Colac Quarry - Northern Development Area

Flora and Fauna Assessment and targeted survey for Corangamite Water Skink

Holcim (Australia) Pty Ltd

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Executive summary

Aurecon undertook a site-based flora and fauna assessment in spring 2020 at the property proposed for the northern expansion of the existing Colac Quarry at Ondit, Victoria. As part of the assessment, detailed habitat mapping and a targeted survey was undertaken for Corangamite Water Skink, a threatened reptile species, listed as endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and *Flora and Fauna Guarantee Act 1988* (FFG Act).

Land within the Project area largely consisted of open agricultural paddocks, which had been de-rocked in the past and heavily farmed over a long period, now being dominated by introduced grasses. This was by far the case in the western half of the Project area. The eastern portion of the Project area was similar, though also comprised several disconnected basalt rocky rises, some which supported native vegetation.

The detailed site investigation undertaken by Aurecon in November 2020 recorded 2.666 hectares of native patch vegetation in the Project area, as well five large scattered Drooping Sheoaks (two of which were dead). Patch vegetation included 30 small patches of Stony Knoll Shrubland (EVC 649) which were limited to the rocky rises within the property and two small patches of Plains Grassy Woodland (EVC 55) immediately to the west of the Project area in the eastern road reserve of Rattrays Road. A follow up site visit undertaken by Aurecon in April 2024 has since verified the findings of the 2020 assessment.

None of the patches of native vegetation recorded in the Project area were consistent with any threatened ecological communities listed under the EPBC Act or FFG Act. Due to the poor condition of the vegetation and long agricultural use of the property, it was determined that no threatened flora species are likely to occur in the Project area.

The rocky rises in the Project area were considered to support potential habitat for the Corangamite Water Skink. A total of 1.743 hectares of moderate (sub-optimal) habitat and 1.736 hectares of low (negligible) habitat for the Corangamite Water Skink was recorded within the Project area. No Corangamite Water Skink individuals were recorded during the targeted survey of these habitats which was undertaken from the 9th to 11th November 2020. While the species has been historically recorded along the northern limit of the Project area in 2004, the findings of the current assessment suggest that the species is unlikely to be reliant on the dry rocky habitat in the Project area, and rather that the species is more likely to regularly utilise high quality habitats elsewhere in the region, namely those rocky habitats which provide immediate access to water such as those at Lake Colac and the existing Colac Quarry.

Based on the final design, the project will have the following impact on ecological values:

- Removal of a total extent of 2.299 hectares of native vegetation (Appendix G). This includes the removal of Stony Knoll Shrubland (EVC 649) and 5 large scattered trees; and
- Removal of 2.790 hectares of potential habitat for Corangamite Water Skink. This includes:
  - 1.387 hectares of low (negligible) habitat; and
  - 1.403 hectares of moderate (sub-optimal) habitat

The proposed removal of native vegetation in the Project area would trigger a permit under Clause 52.17 of the Colac Otway Shire Planning Scheme, and require an offset of 0.824 general habitat units, which must be located in the Corangamite CMA or Colac Otway Shire Council, have a minimum SBV of 0.529 and include the protection of five large trees. An online search of the Native Vegetation Credit Register has shown that the required offset is currently available for purchase. This report addresses the application requirements of the Victorian *Guidelines for the removal, destruction or lopping of native vegetation* and has been prepared in a format that can support a planning permit application to Colac Otway Shire.

An assessment was undertaken for the proposal against the significant impact criteria under the EPBC Act for the Corangamite Water Skink. While the project will result in the removal of low and moderate quality potential habitat for the species, it was determined that the project is unlikely to result in a significant impact on the Corangamite Water Skink due to the following reasons:

- The Project area has been largely subject to long term farming use and the areas of remaining rocky habitat are disconnected and exist as islands in an otherwise farmed paddock;

- Rocky habitats in the Project area are not of high quality for the species as they occur a significant distance from the nearest waterbodies (An unnamed waterbody exists 330 metres to the east, and is separated by introduced pasture).
- Rocky habitats in the Project area are separated from high quality habitat at the existing Colac Quarry which is separated by Ondit-Warrion Road, which acts as a significant barrier for dispersal.

Based on the above, the Corangamite Water Skink is considered to have a low likelihood of occurrence in the Study Area.

Removal of low/moderate potential habitat from the Project area, while considered unlikely to result in a significant impact, may have minor impacts on the potential for dispersal of the species in wet years. Given the minor potential impacts on the Corangamite Water Skink, an EPBC Act referral was submitted for the Project in 2022, which was supported by a Corangamite Water Skink Management Plan (CWSMP) aimed to mitigate the potential impacts to the species. The CWSMP provides a series of measures to mitigate potential impacts to the species, including habitat retention, and salvage and release protocols in the NDA, as well as habitat creation and monitoring nearby in the SDA. Details are provided in the CWSMP which has been prepared for the Project. The Commonwealth Minister provided the decision on 25th March 2022, that the project is Not a Controlled Action under the EPBC Act (Ref 2022/9149), confirming the determination that the proposed impacts to CWS are not significant.

One state listed fauna species was recorded flying over the Project area during the 2020 field assessment, namely the Eastern Great Egret (listed as vulnerable under the FFG Act). Whilst this species was observed flying over the site, the Project area lacks any significant aquatic habitats that would regularly support this species. As such, this listed bird species is not considered to be reliant on the Project area and is unlikely to be subject to adverse impacts by the current proposal.

The proposed action was considered unlikely to have any implications under the EE Act for matters associated with this investigation.

This version of the flora and fauna assessment report (Revision 5) has been updated as at May 2024 in response to recent consultation with the Department of Energy, Environment and Climate Action (DEECA), to include the following:

- Updated likelihood of occurrence assessment to include threatened flora and fauna that have been recently listed as threatened under the EPBC Act and/or FFG Act
- Review and update of current conservation status for all species considered
- Re-consideration of the native vegetation removal assessment, now prepared to include the consideration of past removal (associated with approved removal of native vegetation in Stages 5a, 5b and 6 to the south of Ondit-Warrion Road)
- Verification of 2020 assessment, based on 2024 site visit
- Presentation of photos of all patches of native vegetation in the project area, taken in 2024
- Updated assessment/discussion regarding the likelihood of occurrence of Corangamite Water Skink
- Details of the 'Not a Controlled Action' decision that was made under the EPBC Act in 2022

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1 Introduction

1.1 Project background

Aurecon Australasia Pty Ltd (Aurecon) was engaged by Holcim Pty Ltd (Holcim) to undertake a flora and fauna assessment for the site of the proposed expansion of the existing Colac Quarry at Ondit, Victoria (the Project).

Holcim are seeking to expand their existing basalt quarry extraction area to an additional parcel of land north of Colac Quarry. As part of this process, Holcim are preparing the necessary assessments required to accompany any applications and planning permits required for this work. Aurecon previously prepared a desktop flora and fauna assessment for the project (Aurecon 2020). This current report builds on the desktop assessment, and provides the details of a flora and fauna field assessment and targeted survey for Corangamite Water Skink undertaken by Aurecon in November 2020.

This report documents the sources of information, methods and findings of the flora and fauna assessment. This assessment report has been prepared to support the planning application for the project and to determine the implications of the project under relevant state and Commonwealth environmental legislation.

1.2 Scope and purpose of the assessment

The purpose of the ecological assessment was to provide an assessment of the biodiversity values at the project site, including an assessment of any potential impacts to native vegetation and/or significant flora, fauna and ecological communities. This assessment identifies the environmental approvals that may be triggered under state and federal legislation. This assessment also provides identification of any key risk areas of the project site and recommendations for locating project infrastructure to avoid impacts.

The scope of the ecological assessment was to:

- Undertake a review of existing ecological information for the project site, including preparation of database searches for native vegetation, flora and fauna (previously undertaken as part of the desktop assessment; Aurecon 2020);
- Undertake an ecological field survey to determine the type, extent and quality of native vegetation and fauna habitat present in the Project area;
- Undertake a targeted survey for Corangamite Water Skink in areas of suitable habitat;
- Identify any other significant ecological values (including threatened species or communities) that have potential to occur in the Project area;
- Identify the potential implications for the project based on relevant biodiversity legislation and policy;
- Provide recommendations to assist with project design; and
- Identify the need for any future targeted surveys.

1.3 Limitations

The outcomes of this report are limited to the ecological assessment undertaken for the project site and immediate surrounds. This report is limited to the scope defined in Section 1.2. Should further information become available regarding the conditions at the project site, Aurecon reserves the right to review the report in the context of the additional information.

Ecological assessments can be undertaken at any time of year, however seasonal variations can result in some flora and fauna not being detectable at certain times. Particularly, many flowering plant species are only detectable when producing flowers or fruits. In general, spring is considered the optimal period to undertake ecological field assessments in Victoria, particularly when assessing treeless vegetation, such as

occurs at the Project area. The spring timing of the ecological field survey that informed this assessment was therefore ideal to ascertain the extent and condition of native vegetation in the Project area.

Importantly, the November timing of the targeted survey for Corangamite Water Skink was considered optimal to detect the species. This species is known to be active from mid spring to late autumn (DSEWPC 2011), with females gravid (pregnant) during November, so likely to be less flighty (pers comms Garry Peterson, DELWP (now DEECA), 06/08/2020). The timing and methodology of the survey undertaken for Corangamite Water Skink followed the survey recommendations provided by DEECA during consultation undertaken in August 2020.

1.4 Location

The Project area (Figure 1) is located in Ondit, approximately 15 kilometres north of Colac in Victoria's western district. The Project area is situated at 170 Ondit-Warrion Road, Ondit, directly north of the existing Colac Quarry at 75-95 Potters Road, Ondit. The Project area comprises approximately 41 hectares of land. The Project area is bounded by Ondit-Warrion Road to the south and Rattrays Road to the west. Private farmland occurs to the north, east and west.

Legend

- Project area
- Existing Colac Quarry
- Corangamite Water Skink Records
- Road

Data Source: VicMap (2020); Aurecon (2020)

Image: Digital Cadastral DataBase; Regional Ecosystem Mapping (Version 6.1); High Value Regrowth (Version 2.1) - Department of Environment and Resource Management.

Date: 2/08/2021 Version: 1

C:\Users\ada.lam\Aurecon Group\Melbourne Geospatial - Project Work\J0063_HolcimQuarry\Project\J0063_HolcimQuarry\J0063_HolcimQuarry\J0063_HolcimQuarry.aprx

Author: AL

A3 scale: 1:20,000

0 250 500 Metres

Job No: 509485

Coordinate System: GDA 1994 MGA Zone 54

Holcim Colac Quarry Extension

Figure 1: Project area and existing information

2 Methods

2.1 Desktop assessment

The desktop assessment comprised a review of existing technical reports for the site, as well as a review of current databases for information on native vegetation and threatened flora, fauna and ecological communities listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and *Flora and Fauna Guarantee Act 1988* (FFG Act).

The likelihood of occurrence was then considered for all threatened species and communities recorded or with potential to occur in the 5 km radius search area. Where a species was determined to have a 'High' or 'Moderate' likelihood of occurrence, it is considered further in light of the proposed impacts from the project.

The methods adopted for the database search, likelihood of occurrence and impact assessment are outlined in the following sections.

The likelihood of occurrence assessment has been updated in May 2024 to include consideration of threatened flora and fauna that have been recently listed under the EPBC Act and/or FFG Act. Review and update of current conservation status for all species was also undertaken in the May 2024 update.

2.1.1 Review of previous reports

The following previous technical reports relevant to the Project area and surrounds were reviewed to inform the assessment:

- Biosis (2005) - *Flora and fauna assessment of the Northern Development Area (Rich's), CSR Readmix quarry, Colac, Victoria*, prepared by Biosis in January 2005.
- Biosis (2017a) - *Colac Quarry, 170 Ondit-Warrion Road, Ondit, Victoria: Biodiversity and Planning Assessment*, prepared by Biosis in June 2017.
- AECOM (2019a) – *Water Management Plan Addendum – Stage 5 and Stage 6, Colac Quarry Extension, WA158, 75-95 Potters Road,* prepared by AECOM in May 2019.
- AECOM (2019b) – *Corangamite Water Skink Management Plan – Stage 5 and Stage 6, Colac Quarry Extension, WA158, 75-95 Potters Road, Ondit, Victoria,* prepared by AECOM in June 2019.
- AECOM (2019c) – *Flora and Fauna Assessment Report – Colac Quarry, Stage 5 and Stage 6, 75-95 Potters Road, Ondit, Victoria,* prepared by AECOM in July 2019.

Particularly, the review of previous reports focussed on the assessment undertaken to date on Corangamite Water Skink in and adjacent to the Project area. A summary of this review is provided in Section 3.1.2.

2.1.2 Database search

Information on the occurrence of flora, fauna and ecological communities was obtained from a circular search area with a radius of 5 km centred on the Project area (coordinates: latitude 38˚ 14' 52" S and longitude 143˚ 37' 05" E).

Records from the following databases were collated and reviewed for the search area:

- Protected Matters Search Tool (PMST) of the Australian Government Department of Climate Change, Energy, the Environment and Water for matters protected by the EPBC Act (DCCEEW 2024, See Appendix F); and
- The Victorian Biodiversity Atlas (DELWP 2020a, DEECA 2024a) for records of listed threatened flora and fauna species.

The following information was also reviewed for the Project area as part of the desktop assessment:

- The Victorian DELWP Native Vegetation Information Management System (NVIM) (DELWP 2020b);
- NatureKit (DELWP 2020c);

- VicPlan (DELWP 2020d); and
- Aerial imagery.

2.1.3 Likelihood of occurrence analysis for threatened flora and fauna

The likelihood of occurrence of all threatened flora and fauna species collated in the database search was considered for the Project area. The following threatened species were considered as part of this assessment:

- Flora listed as threatened under the EPBC Act;
- Fauna listed as threatened and/or migratory under the EPBC Act;
- Flora and fauna listed as critically endangered, endangered or vulnerable under the FFG Act.

The likelihood of a species occurring within the Project area was classified as 'Negligible', 'Low', 'Moderate' or 'High' based on the consideration of:

- The presence/absence of previous records in the search region (as returned from the database search);
- The known habitat requirements and distribution of the species; and
- The suitability of habitat in the Project area (based on the findings of the overview field assessment, and previous reports for the site).

The likelihood of occurrence of ecological communities were similarly considered in this report.

Details of the ranking criteria used to determine likelihood of occurrence of threatened flora and fauna in the Project area is provided in Tables 1 and 2 respectively.

Table 1 Likelihood of occurrence criteria for threatened flora species

Likelihood of Occurrence	Criteria
High	Recent reputable records of the species in the local vicinity (i.e. within the last 10 years)
	Known resident in the area based on site observations, database records or expert advice and/or the project area contains high quality habitat
Moderate	Previous reputable records of the species in the local vicinity and/or the project area contains moderate quality habitat
Low	Limited previous records of the species in the local vicinity; and/or, the project area contains poor or limited habitat. May also be considered low if other environmental factors are present such as fragmented or isolated habitat
Negligible	No suitable habitat and/or the project area falls outside the known species range

Table 2 Likelihood of occurrence criteria for threatened and migratory fauna species

Likelihood of Occurrence	Criteria
High	Known resident in the area based on site observations, database records or expert advice
	Recent reputable records (within 5 years) of the species in the local area
	The project area contains the species' preferred habitat
Moderate	The species is likely to visit the project area regularly (i.e. at least seasonally)
	Previous reputable records of the species in the local area
	The project area contains some characteristics of the species' preferred habitat
Low	The species is likely to visit the project area occasionally or opportunistically whilst en-route to more suitable sites
	There are only limited or historical records of the species in the local area (>20 years old)
	The project area contains few or no characteristics of the species' preferred habitat
Negligible	No previous records of the species in the local area
	Previous records of the species exist in the local area but >30 years old
	The species may fly over the area when moving between areas of more suitable habitat
	Out of the known species' range

Likelihood of Occurrence	Criteria
	No suitable habitat present within the project area
	Species is known to be regionally extinct

2.1.4 Impact assessment

Listed threatened species and ecological communities determined as having a High or Moderate likelihood of occurrence in the Project area have been considered regarding the level of likely impact on these values from the proposal.

In the case of Matters of National Environmental Significance (MNES), any threatened species or community determined as having a High or Moderate likelihood of occurrence in the Project area has been assessed against the published Significant Impact Guidelines (DoE 2013) to determine whether the proposal may have a significant impact and whether a referral under the EPBC Act is required (See Section 4.1).

2.2 Field assessment

The flora and fauna field assessment was undertaken over three days, from 9th to 11th November 2020. The Project area was later re-visited on the 23rd April 2024 to verify the findings of the flora and fauna field assessment undertaken in 2020 and to obtain photographs of native vegetation to be removed in accordance with Victoria's *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017a). The Project area was surveyed on foot during both the 2020 and 2024 site visits.

The field assessment was led by Justin Sullivan, a Senior Ecologist, with experience in the identification of Victoria's flora and fauna, and accreditation to undertake the assessment of native vegetation as listed on DELWP's Vegetation Quality Assessment Competency Register. Relevant permits under the Victorian *Wildlife Act* 1975 (No. 10008909) and *Flora and Fauna Guarantee* Act 1988 (No. 10008817) were in effect for this work.

2.2.1 Flora survey

A vegetative description of the Project area was recorded as well as a full a list of the flora species observed. The presence of any suitable habitat for threatened flora species was recorded and mapped, to inform the likelihood of occurrence analysis and inform the potential requirement for any future targeted flora surveys.

All native vegetation (including patches and scattered trees) recorded in the Project area was mapped using Arc Collector on a tablet with in-built GPS (with 4-5 metre accuracy). Patches of native vegetation were classified to Ecological Vegetation Class (EVC) and a Vegetation Quality Assessment (VQA) was undertaken. All scattered trees were identified to species and their diameter at breast height (DBH) was measured. The assessment of native vegetation undertaken was consistent with DELWP's Habitat hectare method (DSE 2004) and Victoria's *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017a). Previous vegetation mapping undertaken by Biosis (2017) was referenced as a guide and updated accordingly based on the current status of the vegetation in the Project area.

The adjoining road reserves of Ondit-Warrion Road and Rattrays Road were also assessed to assist in determining potential impacts from accessing the Project area.

A previous assessment of the Project area (Biosis 2017) had identified that potential habitat occurred for two EPBC Act listed flora species, Salt-lake Tussock-grass and Spiny Peppercress. The current investigation has determined that these species have a low likelihood of occurrence and targeted transect surveys were not considered to be required (See further details in Section 3.3.4 and Appendix D). Salt-lake Tussock-grass is known to flower from September to December, while Spiny Peppercress flowers from spring to autumn (VICFLORA 2020). Aurecon's ecological investigation (November 2020) is therefore considered likely to have recorded these species if they were present in the Project area.

2.2.2 Fauna survey

A list of all fauna species observed within the Project area was recorded through active searching, and general observations including identification of birds and frogs by call. The presence of any suitable habitat for threatened fauna species was recorded and mapped, to inform the likelihood of occurrence analysis as well as the potential requirement for any future targeted fauna surveys.

The review of previous reports determined that one threatened fauna species, the Corangamite Water Skink, had previously been recorded in the Project area. While the records of Corangamite Water Skink at the site are noted in the most recent Biosis (2017) report, it has recently been confirmed (*pers comms* Ian Smales, Biosis, 13th November 2020) that these records were from a much earlier assessment by Biosis in 2004 (Biosis 2005).

As at 2020, the most recent records on the Victorian Biodiversity Atlas (VBA) of Corangamite Water Skink nearby to the Project area are from Meredith Park, on the northern shore of Lake Colac (2016), and from the existing Colac Quarry (2018). Corangamite Water Skink have also been recorded on the north shore of Lake Colac in May 2024 (Aurecon unpublished data). Given the known presence of the Corangamite Water Skink in the surrounding area, and the previous record of the species in the Project area (Biosis 2005), a detailed habitat assessment and targeted survey was undertaken for this species as part of the investigation.

Corangamite Water Skink habitat assessment and targeted survey

The current survey undertook mapping of high, moderate and low quality habitat for Corangamite Water Skink in the Project area based on an understanding of the species habitat requirements, as follows:

- High (optimal habitat) – areas with large, stacked rocks, adjacent to water, often with cover of native shrubs (i.e. Tree Violet). (The stacking of large rocks provides multiple platforms for basking as well as cracks and fissures for refuge).
- Moderate (sub-optimal habitat) - areas with large, stacked rocks, that are not adjacent to water, often with cover of native shrubs.
- Low (negligible habitat) – Less structurally complex stony knolls, with smaller, mostly embedded rock.

Targeted surveying for Corangamite Water Skink was undertaken between 9th to 11th November 2020 in areas of high and moderate habitat identified in the Project area. The methods adopted for the targeted survey were guided by a meeting with Garry Peterson (Program Manager Natural Environment Programs, Barwon South West Region of DELWP) on 6th August 2020, and as per the recommended method outlined in the Commonwealth *Survey guidelines for Australia's threatened reptiles* (DSEWPC 2011).

Targeted surveying for Corangamite Water Skink was undertaken across four sessions including the afternoon of the 9th, morning and afternoon of the 10th, and morning of the 11th November 2020. During these times, areas of suitable habitat were visually searched using binoculars to detect the presence of the species. Structurally complex stony knolls (moderate quality habitat) were first visually searched from a distance, and then traversed on foot, stopping regularly for 1-2 minutes to visually search the area. Existing dry stone walls in and around the boundary of the Project area, particularly where they adjoined remnant stony knolls, were also inspected as part of the targeted survey.

Active searching (i.e. rock rolling) is known to be less valuable to locate the species, so was not relied upon as part of the targeted survey. However, active searching (lifting of building materials, etc) was undertaken around the existing dwelling on two separate occasions on the 9th and 10th November 2020. Times and weather conditions for the Corangamite Water Skink targeted survey are detailed in Table 3.

Table 3 Times and weather conditions for Corangamite Water Skink targeted survey

Date	Habitat assessed	Start time	Temperature at start time	Finish time	Temperature at finish time	Other weather notes
9/11/2020	HZ's 5 to 13, and adjoining dry stone walls	5.20pm	26° C	6pm	21° C	Dry, Full sun, No wind, No cloud cover (optimal conditions)
10/11/2020	HZ's 14 to 25, and adjoining dry stone walls	7.45am	18° C	9.30am	24° C	Dry, Full sun, No wind, No cloud cover (optimal conditions)
10/11/2020	HZ's 14 to 25, and adjoining dry stone walls	4.40pm	30° C	6.10pm	30° C	Dry, Full sun, No wind, No cloud cover (sub-optimal conditions)
11/11/2020	HZ's 1 to 25, and adjoining dry stone walls	6.45am	22° C	9am	21° C	Dry, Full cloud cover, Strong breeze, (sub-optimal conditions)

* HZ's surveyed as per Figure 2.

A brief habitat assessment was undertaken at Meredith Park, on the northern shore of Lake Colac (approx. 2.3 kilometres south of the Project area), to provide an understanding of the preferred habitat requirements for the species. Rocky habitats at Meredith Park were checked for the presence of Corangamite Water Skink briefly on 10th November (11.30am-12pm, during hot and clear conditions; 30° C) and 11th November (9.15am-9.40am; during rainy conditions; 21° C).

Results of the targeted survey for Corangamite Water Skink in the Project area are detailed in Section 3.3.5 of this report.

3 Results

This section of the report presents the integrated results of the database review and ecological field assessment.

3.1 Review of existing information

3.1.1 Database review

The database searches undertaken for the project provided a shortlist of the potential flora, fauna and ecological communities that may occur within 5 km of the Project area. The database search returned 22 threatened flora species and 64 threatened and/or migratory fauna species in the 5 km search area (refer details in Appendices D and E). Threatened and/or migratory flora and fauna species returned from the database search were considered against the suitability of habitat, to determine their likelihood of occurrence in the Project area. Threatened and/or migratory flora and fauna species determined to have a high to moderate likelihood of occurrence in the Project area are discussed in Sections 3.3.4 and 3.3.5.

3.1.2 Review of existing reports on Corangamite Water Skink

The existing Colac Quarry (south of Ondit-Warrion Road) is known to support Corangamite Water Skink, with individuals of the species having been recorded during annual monitoring between 2005 and 2018 (Biosis 2018). Previous expansions of the existing Colac Quarry, including the Southern Development Area [SDA] in 2006, and more recently, Stages 5 and 6 (See Figure 1), were both referred to the Commonwealth based on potential impacts to the Corangamite Water Skink. These previous expansions included the preparation and implementation of management plans for the species (Biosis research 2007; AECOM 2019b). The implementation of the Corangamite Water Skink management plan for the SDA included the creation of rocky habitat in 2008 in Basin 6 of the former quarry. Individuals of Corangamite Water Skink were subsequently recorded within this created habitat annually between 2015 and 2018 (Biosis 2018), while individuals of Corangamite Water Skink previously recorded on dry stony rises at the beginning of the monitoring period (2004), they were not recorded again (AECOM 2019c; Biosis 2017b).

The outcomes of this monitoring suggested that rocky habitats away from standing water are not considered to provide permanent habitat for the Corangamite Water Skink. Rather, the complex rocky habitats that abut the waters edge are considered to provide the most suitable habitats for the species. The monitoring findings also provided evidence for the value of created habitats for the species.

Two specimens of the Corangamite Water Skink were previously recorded along the northern boundary of the current Project area during an ecological survey undertaken by Biosis on 9th November 2004 (Biosis 2005). Surveys have not recorded the species in the Project area since (Biosis 2017a).

As at 2020, eleven records (totalling a count of 57 individuals) of the Corangamite Water Skink occur on the Victorian Biodiversity Atlas (VBA) within the 5km search area (DELWP 2020a). This includes records from Meredith Park on the north shores of Lake Colac, Lake Ondit and from the existing Holcim Quarry south of Ondit-Warrion Road where areas of high quality habitat exist in close proximity to water (as defined in Section 2.2.2). The next closest records exist from Lake Corangamite, Lake Gnalinegurk and Lake Coragulac between 10 and 12 km west of the Project area.

3.2 Survey conditions

The ecological field survey was undertaken under warm, dry conditions during the peak of spring (November) 2020. The timing and condition of the vegetation was considered optimal to assess the extent and quality of native vegetation in the Project area.

The timing of the ecological survey was scheduled to occur during a window of warm weather in the Colac region, appropriate for surveying for Corangamite Water Skink. The temperature varied from mild to hot

across the three days of the ecological survey. Targeted surveying for Corangamite Water Skink was undertaken across four sessions between the 9th to 11th November 2020. Weather conditions were considered optimal during the first two sessions, with the later two considered to be sub-optimal (too hot on 10th November, and too windy on 11th November) (See Table 3).

Weather conditions during the brief checks at Meredith Park, (2.3 kilometres south of the Project area), were poor (too hot on 10th November, and wet on 11th November).

3.3 Ecological assessment

A follow up site visit undertaken by Aurecon in 2024 determined that the status of the environment within the Project area remains unchanged since the 2020 site assessment. As such, the results of the 2020 site visit (as presented in the below sections) are considered current.

3.3.1 Site description

The Project area comprised a 41-hectare parcel of land, bounded on all sides by a largely intact dry stone wall. The eastern half of the Project area supported numerous rocky rises, characterised by the presence of embedded and stacked basalt rock. The property has been extensively modified for farming, evidenced by the dominance of introduced pasture grasses throughout the western half of the Project area, and as well as in the lower areas between the rocky rises in the eastern half. The dominant pasture grass species recorded throughout the Project area were Great Brome, Soft Brome, Kentucky Blue-grass, Oat and Rye Grass.

An existing dwelling and other outbuildings occur in the southern part of the Project area. The area around the dwelling supports a mixture of planted trees including Radiata Pine, English Oak, Willow, Silky Oak, Chery Plum, Pepper Tree and a small number of planted non-indigenous eucalypts. The ground layer in this area is dominated by introduced grasses. Various piles of hard waste and building materials exist around the dwelling and outbuildings. The dwelling and outbuildings was bounded further to the north and east by an inner dry stone wall. Five remnant large Drooping Sheoaks (two of which were dead) were recorded in, and further to the east of this area (Photo 1). A small number of old, planted Cypress Pines also exist in the south east portion of the Project area.

Many of the rocky rises in the Project area supported patches of native vegetation, namely Stony Knoll Shrubland (EVC 649), distinguished by the presence of lichen/moss covered basalt rocks as well at least some presence of native vascular vegetation (Photo 2 and 3). Where areas of lichen/moss covered rock were recorded with no vascular vegetation present, these areas were not considered as native vegetation (as per the definitions of native vegetation in the DELWP Guidelines). Native vascular vegetation in areas of Stony Knoll Shrubland was largely limited to Tree Violet (particularly in the north east of the Project area), as well as scattered occurrences of native grasses (wallaby grass, Kangaroo Grass) and herbs (Sheep's Burr, Grassland Wood Sorrell and Nodding Saltbush). One old specimen of Sweet Bursaria was recorded in an area of Stony Knoll Shrubland (Habitat Zone 15) in the north east of the Project area (Photo 4). Areas of Stony Knoll Shrubland all comprised a high cover of weeds, namely introduced grasses.

Photo 1: Scattered Tree (Drooping Sheoak) and inner dry-stone wall

Photo 2: Stony Knoll Shrubland (EVC 649) distinguished by presence of lichen/moss covered basalt rock and cover of Tree Violet

Photo 3: Stony Knoll Shrubland (EVC 649) on rocky rises and introduced pasture grasses in lower-lying areas in between

Photo 4: Stony Knoll Shrubland (EVC 649), Habitat Zone 15, showing Tree Violet and old specimen of Sweet Bursaria

Low lying areas in between areas of Stony Knoll Shrubland and other rocky rises were almost exclusively comprised of introduced pasture grasses (Photo 3). The soil in these low-lying areas was found to be heavily altered, having been heavily pugged by cattle. Numerous cattle were observed grazing the Project area at the time of the survey. Two small dams were recorded in the Project area, one near to (north west of) the existing dwelling, and one adjacent to Habitat Zone 17 in the north east. Hard and chemical waste was observed in and adjacent to the northern dam (Photo 5). No other aquatic habitats occurred in the Project area.

The bordering dry stone wall was found to be largely intact along the southern, eastern and western boundary. While the dry stone wall along the northern boundary was still present, it was found to be damaged and of a much reduced height.

The adjoining, northern road reserve of Ondit-Warrion Road comprised introduced vegetation, including planted Cherry Plums and English Oaks as well as introduced pasture grasses. The adjoining, eastern road reserve of Rattrays Road was found to support two patches of native vegetation, namely Plains Grassy Woodland (EVC 55) distinguished by the presence of Blackwood (Photo 6). The remaining eastern road reserve of Rattrays Road comprised introduced vegetation.

Photo 5: Hard waste adjacent to small dam in north east of Project area

Photo 6: Plains Grassy Woodland (EVC 55) comprising recruiting Blackwood on eastern road reserve of Rattrays Road (west of Project area)

Several large, non-vegetated salt lakes exist in the region surrounding the Project area including an unnamed lake 400 metres to the east, Lake Ondit 900 metres to the south west, Lake Colac 2.4 km to the south and Lake Beeac 3 km to the north.

The Project area falls within the Victorian Volcanic Plains bioregion, the Corangamite Catchment Management Authority (CMA) area and the Colac Otway Shire Local Government Area (LGA). The Project area is currently zoned Farming Zone (FZ). Vegetation Protection Overlay – Schedule 2 (VPO2) occurs to

the west of the Project area and protects the roadside vegetation in Rattrays Road. The whole Project area is mapped as a Designated Bushfire Prone Area (BPA).

3.3.2 Native vegetation

Types of native vegetation that may be present within the Project area were ascertained through the review of state based mapping resources (DELWP 2020b; DELWP 2020c) and previous assessment reports for the Project area (Biosis 2017). Ecological Vegetation Classes (EVCs) modelled by DELWP in the Project area and surrounding region include Plains Grassy Woodland (EVC 55), Swamp Scrub (EVC 53), Grassy Woodland (EVC 175) and Plains Sedgy Wetland (EVC 647).

Native vegetation recorded in the Project area in the previous Biosis (2017) assessment was limited to 24 patches of Stony Knoll Shrubland (EVC 649), as well as five scattered Drooping Sheoaks. Since 2017, there has been considerable change to the native vegetation permitted clearing regulations in Victoria, namely through the introduction of the present *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) in December 2017. Moreover, the current Assessor's handbook (DELWP 2018) stipulates that applications to remove native vegetation must be supported by a current site assessment, (and namely one that has been completed within the last three years for grassy ecosystems).

Given the time since the Biosis (2017) assessment, an updated native vegetation assessment was undertaken by Aurecon in 2020. A follow up site visit undertaken by Aurecon in 2024 verified the findings of the 2020 assessment.

The following native vegetation occurs in and immediately adjacent to the Project area:

- 32 patches of native vegetation including:
  - 30 patches of Stony Knoll Shrubland (EVC 649; Habitat Zones 1-30); and
  - Two patches of Plains Grassy Woodland (EVC 55; Habitat Zones 31-32) in the eastern road reserve of Rattrays Road; and
- Five large scattered trees (all Drooping Sheoak), two of which were dead.

Individual patches of native vegetation are termed 'Habitat Zones' and have been assessed separately. A summary of the details for each habitat zone is provided in Table 4. The results of the habitat hectare assessment are provided in Appendix B.

The five scattered Drooping Sheoak trees recorded are considered to have once comprised the canopy component of *Higher Rainfall* Plains Grassy Woodland (EVC 55_63). Details of all scattered trees recorded are listed in Table 5.

Table 4 Descriptions of patches of native vegetation (habitat zones) recorded in the Project area

Habitat Zone	Ecological Vegetation Class (EVC)	Habitat Score (out of 100)	Total area (ha)	Description
1-30	Stony Knoll Shrubland (EVC 649)	30	2.591	Small isolated patches distinguished by presence of lichen/moss covered basalt rock, with a low to moderate cover of native shrubs (Tree Violet), and scattered occurrence of native grasses (wallaby grass, Kangaroo Grass) and herbs in select habitat zones (Sheep's Burr, Grassland Wood Sorrell and Nodding Saltbush).
31-32	Plains Grassy Woodland (EVC 55)	16	0.075	Small patches comprised of heavily recruiting Blackwood, over a ground layer of introduced pasture grasses. Recorded to the west of the Project area, in the eastern road reserve of Rattrays Road.
Total area of native vegetation patches			**2.666**	

Table 5 Details of native scattered trees recorded in the Project area

Tree Number	Size and type	DBH (cm)	Common Name	Scientific Name	Comment
1	Large Scattered Tree	41	Drooping Sheoak	*Allocasuarina verticillata*	-
2	Large Scattered Tree	51	Drooping Sheoak	*Allocasuarina verticillata*	-
3	Large Scattered Tree	56	Drooping Sheoak	*Allocasuarina verticillata*	-
4	Large Scattered Tree	44	Drooping Sheoak	*Allocasuarina verticillata*	Dead
5	Large Scattered Tree	71	Drooping Sheoak	*Allocasuarina verticillata*	Dead, stag to 2m

3.3.3 Ecological communities

EPBC Act listed ecological communities

Four EPBC Act listed threatened ecological communities were listed in the PMST as potentially being present in the search area (DAWE 2024; See Appendix F). These included:

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

These communities are discussed below based on the habitat in the Project area.

Grassy Eucalypt Woodland of the Victorian Volcanic Plain – Treeless patches of Stony Knoll Shrubland can be included within the Grassy Eucalypt Woodland of the Victorian Volcanic Plain community, when they occur within, or adjacent to, a patch of eucalypt woodland and meet the relevant understory condition thresholds (TSSC 2009). Given the absence of woodland within and surrounding the Project area, the patches of Stony Knoll Shrubland do not meet the criteria for this community.

Natural Temperate Grassland of the Victorian Volcanic Plain – The Commonwealth listing advice for this community notes that it includes two component EVCs from the VVP bioregion, namely Plains Grassland (EVC 132) and Creekline Tussock Grassland (EVC 654). While it is acknowledged that other EVCs including Stony Knoll Shrubland (EVC 649) intergrade with the listed community (TSSC 2008), Stony Knoll Shrubland is noted as being associated with the Grassy Eucalypt Woodland community as detailed above (DSEWPC 2011). On this basis, the patches of Stony Knoll Shrubland in the Project area do not meet the criteria for the Natural Temperate Grassland community.

Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains – Low-lying areas occur in the Project area between the areas of Stony Knoll Shrubland. These areas are dominated by introduced pasture grasses, and only scattered flora species were recorded. Also, these areas have been heavily pugged by cattle. The main condition threshold for listing as this community requires native plant species to make up 50% or more of the total cover of plants in the ground layer in the area. As the low lying areas in the Project area are dominated by introduced grasses, they do not meet the criteria for the listed Seasonal Herbaceous Wetlands community.

White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland – None of the key canopy species that distinguish this community occur in the Project area. This community therefore does not occur.

No native vegetation in the Project area was consistent with any ecological communities listed under the EPBC Act. It is therefore determined that no EPBC Act listed communities occur in the Project area.

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Legend

- Scattered Tree

Native Vegetation - Habitat Zone ID

- Plains Grassy Woodland (EVC 55)
- Stony Knoll Shrubland (EVC 649)

Corangamite Water Skink Habitat rating

- Low
- Moderate
- N/A
- Dry Stone Walls
- Internal Fences
- Existing Site
- Project area
- Road

Data Source: VicMap (2020); Aurecon (2020)

Image: Digital Cadastral DataBase; Regional Ecosystem Mapping (Version 6.1); High Value Regrowth (Version 2.1) - Department of Environment and Resource Management.

Date: 2/08/2021 Version: 1

A3 scale: 1:3,000

0 50 100 Metres

Job No: 509485

Coordinate System: GDA 1994 MGA Zone 54

Holcim Colac Quarry Extension

Figure 2: Investigation area and ecological values

Author: C:\Users\adalam\Aurecon Group\Melbourne Geospatial - Project Work\J0063_HolcimQuarry\Project\J0063_HolcimQuarry\J0063_HolcimQuarry.aprx

FFG Act listed ecological communities

The native vegetation recorded in the Project area is not considered to be consistent with any of the listed ecological communities listed under the FFG Act.

Specifically, the Western Basalt Plains Grassland Community is described as an open grassland which is dominated by perennial native grasses, and has very few eucalypts and shrubs (SAC 2015). The native vegetation in the Project area rather is distinguished by a high cover of lichen/moss covered rock, moderate native shrub cover, low scattered cover of perennial native grasses and high cover of weeds.

Also, the Western Basalt Plains (River Red Gum) Grassy Woodland Community is described as having a canopy of River Red Gum. This tree species is unlikely to have been historically present on the stony knolls in the Project area.

It is therefore determined that no FFG Act listed communities occur in the Project area.

3.3.4 Flora

Most of the Project area is dominated by introduced flora, with native flora largely limited to the rocky rises as well as scattered occurrences of the native shrub, Tree Violet, along the dry stone walls around the perimeter of the Project area. During the field assessment, 59 flora species were recorded, 47 (80%) of which were introduced species.

A full list of the flora species recorded in the Project area is provided in Appendix C. No threatened flora species were recorded within the Project area. The likelihood of the threatened flora species which were detected in the database searches occurring within 5 km of the Project area was considered in Appendix D. The areas of native vegetation within the Project area were small and disconnected, and comprised a very low native species diversity. They also had a very high cover of grassy weeds. Remaining parts of the Project area, including the lower lying areas, comprised almost exclusively of introduced pasture grasses, and were often heavily pugged by cattle. Given the above condition, and long agricultural use of the overall Project area, it was determined that no suitable habitat for threatened flora exists and that no threatened flora species are likely to occur in the Project area.

3.3.5 Fauna

Fauna habitat

Land within the Project area largely consisted of open agricultural paddocks, which had been de-rocked in the past and heavily farmed over a long period, now being dominated by introduced grasses. This was by far the case in the western half of the Project area. The eastern portion of the Project area was similar, though also comprised several disconnected basalt rocky rises, some which supported native vegetation. The Project area supported limited treed and aquatic habitat.

The rocky rises in the Project area supported potential habitat for the Corangamite Water Skink, as defined in Section 2.2.2. Structurally complex stony knolls, distinguished by the presence of large, stacked or jumbled basalt rock were considered to support moderate quality (sub-optimal) habitat for the Corangamite Water Skink (See Photo 7). Less structurally complex stony knolls, distinguished by the presence of smaller, mostly embedded basalt rock, were considered low quality (negligible) habitat for the species (See Photo 8). While habitat for the Corangamite Water Skink largely coincided with areas of native vegetation (Stony Knoll Shrubland), some additional rocky rises which lacked native vegetation were also recorded.

None of the rocky habitats in the Project area were of high-quality habitat for the Corangamite Water Skink as they were a significant distance away from any available water. The closest waterbodies to the rocky habitats recorded in the Project area included:

- An unnamed lake approximately 330 metres to the east, separated from the Project area by open agricultural land, and

- The existing Colac Quarry inundated pit approximately 230 metres to the south west, separated from the Project area by Ondit-Warrion Road, a main rural road.

Dry stone walls which occurred around the perimeter of the Project area as well as around the existing dwelling were of limited value for the Corangamite Water Skink.

Photo 7: Area of moderate quality Corangamite Water Skink habitat – large, stacked basalt rock

Photo 8: Area of low quality Corangamite Water Skink habitat – less structurally complex stony knolls, supporting mostly embedded basalt rock

The extent of low and moderate quality Corangamite Water Skink habitat recorded within the Project area is presented in Table 6 and Figure 2. It is noted that all patches of Stony Knoll Shrubland (EVC 649) mapped in the Project area (totalling 2.591 ha) were considered to support either low or moderate quality potential habitat for the Corangamite Water Skink. An additional 0.888 ha of rocky habitat in the Project area that did not support any native vegetation was also considered as low quality potential habitat for the Corangamite Water Skink (See Figure 2). The totals presented in Table 6 do not include the area of dry-stone walls which bound the Project area.

Table 6 Area of potential Corangamite Water Skink recorded in the Project area

CWS habitat quality	Area of potential CWS habitat in area of native vegetation (ha)	Area of potential CWS habitat in area of non-native vegetation (ha)	Total area of potential CWS habitat in the project area (ha)
Moderate (sub-optimal)	1.743	0	**1.743**
Low (negligible)	0.848	0.888	**1.736**
Total	**2.591**	**0.888**	**3.479**

The rocky habitats in the Project area would also provide habitat for other reptiles in the region.

No significant hollows were readily observed in the planted trees located around the existing dwelling, however these trees would provide foraging and dispersal habitat for common fauna such as birds and arboreal mammals. Scattered native trees recorded were mostly in poor health, though would provide similar habitat value for common farm birds. Two very small dams were recorded in the Project area, one near to (north west of) the existing dwelling, and one adjacent to Habitat Zone 17 in the north east. Hard and chemical waste was observed in and adjacent to the northern dam (Photo 5). These aquatic habitats lacked fringing vegetation and were not considered to support any significant habitat for aquatic fauna species.

Fauna species

A total of 36 fauna species were recorded in the Project area during the ecology survey, 30 (83%) of which were native bird species. A full list of the fauna species recorded in the Project area is provided in Appendix C. It is to be noted that several of the bird species recorded during the site inspection were limited to observations while flying over the Project area, while on route to the various lakes in the region. This was the case for the one listed fauna species recorded during the ecological survey, Eastern Great Egret (listed as vulnerable under the FFG Act). Whilst this species was observed flying over the site, the Project area lacks

any significant aquatic habitats that would regularly support this species. As such, this state listed bird species is not considered to be reliant on the Project area and is unlikely to be subject to adverse impacts by the current proposal.

The likelihood of the listed fauna species detected in the database searches occurring within 5 km of the Project area was considered in Appendix E. Of these, one threatened fauna species, the Corangamite Water Skink, was initially considered to have a moderate likelihood of occurrence in the Project area. This species is considered further below.

The Project area did not support suitable habitat for the EPBC Act listed Striped Legless Lizard. This was largely determined by the lack of native grassland and large extent of farming use in the Project area (Appendix E).

Corangamite Water Skink - (EPBC Act: Endangered; FFG Act: endangered)

Detailed habitat mapping and targeted surveying for Corangamite Water Skink was undertaken as part of the current investigation by Aurecon as detailed in Section 2.2.2. Rocky habitats were recorded in the Project area that provide opportunities for basking and refuge for the species. However, none of the rocky habitats in the Project area were of high-quality habitat for the Corangamite Water Skink as they were a significant distance away from any available water. The closest waterbodies to the rocky habitats recorded in the Project area included:

- An unnamed lake approximately 330 metres to the east, separated from the Project area by open agricultural land, and
- The existing Colac Quarry inundated pit approximately 230 metres to the south west, separated from the Project area by Ondit-Warrion Road, a main rural road.

As such, habitat for Corangamite Water Skink in the Project area was limited to moderate (sub-optimal) and low (negligible) quality habitats, as defined in Section 2.2.2.

The Corangamite Water Skink was previously recorded along the northern boundary of the Project area during an earlier ecological survey undertaken by Biosis on 9th November 2004 (Biosis 2005). Two specimens were recorded during the 2004 survey including one juvenile amongst the northern perimeter dry-stone wall and one adult amongst rocky habitat in the north east corner of the Project area. Biosis undertook a more recent ecological survey of the Project area in May 2017, which did not record the species.

The November 2020 targeted survey conducted by Aurecon was undertaken across multiple visits over a three day period, and followed the prescribed methods to best detect the species. Areas mapped as moderate quality habitat for the species were targeted during the survey, with survey effort enhanced in the north east of the Project area (where the species was previously recorded in 2004). Weather conditions were optimal for two out of four of the targeted searches for the species. The later two searches were undertaken under sub-optimal (warm and windy) conditions (See Table 3). Corangamite Water Skink was not recorded in the Project area during the targeted survey.

A habitat assessment was also undertaken at Meredith Park at the northern end of Lake Colac in November 2020 to gain a better appreciation of the preferred habitat requirements for the species. This assessment noted the presence of high-quality habitat at Meredith Park (large, jumbled rocky habitat immediately adjacent to a significant body of water). Corangamite Water Skink was not recorded during this brief assessment. However it is noted that the habitat assessment at Meredith Park was undertaken following a change in the weather, and during sub-optimal conditions. Notably, two individuals of Corangamite Water Skink were observed incidentally by Aurecon atop large rock aggregations on the northern shore of Lake Colac on the 23rd April 2024. Individuals were observed basking on fissured rock platforms located immediately adjacent to water, and moved quickly into gaps between stacked rock upon observer movement.

As detailed in Section 3.1.2, VBA records of the Corangamite Water Skink within 5 kilometres of the Project Area are from Meredith Park on the north shores of Lake Colac, Lake Ondit and from the existing Holcim Quarry south of Ondit-Warrion Road where areas of rocky habitat exist adjacent to water. These existing records suggest that the species is more likely to regularly utilise and rely upon rocky habitats which provide immediate access to water. This conclusion is supported by the findings of monitoring undertaken for the

species between 2005 and 2018 in the existing Holcim quarry south of Ondit-Warrion Road in which rocky habitats adjacent to water were found to support the species throughout the monitoring period, whereas individuals previously recorded on dry stony rises at the beginning of the monitoring period were not recorded again (AECOM 2019c; Biosis 2017b).

Summary of Findings

It is acknowledged that a Corangamite Water Skink population may have historically occurred within the Project Area prior to the current farming use of the land, when natural flows and soil structure may have resulted in water being held on site for periods of the year (DSE 2011). However, the current and long-established farming use of the Project area and surrounding properties has heavily altered the natural flows and water holding capacity at the site (DSE 2011). This was evidenced by the heavily pugged and compacted soil and lack of indigenous flora throughout the Study Area, particularly beyond the patches of native vegetation recorded (Figure 2).

The current lack of water in the Study Area and heavily farmed nature of the Project area and surrounds has severely reduced the possibility that the species would utilise the Project area. This is supported given the species occupies a small home range <10m^2 and is rarely found far away from water (Robertson and Coventry 2019: DSE 2011). It is also noted that whilst rocky habitat exists in the Study area, mainly in the north-east corner, a large amount of the rock is embedded and does not represent the preferred habitat for the species which is defined by the Commonwealth as supporting large rock aggregations, rock fissures and permanent freshwater bodies (Robertson and Coventry 2019; DSE 2011). While absent from the site and farmland to the east, such preferred habitat was noted on the northern shore of Lake Colac, where a known population of Corangamite Water Skink occurs (as confirmed through incidental observations by Aurecon in May 2024).

While the lack of water within the Study Area is considered a key limitation for the species, the lack of large rock aggregations and fissured rock (such as that on the shore of Lake Colac) further reduce the likelihood that Corangamite Water Skink would utilise the Study Area. Furthermore, the unnamed lake to the east of the site is shallow, lacks rocky habitat and is separated by over 300 metres of introduced pasture. Given the lack of connectivity and distance of rocky habitat between the site and the unnamed lake, as well as the very small home range of the species, it is considered unlikely that Corangamite Water Skink would regularly move between these areas.

Based on the above, the Corangamite Water Skink is considered to have a low likelihood of occurrence in the Study Area. Therefore, potential impacts to the species from the proposed development including ground disturbance and native vegetation and habitat removal within the limit of extraction (Figure 3) are considered to be negligible to the species.

An assessment against the significant impact criteria under the EPBC Act is provided for the Corangamite Water Skink in Section 4.1.

4 Proposed impacts and implications

Holcim are seeking to expand their existing basalt quarry extraction area to an additional parcel of land north of Ondit-Warrion Road, also referred to as the Northern Development Area (NDA). The Project area will be utilised for basalt quarry extraction over a 20-year timeline. Extraction is to be undertaken across four stages (Stages 1-4) from west to east (see Figure 3). While the proposed works will be undertaken over an extended time period, the full impact of the proposal across the Project area has been considered in this assessment.

The proposed limit of extraction in the Project area is shown in Figure 3. This area will be subject to basalt extraction, and all native vegetation and habitat within this area is proposed to be removed. A 5 metre wide disturbance area to the north and east of the extraction limit has also been included to allow for assumed losses to vegetation immediately adjacent to the quarry edge during extraction works.

A haul road will be constructed at the western edge of the Project area, to allow site access/egress from Rattrays Road. The location of the haul road avoids impacts to native vegetation that occurs further to the north in the Rattrays Road reserve (Habitat Zones 31 and 32).

A small bund wall (1.5 – 2m high) will be constructed within a 20-metre-wide area between the limit of extraction and the western and southern boundaries of the Project area. Bunding is required for site safety and will be planted out with native plant species. All native vegetation and habitat within the 20-metre-wide bund area will be required to be removed. All impacts to native vegetation and habitat are shown in Figure 3. Based on the final design, the project will have the following impact on ecological values:

- Removal of a total extent of 2.299 hectares of native vegetation (Appendix G). This includes the removal of Stony Knoll Shrubland (EVC 649) and 5 large scattered trees.
- Removal of 2.790 hectares of potential habitat for Corangamite Water Skink. This includes:
  - 1.387 hectares of low (negligible) habitat; and
  - 1.403 hectares of moderate (sub-optimal) habitat.

Efforts have been made to avoid impacts to native vegetation and potential habitat for Corangamite Water Skink as much as possible, without undermining the key objectives of the proposal. This has been considered during the planning and design phase, with the final design resulting in the retention of native vegetation and/or habitat along the northern and eastern boundary of the Project area, within the south east corner of the Project area, and within the Rattrays Road reserve. As such, a total of 0.632 hectares of native vegetation will be retained. An avoid and minimise statement that meets the application requirements of the Guidelines is provided in Section 4.4.1.

A total of 0.689 hectares of potential habitat for the Corangamite Water Skink will be retained within the Project area. This includes:

- 0.349 hectares of low (negligible) habitat; and
- 0.340 hectares of moderate (sub-optimal) habitat

An assessment against the Commonwealth EPBC Act Significant Impact Criteria for the Corangamite Water Skink has been undertaken in Section 4.1.

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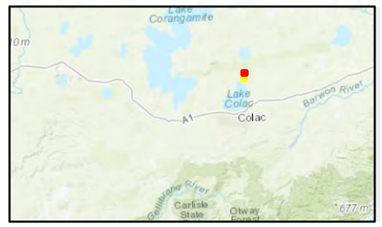

Legend

- Project Area
- Access Road

Stages of Extraction

- Stage 1 (west)
- Stage 2
- Stage 3
- Stage 4 (east)
- Scattered Tree
- Scattered Tree to be removed
- Earth Bund

Corangamite Water Skink Habitat

- Embedded rocky habitat (Low)
- Sub-optimal habitat (Moderate)
- Remove
- Retain

Native Vegetation - Habitat Zone ID

- Plains Grassy Woodland (EVC 55)
- Stony Knoll Shrubland (EVC 649)
- Remove
- Retain
- Proposed limit of extraction
- Road

Data Source: VicMap (2020); Aurecon (2020)

Image: Digital Cadastral DataBase; Regional Ecosystem Mapping (Version 6.1); High Value Regrowth (Version 2.1) - Department of Environment and Resource Management.

Date: 14/05/2024 Version: 1

Author: Nick.Chen Path: C:\Users\Nick.Chen\Aurecon Group\SAVI Spatial - Documents\Project Work\J0063_509485_HolcimQuarry\Project\J0063_HolcimQuarry\J0063_HolcimQuarry - Ecology.aprx

A3 scale: 1:3,000

0 50 100 Metres

Job No: 509485

Coordinate System: GDA 1994 MGA Zone 54

Holcim Colac Quarry Extension

Figure 3: Impacts to ecological values

4.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act is Commonwealth legislation that provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places, termed Matters of National Environmental Significance (MNES). Under the EPBC Act, an action that has, will have, or is likely to have, a significant impact on a MNES must be referred to the Commonwealth Minister for the Environment. The Minister will then determine whether the proposed action requires formal assessment and approval under the EPBC Act.

The results from the database search of the EPBC Act PMST identified multiple MNES potentially occurring within the 5 km radius search area. The MNES relevant to the Project area are summarised in Table 7. The likelihood of occurrence analysis for all threatened and migratory species is tabulated in Appendix D and E.

Table 7 Summary of Matters of National Environmental Significance (MNES) relevant to the search area

Matters of National Environmental Significance	MNES relevant to the project search area
World Heritage Properties	None
National Heritage Places	None
Wetlands of International Importance	1
Great Barrier Reef Marine Park	None
Commonwealth Marine Area	None
Listed Threatened Ecological Communities	4
Listed Threatened Species	54
Listed Migratory Species	17

Ramsar wetlands of international significance

One wetland of international importance is identified in the PMST for the search area, namely the Western District Lakes Ramsar site. There are a large number of wetlands in this region, nine of which are identified as comprising the Ramsar site. The closest of these to the Project area is Lake Beeac, which is 3 kilometres to the north. The Project area does not drain directly into Lake Beeac or any of the other lakes that make up this Ramsar site. The proposed quarry extension is therefore unlikely to result in a significant impact on the ecological character on this Ramsar site.

Listed threatened species

Threatened flora

As detailed in Section 3.3.4, due to the small and altered nature of the remnant areas of native vegetation, as well as the long agricultural use of the overall Project area, it was determined that no threatened flora species are likely to occur in the Project area. No EPBC Act listed threatened flora species are at risk of a significant impact from the proposed action.

Threatened fauna

One EPBC Act listed threatened fauna species, the Corangamite Water Skink, was initially considered to have a moderate likelihood of occurrence in the Project area, and was therefore subject to further consideration. Previous assessments for this species in the region are discussed in Section 3.1.2 while the findings of the current investigation are detailed in Section 3.3.5.

Based on the final design, the project will result in the removal of 2.790 hectares of potential habitat for Corangamite Water Skink, including 1.387 hectares of low (negligible) quality and 1.403 hectares of moderate (sub-optimal) quality habitat for the species. While low and moderate potential habitat for Corangamite Water Skink will be removed, no high-quality habitats which are relied upon by the Corangamite Water Skink (i.e. rocky habitats adjacent to water) will be lost as part of the project. Potential impacts to Corangamite Water Skink habitat from the proposed action have been considered against the Commonwealth Significant Impact Criteria in Table 8.

In summary, it has been considered that the project will not have a significant impact on Corangamite Water Skink due to the following reasons:

- The Project area has been largely subject to long term farming use and the areas of remaining rocky habitat are disconnected and exist as islands in an otherwise farmed paddock;
- Rocky habitats in the Project area are not of high quality for the species as they occur a significant distance from the nearest waterbodies (An unnamed waterbody exists 330 metres to the east, and is separated by introduced pasture).
- Rocky habitats in the Project area are separated from high quality habitat at the existing Colac Quarry which is separated by Ondit-Warrion Road, which acts as a significant barrier for dispersal.

Based on the above, the Corangamite Water Skink is now considered to have a low likelihood of occurrence in the Study Area.

Table 8 Assessment of the proposed action against the EPBC Act significant impact criteria for Corangamite Water Skink

Significant impact criteria for Corangamite Water Skink (listed as Endangered under the EPBC Act)	Assessment response	Criteria met (Y/N)
Lead to a long-term decrease in the size of a population	The Project area is unlikely to support a resident population of Corangamite Water Skink as the site lacks optimal habitat for the species (i.e. rocky habitats adjacent to water) and is separated from high quality habitats in the existing Colac Quarry by Ondit-Warrion Road, which acts as a significant barrier for dispersal. While two specimens were recorded in the Project area in 2004, the species was not recorded during the recent (November 2020) targeted survey. It is therefore considered that the Project area is unlikely to support a resident population of Corangamite Water Skink, and rather that the Project area may only occasionally support dispersing individuals. The loss of the rocky habitat in the Project area would therefore be unlikely to lead to a long-term decrease in the size of the broader Lake Colac Corangamite Water Skink population.	No
Reduce the area of occupancy of the species	Given the lack of high quality habitats in the Project area and the separation of rocky habitats from available water, the Project area is only considered to have potential to support dispersing individuals of the Corangamite Water Skink occasionally, potentially during particularly wet years when there may be the presence of sitting water. Such low utilisation by the species is not considered to meet the definition of occupancy. While the Project will result in a reduction of an area of potential sub-optimal habitat , this will not result in a reduction in the area of occupancy of the species.	No
Fragment an existing population into two or more populations	The proposed action is unlikely to fragment an existing population. The population of Corangamite Water Skink in the area is mainly distributed to the south of the Project area with the majority of recent records from Lake Colac and the existing Colac quarry. Potential habitat in the Project area is already separated from high quality habitats in the existing Colac Quarry by Ondit-Warrion Road, which acts as a significant barrier for dispersal.	No

Significant impact criteria for Corangamite Water Skink (listed as Endangered under the EPBC Act)	Assessment response	Criteria met (Y/N)
Adversely affect habitat critical to the survival of a species	The Project area supports sub-optimal habitat for Corangamite Water Skink (rocky areas without access to water). Habitat onsite would only be utilised occasionally by the species, potentially during particularly wet years when there may be the presence of sitting water. The Project area is not considered to support habitat critical to the species survival. Habitat critical to the species survival in the area would include the habitat on the shores of Lake Colac.	No
Disrupt the breeding cycle of a population	The proposed action is unlikely to disrupt the breeding cycle of the Lake Colac population of the Corangamite Water Skink. Numerous individuals outside the Project area would have no disruption to breeding.	No
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed action would result in the removal of potential sub-optimal habitat for Corangamite Water Skink in the Project area. However, given that the Project area is only likely to support dispersing individuals, the proposed removal of habitat is unlikely to be to the extent that would result in the species declining.	No
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	The proposed action is unlikely to result in invasive species becoming any more established in areas of habitat for the Corangamite Water Skink. The rocky rises that provide sub-optimal habitat for the Corangamite Water Skink in the Project area already comprise a high cover of introduced species. Weed control would be implemented through a Construction Environmental Management Plan for the site to ensure that weed do not spread during extraction activities.	No
Introduce disease that may cause the species to decline, or	The proposed action is unlikely to introduce disease that would cause Corangamite Water Skink to decline. The potential spread of pathogens would be managed through the implementation of a Construction Environmental Management Plan for the site.	No
Interfere with the recovery of the species.	The proposed action has been considered against the objectives of the National Recovery Plan for the Corangamite Water Skink and is unlikely to interfere with the recovery of the species. Namely, the proposed action will not result in a decrease in the number of Corangamite Water Skink populations.	No

As indicated in Table 8, it is concluded that the project is unlikely to result in a significant impact on the Corangamite Water Skink. Removal of low/moderate potential habitat from the Project area, while considered unlikely to result in a significant impact, will have minor impacts on the potential for dispersal of the species in wet years. Given the minor potential impacts on the Corangamite Water Skink, an EPBC Act referral was prepared and submitted for the Project in 2022. The Commonwealth Minister provided the decision on 25th March 2022, that the project is Not a Controlled Action under the EPBC Act (Ref 2022/9149), confirming the determination that the proposed impacts to CWS are not significant.

Previous applications by Holcim for expansion of the existing Colac Quarry operations have managed potential impacts to Corangamite Water Skink through the preparation and implementation of a Corangamite Water Skink Management Plan (CWSMP), for which the same approach is proposed to be applied to the current Project.

While impacts to the species from the current proposed quarry expansion are not considered to be significant, a CWSMP has been prepared that aims to mitigate the potential impacts to the species associated with the removal of low and moderate habitat in the Project area. The CWSMP provides a series of measures to mitigate potential impacts to the species, including habitat retention, and salvage and release protocols in the NDA, as well as habitat creation and monitoring nearby in the SDA. Details are provided in the CWSMP which has been prepared for the Project.

Listed threatened ecological communities

Four EPBC Act listed threatened ecological communities were listed in the PMST as potentially being present in the search area (DAWE 2024; See Appendix F). As detailed in Section 3.3.3, no native vegetation in the Project area was consistent with these ecological communities. No EPBC Act listed threatened ecological communities are at risk of a significant impact from the proposed action.

Migratory species

EPBC Act migratory listed fauna species were considered in Appendix E. No EPBC Act migratory listed species are at risk of a significant impact from the proposed action.

4.2 Environment Effects Act 1978

The *Ministerial Guidelines for Assessment of Environmental Effects under the Environment Effects Act 1978* (DSE 2006) outlines the triggers for referral of a project to the Victorian Minister for Planning who will determine if an Environmental Effects Statement (EES) is required.

Individual criteria relevant to flora and fauna are summarised to include:

- Extensive removal of native vegetation (>10 hectares);
- Long-term loss of a significant proportion of known remaining habitat or population of a threatened species within Victoria;
- Long term changes to Ramsar wetlands.

A combination of two of the following effects to matters listed under the FFG Act, may also trigger a referral under the EE Act:

- Potential loss of a significant area of a listed ecological community;
- Potential loss of a genetically important population of an endangered or threatened species;
- Potential loss of critical habitat; or
- Potential significant effects on habitat values of a wetland supporting migratory bird species

The proposed action will not result in the removal of more than 10 hectares of native vegetation or have impacts to a Ramsar wetland. While a small area of sub-optimal habitat for the Corangamite Water Skink will be removed, the area of loss is not considered to be a significant proportion. Similarly, the proposed action will not result in the defined potential losses outlined in the criteria relevant to matters listed under the FFG Act.

Based on the assessment, it is considered that the project will not trigger any of the criteria relevant to flora and fauna. As such, the preparation of a referral under the *Environment Effects Act 1978* (EE Act) is not required for matters associated with this investigation.

4.3 Flora and Fauna Guarantee Act 1988

The FFG Act is the key piece of Victorian legislation for the conservation of threatened species and communities and for the management of potentially threatening processes. Under the FFG Act a permit is required from DELWP to take (kill, injure, disturb or collect) threatened or protected flora species from public land.

One FFG Act threatened fauna species, Great Egret (listed as vulnerable), was recorded flying over the Project area on route to lakes in the region. This species is not considered to regularly utilise or rely upon the habitats in the Project area. This species is not likely to be impacted by the proposed action.

Habitat for the FFG Act listed (endangered) Corangamite Water Skink was recorded in the Project area. A CWSMP has been prepared for the Project to mitigate the potential impacts to this species.

No FFG Act listed flora or ecological communities were recorded in the Project area.

The Project area comprises private land, and as such, there are no protected flora implications for the project under the FFG Act.

4.4 Planning and Environment Act 1987

The *Planning and Environment Act 1987* controls the planning and development of land in Victoria and provides for the development of planning schemes for all municipalities under the Planning Scheme and Planning Policy Framework.

Clause 12.01-2S (Native vegetation management) and Clause 52.17 (Native Vegetation) of the State Planning Policy Framework requires that the removal of native vegetation results in no net loss in the contribution made by native vegetation to Victoria's biodiversity, and that this is achieved by applying the three-step approach outlined in Victoria's '*Guidelines for the removal, destruction or lopping of native vegetation'* (the Guidelines):

1. ***Avoid** the removal, destruction or lopping of native vegetation.*
2. ***Minimise** impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.*
3. *Provide an **offset** to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation.*

A planning permit is required under Clause 52.17 to remove, destroy or lop native vegetation, including dead native vegetation. Decision guidelines must be considered by the Referral and Responsible Authorities in deciding to grant or otherwise the planning permit. Exemptions to the requirement for a permit to remove native vegetation are specified in Clause 52.17 and include themes such as regrowth, dead vegetation and planted vegetation.

The Guidelines are incorporated into the Victorian Planning Provisions to regulate the clearance of native vegetation across the state. The Guidelines use a risk-based approach to determine the significance of native vegetation based on the extent, quality and location of vegetation proposed to be removed. Further details on the application of the Guidelines are provided in Appendix A.

Under Clause 66.02 a permit application to remove, destroy or lop native vegetation is required to be referred to DELWP as a recommending referral authority if any of the following apply:

- The application triggers the Detailed Assessment Pathway;
- A property vegetation plan applies to the site; or
- The native vegetation is on Crown land which is occupied or managed by the Responsible Authority.

A permit is not required under the Vegetation Protection Overlay – Schedule 2 (VPO2) which occurs over the adjoining Rattrays Road as no native vegetation is proposed to be removed from this area.

4.4.1 Impacts to native vegetation and implications under the Guidelines

Based on the impacts described in Section 4 and shown in Figure 3, the proposed action will result in the following impacts to native vegetation:

- Total extent loss of 2.229 hectares of native vegetation (as per Appendix G). This includes the removal of Stony Knoll Shrubland (EVC 649) and 5 large scattered trees.

Such removal of native vegetation in the Project area would trigger a permit under Clause 52.17 of the Colac Otway Shire Planning Scheme. This report has been prepared to respond to the application requirements of the Guidelines.

It is understood that 2.338 hectares of native vegetation south of the Project area (in Stages 5a, 5b and 6 under WA158) has been previously approved for removal within the last five years. As such, the Native Vegetation Removal Report provided in Appendix G includes consideration of this past removal of vegetation.

Representative photos of the native vegetation to be removed within the Project area are provided in Appendix H.

Assessment pathway

The assessment pathway is determined by the location category and the extent of native vegetation, detailed in Appendix G and summarised as followed:

- Location Category: Location 2
- Extent loss of native vegetation: A total of 2.299 hectares of native vegetation

Based on these details, the Guidelines stipulate that the proposal is to be assessed under the Detailed assessment pathway. As such, the proposed action would require a referral to DELWP.

Avoid and minimise statement

In accordance with the requirements under the Guidelines, any application to remove native vegetation requires the preparation of an 'avoid and minimise statement'. This statement is required to clearly identify the actions undertaken and efforts made throughout the planning process to avoid the removal of, and minimise impacts on, the biodiversity and other values of native vegetation.

At a strategic level, the location of the proposed action is limited to the local area, particularly given the basalt resource available and that the proposed action is an extension of the existing Colac Quarry operation. It is also noted that the site has been subject to a long history of agricultural use and is highly modified.

At a site planning level, efforts have been made to avoid and minimise impacts to native vegetation as much as possible, without undermining the key objectives of the project. The extent of native vegetation has been considered during the planning and design phase, and Aurecon's project ecologists have met with Holcim to discuss recommendations for retention. This has led to the final design for the Project as shown in Figure 3, which allows for the retention of 0.632 hectares of native vegetation in the Project area, specified as follows:

- The retention of Stony Knoll Shrubland (EVC 649) within the northern boundary of the Project area. A portion of Habitat Zones 9, 15, 20, 22, 23, 24, 25, 26 and 27 will be retained in this area, all of which are also considered potential (low or moderate) habitat for Corangamite Water Skink;
- The retention of Stony Knoll Shrubland (EVC 649) in the south east corner of the Project area. All of Habitat Zones 1, 2, 3 and 5 will be retained, all of which are also considered potential (moderate) habitat for Corangamite Water Skink. The entirety of Habitat Zone 4 will also be retained, which is also potential (low quality) habitat for Corangamite Water Skink.
- The retention of all patches of the endangered Plains Grassy Woodland (EVC 55) recorded in the assessment, located within the Rattrays Road reserve (Habitat Zones 31 and 32).

It is considered that no feasible opportunities exist to further avoid or minimise impacts on native vegetation without undermining the key objectives of the project.

Native vegetation offsets

Native vegetation offsets would be required to compensate for any approved removal of native vegetation. A Native Vegetation Removal Report (NVRR) has been prepared to detail the relevant offset requirements and is provided in Appendix G.

A summary of the native vegetation removal details and offset requirements as per the NVRR is provided in Table 9 below.

Table 9 Summary of information from the Native Vegetation Removal Report

Removal and offset details	Information requirement	Project information from NVRR
Removal details	Risk based pathway	Detailed
	Total extent of native vegetation removal	2.299 ha
	Location Category	2
Offset details	Offset requirements	0.824 general habitat units, with the following requirements: ■ Offset must be located in Corangamite CMA or Colac Otway Shire Council ■ Offset must have minimum strategic biodiversity value (SBV) of 0.529 ■ Offset must include the protection of 5 Large trees

The required offset target must be sourced and secured prior to any removal of native vegetation.

Offset statement

An online search of the Native Vegetation Credit Register (NVCR) has shown that the required offset is currently available for purchase (DEECA 2024b). Evidence that the required offset is available is provided in Appendix I. The required offset would need to be secured prior to commencement of the proposed action.

4.5 Wildlife Act 1975 and Wildlife Regulations 2002

The main legislation for protecting and managing fauna in Victoria is the *Wildlife Act 1975*. This covers indigenous vertebrate species (except declared pest species), invertebrate species listed under the FFG Act and some introduced game species.

A Management Authorisation permit would be required under the Act if salvage and relocation of fauna are to be undertaken as part of any removal of habitat associated with the works.

4.6 Catchment and Land Protection Act 1994

The *Catchment and Land Protection Act 1994* (CaLP Act) identifies and classifies certain species as noxious weeds or pest animals and provides a system of controls on noxious species.

The CaLP Act also provides a legislative framework for the management of private and public land and sets out the responsibilities of land managers, stating that they must take all reasonable steps to:

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

The Project area contains the following noxious weeds listed as regionally controlled within the Corangamite Catchment Management Authority region:

- African Box-thorn (*Lycium ferocissimum*)

- Montpellier Broom (*Genista monspessulana*)

Appropriate weed control and hygiene measures should be outlined in the Construction and Operational Environmental Management Plans.

5 Summary and next steps

5.1 Summary

Aurecon undertook a site-based flora and fauna assessment in spring 2020 at the property proposed for the northern expansion of the existing Colac Quarry at Ondit, Victoria. As part of the assessment, detailed habitat mapping and a targeted survey was undertaken for Corangamite Water Skink, a threatened reptile species, listed as endangered under the Commonwealth EPBC Act and Victorian FFG Act.

Land within the Project area largely consisted of open agricultural paddocks, which had been de-rocked in the past and heavily farmed over a long period, now being dominated by introduced grasses. This was by far the case in the western half of the Project area. The eastern portion of the Project area was similar, though also comprised several disconnected basalt rocky rises, some which supported native vegetation.

The detailed site investigation undertaken by Aurecon in November 2020 recorded 2.666 hectares of native patch vegetation in the Project area, as well five large scattered Drooping Sheoaks (two of which were dead). Patch vegetation included 30 small patches of Stony Knoll Shrubland (EVC 649) which were limited to the rocky rises within the property and two small patches of Plains Grassy Woodland (EVC 55) immediately to the west of the Project area in the eastern road reserve of Rattrays Road. A follow up site visit undertaken by Aurecon in April 2024 has since verified the findings of the 2020 assessment.

None of the patches of native vegetation recorded in the Project area were consistent with any threatened ecological communities listed under the EPBC Act or FFG Act. Due to the poor condition of the vegetation and long agricultural use of the property, it was determined that no threatened flora species are likely to occur in the Project area.

The rocky rises in the Project area were considered to support potential habitat for the Corangamite Water Skink. A total of 1.743 hectares of moderate (sub-optimal) habitat and 1.736 hectares of low (negligible) habitat for the Corangamite Water Skink was recorded within the Project area. No Corangamite Water Skink individuals were recorded during the targeted survey of these habitats which was undertaken from the 9th to 11th November 2020. While the species has been historically recorded along the northern limit of the Project area in 2004, the findings of the current assessment suggest that the species is unlikely to be reliant on the dry rocky habitat in the Project area, and rather that the species is more likely to regularly utilise high quality habitats elsewhere in the region, namely those rocky habitats which provide immediate access to water such as those at Lake Colac and the existing Colac Quarry.

Based on the final design, the project will have the following impact on ecological values:

- Removal of a total extent of 2.299 hectares of native vegetation (Appendix G). This includes the removal of Stony Knoll Shrubland (EVC 649) and 5 large scattered trees; and
- Removal of 2.790 hectares of potential habitat for Corangamite Water Skink. This includes:
  - 1.387 hectares of low (negligible) habitat; and
  - 1.403 hectares of moderate (sub-optimal) habitat

The proposed removal of native vegetation in the Project area would trigger a permit under Clause 52.17 of the Colac Otway Shire Planning Scheme, and require an offset of 0.824 general habitat units, which must be located in the Corangamite CMA or Colac Otway Shire Council, have a minimum SBV of 0.529 and include the protection of five large trees. An online search of the Native Vegetation Credit Register has shown that the required offset is currently available for purchase. This report addresses the application requirements of the Victorian *Guidelines for the removal, destruction or lopping of native vegetation* and has been prepared in a format that can support a planning permit application to Colac Otway Shire.

An assessment was undertaken for the proposal against the significant impact criteria under the EPBC Act for the Corangamite Water Skink. While the project will result in the removal of low and moderate quality potential habitat for the species, it was determined that the project is unlikely to result in a significant impact on the Corangamite Water Skink due to the following reasons:

- The Project area has been largely subject to long term farming use and the areas of remaining rocky habitat are disconnected and exist as islands in an otherwise farmed paddock;
- Rocky habitats in the Project area are not of high quality for the species as they occur a significant distance from the nearest waterbodies (An unnamed waterbody exists 330 metres to the east, and is separated by introduced pasture).
- Rocky habitats in the Project area are separated from high quality habitat at the existing Colac Quarry which is separated by Ondit-Warrion Road, which acts as a significant barrier for dispersal.

Based on the above, the Corangamite Water Skink is considered to have a low likelihood of occurrence in the Study Area.

Removal of low/moderate potential habitat from the Project area, while considered unlikely to result in a significant impact, will have minor impacts on the potential for dispersal of the species in wet years. Given the minor potential impacts on the Corangamite Water Skink, an EPBC Act referral was submitted for the Project in 2022, which was supported by a Corangamite Water Skink Management Plan (CWSMP) aimed to mitigate the potential impacts to the species. The CWSMP provides a series of measures to mitigate potential impacts to the species, including habitat retention, and salvage and release protocols in the NDA, as well as habitat creation and monitoring nearby in the SDA. The Commonwealth Minister provided the decision on 25th March 2022, that the project is Not a Controlled Action under the EPBC Act (Ref 2022/9149), confirming the determination that the proposed impacts to CWS are not significant.

One state listed fauna species was recorded flying over the Project area during the 2020 field assessment, namely the Eastern Great Egret (listed as vulnerable under the FFG Act). Whilst this species was observed flying over the site, the Project area lacks any significant aquatic habitats that would regularly support this species. As such, this listed bird species is not considered to be reliant on the Project area and is unlikely to be subject to adverse impacts by the current proposal.

The proposed action was considered unlikely to have any implications under the EE Act for matters associated with this investigation.

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Appendix A: Permitted clearing assessment (the Guidelines)

This section describes the Victorian permitted clearing guidelines and methods of applying those guidelines.

Risk-based Pathway

In Victoria, a permit is required to remove, destroy or lop native vegetation under Clause 52.17 of the Victorian Planning Provisions (VPP) empowered by the Victorian *Planning and Environment Act 1987*. These provisions are outlined in various guidelines discussed below.

In December 2017, the Victorian State Government released a set of reforms to regulate the approval and conditions associated with vegetation clearing.

The *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) outline how impacts on Victoria's biodiversity are assessed and the appropriate risk based pathway when an application to remove native vegetation is lodged (DELWP 2017a). The Guidelines are an incorporated document in all Victorian Planning Schemes and are applied alongside other requirements of the planning scheme when an application for a permit to remove native vegetation is considered by the responsible authority.

The risk based pathway approach categorises an application into one of three pathways. Taken from DELWP 2017a:

- Basic – limited impacts on biodiversity.
- Intermediate – could impact on large trees, endangered EVCs, and sensitive wetlands and coastal areas.
- Detailed – could impact on large trees, endangered EVCs, sensitive wetlands and coastal areas, and could significantly impact on habitat for rare or threatened species.

The location of the vegetation removal is then assessed in terms of significance for biodiversity. Three location categories have been assigned by DELWP (2007a) and in terms of importance include:

- Location 3 – includes locations where the removal of less than 0.5 hectares of native vegetation could have a significant impact on habitat for a rare or threatened species.
- Location 2 – includes locations that are mapped as endangered EVCs and/or sensitive wetlands and coastal areas (section 3.2.1) and are not included in Location 3.
- Location 1 – includes all remaining locations in Victoria.

Once the risk pathway and the location significance are known the application assessment pathway can be determined as per the table below.

Extent of native vegetation to be removed Content	Location 1	Location 2	Location 3
Less than 0.5 hectares and not including any large trees	Basic	Intermediate	Detailed
Less than 0.5 hectares and including one or more large trees	Intermediate	Intermediate	Detailed
0.5 hectares or more	Detailed	Detailed	Detailed

The vegetation removal pathway then determines the level of assessment and information required in an application to remove, lop or destroy native vegetation.

Appendix B: Vegetation quality assessment results

Habitat Hectare Criteria		Max score	Habitat Zone ID	
			HZ 1-30	HZ 31-32
Site Condition	**Bioregion**		VVP	VVP
	EVC		649	55_63
	Large Old Trees	10	NA	0
	Canopy Cover	5	NA	0
	Lack of Weeds	15	4	0
	Understorey	25	5	5
	Recruitment	10	6	5
	Organic Matter	5	4	2
	Logs	5	NA	0
	Total Site Score		19	12
	Standardiser		1.36	1
	Standardised Score		26	12
Landscape Value	Patch Size	10	1	1
	Neighbourhood	10	0	0
	Distance to Core	5	3	3
	Total Landscape Score		4	4
Final score	**Habitat Score (out of 100)**	100	30	16
	Condition Score (out of 1)	1	0.3	0.16
Total area (ha)			2.591	0.075

Appendix C: Flora and fauna recorded in Project area

Origin	Common Name	Scientific Name	Conservation Status		Recorded
			EPBC Act	FFG Act	
Flora recorded in the Project area					
*	African Box-thorn	*Lycium ferocissimum*			X
*P	Almond	*Prunus dulcis*			X
*	Barley-grass	*Hordeum leporinum*			X
	Blackwood	*Acacia melanoxylon*			X
*	Cape weed	*Arctotheca calendula*			X
*	Cherry Plum	*Prunus cerasifera*			X
*	Chickweed	*Stellaria media*			X
*	Cleavers	*Galium aparine*			X
*	Clustered Dock	*Rumex conglomeratus*			X
*	Cocksfoot	*Dactylis glomerata*			X
	Common Spike-sedge	*Eleocharis acuta*			X
*	Common Vetch	*Vicia sativa*			X
*	Curled Dock	*Rumex crispus*			X
*P	Cypress Pine	*Cupressus sp.*			X
*	Dove's Foot	*Geranium molle*			X
	Drooping Sheoak	*Allocasuarina verticillata*			X
*	English Oak	*Quercus robur*			X
*	Field Madder	*Sherardia arvensis*			X
*P	Fig	*Ficus carica*			X
*	Flatweed	*Hypochaeris radicata*			X
	Grassland Wood-sorrel	*Oxalis perennans*			X
*	Great Brome	*Bromus diandrus*			X
*	Hedge Mustard	*Sisymbrium officinale*			X
*	Hop Clover	*Trifolium campestre var. campestre*			X
	Kangaroo Grass	*Themeda triandra*			X
*	Large-flower Wood-sorrel	*Oxalis purpurea*			X
*	Mallow of Nice	*Malva nicaeensis*			X
*	Montpellier Broom	*Genista monspessulana*			X
	Nodding Saltbush	*Einadia nutans*			X
*	Oat	*Avena spp.*			X
*	Pepper Tree	*Schinus spp.*			X
*	Perennial Rye-grass	*Lolium perenne*			X
*	Prairie Grass	*Bromus catharticus*			X
*P	Radiata Pine	*Pinus radiata var. radiata*			X
*	Rough Dog's-tail	*Cynosurus echinatus*			X
*	Salsify	*Tragopogon porrifolius subsp. porrifolius*			X
*	Sheep Sorrel	*Acetosella vulgaris*			X
	Sheep's Burr	*Acaena echinata var. echinata*			X
*	Silky Oak	*Grevillea robusta*			X
*	Silvery Hair-grass	*Aira caryophyllea subsp. caryophyllea*			X
	Slender Dock	*Rumex brownii*			X
*	Slender Thistle	*Carduus pycnocephalus*			X
	Slender Wallaby-grass	*Rytidosperma racemosum var. racemosum*			X
*	Small Nettle	*Urtica urens*			X
*	Soft Brome	*Bromus hordeaceus*			X

Origin	Common Name	Scientific Name	Conservation Status		Recorded
			EPBC Act	FFG Act	
*	Spear Thistle	*Cirsium vulgare*			X
*	Squirrel-tail Fescue	*Vulpia bromoides*			X
	Sweet Bursaria	*Bursaria spinosa subsp. spinosa*			X
*	Timothy Grass	*Phleum pratense*			X
*	Toowoomba Canary-grass	*Phalaris aquatica*			X
	Tree Violet	*Melicytus dentatus s.s.*			X
*	Twiggy Turnip	*Brassica fruticulosa*			X
*	Variegated Thistle	*Silybum marianum*			X
	Wallaby Grass	*Rytidosperma spp.*			X
*	White Arum-lily	*Zantedeschia aethiopica*			X
*	White Clover	*Trifolium repens var. repens*			X
*	Willow	*Salix spp.*			X
*P	Willow Myrtle	*Agonis flexuosa*			X
*	Yorkshire Fog	*Holcus lanatus*			X
Fauna recorded in the Project area					
	Australian Magpie	*Gymnorhina tibicen*			X
	Black Swan	*Cygnus atratus*			X
	Black-shouldered Kite	*Elanus axillaris*			X
	Brown Falcon	*Falco berigora*			X
*	Common Starling	*Sturnus vulgaris*			X
	Crested Pigeon	*Ocyphaps lophotes*			X
*	Eurasian Skylark	*Alauda arvensis*			X
*	European Brown Hare	*Lepus europaeus*			X
*	European Goldfinch	*Carduelis carduelis*			X
*	European Rabbit	*Oryctolagus cuniculus*			X
	Galah	*Eolophus roseicapilla*			X
	Eastern Great Egret	*Ardea alba modesta*		V	X
	Grey Shrike-thrush	*Colluricincla harmonica*			X
*	House Sparrow	*Passer domesticus*			X
	Little Raven	*Corvus mellori*			X
	Long-billed Corella	*Cacatua tenuirostris*			X
	Magpie-lark	*Grallina cyanoleuca*			X
	Masked Lapwing	*Vanellus miles*			X
	Nankeen Kestrel	*Falco cenchroides*			X
	Pacific Black Duck	*Anas superciliosa*			X
	Red Wattlebird	*Anthochaera carunculata*			X
	Royal Spoonbill	*Platalea regia*			X
	Silver Gull	*Chroicocephalus novaehollandiae*			X
	Straw-necked Ibis	*Threskiornis spinicollis*			X
	Striated Fieldwren	*Calamanthus fuliginosus*			X
	Superb Fairy-wren	*Malurus cyaneus*			X
	Tree Martin	*Petrochelidon nigricans*			X
	Wedge-tailed Eagle	*Aquila audax*			X
	Welcome Swallow	*Hirundo neoxena*			X
	Whistling Kite	*Haliastur sphenurus*			X
	White-faced Heron	*Egretta novaehollandiae*			X
	White-fronted Chat	*Epthianura albifrons*			X
	White-necked Heron	*Ardea pacifica*			X
	Willie Wagtail	*Rhipidura leucophrys*			X

Origin	Common Name	Scientific Name	Conservation Status		Recorded
			EPBC Act	FFG Act	
	Yellow-billed Spoonbill	*Platalea flavipes*			X
	Yellow-rumped Thornbill	*Acanthiza chrysorrhoa*			X

Legend: FFG Act: V = vulnerable; * = introduced, X = recorded in Project area during survey, P = planted.

Appendix D: Likelihood of occurrence analysis of threatened flora

Common Name	*Scientific Name*	EPBC Act	FFG Act	Habitat preference	Last record in the search region	Likelihood of occurrence within the Project area
Flora						
Adamson's Blown-grass	*Lachnagrostis adamsonii*	EN	E	Occurs in and around saline depressions on the Volcanic Plain where recorded from Portarlington west almost to the South Australian border.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Alpine Crane's-bill	*Geranium brevicaule*		E	Restricted to grasslands and herb fields of treeless subalpine and alpine areas.	2/02/2012	No suitable habitat in the Project area. Restricted to alpine region. **Negligible**
Basalt Pepper-cress	*Lepidium hyssopifolium s.s.*	EN	E	Collected from scattered sites on the volcanic plain. Recent collections are from disturbed, rather weedy sites. One collection from near Port Fairy is noteworthy for its occurrence in a slightly saline estuary amongst saltmarsh and fringing sedgeland.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Button Wrinklewort	*Rutidosis leptorhynchoides*	EN	E	Confined to basaltic grasslands between Rokewood and Melbourne where endangered due to loss of habitat.	None	No suitable habitat in the Project area. No records in the search region. **Low**
Clover Glycine	*Glycine latrobeana*	VU	V	Widespread but of sporadic occurrence and rarely encountered. Grows mainly in grasslands and grassy woodlands.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Dense Leek-orchid	*Prasophyllum spicatum*	VU	CE	Grows in coastal heath and sandhills. Localised across southern Victoria in coastal heathland and near-coastal heathy forest on sandy soils.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Fragrant Leek-orchid	*Prasophyllum suaveolens*	EN	CE	Endemic to the basalt plains of south-western Victoria where it grows in grassland and grassy woodland on brown water-retentive clay loams.	None	No suitable habitat in the Project area. No records in the search region. Negligible
Green-striped Greenhood	*Pterostylis chlorogramma*	VU	E	Apparently localised in Victoria, but exact range uncertain due to confusion with closely allied species. Grows in moist areas of heathy and shrubby forest, on well-drained soils.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Hoary Sunray	*Leucochrysum albicans var. tricolor*	EN		Heavy soils in native grasslands and grassy woodlands.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Hoary Sun-orchid	*Thelymitra orientalis*	CR	CE	Grows in damp heathy flats and seepage areas usually in peaty white sands	None	No suitable habitat in the Project area. No records in the search region. Negligible

Common Name	*Scientific Name*	EPBC Act	FFG Act	Habitat preference	Last record in the search region	Likelihood of occurrence within the Project area
Flora						
Maroon Leek-orchid	*Prasophyllum frenchii*	EN	E	Widespread across southern Victoria, but rare. Occurs in grassland, heathland and open forest on well-drained or water-retentive sand or clay loams.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Matted Flax-lily	*Dianella amoena*	EN	CE	Lowland grasslands, grassy woodlands, valley grassy forest and creeklines of herb-rich woodlands.	None	No suitable habitat in the Project area. No records in the search region. Negligible
Metallic Sun-orchid	*Thelymitra epipactoides*	EN	E	Grows mostly in coastal heathland, grassland and woodland, but extending further inland into similar habitats in the western part of its range. Substrates may be moist or dry sandy soils.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
River Swamp Wallaby-grass	*Amphibromus fluitans*	VU		Permanent swamps, lagoons, billabongs and dams.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Salt-lake Tussock-grass	*Poa sallacustris*	VU	CE	Known only from margins of brackish to salt lakes in the western district of Victoria (Lakes Corangamite and Terangpom near Cressy, Black Lake near Skipton, Lake Linlithgow near Hamilton) although generally occurring above the level of significant saline influence.	2/03/2016	3 records (totalling a count of 10 individuals) of Salt-lake Tussock-grass occur in the 5km search area, all from Lake Beeac (at least 3km north of the Project area) from 2012 to 2016 (DELWP 2020a). Numerous other records exist along other salt lakes further north (15km north of Project area) (DELWP 2020c). Biosis (2017) stated that potential habitat for Salt-lake Tussock-grass exists in the lower-lying sections of the eastern half of the Project area. However, the current investigation determined the lower-lying areas of the Project area to be comprised almost exclusively by introduced pasture grasses, and heavily pugged by cattle, therefore not supporting suitable habitat to support this species. **Low**

Common Name	*Scientific Name*	EPBC Act	FFG Act	Habitat preference	Last record in the search region	Likelihood of occurrence within the Project area
			Flora			
Slender Darling-pea	*Swainsona murrayana*	VU	E	Extremely rare in northern and western Victoria, with an isolated southern recorded labeled 'Wannon River'. Usually found in seasonally inundated flats and around lakes.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Spiny Peppercress	*Lepidium aschersonii*	VU	E	Mostly on heavy clay soil near salt lakes on volcanic plain, but with outlying records from near Lake Omeo (in 1940 &1981) and the Grampians (in 1893).	6/06/2018	13 records (totalling a count of 80 individuals) of Spiny Peppercress occur in the 5km search area (DELWP 2020a), mostly from around Lake Beeac, with few records nearer to the Project area at Lake Ondit and the unnamed lake to the north east (DELWP 2020c). Biosis (2017) stated that potential habitat for Spiny Peppercress exists in the lower-lying sections of the eastern half of the Project area. However, the current investigation determined the lower-lying areas of the Project area to be comprised almost exclusively by introduced pasture grasses, and heavily pugged by cattle, therefore not supporting suitable habitat to support this species. **Low**
Spiny Rice-flower	*Pimelea spinescens subsp. spinescens*	CR	CE	Endemic in Victoria. Grows in grassland, open shrubland and occasionally woodland, often on basalt-derived soils. Mostly west of Melbourne (to near Horsham), but extending as far north as Echuca.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Spiral Sun-orchid	*Thelymitra matthewsii*	VU	E	Widely distributed but rare, in coastal sandy flats or slightly elevated sites (to 400 m) in well-drained soils (sandy loams to gravelly limestone soils) in open forest. Plants colonise disturbed sites and slowly disappear as these sites stabilise.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**

Common Name	*Scientific Name*	EPBC Act	FFG Act	Habitat preference	Last record in the search region	Likelihood of occurrence within the Project area
Flora						
Swamp Everlasting	*Xerochrysum palustre*	VU	CE	Occurs in lowland swamps, usually on black cracking clay soils, scattered from near the South Australian border north-west of Portland to Bairnsdale district, but rare due to habitat depletion.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Swamp Fireweed	*Senecio psilocarpus*	VU		Rare, restricted in Victoria to a few herb-rich winter-wet swamps throughout the south of the state, west from Sale, growing on volcanic clays or peaty soils.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Trailing Hop-bush	*Dodonaea procumbens*	VU		Grows in low-lying, often winter-wet areas in woodland, low open-forest and grasslands on sands and clays.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**

Legend: EPBC Act: CR = critically endangered, EN = endangered, VU = vulnerable; FFG Act: CE = critically endangered, E = endangered, V = vulnerable.

Appendix E: Likelihood of occurrence analysis of threatened fauna

Common Name	Scientific Name	EPBC Act	FFG Act	Habitat preference	Last record in the search region	Likelihood of occurrence within the Project area
Birds						
Australasian Bittern	*Botaurus poiciloptilus*	EN	CE	Frequents reedbeds, and other vegetation in water such as cumbungi, lignum and sedges.	None	No suitable aquatic habitats in the Project area. **Negligible**
Australasian Shoveler	*Spatula rhynchotis*		V	Found in all kinds of wetlands, preferring large undisturbed heavily vegetated freshwater swamps.	9/04/2019	No significant aquatic habitats in the Project area. **Low**
Australian Gull-billed Tern	*Gelochelidon nilotica macrotarsa*		E	Occurs over wetlands and coastal areas.	27/09/1995	No suitable aquatic habitats in the Project area. **Negligible**
Australian Painted-snipe	*Rostratula australis*	EN	CE	Inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans.	20/02/1980	No suitable aquatic habitats in the Project area. **Negligible**
Black Falcon	*Falco subniger*		CE	Broad range of habitats	29/03/2019	May occasionally fly over the Project area, but unlikely to be reliant on any on the habitats in the Project area. **Low**
Black-faced Monarch	*Monarcha melanopsis*	M		Rainforest ecosystems, including tropical, subtropical and cool temperate rainforest	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Blue-billed Duck	*Oxyura australis*		V	Almost wholly aquatic. Non-breeding flocks congregate on large, deep open freshwater dams and lakes in autumn.	5/05/2018	No significant aquatic habitats in the Project area. **Low**
Blue-winged Parrot	*Neophema chrysostoma*	VU		Inhabits a range of habitats from coastal, sub-coastal and inland areas, right through to semi-arid zones. Throughout their range they favour grasslands and grassy woodlands. They are often found near wetlands both near the coast and in semi-arid zones.	15/08/2001	No suitable habitat in the Project area. **Negligible**.
Brolga	*Antigone rubicunda*		E	In Victoria, Brolga occur in the south-west, the Northern Plains and adjacent parts of the Murray River. Habitat includes large open wetlands and grassy plains.	2/08/1997	No suitable aquatic habitats in the Project area. **Negligible**

Common Name	Scientific Name	EPBC Act	FFG Act	Habitat preference	Last record in the search region	Likelihood of occurrence within the Project area
Brown Treecreeper (south-eastern)	*Climacteris picumnus victoriae*	VU		Inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species. They also occur in mallee, forests and woodlands subject to periodic inundation, e.g., river red gum (woodlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses in the upper Murray River. The subspecies is not usually found in woodlands with a dense shrub layer, and it is absent from heavily degraded woodlands and steep rocky hills.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**.
Caspian Tern	*Hydroprogne caspia*		V	Widespread around the Australian coastline, and also occurs inland along major rivers, especially in the Murray-Darling and Lake Eyre drainage basins.	31/10/2017	No suitable aquatic habitats in the Project area. **Negligible**
Common Greenshank	*Tringa nebularia*	EN,M	E	Found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity, typically with large mudflats and saltmarsh, mangroves or seagrass.	13/01/1988	No suitable aquatic habitats in the Project area. **Negligible**
Common Sandpiper	*Actitis hypoleucos*	M	V	Utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats.	None	No suitable aquatic habitats in the Project area. **Negligible**
Curlew Sandpiper	*Calidris ferruginea*	CR, M	CE	Intertidal mudflats in sheltered coastal areas. Non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms.	22/10/1980	No suitable aquatic habitats in the Project area. **Negligible**
Double-banded Plover	*Charadrius bicinctus*	M		Occurs on littoral, estuarine and fresh or saline terrestrial wetlands and also saltmarsh, grasslands and pasture.	20/02/1980	No suitable aquatic habitats in the Project area. **Negligible**
Diamond Firetail	*Stagonopleura guttata*	VU		Found in open grassy woodland, heath and farmland or grassland with scattered trees	None	No suitable habitat in the Project area. No records in the search region. **Negligible**.
Eastern Curlew	*Numenius madagascariensis*	CR, M	CE	Largest shorebird in Australia. Breeds in Russia and north-eastern China, arrives back to Australia in August to feed on crabs and molluscs in intertidal mudflats on the coast.	None	No suitable aquatic habitats in the Project area. **Negligible**

Common Name	Scientific Name	EPBC Act	FFG Act	Habitat preference	Last record in the search region	Likelihood of occurrence within the Project area
Fork-tailed Swift	*Apus pacificus*	M		Almost exclusively aerial. In Australia, they mostly occur over inland plains but sometimes above foothills or in coastal areas	None	Mostly aerial. Unlikely to rely on any habitats in the Project area. No records in the search region. **Negligible**
Freckled Duck	*Stictonetta naevosa*		E	Prefers permanent fresh water swamps and creeks with heavy growth of cumbungi (bullrushes), lignum or tea-tree.	18/07/2018	No significant aquatic habitats in the Project area. **Low**
Gang-gang Cockatoo	*Callocephalon fimbriatum*	EN	E	During summer, the Gang-gang Cockatoo is found in tall mountain forests and woodlands, with dense shrubby understoreys. In winter, Gang-gangs will move to lower altitudes into drier, more open forests and woodlands. At this time, they may be seen by roadsides and in parks and gardens of urban areas. They require tall trees for nest hollows.	23/07/2015	No suitable habitat in the Project area. **Negligible**.
Great Egret	*Ardea alba modesta*		V	Occurs in a wide range of wetland habitats including swamps and marshes, margins of rivers and lakes, damp or flooded grasslands, pastures, agricultural lands, reservoirs, sewage treatment ponds, drainage channels, salt marshes and mudflats.	9/04/2019	Recorded during the ecological survey flying over the Project area on route to various lakes in the broader region, but given no significant aquatic habitats in the Project area, this species is unlikely to be reliant on the Project area. **Low**
Grey Falcon	*Falco hypoleucos*	VU	V	Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**.
Grey Goshawk	*Accipiter novaehollandiae*		E	Occurs in coastal areas in northern and eastern Australia, found in most forest types, especially tall closed forests, including rainforests.	2/06/2005	No suitable habitat in the Project area. **Negligible**
Hardhead	*Aythya australis*		V	Found in freshwater swamps and wetlands and occasionally in sheltered estuaries	10/12/2018	No significant aquatic habitats in the Project area. **Low**
Latham's Snipe	*Gallinago hardwickii*	VU, M		Occurs in a range of permanent and ephemeral wetlands including freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies).	4/10/1994	No suitable aquatic habitats in the Project area. **Negligible**
Lewin's Rail	*Lewinia pectoralis*		V	Freshwater to saline wetlands, either permanent or ephemeral.	6/08/1997	No suitable aquatic habitats in the Project area. **Negligible**

Common Name	Scientific Name	EPBC Act	FFG Act	Habitat preference	Last record in the search region	Likelihood of occurrence within the Project area
Magpie Goose	*Anseranas semipalmata*		V	Widespread in northern Australia, where they may congregate in huge flocks. Was once also widespread in southern Australia, but disappeared from the region largely due to drainage of breeding wetlands.	8/01/1998	No suitable aquatic habitats in the Project area. **Negligible**
Musk Duck	*Biziura lobata*		V	Range of wetland habitats	5/05/2018	No significant aquatic habitats in the Project area. **Low**
Osprey	*Pandion haliaetus*	M		Occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. Found in coastal areas but occasionally travel inland along major rivers, particularly in northern Australia.	None	No suitable aquatic habitats in the Project area. **Negligible**
Pacific golden plover	*Pluvialis fulva*	M	V	Inhabits coastal habitats, though it occasionally occurs around inland wetlands.	None	No suitable aquatic habitats in the Project area. **Negligible**
Painted Honeyeater	*Grantiella picta*	VU	V	Found in drier open forests and woodlands, and is strongly associated with mistletoe.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Pectoral Sandpiper	*Calidris melanotos*	M		Forages in shallow fresh or saline wetlands and is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands.	None	No suitable aquatic habitats in the Project area. **Negligible**
Plains-wanderer	*Pedionomus torquatus*	CR	CE	Inhabit sparse native grasslands and are often absent from areas where grass becomes too dense or too sparse. They nest amongst native grasses and herbs, or sometimes amongst crops.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Red-necked Stint	*Calidris ruficollis*	M		In Australia, Red-necked Stints are found on the coast, in sheltered inlets, bays, lagoons, estuaries, intertidal mudflats and protected sandy or coralline shores.	14/03/2014	No suitable aquatic habitats in the Project area. **Negligible**
Regent Honeyeater	*Anthochaera phrygia*	CR	CE	Primarily occurs in box-ironbark woodland, but also occurs in other forest types. Mainly feeds on nectar from eucalypts and mistletoes with movements governed by the flowering of select eucalypt species.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**

Common Name	Scientific Name	EPBC Act	FFG Act	Habitat preference	Last record in the search region	Likelihood of occurrence within the Project area
Ruddy tunstone	*Arenaria interpres*	VU, M	E	Found singly or in small groups along the coastline and only occasionally inland. They are mainly found on exposed rocks or reefs, often with shallow pools, and on beaches.	None	No suitable aquatic habitats in the Project area. **Negligible**
Rufous Fantail	*Rhipidura rufifrons*	M		Inhabits wet sclerophyll forests, often in gullies dominated by tall eucalypts, usually with a dense shrubby understorey and ferns.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Satin Flycatcher	*Myiagra cyanoleuca*	M		Inhabits heavily vegetated gullies in eucalypt-dominated forests and taller woodlands	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Sharp-tailed Sandpiper	*Calidris acuminata*	VU, M		Prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation	21/11/1997	No suitable aquatic habitats in the Project area. **Negligible**
South-eastern Hooded Robin, Hooded Robin (south-eastern)	*Melanodryas cucullata cucullata*	EN		Found in lightly timbered woodland, mainly dominated by acacia and/or eucalypts.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**.
Southern Whiteface	*Aphelocephala leucopsis*	VU		Dry open forests and woodland and inland scrubs of mallee, mulga and saltbush are the preferred habitat of Southern Whiteface, especially areas with fallen timber or dead trees and stumps.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**.
Swift Parrot	*Lathamus discolor*	CR	CE	Breeds in Tasmania and overwinters in Victoria. Found in dry sclerophyll forests and woodlands, suburban parks and gardens where it feeds on the nectar of flowering eucalypts, namely Grey, Red Ironbark, Mugga Ironbark, Yellow Gum and White Box. Also feed on lerp psyllids amongst Red Gum.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**.
White-bellied Sea-Eagle	*Haliaeetus leucogaster*		E	Distributed along the coastline of mainland Australia, also extending inland along some of the larger waterways.	22/01/2019	No suitable habitat in the Project area. **Negligible**
White-throated Needletail	*Hirundapus caudacutus*	VU, M	V	Almost exclusively aerial, over a wide variety of habitats.	1/04/1977	Mostly aerial. Unlikely to rely on any habitats in the Project area. No records in the search region. **Negligible**

Common Name	Scientific Name	EPBC Act	FFG Act	Habitat preference	Last record in the search region	Likelihood of occurrence within the Project area
Wood Sandpiper	*Tringa glareola*	M		Occur in small flocks or singly on inland shallow freshwater wetlands, often with other waders. They prefer ponds and pools with emergent reeds and grass, surrounded by tall plants or dead trees and fallen timber.	None	No suitable aquatic habitats in the Project area. **Negligible**
Yellow Wagtail	*Motacilla flava*	M		Regular non-breeding visitor in northern Australia mainly spring-summer, vagrant to the south. Wide range of habitats, including areas with low vegetation, often recorded near water.	None	No suitable aquatic habitats in the Project area. **Negligible**
Mammals						
Eastern Barred Bandicoot	*Perameles gunnii*	EN	E	Found in the grasslands and grassy woodland of Australia and Tasmania. Habitat includes open woodlands and forests with tall dense grass and shrub understorey; most are found near a water supply. Many have adapted to living in tree shelter belts, bush blocks, and on farms.	1/01/1908	No suitable habitat in the Project area. **Negligible**.
Fat-tailed Dunnart	*Sminthopsis crassicaudata*		V	This species is found west of the Great Dividing Range and south of the Tropic of Capricorn. This animal inhabits a wide variety of environments from the southern coast to the arid inland regions, occurring in open woodlands, shrublands and grasslands.	16/07/1998	No suitable habitat in the Project area. **Negligible**.
Grey-headed Flying-fox	*Pteropus poliocephalus*	VU	V	Requires foraging resources and roosting sites. The primary food source is blossom from Eucalyptus and related genera but commonly forages on fruit trees in urban areas. Two known Flying Fox camps occur in the greater Melbourne region including one at Yarra Bend and one at Doveton.	None	Lack of suitable roosting or foraging habitat in the Project area. Limited number of planted eucalypts near to existing dwelling unlikely to be regularly utilised by the species. **Low**
Long-nosed Potoroo	*Potorous tridactylus trisulcatus*	VU	V	Occurs in a variety of wooded habitats in six known populations across Victoria.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
New Holland Mouse, Pookila	*Pseudomys novaehollandiae*	VU	E	Open heathlands, woodlands and dry sclerophyll forests with a heath understorey, grasslands and vegetated sand dunes	None	No suitable habitat in the Project area. No records in the search region. **Negligible**.
Southern Bent-wing Bat	*Miniopterus orianae bassanii*	CR	CE	Roosts underground, predominantly in caves and mines. Foraging areas include forested areas, volcanic plains, wetlands, coastal vegetation (including beaches) and urban areas.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**

Common Name	Scientific Name	EPBC Act	FFG Act	Habitat preference	Last record in the search region	Likelihood of occurrence within the Project area
Southern Brown Bandicoot	*Isoodon obesulus obesulus*	EN	E	Inhabits areas of dense ground cover in heathland, shrubland, sedgeland, heathy open forest and woodland. Suitable habitat includes any areas of vegetation (native or introduced) within the species range, that comprises an understorey vegetation structure with 50–80% foliage cover in the 0.2–1 m height range.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Spot-tailed Quoll	*Dasyurus maculatus maculatus*	EN	E	Temperate and subtropical rainforests in mountain areas wet sclerophyll forest lowland forests open and closed eucalypt woodlands.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**
Smoky Mouse, Konoom	*Pseudomys fumeus*	EN	E	Occurs in a wide variety of habitats, from heath to dry sclerophyll forest, especially along ridgetops. Prefers areas of dense ground cover, such as in heaths, or in areas with grass tussocks, rocks and logs.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**.
Yellow-bellied Glider (south-eastern)	*Petaurus australis australis*	VU		Occurs in eucalypt-dominated woodlands and forests, including both wet and dry sclerophyll forests. The subspecies shows a preference for large patches of mature old growth forest that provide suitable trees for foraging and shelter. There is also a clear preference for forests with a high proportion of winter-flowering and smooth-barked eucalypts.	None	No suitable habitat in the Project area. No records in the search region. **Negligible**.
Frogs						
Growling Grass Frog	*Litoria raniformis*	VU	V	Persists in waterways and other aquatic habitats in the greater Melbourne region. Key habitat features for the species includes submerged vegetation for egg-laying, rocks and logs for basking, permanent freshwater lagoons for breeding and cracks, as well as debris and dense vegetation for refuge.	None	No suitable aquatic habitat in the Project area. No records in the search region. **Negligible**
Reptiles						

Common Name	Scientific Name	EPBC Act	FFG Act	Habitat preference	Last record in the search region	Likelihood of occurrence within the Project area
Corangamite Water Skink	*Eulamprus tympanum marnieae*	EN	E	Found in grassy open woodland and cleared pastures dotted with ephemeral swamps and lakes, on rocky basaltic soils. Within these areas, the lizards inhabit rocky mounds or "stony rises", sheltering in rock crevices and man-made drystone walls.	28/03/2018	Suitable rocky habitats exist in the Project area however, the rocky habitat in the Project area does not have immediate access to any areas of water (the nearest waterbody, an unnamed lake, is 330 metres east of the Project area boundary). While the species was previously recorded along the northern boundary of the Project area in 2004 (Biosis 2005), habitat in the study area is limited to low-moderate quality, (and lacks high-quality habitats that would be preferred by the species). More recent records of the species exist in the region from Lake Colac and the existing Colac Quarry south of Ondit-Warrion Road (DELWP 2020a). **Low**
Striped Legless Lizard	*Delma impar*	VU	E	Inhabits intact grassland habitats where it shelters in grass tussocks, under rocks and in cracks in the soil.	None	Lack of native grassland and/or connectivity in the Project area. Rocky habitats limited to disjunct rocky rises. No records in the search region. **Low**
Swamp Skink	*Lissolepis coventryi*	EN		Often restricted to densely vegetated swamps and associated watercourses, and adjacent wet heaths (Melaleuca or Leptospermum thickets), sedgelands and saltmarshes. Can occur in association with freshwater and saltmarsh environments.	None	The Project area does not contain suitable habitat to support the species. No records in the search region. **Negligible**
Fish						
Dwarf Galaxias	*Galaxiella pusilla*	VU	E	Slow flowing, still shallow permanent and temporary freshwater habitats.	None	No suitable aquatic habitat in the Project area. No records in the search region. **Negligible**
Australian Grayling	*Prototroctes maraena*	VU	E	Occurs in streams and rivers on the eastern and southern flanks of the Great Dividing Range, from Sydney, southwards to the Otway Ranges of Victoria and in Tasmania. The species is found in fresh and brackish waters of coastal lagoons.	None	No moving waterways intersecting or occurring within the Project area. **Negligible**.

Common Name	Scientific Name	EPBC Act	FFG Act	Habitat preference	Last record in the search region	Likelihood of occurrence within the Project area
Yarra Pygmy Perch	*Nannoperca obscura*	EN	V	Preferring slow-moving or still waters including rivers, streams and lakes. Often located within sites that contain abundant submerged and emergent aquatic vegetation and wood debris.	None	No moving waterways intersecting or occurring within the Project area. **Negligible**.
Invertebrates						
Golden Sun Moth	*Synemon plana*	VU	V	Occurs in grassy areas in the greater Melbourne region, mainly in areas dominated by native grasses such as wallaby grass and spear grass, but also in areas of introduced grasses such as Chilean Needle-grass.	None	Lack of native grassland and/or connectivity of suitable grassy habitats in the Project area. No records in the search region. **Low**

Legend: EPBC Act: CR = critically endangered, EN = endangered, VU = vulnerable, M = migratory; FFG Act: CE = critically endangered, E = endangered, V = vulnerable.

Appendix F: EPBC Act Protected Matters Search Tool (PMST) Report

Australian Government

Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 13-May-2024

Summary

Details

- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat

Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	54
Listed Migratory Species:	17

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	28
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	1
Nationally Important Wetlands:	2
EPBC Act Referrals:	6
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Western district lakes	Within Ramsar site	In feature area

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Grassy Eucalypt Woodland of the Victorian Volcanic Plain	Critically Endangered	Community known to occur within area	In feature area
Natural Temperate Grassland of the Victorian Volcanic Plain	Critically Endangered	Community may occur within area	In feature area
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	Community likely to occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat may occur within area	In feature area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Botaurus poiciloptilus](#) Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
[Callocephalon fimbriatum](#) Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area	In feature area
[Climacteris picumnus victoriae](#) Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat may occur within area	In feature area
[Falco hypoleucos](#) Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Grantiella picta](#) Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Lathamus discolor](#) Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
[Melanodryas cucullata cucullata](#) South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Neophema chrysostoma](#) Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Pedionomus torquatus](#) Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Rostratula australis](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
[Stagonopleura guttata](#) Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
FISH			
[Nannoperca obscura](#) Yarra Pygmy Perch [26177]	Endangered	Species or species habitat likely to occur within area	In feature area
[Prototroctes maraena](#) Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area	In buffer area only
FROG			
[Litoria raniformis](#) Southern Bell Frog,, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat likely to occur within area	In feature area
INSECT			
[Synemon plana](#) Golden Sun Moth [25234]	Vulnerable	Species or species habitat likely to occur within area	In feature area
MAMMAL			
[Dasyurus maculatus maculatus (SE mainland population)](#) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Isoodon obesulus obesulus](#) Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat may occur within area	In buffer area only
[Miniopterus orianae bassanii](#) Southern Bent-wing Bat [87645]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
[Petaurus australis australis](#) Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat may occur within area	In feature area
[Pseudomys fumeus](#) Smoky Mouse, Konoom [88]	Endangered	Species or species habitat may occur within area	In buffer area only
[Pseudomys novaehollandiae](#) New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Pteropus poliocephalus](#) Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
PLANT			
[Amphibromus fluitans](#) River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area	In feature area
[Dianella amoena](#) Matted Flax-lily [64886]	Endangered	Species or species habitat may occur within area	In feature area
[Dodonaea procumbens](#) Trailing Hop-bush [12149]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Glycine latrobeana](#) Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Lachnagrostis adamsonii](#) Adamson's Blown-grass, Adamson's Blowngrass [76211]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lepidium aschersonii Spiny Peppercress [10976]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lepidium hyssopifolium Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat may occur within area	In feature area
Leucochrysum albicans subsp. tricolor Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat likely to occur within area	In feature area
Pimelea spinescens subsp. spinescens Plains Rice-flower, Spiny Rice-flower, Prickly Pimelea [21980]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Poa sallacustris Salt-lake Tussock-grass [24424]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat may occur within area	In feature area
Prasophyllum suaveolens Fragrant Leek-orchid [64956]	Endangered	Species or species habitat may occur within area	In feature area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat may occur within area	In feature area
Rutidosis leptorhynchoides Button Wrinklewort [67251]	Endangered	Species or species habitat may occur within area	In feature area
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Swainsona murrayana			
Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thelymitra epipactoides			
Metallic Sun-orchid [11896]	Endangered	Species or species habitat may occur within area	In feature area
Thelymitra matthewsii			
Spiral Sun-orchid [4168]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thelymitra orientalis			
Hoary Sun-orchid [88011]	Critically Endangered	Species or species habitat may occur within area	In feature area
Xerochrysum palustre			
Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			
Delma impar			
Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Eulamprus tympanum marnieae			
Corangamite Water Skink, Dreeite Water Skink [64487]	Endangered	Species or species habitat known to occur within area	In feature area
Lissolepis coventryi			
Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat may occur within area	In feature area

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat likely to occur within area	In feature area
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
[Arenaria interpres](#) Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
[Calidris ruficollis](#) Red-necked Stint [860]		Species or species habitat known to occur within area	In buffer area only
[Charadrius bicinctus](#) Double-banded Plover [895]		Species or species habitat known to occur within area	In feature area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat known to occur within area	In buffer area only
Tringa glareola Wood Sandpiper [829]		Species or species habitat known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area
[Calidris ruficollis](#) Red-necked Stint [860]		Species or species habitat known to occur within area overfly marine area	In buffer area only
[Chalcites osculans as Chrysococcyx osculans](#) Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Charadrius bicinctus](#) Double-banded Plover [895]		Species or species habitat known to occur within area overfly marine area	In feature area
[Charadrius ruficapillus](#) Red-capped Plover [881]		Species or species habitat known to occur within area overfly marine area	In buffer area only
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
[Himantopus himantopus](#) Pied Stilt, Black-winged Stilt [870]		Species or species habitat known to occur within area overfly marine area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat known to occur within area	In buffer area only
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis as Rostratula benghalensis (sensu lato)			
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Sterna striata			
White-fronted Tern [799]		Migration route may occur within area	In feature area
Tringa glareola			
Wood Sandpiper [829]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Lake Beeac W.R	Nature Conservation Reserve	VIC	In buffer area only

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
West Victoria RFA	Victoria	In feature area

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status
Lake Beeac	VIC	In buffer area only
Lower Lough Calvert & Lake Thurrumbong	VIC	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Holcim Colac Quarry Expansion-Stage 5 and Stage 6	2019/8530	Controlled Action	Post-Approval	In feature area
Not controlled action				

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
basalt quarry extension on the Ondit-Warrian Road	2006/3003	Not Controlled Action	Completed	In feature area
Colac Quarry Extension ??? Northern Development Area	2022/9149	Not Controlled Action	Completed	In feature area
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix G: Native Vegetation Removal Report

Native vegetation removal report

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

Date of issue: **17/05/2024**
Time of issue: **12:15 pm**

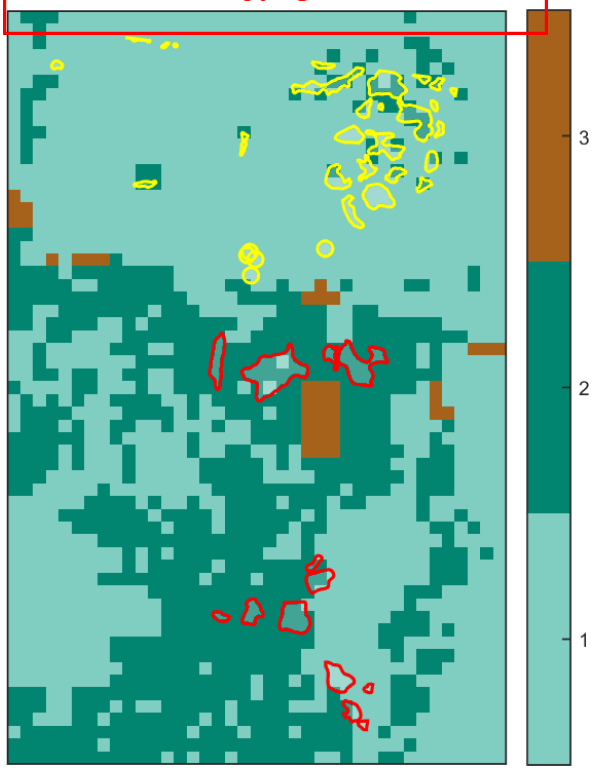
Report ID: AUG_2024_003

Project ID	HolcimQuarry_ENSYM_RevC_20240516

Assessment pathway

Assessment pathway	**Detailed Assessment Pathway**
Extent including past and proposed	4.636 ha
Extent of past removal	2.338 ha
Extent of proposed removal	2.299 ha
No. Large trees proposed to be removed	5
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



VICTORIA State Government | Environment, Land, Water and Planning

Offset requirements if a permit is granted

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

General offset amount[1]	0.824 general habitat units
Vicinity	Corangamite Catchment Management Authority (CMA) or Colac Otway Shire Council
Minimum strategic biodiversity value score[2]	0.529
Large trees	5 large trees

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

Appendix 1 includes information about the native vegetation to be removed

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

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

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

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

Next steps

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

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

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

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

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

Additional application requirements must be met including:

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

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

For more information contact the DELWP Customer Service Centre 136 186

www.delwp.vic.gov.au

Appendix 1: Description of native vegetation to be removed

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

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

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

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

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

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

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

Native vegetation to be removed

Information provided by or on behalf of the applicant in a GIS file						Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
4-HA6	Patch	vvp_0649	Endangered	0	no	0.300	0.095	0.095	0.680		0.036	General
4-HA7	Patch	vvp_0649	Endangered	0	no	0.300	0.206	0.206	0.680		0.078	General
4-HA8	Patch	vvp_0649	Endangered	0	no	0.300	0.059	0.059	0.680		0.022	General
4-HA10	Patch	vvp_0649	Endangered	0	no	0.300	0.069	0.069	0.680		0.026	General
4-HA9	Patch	vvp_0649	Endangered	0	no	0.300	0.039	0.039	0.680		0.015	General
4-HA11	Patch	vvp_0649	Endangered	0	no	0.300	0.170	0.170	0.680		0.064	General
4-HA12	Patch	vvp_0649	Endangered	0	no	0.300	0.071	0.071	0.680		0.027	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
4-HA13	Patch	vvp_0649	Endangered	0	no	0.300	0.133	0.133	0.710		0.051	General
4-HA28	Patch	vvp_0649	Endangered	0	no	0.300	0.025	0.025	0.410		0.008	General
4-HA29	Patch	vvp_0649	Endangered	0	no	0.300	0.029	0.029	0.720		0.011	General
4-HA30	Patch	vvp_0649	Endangered	0	no	0.300	0.033	0.033	0.430		0.011	General
4-HA14	Patch	vvp_0649	Endangered	0	no	0.300	0.118	0.118	0.683		0.045	General
4-HA15	Patch	vvp_0649	Endangered	0	no	0.300	0.537	0.537	0.693		0.204	General
4-HA16	Patch	vvp_0649	Endangered	0	no	0.300	0.054	0.054	0.695		0.021	General
4-HA17	Patch	vvp_0649	Endangered	0	no	0.300	0.007	0.007	0.700		0.003	General
4-HA19	Patch	vvp_0649	Endangered	0	no	0.300	0.026	0.026	0.680		0.010	General
4-HA18	Patch	vvp_0649	Endangered	0	no	0.300	0.017	0.017	0.700		0.006	General
4-HA22	Patch	vvp_0649	Endangered	0	no	0.300	0.030	0.030	0.700		0.012	General
4-HA24	Patch	vvp_0649	Endangered	0	no	0.300	0.219	0.219	0.503		0.074	General
4-HA25	Patch	vvp_0649	Endangered	0	no	0.300	0.033	0.033	0.410		0.010	General
4-HA23	Patch	vvp_0649	Endangered	0	no	0.300	0.023	0.023	0.700		0.009	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
4-HA26b	Patch	vvp_0649	Endangered	0	no	0.300	0.004	0.004	0.640		0.001	General
4-HA27	Patch	vvp_0649	Endangered	0	no	0.300	0.009	0.009	0.640		0.003	General
4-HA20	Patch	vvp_0649	Endangered	0	no	0.300	0.010	0.010	0.724		0.004	General
4-ST41	Scattered Tree	vvp_0649	Endangered	1	no	0.200	0.070	0.040	0.700		0.010	General
4-ST51	Scattered Tree	vvp_0649	Endangered	1	no	0.200	0.070	0.041	0.700		0.010	General
4-ST56	Scattered Tree	vvp_0649	Endangered	1	no	0.200	0.070	0.057	0.700		0.014	General
4-ST44	Scattered Tree	vvp_0649	Endangered	1	no	0.200	0.070	0.070	0.700		0.018	General
4-ST71	Scattered Tree	vvp_0649	Endangered	1	no	0.200	0.070	0.070	0.700		0.018	General
4-HA26a	Patch	vvp_0649	Endangered	0	no	0.300	0.006	0.006	0.640		0.002	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
Wind-blown Tussock-grass	*Poa physoclina*	507791	Endangered	Dispersed	Habitat importance map	0.0012
Fragrant Leek-orchid	*Prasophyllum suaveolens*	504567	Endangered	Dispersed	Habitat importance map	0.0011
White Sunray	*Leucochrysum albicans subsp. tricolor*	504581	Endangered	Dispersed	Habitat importance map	0.0008
Basalt Podolepis	*Podolepis linearifolia*	504658	Endangered	Dispersed	Habitat importance map	0.0008
Button Wrinklewort	*Rutidosis leptorhynchoides*	502982	Endangered	Dispersed	Habitat importance map	0.0007
Basalt Sun-orchid	*Thelymitra gregaria*	504019	Endangered	Dispersed	Habitat importance map	0.0007
Clumping Golden Moths	*Diuris gregaria*	504887	Endangered	Dispersed	Habitat importance map	0.0006
Large-headed Fireweed	*Senecio macrocarpus*	503116	Endangered	Dispersed	Habitat importance map	0.0005
Salt Blown-grass	*Lachnagrostis robusta*	504223	Rare	Dispersed	Habitat importance map	0.0005
Plump Swamp Wallaby-grass	*Amphibromus pithogastrus*	503624	Endangered	Dispersed	Habitat importance map	0.0004
Brackish Plains Buttercup	*Ranunculus diminutus*	504314	Rare	Dispersed	Habitat importance map	0.0004
Curly Sedge	*Carex tasmanica*	500650	Vulnerable	Dispersed	Habitat importance map	0.0004
Forked Rice-flower	*Pimelea hewardiana*	502522	Rare	Dispersed	Habitat importance map	0.0003
Spiny Rice-flower	*Pimelea spinescens subsp. spinescens*	504823	Endangered	Dispersed	Habitat importance map	0.0003
Small Scurf-pea	*Cullen parvum*	502773	Endangered	Dispersed	Habitat importance map	0.0003
Shelford Leek-orchid	*Prasophyllum fosteri*	505632	Endangered	Dispersed	Habitat importance map	0.0003
Wavy Swamp Wallaby-grass	*Amphibromus sinuatus*	503625	Vulnerable	Dispersed	Habitat importance map	0.0003
Plains Yam-daisy	*Microseris scapigera s.s.*	504657	Vulnerable	Dispersed	Habitat importance map	0.0002

Pale-flower Crane's-bill	*Geranium sp. 3*	505344	Rare	Dispersed	Habitat importance map	0.0002
Purple Blown-grass	*Lachnagrostis punicea subsp. punicea*	504206	Rare	Dispersed	Habitat importance map	0.0002
Golden Cowslips	*Diuris behrii*	501061	Vulnerable	Dispersed	Habitat importance map	0.0002
Trailing Hop-bush	*Dodonaea procumbens*	501090	Vulnerable	Dispersed	Habitat importance map	0.0002
Arching Flax-lily	*Dianella sp. aff. longifolia (Benambra)*	505560	Vulnerable	Dispersed	Habitat importance map	0.0002
Pale Swamp Everlasting	*Coronidium gunnianum*	504655	Vulnerable	Dispersed	Habitat importance map	0.0002
Purple Blown-grass	*Lachnagrostis punicea subsp. filifolia*	504222	Rare	Dispersed	Habitat importance map	0.0002
Purple Diuris	*Diuris punctata*	501084	Vulnerable	Dispersed	Habitat importance map	0.0001
Branching Groundsel	*Senecio cunninghamii var. cunninghamii*	503104	Rare	Dispersed	Habitat importance map	0.0001
Fine-hairy Spear-grass	*Austrostipa puberula*	503988	Rare	Dispersed	Habitat importance map	0.0001
Southern Swainson-pea	*Swainsona behriana*	504944	Rare	Dispersed	Habitat importance map	0.0001
Brolga	*Grus rubicunda*	10177	Vulnerable	Dispersed	Habitat importance map	0.0001
Small Milkwort	*Comesperma polygaloides*	500798	Vulnerable	Dispersed	Habitat importance map	0.0001
Button Immortelle	*Leptorhynchos waitzia*	501949	Vulnerable	Dispersed	Habitat importance map	0.0001
Southern Bent-wing Bat	*Miniopterus schreibersii bassanii*	61343	Critically endangered	Dispersed	Habitat importance map	0.0001
Striped Legless Lizard	*Delma impar*	12159	Endangered	Dispersed	Habitat importance map	0.0001
Hairy Tails	*Ptilotus erubescens*	502825	Vulnerable	Dispersed	Habitat importance map	0.0001
Clover Glycine	*Glycine latrobeana*	501456	Vulnerable	Dispersed	Habitat importance map	0.0001
Tough Scurf-pea	*Cullen tenax*	502776	Endangered	Dispersed	Habitat importance map	0.0001
Golden Sun Moth	*Synemon plana*	15021	Critically endangered	Dispersed	Habitat importance map	0.0000
Growling Grass Frog	*Litoria raniformis*	13207	Endangered	Dispersed	Habitat importance map	0.0000
Leafy Twig-sedge	*Cladium procerum*	500786	Rare	Dispersed	Habitat importance map	0.0000

Black Falcon	*Falco subniger*	10238	Vulnerable	Dispersed	Habitat importance map	0.0000
Elegant Parrot	*Neophema elegans*	10307	Vulnerable	Dispersed	Habitat importance map	0.0000
Snowy Mint-bush	*Prostanthera nivea var. nivea*	502746	Rare	Dispersed	Habitat importance map	0.0000
Matted Flax-lily	*Dianella amoena*	505084	Endangered	Dispersed	Habitat importance map	0.0000
Salt Lawrencia	*Lawrencia spicata*	501888	Rare	Dispersed	Habitat importance map	0.0000
Tussock Skink	*Pseudemoia pagenstecheri*	12993	Vulnerable	Dispersed	Habitat importance map	0.0000

Habitat group

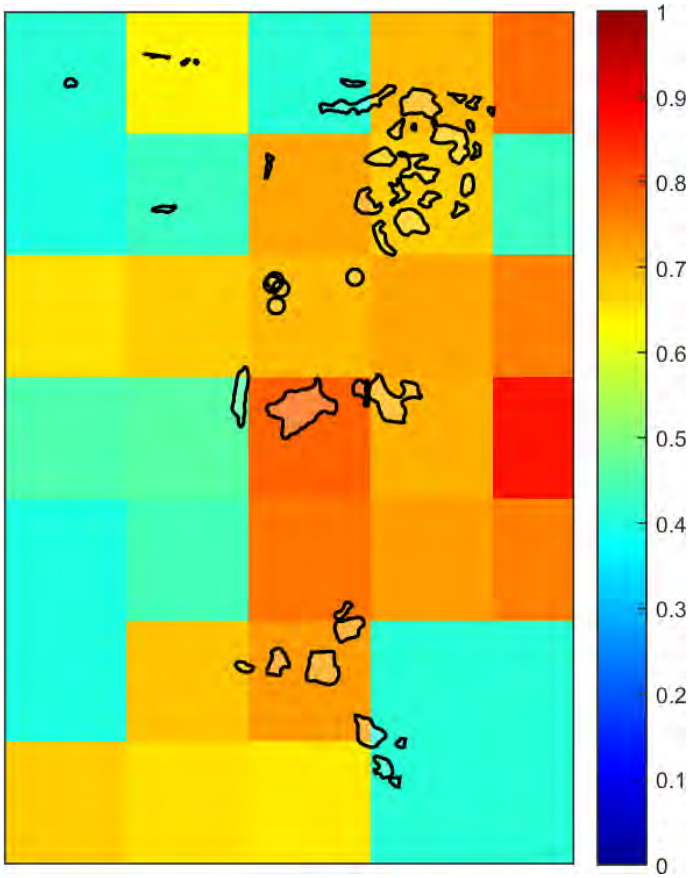
- Highly localised habitat means there is 2000 hectares or less mapped habitat for the species
- Dispersed habitat means there is more than 2000 hectares of mapped habitat for the species

Habitat impacted

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

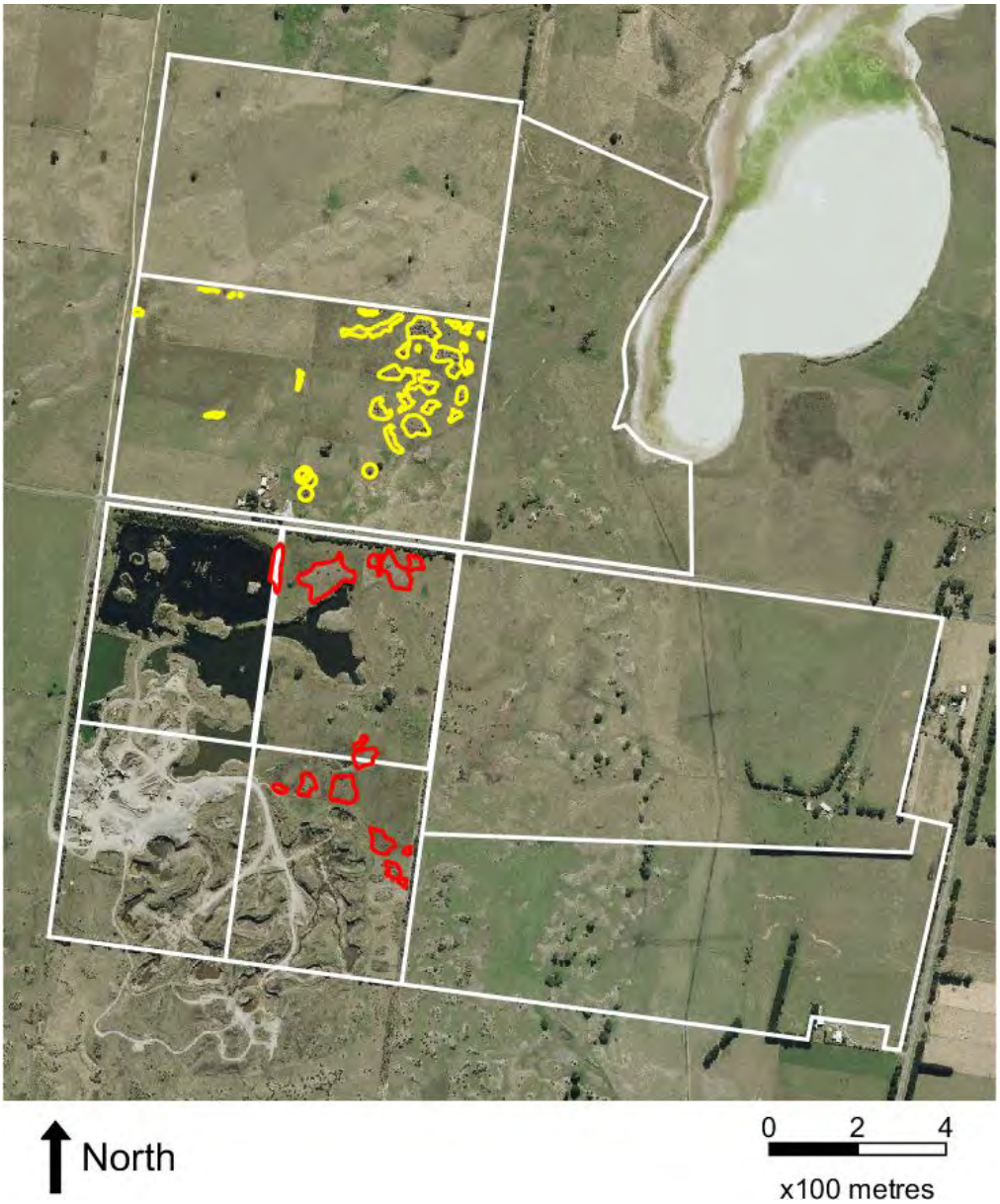
Appendix 3 – Images of mapped native vegetation

2. Strategic biodiversity values map



3. Aerial photograph showing mapped native vegetation

4. Map of the property in context



Yellow boundaries denote areas of proposed native vegetation removal.

Red boundaries denote areas of past removal.

Appendix H: Photos of Native Vegetation Recorded

Image 1: Habitat Zone 1 comprising mound of large piled rocks and boulders, *Prunus* and tree violet (*Melicytus dentatus*).

Image 2: Habitat Zone 2 comprising rocky platform with high cover of lichen and non-native grasses.

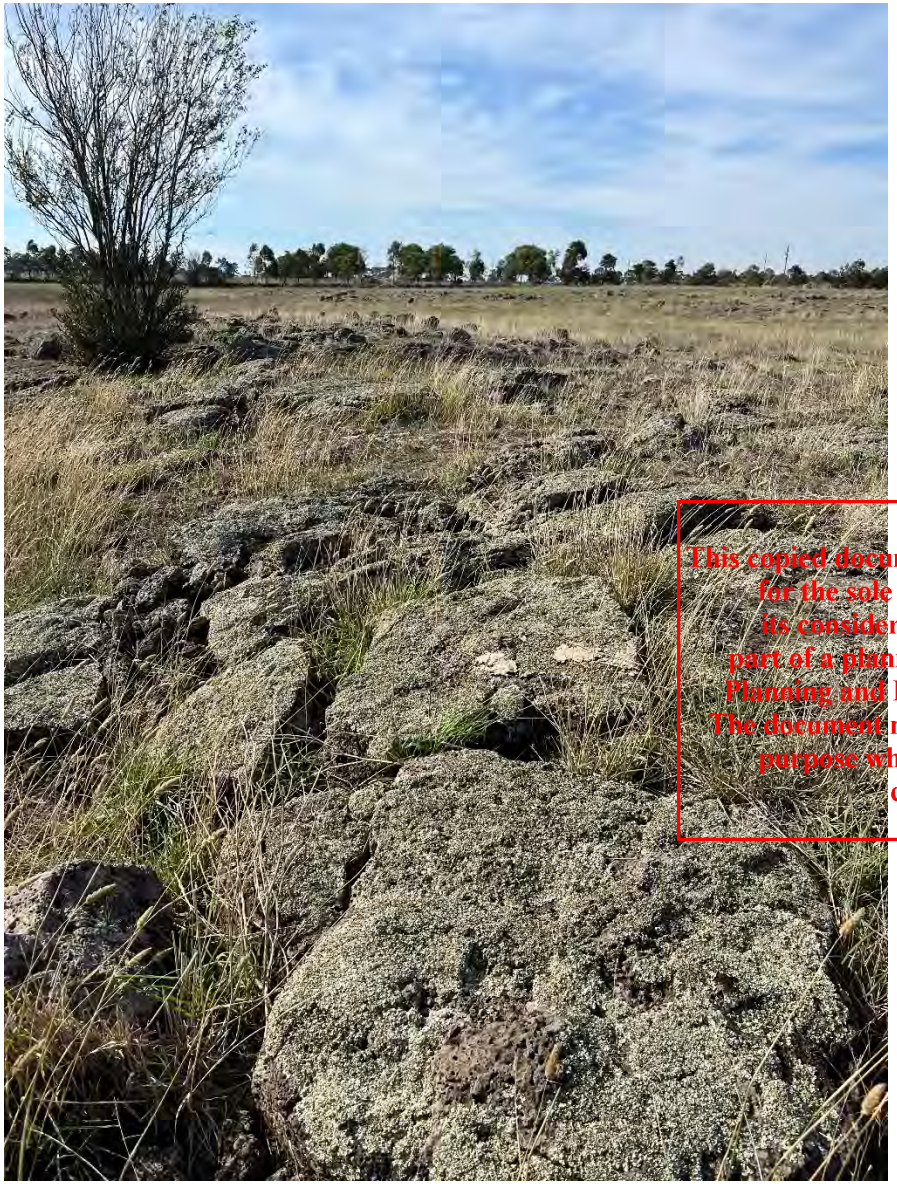


Image 3: Habitat Zone 3 comprising rocky platform with high cover of lichen and non-native grasses.

Image 4: Habitat Zone 4 comprising embedded rocks amongst high cover of lichen and scattered tree violet.

Image 5: Habitat Zone 5 comprising embedded rocks amongst high cover of lichen and scattered tree violet.

Image 6: Habitat Zone 6 comprising embedded rocks and large boulders amongst ground layer of non-native grasses and scattered tree violet.

Image 7: Habitat Zone 7 comprising high cover of tree violet and small patches of scattered native grasses amongst non-native flora.

Image 8: Habitat Zone 8 comprising high cover of tree violet, piled boulders, embedded rock amongst patches of non-native flora.

Image 9: Habitat Zone 9 comprising high cover of tree violet and scattered embedded and loose rock.

Image 10: Habitat Zone 10 comprising high cover of tree violet over stacked rocks and non-native grasses.

Image 11: Habitat Zone 11 comprising raised hill scattered with embedded rock and large boulders.

Image 12: Habitat Zone 12 comprising raised hill with tree violet and scattered boulders embedded in earth.

Image 13: Habitat Zone 13 comprising scattered embedded rocks, non-native grasses and several tree violet shrubs.

Image 14: Habitat Zone 14 comprising scattered embedded rock, non-native grasses and several tree violet shrubs.

Image 15: Habitat Zone 15 including the largest patch of vegetation and supporting dense cover of tree violet over ground layer of embedded rock.

Image 16: Habitat Zone 16 comprising raised mound of tree violet and scattered embedded rock.

Image 17: Habitat Zone 17 comprising patch of scattered rock, tree violet and dumped scrap metal/brick.

Image 18: Habitat Zone 18 small patch comprising dense cover of tree violet.

Image 19: Habitat Zone 19 small patch comprising dense cover of tree violet.

Image 20: Habitat Zone 20 comprising embedded rock and scattered tree violet shrubs.

Image 21: Habitat Zone 21 comprising row of Plains Grassy Woodland and stacked boulders.

Image 22: Habita Zone 22 comprising large stacked and embedded rock amongst scattered tree violet shrubs.

Image 23: Habitat Zone 23 comprising large stacked boulders and scattered tree violet shrubs.

Image 24: Habitat Zone 24 comprising large stacked and embedded rock amongst scattered tree violet shrubs.

Image 25: Habitat Zone 25 raised hill with scattered tree violet and embedded rock.

Image 26: Habitat Zone 26 tree violet over ground layer of embedded rock covered with lichen.

Image 27: Habitat Zone 27 tree violet over ground layer of embedded rock covered with lichen.

Image 28: Habitat Zone 28 comprising embedded rock covered with lichen.

Image 29: Habitat Zone 29 comprising tree violet over ground layer of embedded rock covered with lichen.

Image 30: Habitat Zone 30 comprising low-lying embedded rock covered with lichen.

Image 31: Habitat Zone 31 comprising Blackwood on eastern road reserve of Rattrays Road (west of Project area).

Image 32: Habitat Zone 32 comprising Blackwood on eastern road reserve of Rattrays Road (west of Project area).

Image 33: Scattered native Drooping Sheoak (*Allocasuarina verticillata*) trees located in the southern portion of the Project area.

Appendix I: Evidence that appropriate Native Vegetation offsets are available

Report of available native vegetation credits

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

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

Date and time: 15/05/2024 12:09 **Report ID: 24318**

What was searched for?

General offset

General habitat units	Strategic biodiversity value	Large trees	Vicinity (Catchment Management Authority or Municipal district)
0.824	0.529	5	CMA: Corangamite or LGA: Colac Otway Shire

Details of available native vegetation credits on 15 May 2024 12:09

These sites meet your requirements for general offsets.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
VC_CFL-3080_01	5.132	95	Corangamite	Golden Plains Shire	Yes	Yes	No	Bio Offsets
VC_CFL-3699_01	1.834	45	Corangamite	Colac Otway Shire	Yes	Yes	No	Contact NVOR
VC_CFL-3718_01	7.545	865	Corangamite	Corangamite Shire	Yes	Yes	No	Bio Offsets
VC_CFL-3739_01	5.605	276	Corangamite	Colac Otway Shire	Yes	Yes	No	Bio Offsets
VC_CFL-3787_01	9.579	895	Corangamite	Colac Otway Shire	Yes	Yes	No	VegLink
VC_CFL-3798_01	2.368	232	Corangamite	Colac Otway Shire	Yes	Yes	No	VegLink

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

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

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

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

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

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

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

Next steps

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

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

Broker contact details

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

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

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