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<b>Subject</b>	<b>Impact Assessment - Parwan Recycled Water Storage Dam</b>	<b>Project Name</b>	Parwan-Balliang Irrigation District Supply Network
<b>Attention</b>	Warren Price (Western Water)	<b>Project No.</b>	IS305300
<b>From</b>	Rebecca Sutherland		
<b>Date</b>	22 March 2021		
<b>Copies to</b>	Tom Delaney (CH2MBeca)		

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## 1. Introduction

CH2MBeca have been engaged by Western Water to undertake an Ecological Impact Assessment for the Parwan-Balliang Irrigation District (PBID) Supply Network Project (the Project). This impact assessment details existing ecological values within the proposed Parwan Recycled Water Storage Dam site (the site) located on the corner of Nerowie Road and Parwan South Road. The impact assessment of other project infrastructure is provided in the separate Parwan-Balliang Irrigation District Supply Network – Pipeline, Pump Station and Balance Tank Ecological Impact Assessment Report (CH2MBeca 2021).

The site is characterised by agricultural practices, particularly cropping and grazing. As such, the majority of the site has been largely cleared and de-rocked and any ecological values present have been heavily degraded. The site is located within the Victorian Volcanic Plain bioregion, Port Phillip and Westernport Catchment Management Authority (CMA) and Moorabool Shire Local Government Area (LGA). The site figure is provided in Attachment 1.

## 2. Method

During concept design for the Project a Preliminary Flora and Fauna Assessment was conducted, including a desktop assessment and preliminary field assessment of the proposed storage dam site (CH2MBeca 2019). This memorandum draws from data collected and reported on for the preliminary assessment as well as additional field surveys conducted in May 2020.

### 2.1 Desktop assessment

During the Preliminary Flora and Fauna Assessment (CH2MBeca 2019) a review of the following government databases and associated documents was undertaken to provide information on ecological values previously identified (or modelled to occur) within the wider PBID Project area:

- Commonwealth Department of Agriculture, Water and the Environment (DAWE) database:
  - Protected Matters Search Tool (DAWE 2020): The Protected Matters Search Tool (PMST) highlights Matters of National Environmental Significance (MNES) relevant to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) that are likely to occur within a 5 km buffer of the Project area.
- Victorian Department of Environment, Land, Water and Planning (DELWP) biodiversity databases:

- Nature Kit (DELWP 2020): comprises spatial data of native vegetation across Victoria; including modelled distributions of Ecological Vegetation Classes (EVCs).
- Victorian Biodiversity Atlas (VBA) (DELWP 2020): comprises historical spatial data records of flora and fauna species from across the state. Records are added opportunistically, as flora and fauna surveys are conducted within Victoria for a variety of purposes. The mapping of flora and fauna distribution and determination of species' habitat preferences is an ongoing process.

## 2.2 Field assessment

A preliminary field assessment of the storage dam site was conducted by CH2MBeca ecologists on 23 August 2019, followed by a detailed field assessment on 4 May 2020. The purpose of these assessments was to:

- Map the extent of native vegetation present at the site, including the presence of any endangered EVCs and/or threatened ecological communities.
- Identify and map habitat available for threatened flora and fauna species identified as likely to be present through the desktop assessment to inform targeted surveys.

### 2.2.1 Native vegetation

Native vegetation was mapped in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (the Guidelines) (DELWP 2017) as either a patch, scattered tree or other native vegetation, as described below:

#### Patch:

- 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 where the drip line 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 in DELWP systems and tools.

#### Scattered tree:

- a native canopy tree that does not form part of a remnant patch. A native canopy tree is a mature tree (i.e. it is able to flower) that is greater than 3 m in height and is normally found in the upper layer of the relevant vegetation type.

#### Other native vegetation:

- native vegetation that is not a remnant patch or scattered tree was incidentally identified, such as scattered understorey trees.

## 3. Results

Results of the desktop and field assessments are combined within this section. Results of the PMST and VBA are provided in the Preliminary Flora and Fauna Assessment report (CH2MBeca 2019).

## 3.1 Matters of National Environmental Significance

Commonwealth MNES and results returned by the PMST as relevant to the storage dam site are discussed in Table 1.

**Table 1: Matters of National Environmental Significance**

MNES	PMST Results	Site relevance	CH2MBeca determination
World Heritage Properties	-	Not applicable	<b>No action required</b>
National Heritage Places	-	Not applicable	<b>No action required</b>
Wetlands of International Importance (Ramsar wetlands)	1	One Ramsar wetland is identified as potentially relevant to the site: <ul style="list-style-type: none"> <li>Port Phillip Bay (Western Shoreline) and Bellarine Peninsula.</li> </ul>	<b>No action required</b> The site is 10-20 km upstream of the Ramsar wetland within a natural depression within the landscape. Works within the site are not expected to significantly impact the wetland.
Great Barrier Reef Marine Park	-	Not applicable	<b>No action required</b>
Commonwealth Marine Area	-	Not applicable	<b>No action required</b>
Listed Threatened Ecological Communities (TECs)	5	Five threatened ecological communities were modelled as potentially occurring within 5 km of the site; these are: <ul style="list-style-type: none"> <li>Critically Endangered Grassy Eucalypt Woodland of the Victorian Volcanic Plain</li> <li>Critically Endangered Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP)</li> <li>Critically Endangered White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland</li> <li>Critically Endangered Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains</li> <li>Endangered Grey Box (<i>Eucalyptus microcarpa</i>) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia.</li> </ul>	<b>No action required</b> Field assessments undertaken at the site confirmed that no TECs are present.
Listed Threatened Species	33	Thirty-three threatened species were modelled as potentially being occurring within 5 km of the Project site, including 11	<b>No action required</b> Field assessments undertaken at the site did not identify any threatened species or significant habitat for threatened species.

MNES	PMST Results	Site relevance	CH2MBeca determination
		birds, two fish, one frog, one insect, two mammals, two reptiles, and 14 plants.	
Listed Migratory Species	14	Fourteen migratory species were modelled as potentially occurring within 5 km of the Project site. This includes: one Migratory Marine bird, five Migratory Terrestrial birds, and eight Migratory Wetland birds.	<b>No action required.</b> Field assessments undertaken at the site did not identify significant habitat for listed migratory species.

## 3.2 Native vegetation

Native vegetation in Victoria is classified into EVCs for mapping and conservation management purposes. As part of the desktop assessment the DELWP NatureKit database was accessed. This database identified EVC 132: Plains Grassland as potentially being present on site.

Following the detailed field assessment, it was confirmed that, due to the modified nature of the site and history of grazing and cropping, no patches of native vegetation remain. Threatened ecological communities are also absent from the site. Nineteen scattered trees are present, and these are described in Table 2.

**Table 2: Scattered trees within the storage dam site**

Tree ID	Species	DBH (cm)	Tree size	Health (canopy cover)
1	<i>Eucalyptus microcarpa</i>	74	Large	Canopy 30% - 70%
2	<i>Eucalyptus microcarpa</i>	76	Large	Canopy 30% - 70%
3	<i>Eucalyptus microcarpa</i>	75	Large	Canopy 30% - 70%
4	<i>Eucalyptus microcarpa</i>	56	Large	Canopy 30% - 70%
5	<i>Eucalyptus microcarpa</i>	65	Large	Canopy 30% - 70%
6	<i>Eucalyptus microcarpa</i>	43	Large	Canopy 30% - 70%
7	<i>Eucalyptus microcarpa</i>	49	Large	Canopy 30% - 70%
8	<i>Eucalyptus camaldulensis</i>	100	Large	Canopy 30% - 70%
9	<i>Eucalyptus microcarpa</i>	42	Large	Canopy 30% - 70%
10	<i>Eucalyptus microcarpa</i>	68	Large	Canopy 30% - 70%
11	<i>Eucalyptus microcarpa</i>	74	Large	Canopy 30% - 70%
12	<i>Eucalyptus microcarpa</i>	40	Large	Canopy 30% - 70%
13	<i>Eucalyptus microcarpa</i>	44	Large	Canopy 30% - 70%
14	<i>Eucalyptus microcarpa</i>	68	Large	Canopy 30% - 70%
15	<i>Eucalyptus microcarpa</i>	64	Large	Canopy 30% - 70%
16	<i>Eucalyptus camaldulensis</i>	81	Large	Canopy 30% - 70%
17	<i>Eucalyptus camaldulensis</i>	123	Large	Canopy >70%

Tree ID	Species	DBH (cm)	Tree size	Health (canopy cover)
18	<i>Eucalyptus microcarpa</i>	55	Large	Canopy >70%
25	<i>Eucalyptus microcarpa</i>	48	Small	Canopy 30% - 70%

### 3.3 Threatened species

The desktop assessment of *Flora and Fauna Guarantee Act 1988* (FFG Act) and Victorian Advisory listed threatened species previously recorded within 5 km of the site was completed during concept design and is provided in the Preliminary Flora and Fauna Assessment (CH2MBeca 2019).

Works at the site are unlikely to significantly impact on any threatened species. The site has been highly modified with little vegetation or habitat for threatened species available. Large trees present on site are unlikely to provide suitable habitat due to the lack of connectivity to significant food sources or habitat within the surrounding landscape. Some aerial species may fly over the site or perch briefly but are unlikely to reside on the site permanently.

The existing farm dam currently present on site is unlikely to provide habitat for threatened aquatic species due to a lack of any fringing vegetation and evidence of pugging, sedimentation and disturbance from grazing animals.

### 3.4 DELWP mapped wetlands

A search of DELWP mapped wetlands across Victoria confirmed that the site does not intersect with or indirectly impact any mapped wetlands.

### 3.5 Non-native vegetation

Vegetation across the site is dominated by exotic pasture grasses and weeds, predominantly rye grasses (*Lolium* spp.) and wild oats (*Avena* spp.). Six planted trees are present around the existing farm dam and are described in Table 3.

**Table 3: Planted trees within the storage dam site**

Tree ID	Species	DBH (cm)	Tree size	Health (canopy cover)
19	Unknown	41	Small	Dead
20	<i>Eucalyptus leucoxylon</i>	47	Small	Canopy >70%
21	<i>Eucalyptus leucoxylon</i>	22	Small	Canopy >70%
22	<i>Eucalyptus cladocalyx</i>	58	Small	Dead
23	<i>Eucalyptus leucoxylon</i>	33	Small	Dead
24	<i>Pinus radiata</i>	74	Small	Canopy >70%

Nine noxious weed species, listed as Regionally Controlled in the Port Phillip and Westernport catchment under the *Catchment and Land Protection Act 1994* (CaLP Act), were identified on site:

- Artichoke Thistle (*Cynara cardunculus*)

- Bathurst Burr (*Xanthium spinosum*)
- Horehound (*Marrubium vulgare*)
- Spear Thistle (*Cirsium vulgare*)
- Variegated Thistle (*Silybum marianum*).

Exotic pasture grasses and herbaceous weeds not listed under the CaLP Act were prominent within the landscape, which has been largely disturbed over time in agricultural land use.

## 4. Impact assessment

The project has assumed all vegetation within the site will be impacted by the proposed storage dam works. Areas of native vegetation that are to be removed or impacted due to construction of the proposed storage dam will require approval and offsetting under the Guidelines (DELWP 2017) as invoked by the *Planning and Environment Act 1987* through Clause 52.17 (Native vegetation) of the Victoria Planning Provisions contained in all planning schemes.

### 4.1 Determination of assessment pathway

The Guidelines provide a risk-based level of assessment for approval to remove native vegetation. Based on the potential for biodiversity loss, the risk-based level of assessment identifies the level of risk posed by the proposed works to Victoria's biodiversity and identifies the level of assessment to be conducted to inform determining authorities in making approval decisions.

The risk-based level of assessment (basic, intermediate or detailed) is determined by considering the Location Category, Extent and number of Large Trees of the proposed native vegetation clearing. There are three location categories that indicate the potential risk to biodiversity from removing a small amount of native vegetation. These location categories are Location 1, 2 or 3 (DELWP 2017).

Where a site occupies a broad area, various location categories may return. In such cases the highest category is applied to the entire application. The proposed storage dam site is determined to be in Location 2, and as more than 0.5 ha of native vegetation is being removed the Detailed assessment pathway will apply.

**Table 4: Determining the assessment pathway (From pg. 19 of DELWP (2017))**

Extent of native vegetation	Location Category		
	Location 1	Location 2	Location 3
Less than 0.5 ha and not including any large trees	Basic	Intermediate	Detailed
Less than 0.5 ha and including one or more large trees	Intermediate	Intermediate	Detailed
0.5 ha or more	Detailed	Detailed	Detailed

## 4.2 Application of the three-step principle

Under the Guidelines, a general three step principle is required to be followed to achieve no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. The three steps and their relevance to the proposed storage dam works are:

### Avoid

The site was selected as the preferred location the Parwan Recycled Water Storage Dam for the Western Irrigation Network (WIN) Scheme following an optioneering process, which identified this site as offering a range of attributes beneficial to minimising the social, economic and environmental impacts of the Project and the WIN Scheme. These site-specific attributes include:

- The storage dam site contains a natural depression, which allows for construction of a large storage capacity dam with minimal requirement for earthworks, and therefore minimal need for removal and disposal of spoil.
- The natural depression within the storage dam site was formed by a volcanic eruption point or crater at the required elevation in the recycled water supply network, relatively high in the landscape. This presents a unique opportunity to store a large volume of water, with low exposure to surface water inflows, which reduces the need for extensive surface water diversions and reduces the risk of overflows. Being located relatively high in the landscape also reduces energy consumption and emissions associated with pumping recycled water from the storage to end users.
- The storage dam site has been extensively cleared for historical and ongoing agricultural land uses, with native vegetation within the 55 hectare site limited to occurring within a small area in the base of the depression.
- The storage dam site is located in proximity to proposed recycled water customers, including proposed irrigation of cropping land immediately east and west of the site. This proximity provides considerable hydraulic efficiencies and associated cost savings, including reduced energy consumption and emissions from pumping, along with reduced length / diameter and associated impact footprints for transfer mains.
- The storage dam site is located adjacent to and can be consolidated with existing and other proposed Western Water infrastructure situated in the south east corner of Parwan South Road / Nerowie Road, which contributes to minimising potential loss and fragmentation of agricultural land uses.

Having selected a site that optimises a range of social, economic and environmental benefits, including impacts to relatively low ecological values and a proportionally small native vegetation extent, there are no further opportunities to avoid impacts to native vegetation within the site. This is due to the presence of native vegetation being restricted to the lowest point of the natural depression, which is not feasible to exclude from the recycled water holding area of the storage dam.

### Minimise

As above, having selected a site that optimises a range of social, economic and environmental benefits, including impacts to relatively low ecological values and a proportionally small native vegetation extent, there are no further opportunities to minimise impacts to native vegetation within the site due to the

presence of native vegetation being restricted to the lowest point of the natural depression, which is not feasible to exclude from the recycled water holding area of the storage dam.

## Offset

Where native vegetation is unable to be retained, an offset is required to compensate for the loss to biodiversity from that removal. An application to remove native vegetation must include an offset strategy, including evidence that an offset that meets the offset requirements for the proposed native vegetation removal is available, and explaining how the offset will be secured if a permit is granted. This is detailed further in Section 4.5.

### 4.3 Extent of vegetation loss

The detailed field assessment identified the extent of native vegetation within the site to be a total of nineteen scattered trees as described in Table 2. The extent of native vegetation removal required to be offset under the Guidelines is provided in Table 5.

**Table 5: Total extent of vegetation removal at the storage dam site**

Values	Extent of removal
Scattered trees (large)	18
Scattered trees (small)	1
Total	Scattered trees: 19

Based on these calculations, the Native Vegetation Removal (NVR) Report (Ensym) Scenario Tests are provided in Attachment 2. Confirmation of vegetation removal by the proponent will be required prior to sending the NVR (Ensym) data to DELWP for final determination of removal extents and offsetting requirements.

### 4.4 Native vegetation offsets

Based on the NVR Report, a summary of the offset targets is provided below. This is a Scenario Tests only. Results will be confirmed once a vegetation removal scenario is finalised and NVR (Ensym) data is provided to DELWP for final determination of offsetting requirements.

**Table 6: Offset requirement for the storage dam site.**

General offset amount	0.184 general habitat units
Vicinity	Port Phillip and Westernport Catchment Management Authority (CMA) or the Moorabool Shire Council
Minimum strategic biodiversity value score	0.345
Large trees	18 large trees



## 4.5 Offset statement

As only general habitat units of relatively low Strategic Biodiversity Value are required, they are likely to be readily available to purchase from an accredited Offset Broker. The required offset will be purchased and allocated to the Project, prior to any native vegetation removal taking place.

## 5. Legislation and policy implications

Commonwealth and State legislation relevant to the proposed works and site, and associated approval requirements, are listed below.

**Table 7: Relevant environmental legislation and policy**

Legislation/ policy	Ecological trigger	Next steps
<b>Commonwealth</b>		
EPBC Act	No EPBC MNES were identified on site or are likely to be impacted by works on site.	<b>No further action required</b>
<b>State</b>		
<i>Environment Effects Act 1978 (EE Act)</i>	Less than 10 ha of native vegetation removal is proposed (total removal 0.857 ha – see Attachment 2) and no impacts to FFG Act values will occur.	<b>No further action required</b>
FFG Act	No FFG Act threatened species or threatened communities are impacted works on the site.	<b>No further action required:</b>
VicAdv	No VicAdv species are directly impacted by works on the site.	<b>Considered alongside other legislation below:</b> A species offset may be prescribed for native vegetation removal under the Guidelines and will be detailed in the NVR Report, if applicable (DELWP 2017c). Consideration of impacts to threatened species are incorporated into any permit application for native vegetation removal under Clause 52.17 of the planning scheme that requires assessment via the detailed (or intermediate) assessment pathway under the Guidelines.
<i>Planning and Environment Act 1987(P&amp;E Act)</i>	Works at the site are subject to the Moorabool Planning Scheme. Native vegetation will be removed at the site. There are no relevant environmental overlays at the site.	<b>Permit required:</b> A permit is required from Moorabool Shire Council to remove native vegetation under Clause 52.17 (Native vegetation) of the planning scheme.
<i>Guidelines for the removal, destruction or lopping of native</i>	Native vegetation will be removed at the site.	<b>Permit required:</b> Approval from Moorabool Shire Council pursuant to Clause 52.17 of the planning scheme, is required to remove, destroy or lop

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Legislation/ policy	Ecological trigger	Next steps
<i>vegetation</i> (the Guidelines) (DELWP 2017) - Clause 52.17		native vegetation in Victoria. Assessment and offsetting of native vegetation impacts will need to comply with the requirements of the Guidelines.
<i>Catchment and Land Protection Act 1994</i> (CaLP Act)	<p>Multiple CaLP Act listed noxious weeds were observed during the assessment, including:</p> <ul style="list-style-type: none"> <li>▪ Artichoke Thistle (<i>Cynara cardunculus</i>)</li> <li>▪ Bathurst Burr (<i>Xanthium spinosum</i>)</li> <li>▪ Horehound (<i>Marrubium vulgare</i>)</li> <li>▪ Spear Thistle (<i>Cirsium vulgare</i>)</li> <li>▪ Variegated Thistle (<i>Silybum marianum</i>).</li> </ul> <p>Construction materials and machinery are a potential conduit for weed dispersal.</p>	<p><b>Construction Environmental Management Plan (CEMP) requirement:</b></p> <p>It is the responsibility of the proponent to implement control measures to prevent the spread of noxious weeds and pest animals during construction works at the site. Weed and biosecurity management measures are to be included in the CEMP in accordance with the CaLP Act.</p>
<i>Wildlife Act 1975</i> (Wildlife Act)	Works at the site have potential to impact native wildlife as a result of removal of large trees which can support hollow dependent wildlife or nesting birds.	<p><b>CEMP requirement:</b></p> <p>To facilitate construction, it is recommended to engage an Ecologist or qualified wildlife handler to relocate wildlife to a suitable habitat outside the works area.</p> <p>This requirement should be addressed in the CEMP.</p>
<i>Water Act 1989</i> (Water Act)	No designated waterways will be impacted at the site.	<b>No further action required</b>
<i>Fisheries Act 1995</i> (Fisheries Act)	The existing farm dam on site does not provide suitable habitat for native fish.	<b>No further action required</b>
<i>Environment Protection Act 1970</i> (EP Act)	Discharges and emissions during construction have potential for impacts on the environment.	<p><b>CEMP requirement:</b></p> <p>Design, construction, operation and decommissioning must comply with the general environmental duty and applicable State Environment Protection Policies (SEPPs) and Environmental Reference Standards under the EP Act as current at the time of construction.</p> <p>Control measures are to be included within the CEMP, as a minimum, to minimise erosion and sedimentation and other water pollution, and to prevent the spread of noxious weeds and pest animals.</p> <p>As part of a recycled water reuse scheme, operation of the storage dam will need to comply with Western Water's EPA licence and an approved Health and Environmental Management Plan in accordance with the EP Act.</p>

## 6. Conclusions and next steps

The purpose of this ecological impact assessment was to identify the ecological values within the storage dam site, and the potential impact works at the site may have on the ecological values identified in relation to relevant biodiversity legislation and policy requirements.

A total of 19 scattered trees, assessable under the Guidelines, were identified on site and will be impacted as a result of works conducted on site to facilitate the construction of the Parwan Recycled Water Storage Dam.

An offset of a maximum of 0.184 general habitat units and 18 large trees, with a minimum strategic biodiversity score of 0.345 within the Moorabool Shire Council or Port Phillip and Westernport CMA are required to account for the anticipated removal of native vegetation in accordance with the Guidelines.

In addition to offset requirements, a CEMP must be prepared, detailing how to implement the necessary management and mitigation measures to maintain and further reduce potential impacts to the environment during construction of the Parwan Recycled Water Storage Dam.

## 7. References

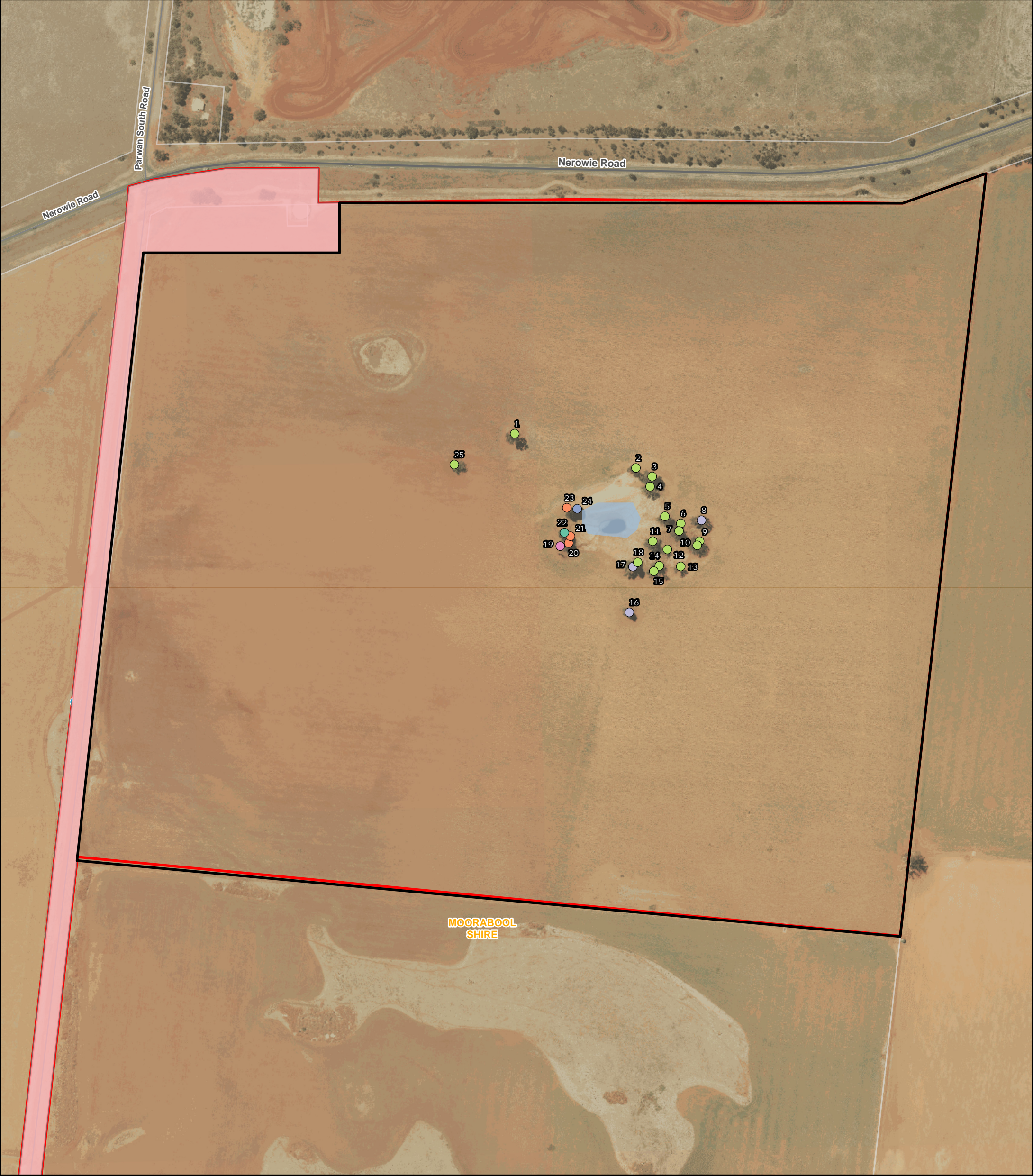
- CH2MBeca (2019). *Parwan to Balliang Irrigation District - Preliminary Flora and Fauna Assessment*. Melbourne.
- CH2MBeca (2021). *Parwan-Balliang Irrigation District Supply Network - Pipeline, Pump Station and Balance Tank*. Melbourne.
- DELWP (2017). *Guidelines for the removal, destruction or lopping of native vegetation*. Department of Environment, Land, Water and Planning, Government of Victoria, Melbourne.

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## Attachment 1 Site figure





- Legend
- Assessment area
  - PBID Storage Dam (Indicative)
  - PBID supply network pipeline assessment area
  - Major Road
  - Minor Road
  - Waterbody
  - Cadastre
  - LGA Boundary

- Scattered Trees
- Eucalyptus camaldulensis
  - Eucalyptus microcarpa
- Planted Trees
- Eucalyptus cladocalyx
  - Eucalyptus leucoxylon
  - Pinus radiata
  - Unknown



IS305300

0 60 120  
Metres

DATA SOURCES  
© Commonwealth of Australia (Geoscience Australia) 2006  
Geodata Topo 250k Series 3; Vicmap Data © State of Victoria 2021; Jacobs 2021; CH2M Beca.

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## Attachment 2 NVR Scenario Test

# Scenario test – native vegetation removal

This report provides offset requirements for internal testing of different proposals to remove native vegetation. **This report DOES NOT support an application to remove, destroy or lop native vegetation under Clause 52.16 or 52.17 of planning schemes in Victoria.** A report must be obtained from the Department of Environment, Land, Water and Planning (DELWP).

Date of issue: 19/03/2021  
Time of issue: 10:51 am

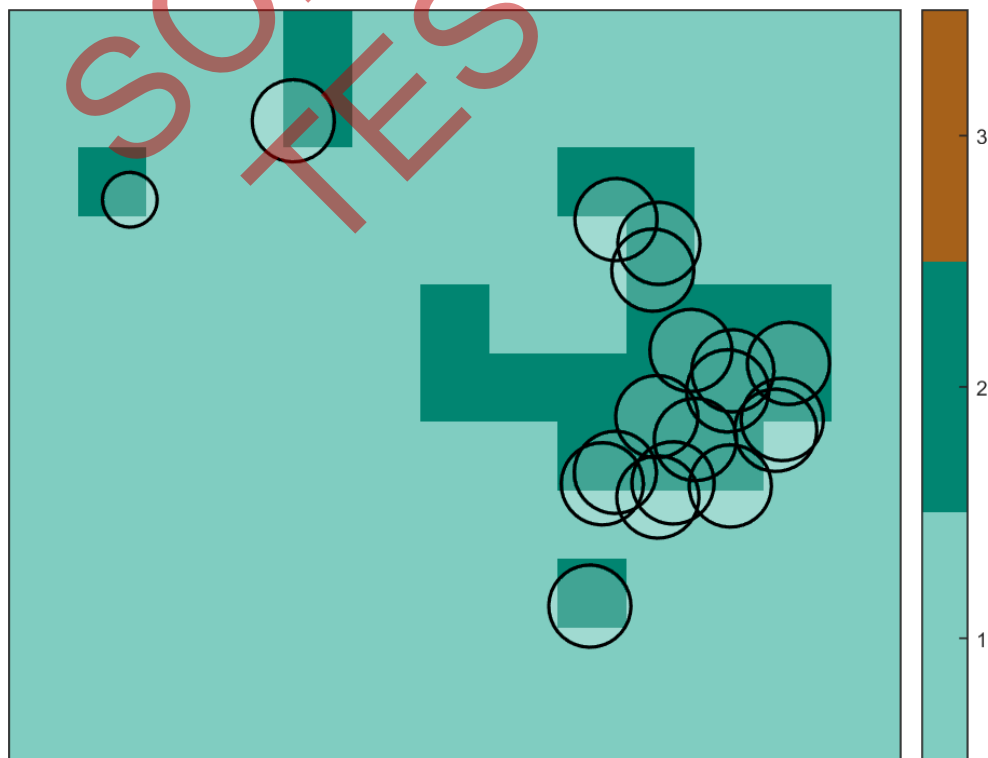
Report ID: Scenario Testing

Project ID PBID\_Dam\_Trees\_VG94

## Assessment pathway

Assessment pathway	Detailed Assessment Pathway
Extent including past and proposed	0.857 ha
Extent of past removal	0.000 ha
Extent of proposed removal	0.857 ha
No. Large trees proposed to be removed	18
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



# Scenario test – native vegetation removal

## Offset requirements if a permit is granted

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

<b>General offset amount<sup>1</sup></b>	0.184 general habitat units
Vicinity	Port Phillip and Westernport Catchment Management Authority (CMA) or Moorabool Shire Council
Minimum strategic biodiversity value score <sup>2</sup>	0.345
Large trees	18 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

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

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



# Scenario test – native vegetation removal

## 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.

**This report DOES NOT support an application to remove, destroy or lop native vegetation under Clause 52.16 or 52.17 of planning schemes in Victoria.**

If you wish to remove the mapped native vegetation you must submit the related shapefiles to the Department of Environment, Land, Water and Planning (DELWP) for processing, by email to [ensymnvrtool.support@delwp.vic.gov.au](mailto:ensymnvrtool.support@delwp.vic.gov.au). DELWP will provide a *Native vegetation removal report* that is required to meet the permit application requirements in accordance with *Guidelines for the removal, destruction or lopping of native vegetation* (Guidelines).

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## 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:

$$\text{Species habitat units} = \text{extent} \times \text{condition} \times \text{species landscape factor} \times 2, \text{ where the species landscape factor} = 0.5 + (\text{habitat importance score}/2)$$

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:

$$\text{General habitat units} = \text{extent} \times \text{condition} \times \text{general landscape factor} \times 1.5, \text{ where the general landscape factor} = 0.5 + (\text{strategic biodiversity value score}/2)$$

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-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.070	0.463		0.015	General
2-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.060	0.430		0.013	General
3-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.040	0.430		0.009	General
4-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.049	0.430		0.011	General
5-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.057	0.430		0.012	General
6-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.030	0.430		0.006	General
7-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.032	0.430		0.007	General
8-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.057	0.430		0.012	General

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
9-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.032	0.430		0.007	General
10-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.037	0.430		0.008	General
11-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.054	0.430		0.012	General
12-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.038	0.430		0.008	General
13-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.057	0.430		0.012	General
14-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.029	0.430		0.006	General
15-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.037	0.430		0.008	General
16-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.070	0.429		0.015	General
17-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.043	0.430		0.009	General
18-ST	Scattered Tree	vvp_0055_61	Endangered	1	no	0.200	0.070	0.033	0.430		0.007	General
25-ST	Scattered Tree	vvp_0055_61	Endangered	0	no	0.200	0.031	0.031	0.410		0.007	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
Bacchus Marsh Wattle	<i>Acacia rostriformis</i>	505136	Vulnerable	Dispersed	Habitat importance map	0.0006
Brittle Greenhood	<i>Pterostylis truncata</i>	502821	Endangered	Dispersed	Habitat importance map	0.0004
Small Golden Moths	<i>Diuris basaltica</i>	501473	Endangered	Dispersed	Habitat importance map	0.0003
Heath Spear-grass	<i>Austrostipa exilis</i>	503984	Rare	Dispersed	Habitat importance map	0.0002
Fragrant Saltbush	<i>Rhagodia parabolica</i>	502929	Rare	Dispersed	Habitat importance map	0.0002
Melbourne Yellow-gum	<i>Eucalyptus leucoxylon subsp. connata</i>	504484	Vulnerable	Dispersed	Habitat importance map	0.0001
Grassland Earless Dragon	<i>Tympanocryptis pinguicolla</i>	12922	Critically endangered	Dispersed	Habitat importance map	0.0001
Large-headed Fireweed	<i>Senecio macrocarpus</i>	503116	Endangered	Dispersed	Habitat importance map	0.0001
Large-flower Crane's-bill	<i>Geranium sp. 1</i>	505342	Endangered	Dispersed	Habitat importance map	0.0001
Spiny Rice-flower	<i>Pimelea spinescens subsp. spinescens</i>	504823	Endangered	Dispersed	Habitat importance map	0.0001
Plump Swamp Wallaby-grass	<i>Amphibromus pithogastrus</i>	503624	Endangered	Dispersed	Habitat importance map	0.0001
Velvet Daisy-bush	<i>Olearia pannosa subsp. cardiophylla</i>	502317	Vulnerable	Dispersed	Habitat importance map	0.0001
Austral Tobacco	<i>Nicotiana suaveolens</i>	502275	Rare	Dispersed	Habitat importance map	0.0001
Brackish Plains Buttercup	<i>Ranunculus diminutus</i>	504314	Rare	Dispersed	Habitat importance map	0.0001
Small Scurf-pea	<i>Cullen parvum</i>	502773	Endangered	Dispersed	Habitat importance map	0.0000
Cane Spear-grass	<i>Austrostipa breviglumis</i>	503268	Rare	Dispersed	Habitat importance map	0.0000
Snowy Mint-bush	<i>Prostanthera nivea var. nivea</i>	502746	Rare	Dispersed	Habitat importance map	0.0000
Tough Scurf-pea	<i>Cullen tenax</i>	502776	Endangered	Dispersed	Habitat importance map	0.0000

Matted Flax-lily	<i>Dianella amoena</i>	505084	Endangered	Dispersed	Habitat importance map	0.0000
Pale-flower Crane's-bill	<i>Geranium sp. 3</i>	505344	Rare	Dispersed	Habitat importance map	0.0000
Rye Beetle-grass	<i>Tripogon loliiformis</i>	503455	Rare	Dispersed	Habitat importance map	0.0000
Dark Wire-grass	<i>Aristida calycina var. calycina</i>	503630	Rare	Dispersed	Habitat importance map	0.0000
Arching Flax-lily	<i>Dianella sp. aff. longifolia (Benambra)</i>	505560	Vulnerable	Dispersed	Habitat importance map	0.0000
Pale Swamp Everlasting	<i>Coronidium gunnianum</i>	504655	Vulnerable	Dispersed	Habitat importance map	0.0000
Purple Diuris	<i>Diuris punctata</i>	501084	Vulnerable	Dispersed	Habitat importance map	0.0000
Austral Crane's-bill	<i>Geranium solanderi var. solanderi s.s.</i>	505337	Vulnerable	Dispersed	Habitat importance map	0.0000
Rosemary Grevillea	<i>Grevillea rosmarinifolia subsp. rosmarinifolia</i>	504066	Rare	Dispersed	Habitat importance map	0.0000
Late-flower Flax-lily	<i>Dianella tarda</i>	505085	Vulnerable	Dispersed	Habitat importance map	0.0000
Branching Groundsel	<i>Senecio cunninghamii var. cunninghamii</i>	503104	Rare	Dispersed	Habitat importance map	0.0000
Golden Sun Moth	<i>Synemon plana</i>	15021	Critically endangered	Dispersed	Habitat importance map	0.0000
Small Milkwort	<i>Comesperma polygaloides</i>	500798	Vulnerable	Dispersed	Habitat importance map	0.0000
Dwarf Brooklime	<i>Gratiola pumilo</i>	503753	Rare	Dispersed	Habitat importance map	0.0000
Waterbush	<i>Myoporum montanum</i>	502240	Rare	Dispersed	Habitat importance map	0.0000
Hairy Tails	<i>Ptilotus erubescens</i>	502825	Vulnerable	Dispersed	Habitat importance map	0.0000
Shiny Leionema	<i>Leionema lamprophyllum subsp. obovatum</i>	505478	Rare	Dispersed	Habitat importance map	0.0000
Clover Glycine	<i>Glycine latrobeana</i>	501456	Vulnerable	Dispersed	Habitat importance map	0.0000
Buloke	<i>Allocasuarina luehmannii</i>	500678	Endangered	Dispersed	Habitat importance map	0.0000
Black Falcon	<i>Falco subniger</i>	10238	Vulnerable	Dispersed	Habitat importance map	0.0000
Silky Kidney-weed	<i>Dichondra sp. 1</i>	505786	Rare	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

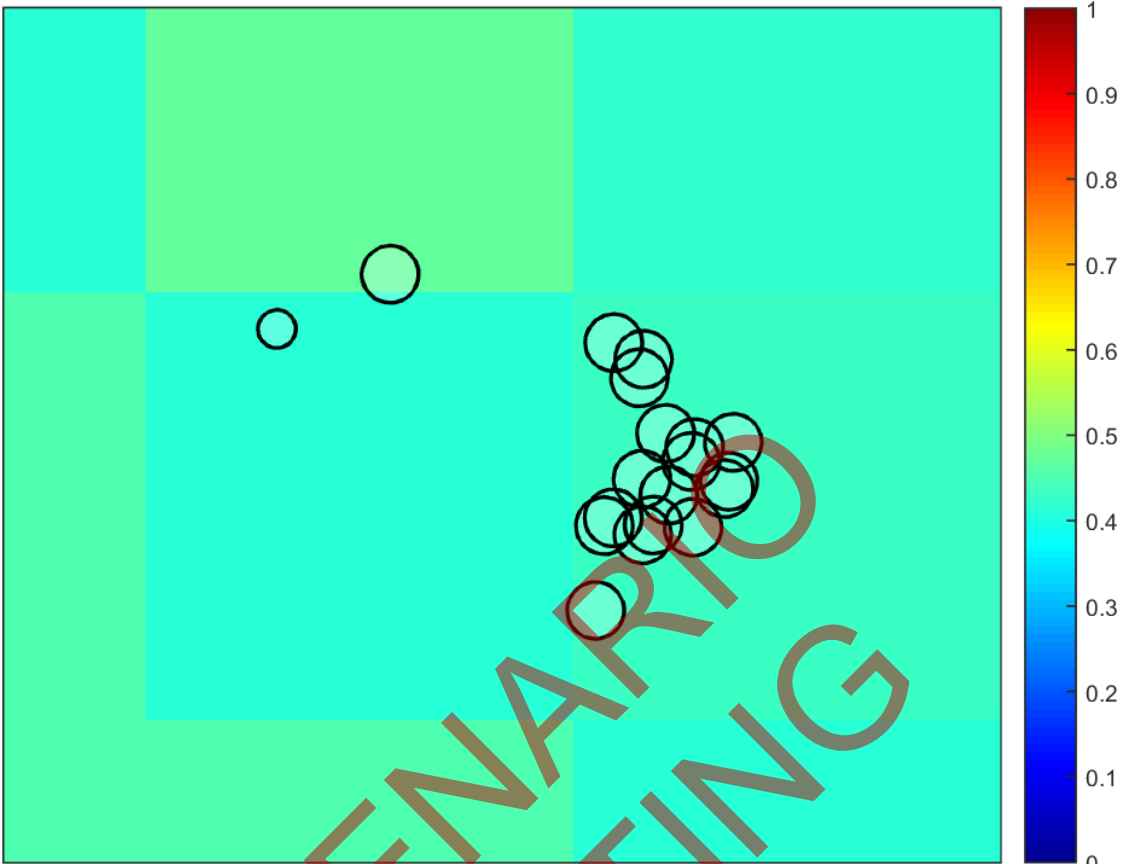
**Habitat impacted**

- 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.

SCENARIO TESTING

Appendix 3 – Images of mapped native vegetation

2. Strategic biodiversity values map



# SCENARIO TESTING