port Philip and Westernport CMA / Hume City Council
Minimum Strategic Biodiversity Score*	0.274

Note: BEU = Biodiversity Equivalence Units

4.4 Significance Assessment

4.4.1 Flora

No significant flora species were recorded in the study area during the field assessment (Appendix 1). There are also no historical records for significant flora within the study area according to the VBA (Figure 3). The VBA includes records for five nationally significant species within a ten kilometre radius of the study area, and the PMST identified suitable habitat for a further eight nationally significant species (Appendix 1). Thirty-nine (39) flora species of State-significance have been previously recorded in a ten kilometre radius of the study area.

It is unlikely that nationally-significant flora species occur in the study area. Despite the study area supporting Plains Grassland which is suitable habitat for a number of significant flora species in the Melbourne region, the frequent mowing regime and threats from weed invasion and anthropogenic disturbance is expected to render the study area as unsuitable habitat. There is potential for the State-significant Rye Beetle-grass *Tripogon loliiformis* and Slender Bindweed *Convolvulus angustissimus* subsp. *angustissimus* given the availability of suitable habitat, and number of recent records in the surrounding landscape (Appendix 2).

4.4.2 Fauna

No significant fauna species were recorded in the study area during the field assessment. There are also no historical records for significant fauna species within the study area according to the VBA (Appendix 2, Figure 4). Within ten kilometres of the study area, there are VBA records for 21 nationally-significant fauna species.

The most important of these records are for Golden Sun Moth and Growling Grass Frog *Litoria raniformis* due to the number of recent records and proximity of the records to the study area. Golden Sun Moth has been recorded over 1,000 times including as recently as 2015. The species was recorded in 2008 at the intersection of Barry Road and Pascoe Vale Road, approximately 500 metres east of the study area. There are 193 records for Growling Grass Frog including as recently as 2015. There are also a number of records in Yuroke Creek, which runs as close as 200 metres west of the study area. In addition to the VBA records, the PMST identified a further seven nationally significant fauna species with suitable habitat in the local area (DoEE 2017).

Fifty-three (53) State and/or Regionally significant species have also been recorded in a surrounding ten kilometre radius of the study area (Appendix 3).

The study area is considered to provide suitable habitat for Golden Sun Moth *Synemon plana.* The species is likely to occur in the patches of Plains Grassland due to the presence of tussock habitat and dominance of Wallaby Grass, the species' preferred feeding plant. While frequent and poorly-timed mowing is a recognised threat to the species, the presence of Plains Grassland habitat suggests that the mowing regime has contributed to sustaining Golden Sun Moth habitat by maintaining an open sward and reducing the build-up of biomass (Plate 1 and Plate 2).

No other significant fauna species are considered likely to occur in the study area. Growling Grass Frog is unlikely to occur in the study area. While the species has been recorded in Yuroke Creek, the study area is located at a much higher elevation than the creek which is likely to preclude the species from using the study area as terrestrial habitat while moving through the landscape. There are no permanent or ephemeral water-bodies in the study area that could be utilised by Growling Grass Frog as breeding habitat or refugia.

Striped Legless Lizard *Delma impar* is a nationally significant fauna species that has been recorded in the surrounding landscape. Embedded rock and cracking soils present within the study area is suitable habitat for the species. However, due to the grass height being maintained at a low level resulting in an open structure with plenty of bare ground, Striped Legless Lizard is likely to avoid the study area due to threats from predation.

Significant bird species have been recorded in the surrounding landscape (Appendix 3). Due to the small area and immaturity of tree plantings in the study area, significant bird species are unlikely to use habitat within the study area but may be recorded as fly-overs en route to larger and better quality habitat.

4.4.3 Communities

The study area does not support any nationally listed ecological communities.

Six nationally listed ecological communities are predicted to occur within ten kilometres of the study area:

- Grassy Eucalypt Woodland of the Victorian Volcanic Plain;
- Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia;

- Natural Damp Grassland of the Victorian Coastal Plains;
- Natural Temperate Grassland of the Victorian Volcanic Plain;
- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains;
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (DoEE 2017).

Moderate-to-high quality examples of Plains Grassland can quality as Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP). The patch of Plains Grassland recorded in the study area was assessed against the condition thresholds for NTGVVP, but did not qualify due to less than 50% cover of native perennial grasses (DSEWPaC 2011).

One state-listed ecological community is present in the study area. Plains Grassland of the Victorian Volcanic Plain is synonymous with Western (Basalt) Plains Grassland Community which is listed under the Victorian *Flora and Fauna Guarantee Act 1988.* All areas classified as Plains Grassland correspond with this state significant ecological community.

4.4.4 Recommendation

Targeted surveys are recommended for Golden Sun Moth to determine the species' presence within the study area. Surveys should be undertaken in accordance with Commonwealth Survey Guidelines which recommends up to four surveys during the species' flying period (late November to early January) and checks of reference sites (DEWHA 2009).

5 LEGISLATIVE AND POLICY IMPLICATIONS

5.1 *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)

The EPBC Act establishes a Commonwealth process for the assessment of proposed actions likely to have a significant impact on any matters of NES.

5.1.1 Implications

Development within the study area is likely to have a significant impact on Golden Sun Moth. Under the significant impact guidelines for the species, the loss, degradation or fragmentation of any Golden Sun Moth habitat less than ten hectares in size is likely to be considered a significant impact (DEWHA 2009). The study area contains approximately 0.6 hectares of suitable habitat for Golden Sun Moth. Based on a brief inspection of land directly adjoining the study area, it is unlikely that Golden Sun Moth habitat identified within the study area is connected to other areas of habitat.

A referral to the Commonwealth Minister for the Environment is recommended to assess the impacts to Golden Sun Moth under the EPBC Act.

5.2 *Flora and Fauna Guarantee Act 1988* (Victoria)

The FFG Act is the primary legislation dealing with biodiversity conservation and sustainable use of native flora and fauna in Victoria. Proponents are required to apply for an FFG Act Permit to 'take' listed and/or protected flora species, listed vegetation communities and listed fish species in areas of public land (i.e. within road reserves, drainage lines and public reserves). An FFG Act permit is generally not required for removal of species or communities on private land, or for the removal of habitat for a listed terrestrial fauna species.

5.2.1 Implications

There is suitable habitat within the study area for several species listed or protected under the FFG Act. In addition, the study area supports the FFG Act-listed community Western (Basalt) Plains Grassland Community. However the study area is privately owned, and as such a permit under the FFG Act is not required.

5.3 *Planning and Environment Act 1987* (Victoria)

The *Planning and Environment Act 1987* outlines the legislative framework for planning in Victoria and for the development and administration of planning schemes. All planning schemes contain native vegetation provisions at Clause 52.17 which require a planning permit from the relevant local Council to remove, destroy or lop native vegetation on a site of more than 0.4 hectares, unless an exemption under clause 52.17-7 of the Victorian Planning Schemes applies or a subdivision is proposed with lots less than 0.4

hectares[2]. Local planning schemes may contain other provisions in relation to the removal of native vegetation (Section 5.3.1).

5.3.1 Local Planning Schemes

The study area is located within the Hume City Council municipality. The following zoning and overlays apply (DELWP 2017f):

- General Residential Zone – Schedule 1 (GRZ1); and,
- Melbourne Airport Environs Overlay – Schedule 1 (MAE01).

These zones and overlays did not influence the assessment of native vegetation removal by Council.

5.3.2 The Guidelines

The State Planning Policy Framework and the decision guidelines at Clause 52.17 (Native Vegetation) and Clause 12.01 require Planning and Responsible Authorities to have regard for 'Permitted clearing of native vegetation - Biodiversity assessment guidelines' (the Guidelines) (DEPI 2013).

5.3.3 Implications

The study area is within Location A, with 0.624 hectares of native vegetation proposed to be removed (0.624 hectares of remnant patches and no scattered trees). As such, the permit application falls under the Low Risk-based pathway.

The offset requirement for native vegetation removal is 0.093 General Biodiversity Equivalence Units (BEU). No specific offsets are required for removing native vegetation.

A Planning Permit from Hume City Council is required to remove, destroy or lop any native vegetation. In this instance, the application will be referred to DELWP as greater than 0.5 hectares of vegetation are proposed for removal. A planning permit is not required for the removal of planted native vegetation and regenerating species due to exemptions under 52.17-7 of the Hume City Planning Scheme.

5.4 *Wildlife Act 1975* and Wildlife Regulations 2013 (Victoria)

The *Wildlife Act 1975* (and associated Wildlife Regulations 2013) is the primary legislation in Victoria providing for protection and management of wildlife. Authorisation for habitat removal may be obtained under the *Wildlife Act 1975* through a licence granted under the *Forests Act 1958*, or under any other Act such as the *Planning and Environment Act 1987*.

In approving planning permit applications, Councils often stipulate conditions of approval aimed at managing potential impacts on ecological values. One such condition may involve the engagement of a qualified fauna spotter/catcher to supervise the clearing of any hollow-bearing trees and capture/relocate any displaced animals (e.g. possums, gliders, microbats etc.). Any persons engaged to remove, salvage, hold or relocate

[2] In accordance with the Victorian Civil and Administrative Tribunal's (VCAT) decision Villawood v Greater Bendigo CC (2005) VCAT 2703 (20 December 2005) all native vegetation is considered lost where proposed lots are less than 0.4 hectares in area and must be offset at the time of subdivision.

native fauna during construction must hold a current Management Authorisation under the *Wildlife Act 1975*, issued by DELWP.

5.4.1 Implications

Due to the lack of nesting and roosting habitat, a fauna handler is unlikely to be required to assist in the salvage and translocation of protected fauna.

5.5 *Catchment and Land Protection Act 1994* (Victoria)

The *Catchment and Land Protection Act 1994* (CaLP Act) contains provisions relating to catchment planning, land management, noxious weeds and pest animals. Landowners are responsible for the control of any infestation of noxious weeds and pest fauna species to minimise their spread and impact on ecological values.

Weeds listed as noxious under the CaLP Act were recorded during the assessment (Serrated Tussock, Fennel and Artichoke Thistle *Cynara cardunculus*). Similarly, there is evidence that the study area is currently occupied by several pest fauna species listed under the CaLP Act.

5.5.1 Implications

A Construction Environmental Management Plan (CEMP), or similar document, should contain appropriate steps to minimise the risk of introducing or spreading declared pest plant and animals in accordance with the CaLP Act.

5.6 Best Practice Mitigation Measures

Recommended measures to mitigate impacts upon terrestrial values present within the study area may include:

- Minimise impacts to native vegetation and habitats through construction and micro-siting techniques, including fencing retained areas of native vegetation. If indeed necessary, trees should be lopped or trimmed rather than removed. Similarly, soil disturbance and sedimentation within wetlands should be avoided or kept to a minimum, to avoid, or minimise impacts to fauna habitats;
- All contractors should be aware of ecologically sensitive areas to minimise the likelihood of inadvertent disturbance to areas marked for retention. Habitat Zones (areas of sensitivity) should be included as a mapping overlay on any construction plans;
- Protecting the root zones of any trees to be retained within the study area or adjoining areas;
- Where possible, construction stockpiles, machinery, roads, and other infrastructure should be placed away from areas supporting native vegetation;
- Ensure that best practice sedimentation and pollution control measures are undertaken at all times, in accordance with Environment Protection Agency guidelines (EPA 1991; EPA 1996; Victorian Stormwater Committee 1999) to prevent offsite impacts to waterways and wetlands; and,

- As indigenous flora provides valuable habitat for indigenous fauna, it is recommended that any landscape plantings that are undertaken as part of the proposed works are conducted using indigenous species sourced from a local provenance, rather than exotic deciduous trees and shrubs.

In addition a CEMP should be prepared prior to commencing construction. The CEMP should include specific species/vegetation conservation strategies, daily monitoring, sedimentation management, site specific rehabilitation plans, weed and pathogen management measures, etc.;

6 OFFSET IMPLICATIONS

6.1 Commonwealth (EPBC Act)

The Australian Government's EPBC Act Environmental Offsets Policy (DSEWPaC 2012) outlines a framework for the use of environmental offsets under the EPBC Act including when they can be required, how they are determined and the framework under which they operate. Clear guidelines on what constitutes a suitable offset are provided and should be considered as part of any proposed offset strategy. Suitable offsets must include the following:

1. It delivers an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed development.
2. It is built around direct offsets but may include compensatory measures.
3. It is in proportion to the level of statutory protection that applies to the protected manner.
4. It is of a size and scale proportionate to the residual impacts on the protected manner.
5. It is additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs.
6. It effectively accounts for and manages the risks of the offset not succeeding.
7. It is efficient, effective, timely, transparent, scientifically robust and reasonable.
8. It has transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.

If the Commonwealth Minister of the Environment determines that the project is likely to have a significant impact on Golden Sun Moth, offsets would be required under the EPBC Act to compensate for the loss of habitat. Offsets could be obtained in the Western Grassland Reserves in accordance with the Melbourne Urban Development policy (DoE 2014).

6.2 State

The Guidelines (DEPI 2013) require offsetting as the final step in considering the impacts of development on native vegetation. Potential offsets may be sourced using the following mechanisms:

- BushBroker: BushBroker maintains a register of landowners who are willing to sell offset credits. Offsets secured by Bushbroker are done so via a Section 69 Agreement under the *Conservation, Forest and Lands Act 1987*.
- Trust for Nature: Trust for Nature holds a list of landowners who are willing to sell vegetation offsets. Offsets secured by Trust for Nature are done so under the Victorian *Conservation Trust Act 1972*.
- Local Councils: The proponent may contact local councils to seek availability of offsets.
- Over-the-Counter Offsets Scheme: The Guidelines include the expansion of the "Over-the-Counter" (OTC) Offsets Scheme, allowing non-government agencies to establish themselves as OTC Facilities.

OTC Facilities will broker native vegetation offsets (credits) between landholders (with offset sites) and permit holders (with offset requirements).

Ecology and Heritage Partners are a DELWP accredited OTC offset broker and can confirm that the offset obligations under the Guidelines required for the proposal can be satisfied through existing credits registered in our OTC database. Several landowners registered in our offset database have suitable General Biodiversity Equivalence Unit (BEUs) native vegetation credits available within Hume City Council or the Port Philip and Westernport CMA. The relevant offset obligations generated by this proposal will be secured through an OTC scheme should a permit be issued for the development.

7 FURTHER REQUIREMENTS

Further requirements associated with development of the study area, as well as additional studies or reporting that may be required, are provided in Table 5.

Table 5. Further requirements associated with development of the study area

Relevant Legislation	Implications	Further Action
Environment Protection and Biodiversity Conservation Act 1999	The project has potential to have a significant impact on Golden Sun Moth. Up to 0.6 hectares of suitable Golden Sun Moth would be removed as part of the project.	Prepare and submit an EPBC Act referral.
Flora and Fauna Guarantee Act 1988	There is suitable habitat within the study area for several species listed or protected under the FFG Act. In addition, the study area supports the FFG Act-listed community Western (Basalt) Plains Grassland Community. However the study area is privately owned, and as such a permit under the FFG Act is not required.	No further action required.
Planning and Environment Act 1987	The study area is within Location A, with 0.624 hectares of native vegetation proposed to be removed (0.624 hectares of remnant patches and no scattered trees). As such, the permit application falls under the Low Risk-based pathway. The offset requirement for native vegetation removal is 0.093 General Biodiversity Equivalence Units (BEU). No specific offsets are required for removing native vegetation. A Planning Permit from Hume City Council is required to remove, destroy or lop any native vegetation. In this instance, the application will be referred to DELWP as greater than 0.5 hectares of vegetation are proposed for removal. A planning permit is not required for the removal of planted native vegetation and regenerating species due to exemptions under 52.17-7 of the Hume City Planning Scheme.	Prepare and submit a Planning Permit application. Planning Permit conditions are likely to include a requirement for: • Identification of a compliant offset, as detailed in Section 4.2. • A CEMP.
Catchment and Land Protection Act 1994	Several weed species listed under the CaLP Act were recorded within the study area. To meet requirements under the CaLP Act, listed noxious weeds should be appropriately controlled throughout the study area.	Incorporate measures into the CEMP for the control of CaLP listed weeds and animals on the property.
Wildlife Act 1975	Any persons engaged to conduct salvage and translocation or general handling of terrestrial fauna species must hold a current Management Authorisation.	It is unlikely a fauna handler would be required to salvage and relocate protected fauna due to the lack of suitable habitat.

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FIGURES

APPENDIX 1 - FLORA

Legend:

* Listed as a noxious weed under the CaLP Act; **w** Weed of National Significance;** Planted indigenous species in the study area; and,

Table A1.1. Flora recorded within the study area

Scientific Name	Common Name	Conservation Status/Notes
INDIGENOUS SPECIES		
Acacia dealbata	Silver Wattle	
Acacia implexa	Lightwood	
Atriplex semibaccata	Berry Salt-bush	
Austrostipa sp.	Spear Grass	
Bursaria spinosa	Sweet Bursaria	**
Einadia nutans	Nodding Salt-bush	
Eucalyptus camaldulensis	River Red-gum	**
Oxalis perennans	Wood Sorrel	
Rytidosperma caespitosum	Common Wallaby-grass	
NON-INDIGENOUS OR INTRODUCED SPECIES		
Brassica fruticulosa	Twiggy Turnip	
Bromus catharticus	Prairie Grass	
Cenchrus clandestinum	Kikuyu	
Centaurium erythraea	Less Centaury	
Cynara cardunculus	Artichoke Thistle	*
Cynodon dactylon	Couch Grass	
Dactylis glomerata	Cocksfoot	
Eleusine tristachya	Crowsfoot Grass	
Foeniculum vulgare	Fennel	
Galenia pubescens	Galenia	*
Helminthotheca echioides	Bristly Ox-tongue	
Hypochoeris radicata	Cat's Ear	
Lepidium africanum	Common Peppercress	
Lolium perenne	Perennial Rye-grass	
Lycium ferocissimum	African Boxthorn	*, w
Madiola caroliniana	Red-flowered Mallow	

Scientific Name	Common Name	Conservation Status/Notes
Nassella trichotoma	Serrated Tussock	*, W
Paspalum dilatatum	Paspalum	
Phalaris aquatica	Phalaris	
Plantago coronopus	Buck's Horn	
Plantago lanceolata	Ribwort	
Polygonum aviculare	Wireweed	
Sonchus oleraceus	Common Sow-thistle	
Vulpia spp.	Rat-tail Fescue	

Table A1.2 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							
Amphibromus fluitans	River Swamp Wallaby-grass	4	2008	VU			4
Dianella amoena	Matted Flax-lily	278	2014	EN	L	e	4
Diuris basaltica	Small Golden Moths	1	1902	EN	L	e	4
Glycine latrobeana	Clover Glycine	#	#	VU	L	v	4
Lachnagrostis adamsonii	Adamson's Blown-grass	#	#	EN	L	v	4
Lepidium hyssopifolium s.s.	Basalt Peppercress	2	1977	EN	L	e	4
Leucochrysum albicans var. tricolor	Hoary Sunray	#	#	EN	L	e	4
Pimelea spinescens subsp. spinescens	Spiny Rice-flower	#	#	CR	L	e	4
Prasophyllum frenchii	Maroon Leek-orchid	#	#	EN	L	e	4
Pterostylis cucullata	Leafy Greenhood	#	#	VU	L	e	4
Rutidosis leptorhynchoides	Button Wrinklewort	#	#	EN	L	e	4

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	DEPI	Likely occurrence in study area
Senecio macrocarpus	Large-fruit Fireweed	#	#	VU	L	e	4
Xerochrysum palustre	Swamp Everlasting	1	2005	VU	L	v	4
STATE SIGNIFICANCE							
Acacia howittii	Sticky Wattle	1	1996			r	4
Alternanthera sp. 1 (Plains)	Plains Joyweed	1	2012			k	4
Amphibromus pithogastrus	Plump Swamp Wallaby-grass	5	2000		L	e	4
Asperula charophyton	Elongate Woodruff	1	2008			k	4
Botrychium australe	Austral Moonwort	1	1983		L	v	4
Callitriche umbonata	Winged Water-starwort	2	2000		X	r	4
Cardamine tenuifolia	Slender Bitter-cress	1	2005			P	4
Carex tasmanica	Curly Sedge	17	2009		L	v	4
Comesperma polygaloides	Small Milkwort	2	2000		L	v	4
Convolvulus angustissimus subsp. omnigracilis	Slender Bindweed	30	2013			k	3
Coronidium gunnianum	Pale Swamp Everlasting	51	2014			v	4
Corymbia maculata	Spotted Gum	4	2014			v	4
Cullen tenax	Tough Scurf-pea	9	2011		L	e	4
Desmodium varians	Slender Tick-trefoil	18	2015			k	4
Dianella sp. aff. longifolia (Benambra)	Arching Flax-lily	27	2016			v	4
Eragrostis trachycarpa	Rough-grain Love-grass	1	1994		D	r	4
Eucalyptus leucoxylon subsp. connata	Melbourne Yellow-gum	7	2014		X	v	5
Eucalyptus X studleyensis	Studley Park Gum	1	2004			e	5
Geranium solanderi var. solanderi s.s.	Austral Crane's-bill	4	2012			v	4

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	DEPI	Likely occurrence in study area
Geranium sp. 1	Large-flower Crane's-bill	10	2016		L	e	4
Geranium sp. 3	Pale-flower Crane's-bill	6	2008			r	4
Goodia medicaginea	Western Golden-tip	3	2010			r	4
Grevillea rosmarinifolia	Rosemary Grevillea	6	2010			P	4
Lachnagrostis punicea subsp. punicea	Purple Blown-grass	19	2001			r	4
Lepidium pseudohyssopifolium	Native Peppercress	2	1995			k	4
Lindsaea trichomanoides	Oval Wedge-fern	1	2000		L	e	4
Melaleuca armillaris subsp. armillaris	Giant Honey-myrtle	8	2014			r	5
Microseris scapigera s.s.	Plains Yam-daisy	1	2010			v	4
Nicotiana suaveolens	Austral Tobacco	7	2010			r	4
Pauridia vaginata var. brevistigmata	Yellow Star	1	1901			k	4
Pellaea calidirupium	Inland Sickle-fern	1	2008			k	4
Pleurosorus subglandulosus	Glandular Blanket-fern	1	2008			k	4
Poa labillardierei var. (Volcanic Plains)	Basalt Tussock-grass	4	2013			k	4
Pterostylis cucullata subsp. cucullata	Leafy Greenhood	1	1770		L	e	4
Ranunculus diminutus	Brackish Plains Buttercup	3	1998			r	4
Rhagodia parabolica	Fragrant Saltbush	11	2014			r	5
Rytidosperma setaceum var. brevisetum	Short-bristle Wallaby-grass	2	1996			r	4
Sclerolaena muricata var. muricata	Black Roly-poly	1	1987			k	4
Tripogon loliiformis	Rye Beetle-grass	23	2013			r	3

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 – FAUNA

Table A2.1. 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 2015); 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 2015); 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	Likelihood
NATIONAL SIGNIFICANCE								
Spot-tailed Quoll	*Dasyurus maculatus maculatus*	1910	2	EN	L	EN	VU	4
Eastern Barred Bandicoot	*Perameles gunnii*	2003	13	EN	L	WX	CR	4
Greater Glider	*Petauroides volans*	#	1	VU	-	VU	VU	4
Grey-headed Flying-fox	*Pteropus poliocephalus*	2016	7	VU	L	VU	VU	4
Australasian Bittern	*Botaurus poiciloptilus*	1950	4	EN	L	EN	VU	4
Lesser Sand Plover	*Charadrius mongolus*	1978	1	EN	-	CR	-	4
Plains-wanderer	*Pedionomus torquatus*	1991	12	CR	L	CR	EN	4
Australian Painted Snipe	*Rostratula australis*	#	1	VU	L	CR	VU	4
Eastern Curlew	*Numenius madagascariensis*	1977	2	CR	-	VU	-	4
Curlew Sandpiper	*Calidris ferruginea*	1977	2	CR	-	EN	-	4
Fairy Tern	*Sternula nereis nereis*	1977	1	VU	L	EN	-	4

Common Name	Scientific Name	Last Documented Record (VBA)	# Records (VBA)	EPBC Act	FFG ACT	DSE (2013)	National Action Plan	Likelihood
Superb Parrot	*Polytelis swainsonii*	1846	1	VU	L	EN	VU	4
Red-tailed Black-Cockatoo	*Calyptorhynchus banksii graptogyne*	1846	1	EN	L	EN	EN	4
Swift Parrot	*Lathamus discolor*	2000	15	CR	L	EN	EN	4
Orange-bellied Parrot	*Neophema chrysogaster*	#	1	CR	L	CR	CR	4
Regent Honeyeater	*Anthochaera phrygia*	1986	4	CR	L	CR	EN	4
Painted Honeyeater	*Grantiella picta*	#	1	VU	L	VU	NT	4
Pink-tailed Worm-Lizard	*Aprasia parapulchella*	#	1	VU	L	EN	-	4
Striped Legless Lizard	*Delma impar*	2011	8	VU	L	EN	VU	3
Grassland Earless Dragon	*Tympanocryptis pinguicolla*	1884	2	EN	L	CR	VU	4
Growling Grass Frog	*Litoria raniformis*	2015	193	VU	L	EN	VU	4
Dwarf Galaxias	*Galaxiella pusilla*	#	1	VU	L	EN	VU	4
Australian Grayling	*Prototroctes maraena*	2002	3	VU	L	VU	VU	4
Murray Cod	*Maccullochella peelii*	2012	4	VU	L	VU	-	4
Macquarie Perch	*Macquaria australasica*	1970	7	EN	L	EN	DD	4
Yarra Pygmy Perch	*Nannoperca obscura*	#	1	VU	L	VU	VU	4
Eltham Copper	*Paralucia pyrodiscus lucida*	1922	2	-	L	EN	VU	4
Golden Sun Moth	Synemon plana	2015	1146	CR	L	CR	-	2
STATE SIGNIFICANCE								
Common Bent-wing Bat (eastern ssp.)	*Miniopterus schreibersii oceanensis*	2013	1	-	L	VU	-	3
Musk Duck	*Biziura lobata*	2000	25	-	-	VU	-	4
Freckled Duck	*Stictonetta naevosa*	2013	3	-	L	EN	-	4
Australasian Shoveler	*Anas rhynchotis*	2000	4	-	-	VU	-	4
Hardhead	*Aythya australis*	2013	77	-	-	VU	-	4
Blue-billed Duck	*Oxyura australis*	2000	3	-	L	EN	-	4
White-throated Needletail	*Hirundapus caudacutus*	2000	24	-	-	VU	-	4
Little Bittern	*Ixobrychus minutus dubius*	1980	1	-	L	EN	-	4
Eastern Great Egret	*Ardea modesta*	2012	65	-	L	VU	-	4
Intermediate Egret	*Ardea intermedia*	2001	7	-	L	EN	-	4
Little Egret	*Egretta garzetta nigripes*	1991	6	-	L	EN	-	4
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	1846	1	-	L	VU	-	4

Common Name	Scientific Name	Last Documented Record (VBA)	# Records (VBA)	EPBC Act	FFG ACT	DSE (2013)	National Action Plan	Likelihood
Grey Goshawk	*Accipiter novaehollandiae novaehollandiae*	1986	2	-	L	VU	-	4
Black Falcon	*Falco subniger*	1986	6	-	-	VU	-	4
Brolga	*Grus rubicunda*	2002	1	-	L	VU	-	4
Lewin's Rail	*Lewinia pectoralis pectoralis*	1988	2	-	L	VU	NT	4
Baillon's Crake	*Porzana pusilla palustris*	2008	8	-	L	VU	-	4
Australian Bustard	*Ardeotis australis*	1846	1	-	L	CR	NT	4
Bush Stone-curlew	*Burhinus grallarius*	1940	2	-	L	EN	NT	4
Common Sandpiper	*Actitis hypoleucos*	1981	4	-	-	VU	-	4
Red-chested Button-quail	*Turnix pyrrhothorax*	1991	1	-	L	VU	-	4
Caspian Tern	*Hydroprogne caspia*	2007	4	-	L	NT	-	4
Turquoise Parrot	*Neophema pulchella*	2000	1	-	L	NT	NT	4
Barking Owl	*Ninox connivens connivens*	1986	1	-	L	EN	NT	4
Brown Treecreeper (south-eastern ssp.)	*Climacteris picumnus victoriae*	1991	6	-	-	NT	NT	4
Speckled Warbler	*Chthonicola sagittatus*	1990	8	-	L	VU	NT	4
Grey-crowned Babbler	*Pomatostomus temporalis temporalis*	1846	1	-	L	EN	NT	4
Hooded Robin	*Melanodryas cucullata cucullata*	1846	1	-	L	NT	NT	4
Diamond Firetail	*Stagonopleura guttata*	1990	8	-	L	NT	NT	4
Murray Short-necked Turtle	*Emydura macquarii*	2011	3	-	-	VU	-	4
Bearded Dragon	*Pogona barbata*	1990	2	-	-	VU	-	4
Tussock Skink	*Pseudemoia pagenstecheri*	2013	8	-	-	VU	-	4
Brown Toadlet	*Pseudophryne bibronii*	1994	27	-	L	EN	DD	4
Southern Toadlet	*Pseudophryne semimarmorata*	1961	3	-	-	VU	-	4
Australian Mudfish	*Neochanna cleaveri*	2008	1	-	L	CR	-	4
Silver Perch	*Bidyanus bidyanus*	1981	1	-	L	VU	-	4
REGIONAL SIGNIFICANCE								
Fat-tailed Dunnart	*Sminthopsis crassicaudata*	1991	7	-	-	NT	-	3
Pied Cormorant	*Phalacrocorax varius*	1995	22	-	-	NT	-	4
Nankeen Night Heron	*Nycticorax caledonicus hillii*	2010	83	-	-	NT	-	4

Common Name	Scientific Name	Last Documented Record (VBA)	# Records (VBA)	EPBC Act	FFG ACT	DSE (2013)	National Action Plan	Likelihood
Glossy Ibis	*Plegadis falcinellus*	2006	1	-	-	NT	-	4
Royal Spoonbill	*Platalea regia*	1991	8	-	-	NT	-	4
Spotted Harrier	*Circus assimilis*	2002	8	-	-	NT	-	4
Sooty Oystercatcher	*Haematopus fuliginosus*	1950	2	-	-	NT	-	4
Latham's Snipe	*Gallinago hardwickii*	2006	13	-	-	NT	-	4
Sanderling	*Calidris alba*	1977	1	-	-	NT	-	4
Little Button-quail	*Turnix velox*	2001	4	-	-	NT	-	4
Australian Pratincole	*Stiltia isabella*	1982	1	-	-	NT	-	4
Whiskered Tern	*Chlidonias hybridus javanicus*	1991	6	-	-	NT	-	4
Pacific Gull	*Larus pacificus pacificus*	1980	7	-	-	NT	-	4
Black-eared Cuckoo	*Chrysococcyx osculans*	2002	4	-	-	NT	-	4
Azure Kingfisher	*Alcedo azurea*	2003	4	-	-	NT	-	4
Spotted Quail-thrush	*Cinclosoma punctatum*	1846	1	-	-	NT	-	4
Golden Perch	*Macquaria ambigua*	1990	2	-	-	NT	-	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 2016); 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).

APPENDIX 3 - BIODIVERSITY ASSESSMENT REPORT