Youth Justice Redevelopment Project:

Spiny Rice-flower survey and updated vegetation assessment

FINAL REPORT

Prepared for Department of Justice and Regulation

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Summary

Biosis Pty Ltd was commissioned by the Victorian Government Department of Justice and Regulation (DJR) to undertake the following tasks in relation to the Youth Justice Redevelopment Project (YJRP) at Cherry Creek, Victoria:

- Targeted survey for Spiny Rice-flower *Pimelea spinescens* subsp. *spinescens* (critically endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)) over the proposed impact area for the Youth Justice Centre (YJC).
- Native vegetation assessment of a revised access road alignment within the proposed impact area.

A preliminary ecological assessment of the broader study area was previously undertaken by Ecology and Heritage Partners Pty Ltd (EHP 2017).

Ecological values

The key ecological value within the impact area is 29.274 hectares of native vegetation, including 29.187 hectares of EPBC Act listed Natural Temperate Grassland of the Victorian Volcanic Plain (critically endangered) and potential habitat for a number of EPBC Act listed threatened species, including Golden Sun Moth *Synemon plana* (critically endangered), Striped Legless Lizard *Delmar impar* (vulnerable), Button Wrinklewort *Rutidosis leptorhynchoides* (endangered), Clover Glycine *Glycine latrobeana* (vulnerable), Large-headed Fireweed *Senecio macrocarpus* (vulnerable) and Matted Flax-lily *Dianella amoena* (endangered). Targeted surveys for these species will be commencing soon. Targeted surveys for Spiny Rice-flower did not detect the species within the impact area.

Government legislation and policy

The revised impact area (with a revised access road alignment) has resulted in changes to impacts on native vegetation. Based on the current design, the proposed development will require the removal of 29.274 hectares of native vegetation, with a strategic biodiversity score of 0.694, from within location risk C. Under the Victorian Biodiversity Assessment Guidelines, the planning permit application for removal of this native vegetation will be assessed on the high risk-based pathway.

Both State and Commonwealth offsets would be required to compensate for loss of the native vegetation. State offsets would comprise a general offset of 4.840 general biodiversity equivalence units (GBEUs), sourced from within the Port Phillip and Westernport Catchment Management Authority (CMA) region and specific offsets (specific biodiversity equivalence units or SBEUs) sourced from anywhere in Victoria for Red-chested Button-quail (11.294 SBEUs), Striped Legless Lizard (14.996 SBEUs), Large-headed Fireweed (12.914 SBEUs) and Pale Swamp Everlasting (14.427 SBEUs).

Commonwealth offsets will need to be secured for removal of Natural Temperate Grassland of the Victorian Volcanic Plain and, depending on the outcome of upcoming targeted surveys, for removal of habitat for EPBC Act listed threatened species.

Recommendations

Targeted surveys for Striped Legless Lizard are currently underway. Proposed targeted surveys for Golden Sun Moth, Button Wrinklewort, Clover Glycine, Large-headed Fireweed and Matted Flax-lily in spring and/or summer will still be required to determine the full impacts of the project and offset requirements arising from these impacts.

1. Introduction

1.1 Project background

Biosis Pty Ltd was commissioned by the Victorian Government Department of Justice and Regulation (DJR) to undertake targeted survey for Spiny Rice-flower *Pimelea spinescens* subsp. *spinescens* for the Youth Justice Redevelopment Project (YJRP) at Cherry Creek, Victoria, and to assess native vegetation for a revised alignment for an access road associated with the YJRP. The YJRP will involve the construction of a 224-bed Youth Justice Centre (YJC) and an access road, in order to link the proposed YJC to existing road infrastructure. The Spiny Rice-flower is listed as critically endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and is listed as threatened in Victoria under the *Flora and Fauna Guarantee Act 1988* (FFG Act).

The current assessment follows on from a preliminary ecological assessment undertaken for the broader study area in May 2017 (EHP 2017), which identified potential habitat for Spiny Rice-flower, along with a number of additional species listed as threatened under the EPBC Act, including Striped Legless Lizard *Delma impar*, Golden Sun Moth *Synemon plana*, Button Wrinklewort *Rutidosis leptorhynchoides*, Clover Glycine *Glycine latrobeana*, Large-headed Fireweed *Senecio macrocarpus* and Matted Flax-lily *Dianella amoena.* These species will be subject to targeted surveys in spring and summer 2017 to determine whether they are present within the proposed impact area.

Since the preliminary ecological assessment was undertaken, the location of the proposed access road has been updated to avoid an existing gas easement. The current assessment therefore also incorporates an assessment of the native vegetation within the new access road alignment, in order to update the native vegetation mapping and offset requirements associated with the proposed YJRP impact area.

1.2 Scope of assessment

The objectives of this investigation are to:

- Undertake targeted survey for Spiny Rice-flower to determine whether the species is present within the proposed YJRP impact area.
- Map native vegetation within the new access road alignment.
- Conduct a vegetation quality assessment of native vegetation within the new access road alignment.
- Produce updated mapping showing the extent of all native vegetation within the proposed YJRP impact area.
- Determine whether any native vegetation mapped within the new access road alignment corresponds to any EPBC Act listed ecological communities.
- Provide updated area calculations for impacts to native vegetation to determine the likely offset requirements in accordance with Victoria's Biodiversity Assessment Guidelines ('the Guidelines').

1.3 Location of the study area

The broader study area is located at Cherry Creek, approximately 10 kilometres south-west of Werribee, Victoria (Figure 1). It encompasses an area of land that currently forms part of Melbourne Water's Western Treatment Plant. The area of land being acquired from Melbourne Water for the project is approximately 75

hectares (referred to as the broader study area), with a proposed impact area of 37 hectares to facilitate the construction of the YJC and access road. The proposed impact area has been positioned in the southern section of the study area to minimise impacts to higher quality areas of native grassland vegetation (EHP 2017).

The study area is within the:

- Victorian Volcanic Plain bioregion
- Management area of Melbourne Water and the Port Phillip and Westernport Catchment Management Authority (CMA)
- City of Wyndham
- Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site.

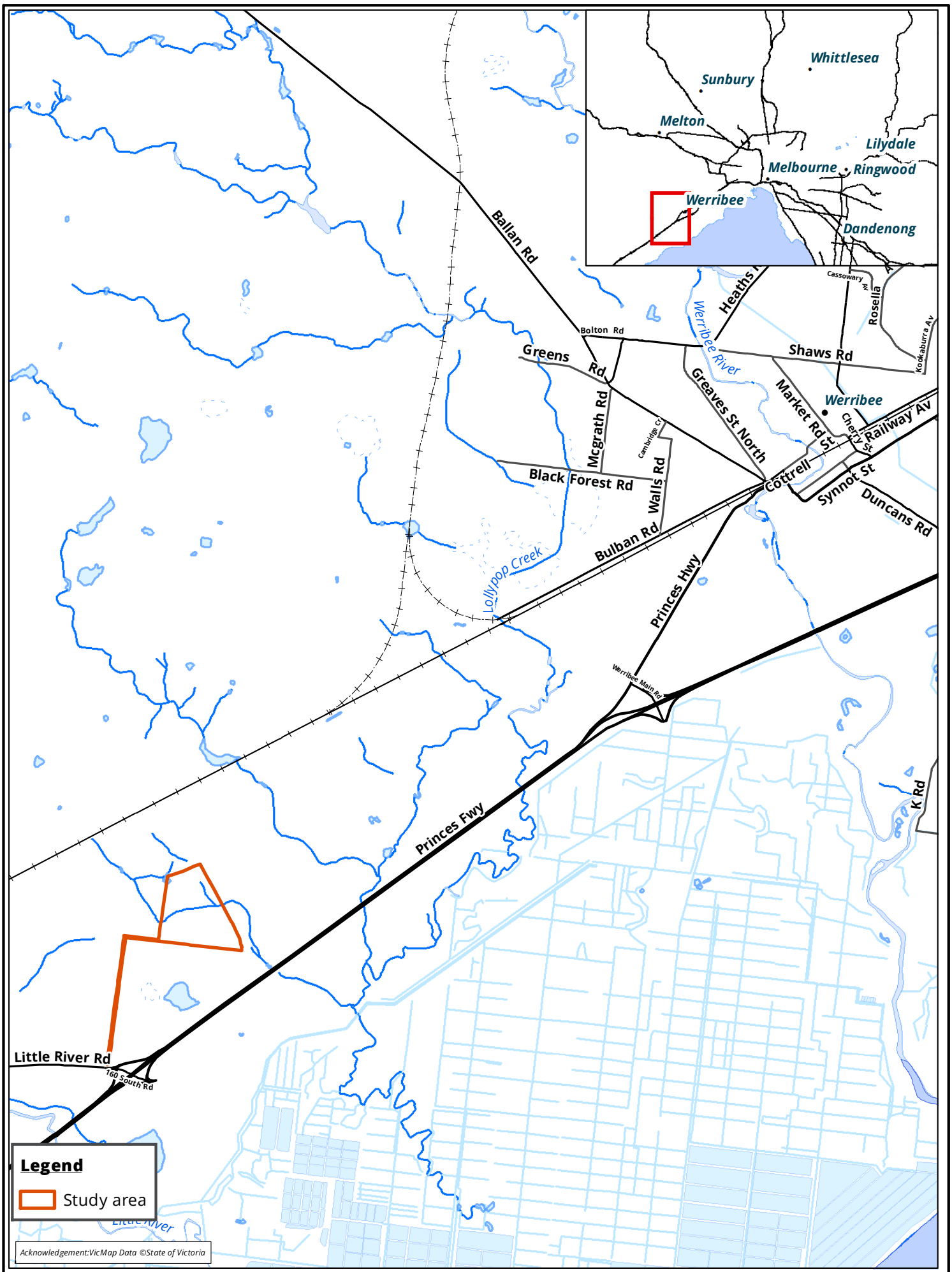

Figure 1 Location of the study area, Cherry Creek, Victoria

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2. Methods

2.1 Background review

The following relevant reports and biodiversity information sources were reviewed as part of the current assessment:

- Preliminary Ecological Assessment: Youth Justice Precinct Development, Cherry Creek. Report prepared by Ecology and Heritage Partners, May 2017 (EHP 2017).
- EPBC Act Policy Statement 3.11: Significant impact guidelines for the critically endangered Spiny Rice-flower (*Pimelea spinescens* subsp. *spinescens*). Department of Environment, Water, Heritage and the Arts (Commonwealth of Australia 2009).
- Victorian Biodiversity Atlas.
- Protected Matters Search Tool of the Australian Government Department of the Environment and Energy for matters protected by the EPBC Act.

2.2 Spiny Rice-flower targeted survey

Targeted surveys for Spiny Rice-flower were undertaken within the proposed impact area on 23, 26 and 30 June 2017 and 18 and 25 July 2017, to coincide with the flowering period for the species. All potential habitat within the proposed impact area was surveyed by two to four ecologists walking parallel transects, less than 5 metres apart. Survey effort was recorded using hand-held GPS units to track the progress of each observer. Targeted survey effort is displayed in Figure 2. The timing and methodology of the targeted Spiny Rice-flower surveys is consistent with the survey guidelines published by the Commonwealth of Australia (2009).

2.3 Vegetation assessment

The vegetation assessment of the new access road alignment was undertaken on 18 July 2017, following the requirements of the Biodiversity Assessment Guidelines (the Guidelines) and Victoria Planning Provisions.

Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses' (Clause 72).

The Guidelines classify native vegetation into two categories (DEPI 2013):

- A **remnant patch** of native vegetation (measured in hectares) is either:
  - An area of native vegetation, with or without trees, where at least 25 percent of the total perennial understorey cover is native plants.
  - An area with three or more indigenous canopy trees where the tree canopy cover is at least 20 percent.
- A **scattered tree** is defined as (extent measured by number of trees):
  - An indigenous canopy tree that does not form part of a remnant patch of native vegetation.

Remnant patch vegetation is classified into ecological vegetation classes (EVCs). An EVC contains one or more floristic (plant) communities, and represents a grouping of broadly similar environments. Definitions of EVCs

and benchmarks (condition against which vegetation quality at the site can be compared) are determined by the Victorian Department of Environment, Land, Water and Planning (DELWP).

A canopy tree is a mature tree that is greater than three metres in height and is normally found in the upper layer of a vegetation type. Ecological vegetation class descriptions provide a list of the typical canopy species. A condition score and extent is applied to each scattered tree based on information provided by DELWP's Native Vegetation Information Management (NVIM).

A Vegetation Quality Assessment was undertaken for all remnant patch native vegetation identified within the new access road alignment. This assessment is consistent with DELWP's habitat hectare method (DSE 2004) and the Guidelines (DEPI 2013). For the purposes of this assessment the limit of the resolution for the habitat hectare assessment process is taken to be 0.001 habitat hectares (Hha). That is, if native vegetation is present with sufficient cover but its condition and extent would not result in the identification of at least 0.001 habitat hectares then that vegetation will not be mapped or assessed as a separate habitat zone.

All native vegetation identified within the new access road alignment was also assessed to determine the presence of EPBC Act listed ecological communities.

2.4 Permits

Biosis undertakes assessments under the following permits and approvals:

- Research Permit/Management Authorisation and Permit to Take Protected Flora & Protected Fish issued by DELWP under the *Wildlife Act 1975, Flora and Fauna Guarantee Act 1988* and *National Parks Act 1975* (Permit number 10007569).

2.5 Qualifications

Ecological surveys provide a sampling of flora and fauna at a given time and season. There are a number of reasons why not all species will be detected at a site during survey, such as low abundance, patchy distribution, species dormancy and seasonal conditions, and migration and breeding behaviours. In many cases these factors do not present a significant limitation to assessing the overall biodiversity values of a site.

The current vegetation assessment was undertaken in mid-winter, which is not an optimal time for survey. Consequently, calculations and estimates of native species coverage were undertaken using a precautionary approach.

Biodiversity Impact Offset Requirement (BIOR) reports are requested through DELWP's Native Vegetation Transitional Guidance team. For the purposes of providing preliminary advice, Biosis has combined the site-based data from the current assessment with the data contained in the EHP (2017) report and processed this through DELWP's EnSym Native Vegetation Regulations (NVR) tool to test the proposed clearing scenario. This was done internally by Biosis using the public release version of EnSym and data was not formally submitted to DELWP. Biosis makes every effort to ensure site and spatial information entered into the EnSym, or supplied to DELWP, is an accurate reflection of proposed native vegetation removal.

2.6 Mapping

Mapping was conducted using hand-held (uncorrected) GPS units (WGS84) and aerial photo interpretation. The accuracy of this mapping is therefore subject to the accuracy of the GPS units (generally ± 7 metres) and dependent on the limitations of aerial photo rectification and registration. Mapping has been produced using a Geographic Information System (GIS).

3. Results

3.1 Spiny Rice-flower

Spiny Rice-flower was not detected within the proposed impact area during the current assessment. The closest known Spiny Rice-flower record is a 2009 record from Wests Road reserve, approximately 1.5 kilometres north-east of the proposed impact area (DELWP 2017; EHP 2017). The species has been recorded a number of times along the Melbourne-Geelong railway line, approximately 1.5 kilometres north. The species is also known to occur to the south of the study area, near Lake Borrie in the Western Treatment Plant. There are no previous Spiny Rice-flower records from within the broader study area.

The survey effort for this assessment is considered to be appropriate as it was conducted during the optimum flowering period for the target species and following the survey guidelines (Commonwealth of Australia 2009). There had also been no recent fires or slashing of the vegetation prior to the targeted surveys. Therefore, the ability of an experienced observer to detect the target species was considered to be good. This suggests that Spiny Rice-flower is not present within the impact area and the proposed YJRP will therefore not impact on this species.

No other threatened flora species were recorded while undertaking the targeted Spiny Rice-flower surveys.

3.2 Vegetation assessment

The majority of the revised road access alignment has been highly modified due to past agricultural activities. Remnant native vegetation within the new access road alignment was representative of two Ecological Vegetation Communities (EVCs):

- Low-rainfall Plains Grassland (EVC 132_63)
- Plains Grassy Wetland (EVC 125).

The remainder of the revised road access alignment predominately supported introduced pasture grasses and weed species. A windbreak of planted vegetation borders the impact area parallel to Little River Road.

The native vegetation assessed within the revised access road alignment is described below. EHP (2017) contains a description of the native vegetation within the remainder of the impact area and broader study area. All native vegetation present within the impact area is displayed in Figure 3. A list of flora species recorded during the current assessment is provided in Table 2, Appendix 1.

Low-rainfall Plains Grassland

Large remnant patches of Low-rainfall Plains Grassland occur to the east of the access road alignment and it is the western edges of these larger patches that the alignment encroaches on (Appendix 2, Photo 1). Here the community is characterised by a dominance of Spear grasses *Austrostipa* spp. and Wallaby grasses *Rytidosperma* spp.. Other perennial species observed were sparsely distributed and included Ruby Saltbush *Enchylaena tomentosa* var. *tomentosa* and Grassland Wood-sorrel *Oxalis perennans*. Occurrences of this EVC (HZ1 and HZ2) across the impact area were of variable quality (Figure 3). The dominant exotic species present throughout was the declared noxious weed Chilean Needle-grass *Nassella neesiana*.

Plains Grassy Wetland

A small ephemeral wetland at the southern end of the access road alignment was identified as Plains Grassy Wetland (HZ3, Figure 3 and Appendix 2, Photo 2). Common Nardoo *Marsilea drummondii* and Spike Sedge *Eleocharis* spp. were the dominant native species in this community. These species were mostly present in the outer margins of the wetland.

3.3 Significant ecological communities

The Protected Matters Search Tool identified five EPBC Act threatened ecological communities with the potential to occur in the impact area:

- Grassy Eucalypt Woodland of the Victorian Volcanic Plain (critically endangered)
- Natural Damp Grassland of the Victorian Coastal Plains (critically endangered)
- Natural Temperate Grassland of the Victorian Volcanic Plain (critically endangered)
- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (critically endangered)
- Subtropical and Temperate Coastal Saltmarsh (vulnerable).

The area of Plains Grassy Wetland does not fit the criteria for the EPBC wetland communities that have the potential to occur in the area:

- Natural Damp Grassland of the Victorian Coastal Plains – the wetland does not meet the minimum patch size of 0.04ha and does not support the key indicator species Kangaroo Grass *Themeda triandra* and/or Common Tussock Grass *Poa labillardierei*.
- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains – the wetland is dominated by *Eleocharis* spp. Spike Sedge which is an indicator that it is not part of the listed community.

Natural Temperate Grassland of the Victorian Volcanic Plain

Areas of Low-rainfall Plains Grassland recorded within the impact area are likely to correspond with the EPBC Act listed Natural Temperate Grassland of the Victorian Volcanic Plain (critically endangered). Based on the current assessment, the patches are likely to fit the criteria for classification as the listed community because:

- Patch sizes are larger than 0.05 hectares
- Patches are dominated by native grasses/herbs.
- Dominant native species (such as Spear Grasses *Austrostipa* spp. and Wallaby Grasses *Austrodanthonia* spp.) make up over 50% of the native species and the perennial tussock cover.

The total area of Natural Temperate Grassland of the Victorian Volcanic Plain in the impact area is 29.187 hectares (Figure 3).

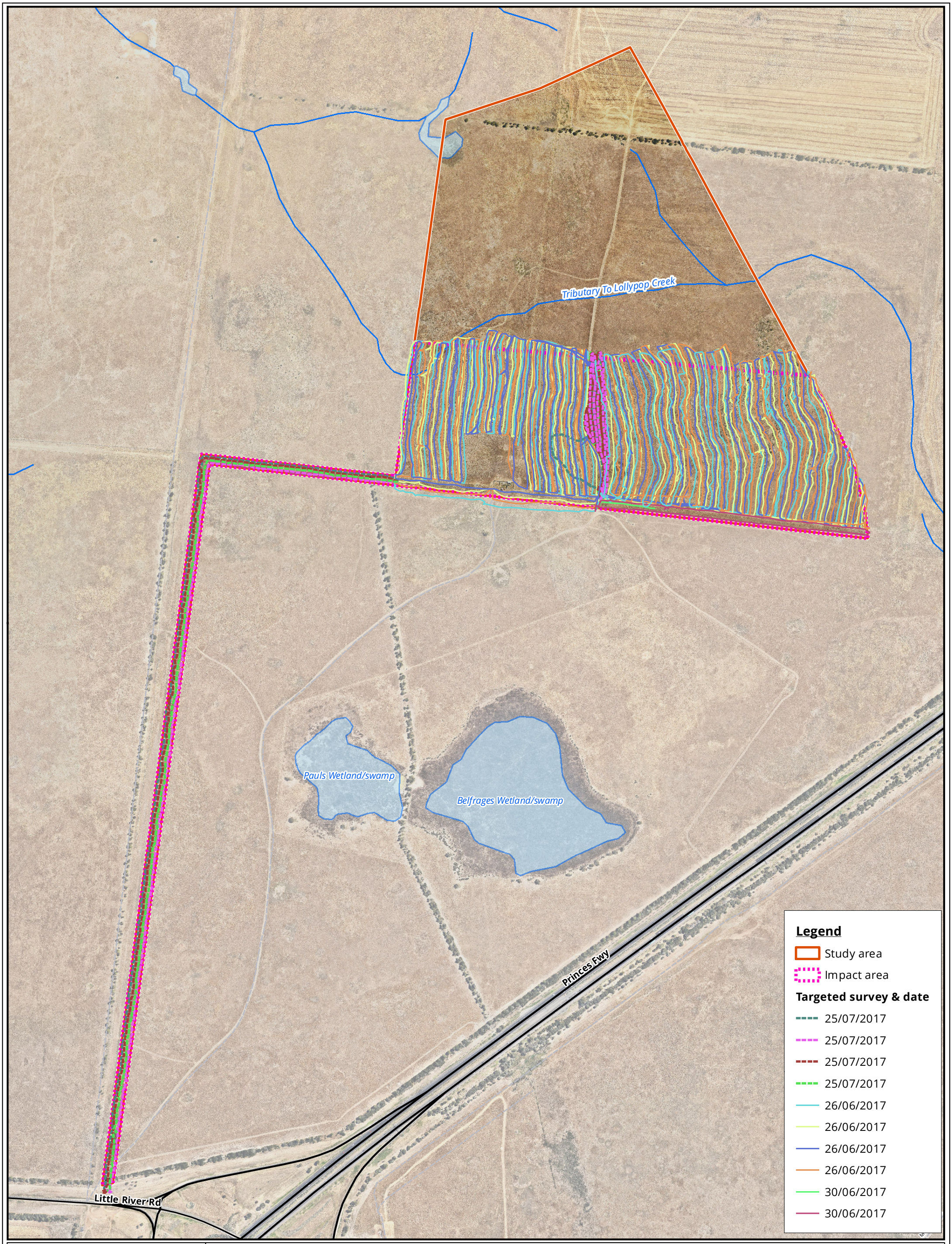

Figure 2 Spiny Rice-flower targeted survey effort within the proposed impact area, Cherry Creek, Victoria

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Acknowledgements: Vicmap ©State of Victoria

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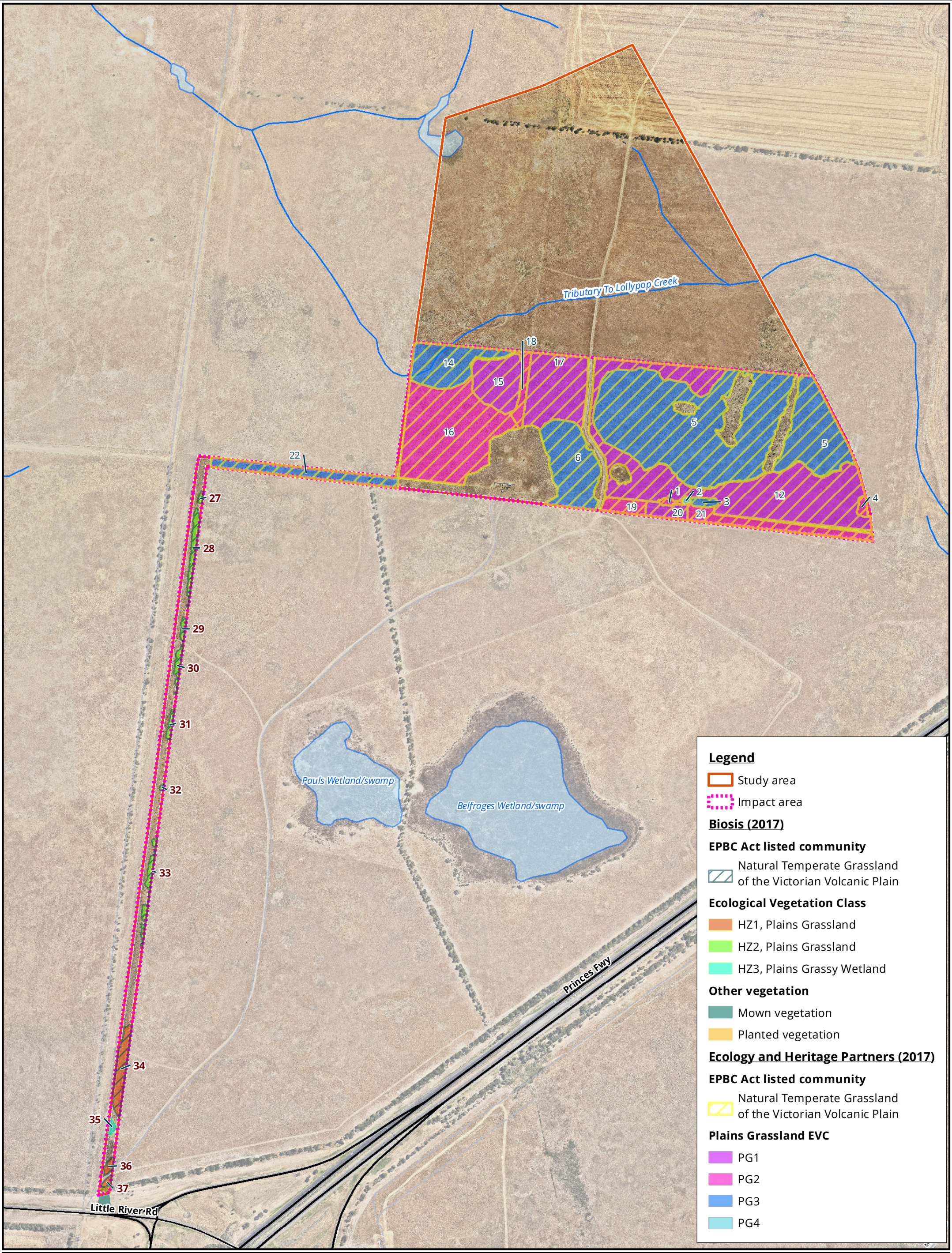

Figure 3 Native vegetation within the proposed impact area, Cherry Creek, Victoria

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4. Government legislation and policy

4.1 Victoria's Biodiversity Assessment Guidelines

The Guidelines describe the following objective for permitted clearing of native vegetation in Victoria: "No net loss in the contribution made by native vegetation to Victoria's biodiversity".

This objective is to be achieved through Victoria's planning system using a risk-based approach that relies on strategic planning and the permit and offset system. The key strategies for achieving no net loss at the permit level are:

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

DELWP has provided biodiversity information tools to assist with determining the risk associated with permitted clearing and the contribution that native vegetation within the study area makes to Victoria's biodiversity.

All planning permit applications to remove native vegetation are assigned to a risk-based pathway determined by the extent and location of proposed clearing. The risk-based pathway will dictate the information to be provided in a planning permit application, the decision guidelines that the responsible authority (e.g. DELWP) will use to assess the permit application and the type of offsets that will be required.

The biodiversity information tools have two components:

- Site-based information: The site-based information is observable at a particular site. Biosis has collected the requisite site-based information for the assessment against the Guidelines.
- Landscape scale information: Landscape scale information requires consideration of information beyond the site. This information is managed by DELWP and can be accessed via the NVIM. For the purposes of providing preliminary advice Biosis has combined the site-based data from the current assessment with the data contained in the EHP (2017) report and run this through DELWP's EnSym Native Vegetation Regulations (NVR) tool to test the proposed clearing scenario. This process was done internally by Biosis using the public release version of EnSym and data was not formally submitted to DELWP.

The following section summarises the results of the site-based assessment and the outputs generated by the EnSym report. The Ensym report identifies the risk-based pathway on which the planning application is likely to be assessed. The full Ensym report can be viewed in Appendix 4.

Note: a glossary of terms used in relation to the Guidelines and Habitat hectares assessment is provided in Appendix 5.

4.1.1 Proposed removal of native vegetation

The extent of native vegetation patches were mapped within the revised access road alignment (Figure 2) and the condition was assessed in relation to standard methods provided by DSE (2004). The condition of native

vegetation was assessed using the DSE Vegetation Quality Assessment Sheet (DSE 2004) and pre-determined EVC benchmarks.

The proposed removal of native vegetation was assessed in accordance with the concept design provided (Plan No. PS 811333A). To assess the overall impact of the project and overall offset obligations, information collected during the current assessment was combined with data on proposed native vegetation removal documented by EHP (2017) for the remainder of the impact area.

The proposed project would result in the removal of 17.139 habitat hectares of native vegetation as shown in Table 3, Appendix 3.

Areas of uniform quality for each EVC within patches are termed 'habitat zones' and are assessed separately. The condition score of the habitat zone is multiplied by the extent of the zone to give a value in habitat hectares.

Twenty eight habitat zones are identified (Table 3, Appendix 3). The results of the condition assessment are provided in Table 3, Appendix 3, with the number of habitat hectares in each habitat zone.

4.1.2 Determining the risk-based pathway

To determine the risk-based pathway for the permit application, two factors are considered: **location risk** and **extent risk**.

Location risk has been pre-determined by DELWP for all locations in Victoria. The location of a particular site is determined using the Native Vegetation Location Risk Map available in the Native Vegetation Information Management (NVIM) system.

The extent risk is based on the extent of native vegetation proposed to be removed. Extent risk is determined with reference to the area of any remnant patches of native vegetation and the number of any scattered trees proposed to be removed.

The project would require the removal of more than one hectare of native vegetation from within location risk C, therefore the application for removal of this native vegetation must meet the requirements of, and be assessed in, the high risk-based pathway. These requirements are provided in Appendix 4. No scattered trees were recorded in the impact area.

4.2 Offset requirements

4.2.1 Victorian offsets

In order to ensure a gain to Victoria's biodiversity that is equivalent to the loss resulting from permitted clearing of native vegetation, compensatory offsets will be required in accordance with Victoria's Biodiversity Assessment Guidelines. Under the Guidelines, losses and gains are measured in biodiversity equivalence scores or units.

For a high risk-based pathway application, the specific-general offset test determines whether a general offset, specific offset or combination of both is required. The results of the specific-general offset test are provided in Appendix 4 and summarized in Table 1.

Table 1 Summary of the EnSym report

Attribute	Outcome
Location risk	C
Native vegetation removal extent	29.274 ha
Risk-based pathway	High
Habitat hectares to be removed	17.139
Strategic Biodiversity Score of native vegetation to be removed	0.694
Number of rare or threatened species with modelled habitat in native vegetation to be removed	19 species
Specific-general offset test result	Above impact threshold for 4 species, which will require specific offsets: • Red-chested Button-quail • Striped Legless Lizard • Large-headed Fireweed • Pale Swamp Everlasting
Offset type	Specific and general offsets
Specific Biodiversity Equivalence Scores	Ranges from 5.647-7.498 for the above 4 species
General Biodiversity Equivalence Score	3.227
Offset risk factor	Specific offset x 2 and General offset x 1.5
Specific offset amount (Specific Biodiversity Equivalence Units)	11.294 units for Red-chested Button-quail 14.996 units for Striped Legless Lizard 12.914 units for Large-headed Fireweed 14.427 units for Pale Swamp Everlasting
General offset minimum Strategic Biodiversity Score	0.451
General offset amount (General Biodiversity Equivalence Units)	4.840 units
Offset vicinity	Port Phillip and Westernport CMA or Wyndham City Council

4.2.2 Commonwealth offsets

In accordance with EPBC Act Offsets Policy (Commonwealth of Australia 2012), compensatory offsets will be required for the project's residual significant impacts on Matters of National Environmental Significance (MNES).

EPBC Act offsets will be required for the removal of 29.187 hectares of Natural Temperate Grassland of the Victorian Volcanic Plain. The presence, extent and condition of this MNES within the study area has been confirmed.

EPBC Act offsets may be required for removal of habitat for Striped Legless Lizard, Golden Sun Moth, Button Wrinklewort, Clover Glycine, Large-headed Fireweed and Matted Flax-lily, depending on the results of upcoming targeted surveys for these species.

Targeted surveys for Spiny Rice-flower did not detect the species. The YJRP would not impact on any Spiny Rice-flower population and offsets for this species would therefore not be required.

4.3 Proposed offset strategy

Biosis understands that there was a proposal to secure State (Victorian) offsets on Melbourne Water land to the south of the study area, subject to an agreement between Melbourne Water and DJR. However, given that this land is already subject to a separate conservation agreement under the EPBC Act for an unrelated project, it is unlikely that it could now be used to secure State offsets for the YJRP. This needs to be clarified in association with the existing referral approval for Melbourne Water's grasslands around the YJRP.

Collocation of State and Commonwealth offset sites to meet requirements of the Victorian Biodiversity Assessment Guidelines and Commonwealth EPBC Act Offsets Policy has occurred in the past and is being explored for this project. Given that State and Commonwealth offset requirements differ, collocation of the two offset sites can be difficult.

State offsets include:

- Specific Biodiversity Equivalence Units (SBEUs), which can be sourced from modelled habitat anywhere in Victoria.
- General Biodiversity Equivalence Units (GBEUs), which must be sourced from within the Port Phillip CMA area or from within Wyndham City Council.

General offsets have a relatively stable and consistent price. The current estimate of 4.840 GBEU is unlikely to change significantly unless there is a substantial footprint change. Unless a reduced price can be negotiated for the large size of this offset, GBEUs expected to be sourced at a rate of $135,000 per unit. This provides a total cost of $653,400 for securing the required general offsets (GBEUs).

There is no urgency to purchase GBEUs as this offset amount is expected to be available on demand. However, because the project will be assessed under a high risk-based pathway, a quote for these offsets will need to be submitted as part of the documentation provided to DELWP.

It is highly unlikely that any EPBC Act offset could be integrated into this purchase of GBEUs unless the Melbourne Water properties in and around the project site can be utilised as an EPBC Act offset area. If the grasslands around the site are eligible for use as an EPBC Act offset then State offsets able to be generated by the same land could be used as they would be linked to the same impact. Determination of the utility of Melbourne Water land as an EPBC Act offset needs to be resolved.

It is likely that State specific offsets (SBEUs) and Commonwealth offsets would need to be secured at one or more offset sites further afield, outside the Port Phillip and Westernport CMA region. The State GBEU offset cost of approximately $653,000 would therefore be an immediate additional cost.

External sites that provide EPBC Act offsets for Natural Temperate Grassland of the Victorian Volcanic Plain have a high probability of also providing EPBC Act offsets for Golden Sun Moth and Striped Legless Lizard. Potential offset sites that have been identified (such as Warrambeen or sites in the Mount Mercer/Shelford/Rokewood area) are examples of this overlap, where the sites support all three relevant MNES. Such areas can use the one area to provide all three offsets concurrently. In that context, securing the largest offset prescription for one of these MNES will secure all the requirements for the other two.

At present, State offsets for the YJRP include four specific offsets ranging from 11.3 to 15 SBEUs. If all of these could be sourced concurrently, the cost is expected to be approximately $3 million. Given the large area required for Commonwealth offsets, some or all of the SBEUs required for at least one species could be expected to be acquired concurrently. This is highly site specific and will ultimately depend on the relevant species models. However, if the target species is present, then DELWP could allow an alternative offset arrangement to be assigned to that site. One way or the other, the use of more remote offset sites is likely to significantly elevate offset costs as more than one site would be required to completely satisfy the diversity of offset requirements.

5. Conclusion and recommendations

Targeted surveys for Spiny Rice-flower did not detect the species within the study area. Targeted surveys for Striped Legless Lizard commenced in September 2017 and are continuing. Targeted surveys for Golden Sun Moth, Button Wrinklewort, Clover Glycine, Large-headed Fireweed and Matted Flax-lily will take place in spring and/or summer.

The extent and condition of native vegetation within the new access road alignment was assessed and the overall State offset requirements for the proposed YJRP impact area were subsequently updated. Commonwealth offset requirements will be determined after the results of targeted surveys are known. Following this, detailed offset strategies will need to be prepared to demonstrate how State and Commonwealth offsets will be secured in accordance with relevant policy.

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Appendices

Appendix 1 Flora

Flora species recorded during the current assessment are provided in Table 2. Those species previously recorded by Ecology and Heritage Partners (2017) are indicated.

Notes to tables:

EPBC Act: CR - Critically Endangered EN - Endangered VU - Vulnerable PMST – Protected Matters Search Tool	**DEPI 2014a:** e - endangered v - vulnerable r - rare k - poorly known
FFG Act: L - listed as threatened under FFG Act P - protected under the FFG Act (public land only)	**Noxious weed status:** SP - State prohibited species RP - Regionally prohibited species RC - Regionally controlled species RR - Regionally restricted species # - Native species outside natural range

Table 2 Flora species recorded from the study area

Status	Scientific Name	Common Name	EHP (2017)
Indigenous species			
	Acaena echinata	Sheep's Burr	
	Atriplex semibaccata	Berry Saltbush	X
	Austrostipa bigeniculata	Kneed Spear-grass	X
	Austrostipa scabra subsp. *falcata*	Rough Spear-grass	X
	Austrostipa spp.	Spear Grass	
	Chloris truncata	Windmill Grass	X
	Eleocharis spp.	Spike Sedge	
	Enchylaena tomentosa var. *tomentosa*	Ruby Saltbush	X
	Juncus spp.	Rush	X
	Juncus subsecundus	Finger Rush	X
P	*Marsilea drummondii*	Common Nardoo	
	Oxalis perennans	Grassland Wood-sorrel	X
	Panicum effusum	Hairy Panic	
	Rumex brownii	Slender Dock	X
	Rytidosperma duttonianum	Brown-back Wallaby-grass	X
	Rytidosperma racemosum var. *racemosum*	Slender Wallaby-grass	X
	Rytidosperma spp.	Wallaby Grass	X

Status	Scientific Name	Common Name	EHP (2017)
	Sclerolaena muricata	Black Roly-poly	
	Themeda triandra	Kangaroo Grass	X
Introduced species			
	Arctotheca calendula	Cape Weed	X
RC	*Cirsium vulgare*	Spear Thistle	X
RC	*Cynara cardunculus* subsp. *flavescens*	Artichoke Thistle	X
	Diplotaxis spp.	Rocket	
RC	*Echium plantagineum*	Paterson's Curse	
	Galenia pubescens var. *pubescens*	Galenia	X
	Helminthotheca echioides	Ox-tongue	X
	Hordeum leporinum	Barley-grass	X
	Hypochaeris radicata	Flatweed	X
	Lactuca serriola	Prickly Lettuce	X
	Lepidium africanum	Common Peppercress	X
	Lolium rigidum	Wimmera Rye-grass	X
RC	*Lycium ferocissimum*	African Box-thorn	X
	Malva parviflora	Small-flower Mallow	X
RC	*Marrubium vulgare*	Horehound	X
RR	*Nassella neesiana*	Chilean Needle-grass	X
RC	*Nassella trichotoma*	Serrated Tussock	X
	Phalaris aquatica	Toowoomba Canary-grass	X
	Plantago coronopus	Buck's-horn Plantain	
	Plantago lanceolata	Ribwort	
	Romulea rosea	Onion Grass	X
	Rumex crispus	Curled Dock	
RC	*Silybum marianum*	Variegated Thistle	X
	Sonchus asper s.s.	Rough Sow-thistle	X
	Sonchus oleraceus	Common Sow-thistle	X
	Trifolium glomeratum	Cluster Clover	X
	Trifolium spp.	Clover	
RC	*Xanthium spinosum*	Bathurst Burr	X

Appendix 2 Photos of the study area

Photo 1 Proposed access road alignment. Looking approximately north-east (see Figure 3).

Photo 2 Plains Grassy Wetland (EVC 125); looking approximately south-west (see Figure 3).

Appendix 3 Vegetation impact assessment results

Quantification and significance of proposed losses

Twenty eight habitat zones are identified (Table 3). This is a combination of the zones identified in the current assessment, along with those previously identified by Ecology and Heritage Partners (EHP 2017) that are within the current proposed impact zone. The combined results of the condition assessments are provided in Table 3, with the number of habitat hectares in each Habitat Zone.

Table 3 Habitat hectares of native vegetation within the study area

Assessor	EnSym ID	Habitat Zone ID	EVC No.	Site condition							Landscape Value				HABITAT SCORE	Habitat points = #/100	Habitat Zone area (ha)	Habitat hectares (Hha)
				Lack of Weeds	Understorey	Recruitment	Organic Matter	Logs	**Standardiser**	**Total Site Score**	Patch Size	Neighbourhood	Distance to Core	**Total Landscape Score**				
Biosis Pty Ltd	1-1-2	36	132-63	4	15	0	0	-	x 1.36	25.84	8	1	3	12	37.84	0.38	0.054	0.021
	2-3-1	35	125	6	10	0	4	-	x 1.36	27.2	1	1	3	4	31.2	0.31	0.062	0.020
	3-1-3	34	132-63	4	15	0	0	-	x 1.36	25.84	8	2	3	13	38.84	0.39	0.369	0.144
	4-2-2	32	132-63	4	5	0	0	-	x 1.36	12.24	8	1	3	12	24.24	0.24	0.010	0.002
	5-2-3	31	132-63	4	5	0	0	-	x 1.36	12.24	8	3	3	14	26.24	0.26	0.055	0.014
	6-2-5	29	132-63	4	5	0	0	-	x 1.36	12.24	8	3	3	14	26.24	0.26	0.043	0.011
	7-2-6	28	132-63	4	5	0	0	-	x 1.36	12.24	8	1	3	12	24.24	0.24	0.191	0.047
	8-2-7	27	132-63	4	5	0	0	-	x 1.36	12.24	8	1	3	12	24.24	0.24	0.022	0.005

Assessor	EnSym ID	Habitat Zone ID	EVC No.	Site condition							Landscape Value				HABITAT SCORE	Habitat points = #/100	Habitat Zone area (ha)	Habitat hectares (Hha)
				Lack of Weeds	Understorey	Recruitment	Organic Matter	Logs	**Standardiser**	**Total Site Score**	Patch Size	Neighbourhood	Distance to Core	**Total Landscape Score**				
	9-1-1	37	132-63	4	15	0	0	-	x 1.36	25.84	8	1	4	13	38.84	0.39	0.032	0.012
	10-2-4	30	132-63	4	5	0	0	-	x 1.36	12.24	8	3	3	14	26.24	0.26	0.083	0.022
	11-2-1	33	132-63	4	5	0	0	-	x 1.36	12.24	8	1	3	12	24.24	0.24	0.159	0.038
Ecology & Heritage Partners	12-1-a	1	132-63	9	15	3	5	-	x 1.36	43.52	8	4	5	17	60.52	0.61	0.055	0.033
	13-2-a	2	132-63	2	10	3	5	-	x 1.36	27.2	8	4	5	17	44.2	0.44	0.025	0.011
	14-3-a	3	132-63	6	15	3	5	-	x 1.36	39.44	8	4	5	17	56.44	0.56	0.106	0.060
	15-4-a	4	132-63	9	15	3	5	-	x 1.36	43.52	8	4	5	17	60.52	0.61	0.078	0.048
	16-5-a	5	132-63	6	15	3	5	-	x 1.36	39.44	8	4	5	17	56.44	0.56	2.026	1.135
	17-6-a	6	132-63	6	15	3	5	-	x 1.36	39.44	8	4	5	17	56.44	0.56	1.778	0.996
	18-14-a	14	132-63	6	15	3	5	-	x 1.36	39.44	8	4	5	17	56.44	0.56	1.289	0.722
	19-15-a	15	132-63	13	15	3	5	-	x 1.36	48.96	8	4	5	17	65.96	0.66	1.101	0.727
	20-16-a	16	132-63	9	15	3	5	-	x 1.36	43.52	8	4	5	17	60.52	0.61	3.917	2.389
	21-17-a	17	132-63	13	15	3	5	-	x 1.36	48.96	8	4	3	15	63.96	0.64	1.932	1.236
	22-18-a	18	132-63	9	15	3	5	-	x 1.36	43.52	8	4	3	15	58.52	0.59	0.301	0.177

Assessor	EnSym ID	Habitat Zone ID	EVC No.	Site condition							Landscape Value				HABITAT SCORE	Habitat points = #/100	Habitat Zone area (ha)	Habitat hectares (Hha)
				Lack of Weeds	Understorey	Recruitment	Organic Matter	Logs	**Standardiser**	**Total Site Score**	Patch Size	Neighbourhood	Distance to Core	**Total Landscape Score**				
	23-19-a	19	132-63	9	15	3	5	-	x 1.36	43.52	8	4	5	17	60.52	0.61	0.288	0.176
	24-20-a	20	132-63	13	15	3	5	-	x 1.36	48.96	8	4	5	17	65.96	0.66	0.279	0.184
	25-21-a	21	132-63	9	15	3	5	-	x 1.36	43.52	8	4	3	15	58.52	059	0.827	0.488
	26-22-a	22	132-63	6	15	3	5	-	x 1.36	39.44	8	4	5	17	56.44	0.56	0.839	0.470
	27-5-b	5	132-63	6	15	3	5	-	x 1.36	39.44	8	4	5	17	56.44	0.56	7.419	4.154
	28-12-a	12	132-63	13	15	3	5	-	x 1.36	48.96	8	4	3	15	63.96	0.64	5.933	3.797
																Total	**29.274**	**17.139**

Appendix 4 EnSym report – test clearing proposal

Testing Clearing proposal

This report provides offset requirements for proposed clearing. **It DOES NOT represent a Biodiversity Impact and Offset Requirements report** required to support applications for permits to remove native vegetation under clause 52.16 or 52.17 of planning schemes in Victoria. It can be used for internal testing of different clearing proposals. Final clearing shapefiles must be submitted to DELWP for processing.

Date of issue: **07/08/2017** **Ref: Scenario Testing**
Time of issue: **3:26 pm**

Project ID	25102_VegClearing_GDA94VICGRID

Summary of marked native vegetation

Risk-based pathway	High
Total extent	29.274 ha
Remnant patches	29.274 ha
Scattered trees	0 trees
Location risk	C

Strategic biodiversity score of all marked native vegetation	0.694

Offset requirements

If the marked vegetation was cleared the following offsets would be applicable.

Offset type	**General offset**
General offset amount (general biodiversity equivalence units)	4.840 general units
General offset attributes	
Vicinity	Port Phillip and Westernport Catchment Management Authority (CMA) or Wyndham City Council
Minimum strategic biodiversity score	0.451[1]
Offset type	**Specific offset(s)**
Specific offset amount (specific biodiversity equivalence units) and attributes	11.294 specific units of habitat for Red-chested Button-quail 14.996 specific units of habitat for Striped Legless Lizard 12.914 specific units of habitat for Large-headed Fireweed 14.427 specific units of habitat for Pale Swamp Everlasting

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

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

Testing Clearing proposal

Next steps

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

If you wish to remove the marked native vegetation you must submit the related shapefiles to the Department of Environment, Land, Water and Planning (DELWP) for processing, by email to nativevegetation.support@delwp.vic.gov.au. DELWP will provide a Biodiversity impact and offset requirements report that is required to meet the permit application requirements.

Biodiversity impact of removal of native vegetation

Habitat hectares

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

Habitat zone	Site assessed condition score	Extent (ha)	Habitat hectares
1-1-2	0.378	0.054	0.021
2-3-1	0.318	0.062	0.020
3-1-3	0.390	0.369	0.144
4-2-2	0.240	0.010	0.002
5-2-3	0.258	0.055	0.014
6-2-5	0.258	0.043	0.011
7-2-6	0.244	0.191	0.047
8-2-7	0.238	0.022	0.005
9-1-1	0.388	0.032	0.012
10-2-4	0.264	0.083	0.022
11-2-1	0.238	0.159	0.038
12-1-a	0.610	0.055	0.033
13-2-a	0.440	0.025	0.011
14-3-a	0.560	0.106	0.060
15-4-a	0.610	0.078	0.048
16-5-a	0.560	2.026	1.135
17-6-a	0.560	1.778	0.996
18-14-a	0.560	1.289	0.722
19-15-a	0.660	1.101	0.727
20-16-a	0.610	3.917	2.389
21-17-a	0.640	1.932	1.236
22-18-a	0.590	0.301	0.177
23-19-a	0.610	0.288	0.176
24-20-a	0.660	0.279	0.184

Testing Clearing proposal

Habitat zone	Site assessed condition score	Extent (ha)	Habitat hectares
25-21-a	0.590	0.827	0.488
26-22-a	0.560	0.839	0.470
27-5-b	0.560	7.419	4.154
28-12-a	0.640	5.933	3.797
TOTAL			17.139

Impacts on rare or threatened species habitat above specific offset threshold

The specific-general offset test was applied to your proposal. The test determines if the proposed removal of native vegetation has a proportional impact on any rare or threatened species habitats above the specific offset threshold. The threshold is set at 0.005 per cent of the total habitat for a species. When the proportional impact is above the specific offset threshold a specific offset for that species' habitat is required.

The specific-general offset test found your proposal has a proportional impact above the specific offset threshold for the following rare or threatened species' habitats.

Species number	Species common name	Species scientific name	Species type	Area of mapped habitat (ha)	Proportional impact (%)
10019	Red-chested Button-quail	Turnix pyrrhothorax	Dispersed	14.461	0.013 %
12159	Striped Legless Lizard	Delma impar	Dispersed	19.720	0.006 %
503116	Large-headed Fireweed	Senecio macrocarpus	Dispersed	16.388	0.092 %
504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	Dispersed	19.720	0.006 %

Clearing site biodiversity equivalence score(s)

Where a habitat zone requires specific offset(s), the specific biodiversity equivalence score(s) for each species in that habitat zone is calculated by multiplying the habitat hectares of the habitat zone by the habitat importance score for each species impacted in the habitat zone.

Habitat zone	Habitat hectares	Habitat for rare or threatened species					Specific biodiversity equivalence score (SBES)
		Proportion of habitat zone with specific offset	Species number	Species common name	Species scientific name	Habitat importance score	
1-1-2	0.021	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.739	0.015
1-1-2	0.021	100.000 %	12159	Striped Legless Lizard	Delma impar	0.751	0.015
1-1-2	0.021	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.829	0.017
1-1-2	0.021	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.751	0.015

Testing Clearing proposal

Habitat zone	Habitat hectares	Habitat for rare or threatened species					Specific biodiversity equivalence score (SBES)
		Proportion of habitat zone with specific offset	Species number	Species common name	Species scientific name	Habitat importance score	
2-3-1	0.020	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.750	0.015
2-3-1	0.020	100.000 %	12159	Striped Legless Lizard	Delma impar	0.765	0.015
2-3-1	0.020	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.840	0.017
2-3-1	0.020	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.770	0.015
3-1-3	0.144	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.779	0.112
3-1-3	0.144	100.000 %	12159	Striped Legless Lizard	Delma impar	0.817	0.118
3-1-3	0.144	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.881	0.127
3-1-3	0.144	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.797	0.115
4-2-2	0.002	100.000 %	12159	Striped Legless Lizard	Delma impar	0.810	0.002
4-2-2	0.002	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.880	0.002
4-2-2	0.002	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.780	0.002
5-2-3	0.014	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.787	0.011
5-2-3	0.014	100.000 %	12159	Striped Legless Lizard	Delma impar	0.821	0.012
5-2-3	0.014	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.898	0.013
5-2-3	0.014	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.801	0.011
6-2-5	0.011	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.780	0.009

Testing Clearing proposal

Habitat zone	Habitat hectares	Habitat for rare or threatened species					Specific biodiversity equivalence score (SBES)
		Proportion of habitat zone with specific offset	Species number	Species common name	Species scientific name	Habitat importance score	
6-2-5	0.011	100.000 %	12159	Striped Legless Lizard	Delma impar	0.830	0.009
6-2-5	0.011	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.900	0.010
6-2-5	0.011	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.770	0.009
7-2-6	0.047	21.549 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.770	0.008
7-2-6	0.047	100.000 %	12159	Striped Legless Lizard	Delma impar	0.773	0.036
7-2-6	0.047	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.855	0.040
7-2-6	0.047	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.740	0.034
8-2-7	0.005	100.000 %	12159	Striped Legless Lizard	Delma impar	0.683	0.003
8-2-7	0.005	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.750	0.004
8-2-7	0.005	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.666	0.003
9-1-1	0.012	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.740	0.009
9-1-1	0.012	100.000 %	12159	Striped Legless Lizard	Delma impar	0.750	0.009
9-1-1	0.012	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.830	0.010
9-1-1	0.012	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.750	0.009
10-2-4	0.022	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.787	0.017
10-2-4	0.022	100.000 %	12159	Striped Legless Lizard	Delma impar	0.838	0.018

Testing Clearing proposal

Habitat zone	Habitat hectares	Habitat for rare or threatened species					Specific biodiversity equivalence score (SBES)
		Proportion of habitat zone with specific offset	Species number	Species common name	Species scientific name	Habitat importance score	
10-2-4	0.022	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.890	0.020
10-2-4	0.022	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.770	0.017
11-2-1	0.038	46.650 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.770	0.014
11-2-1	0.038	100.000 %	12159	Striped Legless Lizard	Delma impar	0.834	0.032
11-2-1	0.038	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.900	0.034
11-2-1	0.038	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.816	0.031
12-1-a	0.033	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.750	0.025
12-1-a	0.033	100.000 %	12159	Striped Legless Lizard	Delma impar	0.810	0.027
12-1-a	0.033	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.870	0.029
12-1-a	0.033	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.770	0.026
13-2-a	0.011	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.781	0.009
13-2-a	0.011	100.000 %	12159	Striped Legless Lizard	Delma impar	0.804	0.009
13-2-a	0.011	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.864	0.010
13-2-a	0.011	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.758	0.008
14-3-a	0.060	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.800	0.048
14-3-a	0.060	100.000 %	12159	Striped Legless Lizard	Delma impar	0.800	0.048

Testing Clearing proposal

Habitat zone	Habitat hectares	Habitat for rare or threatened species					Specific biodiversity equivalence score (SBES)
		Proportion of habitat zone with specific offset	Species number	Species common name	Species scientific name	Habitat importance score	
14-3-a	0.060	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.860	0.051
14-3-a	0.060	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.750	0.045
15-4-a	0.048	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.721	0.034
15-4-a	0.048	100.000 %	12159	Striped Legless Lizard	Delma impar	0.741	0.035
15-4-a	0.048	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.711	0.034
16-5-a	1.135	97.712 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.688	0.763
16-5-a	1.135	100.000 %	12159	Striped Legless Lizard	Delma impar	0.707	0.802
16-5-a	1.135	37.310 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.740	0.313
16-5-a	1.135	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.687	0.780
17-6-a	0.996	13.630 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.561	0.076
17-6-a	0.996	13.630 %	12159	Striped Legless Lizard	Delma impar	0.594	0.081
17-6-a	0.996	13.630 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.648	0.088
17-6-a	0.996	13.630 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.581	0.079
18-14-a	0.722	56.066 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.554	0.224
18-14-a	0.722	56.066 %	12159	Striped Legless Lizard	Delma impar	0.569	0.230
18-14-a	0.722	56.066 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.619	0.251

Testing Clearing proposal

Habitat zone	Habitat hectares	Habitat for rare or threatened species					Specific biodiversity equivalence score (SBES)
		Proportion of habitat zone with specific offset	Species number	Species common name	Species scientific name	Habitat importance score	
18-14-a	0.722	56.066 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.562	0.227
19-15-a	0.727	76.401 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.429	0.238
19-15-a	0.727	76.401 %	12159	Striped Legless Lizard	Delma impar	0.465	0.258
19-15-a	0.727	76.401 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.497	0.276
19-15-a	0.727	76.401 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.446	0.248
20-16-a	2.389	43.465 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.476	0.494
20-16-a	2.389	43.465 %	12159	Striped Legless Lizard	Delma impar	0.500	0.520
20-16-a	2.389	43.465 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.542	0.563
20-16-a	2.389	43.465 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.488	0.507
21-17-a	1.236	15.431 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.442	0.084
21-17-a	1.236	15.431 %	12159	Striped Legless Lizard	Delma impar	0.472	0.090
21-17-a	1.236	15.431 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.505	0.096
21-17-a	1.236	15.431 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.452	0.086
22-18-a	0.177	55.173 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.469	0.046
22-18-a	0.177	55.173 %	12159	Striped Legless Lizard	Delma impar	0.499	0.049
22-18-a	0.177	55.173 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.534	0.052

Testing Clearing proposal

Habitat zone	Habitat hectares	Habitat for rare or threatened species					Specific biodiversity equivalence score (SBES)
		Proportion of habitat zone with specific offset	Species number	Species common name	Species scientific name	Habitat importance score	
22-18-a	0.177	55.173 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.479	0.047
23-19-a	0.176	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.708	0.124
23-19-a	0.176	100.000 %	12159	Striped Legless Lizard	Delma impar	0.755	0.133
23-19-a	0.176	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.815	0.143
23-19-a	0.176	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.728	0.128
24-20-a	0.184	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.750	0.138
24-20-a	0.184	100.000 %	12159	Striped Legless Lizard	Delma impar	0.806	0.148
24-20-a	0.184	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.866	0.159
24-20-a	0.184	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.766	0.141
25-21-a	0.488	100.000 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.781	0.381
25-21-a	0.488	100.000 %	12159	Striped Legless Lizard	Delma impar	0.786	0.384
25-21-a	0.488	91.614 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.852	0.381
25-21-a	0.488	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.757	0.369
26-22-a	0.470	94.580 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.674	0.299
26-22-a	0.470	100.000 %	12159	Striped Legless Lizard	Delma impar	0.686	0.322
26-22-a	0.470	100.000 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.754	0.354

Testing Clearing proposal

Habitat zone	Habitat hectares	Habitat for rare or threatened species					Specific biodiversity equivalence score (SBES)
		Proportion of habitat zone with specific offset	Species number	Species common name	Species scientific name	Habitat importance score	
26-22-a	0.470	100.000 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.669	0.315
27-5-b	4.154	15.307 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.739	0.470
27-5-b	4.154	72.874 %	12159	Striped Legless Lizard	Delma impar	0.609	1.844
27-5-b	4.154	72.874 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.656	1.985
27-5-b	4.154	72.874 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.582	1.762
28-12-a	3.797	69.205 %	10019	Red-chested Button-quail	Turnix pyrrhothorax	0.755	1.983
28-12-a	3.797	79.831 %	12159	Striped Legless Lizard	Delma impar	0.742	2.249
28-12-a	3.797	47.570 %	503116	Large-headed Fireweed	Senecio macrocarpus	0.782	1.412
28-12-a	3.797	79.831 %	504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant	0.709	2.150

There are habitat zones in your proposal which are not habitat for the species above. A general offset is required for the(se) habitat zone(s).

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

Habitat zone	Habitat hectares	Proportion of habitat zone with general offset	Strategic biodiversity score	General biodiversity equivalence score (GBES)
17-6-a	0.996	86.370 %	0.234	0.201
18-14-a	0.722	43.934 %	0.847	0.269
19-15-a	0.727	23.599 %	0.690	0.118
20-16-a	2.389	56.535 %	0.562	0.759
21-17-a	1.236	84.569 %	0.460	0.481
22-18-a	0.177	44.827 %	0.102	0.008

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Habitat zone	Habitat hectares	Proportion of habitat zone with general offset	Strategic biodiversity score	General biodiversity equivalence score (GBES)
27-5-b	4.154	27.126 %	0.749	0.844
28-12-a	3.797	20.169 %	0.714	0.547

Mapped rare or threatened species' habitats on site

This table sets out the list of rare or threatened species' habitats mapped at the site beyond those species for which the impact is above the specific offset threshold. These species habitats do not require a specific offset according to the specific-general offset test.

Species number	Species common name	Species scientific name
10050	Baillon's Crake	Porzana pusilla palustris
10111	Gull-billed Tern	Gelochelidon nilotica macrotarsa
10154	Wood Sandpiper	Tringa glareola
10170	Australian Painted Snipe	Rostratula benghalensis australis
10174	Bush Stone-curlew	Burhinus grallarius
10177	Brolga	Grus rubicunda
10186	Intermediate Egret	Ardea intermedia
10187	Eastern Great Egret	Ardea modesta
10195	Australian Little Bittern	Ixobrychus minutus dubius
10197	Australasian Bittern	Botaurus poiciloptilus
10212	Australasian Shoveler	Anas rhynchotis
10215	Hardhead	Aythya australis
10238	Black Falcon	Falco subniger
13207	Growling Grass Frog	Litoria raniformis
500217	Buloke Mistletoe	Amyema linophylla subsp. orientale
500798	Small Milkwort	Comesperma polygaloides
502776	Tough Scurf-pea	Cullen tenax
503455	Rye Beetle-grass	Tripogon loliiformis
504643	Grey Billy-buttons	Craspedia canens

Offset requirements

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

Testing Clearing proposal

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

Offsets also have required attributes:

- General offsets must be located in the same Catchment Management Authority (CMA) boundary or Local Municipal District (local council) as the clearing and must have a minimum strategic biodiversity score of 80 per cent of the clearing.[2]
- Specific offsets must be located in the same species habitat as that being removed, as determined by the habitat importance map for that species.

The offset requirements for your proposal are as follows:

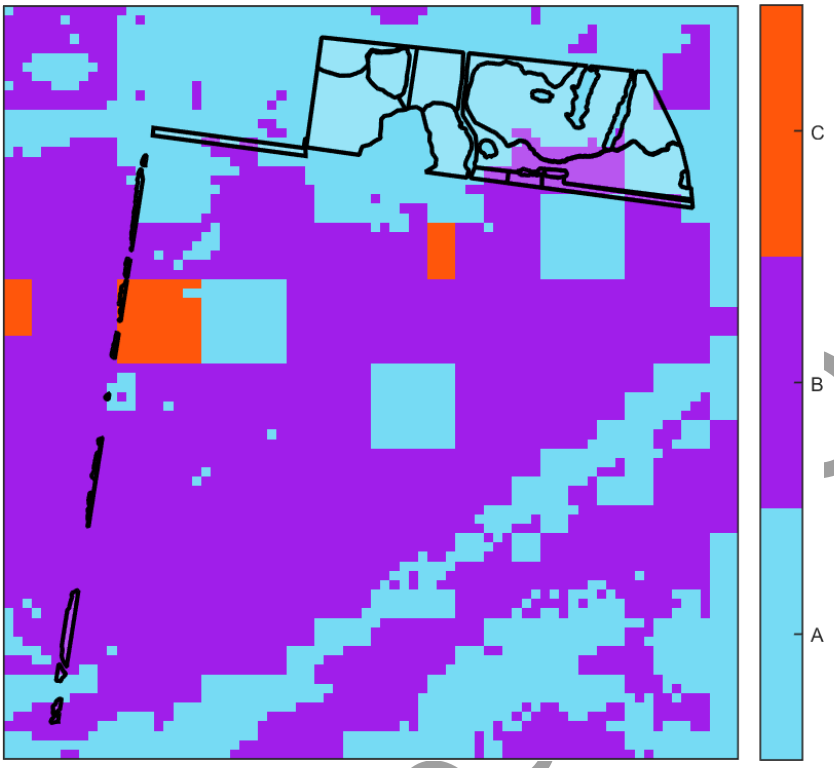
Offset type	Clearing site biodiversity equivalence score	Risk multiplier	Offset requirements	
			Offset amount (biodiversity equivalence units)	Offset attributes
Specific	5.647 SBES	2	11.294 specific units	Offset must provide habitat for 10019, Red-chested Button-quail, Turnix pyrrhothorax
Specific	7.498 SBES	2	14.996 specific units	Offset must provide habitat for 12159, Striped Legless Lizard, Delma impar
Specific	6.457 SBES	2	12.914 specific units	Offset must provide habitat for 503116, Large-headed Fireweed, Senecio macrocarpus
Specific	7.213 SBES	2	14.427 specific units	Offset must provide habitat for 504655, Pale Swamp Everlasting, Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant
General	3.227 GBES	1.5	4.840 general units	Offset must be within Port Phillip And Westernport CMA or Wyndham City Council Offset must have a minimum strategic biodiversity score of 0.451

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

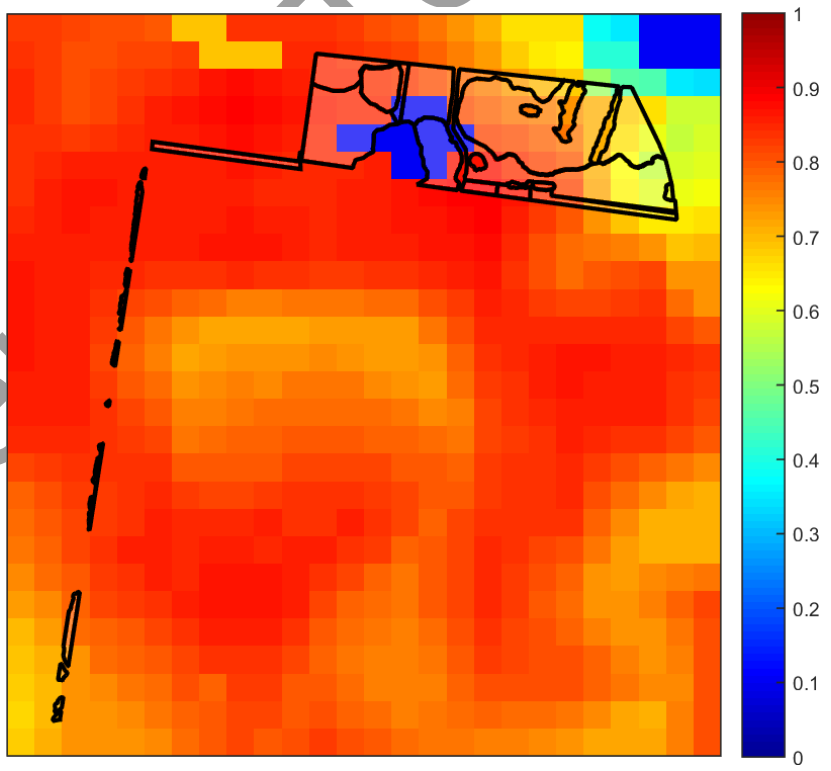
Testing Clearing proposal

Images of marked native vegetation

1. Native vegetation location risk map



2. Strategic biodiversity score map



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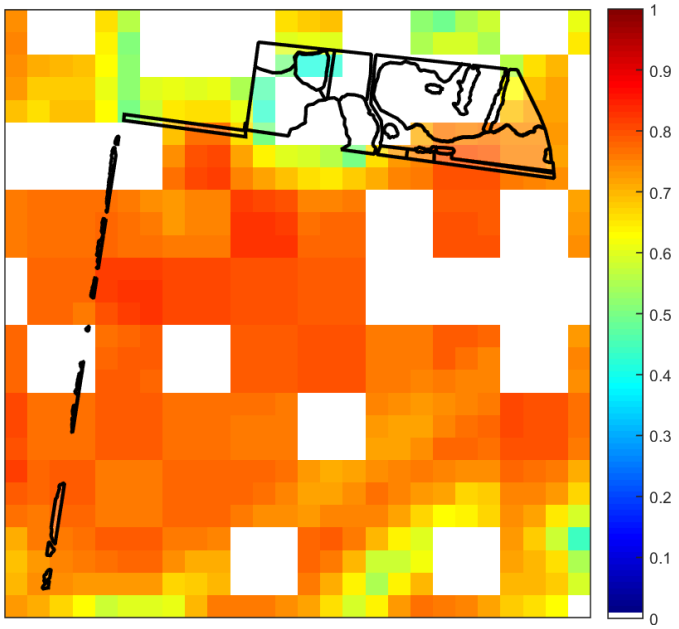
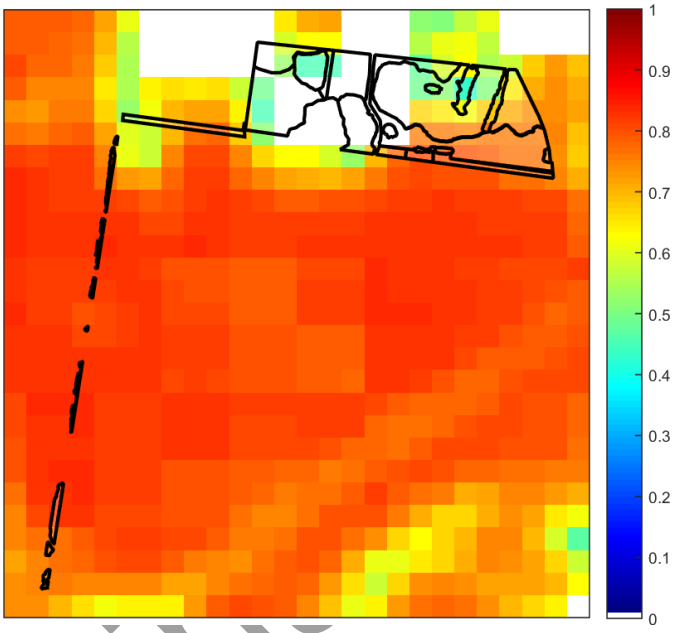
3. Habitat importance maps

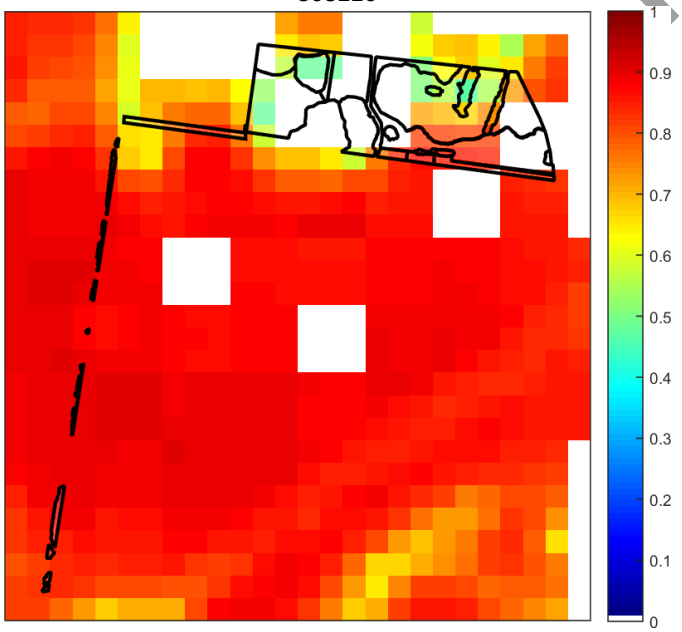
Red-chested Button-quail
Turnix pyrrhothorax
10019



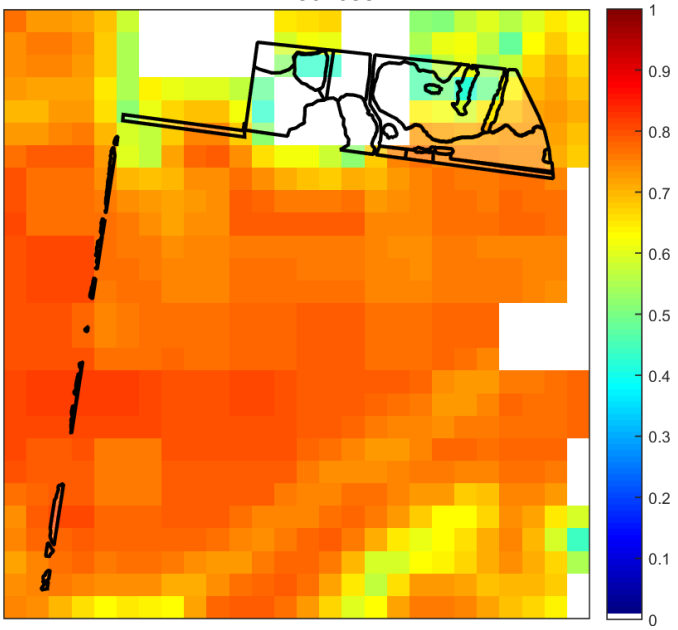
Striped Legless Lizard
Delma impar
12159



Large-headed Fireweed
Senecio macrocarpus
503116



Pale Swamp Everlasting
Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant
504655



Testing Clearing proposal

Glossary

Condition score

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

Dispersed habitat

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

General biodiversity equivalence score

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

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

General offset amount

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

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

General offset attributes

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

Habitat hectares

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

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

Habitat importance score

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

Habitat zone

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

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

Testing Clearing proposal

Highly localised habitat

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

Minimum strategic biodiversity score

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

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

Offset risk factor

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

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

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

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

Offset type

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

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

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

Proportional impact on species

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

Specific offset amount

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

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

Testing Clearing proposal

Specific offset attributes

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

Specific biodiversity equivalence score

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

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

Strategic biodiversity score

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

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

Total extent (hectares) for calculating habitat hectares

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

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

Vicinity

The vicinity is an attribute for a general offset.

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

Appendix 5 Glossary – Biodiversity assessment guidelines

Items marked with 'A' are cited from DEPI (2013) ; items marked with 'B' are cited from DSE (2007b) and items marked with a 'C' are cited from DEPI (2014b).

Avoid [A]

Avoiding removing any native vegetation when undertaking a use or development. This can be either by not permitting or not going ahead with the use or development, or locating it elsewhere so that removing native vegetation is not required.

Benchmark [B]

A standard vegetation –quality reference point, dependent on vegetation type, which is applied in Habitat hectare assessments. Represents the average characteristics of a mature and apparently long undisturbed state of the same vegetation type.

Biodiversity [A]

The variety of all life forms, the different plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part.

Bioregion [B]

Biogeographic areas that capture the patterns of ecological characteristics in the landscape or seascape, providing a natural framework for recognising and responding to biodiversity values. A landscape based approach to classifying the land surface using a range of environmental attributes such as climate, geomorphology, lithology and vegetation.

BushBroker [A]

A program coordinated by DELWP to match parties that require native vegetation offsets with third party suppliers of native vegetation offsets.

Canopy Tree [C]

Is a mature tree greater than 3 m in height and is normally found in the upper layer of a vegetation type. Immature trees that are not yet able to flower and are less than three metres in height are considered part of the understorey (see definition of understorey).

Condition score

The score assigned to a habitat zone that indicates the quality of the vegetation relative to the ecological vegetation class benchmark, usually expressed as a percentage or on a scale of 0 to 1.

Degraded treeless vegetation [B]

Vegetation that is neither a wetland, a remnant patch nor scattered tree(s).

DBH (Diameter at Breast Height) [B]

The diameter of the main trunk of a tree measured 1.3 m above ground level.

Dispersed habitat [A]

Habitat for a rare or threatened species whose habitat is spread over a relatively broad geographic area.

Ecological vegetation class (EVC) [A]

A native vegetation type classified on the basis of a combination of its floristic, life form, environmental and ecological characteristics.

EVC (see Ecological vegetation class) [B]

Extent risk [A]

The level of risk to biodiversity from the removal of native vegetation based on the area and/or number of scattered trees to be removed.

Forb

A herbaceous flowering plant that is not a graminoid (grass, sedge or rush).

Gain [A]

Predicted improvement in the contribution to Victoria's biodiversity achieved from an offset, calculated by combining site gain with the strategic biodiversity score or habitat importance score of the site. Gain is measured with biodiversity equivalence scores or units.

Gain Target [B]

The amount of gain that needs to be achieved to offset a loss measured in Habitat hectares.

General biodiversity equivalence score / units [A]

Score or units used to quantify the relative overall contribution of a site to Victoria's biodiversity.

General offset [A]

An offset that is required when a proposal to remove native vegetation is not deemed, by application of the specific-general offset test, to have a significant impact on habitat for any rare or threatened species.

General provisions [A]

Operational requirements in planning schemes which are consistent across the state, relating to matters such as administrative provisions, ancillary activities and referral of applications.

Habitat hectares [A]

Combined measure of condition and extent of native vegetation. This measure is obtained by multiplying the site's condition score (measured between 0 and 1) with the area of the site (in hectares).

Habitat hectares benchmark [A]

A reference point for each vegetation type that represents the average condition of mature stands that are likely to reflect pre-settlement circumstances.

Habitat hectares site assessment [A]

A site-based measure of the condition of native vegetation with reference to the benchmark for the same type of native vegetation. The assessment generates a condition score of between 0 and 1.

Habitat importance map [A]

A map that indicates the importance of locations as habitat for a particular rare or threatened species. This map is based on modelled data.

Habitat importance score [A]

Measure of the importance of the habitat located on a site for a particular rare or threatened species.

Habitat zone [B]

A discrete area of native vegetation consisting of a single vegetation type (EVC) within an assumed similar quality. This is the base spatial unit for conducting a Habitat hectare assessment. Separate *Vegetation Quality Assessments* (or Habitat hectare assessments) are conducted for each habitat zone within the designated assessment area.

Highly localised habitat [A]

Habitat for rare or threatened species whose habitat is spread over a very restricted area (i.e. less than 2,000 ha). This can also be applied to a similarly limited sub-habitat that is disproportionately important for a wide-ranging rare or threatened species.

Improvement gain [B]

This is gain resulting from management commitments beyond existing obligations under legislation to improve the current vegetation quality. Achieving improvement gain is predicated on maintenance commitments being already in place. For example, control of any threats such as grazing that could otherwise damage the native vegetation must already be agreed. Typical actions leading to an improvement gain include reducing or eliminating environmental weeds, enhancement planting or revegetation over a 10-year management period. If the vegetation is to be used as an offset, a commitment to maintain the improvement gain (i.e. no subsequent decline in quality) will be required in perpetuity.

Incorporated document [A]

A document that is included in the list of incorporated documents in a planning scheme. These documents affect the operation of the planning scheme.

Indigenous vegetation [B]

The type of native vegetation that would have normally been expected to occur on the site prior to European settlement.

Landholder [A]

An owner, occupier, proprietor or holder of land.

Landowner [A]

Owner of land.

Landscape scale information [A]

Mapped or modelled information based on data collected across the landscape rather than just on a particular site.

Large Old Tree (LOT) [B]

A tree with a DBH equal to or greater than the large tree diameter as specified in the relevant EVC benchmark.

Listed species

A flora or fauna species listed under the Commonwealth *Environment Protection and Biodiversity Act 1999* or listed as threatened under the Victorian *Flora and Fauna Guarantee Act 1988*.

Local Planning Policy Framework [A]

Framework outlining a Municipal Strategic Statement and the Local Planning Policies that apply to the local government area.

Location risk [A]

The risk that removing native vegetation in a particular location will have an impact on the persistence of a rare or threatened species.

Loss[A]

Loss in the contribution to Victoria's biodiversity when native vegetation is fully or partially removed, as measured in biodiversity equivalence scores or units.

Maintenance Gain [B]

This is gain from commitments that contribute to the maintenance of the current vegetation quality over time (i.e. avoiding any decline). Includes foregoing certain entitled activities that could otherwise damage or remove native vegetation, such as grazing or firewood collection. Also typically requires a commitment to ensure no further spread of environmental weeds that may otherwise result in the loss of vegetation quality over time. If the vegetation is to be used as an offset, a commitment to maintain the vegetation quality will be required in perpetuity.

Minimise [A]

Locating, designing or managing a use or development to reduce the impacts on biodiversity from the removal of native vegetation.

Native (indigenous) vegetation [B]

Native vegetation is plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses (as defined in Clause 72 of the planning scheme).

Native vegetation credit [A]

Gains in the contribution that native vegetation makes to Victoria's biodiversity that are registered on the native vegetation credit register. Native vegetation credits are offered for sale to parties who are required to offset the removal of native vegetation.

Native vegetation credit register [A]

A statewide register of native vegetation credits that meet minimum standards for security and management of sites. The register is administered by the Department of Environment and Primary Industries, and records the creation, trade and allocation of credits to meet specific offset requirements.

Native vegetation extent [A]

Area of land covered by native vegetation or the number of scattered trees.

Native Vegetation Information Management (NVIM) system [A]

An online tool used to access information about Victoria's native vegetation.

Native vegetation particular provision [A]

Clause 52.17 in the Victoria Planning Provisions that relates to the removing, destroying or lopping of native vegetation.

NatureKit

Web based interactive map available on the DELWP website that provides information on the biodiversity of Victoria and displays flora and fauna data from the Victorian Biodiversity Atlas.

No net loss [A]

An outcome where a particular gain in the contribution to Victoria's biodiversity is equivalent to an associated loss in the contribution to Victoria's biodiversity from permitted clearing.

Offset [A]

Protection and management (including revegetation) of native vegetation at a site to generate a gain in the contribution that native vegetation makes to Victoria's biodiversity. An offset is used to compensate for the loss to Victoria's biodiversity from the removal of native vegetation.

Offset Management Plan (OMP)

A document which sets out the requirements for establishment, protection and management of an offset site.

Offset market [A]

A system which facilitates trade of native vegetation credits between parties requiring offsets and third party suppliers of offsets.

Old tree [B]

A tree with a DBH equal to or greater than 0.75 of the large tree diameter as specified in the relevant EVC benchmark. Includes medium old trees and large old trees (see separate definitions). Some Regional Native Vegetation Plans additionally define very large old trees (1.5 times large tree diameter).

On-site offset [B]

An offset located on the same property as the clearing.

Particular Provisions [A]

Provisions in the Victoria Planning Provisions that relate to specific activities (for example, native vegetation is a Particular Provision).

Patch (see Remnant Patch)

Permit[A]

A legal document that gives permission for a use or development on a particular piece of land.

Perennial [A]

A plant that lives for more than two years. Perennials include species that are always visible e.g. shrubs and trees, but also include species that are not always visible above ground.

Permitted clearing [A]

Removal of native vegetation for which a planning permit has been granted to remove native vegetation.

Permitted clearing regulations [A]

The rules in the planning system that regulate permits for the removal of native vegetation.

Planning provisions – See Victoria Planning Provisions.

Prior management gain

This gain acknowledges actions to manage vegetation since State-wide planning permit controls for native vegetation removal were introduced in 1989.

Planning scheme [A]

Policies and provisions for the use, development and protection of land in a local government area.

Planning system [A]

Victoria's land-use planning system that includes the Victoria Planning Provisions and each local government's planning scheme.

Property Vegetation Plan [B]

A plan which relates to the management of native vegetation within a property, and which is contained within an agreement made pursuant to section 69 of the Conservation, Forests and Lands Act 1987.

Protected species

A flora species protected under the *Victorian Flora and Fauna Guarantee Act 1988.*

Protection (of a tree) [B]

An area with twice the canopy diameter of the tree(s) fenced and protected from adverse impacts: grazing, burning and soil disturbance not permitted, fallen timber retained, weeds controlled, and other intervention and/or management if necessary to ensure adequate natural regeneration or planting can occur.

Rare or threatened species [A]

A species that is listed in:

- DELWP's Advisory List of Rare or Threatened Plants in Victoria as 'endangered', 'vulnerable', or 'rare', but does not include the 'poorly known' category
- DELWP's Advisory List of Threatened Vertebrate Fauna in Victoria as 'critically endangered', 'endangered' or 'vulnerable', but does not include 'near threatened' or 'data deficient' categories
- DELWP's Advisory List of Threatened Invertebrate Fauna in Victoria as 'critically endangered', 'endangered' or 'vulnerable', but does not include 'near threatened' or 'data deficient' categories.

Recruitment [B]

The production of new generations of plants, either by allowing natural ecological processes to occur (regeneration etc), by facilitating such processes such as regeneration to occur, or by actively revegetating (replanting, reseeding). See Revegetation.

Referral authority [A]

An authority that a permit application is referred to for decision under Section 55 of the Planning and Environment Act 1987. All referral requirements are specified in Clause 66 of planning schemes.

Remnant patch of native vegetation [A]

Either:

- an area of native vegetation , with or without trees, where at least 25 per cent of the total perennial understorey plant cover is native plants.
- an area with three or more indigenous canopy trees where the tree canopy cover is at least 20 per cent.

Remnant vegetation [B]

Native vegetation that is established or has regenerated on a largely natural landform. The species present are those normally expected in that vegetation community. Largely natural landforms may have been subject to some past surface disturbance such as some clearing or cultivation (or even the activities of the nineteenth century gold rushes) but do not include man-made structures such as dam walls and quarry floors.

Responsible authority [A]

The authority charged with the responsibility for administering and enforcing particular aspects of a planning scheme.

Revegetation [B]

Establishment of native vegetation to a minimum standard in formerly cleared areas, outside of a remnant patch.

Scattered tree [C]

An indigenous canopy tree that does not form part of a remnant patch of native vegetation (see definition of remnant patch of native vegetation).

Section 173 agreements [B]

A management agreement primarily between a landowner and the responsible authority according to section 173 of the Planning and Environment Act 1987.

Security Gain

This is gain from actions to enhance security of the on-going management and protection of native vegetation at the offset site, either by entering into an on-title agreement (for example under Section 173 of the *Planning and Environment Act 1987*), or by locating the offset on land that has greater security than the clearing site, or by transferring private land to a secure public conservation reserve.

Site [A]

An area of land that contains contiguous patches of native vegetation or scattered trees, within the same ownership.

Site-based information [A]

Information that is collected at a site.

Site gain [A]

Predicted improvement in the condition, or the condition and extent, of native vegetation at a site (measured in Habitat hectares) generated by the landowner committing to active management and increased security.

Site loss [A]

Loss in the condition, or condition and extent, of native vegetation when native vegetation is fully or partially removed, measured in Habitat hectares.

sp.

Species (one species).

spp.

Species (more than one species).

Species persistence [A]

The continued existence of a species into the future.

Specific biodiversity equivalence score / units [A]

With reference to a specific species, a score or units used to quantify the relative contribution of a site to Victoria's biodiversity.

Specific-general offset test [A]

A test used to determine whether a general or specific offset is required based on the impact of native vegetation removal on the habitat for rare or threatened species.

Specific offset [A]

An offset that is targeted to a particular species (or multiple species) impacted by the removal of native vegetation.

State Planning Policy Framework [A]

A collection of clauses in the Victoria Planning Provisions that inform planning authorities and responsible authorities of those aspects of state planning policy which they are to take into account and give effect to in planning and administering their respective areas.

Strategic biodiversity map [A]

A map that shows the relative value of a location in the landscape with regard to its condition, extent, connectivity and the support function it plays for species. The map is based on modelled data.

Strategic biodiversity score [A]

A score that quantifies the relative value of a location in the landscape with regard to its condition, extent, connectivity and the support function it plays for species.

Strategic planning [A]

A coordinated approach to planning where areas for conservation and areas which can be cleared are strategically identified.

Supplementary planting

Establishment of overstorey and/or understorey plants within a remnant patch. Typically includes the planting or direct-seeding of understorey life forms.

Taxon (plural taxa)

A term used to describe any taxonomic unit. This term is typically used when referring broadly to any scientifically recognised species, subspecies or variety.

Third-party offset [B]

An offset located on a property owned by a person other than the landowner who incurs the native vegetation loss being offset.

Understorey

Understorey is all vegetation other than mature canopy trees – includes immature trees, shrubs, grasses, herbs, mosses, lichens and soil crust. It does not include dead plant material that is not attached to a living plant. More information on understorey life forms is set out in the Vegetation Quality Assessment Manual (DSE 2004).

Vegetation Quality Assessment

The standard DELWP method for assessing remnant patches of vegetation. Details of the method are outlined in the Vegetation Quality Assessment Method (DSE 2004). The results of the assessment are expressed in Habitat hectares. Also referred to as a 'Habitat hectare assessment'

Victoria Planning Provisions [A]

A list of planning provisions that provides a standard template for individual planning schemes.

Zone [A]

A zone in the Victoria Planning Provisions is a set of permitted uses of land which are defined spatially