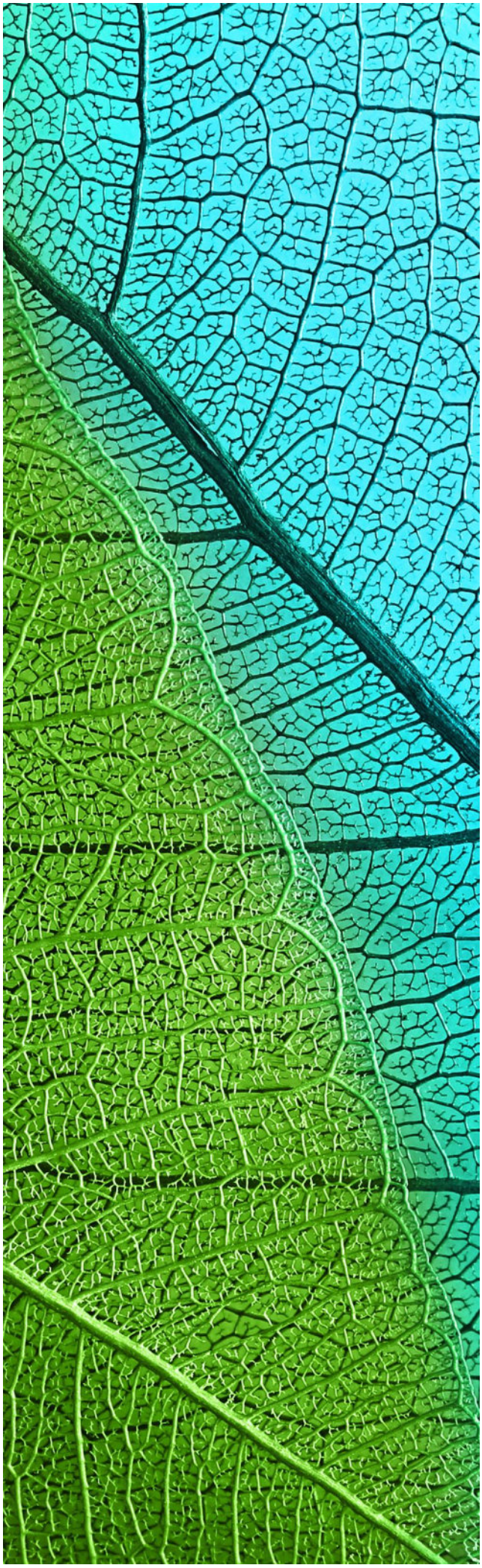

Hopkins Road, Fulham

Flora and Fauna Assessment

Prepared for Solis Renewable Energy Pty Ltd c/- Ricardo Energy, Environment & Planning

November 2021
Report No. 20138.1 (1.2)

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1. Executive summary

Ricardo Energy, Environment & Planning engaged Nature Advisory Pty Ltd to conduct a flora and fauna assessment of a 160-hectare area of land in Fulham. The specific area investigated, herein referred to as the 'study area', was bounded by Hopkins Road to the east, McLarens Road to the south and private property to the north and west. Development of a solar energy facility is proposed for the study area.

The study area was dominated by introduced pasture grasses, while approximately one quarter of the study area supported native vegetation in the form of highly modified woodland, and to a lesser extent, highly modified swamp scrub swamp vegetation that was concentrated in the north-eastern, south-eastern and south-western parts of the study area. Similar native vegetation but of a higher quality occurred in small patches along the roadsides of Hopkins Road and McLarens Road.

Fauna habitat in the study area consisted of grass-dominated vegetation, and comparatively small areas of planted treed vegetation and wetland habitats.

No flora, fauna or ecological communities listed under the EPBC Act or FFG Act were recorded and there are no implications under either of these Acts for the proposed development.

The following native vegetation was recorded in the study area:

- A total of 19 patches of native vegetation (absent of large trees), equating to a total extent of 29.330 hectares that comprised the following:
    - 13 patches of highly modified Plains Grassy Woodland (EVC 55), equating to an extent of 28.795 hectares; and
    - 6 patches of highly modified Swamp Scrub vegetation (EVC 53), equating to an extent of 0.535 hectares.

DELWP-mapped wetlands were also present within the study area. these are considered as native vegetation for the purposes of this assessment.

The currently proposed footprint will result in the loss of all of the native vegetation present except for some in the southeast. A total extent of 27.878 hectares of native vegetation, comprising 27.714 hectares of patch vegetation and 0.164 hectares of DELWP mapped wetlands, will be removed.

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

The assessment pathway is determined by the location category and extent of native vegetation as detailed for the study area as follows:

- Location Category: Location 2
- Extent of native vegetation: A total of 27.878 hectares of native vegetation (including no large trees).

Based on these details, the Guidelines stipulate that the proposal is to be assessed under the Detailed assessment pathway.

This proposal would trigger a referral to DELWP based on the criteria specified in Section 3.3.3.

Offsets required to compensate for the proposed removal of native vegetation from the study area are provided below.

- 8.180 general habitat units and must include the following offset attribute requirements:
    - Minimum strategic biodiversity value (SBV) of 0.373.
    - Occur within the West Gippsland CMA boundary or the Wellington municipal district.

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

The offset target for the current proposal will be achieved via a third-party offset.

There are no implications for the proposed development in regards to the FFG Act and EPBC Act.

A referral will be required under the EE Act.

The table below summarises the compliance of the information in this report with the application requirements of the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017a).

Application requirement		Response
1.	Information about the native vegetation to be removed	See Section 5.2 of this report.
2.	Topographic and land information relating to the native vegetation to be removed	See Section 5.1 of this report.
3.	Recent, dated photographs of the native vegetation to be removed	See Appendix 4 of this report.
4.	Details of any other native vegetation approved to be removed, or that was removed without the required approvals, on the same property or on contiguous land in the same ownership as the applicant, in the five-year period before the application for a permit is lodged	N/A
5.	An avoid and minimise statement	See Section 7.2.1 of this report.
6.	A copy of any Property Vegetation Plan contained within an agreement made pursuant to section 69 of the *Conservation, Forests and Lands Act 1987* that applies to the native vegetation to be removed	N/A
7.	Where the removal of native vegetation is to create defendable space, a written statement explaining why the removal of native vegetation is necessary. This statement is not required when the creation of defendable space is in conjunction with an application under the Bushfire Management Overlay.	N/A
8.	If the application is under Clause 52.16, a statement that explains how the proposal responds to the Native Vegetation Precinct Plan considerations (at decision guideline 8).	N/A

	Application requirement	Response
9.	An offset statement providing evidence that an offset that meets the offset requirements for the native vegetation to be removed has been identified and can be secured in accordance with the Guidelines	See Appendix 7 of this report.

Additional requirements for applications in the Detailed assessment pathway		
	Application requirement	**Response**
10.	A site assessment report of the native vegetation to be removed, including: ▪ A habitat hectare assessment of any patches of native vegetation, including the condition, extent (in hectares), Ecological Vegetation Class and bioregional conservation status. ▪ The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any large trees within patches ▪ The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any scattered trees, and whether each tree is small or large.	See Section 5.2.1, Appendix 2 and Appendix 6 of this report.
11.	Information about impacts on rare or threatened species habitat, including: The relevant section of the Habitat importance map for each rare or threatened species requiring a species offset. For each rare or threatened species that the native vegetation to be removed is habitat for, according to the Habitat importance maps: ▪ the species' conservation status ▪ the proportional impact of the removal of native vegetation on the total habitat for that species ▪ whether their habitats are highly localised habitats, dispersed habitats, or important areas of habitat within a dispersed species habitat.	See Appendix 6 of this report.

2. Introduction

Ricardo Energy, Environment & Planning engaged Nature Advisory Pty Ltd to conduct a flora and fauna assessment of a 160-hectare area of land in Fulham. The specific area investigated, herein referred to as the 'study area', was bounded by Hopkins Road to the east, McLarens Road to the south and private property to the north and west. Development of a solar energy facility is proposed for the study area.

This investigation was commissioned to provide information on the extent and condition of native vegetation in the study area according to Victoria's *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017a), herein referred to as 'the Guidelines', and 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.

Specifically, the scope of the investigation included the following:

- A review of existing information on the flora, fauna and native vegetation of the study area and surrounds, including the following:
    - The *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*; and
    - DELWP's *Native Vegetation Information Management system* (NVIM).
- A site survey involving the following:
    - Characterisation and mapping of native vegetation on the site, as defined in the Guidelines;
    - Assessment of native vegetation in accordance with the Guidelines, including habitat hectare assessment;
    - Compilation of flora species list for the site;
    - Assessment of the nature and quality of native fauna habitat; and
    - Assessment of the likelihood of occurrence of EPBC Act- and FFG Act-listed flora, fauna and communities on the site.

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 a team from Nature Advisory comprising Annette Cavanagh (Botanist), Guille Mayor (Ecologist), Verity Fyfe (Senior Ecologist), Nhung Nguyen (Senior GIS Analyst) and Gael Campbell-Young (Senior Ecologist and Project Manager).

3. Planning and legislative considerations

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

3.1. Local planning provisions

The study area is located within the Wellington local government area and currently zoned Farming Zone in the Wellington Planning Scheme.

The study area is located within a Bushfire-prone Area.

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

3.2. Overlays

No overlays cover the study area.

3.3. State planning provisions

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

Clause 52.17 of all Victorian Planning Schemes states that:

A permit is required to remove, destroy or lop native vegetation, including dead native vegetation.

A permit is not required if:

- An exemption in Table 52.17-7 specifically states that a permit is not required.
- A native vegetation precinct plan corresponding to the land is incorporated into the planning scheme and listed in the schedule to Clause 52.16.
- The native vegetation is specified in a schedule to Clause 52.17.

3.3.1. Exemptions

No exemptions to Clause 52.17 are relevant to this project.

3.3.2. Application requirements

Any application to remove, destroy or lop native vegetation must comply with the application requirements specified in the Guidelines (DELWP 2017a).

When assessing an application, Responsible Authorities are also obligated to refer to Clause 12.01-2 (Native vegetation management) in the Planning Scheme that refers to the following in addition to the Guidelines:

- *Assessor's handbook – applications to remove, destroy or lop native vegetation* (Version 1.1) (DELWP 2018a).
- Statewide biodiversity information maintained by DELWP.

The application of the Guidelines (DELWP 2017a) is explained further in Appendix 1.

3.3.3. Referral to DELWP

Clause 66.02-2 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.

Any application to remove, destroy or lop native vegetation must be referred to DELWP if:

- The impacts to native vegetation are in the Detailed Assessment Pathway;
- A property vegetation plan applies to the site; or
- The native vegetation is on Crown land that is occupied or managed by the responsible authority.

3.4. EPBC Act

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) 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).

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

3.5. FFG Act

The Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act) lists threatened and protected species and ecological communities (DELWP 2018b, DELWP 2017b). Any removal of protected flora, that includes threatened flora species and the plants that make up threatened communities, listed under the FFG Act from public land requires a Protected Flora Licence or Permit under the Act, obtained from DELWP.

The FFG Act only applies to private land where a license is required to remove grass trees, tree ferns and sphagnum moss for sale, or where an Interim Conservation Order has been made to protect critical habitat for a threatened species or community. No such habitat has ever been declared, therefore this mechanism under the FFG Act has never been implemented.

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

3.6. 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 Environmental Effects Statement (EES) is required according to the *Ministerial Guidelines for Assessment of Environmental Effects under the* Environment Effects Act 1978 (DSE 2006).

The criteria related to flora, fauna and native vegetation that trigger a Referral are outlined below.

One or more of the following would trigger a Referral:

- Potential clearing of 10 hectares 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 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 hectares 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.

Implications under the *Environment Effects Act 1978* (EE Act) for the current proposal are discussed in Section 7.5.

3.7. CaLP Act

The *Catchment and Land Protection Act 1994* (CaLP Act) requires that landowners (or a third party to whom responsibilities have been legally transferred) must eradicate regionally prohibited weeds and prevent the growth and spread of regionally controlled weeds.

Weed species listed in the CaLP Act that have been recorded in the study area are discussed in Section 7.6.

4. Existing information and methods

4.1. Existing information

Existing information used for this investigation is described below.

4.1.1. Existing reporting and documentation

The existing documentation below, relating to the study area was reviewed.

- Wellington Planning Scheme

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 the following:

- Relevant EVC benchmarks for the Gippsland Plain bioregion[1] (DSE 2004a); and
- *NatureKit* (DELWP 2021a).

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° 06' 58" S and longitude 146° 58' 03" 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.

The online EPBC Act *Protected Matters Search Tool* (DAWE 2021a) was consulted to determine whether nationally listed species or communities potentially occurred in the search region based on habitat modelling.

4.2. Field methods

Field assessments were conducted on 26 and 27 August, and 29 and 30 October 2020. During these assessments, the study area was initially surveyed by vehicle and areas supporting native vegetation and/or fauna habitat were inspected in more detail on foot.

Sites in the study area found to support native vegetation or with potential to support listed matters were mapped 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.

[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).

4.2.1. Native vegetation

Native vegetation is currently defined in Clause 73.01 of all Victorian planning schemes as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses'. The Guidelines (DELWP 2017a) further classify native vegetation as belonging to two categories:

- Patch; or
- Scattered tree.

The definitions of these categories are provided below, along with the prescribed DELWP methods for assessment. Further details on definitions of patches and scattered trees are provided in Appendix 1.

Patch

A patch of native vegetation is either:

- An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native; or
- Any area with three or more native canopy trees[2] where the drip line[3] of each tree touches the drip line of at least one other tree, forming a continuous canopy; or
- Any mapped wetland included in the *Current wetlands map*, available at *MapShareVic* (DELWP 2021b).

Patch condition is assessed using the habitat hectare method (Parkes *et al.* 2003; DSE 2004b) whereby components of the patch (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 *Native Vegetation Information Management* (NVIM) system (DELWP 2021c) provides modelled condition scores for native vegetation to be used in certain circumstances.

Scattered tree

A scattered tree is:

- A native canopy tree[2] that does not form part of a patch.

Scattered trees are counted and mapped, the species identified and the circumference at 1.3 metres above the ground is recorded.

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 2017b).

[2] A native canopy tree is a mature tree (i.e. able to flower) that is taller than three metres and normally found in the upper layer of the relevant vegetation type.
[3] The drip line is the outermost boundary of a tree canopy (leaves and/or branches) where the water drips on to the ground.

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 this 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.
- Daytime bird observations.
- 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, water bodies and surface rocks.

Habitat connectivity of the study area (i.e. degree of isolation/fragmentation), including linkages to other habitats in the region, was determined using field observations, recent aerial photography and *NatureKit* (DELWP 2021a).

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 study area was assessed 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 and FFG Act-listed community descriptions (SAC 2015).

4.3. Limitations of field assessment

Site assessments were carried out in winter and spring. The short duration and seasonal timing of field assessments can result in some species not being detected when these may occur at other times. Additionally, some flora species and life-forms may be undetectable at the time of the survey or unidentifiable due to a lack of flowers or fruit.

Difficulties in identifying flora in its observed state limited the accuracy of determining native vegetation patch extent. 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.

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

Identification of EVCs considers vegetation types that would have naturally occupied the landscape prior to European impacts. Significant past vegetation clearance, and alteration of the study area's landform and hydrology, has resulted in the emergence of an artificial site ecology that is likely to be notably different to what would have naturally occupied the study area. Identification of EVCs in altered areas was therefore based upon consideration of:

- Modelled EVC mapping (DELWP 2021a);
- Any observed indigenous flora species that are useful for determining EVCs; and
- Relevant published EVC benchmark descriptions.

If the above information was not sufficient to allow for a reasonable conclusion to be made regarding which EVC would have naturally occurred and the observed vegetation resembled an EVC that is likely to have naturally occurred in the region, EVC identification was based upon the structure and floristic composition of current observed vegetation.

5. Assessment results

5.1. Site description

The study area for this investigation (Figure 1) consisted of approximately 160 hectares of private land and adjoining roadside located at Hopkins Road, Fulham, approximately eight kilometres west of Sale and 180 kilometres east-south-east of Melbourne's CBD. The study area is bordered by Hopkins Road to the east, McLarens Road to the south, farmland and the Fulham Correctional Centre to the north, and farmland to the west.

The study area supported loamy soils on a relatively flat landscape. A small drainage line ran across the south-eastern corner, and several dams were present throughout, two of which were mapped as DELWP Mapped Wetlands. A house and planted treed vegetation occurred in the east of the study area. The study area has been historically cleared and long been used for stock grazing. Land surrounding the study area was also predominantly used for agriculture.

Vegetation in the study area was dominated by introduced pasture grasses such as Rye Grass, Cocksfoot and Toowoomba Canary-grass, occurring across most of the study area. Approximately one quarter of the study area supported native vegetation consisting of Spear Grass, Wallaby Grass, Rush, Common Blown-grass and Common Wheat-grass. These areas were mostly confined to the north-eastern, south-eastern and south-western corners of the study area. Native vegetation also occurred in small patches along the roadsides of Hopkins Road and McLarens Road. These areas supported native species such as Kangaroo Grass, Common Tussock-grass, Wattle Mat-rush, Common Woodruff and Sheep's Burr.

Fauna habitat within the study area comprised the following:

- Grassland habitat: Most of the study area comprised derived grassland that consisted of both native and non-native species. These areas had been grazed by cattle. The grassland habitat continued into adjacent properties forming a larger core area.
- Wetland habitat: Low-lying areas supporting surface water and a narrow drainage line and farm dams of varying sizes were scattered through the study area. There was minimal fringing vegetation around water bodies due to traffic from stock and erosion. However, these areas may attract some frogs and waterbirds, and provide a drinking spot for birds and other vertebrates.
- Planted vegetation: Several planted trees, such as Pines and Sugar Gums were present at the eastern extent of the study area which may provide roosting sites for birds and arboreal mammals. A dense cover of African Box-thorn in the understorey may also provide cover for ground-dwelling fauna.

The following key fauna habitat areas occurred within the region:

- The Holey Plains State Park occurs approximately 7.5 kilometres south of the study area. Fauna habitat in the study area is isolated from this habitat by pine plantations that occur immediately to the north of the State Park.
- Sale Common, part of the Gippsland Lakes Ramsar Site, was located approximately 10 kilometres east of the study area. Fauna habitat in the study area was connected to this habitat via adjacent properties. There are several minor roads that pass between the study area and the Sale Common, however, these are unlikely to impede fauna movement.

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

5.2. Native vegetation

5.2.1. Patches of native vegetation

Pre–European EVC mapping (DELWP 2021a) indicated that the study area and surrounds would have supported Plains Grassy Woodland/Gilgai Wetland Mosaic (EVC 259), Swamp Scrub (EVC 53) and Plains Grassland (EVC 132) prior to European settlement based on modelling of factors including rainfall, aspect, soils and remaining vegetation.

Evidence on site, including floristic composition and soil characteristics, suggested that Plains Grassy Woodland (EVC 55) and Swamp Scrub (EVC 53) were present within the study area (Figure 1). A description of these EVCs is provided within the EVC benchmarks in Appendix 5.

A total of 19 patches (referred to herein as habitat zones) comprising the abovementioned EVCs, were identified in the study area (Table 1). This totalled an area of 29.330 hectares of native vegetation in patches and included no large trees.

Table 1: Description of habitat zones in the study area

Habitat Zone	EVC	Description
A, B, C & D	Plains Grassy Woodland (EVC 55)	These were small areas of native vegetation along the roadside. No large trees or canopy trees present. Native understorey included tufted and non-tufted graminoids with an approximate cover of 30%. Typical species present were Spear Grass, Kangaroo Grass, Common Tussock-grass and Common Wheat-grass. There was a low to moderate cover of herbs in some habitat zones (1–10%), attributable to Sheep's Burr and Common Woodruff. Weed cover was approximately 30% and included high-threat Paspalum, Cocksfoot, Yorkshire Fog and Rat-tail Grass. Bryophyte cover was 10% and soil crust cover was 1%. Organic litter cover was 40% and was mostly native in origin. No logs were present.
E & F	Swamp Scrub (EVC 53)	Occurring along the roadside, these habitat zones were dominated by Australian Sweet-grass, having a total cover of 50%. A low cover of herbs was also present (4%). This included Sheep's Burr and Crane's Bill. No canopy trees were present. Weed cover was 5% and comprised Toowoomba Canary-grass, Cocksfoot and Cape Weed. No bryophytes or soil crusts were recorded. Organic litter cover was 5%.
G	Swamp Scrub (EVC 53)	This habitat zone supported a 25% cover of tufted graminoids (Spear Grass and Kangaroo Grass) and a 30% cover of non-tufted graminoids (Australian Sweet-grass and Common Wheat-grass). No canopy species were present. Weed cover was 30% and included Toowoomba Canary-grass, Cocksfoot, Cape Weed and Couch. There was a 5% cover of bryophytes, and 20% cover of organic litter, however, this was mostly non-native in origin.

Habitat Zone	EVC	Description
H, I & J	Plains Grassy Woodland (EVC 55)	Spear Grass, Kangaroo Grass and Wallaby Grass were the dominant native species, providing a cover of 15–25%. Common Wheat-grass had a cover of 5% and there was a minimal cover of medium and small shrubs (Black Wattle) in HZ H and I. A 3% cover of herbs was recorded in HZ I. No canopy was present. Weed cover was approximately 30%, but reached up to 60% in HZ J. Dominant species were Toowoomba Canary-grass, Couch, Yorkshire Fog and Cocksfoot. Bryophytes and soil crusts were not present, nor were logs. Organic litter cover was 20-30%.
K & L	Swamp Scrub (EVC 53)	No canopy cover was present, with the dominant life forms being tufted (15% cover) and non-tufted (10% cover) graminoids. Common species were Spear Grass, Common Blown-grass and Rush. A low herb cover was present (1%), being attributable to Small Loosestrife. Weed cover was 30%, mostly consisting of Rat-tail Grass, Rye Grass, Cocksfoot and Toowoomba Canary-grass. Bryophyte cover was 1%. Soil crusts and organic litter were not present.
M	Swamp Scrub (EVC 53)	Australian Sweet-grass was the dominant native species, having a total cover of 50%. No canopy trees were present. Weed cover was 5% and comprised Toowoomba Canary-grass, Cocksfoot and Cape Weed. No bryophytes or soil crusts were recorded. Organic litter cover was 5%.
N1 & N2	Plains Grassy Woodland (EVC 55)	The dominant native species in these habitat zones were Spear Grass and Brown-back Wallaby-grass, with a cover of 30%. There was no canopy cover. Weed cover was 40%. High-threat weeds present were African Box-thorn, Brown-top Bent, African Thistle, Rat-tail Grass, Cocksfoot and Toowoomba Canary-grass. Bryophytes, soil crusts and logs were not present. Organic litter cover was 20% and was mostly native in origin.
O, P, Q & R	Plains Grassy Woodland (EVC 55)	These habitat zones lacked a canopy, with tufted graminoids and non-tufted graminoids the only life forms present. Spear Grass and Brown-back Wallaby-grass had a combined cover of 20–30%, while Rush and Common Wheat-grass had a cover of 1–10%. Weed cover was 60% and included high-threat Cocksfoot, Rat-tail Grass, African Box-thorn, Brown-top Bent and Toowoomba Canary-grass. Bryophytes, soil crusts and logs were absent. Organic litter cover was approximately 25% and native in origin.

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	Area (ha)	Condition score (out of 100)	No. of Large Trees in HZ
A	Plains Grassy Woodland (EVC 55)	0.025	25	0
B	Plains Grassy Woodland (EVC 55)	0.021	26	0
C	Plains Grassy Woodland (EVC 55)	0.024	25	0
D	Plains Grassy Woodland (EVC 55)	0.021	21	0
E	Swamp Scrub (EVC 53)	0.003	30	0
F	Swamp Scrub (EVC 53)	0.025	30	0
G	Swamp Scrub (EVC 53)	0.013	29	0
H	Plains Grassy Woodland (EVC 55)	0.014	27	0
I	Plains Grassy Woodland (EVC 55)	0.024	27	0
J	Plains Grassy Woodland (EVC 55)	0.004	24	0
K	Swamp Scrub (EVC 53)	0.280	28	0
L	Swamp Scrub (EVC 53)	0.102	28	0
M	Swamp Scrub (EVC 53)	0.112	30	0
N1	Plains Grassy Woodland (EVC 55)	0.824	28	0
N2	Plains Grassy Woodland (EVC 55)	0.17	28	0
O	Plains Grassy Woodland (EVC 55)	7.476	27	0
P	Plains Grassy Woodland (EVC 55)	16.316	27	0
Q	Plains Grassy Woodland (EVC 55)	1.62	25	0
R	Plains Grassy Woodland (EVC 55)	2.255	25	0
Total		**29.330**		**0**

Figure 1-1: Study area and native vegetation

Project: Hopkins Road, Fulham
Client: Soils Renewable Energy Pty Ltd
Date: 13/09/2021

Study area

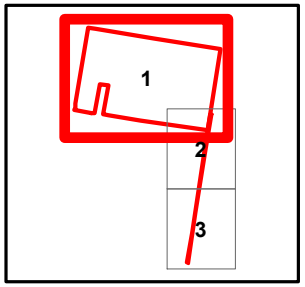
DELWP Wetland

Native vegetation

LaTrobe Valley Plains Grassland (EVC 132_61)

Plains Grassy Woodland (EVC 55)

Swamp Scrub (EVC 53_61)



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Metres

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5.2.2. Scattered trees

No scattered trees were recorded in the study area.

5.3. Flora species

5.3.1. Species recorded

During the field assessments, 35 plant species were recorded of which 16 (46%) were indigenous and 19 (54%) were introduced or non-indigenous native in origin (Appendix 3:).

5.3.2. Listed species

VBA records (DELWP 2021d) and the EPBC Protected Matters Search Tool (DAWE 2021a) indicated that within the search region there were records of, or potential suitable habitat occurred for 11 species listed under the Commonwealth EPBC Act and ten listed under the state FFG Act, including eight listed under both Acts. No flora species listed under the EPBC Act were recorded during the field survey.

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

This analysis indicates that no listed flora species are likely to occur or have the potential to occur in the study area due to the highly modified nature of the study area.

Table 3: Listed flora species and the likelihood of occurrence in the study area

Common Name	Scientific name	EPBC	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
River Swamp Wallaby-grass	*Amphibromus fluitans*	VU		River Swamp Wallaby-grass mostly grows in permanent swamps and also lagoons, billabongs, dams and roadside ditches. The species requires moderately fertile soils with some bare ground; conditions that are caused by seasonally-fluctuating water levels (DAWE 2021).	None	N/A	Study area was highly modified and there are no recent nearby records - **Unlikely to occur.**
Thick-lip Spider-orchid	*Caladenia tessellata*	VU		Coastal Open Woodlands, Lowland Forest, Heathy Woodland (Entwisle 1994).	None	N/A	Study area was highly modified and there are no recent nearby records - **Unlikely to occur.**
Dwarf Kerrawang	*Commersonia prostrata*	EN	L	In Victoria, the Dwarf Kerrawang grows on swampy, sometimes ephemeral wetlands and lake margins, often dominated by *Lepidosperma* spp. (Short 1996; James 2003; Carter & Walsh 2010a). Dwarf Kerrawang is part of the Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and associated native grassland ecological community, listed under the EPBC Act as critically endangered. The species also occurs in habitat of the Victorian listed communities Coastal Manna Gum (*Eucalyptus viminalis* subsp. *pryoriana*) Woodland and Lowland Forest dominated by White Stringybark (*Eucalyptus globoidea*) (James 2003).	None	N/A	Study area was highly modified and there are no recent nearby records - **Unlikely to occur.**
Small Scurf-pea	*Cullen parvum*		L	The species grows in grasslands and grassy (River Red-gum) woodlands in areas with rainfall of between 450 and 700 mm (Jeanes, 1996). These sites are subject to irregular flooding and have relatively rich soils derived from alluvium. An exception is the population near Shelford that grows on rocky clay soils derived from basalt (DSE 2005).	2	1/01/2005	Study area was highly modified - **Unlikely to occur.**
Matted Flax-lily	*Dianella amoena*	EN	L	Lowland grassland and grassy woodlands on well-drained to seasonally waterlogged fertile sandy loams to heavy cracking soils derived from sedimentary or volcanic Geology. Widely distributed from eastern to south-western Victoria (DAWE 2021).	None	N/A	Study area was highly modified and there are no recent nearby records - **Unlikely to occur.**
Purple Diuris	*Diuris punctata*		L	Principally in lowland native grasslands, grassy woodlands, heathy woodlands and open heathlands, usually on fertile, loamy soils and including periodically inundated areas (Earl & Barlow 2004).	12	7/10/2019	Study area was highly modified - **Unlikely to occur.**
Clover Glycine	*Glycine latrobeana*	VU	L	Found across south-eastern Australia in native grasslands, dry sclerophyll forests, woodlands and low open woodlands with a grassy ground layer. In Victoria, populations occur in lowland grasslands, grassy woodlands and sometimes in grassy heath (DAWE 2021).	None	N/A	Study area was highly modified and there are no recent nearby records - **Unlikely to occur.**
Basalt Peppercress	*Lepidium hyssopifolium* s.s.	EN	L	Known to establish on open, bare ground with limited competition from other plants. Previously recorded from Eucalypt woodland with a grassy ground cover and low open Casuarina woodland with a grassy ground cover and tussock grassland. Now generally found amongst exotic pasture grasses and beneath exotic trees (DAWE 2021).	None	N/A	Study area was highly modified and there are no recent nearby records - **Unlikely to occur.**

Common Name	Scientific name	EPBC	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
Maroon Leek-orchid	*Prasophyllum frenchii*	EN	L	Grows mainly in open sedge swampland or in wet grassland and wet heathland generally bordering swampy regions. Sites are generally low altitude, flat and moist. Soils are generally moderately rich damp sandy or black clay loams. Climate is mild, with an annual rainfall of 600–1100 mm, occurring predominantly in winter and spring (DAWE 2021).	None	N/A	Study area was highly modified and there are no recent nearby records - **Unlikely to occur.**
Wellington Mint-bush	*Prostanthera galbraithiae*	VU	L	Heathy open forest, usually on gravelly sand (Conn 1999).	61	14/09/2018	Study area was highly modified - **Unlikely to occur.**
Green-striped Greenhood	*Pterostylis chlorogramma*	VU	L	Occurs in mixed Box-Stringybark forest with a shrubby understorey, often with *Pteridium esculentum* as a major component on sandy or clay loam soils (Duncan *et al*. 2009).	None	N/A	Study area was highly modified and there are no recent nearby records - **Unlikely to occur.**
Swamp Fireweed	*Senecio psilocarpus*	VU		Herb-rich winter-wet swamps on volcanic clays or peaty soils (Walsh 1999). Known from approximately 10 sites between Wallan, about 45 km north of Melbourne and Honans Scrub in south-eastern South Australia (TSSC 2008).	None	N/A	Study area was highly modified and there are no recent nearby records - **Unlikely to occur.**
Swamp Everlasting	*Xerochrysum palustre*	VU	L	Grows in wetlands including sedge-swamps and shallow freshwater marshes, often on heavy black clay soils. Commonly associated genera include *Amphibromus, Baumea, Carex, Chorizandra, Craspedia, Eleocharis, Isolepis, Lachnagrostis, Lepidosperma, Myriophyllum, Phragmites australis, Themeda triandra* and *Villarsia* (DAWE 2021).	None	N/A	Study area was highly modified and there are no recent nearby records - **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 = listed as threatened (L) under the FFG Act.

5.4. Fauna habitats

The study area supported the following fauna habitat types.

- Grassland habitat;
- Wetland habitat; and
- Planted vegetation.

Grassland habitat: Approximately 15% of the study area comprised native grassland that supported Spear Grass, Wallaby Grass and Common Wheat-grass. Almost the entire remainder of the study area supported non-native grassland dominated by Rye Grass, Cocksfoot, Yorkshire Fog and Toowoomba Canary-grass. These grasslands had a history of grazing by cattle. The grassland habitat continued into adjacent properties forming a larger core area. Such habitat is shown in Photo 1.

Photo 1: Grassland habitat

Wetland habitat: A very small portion of the study area (approximately 0.2%) supported wetland habitat that included farm dams and a narrow drainage line. This habitat was degraded and supported sparse fringing vegetation due to stock access and erosion. These areas were mostly isolated but may attract frogs and some waterbirds, and provide a drinking spot for birds and other vertebrates. Such habitat is shown in Photo 2.

Photo 2: Wetland habitat

Planted vegetation: A small area of planted vegetation occurred at the eastern extent of the study area. This included Pine trees and Sugar Gums, and a dense understorey of the high-threat weed African Box-

thorn. This habitat may provide roosting and nesting sites for birds and arboreal mammals, while the understorey may provide cover for ground-dwelling fauna. This habitat is isolated from other wooded habitat in the surrounding landscape. Such habitat is shown in Photo 3.

Photo 3: Planted vegetation

5.5. Fauna species

5.5.1. Listed species

The review of existing information [including VBA records (DELWP 2021d) and results of the EPBC Protected Matters Search Tool (DAWE 2021a)] indicated that within the search region there were records of, or there was potential suitable habitat for, 34 fauna species listed under the Commonwealth EPBC Act and the state FFG Act. 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 inland; and
- Migratory oceanic bird species (such as albatrosses and petrels), and migratory shorebirds given that the study area is inland.

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 for which suitable habitat exists, but recent records are scarce. This analysis indicates that seven listed fauna species are likely to occur or have the potential to occur. These species include the following:

- Black Falcon (listed under FFG Act);
- Fork-tailed Swift (Migratory under EPBC Act);
- Great Egret (listed under FFG Act);
- Latham's Snipe (Migratory under EPBC Act);
- Magpie Goose (listed under FFG Act);
- White-throated Needletail (Migratory under EPBC Act);
- Green and Golden Bell Frog (Vulnerable under EPBC Act).

The susceptibility of these species to impacts from development is discussed in Section 5.5.2.

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

Common Name	Scientific name	EPBC-T	EPBC-M	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
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 & Higgins 1990).	1	4/04/2019	Habitat in study area is highly modified - **Unlikely to occur.**
Australian Painted-snipe	*Rostratula australis*	EN		L	Generally inhabits shallow terrestrial freshwater wetlands, including temporary and permanent lakes, swamps and claypans. This species also uses 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 or Canegrass or sometimes Tea-tree. Sometimes utilises areas that are lined with trees or that have some scattered fallen or washed-up timber (DAWE 2020).	None	N/A	Suitable habitat in study area, however no records in the region and species very scarce in the SE of Australia - **Unlikely to occur.**
Black Falcon	*Falco subniger*			L	Woodlands, open country and terrestrial wetlands; in arid and semi-arid zones; mainly over open plains and undulating land with large tracts of low vegetation. More commonly found in north-western Victoria and only occasionally found in southern Victoria. A highly mobile species, moving in response to food availability and seasonal conditions (Marchant & Higgins 1993).	1	18/05/2020	Suitable open habitat in study area and recent records in the vicinity - **Potential to occur.**
Black-faced Monarch	*Monarcha melanopsis*		M (Bonn A2H)		Rainforests, eucalypt woodlands, coastal scrub and damp gullies (Higgins *et al*. 2006).	None	N/A	No suitable habitat in study area and no recent nearby records - **Unlikely to occur.**
Diamond Firetail	*Stagonopleura guttata*			L	Commonly found in box-ironbark forests and woodlands and also occurs along watercourses and in farmland areas. Widespread but scattered. Forages on a wide range of seeds, which in some cases a large portion can be derived from weed species (Read 1994). Populations had declined in Victoria since the 1950s (Emison *et al*. 1987; Tzaros 2005).	2	30/12/1998	Habitat in study area is highly modified. Nearest suitable habitat at the foothills of the ranges - **Potential to occur.**
Fork-tailed Swift	*Apus pacificus*		M (CAMBA, ROKAMBA, JAMBA)		The species can occur in wet sclerophyll forest but mainly prefers open forest or plains. Almost exclusively aerial and feeds up to hundreds of metres above the ground, but can feed among open forest canopy. The species breeds internationally and seldom roosts in trees (Higgins 1999).	None	N/A	Highly mobile aerial species, occurs in the region annually - **Potential to occur.**
Freckled Duck	*Stictonetta naevosa*			L	Terrestrial wetlands; prefers fresh, densely vegetated waters, particularly floodwater swamps and creeks vegetated with Lignum or Cane Grass. During dry seasons or droughts, moves off ephemeral breeding swamps and occupies large permanent waters (Marchant & Higgins 1990).	117	13/06/2019	Habitat in study area is highly modified - **Unlikely to occur.**
Glossy Ibis	*Plegadis falcinellus*		M (Bonn A2S)		Prefers freshwater inland wetlands, in particular, permanent or ephemeral water bodies and swamps with abundant vegetation (Marchant & Higgins 1990).	8	18/05/2020	Habitat in study area is highly modified - **Unlikely to occur.**
Great Egret	*Ardea alba*			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 & Higgins 1990).	61	6/05/2019	Suitable habitat in study area and recent records in the vicinity - **Potential to occur.**

Common Name	Scientific name	EPBC-T	EPBC-M	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
Grey Falcon	*Falco hypoleucos*	VU		L	Inhabits arid and semi-arid zones; mainly on sandy and stony plains of inland drainage systems, lightly timbered with acacia. Hunts far into open areas, over spinifex, tussock grasslands and low shrublands. In Victoria, few records mostly in north and north-western regions (Marchant & Higgins 1993).	None	N/A	No suitable habitat in study area and no recent nearby records - **Unlikely to occur.**
Grey Goshawk	*Accipiter novaehollandiae*			L	Inhabits rainforests, open forests, swamp forests, woodlands and plantations; most abundant where forest or woodland provide cover for hunting from perches. In Victoria, most common in Otway ranges (Marchant & Higgins 1993).	2	18/05/2020	No suitable habitat in study area - **Unlikely to occur.**
Latham's Snipe	*Gallinago hardwickii*		M (Bonn A2H, ROKAMBA, JAMBA, CAMBA)		Occurs in wide variety of permanent and ephemeral wetlands; prefers open freshwater wetlands with dense cover nearby, such as the edges of rivers and creeks, bogs, swamps and waterholes. The species is widespread in south-eastern Australia and most of its population occurs in Victoria, except in the northwest of the state (Naarding 1983; Higgins & Davies 1996).	84	2/02/2019	Suitable habitat in study area and several recent nearby records - **Likely to occur.**
Little Egret	*Egretta garzetta*			L	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 & Higgins 1990).	8	10/11/2018	Habitat in study area is highly modified - **Unlikely to occur.**
Magpie Goose	*Anseranas semipalmata*			L	Terrestrial and aquatic habitats, but activities cantered on wetlands, mainly those on floodplains of rivers (Marchant & Higgins 1990).	6	31/03/2007	Suitable habitat in study area, records in the vicinity in similar habitat - **Potential to occur.**
Masked Owl	*Tyto novaehollandiae*			L	Open woodlands and forests that provide dense, tall tree cover, and adjoining open habitats such as cleared farmlands. In Victoria, most widespread in E. Gippsland (Higgins 1999).	1	30/03/2006	No suitable habitat in study area - **Unlikely to occur.**
Osprey	*Pandion cristatus*		M (Bonn A2S)		Rare vagrant to Victoria (Marchant & Higgins 1993). Littoral and coastal habitats and terrestrial wetlands. Mostly found in coastal areas but occasionally travel inland along major rivers (Marchant & Higgins 1993; Olsen 1995; Johnstone & Storr 1998). Require extensive areas of open fresh, brackish or saline water for foraging (Marchant & Higgins 1993).	None	N/A	No suitable habitat in study area and no recent nearby records - **Unlikely to occur.**
Painted Honeyeater	*Grantiella picta*	VU		L	Inhabits box-ironbark forests and woodlands and mainly feeds on the fruits of mistletoe. Strongly associated with mistletoe around the margins of open forests and woodlands. Can also be found in farmland containing remnant treed vegetation. Occurs at few localities. Uncommon breeding migrant from further north, arriving in October and leaving in February (Higgins *et al*. 2001; Tzaros 2005).	None	N/A	No suitable habitat in study area and no recent nearby records - **Unlikely to occur.**
Plumed Egret	*Ardea plumifera*			L	Mainly inhabits terrestrial wetlands; only occasionally visits coastal wetlands and forages amongst aquatic vegetation in shallow water and requires trees for roosting and nesting. Often occurs in wetlands that contain vegetation, including Bulrush (Marchant & Higgins 1990).	5	18/05/2020	Habitat in study area is highly modified - **Unlikely to occur.**

Common Name	Scientific name	EPBC-T	EPBC-M	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
Powerful Owl	*Ninox strenua*			L	Found in tall, open wet sclerophyll forests with sheltered gullies and old growth forest with dense understorey. Also found in dry forests with box and ironbark eucalypts and River Red-gum. Large old trees with hollows are required by this species for nesting. In Victoria, Powerful Owl is widespread, having been recorded from most of the state. However, throughout its range it is uncommon and occurs in low densities (Higgins 1999). Also occurs in highly urbanised areas, such as metropolitan Melbourne, heavily reliant upon various forms of movement corridors (riparian strips, roadside vegetation and recreational reserves) to both hunt within and navigate throughout the landscape (Carter *et al*. 2019).	2	30/03/2006	No suitable habitat in study area - **Unlikely to occur.**
Regent Honeyeater	*Anthochaera phrygia*	CR		L	Inhabits dry box-ironbark eucalypt forests near rivers and creeks on inland slopes of the Great Dividing Range. Can also occur in small remnant patches or in mature trees in farmland or partly cleared agricultural land (Higgins *et al*. 2001).	None	N/A	No suitable habitat in study area and no recent nearby records - **Unlikely to occur.**
Rufous Fantail	*Rhipidura rufifrons*		M (Bonn A2H)		In east and south-east Australia, mainly inhabits tall wet sclerophyll forests, often in gullies. When on passage in warmer months, sometimes recorded in drier sclerophyll forests and woodlands, and parks and gardens (Higgins *et al*. 2006). Virtually absent from south-eastern Australia during winter (Higgins *et al*. 2006).	1	4/02/2019	No suitable habitat in study area - **Unlikely to occur.**
Satin Flycatcher	*Myiagra cyanoleuca*		M (Bonn A2H)		Mostly found in eucalypt forest, particularly tall wet forests and woodland within gullies (Higgins *et al*. 2006). Also inhabits eucalypt woodland comprising an open understorey and a grassy ground layer (Higgins *et al*. 2006). Generally absent from rainforest (Higgins *et al*. 2006).	None	N/A	No suitable habitat in study area and no recent nearby records - **Unlikely to occur.**
Swift Parrot	*Lathamus discolor*	CR		L	Prefers a select range of eucalypts in Victoria, including Yellow Gum, Grey Box, White Box, Red Ironbark and Yellow Box, and River Red-gum when this species supports abundant 'lerp' (Saunders & Tzaros 2011). The species is also known to forage within planted stands of Spotted Gum and Sugar Gum (Nature Advisory; unpublished data). 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 & Tzaros 2005), though it is also not uncommonly sighted in urban areas (Nature Advisory; unpublished data). Occurrence of this species on the mainland can substantially change from year to year depending on food availability, giving potential for this species to occur almost anywhere throughout its range (Emison *et al*. 1987).	None	N/A	No suitable habitat in study area and no recent nearby records - **Unlikely to occur.**
White-bellied Sea-Eagle	*Haliaeetus leucogaster*			L	Maritime habitats, large terrestrial 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 & Higgins 1993).	37	23/05/2019	No suitable habitat in study area - **Unlikely to occur.**
White-throated Needletail	*Hirundapus caudacutus*	VU	M (CAMBA, ROKAMBA, JAMBA)		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).	8	21/01/2010	Highly mobile aerial species with recent nearby records - **Potential to occur.**

Common Name	Scientific name	EPBC-T	EPBC-M	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
Yellow Wagtail	*Motacilla flava*		M (CAMBA, JAMBA, ROKAMBA)		Regular non-breeding visitor in northern Australia mainly spring-summer, vagrant to the south. Occupies a wide range of habitats, usually open areas with low vegetation such as crop, grassland and even parkland. Often recorded near water (Higgins, Peter & Cowling 1999)	None	N/A	Species scarce in the south of Australia and no recent nearby records - **Unlikely to occur.**
Mammals								
Southern Greater Glider	*Petauroides volans*	VU		L	In Victoria, this species inhabits forest habitats dominated by peppermint, stringybark, ash and gum eucalypts (Menkhorst 1995). Restricted to the central highlands and eastern Victoria, and common in areas of high rainfall. Rare in dry stringybark-box and Snow Gum forest, and does not occur in the box-ironbark or River Red-gum dominated riverina regions (Menkhorst 1995).	None	N/A	No suitable habitat in study area and no recent nearby records - **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).	None	N/A	No suitable habitat in study area and no recent nearby records - **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	22/09/2017	No suitable habitat in study area - **Unlikely to occur.**
Bats								
Yellow-bellied Sheathtail Bat	*Saccolaimus flaviventris*			L	Known to occur from urban, agricultural semi-arid and tall wet forest habitats (Menkhorst 1995).	1	11/04/1990	Suitable habitat in study area. Species very scarce in southern Victoria - **Unlikely to occur.**
Amphibians								
Giant Burrowing Frog	*Heleioporus australiacus*	VU		L	Across its range, the Giant Burrowing Frog appears to be dependent on areas with native vegetation, as no Giant Burrowing Frogs have been recorded from cleared lands. However, it should be noted that no targeted surveys for the species have occurred in such lands. A BIOCLIM analysis suggests that the species is not climatically suited to large river valleys, most of which have now been cleared for agriculture. In the southern portion of its range, the Giant Burrowing Frog has been reported to occur in a wide range of forest communities including montane sclerophyll woodland, montane riparian woodland, and wet and dry sclerophyll forest (DAWE 2020).	None	N/A	No suitable habitat in study area and no recent nearby records - **Unlikely to occur.**
Green and Golden Bell Frog	*Litoria aurea*	VU			Permanent water with fringing or emergent vegetation in streams, swamps, lagoons, farm dams and ornamental ponds (Cogger 2000). Also occurs in disturbed sites such as disused industrial sites, brick pits, mines and council tips (Tyler 1997).	2	18/05/2020	Suitable habitat in study area and recent records nearby - **Potential to occur.**
Fish								
Australian Grayling	*Prototroctes maraena*	VU		L	Large and small coastal streams and rivers with cool, clear waters with a gravel substrate and altering pools and riffles (Cadwallader & Backhouse 1983).	1	3/02/2016	No suitable habitat in study area - **Unlikely to occur.**

Common Name	Scientific name	EPBC-T	EPBC-M	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
Dwarf Galaxias	*Galaxiella pusilla*	VU		L	Ranges from the far west of the state through to the Mitchell River basin in central Gippsland. Vegetated margins of still water, ditches, swamps and backwaters of creeks, both ephemeral and permanent (Allen *et al*. 2002). Some wetlands where it occurs may partially or completely dry up during summer, with such wetlands reliant on seasonal flooding plus linkages to other sites where the species occurs, for habitat and population replenishment (Saddlier, Jackson & Hammer 2010). Also often found in association with burrowing freshwater crayfish (Engaeus spp.), with the crayfish burrows reportedly providing refuge from predators and dry conditions for the species (Saddlier, Jackson & Hammer 2010).	4	28/03/2012	Habitat in study area is highly modified - **Unlikely to occur.**

Notes: EPBC-T = threatened species status under EPBC Act (EX = presumed extinct in the wild; CR = 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 =** listed as threatened (L) under the FFG Act.

5.5.2. Susceptibility of listed fauna to impacts

The following analysis identifies the susceptibility to development of listed fauna species that may utilise the study area. This analysis includes consideration of the factors below.

- The mobility of the species; and

  The availability and extent of other suitable habitat in the region and the degree to which each species may rely on habitat in the study area.

Targeted surveys will be required to determine the presence or absence of any listed fauna species considered to be susceptible to impacts from development.

Birds (non-migratory)

Three listed non-migratory bird species are considered to 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.

- **Black Falcon (listed under FFG Act)**

  This species mainly preys on small and medium-sized birds and the study area provides habitat for open farmland birds that constitute part of the diet. The species is uncommon in the region however and is therefore unlikely to be impacted by the development.

- **Great Egret (listed under FFG Act)**

  Habitat on site for this species is considered to be suboptimal due to the lack of fringing vegetation around the farm dams and the size of the dams. However, due to the proximity of larger water bodies and wetlands the species may possibly occur incidentally in the study site. Due to the lack of quality habitat on site, Great Egret is unlikely to be impacted by the development.

- **Magpie Goose (listed under FFG Act)**

  This species is scarce in Victoria and can use a variety of wetland habitats provided there are large wetlands with paddocks in the vicinity. Given the habitat on site is of moderate suitability, and high-quality habitat is found in the vicinity, the species may occur incidentally, however development of the site is unlikely to impact Magpie Goose.

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.

- **White-throated Needletail (Vulnerable under EPBC Act)**

  This species may occur in the study area, however only in the capacity of flying over due to the strictly aerial biology. White-throated Needletail depends mostly on extensive forests to forage but may occasionally use adjacent farmland. Due to the lack of forested areas in the vicinity this species is unlikely to be impacted by the development.

- **Fork-tailed Swift (Migratory under EPBC Act)**

  This species may occur in the study area, however only in the capacity of flying over due to the strictly aerial biology. Differently to White-throated Needletail, this species prefers open landscapes to forests. However, due to the abundance of this habitat in the region and the scarce records of the species in the vicinity, this species is unlikely to be impacted by the development.

- **Latham's Snipe (Migratory under EPBC Act)**

  The site holds suitable habitat for the species in the form of dams, drainage lines and flooded pasture. The species will likely occur occasionally in the study area, however due to the wide availability of higher quality habitat in the reserves to the south and east Latham's Snipe is unlikely to be impacted by the development.

Frogs

One listed frog 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.

- **Green and Golden Bell Frog (Vulnerable under EPBC Act)**

  Habitat on site is of moderate suitability, however due to the presence of the species in nearby wetlands this could occur incidentally during rainy periods when some individuals disperse in search of new breeding areas. Due to the low quality of the habitat on site and the availability of optimal habitat in the broader region, the Green and Golden Bell Frog is unlikely to be impacted by the development.

5.6. Listed ecological communities

The EPBC Protected Matters Search Tool (DAWE 2021a) indicated that three ecological communities listed under the EPBC Act had the potential to occur in the search region (Table 5). The occurrence in the study area was determined based on an assessment of the native vegetation present against published descriptions and condition thresholds for these communities.

Table 5: EPBC Act-listed ecological communities and likelihood of occurrence in the study area

Ecological Community	EPBC Status	Occurrence in the study area
Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and Associated Native Grassland	CR	The study area was highly modified and does not support any native treed vegetation – **Does not occur.**
Natural Damp Grassland of the Victorian Coastal Plains	CR	The study area was highly modified and is derived from Plains Grassy Woodland (EVC 55) that is contra-indicative of the community – **Does not occur.**
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	CR	The study area was highly modified and any areas with the potential to host the community were less than 0.5 hectares – **Does not occur.**

Notes: EPBC = status under the EPBC Act (CR = Critically Endangered).

6. Assessment of impacts

6.1. Proposed development

The current proposal will involve the installation of a solar farm facility.

To determine impacts to native vegetation, the proposed development plan was overlaid with the native vegetation mapped as part of this investigation. Native vegetation occurring in the following locations was considered to be removed based on the proposed plan:

- Direct removal:
    - Native vegetation within all proposed development areas
    - Native vegetation within proposed driveway

6.2. Impacts of proposed development

6.2.1. Native vegetation

The current proposal will result in the loss of a total extent of 27.878 hectares of native vegetation as represented in Figure 2 and documented in the *Native Vegetation Removal* (NVR) report provided by DELWP (Appendix 6:).

This comprised the following:

- 27.714 hectares of native vegetation in patches (including no large trees in patches); and
- 0.164 hectares of DELWP mapped wetlands.

No native vegetation has been approved for removal on the property within the last five years.

Photographs of native vegetation proposed for removal are provided in Appendix 4.

6.2.2. Modelled species important habitat

The current proposal footprint will not have a significant impact on any habitat for any rare or threatened species as determined in Appendix 6:

6.2.3. Listed flora species

The analysis of the likelihood of occurrence of listed flora species presented in Section 5.3.2 identified that no listed flora species would be impacted by any development in the study area.

6.2.4. Fauna habitat

The proposed development will result in the removal of at least 150 hectares of fauna habitat, predominantly in the form of grassland and pasture.

6.2.5. Listed fauna species

The analysis of susceptibility of listed fauna species to impacts presented in Section 5.5.2 identified that no listed fauna species could be impacted by development of the study area.

6.2.6. Threatened ecological communities

The proposed development footprint will not result in the loss of any threatened ecological communities.

Figure 2-1: Native vegetation to be removed

Project: Hopkins Road, Fulham
Client: Soils Renewable Energy Pty Ltd
Date: 13/09/2021

Study area

DELWP Wetland

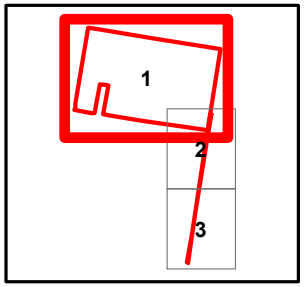
Native vegetation

LaTrobe Valley Plains Grassland (EVC 132_61)

Plains Grassy Woodland (EVC 55)

Swamp Scrub (EVC 53_61)

Native vegetation to be removed



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Metres

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7. Implications under legislation and policy

7.1. Summary of planning implications

No overlays cover the study area.

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

7.2. Implications under the Guidelines

7.2.1. Avoid and minimise statement

In accordance with the Guidelines, all applications to remove native vegetation must provide an avoid and minimise statement that describes any efforts undertaken to avoid the removal of, and minimise the impacts on biodiversity and other values of native vegetation, and how these efforts focus on areas of native vegetation that have the most value. Efforts to avoid and minimise impacts to native vegetation in the current application are presented as follows:

- Strategic level planning – the solar energy facility is proposed for an area that has been historically cleared and is highly modified from the original state. As such, this supports low quality vegetation compared to some surrounding areas.
- Site level planning – development will avoid native vegetation present on the roadsides. The highest quality vegetation, that is the vegetation in the south-eastern corner of the study area, will also be avoided. The site's primary and secondary access points have been designed to ensure retention of native vegetation. The solar panels will also sit atop the grassland, as such the majority of the grassland will remain. It should also be noted that the solar farm has an expected operation life of approximately 35 years. A decommissioning plan requires the land to be converted back to its original state after the use has ceased. Additionally, the project will provide the appropriate offset to compensate for the biodiversity impact from the removal of the native vegetation.
- Furthermore, the proponent advises that no feasible opportunities exist to further avoid and minimise impacts on native vegetation without undermining the key objectives of the proposal. More specifically, the solar panels are installed in rows of 'solar tables', of which the length is 105 m. Accordingly, to retain a 1 m x 1 m patch, the site would lose approximately 87 solar panels. For the solar farm project to be feasible for all stakeholders it must generate approximately 80 MW of electricity, the loss of solar panels to retain further patches of poor quality native vegetation could jeopardise the project.

7.2.2. Assessment pathway

The assessment pathway is determined by the location category and extent of native vegetation as detailed for the study area as follows:

- Location Category: Location 2
- Extent of native vegetation: A total of 27.879 hectares of native vegetation (including no large trees).

Based on these details, the Guidelines stipulate that the proposal is to be assessed under the Detailed assessment pathway.

This proposal would trigger a referral to DELWP based on the criteria specified in Section 3.3.3.

7.2.3. Offset requirements

Offsets required to compensate for the proposed removal of native vegetation from the study area are provided below.

- 8.180 general habitat units and must include the following offset attribute requirements:
  - Minimum strategic biodiversity value (SBV) of 0.373; and
  - Occur within the West Gippsland CMA boundary or the Wellington municipal district.

7.2.4. Offset statement

The offset target for the current proposal will be achieved *via* a third-party offset.

An online search of the Native Vegetation Credit Register (NVCR) has shown that the required offset is currently available for purchase from a native vegetation credit owner (DELWP 2021e).

Evidence that the required offset is available is provided in Appendix 7: . The required offset would be secured following approval of the application to remove native vegetation.

7.3. EPBC Act

The EPBC Act 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.

Based on the relevant guidelines, the proposed development is unlikely to result in a significant impact on any EPBC Act-listed values. For this reason, Referral of the project under the Act is not necessary.

7.4. FFG Act

The Victorian FFG Act lists threatened and protected species and ecological communities (DELWP 2017b, 2018b). 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 following FFG Act values listed as threatened or protected were recorded on public land:

- Black Wattle (protected)

However, this value is not susceptible to impacts from the proposed development on public land, and a Protected Flora Licence or Permit under the FFG Act would not be required for the current proposal.

7.5. EE Act

The *Ministerial Guidelines for Assessment of Environmental Effects under the* Environment Effects Act 1978 (DSE 2006) identifies criteria that trigger a Referral to the State Minister for Planning.

Based on the relevant criteria, a Referral to the State Minister for Planning will be required under the EE Act due to the extent of removal being greater than ten hectares and this being the endangered EVC Plains Grassy Woodland (EVC 55).

7.6. CaLP Act

The *Catchment and Land Protection Act 1994* (CaLP Act) requires that landowners (or a third party to whom responsibilities have been legally transferred) must eradicate regionally prohibited weeds and prevent the growth and spread of regionally controlled weeds.

Property owners who do not eradicate regionally prohibited weeds or prevent the growth and spread of regionally controlled weeds for which they are responsible, may be issued with a Land Management Notice or Directions Notice that requires specific control work to be undertaken.

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

- African Box-thorn

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.).

7.7. Construction mitigation recommendations

Recommendations to mitigate impacts to vegetation during construction are provided below:

- Establish appropriate vegetation protection zones around areas of native vegetation to be retained prior to works.
- Ensure all construction personnel are appropriately briefed prior to works, and that no construction personnel, machinery or equipment are placed inside vegetation protection zones.

8. References

Allen, GR, Midgley, SH & Allen, M 2002, *Field Guide to the Freshwater Fishes of Australia*, Western Australian Museum, Perth.

Cadwallader, PL & Backhouse, GN 1983, *A Guide to the Freshwater Fish of Victoria*, Fisheries and Wildlife, Melbourne.

Carter, N, Cooke R, White, JG, Whisson, DA, Isaac, B & Bradsworth, N 2019, 'Joining the dots: How does an apex predator move through an urbanzing landscape?', *Global Ecology and Conservation*, vol. 16, pp. 1–12.

Carter, O & Walsh, N 2010, *National recovery plan for the Dwarf Kerrawang (*Rulingia prostrata*).* [Online]. East Melbourne, Victoria: Department of Sustainability and Environment.

Cogger, HG 2000, *Reptiles and Amphibians of Australia*, Reed New Holland, Sydney.

Conn BJ 1999, 'Lamiaceae', in Walsh, NG & Entwisle, TJ (eds), *Flora of Victoria, Volume 4: Dicotyledons Cornaceae to Asteraceae*, Inkata Press, Melbourne, pp. 451–452.

DAWE 2021a, *EPBC Act Protected Matters Search Tool*, Department of the Environment and Energy, Canberra, viewed 21 April 2021, https://www.environment.gov.au/epbc/pmst/index.html.

DELWP 2017a, *Guidelines for the removal, destruction or lopping of native vegetation* (dated December 2017), Department of Environment, Land, Water and Planning, East Melbourne.

DELWP 2017b, *Flora and Fauna Guarantee Act 1988—Protected Flora List, June 2017*, Department of Environment, Land, Water and Planning, East Melbourne.

DELWP 2018a, *Assessor's Handbook—Applications to remove, destroy or lop native vegetation* (Version 1.1, dated October 2018), Department of Environment, Land, Water and Planning, East Melbourne.

DELWP 2018b, *Flora and Fauna Guarantee Act 1988—Threatened List, April 2018*, Department of Environment, Land, Water and Planning, East Melbourne.

DELWP 2021a, *NatureKit*, Department of Environment, Land, Water and Planning, East Melbourne, Victoria, viewed 21 April 2021, https://www.environment.vic.gov.au/biodiversity/naturekit.

DELWP 2021b, *MapShareVic*, Department of Environment, Land, Water and Planning, East Melbourne, Victoria, viewed 21 April 2021, https://www2.delwp.vic.gov.au/maps/maps-and-services/interactive-maps.

DELWP 2021c, *Native Vegetation Information Management system*, Department of Environment, Land, Water and Planning, East Melbourne, Victoria, viewed 21 April 2021, https://nvim.delwp.vic.gov.au/.

DELWP 2021d, *Victorian Biodiversity Atlas 3.2.5*, Department of Environment, Land, Water and Planning, East Melbourne, Victoria, viewed 21 April 2021, https://vba.dse.vic.gov.au.

DELWP 2021e, *Online Search of the Native Vegetation Credit Register,* Department of Environment, Land, Water and Planning, East Melbourne, viewed 23 April 2021, https://nvcr.delwp.vic.gov.au.

Department of Agriculture, Water and the Environment 2020, Species Profile and Threats Database, Department of Agriculture, Water and the Environment, Canberra, accessed 2020, <http://www.environment.gov.au/sprat.>

Department of Agriculture, Water and the Environment 2020, Species Profile and Threats Database, Department of Agriculture, Water and the Environment, Canberra, accessed 2020, <http://www.environment.gov.au/sprat>

Department of Agriculture, Water and the Environment 2020, *Species Profile and Threats Database*, Department of Agriculture, Water and the Environment, Canberra, accessed 2020, http://www.environment.gov.au/sprat.

Department of Natural Resources and Environment (DNRE) 1997, *Victoria's Biodiversity—Directions in Management*, Department of Environment, Land, Water and Planning, East Melbourne.

Department of Sustainability and Environment (DSE) 2004a, *Ecological Vegetation Class (EVC) Benchmarks by Bioregion*, Department of Environment, Land, Water and Planning, East Melbourne.

Department of Sustainability and Environment (DSE) 2004b, *Native Vegetation: sustaining a living landscape, Vegetation Quality Assessment Manual—guidelines for applying the Habitat Hectare scoring method (Version 1.3)*, Department of Environment, Land, Water and Planning, East Melbourne.

Department of Sustainability and Environment (DSE) 2006, *Ministerial Guidelines for Assessment of Environmental Effects under the* Environmental Effects Act 1978, Department of Environment, Land, Water and Planning, East Melbourne.

Duncan M, Pritchard A & Coates F 2009, *National Recovery Plan for Fifteen Threatened Orchids in South-eastern Australia,* Department of Sustainability and Environment, now Department of Environment, Land, Water and Planning, Victoria.

Earl G & Barlow T 2004, *Flora and Fauna Guarantee Act 1988 Action Statement: Purple Diuris* Diuris punctata *var.* punctata, Department of Sustainability and Environment, now Department of Environment, Land, Water and Planning, Melbourne.

Emison WB, Beardsell CM, Norman FI, Loyn RH & Bennett SC 1987, *Atlas of Victorian Birds*, Department of Conservation, Forests and Lands and the Royal Australasian Ornithologists Union, Melbourne.

Entwisle TJ 1994, 'Orchidaceae', in Walsh, NG & Entwisle, TJ (eds), *Flora of Victoria, Volume 2: Ferns and Allied Plants, Conifers and Monocotyledons*, Inkata Press, Melbourne, pp. 740–901.

Higgins PJ & Davies SJJF 1996, *Handbook of Australian, New Zealand and Antarctic Birds, Volume 3: Snipe to Pigeons*, Oxford University Press, Melbourne.

Higgins PJ 1999, *Handbook of Australian, New Zealand and Antarctic Birds, Volume 4: Parrots to Dollarbird*, Oxford University Press, Melbourne.

Higgins PJ, Peter JM & Cowling SJ 2006, *Handbook of Australian, New Zealand and Antarctic Birds, Volume 7: Boatbills to Starlings*, Oxford University Press, Melbourne.

Higgins PJ, Peter JM & Steele WK 2001, *Handbook of Australian, New Zealand and Antarctic Birds, Volume 5: Tyrant-flycatchers to Chats*, Oxford University Press, Melbourne.

James M 2003, *Flora and Fauna Guarantee Action Statement 144 - Dwarf Kerrawang* Rulingia prostrata. [Online]. Victorian Department of Sustainability and Environment.

Johnstone RE & Storr GM 1998, *Handbook of Western Australian Birds, Volume 1: Non-passerines (Emu to Dollarbird)*, West Australian Museum, Perth, Western Australia.

Kennedy SJ & Tzaros CL 2005, 'Foraging ecology of the Swift Parrot Lathamus discolor in the box-ironbark forests and woodlands of Victoria', *Pacific Conservation Biology* 11: 158–173.

Marchant S & Higgins PJ 1990, *Handbook of Australian, New Zealand and Antarctic birds, Volume 1: Ratites to Ducks*, Oxford University Press, Melbourne.

Marchant S & Higgins PJ 1993, *Handbook of Australian, New Zealand and Antarctic Birds, Volume 2—Raptors to Lapwings*, Oxford University Press, Melbourne, Victoria.

Menkhorst P 1995, *Mammals of Victoria*, Oxford University Press, Melbourne.

Naarding JA 1983, *Latham's Snipe in Southern Australia*, Wildlife Division Technical Report 83/1, Tasmania National Parks and Wildlife Service, Tasmania.

Olsen P 1995, *Australian Birds of Prey*, University of NSW Press, Sydney, NSW.

Parkes D, Newell G, & Cheal D 2003, 'Assessing the Quality of Native Vegetation: The 'habitat hectares' approach', *Ecological Management and Restoration* 4:29–38.

Read JL 1994, 'The diet of three species of Firetail Finches in temperate South Australia', *Emu - Austral Ornithology*, vol. 94, pp. 1–8.

Saddlier S, Jackson J & Hammer, M 2010, *'National recovery plan for the Dwarf Galaxias* (Galaxiella pusilla)', Department of Environment, Land, Water & Planning (DELWP), Melbourne.

Saunders DL & Tzaros CL 2011, *'National recovery plan for Swift Parrot* Lathamus discolor', Birds Australia, Melbourne.

Scientific Advisory Committee (SAC) 2015, *Flora and Fauna Guarantee Act 1988—Threatened List: Characteristics of Threatened Communities*, Department of Environment, Land, Water and Planning, East Melbourne.

Short PS (1996). Sterculiaceae. In: Walsh, N.G. & T.J. Entwisle, eds. *Flora of Victoria, vol.3*, pp. 24–331, Inkata Press, Melbourne.

Threatened Species Scientific Committee (2008). *Commonwealth Conservation Advice on* Senecio psilocarpus. Department of the Environment, Water, Heritage and the Arts. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/64976-conservation-advice.pdf.

Tzaros C 2005, *Wildlife of the Box-Ironbark Country*, CSIRO Publishing, Collingwood.

Appendix 1: Details of the assessment process in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (DELWP 2017a)

Purpose and objective

Policies and strategies relating to the protection and management of native vegetation in Victoria are defined in the State Planning Policy Framework (SPPF). The objective identified in Clause 12.01 of all Victorian Planning Schemes is 'To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation'.

This is to be achieved through the following three-step approach, as detailed in the Guidelines:

1. Avoid the removal, destruction or lopping of native vegetation.
2. Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
3. Provide an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation.

Note: While a planning permit may still be required, if native vegetation does not meet the definition of either a patch or a scattered tree, an offset under the Guidelines is not required.

Assessment pathways

The first step in determining the type of assessment required for any site in Victoria is to determine the assessment pathway for the proposed native vegetation removal. The three possible assessment pathways for applications to remove native vegetation in Victoria are:

- Basic;
- Intermediate; or
- Detailed.

This assessment pathway is determined by two factors:

- **Location Category**, as determined using the states' Location Map. The location category indicates the potential risk to biodiversity from removing a small amount of native vegetation. The three location categories are defined as:
    - Location 1 – shown in light blue-green on the Location Map; occurring over most of Victoria.
    - Location 2 – shown in dark blue-green on the Location Map; includes areas mapped as endangered EVCs and/or sensitive wetlands and coastal areas.
    - Location 3 – shown in brown on the Location Map; includes areas where the removal of less than 0.5 hectares of native vegetation could have a significant impact on habitat for rare and threatened species.
- **Extent of native vegetation** – The extent of any patches and scattered trees proposed to be removed (and the extent of any past native vegetation removal), with consideration as to whether the proposed removal includes any large trees. Extent of native vegetation is determined as follows:
    - **Patch** – the area of the patch in hectares.
    - **Scattered Tree** – the extent of a scattered tree is dependent on whether the scattered tree is small or large. A tree is considered to be a large tree if it is greater or equal to the large tree benchmark diameter at breast height (DBH) for the relevant bioregional EVC. Any scattered

tree that is not a large tree is a small scattered tree. The extent of large and small scattered trees is determined as follows:

- **Large scattered tree** – the area of a circle with a 15-metre radius, with the trunk of the tree at the centre.
- **Small scattered tree** – the area of a circle with a ten-metre radius, with the trunk of the tree at the centre.

The assessment pathway for assessing an application to remove native vegetation is then determined as detailed in the following matrix table:

Extent of native vegetation	Location Category		
	Location 1	Location 2	Location 3
< 0.5 hectares and not including any large trees	Basic	Intermediate	Detailed
< 0.5 hectares and including one or more large trees	Intermediate	Intermediate	Detailed
≥ 0.5 hectares	Detailed	Detailed	Detailed

Note: If the native vegetation to be removed includes more than one location category, the higher location category is used to determine the assessment pathway.

Landscape scale information – strategic biodiversity value

The strategic biodiversity value (SBV) is a measure of a location's importance to Victoria's biodiversity, relative to other locations across the state. This is represented as a score between 0 and 1 and determined from the Strategic biodiversity value map, available from *NVIM* (DELWP 2021c).

Landscape scale information – habitat for rare or threatened species

Habitat importance for rare or threatened species is a measure of the importance of a location in the landscape as habitat for a particular rare or threatened species, in relation to other habitat available for that species. It is represented as a score between 0 and 1 and is determined from the Habitat importance maps, administered by DELWP.

This includes two groups of habitat:

- **Highly localised habitats** – Limited in area and considered to be equally important, therefore having the same habitat importance score.
- **Dispersed habitats** – Less limited in area and based on habitat distribution models.

Habitat for rare or threatened species is used to determine the type of offset required in the detailed assessment pathway.

Biodiversity value

A combination of site-based and landscape-scale information is used to calculate the biodiversity value of native vegetation to be removed. Biodiversity value is represented by a general or species habitat score, detailed as follows.

Firstly, the extent and condition of native vegetation to be removed are combined to determine the habitat hectares as follows:

Habitat hectares = extent of native vegetation x condition score

Secondly, the habitat hectare score is combined with a landscape factor to obtain an overall measure of biodiversity value. Two landscape factors exist as follows:

- **General landscape factor** – determined using an adjusted strategic biodiversity score, and relevant when no habitat importance scores are applicable;
- **Species landscape factor** – determined using an adjusted habitat importance score for each rare or threatened species habitat mapped at a site in the Habitat importance map.

These factors are subsequently used as follows to determine the biodiversity value of a site:

General habitat score = habitat hectares x general landscape factor

Species habitat score = habitat hectares x species landscape factor

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 multiplier to address the risk of offset:

- A **general offset** is required when the removal of native vegetation does not have a significant impact on any habitat for rare or threatened species (i.e. the proportional impact is below the species offset threshold). In this case a multiplier of 1.5 applies to determine the general offset amount.

General offset (amount of general habitat units) = general habitat score x 1.5

- A **species offset** is required when the removal of native vegetation has a significant impact on habitat for a rare or threatened species (i.e. the proportional impact is above the species offset threshold). In this case a multiplier of 2 applies to determine the species offset quantity.

Species offset (amount of species habitat units) = Species habitat score x 2

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

Offset attributes

Offsets must meet the following attribute requirements, as relevant:

- General offsets
  - **Offset amount** – general offset = general habitat score x 1.5
  - **Strategic biodiversity value (SBV)** – the offset has at least 80% of the SBV of the native vegetation removed

- **Vicinity** – the offset is in the same CMA boundary or municipal district as the native vegetation removed
- Habitat for rare and threatened species – N/A
- **Large trees** – the offset include the protection of at least one large tree for every large tree to be removed

- Species offsets
  - **Offset amount** – species offset = species habitat score x 2
  - Strategic biodiversity value (SBV): N/A
  - Vicinity: N/A
  - **Habitat for rare and threatened species** – the offset comprises mapped habitat according to the Habitat importance map for the relevant species
  - **Large trees** – the offset include the protection of at least one large tree for every large tree to be removed

Appendix 2: Detailed habitat hectare assessment results

Habitat Zone			A	B	C	D	E	F	G	H	I	J
Bioregion			GipP	GipP	GipP	GipP	GipP	GipP	GipP	GipP	GipP	GipP
EVC Number			55	55	55	55	53_61	53_61	53_61	55	55	55
Total area of Habitat Zone (ha)			0.025	0.021	0.024	0.021	0.003	0.025	0.013	0.014	0.024	0.004
Site Condition	Large Old Trees	/10	0	0	0	0	0	0	0	0	0	0
	Tree Canopy Cover	/5	0	0	0	0	0	0	0	0	0	0
	Lack of Weeds	/15	4	4	4	4	7	7	4	4	4	0
	Understorey	/25	5	5	5	5	5	5	5	5	5	5
	Recruitment	/10	0	0	0	0	0	0	0	0	0	0
	Organic Matter	/5	3	3	3	5	2	2	4	4	4	5
	Logs	/5	0	0	0	0	0	0	0	0	0	0
	Site condition standardising multiplier*		1.00	1.00	1.00	1.00	1.15	1.15	1.15	1.00	1.00	1.00
	Site Condition subtotal		*12*	*12*	*12*	*14*	*16*	*16*	*15*	*13*	*13*	*10*
Landscape Context	Patch Size	/10	8	8	8	1	8	8	8	8	8	8
	Neighbourhood	/10	2	3	2	3	3	3	3	3	3	3
	Distance to Core	/5	3	3	3	3	3	3	3	3	3	3
Total Condition Score		**/100**	**25**	**26**	**25**	**21**	**30**	**30**	**29**	**27**	**27**	**24**

Habitat Zone			K	L	M	N1	N2	O	P	Q	R
Bioregion			GipP	GipP	GipP	GipP	GipP	GipP	GipP	GipP	GipP
EVC Number			53_61	53_61	53_61	55	55	55	55	55	55
Total area of Habitat Zone (ha)			0.280	0.102	0.112	0.824	0.17	7.476	16.316	1.62	2.255
Site Condition	Large Old Trees	/10	0	0	0	0	0	0	0	0	0
	Tree Canopy Cover	/5	0	0	0	0	0	0	0	0	0
	Lack of Weeds	/15	6	6	7	4	4	0	0	0	0
	Understorey	/25	5	5	5	5	5	5	5	5	5
	Recruitment	/10	0	0	0	0	0	0	0	0	0
	Organic Matter	/5	0	0	2	5	5	5	5	5	5
	Logs	/5	0	0	0	0	0	0	0	0	0
	Site condition standardising multiplier*		1.15	1.15	1.15	1.00	1.00	1.00	1.00	1.00	1.00
	Site Condition subtotal		*13*	*13*	*16*	*14*	*14*	*10*	*10*	*10*	*10*
Landscape Context	Patch Size	/10	8	8	8	8	8	8	8	8	8
	Neighbourhood	/10	4	4	3	3	3	5	5	4	4
	Distance to Core	/5	3	3	3	3	3	4	4	3	3
Total Condition Score		**/100**	**28**	**28**	**30**	**28**	**28**	**27**	**27**	**25**	**25**

* Modified approach to habitat scoring - refer to Table 14 of DELWP's Vegetation Quality Assessment Manual (DSE, 2004).

Appendix 3: Flora species recorded in the study area

Origin	Common name	Scientific name	EPBC	FFG-T	FFG-P	CaLP Act
	Black Wattle	*Acacia mearnsii*			P	
	Sheep's Burr	*Acaena* sp.				
*	Brown-top Bent	*Agrostis capillaris*				
	Common Wheat-grass	*Anthosachne scabra s.s.*				
*	Cape weed	*Arctotheca calendula*				
	Common Woodruff	*Asperula conferta*				
	Spear Grass	*Austrostipa* sp.				
*	African Thistle	*Berkheya rigida*				
*	Kikuyu	*Cenchrus clandestinus*				
*	Couch	*Cynodon dactylon* var. *dactylon*				
*	Cocksfoot	*Dactylis glomerata*				
	Crane's Bill	*Geranium* sp.				
	Australian Sweet-grass	*Glyceria australis*				
*	Yorkshire Fog	*Holcus lanatus*				
*	Flatweed	*Hypochaeris radicata*				
	Rush	*Juncus* sp.				
	Common Blown-grass	*Lachnagrostis filiformis s.l.*				
*	Rye Grass	*Lolium* sp.				
	Wattle Mat-rush	*Lomandra filiformis*				
*	African Box-thorn	*Lycium ferocissimum*				C
	Small Loosestrife	*Lythrum hyssopifolia*				
*	Paspalum	*Paspalum dilatatum*				
*	Toowoomba Canary-grass	*Phalaris aquatica*				
*	Buck's-horn Plantain	*Plantago coronopus*				
*	Ribwort	*Plantago lanceolata*				
*	Annual Meadow-grass	*Poa annua s.l.*				
	Common Tussock-grass	*Poa labillardierei*				
*	Onion Grass	*Romulea rosea*				
	Dock	*Rumex* sp.				
	Brown-back Wallaby-grass	*Rytidosperma duttonianum*				
	Wallaby Grass	*Rytidosperma* sp.				
*	Common Sow-thistle	*Sonchus oleraceus*				
*	Rat-tail Grass	*Sporobolus africanus*				
	Kangaroo Grass	*Themeda triandra*				
*	Squirrel-tail Fescue	*Vulpia bromoides*				

Notes: Origin: * = introduced to Victoria; **EPBC =** threatened species status under the EPBC Act (EX = presumed extinct in the wild; CR = critically endangered; EN = endangered; VU = vulnerable); **FFG-T** = listed as threatened (L) under the FFG Act; **FFG-P**: listed as protected (P) under the FFG Act; **CaLP Act**: declared noxious weeds under the CaLP Act [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)].

Appendix 4: Photographs of native vegetation proposed for removal

Highly modified Plains Grassy Woodland vegetation in the south-west quarter of the study area (Habitat Zone O) – facing north-east (27/08/2020)

Highly modified Plains Grassy Woodland vegetation in the south-east quarter of the study area (Habitat Zone R) – facing east (27/08/2020)

Highly modified Plains Grassy Woodland vegetation in the north-east quarter of the study area (Habitat Zone P) – facing south (27/08/2020)

Highly modified Plains Grassy Woodland vegetation in the south-east quarter of the study area (Habitat Zone Q) – facing north (27/08/2020)

Department of Sustainability and Environment

EVC/Bioregion Benchmark for Vegetation Quality Assessment

Gippsland Plain bioregion

EVC 55: Plains Grassy Woodland

Description:
An open, eucalypt woodland to 15 m tall occurring on a number of geologies and soil types. Occupies poorly drained, fertile soils on flat or gently undulating plains at low elevations. The understorey consists of a few sparse shrubs over a species-rich grassy and herbaceous ground layer.

Large trees:

Species	DBH(cm)	#/ha
Eucalyptus spp.	80 cm	10 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
20%	*Eucalyptus tereticornis* ssp. *mediana*	Gippsland Red-gum
	Eucalyptus camaldulensis	River Red-gum

Understorey:

Life form	#Spp	%Cover	LF code
Immature Canopy Tree		5%	IT
Understorey Tree or Large Shrub	1	5%	T
Medium Shrub	2	10%	MS
Small Shrub	1	1%	SS
Prostrate Shrub	1	1%	PS
Large Herb	1	5%	LH
Medium Herb	10	20%	MH
Small or Prostrate Herb	3	5%	SH
Large Tufted Graminoid	2	5%	LTG
Large Non-tufted Graminoid	1	10%	LNG
Medium to Small Tufted Graminoid	9	35%	MTG
Medium to Tiny Non-tufted Graminoid	2	10%	MNG
Bryophytes/Lichens	na	10%	BL

LF Code	Species typical of at least part of EVC range	Common Name
T	*Allocasuarina littoralis*	Black Sheoak
T	*Acacia mearnsii*	Black Wattle
T	*Acacia melanoxylon*	Blackwood
MS	*Kunzea ericoides*	Burgan
SS	*Pimelea humilis*	Common Rice-flower
PS	*Bossiaea prostrata*	Creeping Bossiaea
MH	*Hypericum gramineum*	Small St John's Wort
MH	*Oxalis perennans*	Grassland Wood-sorrel
SH	*Dichondra repens*	Kidney-weed
SH	*Poranthera microphylla*	Small Poranthera
LTG	*Austrostipa rudis*	Veined Spear-grass
LNG	*Gahnia radula*	Thatch Saw-sedge
MTG	*Themeda triandra*	Kangaroo Grass
MTG	*Carex breviculmis*	Common Grass-sedge
MTG	*Lomandra filiformis*	Wattle Mat-rush
MTG	*Schoenus apogon*	Common Bog-sedge
MNG	*Microlaena stipoides* var. *stipoides*	Weeping Grass

Recruitment:
Continuous

Organic Litter:
10 % cover

Logs:
10 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	*Plantago lanceolata*	Ribwort	high	low
MH	*Hypochoeris radicata*	Cat's Ear	high	low
MH	*Centaurium erythraea*	Common Centaury	high	low
LNG	*Holcus lanatus*	Yorkshire Fog	high	high
MTG	*Anthoxanthum odoratum*	Sweet Vernal-grass	high	high
MNG	*Romulea rosea*	Onion Grass	high	low
MNG	*Briza maxima*	Large Quaking-grass	high	low
MNG	*Briza minor*	Lesser Quaking-grass	high	low

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

Department of Sustainability and Environment

EVC/Bioregion Benchmark for Vegetation Quality Assessment

Gippsland Plain bioregion

EVC 53_61: Swamp Scrub

Description:

Closed scrub to 8 m tall at low elevations on alluvial deposits along streams or on poorly drained sites with higher nutrient availability. The EVC is dominated by Swamp Paperbark *Melaleuca ericifolia* (or sometimes Woolly Tea-tree *Leptospermum lanigerum*) which often forms a dense thicket, out-competing other species. Occasional emergent eucalypts may be present. Where light penetrates to ground level, a moss/lichen/liverwort or herbaceous ground cover is often present. Dry variants have a grassy/herbaceous ground layer.

Canopy Cover:

% cover	Character Species	Common Name
50%	*Leptospermum lanigerum*	Woolly Tea-tree
	Melaleuca ericifolia	Swamp Paperbark

Understorey:

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

LF Code	Species typical of at least part of EVC range	Common Name
MS	*Coprosma quadrifida*	Prickly Currant-bush
MS	*Leptospermum continentale*	Prickly Tea-tree
LH	*Lycopus australis*	Australian Gipsywort
LH	*Lythrum salicaria*	Purple Loosestrife
LH	*Persicaria praetermissa*	Spotted Knotweed
MH	*Hydrocotyle pterocarpa*	Wing Pennywort
MH	*Stellaria angustifolia*	Swamp Starwort
MH	*Lobelia anceps*	Angled Lobelia
SH	*Crassula helmsii*	Swamp Crassula
LTG	*Juncus procerus*	Tall Rush
LTG	*Poa labillardierei*	Common Tussock-grass
LNG	*Gahnia radula*	Thatch Saw-sedge
LNG	*Phragmites australis*	Common Reed
LNG	*Baumea rubiginosa* s.l.	Soft Twig-rush
MTG	*Triglochin procerum* s.l.	Water Ribbons
MTG	*Juncus gregiflorus*	Green Rush
MNG	*Eleocharis acuta*	Common Spike-sedge
GF	*Blechnum cartilagineum*	Gristle Fern
SC	*Calystegia sepium*	Large Bindweed

Victoria The Place To Be

Recruitment:
Continuous

Organic Litter:
40 % cover

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MH	*Hypochoeris radicata*	Cat's Ear	high	low
LNG	*Holcus lanatus*	Yorkshire Fog	high	high

Published by the Victorian Government Department of Sustainability and Environment February 2005

EVC/Bioregion Benchmark for Vegetation Quality Assessment

Gippsland Plain bioregion

EVC 53_62: *Estuarine* Swamp Scrub

Description:
Closed scrub to 6 m tall growing on the edge of estuarine waterbodies such as creeks, rivers and lagoons with intermediate salinity and poor drainage conditions. Dominated by Swamp Paperbark *Melaleuca ericifolia* with a halophytic (succulent) ground layer dominated by graminoids and herbs. Often occurs in close association with Estuarine Wetland.

Canopy Cover:

%cover	Character Species	Common Name
50%	*Melaleuca ericifolia*	Swamp Paperbark

Understorey:

Life form	#Spp	%Cover	LF code
Medium Shrub	2	10%	MS
Medium Herb	3	20%	MH
Small or Prostrate Herb	2	5%	SH
Medium to Small Tufted Graminoid	2	10%	MTG
Medium to Tiny Non-tufted Graminoid	2	15%	MNG
Total understorey projective foliage cover		**60%**	

LF Code	Species typical of at least part of EVC range	Common Name
MS	*Rhagodia candolleana* ssp. *candolleana*	Seaberry Saltbush
MS	*Atriplex cinerea*	Coast Saltbush
MH	*Samolus repens*	Creeping Brookweed
MH	*Chenopodium glaucum*	Glaucous Goosefoot
MH	*Sarcocornia quinqueflora*	Beaded Glasswort
SH	*Selliera radicans*	Shiny Swamp-mat
SH	*Apium prostratum* ssp. *prostratum*	Sea Celery
MTG	*Poa poiformis*	Blue Tussock-grass
MTG	*Poa labillardierei*	Common Tussock-grass
MNG	*Ficinia nodosa*	Knobby Club-sedge
MNG	*Distichlis distichophylla*	Australian Salt-grass

Recruitment:
Continuous

Organic Litter:
20 % cover

Logs:
5 m/0.1 ha. (note: large log class does not apply)

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MH	*Hypochoeris radicata*	Cat's Ear	high	low
LNG	*Holcus lanatus*	Yorkshire Fog	high	high

EVC 53_62: *Estuarine* Swamp Scrub - Gippsland Plain bioregion

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

www.dse.vic.gov.au

Native vegetation removal report

This report provides information to support an application to remove, destroy or lop native vegetation in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation*. The report **is not an assessment by DELWP** of the proposed native vegetation removal. Native vegetation information and offset requirements have been determined using spatial data provided by the applicant or their consultant.

Date of issue: **26/10/2021**
Time of issue: **1:27 pm**

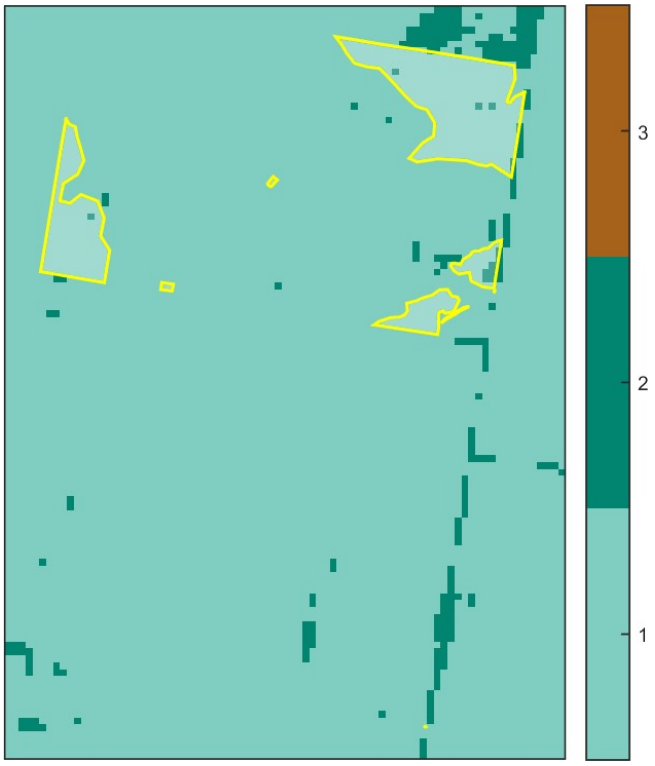
Report ID: NAA_2021_125

Project ID	20138_Solar_Remo_210913

Assessment pathway

Assessment pathway	**Detailed Assessment Pathway**
Extent including past and proposed	27.879 ha
Extent of past removal	0.000 ha
Extent of proposed removal	27.879 ha
No. Large trees proposed to be removed	0
Location category of proposed removal	Location 2 The native vegetation is in an area mapped as an endangered Ecological Vegetation Class (as per the statewide EVC map). Removal of less than 0.5 hectares of native vegetation in this location will not have a significant impact on any habitat for a rare or threatened species.

1. Location map



Offset requirements if a permit is granted

Any approval granted will include a condition to obtain an offset that meets the following requirements:

General offset amount[1]	8.181 general habitat units
Vicinity	West Gippsland Catchment Management Authority (CMA) or Wellington Shire Council
Minimum strategic biodiversity value score[2]	0.373
Large trees	0 large trees

NB: values within tables in this document may not add to the totals shown above due to rounding

Appendix 1 includes information about the native vegetation to be removed

Appendix 2 includes information about the rare or threatened species mapped at the site.

Appendix 3 includes maps showing native vegetation to be removed and extracts of relevant species habitat importance maps

1 The general offset amount required is the sum of all general habitat units in Appendix 1.

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

Next steps

Any proposal to remove native vegetation must meet the application requirements of the Detailed Assessment Pathway and it will be assessed under the Detailed Assessment Pathway.

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

This *Native vegetation removal report* must be submitted with your application for a permit to remove, destroy or lop native vegetation.

Refer to the *Guidelines for the removal, destruction or lopping of native* vegetation (the Guidelines) for a full list of application requirements This report provides information that meets the following application requirements:

- The assessment pathway and reason for the assessment pathway
- A description of the native vegetation to be removed (partly met)
- Maps showing the native vegetation and property (partly met)
- Information about the impacts on rare or threatened species.
- The offset requirements determined in accordance with section 5 of the Guidelines that apply if approval is granted to remove native vegetation.

Additional application requirements must be met including:

- Topographical and land information
- Recent dated photographs
- Details of past native vegetation removal
- An avoid and minimise statement
- A copy of any Property Vegetation Plan that applies
- A defendable space statement as applicable
- A statement about the Native Vegetation Precinct Plan as applicable
- A site assessment report including a habitat hectare assessment of any patches of native vegetation and details of trees
- An offset statement that explains that an offset has been identified and how it will be secured.

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

For more information contact the DELWP Customer Service Centre 136 186

www.delwp.vic.gov.au

Appendix 1: Description of native vegetation to be removed

The species-general offset test was applied to your proposal. This test determines if the proposed removal of native vegetation has a proportional impact on any rare or threatened species habitats above the species offset threshold. The threshold is set at 0.005 per cent of the mapped habitat value for a species. When the proportional impact is above the species offset threshold a species offset is required. This test is done for all species mapped at the site. Multiple species offsets will be required if the species offset threshold is exceeded for multiple species.

Where a zone requires species offset(s), the species habitat units for each species in that zone is calculated by the following equation in accordance with the Guidelines:

Species habitat units = extent x condition x species landscape factor x 2, where the species landscape factor = 0.5 + (habitat importance score/2)

The species offset amount(s) required is the sum of all species habitat units per zone

Where a zone does not require a species offset, the general habitat units in that zone is calculated by the following equation in accordance with the Guidelines:

General habitat units = extent x condition x general landscape factor x 1.5, where the general landscape factor = 0.5 + (strategic biodiversity value score/2)

The general offset amount required is the sum of all general habitat units per zone.

Native vegetation to be removed

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	**Type**	**BioEVC**	**BioEVC conservation status**	**Large tree(s)**	**Partial removal**	**Condition score**	**Polygon Extent**	**Extent without overlap**	**SBV score**	**HI score**	**Habitat units**	**Offset type**
1-O	Patch	gipp0055	Endangered	0	no	0.270	7.476	7.476	0.540		2.332	General
1-P	Patch	gipp0055	Endangered	0	no	0.270	16.316	16.316	0.441		4.761	General
1-Q	Patch	gipp0055	Endangered	0	no	0.250	1.620	1.620	0.418		0.431	General
1-R	Patch	gipp0055	Endangered	0	no	0.250	2.255	2.255	0.434		0.606	General
1-85667	Patch	gipp0074	Endangered	0	no	0.200	0.104	0.104	0.430		0.022	General
1-1	Patch	gipp0055	Endangered	0	no	0.200	0.060	0.060	0.440		0.013	General
1-M	Patch	gipp0053_61	Endangered	0	no	0.300	0.046	0.046	0.450		0.015	General
1-F	Patch	gipp0053_61	Endangered	0	no	0.220	0.001	0.001	0.450		0.000	General
1-AA	Patch	gipp0125	Endangered	0	no	0.260	0.001	0.001	0.840		0.000	General

Appendix 2: Information about impacts to rare or threatened species' habitats on site

This table lists all rare or threatened species' habitats mapped at the site.

Species common name	Species scientific name	Species number	Conservation status	Group	Habitat impacted	% habitat value affected
Rough-grain Love-grass	*Eragrostis trachycarpa*	501197	Rare	Dispersed	Habitat importance map	0.0004
Veiled Fringe-sedge	*Fimbristylis velata*	501369	Rare	Dispersed	Habitat importance map	0.0003
Grey Billy-buttons	*Craspedia canens*	504643	Endangered	Dispersed	Habitat importance map	0.0002
Small Scurf-pea	*Cullen parvum*	502773	Endangered	Dispersed	Habitat importance map	0.0002
Maroon Leek-orchid	*Prasophyllum frenchii*	502709	Endangered	Dispersed	Habitat importance map	0.0002
Wavy Swamp Wallaby-grass	*Amphibromus sinuatus*	503625	Vulnerable	Dispersed	Habitat importance map	0.0001
Matted Flax-lily	*Dianella amoena*	505084	Endangered	Dispersed	Habitat importance map	0.0001
Annual Fireweed	*Senecio glomeratus subsp. longifructus*	507144	Rare	Dispersed	Habitat importance map	0.0001
Leafy Twig-sedge	*Cladium procerum*	500786	Rare	Dispersed	Habitat importance map	0.0001
Purple Blown-grass	*Lachnagrostis punicea subsp. punicea*	504206	Rare	Dispersed	Habitat importance map	0.0001
Pale Swamp Everlasting	*Coronidium gunnianum*	504655	Vulnerable	Dispersed	Habitat importance map	0.0001
Purple Blown-grass	*Lachnagrostis punicea subsp. filifolia*	504222	Rare	Dispersed	Habitat importance map	0.0001
Purple Diuris	*Diuris punctata*	501084	Vulnerable	Dispersed	Habitat importance map	0.0001
Swamp Everlasting	*Xerochrysum palustre*	503763	Vulnerable	Dispersed	Habitat importance map	0.0001
Trailing Hop-bush	*Dodonaea procumbens*	501090	Vulnerable	Dispersed	Habitat importance map	0.0001
Woolly Waterlily	*Philydrum lanuginosum*	502494	Vulnerable	Dispersed	Habitat importance map	0.0001
Growling Grass Frog	*Litoria raniformis*	13207	Endangered	Dispersed	Habitat importance map	0.0001
Lacey River Buttercup	*Ranunculus amplus*	505019	Rare	Dispersed	Habitat importance map	0.0000

Lewin's Rail	*Lewinia pectoralis pectoralis*	10045	Vulnerable	Dispersed	Habitat importance map	0.0000
Salt Lawrencia	*Lawrencia spicata*	501888	Rare	Dispersed	Habitat importance map	0.0000
Silky Kidney-weed	*Dichondra sp. 1*	505786	Rare	Dispersed	Habitat importance map	0.0000
Tall Vanilla-lily	*Arthropodium sp. 1 (robust glaucous)*	503699	Rare	Dispersed	Habitat importance map	0.0000
Forest Bitter-cress	*Cardamine papillata*	505034	Vulnerable	Dispersed	Habitat importance map	0.0000
Lanky Buttons	*Leptorhynchos elongatus*	501941	Endangered	Dispersed	Habitat importance map	0.0000
Spurred Helmet-orchid	*Corybas aconitiflorus*	500835	Rare	Dispersed	Habitat importance map	0.0000
Black Falcon	*Falco subniger*	10238	Vulnerable	Dispersed	Habitat importance map	0.0000
Australian Little Bittern	*Ixobrychus dubius*	10195	Endangered	Dispersed	Habitat importance map	0.0000
Australasian Bittern	*Botaurus poiciloptilus*	10197	Endangered	Dispersed	Habitat importance map	0.0000
Austral Crane's-bill	*Geranium solanderi var. solanderi s.s.*	505337	Vulnerable	Dispersed	Habitat importance map	0.0000
Baillon's Crake	*Porzana pusilla palustris*	10050	Vulnerable	Dispersed	Habitat importance map	0.0000
Australasian Shoveler	*Anas rhynchotis*	10212	Vulnerable	Dispersed	Habitat importance map	0.0000

Habitat group

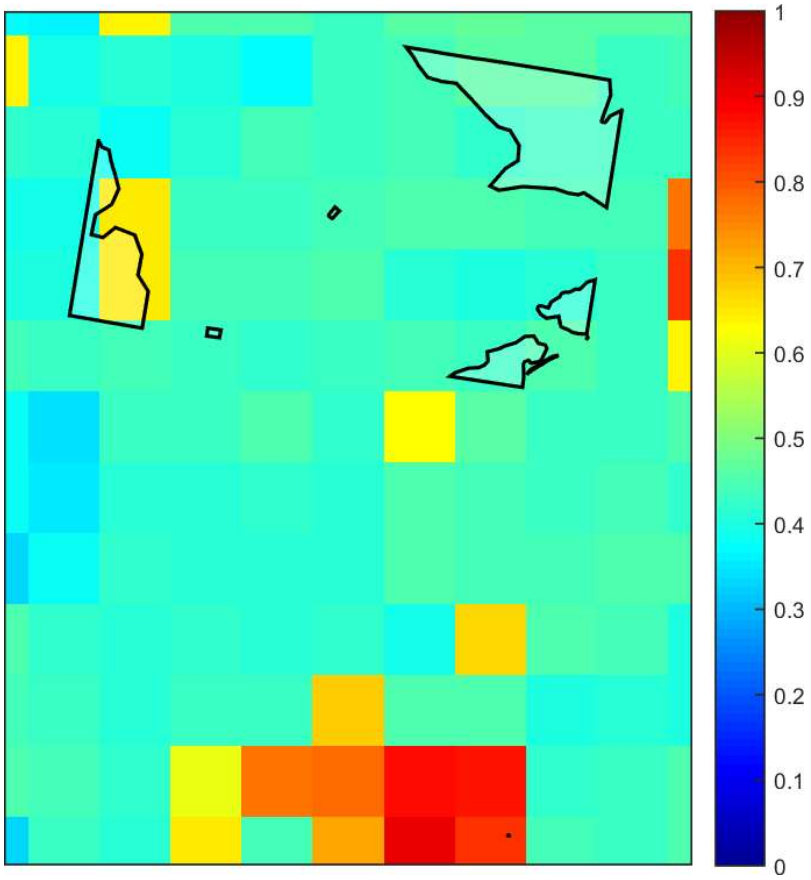
- Highly localised habitat means there is 2000 hectares or less mapped habitat for the species
- Dispersed habitat means there is more than 2000 hectares of mapped habitat for the species

Habitat impacted

- Habitat importance maps are the maps defined in the Guidelines that include all the mapped habitat for a rare or threatened species
- Top ranking maps are the maps defined in the Guidelines that depict the important areas of a dispersed species habitat, developed from the highest habitat importance scores in dispersed species habitat maps and selected VBA records
- Selected VBA record is an area in Victoria that represents a large population, roosting or breeding site etc.

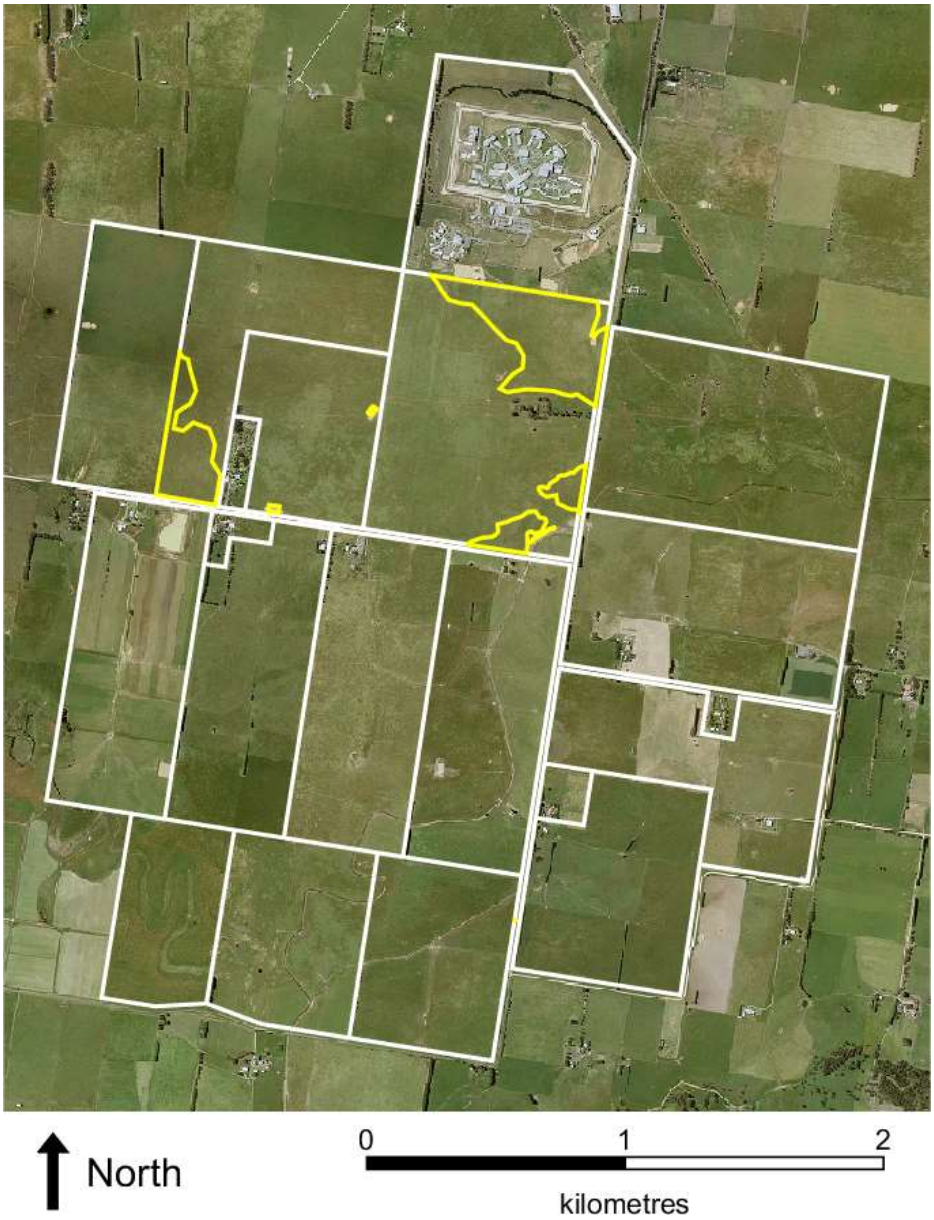
Appendix 3 – Images of mapped native vegetation

2. Strategic biodiversity values map



3. Aerial photograph showing mapped native vegetation

4. Map of the property in context



Yellow boundaries denote areas of proposed native vegetation removal.

Report of available native vegetation credits

This report lists native vegetation credits available to purchase through the Native Vegetation Credit Register.

This report is **not evidence** that an offset has been secured. An offset is only secured when the units have been purchased and allocated to a permit or other approval and an allocated credit extract is provided by the Native Vegetation Credit Register.

Date and time: 10/11/2021 10:18 **Report ID: 11756**

What was searched for?

General offset

General habitat units	Strategic biodiversity value	Large trees	Vicinity (Catchment Management Authority or Municipal district)	
8.181	0.373	0	CMA	West Gippsland
			or LGA	Wellington Shire

Details of available native vegetation credits on 10 November 2021 10:18

These sites meet your requirements for general offsets.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
BBA-0138	24.007	1605	West Gippsland	Wellington Shire	Yes	Yes	No	Ecocentric
BBA-0759	18.868	659	West Gippsland	Wellington Shire	Yes	Yes	No	Contact NVOR
BBA-2623	23.877	873	West Gippsland	Baw Baw Shire	Yes	Yes	No	Contact NVOR
BBA-2751	10.316	0	West Gippsland	Wellington Shire	Yes	Yes	No	Contact NVOR
BBA-2845	27.551	1069	West Gippsland	Baw Baw Shire	Yes	Yes	No	Contact NVOR
BBA-2875	33.209	1055	West Gippsland	Wellington Shire	Yes	Yes	No	Contact NVOR

These sites meet your requirements using alternative arrangements for general offsets.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)

There are no sites listed in the Native Vegetation Credit Register that meet your offset requirements when applying the alternative arrangements as listed in section 11.2 of the Guidelines for the removal, destruction or lopping of native vegetation.

These potential sites are not yet available, land owners may finalise them once a buyer is confirmed.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)

There are no potential sites listed in the Native Vegetation Credit Register that meet your offset requirements.

LT - Large Trees *CMA - Catchment Management Authority* *LGA - Municipal District or Local Government Authority*

Next steps

If applying for approval to remove native vegetation
Attach this report to an application to remove native vegetation as evidence that your offset requirement is currently available.

If you have approval to remove native vegetation
Below are the contact details for all brokers. Contact the broker(s) listed for the credit site(s) that meet your offset requirements. These are shown in the above tables. If more than one broker or site is listed, you should get more than one quote before deciding which offset to secure.

Broker contact details

Broker Abbreviation	Broker Name	Phone	Email	Website
Abezco	Abzeco Pty. Ltd.	(03) 9431 5444	offsets@abzeco.com.au	www.abzeco.com.au
Baw Baw SC	Baw Baw Shire Council	(03) 5624 2411	bawbaw@bawbawshire.vic.gov.au	www.bawbawshire.vic.gov.au
Bio Offsets	Biodiversity Offsets Victoria	0452 161 013	info@offsetsvictoria.com.au	www.offsetsvictoria.com.au
Contact NVOR	Native Vegetation Offset Register	136 186	nativevegetation.offsetregister@delwp.vic.gov.au	www.environment.vic.gov.au/native-vegetation
Ecocentric	Ecocentric Environmental Consulting	0410 564 139	ecocentric@me.com	Not avaliable
Ethos	Ethos NRM Pty Ltd	(03) 5153 0037	offsets@ethosnrm.com.au	www.ethosnrm.com.au
Nillumbik SC	Nillumbik Shire Council	(03) 9433 3316	offsets@nillumbik.vic.gov.au	www.nillumbik.vic.gov.au
TFN	Trust for Nature	8631 5888	offsets@tfn.org.au	www.trustfornature.org.au
VegLink	Vegetation Link Pty Ltd	(03) 8578 4250 or 1300 834 546	offsets@vegetationlink.com.au	www.vegetationlink.com.au
Yarra Ranges SC	Yarra Ranges Shire Council	1300 368 333	biodiversityoffsets@yarraranges.vic.gov.au	www.yarraranges.vic.gov.au

For more information contact the DELWP Customer Service Centre 136 186 or the Native Vegetation Credit Register at nativevegetation.offsetregister@delwp.vic.gov.au

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: 20138 / Date: 26/8/20 Surveyor: VF Bioreg: GP EVC: 55

Can Height 15 / 12 LOT DBH 80 Epis recr _____ Y / N Seas LFs: P/A

HZ: A

WP: TAB

Photo: TAB

NH:

Tenure: PUB

Indigenous			% Cover				Exotic			
Rec	Species	LF	L	M	S/T	P/ misc.	Species	HT	GS	Un C
	Austrostipa sp	TG	-2	-15			Paspalum	/		
	Themeda tri	TG		-↑			Couch			
	Poa sp	TG	-↑	-↑			Cocksfoot	/		
							Sporobolus	/		
							Holcus lan	/		
	Anthosachne saal	NG		-15			Rom ros			
							Kikuyu			
							Cape weed			
							Sonchus oler			
							Hyp rad			
							Phalaris	/		

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes 10 *Woody weeds* ____% Total Weeds 30 %(75 %HT) LOTs 0 (— % health)

Soil Crusts 1 *NonW. weeds* ____% Canopy: Max Height ____ Cover 0 Health — %

Litter (N/E) 40 *GS targ.weeds* ____% Small Logs 0 ____ m

Bare Ground ____ *Annual weeds* ____% Large Logs 0 ____ m ½ LOT DBH

Management notes & onsite threats (OPs only): </>25% per grass weed

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: 20138.1 Date: 26/8/20 Surveyor: VF Bioreg: GP EVC: 55

Can Height 15 / 12 LOT DBH 80 Epis recr _____ Y / N Seas LFs: P/A

HZ: B

WP: TAB

Photo: TAB

NH:

Tenure: PUB

Indigenous			% Cover				Exotic			
Rec	Species	LF	L	M	S/T	P/ misc.	Species	HT	GS	Un C
	Austrostipa sp	TG	-1	-15			As for H2 A			
	Themeda tri	TG		-1						
	Poa lab	TG		-1						
	Lomandra fil	TG		-1						
	Anthosachne scab	NG	-1	-15						
	Acaena	H		-1						

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes 10 *Woody weeds* ____% Total Weeds 30 %(50 %HT) LOTs 0 (— % health)

Soil Crusts 1 *NonW. weeds* ____% Canopy: Max Height ____ Cover 0 Health ____%

Litter (N/E) 40 *GS targ.weeds* ____% Small Logs 0 ____ m

Bare Ground ____ *Annual weeds* ____% Large Logs 0 ____ m ½ LOT DBH

Management notes & onsite threats (OPs only): *</>25% per. grass weed* NOTE SOILS

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: 20138. /Date: 26/8/20 Surveyor: VF Bioreg: GP EVC: 55

Can Height 15 / 12 LOT DBH 80 Epis recr _____ Y / N Seas LFs: P/A

HZ: C

WP: TAB

Photo: TAB

NH:

Tenure: PUB

Indigenous			% Cover				Exotic			
Rec	Species	LF	L	M	S/T	P/ misc.	Species	HT	GS	Un C
	Austrostipa sp	TG	2	15			As for H2 A			
	Themeda tri	TG		+?						
	Poa lab	TG		-?						
	Anthosachne scab	NG	3	15						

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes 10 Woody weeds ____% Total Weeds 30 %(75%HT) LOTs 0 (—% health)

Soil Crusts 1 NonW. weeds ____% Canopy: Max Height ____ Cover 3 Health —%

Litter (N/E) 40 GS targ.weeds ____% Small Logs 0 ____m

Bare Ground ____ Annual weeds ____% Large Logs 0 ____m ½ LOT DBH

Management notes & onsite threats (OPs only): </>25% per grass wood

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: 20138.1 Date: 26/8/20 Surveyor: VF Bioreg: GP EVC: 55

Can Height 15 / 12 LOT DBH ____ Epis recr ____ Y / N Seas LFs: P/A

HZ: D

WP: TAB

Photo: TAB

NH:

Tenure: PUB

Indigenous		LF	% Cover				Exotic			
Rec	Species		L	M	S/T	P/ misc.	Species	HT	GS	Un C
	Austrostipa sp	TG	-2	-10			carch			
	Poa lab	TG		-T			cocksfoot	/		
							Plantago lan			
	Anthosachne scab	NG		-5			Ran ra.s			
							Phalaris	/		
							Sonchus cle			
	Asperula cunn	H		-10	-10		Hyp rad			
	Acaena	H		-T						

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes 10 Woody weeds ____ % Total Weeds 30 %(7&C%HT) LOTs 3 (— % health)

Soil Crusts 1 NonW. weeds ____ % Canopy: Max Height ____ Cover 0 Health — %

Litter (N/E) 30 GS targ.weeds ____ % Small Logs 0 ____ m

Bare Ground ____ Annual weeds ____ % Large Logs 0 ____ m ½ LOT DBH

Management notes & onsite threats (OPs only): </>25% per grass weed NOTE soils

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: 20138.1 Date: 26/8/20 Surveyor: VF Bioreg: GP EVC: 53_61

Can Height 8 / 6 LOT DBH N/A Epis recr _____ Y / N Seas LFs: P/A

HZ: E , F , P

WP: TAB

Photo: TAB

NH:

Tenure: PUB

Indigenous			% Cover				Exotic			
Rec	Species	LF	L	M	S/T	P/ misc.	Species	HT	GS	Un C
	Glycena aus	NG		50			Phalaris	1		
							cocksfoot	1		
							Cape weed			
	Geranium sp	H		4		NOT				
	Acaena	H		1		IN HZ				
						P				

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes 0 *Woody weeds* ____% Total Weeds 5 %(75 %HT) LOTs N/A(___ % health)

Soil Crusts 0 *NonW. weeds* ____% Canopy: Max Height ____ Cover 0 Health ____%

Litter (N/E) S *GS targ.weeds* ____% Small Logs 0 ____m

Bare Ground ____ *Annual weeds* ____% Large Logs 0 ____m ½ LOT DBH

Management notes & onsite threats (OPs only): </>25% per grass weed

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: 20138.1 Date: 26/8/20 Surveyor: V.F Bioreg: GP EVC: 53_61

Can Height 8 / 6 LOT DBH N/A Epis recr _____ Y / N Seas LFs: P/A

HZ: G

WP: TAB

Photo: TAB

NH:

Tenure: PUB

Indigenous			% Cover				Exotic			
Rec	Species	LF	L	M	S/T	P/ misc.	Species	HT	GS	Un C
	Glycenia aus	NG		-30			Phalaris	/		
	Anthosachne scab	NG		-T			cocksfoot	/		
	Austrostipa sp	TG		-25			cape weed			
	Themeda tri	TG		-T			couch			

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes 5 *Woody weeds* ____% Total Weeds 30 %(75%HT) LOTs N/A(—% health)

Soil Crusts 0 *NonW. weeds* ____% Canopy: Max Height ____ Cover N/A Health —%

Litter (M)(E) 20 *GS targ.weeds* ____% Small Logs N/A m

Bare Ground ____ *Annual weeds* ____% Large Logs N/A m ½ LOT DBH

Management notes & onsite threats (OPs only): </>25% per. grass weed NOTE SOILS

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: 20138-1 Date: 26/8/20 Surveyor: V.F Bioreg: GP EVC: 55

Can Height 15 / 12 LOT DBH 80 Epis recr _____ Y / N Seas LFs: P/A

HZ: H

WP: TAB

Photo: TAB

NH:

Tenure: PUB

Indigenous			% Cover				Exotic			
Rec	Species	LF	L	M	S/T	P/ misc.	Species	HT	GS	Un C
	A. meam	S		+	+		Phalaris	✓		
							Couch			
	Austrostipa sp	TG		-15			Holcus lan	✓		
	Themeda tri	TG		-1			Cocksfoot	✓		
							Plantago lan			
	Arthrochne	NG		-5			Hyp rad			
							Ran rep			

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes 0 Woody weeds ____% Total Weeds 35 %(35 %HT) LOTS 0 (— % health)

Soil Crusts 0 NonW. weeds ____% Canopy: Max Height ____ Cover 0 Health ____%

Litter (N/E) 30 GS targ.weeds ____% Small Logs 0 ____ m

Bare Ground ____ Annual weeds ____% Large Logs 0 ____ m ½ LOT DBH

Management notes & onsite threats (OPs only): </>25% per grass weed

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: 20138-/ Date: 26/8/20 Surveyor: VF Bioreg: GP EVC: 55

Can Height 15 / 12 LOT DBH 80 Epis recr_____ Y / N Seas LFs: P/A

HZ: I

WP: TAB

Photo: TAB

NH:

Tenure: PUB

Indigenous		LF	% Cover				Exotic			
Rec	Species		L	M	S/T	P/ misc.	Species	HT	GS	Un C
	Austrostipa sp	TG	-2	-2	5		As for HZ H			
	Ryt sp	TG		-P						
	Acacia mearn	S		-+	-+					
	Acaena	H		-3						
	Rumex	H		-P						

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes 0 *Woody weeds*____% Total Weeds 30 %(75 %HT) LOTs 0 (___% health)

Soil Crusts 0 *NonW. weeds*____% Canopy: Max Height____ Cover____ Health____%

Litter (N/E) 20 *GS targ.weeds*____% Small Logs 0 m

*Bare Ground*____ *Annual weeds*____% Large Logs 0 m ½ LOT DBH

Management notes & onsite threats (OPs only): *</>25% per. grass weed* NOTE SOILS

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: 20138 · 1 Date: 26/8/20 Surveyor: VF Bioreg: GP EVC: 55

Can Height 15 / 12 LOT DBH 80 Epis recr _____ Y / N Seas LFs: P/A

HZ: J

WP: TAB

Photo: TAB

NH:

Tenure: PUB

Indigenous			% Cover				Exotic			
Rec	Species	LF	L	M	S/T	P/ misc.	Species	HT	GS	Un C
	Austrostipa sp	TG	-3	-20			As for H2 H			
	Themeda tri	TG	-T	-T						
	Anthosachne scab	NG		-5						
	Juncus sp	NG		-T						

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes 0 *Woody weeds* ____% Total Weeds 60 %(75 %HT) LOTs 3 (—% health)

Soil Crusts 0 *NonW. weeds* ____% Canopy: Max Height ____ Cover 0 Health —— %

Litter (N/E) 30 *GS targ.weeds* ____% Small Logs 0 ____ m

Bare Ground ____ *Annual weeds* ____% Large Logs 0 ____ m ½ LOT DBH

Management notes & onsite threats (OPs only): </>25% per. grass weed NOTE SOILS

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: 20138 · / Date: 26/8/20 Surveyor: VF Bioreg: GP EVC: 55

Can Height 15 / 12 LOT DBH 80 Epis recr________ Y / N Seas LFs: P/A

HZ: K

WP: TAB

Photo: TAB

NH:

Tenure: PRIV

Indigenous			% Cover				Exotic			
Rec	Species	LF	L	M	S/T	P/ misc.	Species	HT	GS	UnC
	Austrostipa sp	TG	-3	-20			Rom ros		/	
	Ryt sp	TG		-?			Cocksfoot	/		
	Ryt dut	TG		-?			Capeweed			
							Vulpia			
	Juncus sp	NG		-1			Sporobolus	/		
							Lolium			
							African Box-th	/		
							Brown-top Bent			
							Phalaris	/		

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes 0 *Woody weeds*_____% Total Weeds 60 %(750 %HT) LOTs 0 (— % health)

Soil Crusts 0 *NonW. weeds*_____% Canopy: Max Height _______ Cover 0 Health ______%

Litter (N/E) 25 *GS targ.weeds*_____% Small Logs 0 m

*Bare Ground*_____ *Annual weeds*_____% Large Logs 0 m ½ LOT DBH

Management notes & onsite threats (OPs only): *</>25% per. grass weed* *NOTE SOILS*

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: 20138.1 Date: 27/8/20 Surveyor: VF Bioreg: GP EVC: 55

Can Height 15 / 12 LOT DBH 80 Epis recr _____ Y / N Seas LFs: P/A

HZ: L

WP: TAB

Photo: TAB

NH:

Tenure: PRIV

Indigenous			% Cover				Exotic			
Rec	Species	LF	L	M	S/T	P/ misc.	Species	HT	GS	Un C
	Austrostipa sp	TG	4	30			As for HZK			
	Ry+ sp 1	TG		1						
	Ry+ dut+	TG		1						
	Arthrosachne scab	NG	5	8						

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes 0 Woody weeds ____ % Total Weeds 55 %(78 %HT) LOTs 0 (— % health)

Soil Crusts 0 NonW. weeds ____ % Canopy: Max Height ____ Cover 0 Health — %

Litter (N/E) 30 GS targ.weeds ____ % Small Logs 0 ____ m

Bare Ground ____ Annual weeds ____ % Large Logs 0 ____ m ½ LOT DBH

Management notes & onsite threats (OPs only): </> 25% per grass weed

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: 20138.1 Date: 27/8/20 Surveyor: VF Bioreg: GP EVC: 53_61

Can Height 8 / 6 LOT DBH N/A Epis recr _____ Y / N Seas LFs: P/A

HZ: M, N

WP: TAB

Photo: TAB

NH:

Tenure: PRIV

Indigenous			% Cover				Exotic			
Rec	Species	LF	L	M	S/T	P/ misc.	Species	HT	GS	Un C
	Juncus sp	NG		-10			Sparabdus	✓		
							colum	✓		
	Austrostipa sp	TG		-15			Cocksfoot	✓		
	Ryt dutt	TG		-T			Phalaris	✓		
	Lachnagrostis	TG		-T			BTB			
							Cape Weed			
	Lythrum hyssop	H		-1			Ran ros			
							Plantago coron			
							Poa annua			
							Vulpia			

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes 1 *Woody weeds* ____% Total Weeds 30 %(<50 %HT) LOTs N/A % health)

Soil Crusts 0 *NonW. weeds* ____% Canopy: Max Height ____ Cover 0 Health ____%

Litter (N/E) 0 *GS targ.weeds* ____% Small Logs N/A m

Bare Ground ____ *Annual weeds* ____% Large Logs N/A m ½ LOT DBH

Management notes & onsite threats (OPs only): </>25% per. grass weed NOTE SOILS

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: 20138.1 Date: 27/8/20 Surveyor: VF Bioreg: GP EVC: 55

Can Height 15 / 12 LOT DBH 80 Epis recr _____ Y / N Seas LFs: P/A

HZ: 6

WP: TAB

Photo: TAB

NH:

Tenure: PRIV

Indigenous			% Cover				Exotic			
Rec	Species	LF	L	M	S/T	P/ misc.	Species	HT	GS	Un C
	Austrostipa sp	TG		30			Plantago lan			
	Ryt sp 1	TG		T			African Bek-NL	/		
	Ryt duttt	TG		T			BTB	/		
							Cocksfoot	/		
							Phalaris	/		
							Cape Weed			
							Rom ros			
							Vulpia			
							Poa annua			
							Thistle (P)	/		
							Sparabolus	/		

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes 0 *Woody weeds* ____% Total Weeds 40 %(75e%HT) LOTs 0 (~ % health)

Soil Crusts 0 *NonW. weeds* ____% Canopy: Max Height ____ Cover 0 Health ____%

Litter (N/E) 20 *GS targ.weeds* ____% Small Logs 0 ____m

Bare Ground ____ *Annual weeds* ____% Large Logs 0 ____m ½ LOT DBH

Management notes & onsite threats (OPs only): </>25% per grass weed

Habitat Hectare Assessment (GC ≥25 / 3T + C ≥20)

Size ranges: Canopy Tree (5m-min can); Understory Tree/Shrub (1-5m); Mallee (>3m); Epiphyte; Scrambler/Climber; Herb (5-50cm); TGram (10cm-1m); NGram (>/<1m); Misc: Hummock Grass; Ground Fern; Tree Fern. **Can. & LOTs** (<30/30-70/>70). **Weeds** (0/<50/>50). **UnC**=Uncontrollable. **GS**=GSTarg

Job: [illegible] Date: [illegible] Surveyor: Bioreg: EVC:

Can Height ____ /______ LOT DBH ______ Epis recr_________ Y / N Seas LFs: P/A

HZ: [illegible]

WP:

Photo:

NH:

Tenure:

Indigenous		LF	% Cover				Exotic						
Rec	Species		L	M	S/T	P/ misc.		Species			HT	GS	UnC

EPBC Act listed Community:

FFG Act listed Community:

Bryophytes ______ *Woody weeds*_____% Total Weeds______%(%HT) LOTs_____(% health)

Soil Crusts ______ *NonW. weeds* _____% Canopy: Max Height _______ Cover _______ Health _______%

Litter (N/E) ______ *GS targ.weeds* _____% Small Logs ____m

Bare Ground ______ *Annual weeds* _____% Large Logs ____m ½ LOT DBH

Management notes & onsite threats (OPs only): *</>25% per. grass weed* NOTE SOILS

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. HZ A | Location Fulham | Date 26/8/20

Assessor(s) V. Fyfe | Map Name/No. 20138-1 | AMG / MGA

Tenure PUB | EVC 55 - Plains Grassy Woodland | Bioregion Gippsland Plain

'Site Condition Score'

NO LTS

Large Trees — Score: 0

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

NO CANOPY

Tree Canopy Cover — Score: 0

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds — Score: 4

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
iT	— / —	NA / 5	X	NA
T	— / 1	NA / 5	↓	↓
MS	— / 2	NA / 10		
SS	— / 1	NA / 1		
PS	— / 1	NA / 1		
LH	— / 1	NA / 5	✓	✓
MH	— / 10	NA / 20	X	NA
SH	— / 3	NA / 5	X	NA
LTG	2 / 2	2 / 5	✓	X
LNG	— / 1	NA / 10	X	NA
MTG	3 / 9	15 / 35	✓	✓
MNG	1 / 2	15 / 10	✓	X
BL	na / na	10 / 10	✓	X
	/	/		
	/	/		
	/	/	4/13	1/4

Present — For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present') — For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey — Score: 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

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Vegetation Quality Field Assessment Sheet

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Recruitment

Score 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

° treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	N/A
number of woody spp. in EVC benchmark (SS and taller)	5

NO LOGS

Logs

Score 0

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score 3

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Patch Size

Score 8

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score 3

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score 2

Radius from site	% Native vegetation*	Weighting	
100 m	40	0.03	1.2
1 km	40	0.04	1.6
5 km	40	0.03	1.2
	subtract 2 if the neighbourhood is 'significantly disturbed'		4.0
		Add Values and 'round-off'	2

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

Component	'Site Condition Score'							'Landscape Context Score'			Total
	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	100
Score	0	0	4	5	0	3	0	8	2	3	25

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. H2 B | Location Fulham 20138.1 | Date 26/8/20

Assessor(s) V. Fyfe | Map Name/No. | AMG / MGA

Tenure PUB | EVC Plains Grassy Woodland - 55. | Bioregion Gippsland Plain

'Site Condition Score'

Large Trees — Score: 0

Category & Description	% Canopy Health* > 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

NO CANOPY

Tree Canopy Cover — Score: 0

Category & Description	% Canopy Health * > 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds — Score: 4

Category & Description	'high threat' weeds* None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
LT	— / 1 / —	NA / 5	X	NA
T	— / 1 / 1	NA / 5	↓	↓
MS	— / 1 / 2	1 / 10	↓	↓
SS	— / 1 / 1	1 / 1	↓	↓
PS	— / 1 / 1	1 / 1	↓	↓
LH	— / 1 / 1	↓ / 5	↓	↓
MH	1 / 1 / 10	1 / 1 / 20	X	NA
SH	— / 1 / 3	— / 1 / 5	X	NA
LTG	1 / 1 / 2	1 / 1 / 5	✓	X
LNG	1 / 1 / 1	1 / 1 / 10	✓	✓
MTG	4 / 1 / 9	15 / 1 / 35	✓	✓
MNG	1 / 1 / 2	15 / 1 / 10	✓	X
BL	nq / 1 / nq	101 / 1 / 10	✓	X
	/ 1 /	/ 1 /		
	/ 1 /	/ 1 /		
	/ 1 /	/ 1 /	5/13	2/5

Present — For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey — Score: 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

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Recruitment — Score: 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

° treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment
Eucalypt canopy (combined species)	(✓) N/A
number of woody spp. in EVC benchmark (SS and taller)	5

Logs — Score: 0

No LOGS

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

Organic Litter — Score: 3

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Patch Size — Score: 8

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area — Score: 3

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood — Score: 3

Radius from site	% Native vegetation *	Weighting	
100 m	60	0.03	1.8
1 km	40	0.04	1.6
5 km	40	0.03	1.2
	subtract 2 if the neighbourhood is 'significantly disturbed'		4.6-2
		Add Values and 'round-off'	3

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

	'Site Condition Score'							'Landscape Context Score'			
Component	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	Total
											100
Score	0	0	4	5	0	3	0	8	3	3	26

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. HZ C | Location Fulham 20138.1 | Date 26/8/20

Assessor(s) V. Fyfe | Map Name/No. | AMG / MGA

Tenure PUB | EVC 55 – Plains Grassy Woodland | Bioregion Gippsland Plain

'Site Condition Score'

NO LT'S

Large Trees — Score: 0

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

NO CANOPY

Tree Canopy Cover — Score: 0

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds — Score: 4

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
LT	– 1 –	NA 5	X	NA
T	– 1 1	1 5	↓	↓
M.S	– 1 2	1 10		
SS	– 1 1	1 1		
PS	– 1 1	1 1		
LH	– 1 1	1 5		
MH	– 1 10	1 20		
SH	– 1 3	V1 5	✓	✓
LTG	1 1 2	2 5	✓	X
LNG	1 1 1	3 10	✓	✓
MTG	3 1 9	15 35	✓	✓
MNG	1 1 2	15 10	✓	X
BL	ng ng	101 10	✓	X
	/	/		
	/	/		
	/	/	5/13	2/5

Present — For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present') — For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey — Score: 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

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Vegetation Quality Field Assessment Sheet

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Recruitment

Score: 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

° treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	N/A
number of woody spp. in EVC benchmark (SS and taller)	5

Logs

NO LOGS

Score: 0

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score: 3

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Patch Size

Score: 8

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score: 3

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score: 2

Radius from site	% Native vegetation *	Weighting	
100 m	40	0.03	1.2
1 km	40	0.04	1.6
5 km	40	0.03	1.2
	subtract 2 if the neighbourhood is 'significantly disturbed'		4.0
		Add Values and 'round-off'	20

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

	'Site Condition Score'							'Landscape Context Score'			
Component	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	Total
Score	0	0	4	5	0	3	0	8	2	3	25

Vegetation Quality Field Assessment Sheet

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Department of Sustainability and Environment

Site Name/No. H2 D | Location Fulham 20138.1 | Date 26/8/20

Assessor(s) V. Fyfe | Map Name/No. | AMG / MGA

Tenure PUB | EVC SS - Plains Grassy Woodland | Bioregion Gippsland Plain

'Site Condition Score'

NO LT'S

Large Trees — Score: 0

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

NO CANOPY

Tree Canopy Cover — Score: 0

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds — Score: 4

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	(4)
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
IT	— / 1 / —	NA / 1 / 5	X	NA
T	— / 1 / 1	NA / 1 / 5	↓	↓
MS	— / 1 / 2	— / 1 / 10		
SS	— / 1 / 1	— / 1 / 1		
PS	— / 1 / 1	— / 1 / 1		
LH	— / 1 / 1	✓ / 1 / 5	✓	✓
MH	2 / 1 / 10	10 / 1 / 20	✓	✓
SH	1 / 1 / 3	10 / 1 / 5	✓	X
LIG	1 / 1 / 2	2 / 1 / 5	✓	X
LNG	— / 1 / 1	— / 1 / 10	X	NA
MTG	2 / 1 / 9	10 / 1 / 35	✓	✓
MNG	1 / 1 / 2	5 / 1 / 10	✓	X
BL	na / 1 / na	10 / 1 / 10	✓	X
	/ 1 /	/ 1 /		
	/ 1 /	/ 1 /		
	/ 1 /	/ 1 /	6/13	2/6

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey — Score: 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		(5)
~~≥ 50%~~ to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

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Vegetation Quality Field Assessment Sheet

Version 1.3 October 2004

Recruitment

Score: 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

° treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	N/A
number of woody spp. in EVC benchmark (SS and taller)	5

Logs

NO LOGS

Score: 0

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score: 5

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Patch Size

Score: 1

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score: 3

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
~~1 to 5 km~~	~~2~~	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score: 3

Radius from site	% Native vegetation *	Weighting	
100 m	60	0.03	1.8
1 km	40	0.04	1.6
5 km	40	0.03	1.2
	subtract 2 if the neighbourhood is 'significantly disturbed'		4.6
		Add Values and 'round-off'	5

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

	'Site Condition Score'							'Landscape Context Score'			
Component	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	Total
Score	0	0	4	5	0	5	0	1	3	3	21
											100

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. H2's E, F & P Location Fulham 20138.1 Date 26/8/20

Assessor(s) V. Fyfe Map Name/No. ..... AMG / MGA .....

Tenure PUB - E&F PRIV - P EVC 53_61 - Swamp Scrub Bioregion Gippsland Plain

'Site Condition Score'

N/A

Large Trees — Score: N/A

Category & Description	% Canopy Health* > 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

NO CANOPY

Tree Canopy Cover — Score: 0

Category & Description	% Canopy Health * > 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds — Score: 7

Category & Description	'high threat' weeds* None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	(7)
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
MS	– / 12	NA / 10	X	NA
SS	– / 12	NA / 1	X	NA
LH	– / 12	NA / 5	X	NA
MH	2 / 13	4 / 15	✓	✓
SH	– / 12	NA / 5	X	NA
LTG	– / 12	/ 10	↓	↓
LNG	– / 13	/ 10	↓	↓
MTG	– / 12	/ 5	↓	↓
MNG	/ 12	50 / 15	✓	X
GF	– / 1	NA / 5	X	NA
SC	– / 1	NA / 1	X	NA
BL	na / na	– / 20	X	NA
	/	/		
	/	/		
	/	/		
	/	/	2/12	1/2

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey — Score: 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		(5)
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

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The Place To Be

Vegetation Quality Field Assessment Sheet

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Recruitment

Score: 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

° treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	N/A
number of woody spp. in EVC benchmark (SS and taller)	4

N/A

Logs

Score: N/A

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score: 2

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Patch Size

Score: 8

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score: 3

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score: 3

Radius from site	% Native vegetation *	Weighting	
100 m	60	0.03	1.8
1 km	40	0.04	1.6
5 km	40	0.03	1.2
	subtract 2 if the neighbourhood is 'significantly disturbed'		4.6
		Add Values and 'round-off'	5

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

Component	'Site Condition Score'							'Landscape Context Score'			Total
	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	100
Score	N/A	0	7	5	0	2	N/A	8	3	3	30

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. H2 G | Location Fulham 20138-1 | Date 26/8/20

Assessor(s) V. Fyfe | Map Name/No. | AMG / MGA

Tenure PUB | EVC 53_61 - Swamp Scrub | Bioregion Gippsland Plain

'Site Condition Score'

Large Trees

N/A

Score N/A

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

NO CANOPY

Tree Canopy Cover

Score 0

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds

Score 4

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	(4)
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
MS	1 / 2	NA / 10	X	NA
SS	1 / 2	1 / 1	✓	
LH	1 / 2	1 / 5	✓	
MH	1 / 3	1 / 15	✓	
SH	1 / 2	1 / 5	✓	
LG	1 / 2	1 / 10	X	
LNG	1 / 3	✓ / 10	X	✓
MG	2 / 2	25 / 5	✓	X
MNG	2 / 2	30 / 15	✓	X
GF	1 / 1	NA / 5	X	NA
SC	1 / 1	NA / 1	X	NA
BL	na / na	5 / 20	✓	✓
	/	/		
	/	/		
	/	/		
	/	/	3/12	1/3

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey

Score 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		(5)
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

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Vegetation Quality Field Assessment Sheet

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Recruitment

Score: 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

° treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	N/A
number of woody spp. in EVC benchmark (SS and taller)	4

Logs

N/A

Score: N/A

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score: 4

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Patch Size

Score: 8

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score: 3

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score: 3

Radius from site	% Native vegetation *	Weighting	
100 m	60	0.03	1.8
1 km	40	0.04	1.6
5 km	40	0.03	1.2
subtract 2 if the neighbourhood is 'significantly disturbed'			4.6-2
		Add Values and 'round-off'	3

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

Component	'Site Condition Score'							'Landscape Context Score'			Total
	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	100
Score	N/A	0	4	5	0	4	N/A	8	3	3	29

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. HZ H | Location Fulham 20138.1 | Date 26/8/20

Assessor(s) V. Fyfe | Map Name/No. | AMG / MGA

Tenure PUB | EVC 55 – Plains Grassy Woodland | Bioregion Gippsland Plain

'Site Condition Score'

Large Trees

No LTS

Score 0

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Tree Canopy Cover

NO CANOPY

Score 0

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds

Score 4

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	(4)
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
LT	– / 1 / –	NA / 5	X	NA
T	– / 1 / 1	NA / 5	↓	↓
MS	1 / 1 / 2	+ / 1 / 10	↓	↓
SS	1 / 1 / 1	+ / 1 / 1	✓	X
PS	– / 1 / 1	NA / 1	X	NA
LH	– / 1 / 1	↓ / 1 / 5	↓	↓
MH	– / 1 / 10	↓ / 1 / 20	↓	↓
SH	– / 1 / 3	↓ / 1 / 5	↓	↓
LG	– / 1 / 2	NA / 1 / 5	↓	↓
LNG	– / 1 / 1	NA / 1 / 10	✓	✓
MTG	2 / 1 / 9	15 / 1 / 35	✓	✓
MNG	1 / 1 / 2	5 / 1 / 10	✓	X
BL	na / 1 / na	– / 1 / 10	X	NA
	/ 1 /	/ 1 /		
	/ 1 /	/ 1 /		
	/ 1 /	/ 1 /	3/13	1/3

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey

Score 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		(5)
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

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Vegetation Quality Field Assessment Sheet

Version 1.3 October 2004

Recruitment

Score 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

° treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	N/A
number of woody spp. in EVC benchmark (SS and taller)	5

Logs

NO LOGS

Score 0

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score 4

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Patch Size

Score 8

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score 3

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
~~1 to 5 km~~	~~2~~	~~1~~
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score 3

Radius from site	% Native vegetation*	Weighting	
100 m	60	0.03	1.8
1 km	40	0.04	1.6
5 km	40	0.03	1.2
	subtract 2 if the neighbourhood is 'significantly disturbed'		4.6
		Add Values and 'round-off'	35

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

Component	'Site Condition Score'							'Landscape Context Score'			Total
	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	100
Score	0	0	4	5	0	4	0	8	3	3	27

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. H2 T | Location Fulham 20138.1 | Date 26/8/20

Assessor(s) V. Fyfe | Map Name/No. | AMG / MGA

Tenure PUB | EVC 55 – Plains Grassy Woodland | Bioregion Gippsland Plain

'Site Condition Score'

Large Trees

No LT'S

Score 0

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

NO CANOPY

Tree Canopy Cover

Score 0

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds

Score 4

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
iT	– / 1 / –	NA / 5	X	NA
T	– / 1 / 1	NA / 5	X	NA
MS	1 / 1 / 2	+ / 10	X	NA
SS	1 / 1 / 1	+ / 1	✓	X
PS	– / 1 / 1	NA / 1	X	NA
LH	– / 1 / 1	NA / 5	X	NA
MH	2 / 1 / 10	3 / 1 / 20	✓	✓
SH	– / 1 / 3	NA / 5	X	NA
LTG	1 / 1 / 2	2 / 1 / 5	✓	X
LNG	– / 1 / 1	NA / 10	X	NA
MTG	2 / 1 / 9	2 / 5 / 35	✓	✓
MNG	– / 1 / 2	NA / 10	X	NA
BL	na / na / na	– / 1 / 10	X	NA
	/ /	/ /		
	/ /	/ /		
	/ /	/ /	4/13	2/4

Present — For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present') — For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey

Score 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

Victoria
The Place To Be

Vegetation Quality Field Assessment Sheet

Version 1.3 October 2004

Recruitment

Score 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

° treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	N/A
number of woody spp. in EVC benchmark (SS and taller)	5

Logs

NO LOGS

Score 0

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score 4

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Patch Size

Score 8

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score 3

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score 3

Radius from site	% Native vegetation*	Weighting	
100 m	60	0.03	1.8
1 km	40	0.04	1.6
5 km	40	0.03	1.2
	subtract 2 if the neighbourhood is 'significantly disturbed'		4.6
		Add Values and 'round-off'	5

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

Component	'Site Condition Score'							'Landscape Context Score'			Total
	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	100
Score	0	0	4	5	0	4	0	8	3	3	27

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. HZ J Location Fulham Date 26/8/20

Assessor(s) V. Tyfe Map Name/No. 20138-1 AMG / MGA

Tenure PUB EVC 55 - Plains Grassy Woodland Bioregion Gippsland Plain

'Site Condition Score'

No LTS

Large Trees Score: 0

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

NO CANOPY

Tree Canopy Cover Score: 0

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds Score: 0

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
IT	— / 1 / —	NA / 5	X	NA
T	— / 1 / 1	NA / 5	X	NA
MS	— / 1 / 2	1 / 10	✓	✓
SS	— / 1 / 1	1 / 1		
PS	— / 1 / 1	1 / 1		
LH	— / 1 / 1	1 / 5		
MH	— / 1 / 10	1 / 20		
SH	— / 1 / 3	✓ / 1 / 5	✓	✓
GG	2 / 1 / 2	3 / 1 / 5	✓	X
LNG	— / 1 / 1	NA / 1 / 10	X	NA
MTG	2 / 1 / 9	20 / 1 / 35	✓	✓
MNG	2 / 1 / 2	5 / 1 / 10	✓	X
BL	na / 1 / na	— / 1 / 10	X	NA
	/ 1 /	/ 1 /		
	/ 1 /	/ 1 /		
	/ 1 /	/ 1 /	3/13	1/3

Present

For life forms with benchmark cover of <10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey Score: 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

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Vegetation Quality Field Assessment Sheet

Version 1.3 October 2004

Recruitment

Score: 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

° treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment
Eucalypt canopy (combined species)	(✓) N/A
number of woody spp. in EVC benchmark (SS and taller)	5

Logs

NO LOGS

Score: 0

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score: 5

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Patch Size

Score: 8

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score: 3

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score: 5

Radius from site	% Native vegetation *	Weighting	
100 m	60	0.03	1.8
1 km	40	0.04	1.6
5 km	40	0.03	1.2
	subtract 2 if the neighbourhood is 'significantly disturbed'		4.6
		Add Values and 'round-off'	5

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

Component	'Site Condition Score'							'Landscape Context Score'			Total
	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	100
Score	0	0	0	5	0	5	0	8	3	3	24

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. HZ K | Location Fulham | Date 26/8/20

Assessor(s) V. Fyfe | Map Name/No. 2e138.1 | AMG / MGA

Tenure PRIV | EVC 55 - Plains Grassy Woodland | Bioregion Gippsland Plain

'Site Condition Score'

Large Trees

NO LT'S

Score 0

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Tree Canopy Cover

NO CANOPY

Score 0

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds

Score 0

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
IT	— / 1	~~NA~~ / 5	X	NA
T	— / 1	NA / 5	↓	↓
MS	— / 2	1 / 10	↓	↓
SS	— / 1	1 / 1	↓	↓
PS	— / 1	1 / 1	↓	↓
LH	— / 1	1 / 5	↓	↓
MH	— / 10	1 / 20	↓	↓
SH	— / 3	✓ / 5	✓	✓
LTG	1 / 2	3 / 5	✓	X
LNG	— / 1	NA / 10	X	NA
MTG	3 / 9	20 / 35	✓	✓
MNG	1 / 2	1 / 10	✓	✓
BC	none	— / 10	X	NA
	/	/		
	/	/		
	/	/	3/13	2/3

Present — For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present') — For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey

Score 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

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Vegetation Quality Field Assessment Sheet

Version 1.3 October 2004

Recruitment

Score 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

° treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment
Eucalypt canopy (combined species)	N/A (✓)
number of woody spp. in EVC benchmark (SS and taller)	5

Logs

NO LOGS

Score 0

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score 5

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Patch Size

Score 8

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score 3

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
~~1 to 5 km~~	~~2~~	~~1~~
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score 4

Radius from site	% Native vegetation *	Weighting	
100 m	100	0.03	3
1 km	40	0.04	1.6
5 km	40	0.03	1.2
	subtract 2 if the neighbourhood is 'significantly disturbed'		5.8
		Add Values and 'round-off'	6

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

Component	'Site Condition Score'							'Landscape Context Score'			Total
	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	100
Score	0	0	0	5	0	5	0	8	4	3	25

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. H2 L Location Fulham 20138.1 Date 26/8/20

Assessor(s) V. Fyfe Map Name/No. ..... AMG / MGA .....

Tenure PRIV EVC 55 - Plains Grassy Woodland Bioregion Gippsland Plain

'Site Condition Score'

Large Trees

NO LTS

Score 0

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Tree Canopy Cover

NO CANOPY

Score 0

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds

Score 0

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
IT	— / 1	NA / 5	X	NA
T	— / 1	NA / 5	↓	↓
MS	— / 2	1 / 10		
SS	— / 1	1 / 1		
PS	— / 1	1 / 1		
LH	— / 1	1 / 5		
MH	— / 10	1 / 20		
SH	— / 3	V / 5		
LTG	1 / 2	4 / 5	✓	X
LNG	1 / 1	5 / 10	✓	X
MTG	3 / 9	30 / 35	✓	✓
MNG	1 / 2	8 / 10	✓	X
BL	native	— / 10	X	NA
	/	/		
	/	/		
	/	/	4/13	1/4

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey

Score 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

Victoria The Place To Be

Vegetation Quality Field Assessment Sheet

Version 1.3 October 2004

Recruitment

Score 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

° treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	N/A
number of woody spp. in EVC benchmark (SS and taller)	5

Logs

NO LOGS

Score 0

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score 5

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Patch Size

Score 8

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score 4

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score 5

Radius from site	% Native vegetation *	Weighting	
100 m	100	0.03	3.0
1 km	60	0.04	2.4
5 km	40	0.03	1.2
	subtract 2 if the neighbourhood is 'significantly disturbed'		6.6
		Add Values and 'round-off'	7

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

Component	'Site Condition Score'							'Landscape Context Score'			Total
	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	100
Score	0	0	0	5	0	5	0	8	5	4	27

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. H2S M&N Location Fulham Date 26/8/20

Assessor(s) V. Fyfe Map Name/No. 20138.1 AMG / MGA

Tenure PRIV EVC 53_61 - Swamp Scrub Bioregion Gippsland Plain

'Site Condition Score'

Large Trees

N/A **Score** N/A

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

NO CANOPY

Tree Canopy Cover

Score 0

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds

Score 6

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
MS	1 / 2	NA / 10	X	NA
SS	1 / 2	NA / 1	↓	↓
LH	1 / 2	NA / 5		
MH	1 / 3	1 / 15		
SH	1 / 2	NA / 5		
LG	1 / 2	NA / 10		
CNG	1 / 5	NA / 10	✓	✓
MTG	3 / 2	15 / 5	✓	X
MNG	1 / 2	10 / 15	✓	X
GF	1 / 1	NA / 5	X	NA
SC	1 / 1	NA / 1	X	NA
BC	na / na	1 / 20	X	NA
	/	/		
	/	/		
	/	/		
	/	/	2/12	0/2

Present

For life forms with benchmark cover of <10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey

Score 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

Victoria The Place To Be

Vegetation Quality Field Assessment Sheet

Version 1.3 October 2004

Recruitment

Score: 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

° treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	N/A
number of woody spp. in EVC benchmark (SS and taller)	5

Logs

N/A

Score: N/A

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

NO LITTER

Score: 0

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Patch Size

Score: 8

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score: 3

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score: 4

Radius from site	% Native vegetation*	Weighting	
100 m	100	0.03	3.0
1 km	40	0.04	1.6
5 km	40	0.03	1.2
subtract 2 if the neighbourhood is 'significantly disturbed'			5.8
		Add Values and 'round-off'	6 → 4

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

	'Site Condition Score'							'Landscape Context Score'			
Component	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	**Total**
Score	N/A	0	6	5	0	0	N/A	8	4	3	**28**

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. H2 O Location Fulham Date 26/8/20

Assessor(s) V. Fyfe Map Name/No. ..... AMG / MGA .....

Tenure PRIV EVC 55 - Plains Grassy Woodland Bioregion Gippsland Plain

'Site Condition Score'

Large Trees

NO LT'S

Score 0

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Tree Canopy Cover

NO CANOPY

Score 0

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds

Score 4

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	(4)
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
LT	— / 1 / —	NA / 5	X	NA
T	— / 1 / 1	NA / 5		
MS	— / 1 / 2	1 / 10		
SS	— / 1 / 1	1 / 1		
PS	— / 1 / 1	1 / 1		
LH	— / 1 / 1	1 / 5		
MH	— / 1 / 10	1 / 20		
SH	— / 1 / 3	1 / 5		
LTG	— / 1 / 2	1 / 5		
LNG	— / 1 / 1	1 / 10	✓	✓
MTG	3 / 1 / 9	30 / 35	✓	✓
MNG	— / 1 / 2	NA / 10	X	NA
BC	na / na	— / 10	X	NA
	/	/		
	/	/		
	/	/	1/13	1/1

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey

Score 5

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		(5)
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

Victoria
The Place To Be

Vegetation Quality Field Assessment Sheet

Version 1.3 October 2004

Recruitment

Score: 0

Category & Description			High diversity*°	Low diversity*°
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment°	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

° treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	N/A
number of woody spp. in EVC benchmark (SS and taller)	5

Logs

NO LOGS

Score: 0

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

Organic Litter

Score: 5

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

'Landscape Context Score'

Score: 3

Patch Size

Score: 8

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area

Score: 3

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood

Score: 3

Radius from site	% Native vegetation *	Weighting	
100 m	60	0.03	1.8
1 km	40	0.04	1.6
5 km	40	0.03	1.2
	subtract 2 if the neighbourhood is 'significantly disturbed'		4.6
		Add Values and 'round-off'	5

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

	'Site Condition Score'							'Landscape Context Score'			
Component	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	Total
Score	0	0	4	5	0	5	0	8	3	3	28
											100