VENUS BAY CARAVAN PARK

FLORA AND FAUNA ASSESSMENT

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March 2017

Report No. 16068 (1.3)

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1. EXECUTIVE SUMMARY

JardineJohnstone Environment and Planning Pty Ltd, on behalf of Mr Jacob van der Meulen, engaged Brett Lane & Associates Pty Ltd (BL&A) to conduct a flora and fauna assessment of an area of land at at 113A Jupiter Boulevard, Venus Bay in south Gippsland. The specific area investigated, referred to herein as the 'study area', comprised private and public land (road reserve) land, bordered by Inlet View Road in the north, Venus Bay Caravan Park in the east and Cape Liptrap Coastal Park in the west and south. The study area is proposed to be sub-divided into eight residential allotments.

This investigation was commissioned to provide information on the extent and condition of native vegetation in the study area according to Victoria's *Biodiversity assessment guidelines* (the 'Guidelines') (DEPI 2013), as well as any potential impacts on flora and fauna matters listed under the state *Flora and Fauna Guarantee Act 1988* (FFG Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This report outlines any implications under relevant national, state and local legislation and policy frameworks.

1.1. The study area

The study area supported deep aeolian sands on a sequence of tertiary coastal dunes. There were no coherent drainages or bodies of standing water in the study area. Two areas of recent minor earthworks were observed in the study area between habitat zones E and H.

Past land use was apparently predominantly domestic stock grazing, although this has ceased in the recent past. Surrounding land predominantly supported residential dwellings to the north and east of the study area, comprising the township of Venus Bay and natural area conservation to the south of the study area – Cape Liptrap Coastal Park.

The majority of the study area supported remnant native vegetation, in the form of modified Coast Banksia Woodland (Ecological Vegetation Class (EVC 2), where the Coast Banksia canopy had been much reduced and the community was instead dominated by Coast Tea-tree, Coast Wattle, Coast Beard-heath, Sea-berry Saltbush and introduced Panic Veldt-grass. The balance of the study area had been all but cleared of native vegetation in the past for domestic stock grazing and instead supported a variety of agricultural and environmental weeds typical of the locality.

The study area is located within the South Gippsland local government area. It is currently zoned Farming Zone in the South Gippsland Planning Scheme. It is located within a Bushfire-prone Area and is subject to an Environmental Significance Overlay – Schedule 3 (ESO3 - Coastal Settlements).

1.2. Flora and fauna values of the study area

Native vegetation in the study area comprised 13 remnant patches, a habitat hectare assessment summary of which is provided below and the location of which is provided in Figure 1.

Habitat Zone	EVC no.	Area (ha)	Condition score (out of 100)	Habitat Hectares
A	2	0.022	32	0.007
B	2	0.009	39	0.003
C	2	0.032	22	0.007
D	2	0.239	38	0.091
E	2	0.799	52	0.416
F	2	0.048	37	0.018
G	2	0.078	38	0.029
H	2	0.244	38	0.093
I	2	0.515	52	0.268
k	2	0.401	52	0.209
L	2	0.019	37	0.007
M	2	0.101	*20	0.020
N	2	0.187	*20	0.037
Total		**2.694**		**1.205**

* = DELWP modelled score

Nine scattered trees were recorded in the study area. All were Coast Banksia, of DBH (diameter at breast height) between 15 and 30 centimetres and would have once comprised the canopy component of Coast Banksia Woodland (EVC 2).

No EPBC Act or FFG Act listed flora or fauna species were recorded in the study area during the current investigation.

No EPBC Act or FFG Act listed flora species are considered to potentially occur in the study area due to a lack of suitable habitat for such there.

The following EPBC Act and FFG Act listed fauna species are considered likely to occur, or potentially to occur, in the study area based on recent historical records in the region and the presence of suitable habitat:

- Non-migratory birds:
  - White-bellied Sea-Eagle (FFG Act listed).
- Migratory birds:
  - Fork-tailed Swift (EPBC Act: Migratory);
  - Rufous Fantail (EPBC Act: Migratory); and
  - White-throated Needletail (EPBC Act: Migratory).

- Mammals:
    - Yellow-bellied Sheathtail Bat (FFG Act listed).

1.3. Impacts of the proposed development

The current development proposal will result in the loss of **0.947** hectares of native vegetation, which equates to 0.436 Habitat Hectares and 0.238 Biodiversity Equivalence Units (BEU's).

The proposed development is not considered to result in a significant impact on any of the above listed EPBC Act and FFG Act listed fauna species, which were considered likely to occur, or potentially to occur in the study area.

1.4. Regulatory implications of the proposed development

State permit requirements

A permit is required under ESO3 for the proposal to remove native vegetation from within the study area. The Responsible Authority (South Gippsland Shire Council) will consider the decision guidelines for ESO3 in their decision to grant a permit.

A planning permit under Clause 52.17 of the South Gippsland Planning Scheme is required for the removal of native vegetation.

The current proposal triggers a referral to DELWP as it meets the criteria specified in Section 3.2.

State offset requirements and offset strategy

Offsets required to compensate for the proposed removal of native vegetation from the study area have been determined by DELWP Transition Support (Appendix 7). The required offset will be **0.357** *general* biodiversity equivalence units (GBEU's) with a minimum strategic biodiversity score of **0.432** within the West Gippsland Catchment Management Authority area or the South Gippsland local government area.

Under the Guidelines *all* offsets must be secured prior to the removal of native vegetation.

Retained native vegetation in the balance of the subject property cannot be used as an onsite offset, as it does not meet the eligibility criteria outlined in the Guidelines. As such, a third party (offsite) offset will be identified through a native vegetation broker to meet the offset requirement.

Implications under the Commonwealth EPBC Act

Based on the relevant guidelines, the proposed development is unlikely to result in a significant impact on any EPBC Act listed values identified in this report.

Therefore, there are no implications under the EPBC Act.

Implications under the State FFG Act

As no FFG Act values listed as threatened or protected are susceptible to impacts from the proposed development on public land, there are no implications under the FFG Act for the proposal.

Implications under the State *Environment Effects Act 1978* (EE Act)

Based on the relevant criteria, a Referral to the state Minister for Planning will not be required under the EE Act for the aspects covered by the current investigation.

Implications under the State *Catchment and Land Protection Act 1994* (CaLP Act)

In accordance with the CaLp Act, the noxious weed species listed below, which were recorded in the study area, must be controlled.

- Apple of Sodom;
- Montpellier Broom; and
- Soursob.

2. INTRODUCTION

JardineJohnstone Environment and Planning Pty Ltd, on behalf of Mr Jacob van der Meulen, engaged Brett Lane & Associates Pty Ltd (BL&A) to conduct a flora and fauna assessment of an area of land at 113A Jupiter Boulevard, Venus Bay in south Gippsland. The specific area investigated, referred to herein as the 'study area', comprised private and public land (road reserve) land, bordered by Inlet View Road in the north, Venus Bay Caravan Park in the east and Cape Liptrap Coastal Park in the west and south. The study area is proposed to be sub-divided into eight residential allotments.

This investigation was commissioned to provide information on the extent and condition of native vegetation in the study area according to Victoria's *Biodiversity assessment guidelines* (DEPI 2013), as well as any potential impacts on flora and fauna matters listed under the state *Flora and Fauna Guarantee Act 1988* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. This report outlines any implications under relevant national, state and local legislation and policy frameworks.

Specifically, the scope of the investigation included:

- Existing information on the flora, fauna and native vegetation of the study area and surrounds was reviewed, including:
    - Victorian Biodiversity Atlas administered by the Department of Environment, Land, Water and Planning (DELWP);
    - The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool;
    - DELWP Native Vegetation Information Management system (NVIM); and
    - Desktop assessment of other native vegetation within the broader property for its eligibility as an offset in accordance with the Guidelines.
- A site survey was undertaken involving:
    - Characterisation and mapping of remnant native vegetation on the site;
    - Assessment of native vegetation in accordance with Victoria's *Biodiversity assessment guidelines* (the 'Guidelines') including habitat hectare assessment and/or scattered tree assessment;
    - Compilation of flora and fauna species lists for the site;
    - Assessment of the nature and quality of native fauna habitat;
    - Assessment of the likelihood of occurrence of EPBC Act and FFG Act listed flora and fauna on the site; and
    - Assessment of other native vegetation within the broader property for its site-based eligibility as an offset in accordance with the Guidelines.

This report is divided into the following sections:

Section 3 provides the legislative background including details of all relevant Commonwealth, State and local legislation and policies.

Section 4 describes the sources of information, including the methods used for the field survey.

Section 5 presents the assessment results, including details of the native vegetation, flora and fauna of the study area.

Section 6 discusses the proposed impacts of the project.

Section 7 details the implications of the findings under the relevant legislation and policy.

This investigation was undertaken by Brett Macdonald, Senior Ecologist and Project Manager from BL&A.

3. PLANNING AND LEGISLATIVE CONSIDERATIONS

This investigation and report addresses the application on the site of relevant legislation and planning policies that protect biodiversity. Local, state and Commonwealth controls are summarised below.

3.1. Local planning provisions

The study area is located within the South Gippsland local government area. It is currently zoned Farming Zone in the South Gippsland Planning Scheme. It is located within a Bushfire-prone Area.

Local planning provisions apply under the Victorian *Planning and Environment Act 1987*.

3.1.1. Overlays

The entire study area is subject to an Environmental Significance Overlay – Schedule 3 (ESO3 - Coastal Settlements) in the South Gippsland Planning Scheme which is relevant to this assessment. The purpose of this overlay is discussed below.

Objectives

The objectives of ESO3 are as follows:

- To protect and enhance the natural beauty of the coastal area;
- To protect and enhance the environmental quality of the coastal area;
- To minimise the risk of erosion, pollution and destruction of the environment through poorly managed development; and
- To ensure that development adjacent to coastal areas is compatible with the environment and does not result in adverse impacts on coastal processes.

Permit requirements

A planning permit is required under ESO3 to remove, destroy or lop native vegetation.

Decision guidelines

The decision guidelines, which the Shire of South Gippsland will follow when deciding on an application to remove native vegetation, are as follows:

- The purpose of the overlay;
- The maintenance and improvement of the stability of the coastal dunes and coastlines;
- The preservation of any existing natural vegetation;
- The conservation of any areas of environmental importance or significance;
- The intensity of human activity which the landscapes and the environment the area can sustain;
- Whether the development of the land will be detrimental to the natural environment;
- Any relevant coastal study adopted by the Shire of South Gippsland;
- The views of the Department of Sustainability and Environment in respect to:

- Subdivision applications of greater than four lots or any subdivision application which may have adverse environmental effects;
- Applications which in the opinion of the responsible authority may adversely affect coastal processes, dune systems (including tertiary systems), have possible effect on aquatic habitat and flora and fauna habitat;
- Applications which in the opinion of the responsible authority may cause or otherwise cause erosion, land degradation or affect land stability on either the subject land or on adjoining land; and
- Applications which in the opinion of the responsible authority may adversely affect wildlife habitat and sites of biological or zoological significance.

3.2. State planning provisions

State planning provisions are established under the Victorian *Planning and Environment Act 1987*.

Under Clause 52.17 of all Victorian Planning Schemes a planning permit is required for the destruction, lopping or removal of native vegetation on land which has an area of 0.4 hectares or more (together with all contiguous land in single ownership). This includes the removal of dead trees with a DBH (diameter at breast height or 1.3 metres) of 40 centimetres or more and any individual scattered native plants.

Before issuing a planning permit, Responsible Authorities are obligated to refer to Clause 12.01 (Biodiversity) in the Planning Scheme. This refers in turn to the following online tool and document:

- The Native Vegetation Information Management system (NVIM) (DELWP 2016a) — a database administered by DELWP; and
- *Permitted clearing of native vegetation – Biodiversity assessment guidelines* (DEPI 2013).

A planning permit under Clause 52.17 of the South Gippsland Planning Scheme is required for the removal of native vegetation.

The application of the *Native Vegetation Information Management system* (NVIM) (DELWP 2016a) and *Permitted clearing of native vegetation – Biodiversity assessment guidelines* (the 'Guidelines') (DEPI 2013) are explained further in Appendix 1.

Clause 66.02 of the planning scheme determines the role of DELWP in the assessment of native vegetation removal permit applications. If an application is referred, DELWP may make certain recommendations to the responsible authority in relation to the permit application. An application to remove native vegetation must be referred to DELWP in the following circumstances:

- Applications where the native vegetation to be removed is 0.5 hectares or more (this does not apply to removal of scattered trees only);
- All applications in the high risk-based pathway;
- Applications where a property vegetation plan applies to the site; and
- Applications on Crown land which is occupied or managed by the responsible authority.

3.3. EPBC Act

The *Environment Protection and Biodiversity Conservation Act 1999* protects a number of threatened species and ecological communities that are considered to be of national conservation significance. Any significant impacts on these species require the approval of the Australian Minister for the Environment.

Implications under the EPBC Act for the current proposal are discussed in Section 7.3.

3.4. FFG Act

The Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act) lists threatened and protected species and ecological communities (DELWP 2015a, DELWP 2015b). Any removal of threatened flora species or communities (or protected flora) listed under the FFG Act from public land requires a Protected Flora Licence or Permit under the Act, obtained from DELWP.

Implications under the FFG Act for the current proposal are discussed in Section 7.4.

3.5. EE Act

One or a combination of a number of criteria may trigger a requirement for a Referral to the Victorian Minister for Planning who will determine if an EES is required according to the "Ministerial Guidelines for Assessment of Environmental Effects under the *Environment Effects Act 1978"* (DSE 2006).

Implications under the EE Act for the current proposal are discussed in Section 0.

4. EXISTING INFORMATION & METHODS

4.1. Existing information

Existing information used for this investigation is described below.

4.1.1. Existing reporting and documentation

The reports, planning schemes and/or development plans below, relating to the study area were reviewed.

- South Gippsland Planning Scheme; and
- 113A Jupiter Boulevard, Venus Bay, Draft Bushfire Management Plan, July 2016, JardineJohnstone Environment and Planning Pty Ltd.

4.1.2. Native vegetation

Pre-1750 (pre-European settlement) vegetation mapping administered by DELWP was reviewed to determine the type of native vegetation likely to occur in the study area and surrounds. Information on Ecological Vegetation Classes (EVCs) was obtained from published EVC benchmarks. These sources included:

- Relevant EVC benchmarks for the Gippsland Plain bioregion[1] (DELWP 2015c); and
- Biodiversity Interactive Maps (DELWP 2016b).

4.1.3. Listed matters

Existing flora and fauna species records and information about the potential occurrence of listed matters was obtained from an area termed the 'search region', defined here as an area with a radius of ten kilometres from the approximate centre point of the study area (coordinates: latitude 38˚ 42' 04" S and longitude 145˚ 48' 51" E).

A list of the flora and fauna species recorded in the search region was obtained from the Victorian Biodiversity Atlas (VBA), a database administered by DELWP (2016c).

The 'Vegetation/ Modelled FFG Act Communities' layer in DELWP's Biodiversity Interactive Map (DELWP 2016a) was consulted to determine which ecological communities listed as threatened under the FFG Act were modelled to potentially occur in or near the study area.

The online *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool (Department of the Environment 2016) was consulted to determine whether nationally listed species or communities potentially occurred in the search region based on habitat modelling.

4.2. Field methods

The field assessment was conducted on the 17th June 2016. During this assessment, the study area was surveyed in detail on foot.

[1] A bioregion is defined as "a geographic region that captures the patterns of ecological characteristics in the landscape, providing a natural framework for recognising and responding to biodiversity values". In general bioregions reflect underlying environmental features of the landscape (DNRE 1997).

Sites in the study area found to support native vegetation or with potential to support listed matters were mapped. Mapping was undertaken through a combination of aerial photograph interpretation and ground-truthing using a hand held GPS (accurate to approximately five metres). Species and ecological communities listed as threatened under the EPBC Act or FFG Act (where they occurred on public land) were also mapped using the same method.

4.2.1. Native vegetation

Native vegetation is currently defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses'. The *Biodiversity assessment guidelines* define native vegetation as belonging to two categories (DEPI 2013):

- Remnant patch; or
- Scattered trees.

The definitions of these categories are provided below, along with the prescribed DELWP methods to assess them.

Remnant patch

A remnant patch of native vegetation is either:

- An area of native vegetation where at least 25 per cent of the total perennial understorey plant cover is native; and/or
- Any area with three or more native canopy trees[2] where the canopy foliage cover[3] is at least 20 per cent of the area.

Remnant patch condition is assessed using the habitat hectare method (Parkes *et al*. 2003; DSE 2004) whereby components of native vegetation (e.g. tree canopy, understorey and ground cover) are assessed against an EVC benchmark. The score effectively measures the percentage resemblance of the vegetation to its original condition.

The NVIM system (DELWP 2016a) provides modelled condition scores for native vegetation to be used in certain circumstances (see Appendix 1). All wetlands mapped on DELWP's native vegetation layer are treated as a remnant patch.

The condition score assists in defining the biodiversity equivalence score of the native vegetation and the offset targets if removal of native vegetation is approved (see Appendix 1 for details of how scoring works).

Scattered trees

The *Biodiversity assessment guidelines* define scattered trees as a native canopy tree[2] that does not form part of a remnant patch of native vegetation.

Scattered trees are counted, the species identified and their DBH (diameter at breast height or 1.3 metres above ground) measured or estimated.

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[2] A canopy tree is a reproductively mature tree that is greater than 3 metres in height and is normally found in the upper layer of the relevant vegetation type.
[3] Foliage cover is the proportion of the ground that is shaded by vegetation foliage when lit from directly above.

4.2.2. Flora species and habitats

Records of flora species were made in conjunction with sampling methods used to undertake habitat hectare assessments of native vegetation described above. Specimens requiring identification using laboratory techniques were collected.

Species protected under the FFG Act were determined by crosschecking against the FFG Act Protected Flora List (DELWP 2015a).

The potential for habitats to support listed flora species was assessed based on the criteria outlined below:

- The presence of suitable habitat for flora species such as soil type, floristic associations and landscape context; and
- The level of disturbance of suitable habitats by anthropogenic disturbances and invasions by pest plants and animals.

Wherever appropriate, a precautionary approach was adopted in determining the likelihood of occurrence or flora listed under the EPBC Act and/or FFG Act. That is, where insufficient evidence was available on the potential occurrence of a listed species, it is assumed that it could be in an area of suitable habitat.

4.2.3. Fauna species and habitats

The techniques below were used to detect fauna species utilising the study area.

- Incidental searches for mammal scats, tracks and signs (e.g. diggings, signs of feeding and nests/burrows).
- Turning over logs/rocks and other ground debris for reptiles, frogs and mammals.
- Bird observation during the day.
- General searches for reptiles and frogs; including identification of frog calls in seasonally wet areas.
- General searches for bat habitat including waterbodies and potential roosting sites such as caves, dead trees with hollows and underneath bark of trees.

Fauna habitats are described using habitat components that include old-growth trees, fallen timber, leaf litter and surface rocks.

The study area's habitat connectivity (i.e. degree of isolation/fragmentation), including linkages to other habitats in the region, was determined using field observations, recent aerial photography and DELWP's Biodiversity Interactive Maps (DELWP 2016b).

Wherever appropriate, a precautionary approach was adopted in determining the likelihood of occurrence or fauna listed under the EPBC Act and FFG Act. That is, where insufficient evidence was available on the potential occurrence of a listed species, it is assumed that it could be in an area of suitable habitat.

4.2.4. Threatened ecological communities

The likelihood of listed threatened ecological communities occurring in the study area was determined by checking general field observations against published descriptions of relevant listed ecological communities modelled to potentially occur in the study area.

Reviewed ecological community descriptions comprised identification criteria and condition thresholds from listing advice for EPBC Act communities as well as FFG Act listed community descriptions (SAC 2016).

4.3. Limitations of field assessment

The site assessment was carried out in mid-winter. The short duration and seasonal timing of field assessments can result in some species not being detected when they may occur at other times. Additionally, some flora species and life-forms may have been undetectable at the time of the survey or unidentifiable due to a lack of flowers or fruit.

The timing of the survey and condition of vegetation was otherwise considered suitable to ascertain the extent and condition of native vegetation and fauna habitats.

As this report addresses a particular regulatory requirement (i.e. Clause 52.17 and ESO3 in the South Gippsland Planning Scheme), compilation of full species lists for common flora and fauna species likely to occur has not been undertaken. Only listed threatened and migratory species have been assessed for their likelihood of occurrence in the study area.

These limitations were not considered to compromise the validity of the current investigation, which was designed to address the relevant policies and decision guidelines.

5. ASSESSMENT RESULTS

5.1. Site description

The study area for this investigation (Figure 1) was an area of private and public land (road reserve) at 113A Jupiter Boulevard, Venus Bay in south Gippsland, and bordered by Inlet View Road in the north, Venus Bay Caravan Park in the east and Cape Liptrap Coastal Park in the west and south.

The study area supported deep aeolian sands on a sequence of tertiary coastal dunes. There were no coherent drainages or bodies of standing water in the study area. Two areas of recent minor earthworks were observed in the study area between habitat zones E and H.

Past land use was apparently predominantly domestic stock grazing, although this has ceased in the recent past. Surrounding land predominantly supported residential dwellings to the north and east of the study area, comprising the township of Venus Bay and natural area conservation to the south of the study area – Cape Liptrap Coastal Park.

The majority of the study area supported remnant native vegetation, in the form of modified Coast Banksia Woodland (Ecological Vegetation Class (EVC 2), where the Coast Banksia canopy had been much reduced and the community was instead dominated by Coast Tea-tree, Coast Wattle, Coast Beard-heath, Sea-berry Saltbush and introduced Panic Veldt-grass. The balance of the study area had been all but cleared of native vegetation in the past for domestic stock grazing and instead supported a variety of agricultural and environmental weeds typical of the locality.

The study area lies within the Gippsland Plain bioregion and falls within the West Gippsland catchment.

5.2. Remnant patches

Pre–European EVC mapping (DELWP 2016b) indicated that the study area and surrounds would have supported a mosaic of Coastal Dune Scrub (EVC 160) and Coastal Dune Grassland (EVC 879) prior to European settlement based on modelling of factors including rainfall, aspect, soils and remaining vegetation.

Evidence on site, however confirmed that neither of DELWP modelled EVC's were present; instead all native vegetation in the study area was found to be a modified form of Coast Banksia Woodland (EVC 2) (Figure 1). A description of this EVC is provided within the EVC benchmark in Appendix 6.

13 remnant patches (referred to herein as habitat zones) comprising the abovementioned EVC were identified in the study area (Table 1).

Table 1: Description of habitat zones in the study area

Habitat Zone	EVC	Description
A,B	Coast Banksia Woodland (EVC 2)	Both zones dominated by a single immature Coast Banksia canopy tree above an understory dominated by Coast Tea-tree, Coast Wattle, Coast Beard-heath and Sea-berry Saltbush. Native species diversity in the ground layer poor. Introduced weed cover low, comprising predominantly Kikuyu and Panic Veldt-grass, both considered high-threat weed species in this EVC.
C,F,L		Canopy absent, instead dominated by an understory tree layer of immature Coast Banksia (canopy trees) over a low shrub layer dominated by regenerating Coast Banksia, Coast Wattle, Coast Tea-tree and Austral Bracken. Native species diversity in the ground layer very poor to poor. Introduced weed cover high, comprising predominantly Panic Veldt-grass, which is considered a high-threat weed species in this EVC.
D,H,G,E,I,K		Canopy absent, instead dominated by an understory shrub/tree layer of Coast Tea-tree, Coast Wattle, Coast Beard-heath and Sea-berry Saltbush, with a scattering of immature Coast Banksia (canopy trees). Native species diversity in the ground layer varied from poor to moderate. Introduced weed cover varied from moderate to very high, comprising predominantly Panic Veldt-grass, which is considered a high-threat weed species in this EVC.
M,N		Not assessed in detail. From brief observation, these zones appeared to be more degraded than the other zones due to their close proximity to dwellings.

The habitat hectare assessment results for these habitat zones are provided in Table 2. More detailed habitat scoring results are presented in Appendix 2.

Table 2: Summary of habitat hectare assessment results

Habitat Zone	EVC no.	Area (ha)	Condition score (out of 100)	Habitat Hectares
A	2	0.022	32	0.007
B	2	0.009	39	0.003
C	2	0.032	22	0.007
D	2	0.239	38	0.091
E	2	0.799	52	0.416
F	2	0.048	37	0.018
G	2	0.078	38	0.029
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M	2	0.101	*20	0.020
N	2	0.187	*20	0.037
Total		**2.694**		**1.205**

* = DELWP modelled score

Figure 1: Study area and native vegetation

Project: Venus Bay Caravan Park
Client: Jardine Johnstone, Environment and Planning

Legend

- Study area
- Existing building envelopes 50m buffer
- Scattered trees
- Coast Banksia Woodland (EVC 2)
- Native vegetation removal exempt under Clause 52.48
- Native vegetation to be removed

N

Metres
0 100

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16068 - Date: 27/02/2017 - Created by: nmay / bmacdonald - E:\GIS\2016 Jobs\16068\16068 FIG 2 NV removal updated lots 161122.mxd

5.3. Scattered trees

Nine scattered trees were recorded in the study area. All were Coast Banksia, of DBH (diameter at breast height) between 15 and 30 centimetres and would have once comprised the canopy component of Coast Banksia Woodland (EVC 2).

5.4. Flora species

5.4.1. Species recorded

During the habitat hectare assessment 29 plant species were recorded. Of these, 18 (62%) were indigenous and 11 (38%) were introduced or non-indigenous native in origin (Appendix 3).

5.4.2. Listed species

VBA records (VBA 2013) and the EPBC Protected Matters Search Tool (Department of the Environment 2013) indicated that within the search region there were records of, or there occurred potential suitable habitat for, three species listed under the Commonwealth EPBC Act and three listed under the state *Flora and Fauna Guarantee Act 1988* (FFG Act), including three listed under both Acts. No flora species listed under the EPBC Act were recorded during the field survey.

The likelihood of occurrence in the study area of species listed under the EPBC Act and FFG Act is addressed in Table 3. Species considered 'likely to occur' are those that have a very high chance of being in the study area based on numerous records in the search region and suitable habitat in the study area. Species considered to have the 'potential to occur' are those where suitable habitat exists, but recent records are scarce.

This analysis indicates that none of the flora species listed in Table 3 are likely to occur or have the potential to occur in the study area.

Table 3: FFG Act and EPBC Act listed flora species and likelihood of occurrence

Common Name	Scientific name	Conservation status		Habitat	Number of records	Date of last record	Likelihood of occurrence
		EPBC	FFG				
Eastern Spider-orchid	*Caladenia orientalis*	EN	L	Heathland and Heathy Woodland in coastal areas between the Mornington Peninsula and Wilsons Promontory (Jeanes & Backhouse 2006).	Nil	NA	No suitable habitat in the study area - **unlikely to occur**
Leafy Greenhood	*Pterostylis cucullata subsp. cucullata*	VU	L	Coast Tea-tree (Leptospermum laevigatum) or Moonah (Melaleuca lanceolata) coastal scrubs on stabilized sand dunes, with an open understorey and grassy and herbaceous groundcover on seasonally damp but well drained humus rich sandy loams. Mt Eccles population occurs in Brown Stringybark (Eucalyptus baxteri) and Manna Gum (E. viminalis) forest with a grassy groundcover (Duncan 2010).	Nil	NA	Coast Tea-tree dominated vegetation in the study area has a highly modified ground layer and lack of historical records in the search region - **unlikely to occur**
Maroon Leek-orchid	*Prasophyllum frenchii*	EN	L	Favouring heathland and Grassland on black clays (Bates 1994).	Nil	NA	No suitable habitat in the study area - **unlikely to occur**

Notes: EPBC = threatened species status under EPBC Act: EX = presumed extinct in the wild; CR = critically endangered; EN = endangered; VU = vulnerable; **FFG** = threatened species status under the FFG Act: L = listed as threatened under the FFG Act.

5.5. Fauna habitat

As described in Section 5.1 above, the study area supported a mosaic of modified Coast Banksia Woodland and open herbaceous pasture. The areas of Coast Banksia Woodland were largely devoid of mature canopy trees and none of the trees observed were hollow-bearing, thus excluding fauna species which rely on such resources for foraging and breeding. Understorey vegetation was quite dense, providing shelter, foraging and breeding habitat for a range of faunal groups.

The mosaic of open pasture and closed scrub provides ideal habitat for herbivorous marsupials such as Common Wombat, Black Wallaby and Eastern Grey Kangaroo, as well as introduced herbivorous species, such as European Rabbit and deer species.

5.6. Fauna species

5.6.1. Species recorded

During the field assessment 22 fauna species were recorded. This included 19 bird (four introduced) and three mammal (none introduced) species (Appendix 4).

5.6.2. Listed species

The review of existing information indicated that 27 fauna species listed under the state *Flora and Fauna Guarantee Act 1988* (FFG Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) have previously been recorded within the search region within the last 30 years or for which potential habitat occurs according to the EPBC Act Protected Matters Search Tool. The likelihood of occurrence of these species in the study area was assessed and the results are presented in Table 4.

This analysis of potential occurrence of listed fauna species excludes:

- Marine fauna given that the study area is not oceanic
- Migratory oceanic bird species (such as albatrosses and petrels) and migratory shorebirds given that the study area is not on the coastline.

Species considered 'likely to occur' are those that have a very high chance of being in the study area given the existence of numerous records in the search region and suitable habitat in the study area. Using the precautionary approach, species considered to have the 'potential to occur' are those where suitable habitat exists, but recent records are scarce. This analysis indicates that five listed fauna species are likely to occur or have the potential to occur. These species are:

- Non-migratory birds:
    - White-bellied Sea-Eagle (FFG Act listed).
- Migratory birds:
    - Fork-tailed Swift (EPBC Act: Migratory);
    - Rufous Fantail (EPBC Act: Migratory); and
    - White-throated Needletail (EPBC Act: Migratory).
- Mammals:
    - Yellow-bellied Sheathtail Bat (FFG Act listed).

The susceptibility of these species to impacts from development is discussed in Section 5.6.3.

Table 4: Listed fauna species from the search region and likelihood of occurrence in the study area

Common Name	Scientific name	Conservation status			Habitat	Number of records	Date of last record	Likelihood of occurrence
		EPBC-T	EPBC-M	FFG-T				
Birds								
Australasian Bittern	*Botaurus poiciloptilus*	EN		L	Terrestrial wetlands, including a range of wetland types but prefers permanent water bodies with tall dense vegetation, particularly those dominated by sedges, rush, reeds or cutting grass (Marchant and Higgins 1990).	Nil	NA	No suitable wetland habitat in study area - **unlikely to occur**
Australian Painted Snipe	*Rostratula australis*	EN		L	Generally inhabits shallow terrestrial freshwater wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains. Typical sites include those with rank emergent tussocks of grass, sedges, rushes or reeds, or samphire; often with scattered clumps of lignum Muehlenbeckia or canegrass or sometimes tea-tree (Melaleuca). Sometimes utilises areas that are lined with trees, or that have some scattered fallen or washed-up timber (DoE 2016a).	Nil	NA	No suitable wetland habitat in study area - **unlikely to occur**
Black-faced Monarch	*Monarcha melanopsis*		M (Bonn Convention (A2H))		Rainforests, eucalypt woodlands, coastal scrub and damp gullies (Higgins et al. 2006)	Nil	NA	Suitable dispersal habitat in the study area, although lack of historical records in the search region suggest that this species is **unlikely to occur**
Cattle Egret	*Ardea ibis*		M (JAMBA, CAMBA)		Wooded lands and terrestrial freshwater wetlands and pasture, in association with cattle (Marchant and Higgins 1990).	63	1/07/2001	No suitable habitat in study area - **unlikely to occur**
Eastern Great Egret	*Ardea modesta*		M (JAMBA, CAMBA)	L	Occurs in a variety of wetlands including: permanent water bodies on flood plains; shallows of deep permanent lakes, either open or vegetated with shrubs or trees; semi-permanent swamps with tall emergent vegetation (e.g. bulrush) and herb dominated seasonal swamps with abundant aquatic flora (Marchant and Higgins 1990).	1	30/05/2009	No suitable wetland habitat in study area - **unlikely to occur**
Fork-tailed Swift	*Apus pacificus*		M (JAMBA,CAMBA, ROKAMBA)		Aerial, over inland plains, sometimes above foothills or in coastal areas, over cliffs and urban areas (Higgins 1999).	Nil	NA	May occasionally forage over study area - **potential to occur**
Hooded Plover	*Thinornis rubricollis rubricollis*			L	Inhabits sandy ocean beaches, especially those that are broad and flat, with a wide wave-wash zone for feeding. Widespread in all coastal waters of Victoria. Numbers reduced due to disturbance by recreational activities on beaches. (Marchant and Higgins 1993).	1	20/01/2010	No suitable habitat on public land in study area - **unlikely to occur**
Intermediate Egret	*Ardea intermedia*			L	It mainly inhabits terrestrial wetlands; only occasionally visit coastal wetlands and forages amongst aquatic vegetation in shallow water and requires trees for roosting and nesting. It often occurs in wetlands that contain vegetation, including bulrush (Marchant and Higgins 1990).	48	17/05/2003	No suitable wetland habitat in study area - **unlikely to occur**

Common Name	Scientific name	Conservation status			Habitat	Number of records	Date of last record	Likelihood of occurrence
		EPBC-T	EPBC-M	FFG-T				
Latham's Snipe	*Gallinago hardwickii*		M (JAMBA, CAMBA, ROKAMBA, Bonn A2H)		Occurs in wide variety of permanent and ephemeral wetlands; it prefers open freshwater wetlands with dense cover nearby, such as the edges of rivers and creeks, bogs, swamps, waterholes. The species is wide spread in southeast Australia and most of its population occurs in Vic. Except in the northwest of the state. (Naarding 1983; Higgins and Davies 1996).	Nil	NA	No suitable wetland habitat in study area - **unlikely to occur**
Little Egret	*Egretta garzetta nigripes*			L	It occurs in a range of coastal and terrestrial wetlands, including freshwater wetlands with vegetation such as bulrush and requires trees for roosting and nesting (Marchant and Higgins 1990).	302	15/09/2006	No suitable wetland habitat in study area - **unlikely to occur**
Orange-bellied Parrot	*Neophema chrysogaster*	CE	M (JAMBA)	L	Inhabits natural saltmarshes dominated by Beaded Glasswort and Shrubby Glasswort as well as associated grassy or weedy pastures (OBPRT 2006).	120	5/06/1999	No suitable habitat in study area - **unlikely to occur**
Osprey	*Pandion cristatus*		M (Bonn Convention (A2S))		Rare vagrant to Victoria (Marchant & Higgins 1993). Littoral and coastal habitats and terrestrial wetlands. They are mostly found in coastal areas but occasionally travel inland along major rivers (Johnstone & Storr 1998; Marchant & Higgins 1993; Olsen 1995). They require extensive areas of open fresh, brackish or saline water for foraging (Marchant & Higgins 1993).	Nil	NA	The lack of historical records in the search region and rare entry in Victoria suggest that this species is **unlikely to occur**
Regent Honeyeater	*Anthochaera phrygia*	CR	M (JAMBA)	L	Inhabits dry box-ironbark eucalypt forests near rivers and creeks on inland slopes of the Great Dividing Range. It could also occur in small remnant patches or in mature trees in farmland or partly cleared agricultural land (Higgins et al. 2001).	Nil	NA	No suitable habitat in study area - **unlikely to occur**
Rufous Fantail	*Rhipidura rufifrons*		M (Bonn Convention (A2H))		Primarily found in dense, moist habitats. Less often present in dry sclerophyll forests and woodlands (Higgins et al. 2006).	6	1/02/1999	Suitable dispersal habitat in the study area and historical records - **potential to occur**
Satin Flycatcher	*Myiagra cyanoleuca*		M (Bonn Convention (A2H))		Tall forests and woodlands in wetter habitats but not in rainforest (Higgins et al. 2006)	12	13/01/2001	No suitable habitat in study area - **unlikely to occur**
Short-tailed Shearwater	*Puffinus tenuirostris*		M (JAMBA, ROKAMBA)		Marine, pelagic, in subantarctic and antarctic waters, breeds on mainland Victoria (Marchant and Higgins 1990)	188	18/01/2001	Nesting burrows were not observed in the study area - **unlikely to occur**
Swift Parrot	*Lathamus discolor*	CR		L	Prefers a narrow range of eucalypts in Victoria, including White Box, Red Ironbark and Yellow Gum as well as River Red Gum when this species supports abundant 'lerp'. Breeds in Tasmania and migrates to the mainland of Australia for the autumn, winter and early spring months. It lives mostly north of the Great Dividing Range, passing through two areas of Victoria on migration: the Port Phillip district and Gippsland. (Emison et al. 1987; Higgins 1999; Kennedy and Tzaros 2005).	Nil	NA	No suitable habitat in study area - **unlikely to occur**
White-bellied Sea-Eagle	*Haliaeetus leucogaster*			L	Maritime habitats, terrestrial large wetlands and coastal lands of tropical and temperate Australia and offshore islands, ranging far inland only over large rivers and wetlands. The eagles usually breed on coast and offshore islands and inland beside large lakes or rivers, usually in tall trees in or near water, also in cliffs, rock pinnacles and escarpments. (Marchant and Higgins 1993).	2	15/04/2008	Likely to occasionally forage over study area and recent historical records - **likely to occur**

Common Name	Scientific name	Conservation status			Habitat	Number of records	Date of last record	Likelihood of occurrence
		EPBC-T	EPBC-M	FFG-T				
White-throated Needletail	*Hirundapus caudacutus*		M (JAMBA, CAMBA, ROKAMBA)		Aerial, over all habitats, but probably more over wooded areas, including open forest and rainforest. Often over heathland and less often above treeless areas such as grassland and swamps or farmland (Higgins 1999).	41	25/02/2001	Many recent historical records in search region. Likely to seasonally forage over study area - **likely to occur**
Mammals								
Broad-toothed Rat	*Mastacomys fuscus mordicus*	VU		L	Alpine sedges and heaths, wet sedge and grass patches in forest in eastern highlands, south gippsland highland and Otways (Menkhorst 1995).	Nil	NA	Altitude of study area too low for this species - **unlikely to occur**
Grey-headed Flying-fox	*Pteropus poliocephalus*	VU		L	Roosts in riverine habitat in Melbourne and forages widely in flowering eucalypts and fruit trees (Menkhorst 1995).	Nil	NA	The lack of historical records in the search region suggest that this species is **unlikely to occur**
Southern Brown Bandicoot	*Isoodon obesulus obesulus*	EN		L	Species experts define suitable habitat for Southern Brown Bandicoots (eastern) to be any patches of native or exotic vegetation, within their distribution, which contains understorey vegetation structure with 50–80% average foliage density in the 0.2–1 m height range. In areas where native habitats have been degraded or diminished, exotic vegetation, such as Blackberry (Rubus spp.), can and often does, provide important habitat (DoE 2016b).	Nil	NA	The lack of suitable habitat in study area and lack of historical records in the search region suggest that this species is **unlikely to occur**
Spot-tailed Quoll	*Dasyurus maculatus maculatus*	EN		L	Rainforest, wet and dry forest, coastal heath and scrub and River Red-gum woodlands along inland rivers (Menkhorst 1995).	Nil	NA	The lack of historical records in the search region suggest that this species is **unlikely to occur**
Swamp Antechinus	*Antechinus minimus maritimus*	VU		L	In coastal Victoria and far south-eastern South Australia, mainly occurs in damp areas, particularly at sites with dense vegetation at about 1–2 m above ground level. Its habitat includes dense wet heathlands, tussock grasslands, sedgelands, damp gullies, swamps and some shrubby woodlands, often in landscape settings with little exposure to the sun (DoE 2016c).	2	31/01/2013	No suitable habitat in study area - **unlikely to occur**
White-footed Dunnart	*Sminthopsis leucopus*			L	Coastal tussock grassland and sedgeland, wet heath, and forest or woodland with a dense heathy understorey or mid-storey vegetation (Menkhorst 1995).	1	11/07/1992	No suitable habitat in study area - **unlikely to occur**
Yellow-bellied Sheathtail Bat	*Saccolaimus flaviventris*			L	Known to occur from urban, agricultural semi-arid and tall wet forest habitats (Menkhorst 1995).	2	21/05/2000	May occasionally forage over study area and recent historical records in the search region - **potential to occur**
Frogs								
Growling Grass Frog	*Litoria raniformis*	VU		L	Permanent, still or slow flowing water with fringing and emergent vegetation in streams, swamps, lagoons and artificial wetlands such as farm dams and abandoned quarries (Clemann and Gillespie 2004).	Nil	NA	No suitable habitat in study area - **unlikely to occur**

Notes: EPBC-T = threatened species status under EPBC Act; EX = presumed extinct in the wild; CE = critically endangered; EN = endangered; VU = vulnerable; **EPBC-M** = migratory status under the EPBC Act; M = listed migratory taxa; Bonn Convention (A2H) - Convention on the Conservation of Migratory Species of Wild Animals – listed as a member of a family; Bonn Convention (A2S) - Convention on the Conservation of Migratory Species of Wild Animals - species listed explicitly; CAMBA - China- Australia Migratory Birds Agreement; JAMBA - Japan-Australia Migratory Birds Agreement; ROKAMBA - Republic of Korea Australia Migratory Birds Agreement; **FFG-T** = threatened species status under the FFG Act: L = listed as threatened under the FFG Act.

5.6.3. Susceptibility of listed fauna to impacts

The following analysis identifies the susceptibility to development of listed fauna species which may utilise the study area.

Birds

One listed non-migratory bird species is considered to have the potential to occur in the study area. The susceptibility of this species to possible impacts from any development in the study area is discussed below.

- White-bellied Sea-Eagle (FFG Act listed)

  This species may occasionally hunt above the study area though would not make direct use of the habitat there. It is therefore considered unlikely that White-bellied Sea-Eagle would be impacted by development in the study area.

Migratory Birds

Three listed migratory bird species (excluding oceanic species and shorebirds) have the potential to occur in the study area. The susceptibility of these species to possible impacts from any development in the study area is discussed below.

- Fork-tailed Swift and White-throated Needletail (both EPBC Act: Migratory)

  These aerial summer migrants to south eastern Australia may occasionally forage above the study area, in fast moving wide-ranging feeding flocks, though would not make any direct use of the habitat there. As such, the proposed development is not considered to pose any direct threat to these species.

- Rufous Fantail (EPBC Act: Migratory)

  This species is a breeding migrant, dispersing from northern Australia to SE Australia during the warmer months. It prefers dense moist habitats in SE Australia, such as tall wet forest and temperate rainforest. While individuals may occasionally pass through the study area during migration, it is unlikely that they would breed there. As such, the proposed development is unlikely to have an impact on Rufous Fantail.

Mammals

One listed mammal species is considered to have the potential to occur in the study area. The susceptibility of this species to possible impacts from any development in the study area is discussed below.

- Yellow-bellied Sheathtail Bat (FFG Act listed)

  This species is known to occur over a wide range of habitats, from wet and dry sclerophyll woodlands to open woodlands, acacia shrublands, mallee, grasslands and deserts, over a wide geographic range from northern Australia to the south east coastline. They are known to prefer roosting and breeding in tree hollows (Churchill 2008).

  Considering there are only two records of the species in the search region from 2000 and earlier, it is assumed that they seldom inhabit the region. There are also no hollow-bearing trees in the study area for roosting or breeding. It is therefore considered unlikely that the proposed development would have an impact on the Yellow-bellied Sheathtail Bat.

5.7. Listed ecological communities

No listed ecological communities were found to occur in the study area.

6. IMPACTS OF PROPOSED DEVELOPMENT

6.1. Proposed development

The current proposal will involve subdivision of the study area into 8 residential allotments and the construction of dwellings and associated road access and utilities.

The extent of the area of impact for the current proposal was considered to include the outer-most boundaries of the proposed dwelling building envelopes, access road and defendable space envelopes, except where native vegetation removal is exempt under Clause 52.48 of the South Gippsland Planning Scheme (as shown in Figure 1).

6.2. Impacts of proposed development

Impacts have been identified for the proposed development. These impacts on ecological values are outlined below and shown in Figure 1.

6.2.1. Native vegetation

Total extent of loss

The current proposal footprint will result in the loss of a total 'extent' of 0.947 hectares of native vegetation remnant patches, as represented in Figure 1 and documented in the BIOR report provided by DELWP Transition Support (Appendix 7). This comprised:

Recent photographs of the native vegetation proposed for removal are provided in Appendix 5.

It is understood that no native vegetation has been approved for removal on the property within the last five years.

Determination of remnant patch losses

This loss was calculated as a combination of direct removal of vegetation for the dwelling building envelopes and access road and partial removal of vegetation throughout the remainder of the defendable space envelopes, as the study area is located within a Bushfire-prone Area.

Partial removal was calculated in accordance with current CFA defendable space requirements (CFA 2016), which ultimately resulted in the determination of complete vegetation removal from the defendable space envelopes, as any retention was found to be untenable for the following reasons:

- The retention of scrub vegetation as five square metre blocks, spaced five metres apart within the defendable space envelopes results in a situation where the vegetation no longer meets the Guidelines definition of native vegetation, as the blocks would be too small. The smallest patch size is 0.001 hectares, and five square metres is 0.0005 hectares.

  Even if the blocks are aggregated, the vegetation still doesn't meet the Guidelines definition of native vegetation, as total understorey native vegetation cover falls below the 25% threshold; and
- In the context of the proposed development, retaining vegetation as a matrix of five square metre blocks is unrealistic.

Clause 52.48 of the South Gippsland Planning Scheme however, provides a planning permit exemption for the removal of vegetation for defendable space within 50 metres of existing dwellings adjacent the study area. As such, any proposed vegetation removal which falls within these 50 metre buffers around existing dwellings is exempt under Clause 52.48 (as shown in Figure 1), with the exception of a small stand of Banksia trees in Habitat Zone N, which are not excempt.

6.2.2. Modelled species important habitat

The current proposal footprint will not have a proportional impact on modelled habitat above the specific offset threshold for any rare or threatened species listed on DELWP's advisory lists, as determined by DELWP.

6.2.3. Listed flora species

The analysis of the likelihood of occurrence of listed flora species presented in Section 5.4.2 identified that it is unlikely that any EPBC Act or FFG Act listed species would occur in the study area due to a lack of suitable habitat for there for such.

6.2.4. Listed fauna species

The analysis of susceptibility of listed fauna species to impacts presented in Section 5.6.3 identified that no EPBC Act or FFG Act listed species would be significantly impacted by the proposed development in the study area.

7. IMPLICATIONS UNDER LEGISLATION AND POLICY

7.1. Summary of planning implications

A permit is required under ESO3 for the proposal to remove native vegetation from within the study area. The Responsible Authority (South Gippsland Shire Council) will consider the decision guidelines (provided in Section 3.1.1 above) in their decision to grant a permit.

A planning permit under Clause 52.17 of the South Gippsland Planning Scheme is required for the removal of native vegetation.

7.2. Implications under the Guidelines

7.2.1. Risk–based assessment pathway for the site

The risk-based assessment pathway is determined on the basis of 'extent risk' and 'location risk'. The extent risk was found to be 0.947 hectares and all of the proposed native vegetation removal is situated within a mapped area of Location Risk A

Based on the details above and the criteria outlined in Section 3.2, the Guidelines stipulate that the proposal will be assessed under the low risk assessment pathway and that a general offset applies to any approved native vegetation removal.

The current proposal triggers a referral to DELWP as it meets the criteria specified in Section 3.2.

7.2.2. Offset requirements

Offsets required to compensate for the proposed removal of native vegetation from the study area have been determined by DELWP Transition Support (Appendix 7). The required offset will be **0.357** *general* biodiversity equivalence units with a minimum strategic biodiversity score of **0.432** within the West Gippsland Catchment Management Authority area or the South Gippsland local government area.

Under the Guidelines *all* offsets must be secured prior to the removal of native vegetation.

7.2.3. Offset strategy

With regards to the use of retained native vegetation in the balance of the subject property as an onsite offset, it must meet all of the criteria outlined below:

- Offsets must be sited at least 150 metres away from any dwellings and associated buildings on the subject land or adjoining properties covered by a Bushfire Management Overlay (BMO), or at least 50 metres away from these structures on all other land occurring within DELWP-mapped Bushfire Prone Areas (BPA);
- Offsets must be set back at least six metres from property boundaries to allow for firebreaks, boundary fence maintenance, etc.
- Offsets may not be located in areas subject to the following encumbrances or constraints, which impede the ability to achieve native vegetation management/revegetation objectives:
    - Incompatible current and/or future land use (where known);

  - Existing offsets or other existing agreements; or
  - Identified threats to native vegetation condition.
- Revegetation offsets (woody vegetation and low risk only) must be at least one hectare in size; have an average width of at least 20 metres; and have a perimeter to area ratio of 1:20.

Offsets must be protected using an appropriate on-title security agreement and managed for the first ten years of establishment to meet specific targets set out in an offset plan and maintained in perpetuity.

As the study area is subject to a BMO, and requires offsets to be sited at least 150 metres away from any dwellings and associated buildings, none of the retained native vegetation within the property is eligible as an offset.

As such, a third party (offsite) offset will be identified through a native vegetation broker to meet the offset requirement.

7.3. EPBC Act

The *Environment Protection and Biodiversity Conservation Act 1999* protects a number of threatened species and ecological communities that are considered to be of national conservation significance. Any significant impacts on these species require the approval of the Australian Minister for the Environment.

If there is a possibility of a significant impact on nationally threatened species or communities or listed migratory species, a Referral under the EPBC Act should be considered. The Minister will decide after 20 business days whether the project will be a 'controlled action' under the EPBC Act, in which case it cannot be undertaken without the approval of the Minister. This approval depends on a further assessment and approval process (lasting between three and nine months, depending on the level of assessment).

Based on the relevant guidelines, the proposed development is unlikely to result in a significant impact on any EPBC Act listed values identified in this report.

Therefore, there are no implications under the EPBC Act.

7.4. FFG Act

The Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act) lists threatened and protected species and ecological communities (DELWP 2015a, DELWP 2015b). Any removal of threatened flora species or communities (or protected flora) listed under the FFG Act from public land requires a Protected Flora Permit under the Act, obtained from DELWP.

The FFG Act only applies to private land in relation to the commercial collection of grasstrees, tree-ferns and sphagnum moss.

As no FFG Act values listed as threatened or protected are susceptible to impacts from the proposed development on public land, there are no implications under the FFG Act for the proposal.

7.5. EE Act

The "Ministerial Guidelines for Assessment of Environmental Effects under the *Environment Effects Act 1978"* (DSE 2006), identifies criteria which trigger a Referral to the State Minister for Planning. The criteria related to flora, fauna and native vegetation are outlined below.

One or more of the following would trigger a Referral:

- Potential clearing of 10 ha or more of native vegetation from an area that:
    - Is of an Ecological Vegetation Class identified as endangered by the Department of Sustainability and Environment (in accordance with Appendix 2 of Victoria's Native Vegetation Management Framework); or
    - Is, or is likely to be, of very high conservation significance (as defined in accordance with Appendix 3 of Victoria's Native Vegetation Management Framework); and
    - Is not authorised under an approved Forest Management Plan or Fire Protection Plan
- Potential long-term loss of a significant proportion (e.g. 1 to 5 percent depending on the conservation status of the species) of known remaining habitat or population of a threatened species within Victoria
- Potential long-term change to the ecological character of a wetland listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'
- Potential extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems, over the long term

Two or more of the following would also trigger a Referral:

- Potential clearing of 10 ha or more of native vegetation, unless authorised under an approved Forest Management Plan or Fire Protection Plan
- Matters listed under the Flora and Fauna Guarantee Act 1988:
    - Potential loss of a significant area of a listed ecological community; or
    - Potential loss of a genetically important population of an endangered or threatened species (listed or nominated for listing), including as a result of loss or fragmentation of habitats; or
    - Potential loss of critical habitat; or
    - Potential significant effects on habitat values of a wetland supporting migratory bird species.

Based on these criteria, a Referral to the state Minister for Planning will not be required under the EE Act for the aspects covered by the current investigation.

7.6. CaLP Act

The *Catchment and Land Protection Act 1994* (CaLP Act) requires that land owners (or a third party to whom responsibilities have been legally transferred) must take all reasonable steps on their land to:

- Avoid causing or contributing to land degradation which causes or may cause damage to land of another land owner;
- Conserve soil;
- Protect water resources;
- Eradicate regionally prohibited weeds;
- Prevent the growth and spread of regionally controlled weeds;
- Prevent the spread of, and as far as possible eradicate, established pest animals; and
- Prevent the spread of regionally controlled weeds and established pest animals on a roadside that adjoins the land owner's land.

In accordance with the *Catchment and Land Protection Act 1994*, the noxious weed species listed below, which were recorded in the study area, must be controlled.

- Apple of Sodom;
- Montpellier Broom; and
- Soursob.

Precision control methods that minimise off-target kills (e.g. spot spraying) should be used in environmentally sensitive areas (e.g. within or near native vegetation, waterways, etc.).

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Appendix 1: Details of the Guidelines assessment process

Native Vegetation Information Management system (NVIM)

The online Native Vegetation Information Management system (NVIM) is an interactive mapping tool, which provides some of the information required to accompany a permit to remove native vegetation. It does not replace the application process.

The information provided by NVIM can include the following (described in more detail below):

- The *location risk* of the native vegetation;
- The *condition* of the native vegetation – used for the low-risk assessment pathway only;
- The *strategic biodiversity score* of the native vegetation proposed to be removed; and
- The *native vegetation offset* requirement – used for the low risk assessment pathway only.

Biodiversity assessment guidelines

Guidelines objective

As set out in *Permitted clearing of native vegetation – Biodiversity assessment guidelines* ('the Guidelines') the objective for permitted clearing of native vegetation in Victoria is 'No net loss in the contribution made by native vegetation to Victoria's biodiversity'. The key strategies for ensuring this outcome when considering an application to remove native vegetation are:

- Avoiding the removal of native vegetation that makes a significant contribution to Victoria's biodiversity;
- Minimising impacts on Victoria's biodiversity from the removal of native vegetation; and
- Where native vegetation is permitted to be removed, ensuring it is offset in a manner that makes an equivalent contribution to Victoria's biodiversity made by the native vegetation to be removed.

Note: if native vegetation does not meet the definition of either a remnant patch or scattered trees, the Guidelines are not required to be applied.

Risk-based assessment pathways

The first step in determining the type of assessment required for any site in Victoria is to determine the risk to biodiversity associated with the proposed native vegetation removal and therefore the risk-based assessment pathway for the proposed native vegetation removal. There are three risk-based pathways for assessing an application to remove native vegetation, below.

- Low risk
- Moderate risk
- High risk

This risk-based assessment pathway is determined by two factors, outlined below.

Extent risk – the area in hectares proposed to be removed *or* the number of scattered trees. *Note:* extent risk also includes any native vegetation clearing for which permission has been granted in the last five years.

Location risk – the likelihood that removing native vegetation in a location will have an impact on the persistence of a rare or threatened species classified into three categories: Location A, Location B and Location C.

The risk-based pathway for assessing an application to remove native vegetation is determined by the following matrices for remnant patches and scattered trees:

Extent (remnant patches)	Location A	Location B	Location C
< 0.5 hectares	Low	Low	High
≥ 0.5 hectares and < 1 hectare	Low	Moderate	High
≥ 1 hectare	Moderate	High	High
Extent (scattered trees)	**Location A**	**Location B**	**Location C**
< 15 scattered trees	Low	Moderate	High
≥ 15 scattered trees	Moderate	High	High

All native vegetation within any subdivision plot of less than 0.4 hectares is deemed to be lost; For applications with combined removal of both remnant patch and scattered trees, the extent of the scattered trees is converted to an area by assigning a standard area of 0.070 hectares per tree – the total extent is then used to determine the risk-based pathway.

The presence of any Location B or Location C risk categories within an area of proposed native vegetation removal means this whole area of removal is considered to belong to that category for the purpose of determining the risk-based assessment pathway.

Strategic biodiversity score

The strategic biodiversity score generated by NVIM acts as a measure of the site's importance for Victoria's biodiversity relative to other locations across the landscape. It is calculated based on a weighted average of scores across an area of native vegetation proposed for removal on a site.

Habitat importance

Habitat importance mapping produced by DELWP is based on one or a combination of habitat importance models, habitat distribution models or site record data. It identifies the following:

- *Habitat importance for dispersed species* – based on habitat distribution models and assigned a habitat importance score ranging from 0 to 1; and
- *Highly localised habitats* – considered to be equally important for a particular species and assigned a habitat importance score of 1.

Habitat importance mapping is used to determine the type of offset required under the moderate and high risk assessment pathways.

Biodiversity equivalence

Biodiversity equivalence scores are used to quantify losses in the contribution to Victoria's biodiversity from removing native vegetation and gains in this contribution from a native vegetation offset.

There are two types of biodiversity equivalence scores depending on whether or not the site makes a contribution to the habitat of a Victorian rare or threatened species.

- A *general* biodiversity equivalence score is a measure of the contribution native vegetation on a site makes to Victoria's biodiversity overall and applies when no habitat importance scores are applicable according to the equation:

General biodiversity equivalence score =
habitat hectares x strategic biodiversity score

- A *specific* biodiversity equivalence score is a measure of the contribution that native vegetation on a site makes to the habitat of a particular rare or threatened species – calculated for each such species for which the site provides important habitat (using habitat importance scores provided by DELWP) according to the equation:

Specific biodiversity equivalence score =
habitat hectares x habitat importance score

Offset requirements

A native vegetation offset is required for the approved removal of native vegetation. Offsets conform to one of two types and each type incorporates a risk factor to address the risk of offset failing:

- A *general* offset applies if the removal of native vegetation impacts Victoria's overall biodiversity and has an offset risk factor of 1.5 applied according to the equation:

General risk-adjusted offset requirement =
general biodiversity equivalence score (clearing site) x 1.5

- A *specific* offset applies if the native vegetation makes a significant impact to habitat for a rare or threatened species determined by a *specific-general offset test*. It applies to each species impacted and has an offset risk factor of 2 applied according to the equation:

Specific risk-adjusted offset requirement =
specific biodiversity equivalence score (clearing site) x 2

Note: if native vegetation does not meet the definition of either a remnant patch or scattered trees an offset is not required.

Summary of the Guidelines assessment process

Decision guidelines	Offset requirements
Low-risk assessment pathway	
An application for removal cannot be refused on biodiversity grounds (unless it is not in accordance with any property vegetation plan that applies to the site). *Note: this guideline also applies to native vegetation that does not meet the definition of either a remnant patch or scattered trees.*	General offset applies: ▪ General offset = general biodiversity equivalence score (clearing site) x 1.5 ▪ Offset must be located in the same CMA^ or Local Government Area as the removal ▪ Offset must have a strategic biodiversity score at least 80% of the native vegetation removed Offsets must be secured before the removal of native vegetation.
Moderate-risk assessment pathway	
The responsible authority will consider: ▪ The strategic biodiversity score and habitat importance score of the native vegetation proposed to be removed ▪ Any property vegetation plan that applies to the site ▪ Whether reasonable steps have been taken to ensure that impacts of the proposed removal of native vegetation on biodiversity have been minimised with regard to the contribution to biodiversity made by the native vegetation to be removed and the native vegetation to be retained ▪ Whether an offset has been identified that meets the requirements ▪ The need to remove native vegetation to create defendable space to reduce the risk of bushfire	If the proportional impact on modelled habitat for a rare or threatened species is above a predetermined threshold, a specific offset applies for that species: ▪ Specific offset = specific biodiversity equivalence score (clearing site) x 2 ▪ Offset must be located in the same species habitat anywhere in Victoria as determined by DELWP habitat importance mapping General offsets apply where the specific offset threshold is not exceeded. Offsets must be secured before the removal of native vegetation.

High-risk assessment pathway	
In addition to the considerations for the moderate pathway the responsible authority will determine whether the native vegetation to be removed makes a significant contribution to Victoria's biodiversity. This includes considering: ▪ Impacts on important habitat for rare or threatened species, particularly highly localised habitat ▪ Proportional impacts on remaining habitat for rare or threatened species ▪ If the removal of the native vegetation will contribute to a cumulative impact that is a significant threat to the persistence of a rare or threatened species ▪ The availability of, and potential for, gain from offsets	As for the moderate pathway

*** Habitat hectares = condition score (out of 1) x extent (hectares)**

^ Catchment Management Authority

Note: All applications must provide information about the vegetation to be removed such as location and address of the property, description of the vegetation, maps and recent dated photographs.

Appendix 2: Detailed habitat hectare assessment results

Habitat Zone			A	B	C	D	E	F	G	H	I
Bioregion			GipP	GipP	GipP	GipP	GipP	GipP	GipP	GipP	GipP
EVC Number			2	2	2	2	2	2	2	2	2
Total area of Habitat Zone (ha)			0.022	0.009	0.032	0.239	0.799	0.048	0.078	0.244	0.515
Site Condition	Large Old Trees	/10	0	10	0	0	0	0	0	0	0
	Tree Canopy Cover	/5	0	0	0	0	0	0	0	0	0
	Lack of Weeds	/15	7	7	4	0	4	7	0	0	4
	Understorey	/25	5	5	5	15	20	5	15	15	20
	Recruitment	/10	6	3	3	3	6	3	3	3	6
	Organic Matter	/5	5	5	3	3	5	5	3	3	5
	Logs	/5	2	2	0	2	2	2	2	2	2
	Site condition standardising multiplier*		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Site Condition subtotal		*25*	*32*	*15*	*23*	*37*	*22*	*23*	*23*	*37*
Landscape Context	Patch Size	/10	1	1	1	8	8	8	8	8	8
	Neighbourhood	/10	3	3	3	3	3	3	3	3	3
	Distance to Core	/5	3	3	3	4	4	4	4	4	4
Total Condition Score		**/100**	**32**	**39**	**22**	**38**	**52**	**37**	**38**	**38**	**52**
Condition score out of 1			0.32	0.39	0.22	0.38	0.52	0.37	0.38	0.38	0.52
Habitat Hectares in Habitat Zone#			**0.007**	**0.003**	**0.007**	**0.091**	**0.416**	**0.018**	**0.029**	**0.093**	**0.268**
Area of Habitat Zone to be removed (ha)			0.000	0.000	0.032	0.018	0.607	0.020	0.000	0.112	0.068
Habitat Hectares to be removed#			**0.000**	**0.000**	**0.007**	**0.007**	**0.316**	**0.007**	**0.000**	**0.043**	**0.035**

Habitat Zone			k	L	M	N
Bioregion			GipP	GipP	GipP	GipP
EVC Number			2	2	2	2
Total area of Habitat Zone (ha)			0.401	0.019	0.101	0.187
Site Condition	Large Old Trees	/10	0	0	DELWP modelled score	DELWP modelled score
	Tree Canopy Cover	/5	0	0		
	Lack of Weeds	/15	4	7		
	Understorey	/25	20	5		
	Recruitment	/10	6	3		
	Organic Matter	/5	5	5		
	Logs	/5	2	2		
	Site condition standardising multiplier*		1.00	1.00		
	Site Condition subtotal		*37*	*22*		
Landscape Context	Patch Size	/10	8	8		
	Neighbourhood	/10	3	3		
	Distance to Core	/5	4	4		
Total Condition Score		**/100**	**52**	**37**	**20**	**20**
Condition score out of 1			0.52	0.37	0.20	0.20
Habitat Hectares in Habitat Zone#			**0.209**	**0.007**	**0.020**	**0.037**
Area of Habitat Zone to be removed (ha)			0.069	0.000	0.000	0.020
Habitat Hectares to be removed#			**0.036**	**0.000**	**0.000**	**0.004**

Habitat hectares = habitat score (out of 1) x area in zone; * Modified approach to habitat scoring for treeless EVCs; ^ Sourced from DEPI's online Biodiversity Interactive Map

Appendix 3: Flora species recorded in the study area and listed species known (or with the potential) to occur in the search region

Origin	Common name	Scientific name	EPBC-T	FFG-T	FFG-P	DELWP	CaLP Act	WONS	Recorded
*	Apple of Sodom	*Solanum linnaeanum*					c		X
	Austral Bracken	*Pteridium esculentum*							X
	Bassian Pomaderris	*Pomaderris oraria subsp. oraria*				r			
	Bidgee-widgee	*Acaena novae-zelandiae*							X
	Bog Gum	*Eucalyptus kitsoniana*				r			
	Bower Spinach	*Tetragonia implexicoma*							X
*	Buck's-horn Plantain	*Plantago coronopus*							X
	Coast Ballart	*Exocarpos syrticola*				r			
	Coast Banksia	*Banksia integrifolia subsp. integrifolia*							X
	Coast Beard-heath	*Leucopogon parviflorus*			p				X
	Coast Bitter-bush	*Adriana quadripartita*				v			
	Coast Flax-lily	*Dianella sp. aff. revoluta (Coastal)*							X
	Coast Stackhousia	*Stackhousia spathulata*				k			
	Coast Sword-sedge	*Lepidosperma gladiatum*							X
	Coast Tea-tree	*Leptospermum laevigatum*							X
	Coast Wattle	*Acacia longifolia subsp. sophorae*							X
	Coastal Greenhood	*Pterostylis alveata*			p	v			
	Crane's Bill	*Geranium spp.*							X
	Creeping Rush	*Juncus revolutus*				r			
	Dune Wood-sorrel	*Oxalis rubens*				r			

Origin	Common name	Scientific name	EPBC-T	FFG-T	FFG-P	DELWP	CaLP Act	WONS	Recorded
	Eastern Spider-orchid	*Caladenia orientalis*	EN	L	p	e			
*	Flatweed	*Hypochaeris radicata*							X
	Grey Mangrove	*Avicennia marina subsp. australasica*				r			
	Groundsel	*Senecio spp.*			p				X
	Guinea Flower	*Hibbertia spp.*							X
	Karkalla	*Carpobrotus rossii*							X
	Kidney-weed	*Dichondra repens*							X
*	Kikuyu	*Cenchrus clandestinus*							X
	Knobby Club-sedge	*Ficinia nodosa*							X
	Leafy Greenhood	*Pterostylis cucullata subsp. cucullata*	VU	L	p	e			
	Maroon Leek-orchid	*Prasophyllum frenchii*	EN	L	p	e			
	Marsh Saltbush	*Atriplex paludosa subsp. paludosa*				r			
*	Montpellier Broom	*Genista monspessulana*					C	WONS	X
*	Panic Veldt-grass	*Ehrharta erecta var. erecta*							X
	Rusty Velvet-bush	*Lasiopetalum ferrugineum*				P			
	Seaberry Saltbush	*Rhagodia candolleana subsp. candolleana*							X
*	Sheep Sorrel	*Acetosella vulgaris*							X
	Small-leaved Clematis	*Clematis microphylla s.l.*							X
	Snowy Daisy-bush	*Olearia lirata*			p				X
*	Soursob	*Oxalis pes-caprae*					R		X

Origin	Common name	Scientific name	EPBC-T	FFG-T	FFG-P	DELWP	CaLP Act	WONS	Recorded
	Spiny-headed Mat-rush	*Lomandra longifolia subsp. longifolia*							X
#	Sweet Pittosporum	*Pittosporum undulatum*							X
	Tussock Grass	*Poa spp.*							X
	Walsh's Couch	*Zoysia macrantha subsp. walshii*				r			
	Yellow Sea-lavender	*Limonium australe var. australe*				r			

Notes: EPBC = threatened species status under EPBC Act: EX = presumed extinct in the wild; CR = critically endangered; EN = endangered; VU = vulnerable; **FFG-T** = threatened species status under the FFG Act: L = listed as threatened under the FFG Act; **FFG-P** = protected species status under the FFG Act: p = listed as protected; **DELWP** = status under DELWP's Advisory List (DEPI 2014a); x = presumed extinct in the wild; cr = critically endangered; e = endangered; v = vulnerable; r = rare; k = insufficiently known; **CaLP Act** = declared noxious weeds status under the CaLP Act; S = State Prohibited Weeds (any infestations are to be reported to DELWP. DELWP is responsible for control of State Prohibited Weeds); P = Regionally Prohibited Weeds (Land owners must take all reasonable steps to eradicate regionally prohibited weeds on their land); C = Regionally Controlled Weeds (Land owners have the responsibility to take all reasonable steps to prevent the growth and spread of Regionally controlled weeds on their land); R = Restricted Weeds (Trade in these weeds and their propagules, either as plants, seeds or contaminants in other materials is prohibited); **WONS** = Weeds of National Significance

X = recorded in the study area

* = introduced to Victoria

= Victorian native taxa occurring outside their natural range

Appendix 4: Terrestrial vertebrate fauna species recorded and listed species that have the potential to occur in the study area

Origin	Common name	Scientific name	Conservation status					Recorded
			EPBC-T	EPBC-M	FFG-T	FFG-P	DELWP	
Birds								
	Australasian Bittern	*Botaurus poiciloptilus*	EN		L	p	e	
	Australasian Pipit	*Anthus novaeseelandiae*						
	Australian Hobby	*Falco longipennis*						
	Australian Magpie	*Gymnorhina tibicen*						x
	Australian Painted Snipe	*Rostratula australis*	EN		L	p	cr	
	Australian Raven	*Corvus coronoides*						
	Australian White Ibis	*Threskiornis molucca*						
	Banded Lapwing	*Vanellus tricolor*						
	Beautiful Firetail	*Stagonopleura bella*						
	Black-faced Cuckoo-shrike	*Coracina novaehollandiae*						
	Black-faced Monarch	*Monarcha melanopsis*		M (Bonn Convention (A2H))				
	Black-shouldered Kite	*Elanus axillaris*						
	Blue-winged Parrot	*Neophema chrysostoma*						
	Brown Falcon	*Falco berigora*						
	Brown Goshawk	*Accipiter fasciatus*						
	Brown Thornbill	*Acanthiza pusilla*						
	Brown-headed Honeyeater	*Melithreptus brevirostris*						
	Brush Bronzewing	*Phaps elegans*						
	Buff-rumped Thornbill	*Acanthiza reguloides*						

Origin	Common name	Scientific name	Conservation status					Recorded
			EPBC-T	EPBC-M	FFG-T	FFG-P	DELWP	
	Cattle Egret	*Ardea ibis*		M (JAMBA, CAMBA)				
	Collared Sparrowhawk	*Accipiter cirrhocephalus*						
*	Common Blackbird	*Turdus merula*						x
	Common Bronzewing	*Phaps chalcoptera*						
*	Common Myna	*Acridotheres tristis*						x
*	Common Starling	*Sturnus vulgaris*						x
	Crescent Honeyeater	*Phylidonyris pyrrhoptera*						
	Crimson Rosella	*Platycercus elegans*						x
	Dusky Woodswallow	*Artamus cyanopterus*						
	Eastern Great Egret	*Ardea modesta*		M (JAMBA, CAMBA)	L	p	v	
	Eastern Rosella	*Platycercus eximius*						
	Eastern Spinebill	*Acanthorhynchus tenuirostris*						x
	Eastern Whipbird	*Psophodes olivaceus*						x
	Eastern Yellow Robin	*Eopsaltria australis*						x
	Eurasian Coot	*Fulica atra*						
	European Goldfinch	*Carduelis carduelis*						
*	European Greenfinch	*Carduelis chloris*						
*	European Skylark	*Alauda arvensis*						
	Fairy Martin	*Petrochelidon ariel*						
	Fan-tailed Cuckoo	*Cacomantis flabelliformis*						
	Flame Robin	*Petroica phoenicea*						
	Fork-tailed Swift	*Apus pacificus*		M (JAMBA,CAMBA, ROKAMBA)				

Origin	Common name	Scientific name	Conservation status					Recorded
			EPBC-T	EPBC-M	FFG-T	FFG-P	DELWP	
	Galah	*Eolophus roseicapilla*						
	Golden Whistler	*Pachycephala pectoralis*						
	Golden-headed Cisticola	*Cisticola exilis*						
	Grey Butcherbird	*Cracticus torquatus*						X
	Grey Fantail	*Rhipidura albiscarpa*						X
	Grey Shrike-thrush	*Colluricincla harmonica*						X
	Hooded Plover	*Thinornis rubricollis rubricollis*			L	p	v	
	Horsfield's Bronze-Cuckoo	*Chrysococcyx basalis*						
*	House Sparrow	*Passer domesticus*						
	Intermediate Egret	*Ardea intermedia*			L	p	e	
	Latham's Snipe	*Gallinago hardwickii*		M (JAMBA, CAMBA, ROKAMBA, Bonn A2H)			nt	
	Laughing Kookaburra	*Dacelo novaeguineae*						
	Little Egret	*Egretta garzetta nigripes*			L	p	e	
	Little Raven	*Corvus mellori*						X
	Little Wattlebird	*Anthochaera chrysoptera*						X
	Long-billed Corella	*Cacatua tenuirostris*						
	Magpie-lark	*Grallina cyanoleuca*						
	Masked Lapwing	*Vanellus miles*						
	Nankeen Kestrel	*Falco cenchroides*						
	New Holland Honeyeater	*Phylidonyris novaehollandiae*						

Origin	Common name	Scientific name	Conservation status					Recorded
			EPBC-T	EPBC-M	FFG-T	FFG-P	DELWP	
	Noisy Miner	*Manorina melanocephala*						
	Olive Whistler	*Pachycephala olivacea*						
	Orange-bellied Parrot	*Neophema chrysogaster*	CE	M (JAMBA)	L	p	cr	
	Osprey	*Pandion cristatus*		M (Bonn Convention (A2S))				
	Pallid Cuckoo	*Cuculus pallidus*						
	Peregrine Falcon	*Falco peregrinus*						
	Pied Cormorant	*Phalacrocorax varius*					nt	
	Rainbow Lorikeet	*Trichoglossus haematodus*						
	Red Wattlebird	*Anthochaera carunculata*						x
	Red-browed Finch	*Neochmia temporalis*						
	Regent Honeyeater	*Anthochaera phrygia*	CR	M (JAMBA)	L	p	cr	
*	Rock Dove	*Columba livia*						
	Royal Spoonbill	*Platalea regia*					nt	
	Rufous Fantail	*Rhipidura rufifrons*		M (Bonn Convention (A2H))				
	Rufous Whistler	*Pachycephala rufiventris*						
	Satin Flycatcher	*Myiagra cyanoleuca*		M (Bonn Convention (A2H))				
	Scarlet Honeyeater	*Myzomela sanguinolenta*						
	Scarlet Robin	*Petroica boodang*						
	Shining Bronze-Cuckoo	*Chrysococcyx lucidus*						
	Short-tailed Shearwater	*Puffinus tenuirostris*		M (JAMBA, ROKAMBA)				

Origin	Common name	Scientific name	Conservation status					Recorded
			EPBC-T	EPBC-M	FFG-T	FFG-P	DELWP	
	Silver Gull	*Chroicocephalus novaehollandiae*						x
	Silvereye	*Zosterops lateralis*						x
	Southern Boobook	*Ninox novaeseelandiae*						
	Southern Emu-wren	*Stipiturus malachurus*						
	Spotted Pardalote	*Pardalotus punctatus*						
*	Spotted Turtle-Dove	*Streptopelia chinensis*						x
	Striated Fieldwren	*Calamanthus fuliginosus*						
	Striated Pardalote	*Pardalotus striatus*						
	Striated Thornbill	*Acanthiza lineata*						
	Superb Fairy-wren	*Malurus cyaneus*						
	Swamp Harrier	*Circus approximans*						
	Swift Parrot	*Lathamus discolor*	CR		L	p	e	
	Wedge-tailed Eagle	*Aquila audax*						
	Welcome Swallow	*Petrochelidon neoxena*						
	Whistling Kite	*Haliastur sphenurus*						
	White-bellied Sea-Eagle	*Haliaeetus leucogaster*			L	p	v	
	White-browed Scrubwren	*Sericornis frontalis*						x
	White-browed Woodswallow	*Artamus superciliosus*						
	White-eared Honeyeater	*Lichenostomus leucotis*						
	White-fronted Chat	*Epthianura albifrons*						
	White-plumed Honeyeater	*Lichenostomus penicillatus*						

Origin	Common name	Scientific name	Conservation status					Recorded
			EPBC-T	EPBC-M	FFG-T	FFG-P	DELWP	
	White-throated Needletail	*Hirundapus caudacutus*		M (JAMBA, CAMBA, ROKAMBA)			v	
	White-throated Treecreeper	*Cormobates leucophaeus*						
	Willie Wagtail	*Rhipidura leucophrys*						X
	Yellow Thornbill	*Acanthiza nana*						
	Yellow-faced Honeyeater	*Lichenostomus chrysops*						
	Yellow-rumped Thornbill	*Acanthiza chrysorrhoa*						
	Yellow-tailed Black-Cockatoo	*Calyptorhynchus funereus*						
Mammals								
	Black Wallaby	*Wallabia bicolor*						X
	Broad-toothed Rat	*Mastacomys fuscus mordicus*	VU		L	p	e	
*	Brown Rat	*Rattus norvegicus*						
	Bush Rat	*Rattus fuscipes*						
	Common Brushtail Possum	*Trichosurus vulpecula*						
	Common Wombat	*Vombatus ursinus*						X
	Eastern Grey Kangaroo	*Macropus giganteus*						X
*	European Rabbit	*Oryctolagus cuniculus*						
	Grey-headed Flying-fox	*Pteropus poliocephalus*	VU		L	p	v	
*	Hog Deer	*Cervus porcinus*						
*	House Mouse	*Mus musculus*						
	Koala	*Phascolarctos cinereus*						

Origin	Common name	Scientific name	Conservation status					Recorded
			EPBC-T	EPBC-M	FFG-T	FFG-P	DELWP	
	Lesser Long-eared Bat	*Nyctophilus geoffroyi*						
	Short-beaked Echidna	*Tachyglossus aculeatus*						
	Southern Brown Bandicoot	*Isoodon obesulus obesulus*	EN		L	p	nt	
	Spot-tailed Quoll	*Dasyurus maculatus maculatus*	EN		L	p	e	
	Swamp Antechinus	*Antechinus minimus maritimus*	VU		L	p	nt	
	White-footed Dunnart	*Sminthopsis leucopus*			L	p	nt	
	White-striped Freetail Bat	*Tadarida australis*						
	Yellow-bellied Sheathtail Bat	*Saccolaimus flaviventris*			L	p	dd	
Reptiles								
	Lace Monitor	*Varanus varius*					e	
	Lowland Copperhead	*Austrelaps superbus*						
Frogs								
	Growling Grass Frog	*Litoria raniformis*	VU		L	p	e	
	Southern Brown Tree Frog	*Litoria ewingii*						

Notes: EPBC-T = threatened species status under EPBC Act; EX = presumed extinct in the wild; CE = critically endangered; EN = endangered; VU = vulnerable; **EPBC-M** = migratory status under the EPBC Act; M = listed migratory taxa; Bonn Convention (A2H) - Convention on the Conservation of Migratory Species of Wild Animals – listed as a member of a family; Bonn Convention (A2S) - Convention on the Conservation of Migratory Species of Wild Animals - species listed explicitly; CAMBA - China- Australia Migratory Birds Agreement; JAMBA - Japan-Australia Migratory Birds Agreement; ROKAMBA - Republic of Korea Australia Migratory Birds Agreement; **FFG-T** = listed as threatened species under the FFG Act**: FFG-P** = listed as protected species under the FFG Act; **DELWP** = status under DELWP's Advisory List (DEPI 2014b); x = presumed extinct in the wild; cr = critically endangered; e = endangered; v = vulnerable; nt = lower risk near threatened; dd = data deficient

Appendix 5: Photographs of native vegetation proposed for removal

Habitat Zone C

Habitat Zone D (also typical of habitat zones G and H)

Habitat Zone E (also typical of habitat zones I and K)

Habitat Zone F

Appendix 6: EVC benchmarks

Coast Banksia Woodland (EVC 2) – Gippsland Plain bioregion

EVC/Bioregion Benchmark for Vegetation Quality Assessment

Gippsland Plain bioregion

EVC 2: Coast Banksia Woodland

Description:
Restricted to near coastal localities on secondary or tertiary dunes behind Coastal Dune Scrub. Usually dominated by a woodland overstorey of Coast Banksia *Banksia integrifolia* to 15 m tall over a medium shrub layer. The understorey consists of a number of herbs and sedges, including scramblers.

Large trees:

Species	DBH(cm)	#/ha
Banksia spp.	50 cm	10 / ha
Eucalyptus spp.	70 cm	

Tree Canopy Cover:

%cover	Character Species	Common Name
15%	*Banksia integrifolia*	Coast Banksia
	Eucalyptus viminalis ssp. *pryoriana*	Rough-barked Manna Gum

Life Forms:

Life form	#Spp	%Cover	LF code
Immature Canopy Tree		5%	IT
Medium Shrub	3	40%	MS
Small Shrub	1	1%	SS
Large Herb	2	1%	LH
Medium Herb	3	15%	MH
Small or Prostrate Herb	2	10%	SH
Large Tufted Graminoid	1	1%	LTG
Medium to Small Tufted Graminoid	1	5%	MTG
Medium to Tiny Non-tufted Graminoid	1	10%	MNG
Ground Fern	1	10%	GF
Scrambler or Climber	2	10%	SC
Bryophytes/Lichens	na	20%	BL

LF Code	Species typical of at least part of EVC range	Common Name
MS	*Leucopogon parviflorus*	Coast Beard-heath
MS	*Rhagodia candolleana* ssp. *candolleana*	Seaberry Saltbush
MS	*Leptospermum laevigatum*	Coast Tea-tree
LH	*Senecio minimus*	Shrubby Fireweed
LH	*Haloragis brownii*	Swamp Raspwort
MH	*Sambucus gaudichaudiana*	White Elderberry
MH	*Viola hederacea* sensu Willis (1972)	Ivy-leaf Violet
MH	*Lobelia anceps*	Angled Lobelia
MH	*Sarcocornia quinqueflora*	Beaded Glasswort
SH	*Hydrocotyle sibthorpioides*	Shining Pennywort
SH	*Dichondra repens*	Kidney-weed
GF	*Pteridium esculentum*	Austral Bracken
SC	*Galium australe*	Tangled Bedstraw
SC	*Clematis microphylla*	Small-leaved Clematis

Recruitment:
Episodic/Fire. Desirable period between disturbances is 30 years.

Organic Litter:
40 % cover

Logs:
10 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	*Cirsium vulgare*	Spear Thistle	high	high
MH	*Hypochoeris radicata*	Cat's Ear	high	low

Published by the Victorian Government Department of Sustainability and Environment April 2004

Appendix 7: Biodiversity assessment report (DELWP)

Biodiversity impact and offset requirements report

This report **does not represent an assessment by DELWP** of the proposed native vegetation removal. It provides biodiversity information for low risk-based pathway applications for permits to remove native vegetation under clause 52.16 or 52.17 of the planning schemes in Victoria.

Date of issue: **02/03/2017**
Time of issue: **12:42 pm**

DELWP ref: BLA_0453

Project ID	BLA_16068_Venus_bay_Caravan_park

Summary of marked native vegetation

Risk-based pathway	**Low**
Total extent	0.947 ha
Remnant patches	0.947 ha
Scattered trees	0 trees
Location risk	A

Strategic biodiversity score of all marked native vegetation	0.541

Offset requirements if a permit is granted

If a permit is granted to remove the marked native vegetation, a requirement to obtain a native vegetation offset will be included in the permit conditions. The offset must meet the following requirements:

Offset type	**General offset**
General offset amount (general biodiversity equivalence units)	0.357 general units
General offset attributes	
Vicinity	West Gippsland Catchment Management Authority (CMA) **or** South Gippsland Shire Council
Minimum strategic biodiversity score	0.432[1]

See Appendices 1 and 2 for details in how offset requirements were determined.

NB: values presented in tables throughout this document may not add to totals due to rounding

[1] Minimum strategic biodiversity score is 80 per cent of the weighted average score across habitat zones where a general offset is required

Next steps

This proposal to remove native vegetation must meet the application requirements of the low risk-based pathway and it will be assessed under the low risk-based pathway.

If you wish to remove the marked native vegetation you are required to apply for a permit from your local council. Council will then refer your application to DELWP for assessment, as required. **This report is not a referral assessment by DELWP.**

The biodiversity assessment report from NVIM and this biodiversity impact and offset report should be submitted with your application for a permit to remove native vegetation you plan to remove, lop or destroy.

This report provides the following information to meet application requirements for a permit to remove native vegetation:

- Confirmation of the risk-based pathway of the application for a permit to remove native vegetation
- The area of the patch of native vegetation and/or the number of any scattered trees to be removed
- The strategic biodiversity score of the native vegetation to be removed
- The offset requirements should a permit be granted to remove native vegetation.

Refer to the *Permitted clearing of native vegetation – Biodiversity assessment guidelines* and for a full list and details of application requirements.

Authorised by the Victorian Government, 8 Nicholson Street, East Melbourne.

For more information contact the DELWP Customer Service Centre 136 186

Appendix 1 – Biodiversity impact of removal of native vegetation

Habitat hectares

Habitat hectares are calculated for each habitat zone within your proposal using the extent and condition scores in the GIS data you provided.

Habitat zone	Site assessed condition score	Extent (ha)	Habitat hectares
1-1-E	0.520	0.607	0.316
2-1-C	0.220	0.032	0.007
3-1-F	0.380	0.015	0.006
4-1-D1	0.380	0.018	0.007
5-1-H1	0.520	0.112	0.058
6-1-K1	0.370	0.000	0.000
7-1-K2	0.370	0.018	0.007
8-1-K3	0.370	0.051	0.019
9-1-I1	0.150	0.068	0.010
10-1-F	0.380	0.005	0.002
11-1-A	0.320	0.000	0.000
12-1-N	0.200	0.020	0.004
TOTAL			**0.436**

Clearing site biodiversity equivalence score(s)

The general biodiversity equivalence score for the habitat zone(s) is calculated by multiplying the habitat hectares by the strategic biodiversity score.

Habitat zone	Habitat hectares	Strategic biodiversity score	General biodiversity equivalence score (GBES)
1-1-E	0.316	0.552	0.174
2-1-C	0.007	0.546	0.004
3-1-F	0.006	0.549	0.003
4-1-D1	0.007	0.547	0.004
5-1-H1	0.058	0.560	0.033
6-1-K1	0.000	0.560	0.000
7-1-K2	0.007	0.562	0.004
8-1-K3	0.019	0.498	0.009
9-1-I1	0.010	0.553	0.006
10-1-F	0.002	0.549	0.001
11-1-A	0.000	0.545	0.000
12-1-N	0.004	0.100	0.000

Appendix 2 – Offset requirements detail

If a permit is granted to remove the marked native vegetation the permit condition will include the requirement to obtain a native vegetation offset.

To calculate the required offset amount required the biodiversity equivalence scores are aggregated to the proposal level and multiplied by the relevant risk multiplier.

Offsets also have required attributes:

- General offsets must be located in the same Catchment Management Authority (CMA) boundary or Local Municipal District (local council) as the clearing and must have a minimum strategic biodiversity score of 80 per cent of the clearing.[2]

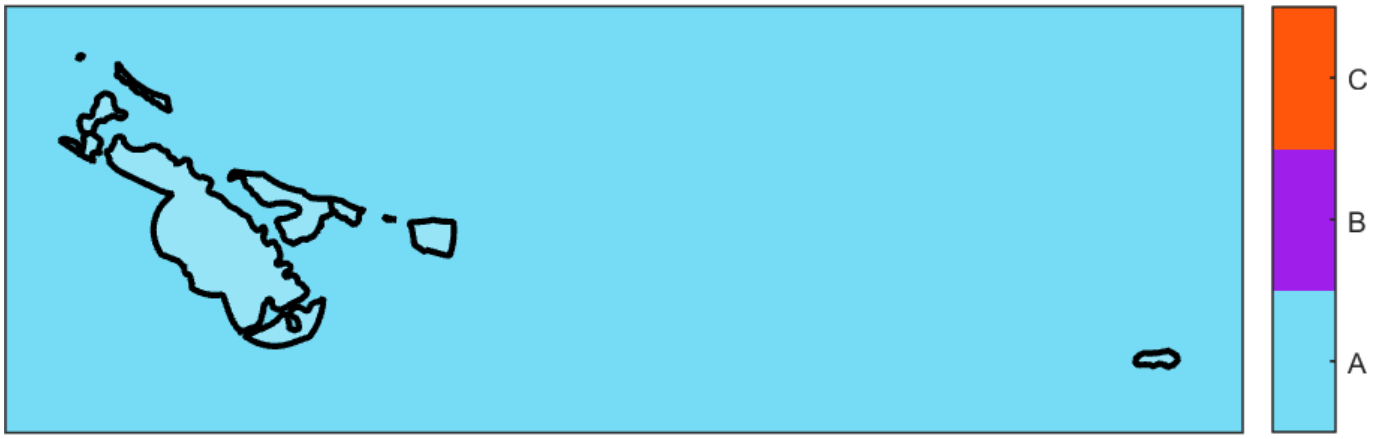
The offset requirements for your proposal are as follows:

Offset type	Clearing site biodiversity equivalence score	Risk multiplier	Offset requirements	
			Offset amount (biodiversity equivalence units)	Offset attributes
General	0.238 GBES	1.5	0.357 general units	Offset must be within West Gippsland CMA or South Gippsland Shire Council Offset must have a minimum strategic biodiversity score of 0.432

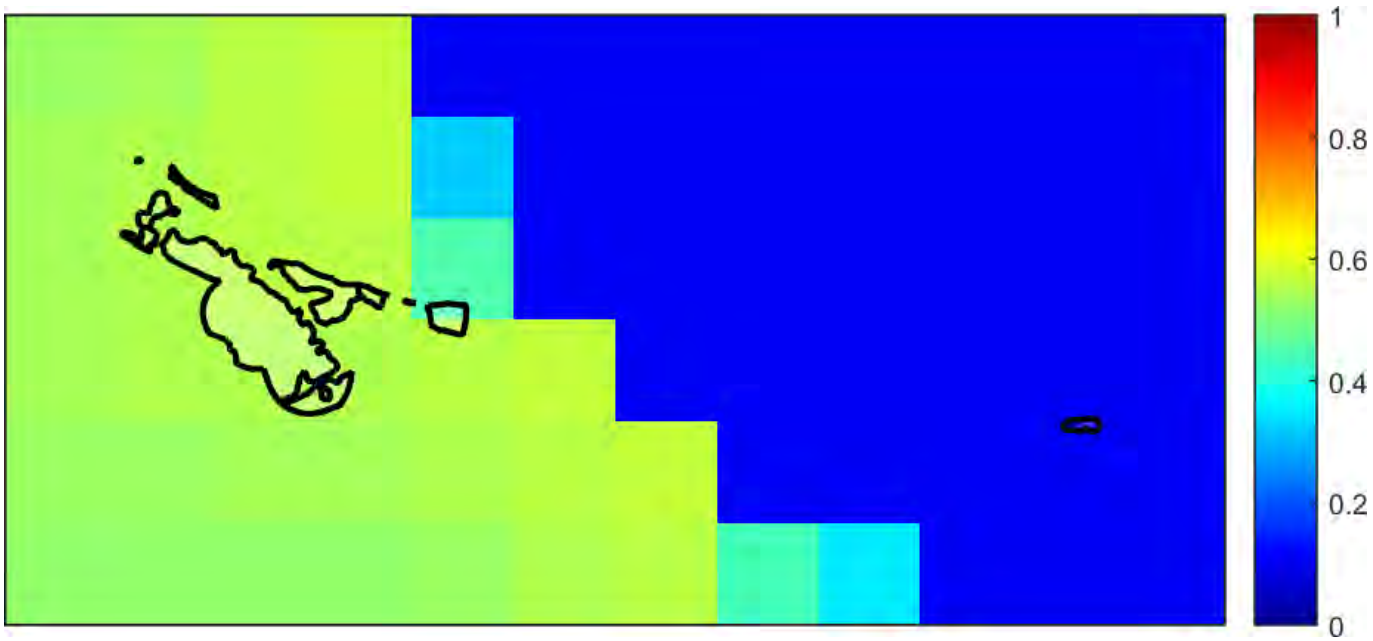
[2] Strategic biodiversity score is a weighted average across habitat zones where a general offset is required

Appendix 3 – Images of marked native vegetation

1. Native vegetation location risk map



2. Strategic biodiversity score map



3. Aerial photograph showing marked native vegetation

Glossary

Condition score

This is the site-assessed condition score for the native vegetation. Each habitat zone in the clearing proposal is assigned a condition score according to the habitat hectare assessment method. This information has been provided by or on behalf of the applicant in the GIS file.

Dispersed habitat

A dispersed species habitat is a habitat for a rare or threatened species whose habitat is spread over a relatively broad geographic area greater than 2,000 hectares.

General biodiversity equivalence score

The general biodiversity equivalence score quantifies the relative overall contribution that the native vegetation to be removed makes to Victoria's biodiversity. The general biodiversity equivalence score is calculated as follows:

$$\textit{General biodiversity equivalence score} = \textit{habitat hectares} \times \textit{strategic biodiversity score}$$

General offset amount

This is calculated by multiplying the general biodiversity equivalence score of the native vegetation to be removed by the risk factor for general offsets. This number is expressed in general biodiversity equivalence units and is the amount of offset that is required to be provided should the application be approved. This offset requirement will be a condition to the permit for the removal of native vegetation.

$$\textit{Risk adjusted general biodiversity equivalence score} = \textit{general biodiversity equivalence score clearing} \times 1.5$$

General offset attributes

General offset must be located in the same Catchment Management Authority boundary or Municipal District (local council) as the clearing site. They must also have a strategic biodiversity score that is at least 80 per cent of the score of the clearing site.

Habitat hectares

Habitat hectares is a site-based measure that combines extent and condition of native vegetation. The habitat hectares of native vegetation is equal to the current condition of the vegetation (condition score) multiplied by the extent of native vegetation. Habitat hectares can be calculated for a remnant patch or for scattered trees or a combination of these two vegetation types. This value is calculated for each habitat zone using the following formula:

$$\textit{Habitat hectares} = \textit{total extent}\ (\textit{hectares}) \times \textit{condition score}$$

Habitat importance score

The habitat importance score is a measure of the importance of the habitat located on a site for a particular rare or threatened species. The habitat importance score for a species is a weighted average value calculated from the habitat importance map for that species. The habitat importance score is calculated for each habitat zone where the habitat importace map indicates that species habitat occurs.

Habitat zone

Habitat zone is a discrete contiguous area of native vegetation that:

- is of a single Ecological Vegetation Class
- has the same measured condition.

Highly localised habitat

A highly localised habitat is habitat for a rare or threatened species that is spread across a very restricted area (less than 2,000 hectares). This can also be applied to a similarly limited sub-habitat that is disproportionately important for a wide-ranging rare or threatened species. Highly localised habitats have the highest habitat importance score (1) for all locations where they are present.

Minimum strategic biodiversity score

The minimum strategic biodiversity score is an attribute for a general offset.

The strategic biodiversity score of the offset site must be at least 80 per cent of the strategic biodiversity score of the native vegetation to be removed. This is to ensure offsets are located in areas with a strategic value that is comparable to, or better than, the native vegetation to be removed. Where a specific and general offset is required, the minimum strategic biodiversity score relates only to the habitat zones that require the general offset.

Offset risk factor

There is a risk that the gain from undertaking the offset will not adequately compensate for the loss from the removal of native vegetation. If this were to occur, despite obtaining an offset, the overall impact from removing native vegetation would result in a loss in the contribution that native vegetation makes to Victoria's biodiversity.

To address the risk of offsets failing, an offset risk factor is applied to the calculated loss to biodiversity value from removing native vegetation.

$$\boldsymbol{Risk\ factor\ for\ general\ offsets} = \mathbf{1.5}$$

$$\boldsymbol{Risk\ factor\ for\ specific\ offset} = \mathbf{2}$$

Offset type

The specific-general offset test determines the offset type required.

When the specific-general offset test determines that the native vegetation removal will have an impact on one or more rare or threatened species habitat above the set threshold of 0.005 per cent, a specific offset is required. This test is done at the permit application level.

A general offset is required when a proposal to remove native vegetation is not deemed, by application of the specific-general offset test, to have an impact on any habitat for any rare or threatened species above the set threshold of 0.005 per cent. All habitat zones that do not require a specific offset will require a general offset.

Proportional impact on species

This is the outcome of the specific-general offset test. The specific-general offset test is calculated across the entire proposal for each species on the native vegetation permitted clearing species list. If the proportional impact on a species is above the set threshold of 0.005 per cent then a specific offset is required for that species.

Specific offset amount

The specific offset amount is calculated by multiplying the specific biodiversity equivalence score of the native vegetation to be removed by the risk factor for specific offsets. This number is expressed in specific biodiversity equivalence units and is the amount of offset that is required to be provided should the application be approved. This offset requirement will be a condition to the permit for the removal of native vegetation.

$$\boldsymbol{Risk\ adjusted\ specific\ biodiversity\ equivalence\ score} = \boldsymbol{specific\ biodiversity\ equivalence\ score\ clearing} \times \mathbf{2}$$

Specific offset attributes

Specific offsets must be located in the modelled habitat for the species that has triggered the specific offset requirement.

Specific biodiversity equivalence score

The specific biodiversity equivalence score quantifies the relative overall contribution that the native vegetation to be removed makes to the habitat of the relevant rare or threatened species. It is calculated for each habitat zone where one or more species habitats require a specific offset as a result of the specific-general offset test as follows:

$$\textit{Specific biodiversity equivalence score} = \textit{habitat hectares} \times \textit{habitat importance score}$$

Strategic biodiversity score

This is the weighted average strategic biodiversity score of the marked native vegetation. The strategic biodiversity score has been calculated from the *Strategic biodiversity map* for each habitat zone.

The strategic biodiversity score of native vegetation is a measure of the native vegetation's importance for Victoria's biodiversity, relative to other locations across the landscape. The *Strategic biodiversity map* is a modelled layer that prioritises locations on the basis of rarity and level of depletion of the types of vegetation, species habitats, and condition and connectivity of native vegetation.

Total extent (hectares) for calculating habitat hectares

This is the total area of the marked native vegetation in hectares.

The total extent of native vegetation is an input to calculating the habitat hectares of a site and in calculating the general biodiversity equivalence score. Where the marked native vegetation includes scattered trees, each tree is converted to hectares using a standard area calculation of 0.071 hectares per tree. This information has been provided by or on behalf of the applicant in the GIS file.

Vicinity

The vicinity is an attribute for a general offset.

The offset site must be located within the same Catchment Management Authority boundary or Local Municipal District as the native vegetation to be removed.