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Diana Alpine Lodge, Falls Creek:

Flora and fauna assessment

FINAL REPORT

Prepared for Send it Architecture

25 June 2024

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- Georgina Zacks and Cassandra Kalafatakis (field assistance)
- Sam Panter (mapping)
- Jeff Yugovic (quality assurance)

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Biosis acknowledges the Aboriginal and Torres Strait Islander peoples as Traditional Custodians of the land on which we live and work.

We pay our respects to the Traditional Custodians and Elders past and present and honour their connection to Country and ongoing contribution to society.

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Summary

Biosis Pty Ltd was commissioned by Send it Architecture to undertake a flora and fauna assessment of Diana Alpine Lodge located at 6 Falls Creek Road, Falls Creek (the study area). The existing building on the site is proposed for redevelopment into thirteen apartments and associated infrastructure.

The study area is located in Falls Creek approximately 600 metres west-south-west of the Falls Creek Police Station, and approximately 17.5 kilometres south-east of Mount Beauty (Figure 1).

Ecological values

Key ecological values identified within the study area are as follows:

- Vegetation consistent with Sub-alpine Woodland Ecological Vegetation Class (EVC) 43. This EVC has a Bioregional Conservation Status (BCS) of Least Concern within the Victorian Alps Bioregion.
- 13 large trees were recorded within vegetation surrounding the existing building.
- Habitat for *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or *Flora and Fauna Guarantee Act 1988* (FFG Act) listed species:
 - Broad-toothed Rat *Mastacomys fuscus mordicus* (Endangered, EPBC Act; Vulnerable FFG Act)
 - Gang-gang Cockatoo *Calyptalonichus fimbriatum* (Endangered, EPBC Act; FFG Act)
 - White-throated Needletail *Hirundo alba caudocinctus* (Vulnerable, EPBC Act; FFG Act)
 - Alpine Bog Skink *Pseudemoia cryodroma* (Endangered, EPBC Act; FFG Act)
 - Tussock Skink *Pseudemoia pagenstecheri* (Endangered, FFG Act)
- FFG Act listed flora species; Bogong Sally *Eucalyptus pauciflora* subsp. *hedraia* (Critically Endangered), Royal Grevillea *Grevillea victoriae* (Endangered), Bogong Daisy-bush *Olearia frostii* (Endangered) and Dusty Daisy-bush *Olearia phlogopappa* subsp. *flavescens* (Endangered) were recorded in the study area.

Government legislation and policy

An assessment of the project in relation to key biodiversity legislation and policy is summarised below.

| Legislation / policy | Relevant ecological feature on site | Permit / approval required | Notes |
|--|--|----------------------------------|---|
| <i>Environment Protection and Biodiversity Conservation Act 1999</i> | Habitat for EPBC listed fauna species. | Referral not recommended. | Significant impacts on Matters of National Environmental Significance are considered unlikely. |
| <i>Flora and Fauna Guarantee Act 1988</i> | Suitable habitat for four FFG listed flora species and one FFG listed fauna species: <ul style="list-style-type: none">• Bogong Sally• Royal Grevillea• Bogong Daisy-bush• Dusty Daisy-bush | Protected Flora Permit required. | Site is privately leased Crown land. A permit will be required if protected flora is impacted by the development. |

| Legislation / policy | Relevant ecological feature on site | Permit / approval required | Notes |
|---|--|---|---|
| | <ul style="list-style-type: none"> Tussock Skink. Above listed protected flora species were recorded in study area. | | |
| Planning & Environment Act 1987 | Applies to any native vegetation to be removed, destroyed or lopped. | Planning permit is required in Victoria to remove or lop native vegetation. | The permit application needs to meet requirements of the Intermediate Assessment Pathway. |
| Catchment and Land Protection Act 1994 | Three regionally controlled noxious weeds and one pest animal were recorded in the study area. | The proponent must prevent the growth and spread of regionally controlled weeds, and prevent the spread of, and as far as possible eradicate, established pest animals. | Comply with requirements to control/eradicate. Hygiene controls must be implemented during construction to ensure weeds are not introduced or spread by construction works. |

Guidelines for the removal, destruction or lopping of native vegetation (the Guidelines)

Efforts should be made to minimise impacts within the Tree Protection Zones (TPZs) of large trees within the patch vegetation. Given the construction design and associated works will involve direct removal of native vegetation and encroachment into TPZs, Clause 52.17 of the Victoria Planning Provisions will be triggered, and a planning permit application will be required for the removal, destruction or lopping of native vegetation.

Based on the current design, the proposed development will require the removal of 0.015 hectares of native vegetation, including two large trees, from within Location category 1. Therefore, the planning permit application will be assessed on the Intermediate Assessment Pathway. The strategic biodiversity value score of the native vegetation proposed for removal is 0.270.

If a permit is granted, the offset requirements would be 0.007 general habitat units. The general offset must be within the North East Catchment Management Authority, and must have a minimum strategic biodiversity value score of 0.216.

Send it Architecture may seek to purchase 'third party' specific offset credits via an accredited trading scheme. Option are provided in Appendix 5.

Recommendations

All areas of vegetation/habitat nominated in the overall final design plan as 'retained' and the TPZ and 15 metre protection buffers of retained vegetation (and that adjoining the project study area) should be treated as no-go zones and placement of building envelopes, parking and stockpile areas should avoid these areas. Adequate barriers, fencing and signage are recommended in areas where works are in close proximity to these no-go zones.

These biodiversity and vegetation protection measures should be documented in a Site Environmental Management Plan, which should also include other measures to reduce the possible impacts of site construction works, including erosion and sedimentation management, biosecurity considerations (pests and diseases), waste and pollution management, and work site delineation.

1 Introduction

1.1 Project background

Biosis Pty Ltd was commissioned by Send it Architecture to undertake a flora and fauna assessment of Diana Alpine Lodge located at 6 Falls Creek Road, Falls Creek (the study area). The existing building on the site is proposed for redevelopment into apartments and associated infrastructure. The preliminary design for redevelopment includes 13 apartments, with communal areas, deck areas and other associated infrastructure within the building's overall footprint.

1.2 Scope of assessment

The objectives of this investigation are to:

- Describe the vascular flora (ferns, conifers, flowering plants), vertebrate fauna (mammals, birds, reptiles, frogs, fishes) observed within the study area.
- Map native vegetation and other habitat features within the study area.
- Conduct a vegetation quality assessment.
- Review the implications of relevant biodiversity legislation and policy, including Victoria's Guidelines for the removal, destruction or lopping of native vegetation ('the Guidelines').
- Identify potential implications of the proposed development and provide recommendations to assist with development design.
- Recommend any further assessments of the site that may be required e.g. targeted searches for threatened species.

1.3 Location of study area

The study area is located in Falls Creek approximately 600 metres west-south-west of the Falls Creek Police Station and approximately 17.5 kilometres south-east of Mount Beauty (Figure 1). The study area encompasses approximately 0.23 hectares of privately leased Crown land and the immediately adjacent vacant land to the east. The study area is currently zoned CDZ1 (Comprehensive Development Zone – Schedule 1). The overlays which apply to the study area include a Bushfire Management Overlay – Schedule 1 (BMO1), Design and Development Overlay – Schedule 2 (DDO2) and the Erosion Management Overlay – Schedule 1 (EMO1).

The study area is within the:

- Victorian Alps Bioregion
- Kiewa River Basin (North East catchment)
- Management area of North East Catchment Management Authority (CMA)
- Alpine Resorts Planning Scheme.

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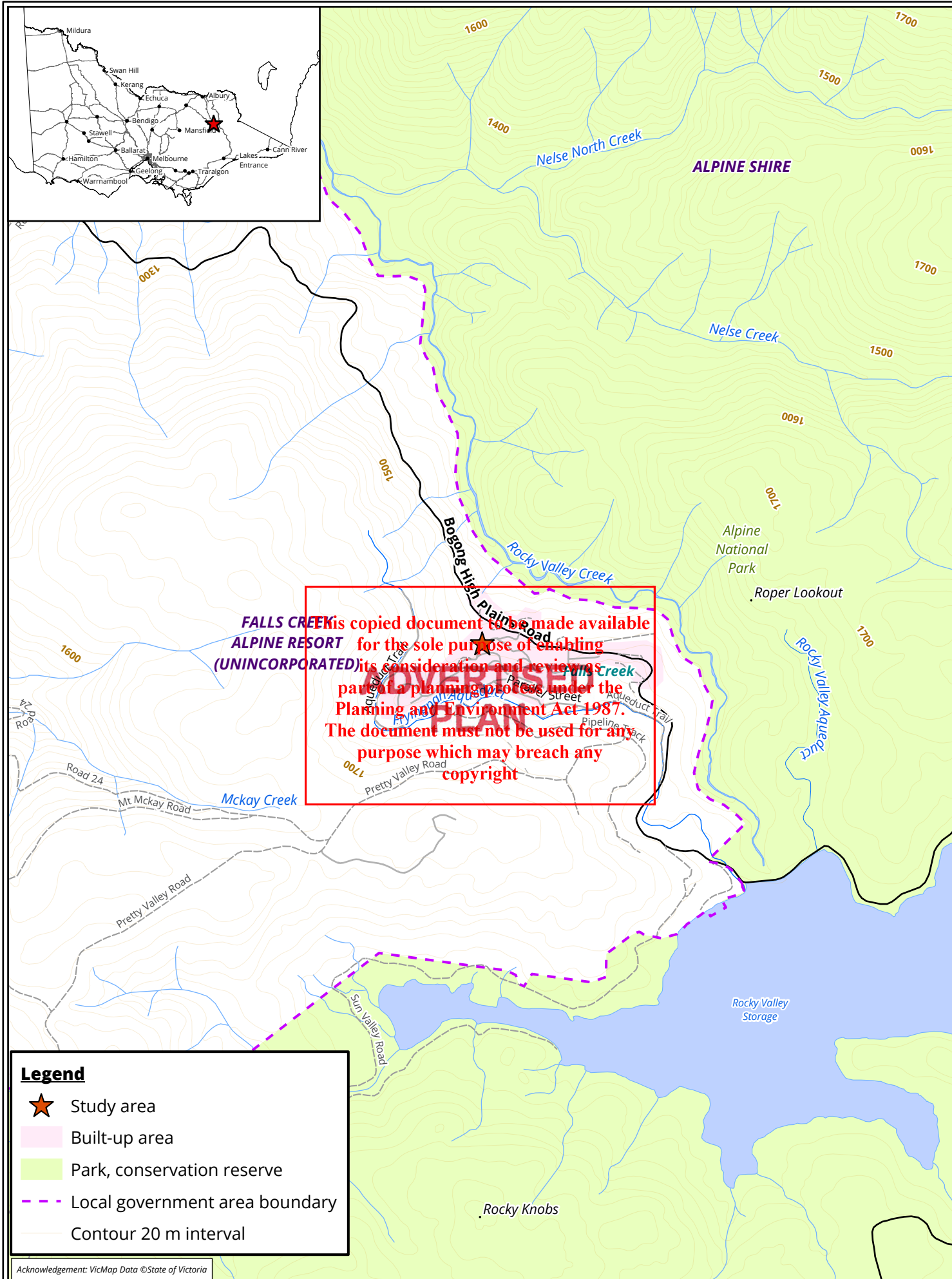


Figure 1 Location of the study area - 6 Falls Creek Road, Falls Creek, Victoria

2 Methods

2.1 Database review

In order to provide a context for the study area, information about flora and fauna from within 5 kilometres of the study area (the 'local area') was obtained from relevant biodiversity databases, many of which are maintained by the Victorian Government Department of Energy, Environment and Climate Action (DEECA) (formerly Department of Environment, Land, Water and Planning (DELWP)) or the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW). Records from the following databases were collated and reviewed:

- DEECA's Victorian Biodiversity Atlas (VBA), including the 'VBA_FLORA25, FLORA100 & FLORA Restricted' and 'VBA_FAUNA25, FAUNA100 & FAUNA Restricted' datasets (DSE 2009a).
- DCCEEW's Protected Matters Search Tool for matters protected by the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Other sources of biodiversity information were examined including:

- DEECA's NatureKit mapping tool.
- DEECA's Habitat Importance maps.
- DEECA's Native Vegetation Regulations (NVR) Map online application tool.
- DEECA's Ensym NVR Tool Support team was provided with site-based spatial information in order to generate a Native Vegetation Removal Report for the study area.
- Planning Scheme zones relevant to biodiversity based on <http://planningschemes.dpcd.vic.gov.au>.

2.2 Definitions of threatened species and communities

Threatened species and communities are listed under the EPBC Act and/or Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act). The conservation status of a species or ecological community is determined by its listing status under Commonwealth or State legislation/policy (Table 1).

Table 1 Conservation status of threatened species and ecological communities

| Government level | Conservation status |
|------------------|--|
| National | Listed as nationally critically endangered, endangered or vulnerable under the EPBC Act. |
| State | Listed as extinct, extinct in the wild, critically endangered, endangered, vulnerable or conservation dependent in Victoria under the FFG Act. |

Lists of threatened species generated from the databases are provided in Appendix 1.2 (flora) and Appendix 2.2 (fauna). Each species has been assessed to determine its likelihood of occurrence based on the following process.

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2.3 Determining likelihood of occurrence of threatened species

Likelihood of occurrence indicates the potential for a species or ecological community to occur regularly within the study area. It is based on expert opinion, information in relevant biodiversity databases and reports, and an assessment of habitats on the site. Likelihood of occurrence is ranked as negligible, low, medium, high or recorded. The rationale for the rank assigned is provided for each species in Appendix 1.2 (flora) and Appendix 2.2 (fauna). Those species for which there is little or no suitable habitat within the study area are assigned a likelihood of low or negligible and are not considered further.

Only those species listed under the EPBC Act or the FFG Act (hereafter referred to as 'threatened species') are assessed to determine their likelihood of occurrence. The habitat value for threatened species is calculated by the Habitat Importance Modelling produced by DEECA (DELWP 2017a). Where threatened species are recorded in the study area this is noted in Appendix 1.2 (flora) and Appendix 2.2 (fauna).

Threatened species which have at least medium likelihood of occurrence are given further consideration in this report. The need for targeted survey for these species is also considered.

2.4 Site investigation

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2.4.1 Flora assessment

The flora assessment was undertaken on 18 March 2024 by Georgina Zacks (Senior Botanist) and Cassandra Kalafatakis (Graduate Botanist). A list of flora species was collected and will be submitted to DEECA for incorporation into the VBA. Planted species were not recorded unless they were naturalised.

Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs, and grasses' (Clause 73.01).

The Guidelines classify native vegetation into two categories (DELWP 2017b):

- A **patch** of native vegetation (measured in hectares) is one of the following:
 - An area of vegetation, with or without trees, where at least 25% of the total perennial understorey cover is native.
 - An area with three or more native canopy trees where the drip line (i.e. the outermost boundary of a tree canopy) of each tree touches the drip line of at least one other tree, forming a continuous canopy.
 - Any mapped wetland included in the Current wetlands map, available in DEECA systems and tools.
- A **scattered tree** is defined as a native canopy tree that does not form part of a patch.

Patch vegetation is classified into ecological vegetation classes (EVCs), which are the standard unit for classifying vegetation types in Victoria. They are described through a combination of floristics, lifeforms and ecological characteristics, and through an inferred fidelity to particular environmental attributes. Each EVC contains one or more floristic (plant) communities. The EVC benchmarks are standard descriptions that allow the vegetation quality on a given site to be determined under the Guidelines (DELWP 2017b).

A canopy tree is a mature tree that is greater than three metres in height and is normally found in the upper layer of a vegetation type. Ecological vegetation class descriptions provide a list of the typical canopy species. A scattered tree is defined as either small or large, and is determined using the large tree benchmark for the relevant EVC. The extent of a small, scattered tree is the area of a circle with a 10-metre radius (i.e. 0.031

hectares), while the extent of a large, scattered tree is a circle with a 15-metre radius (i.e. 0.070 hectares). A condition score is applied to each scattered tree based on information provided by DEECA's NVR Map.

A Vegetation Quality Assessment (VQA) was undertaken for all patches of native vegetation based on DEECA's habitat hectare method (DSE 2004) and the Guidelines (DELWP 2017b).

Species nomenclature for flora follows the Victorian Biodiversity Atlas (VBA).

2.4.2 Fauna assessment

A desktop fauna assessment was undertaken by a zoologist (Ewan Kelly – Team Leader) to assess the fauna habitat values of the study area, and to determine the likelihood of threatened fauna species occurring. The desktop fauna assessment incorporated a review of database records of significant fauna along with photographs and vegetation descriptions obtained during the flora assessment.

2.4.3 Permits

Biosis undertakes flora and fauna assessments under the following permits and approvals:

- Permit to Take/Keep Protected Flora issued by DEECA under the FFG Act (Permit Number 10010194).

2.5 Qualifications

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

The current flora and fauna assessment was conducted in early autumn, which is just outside of the optimal time for survey in Victorian sub-alpine environments as plants have generally finished flowering and the material required for some flora species identification is often no longer available. Despite this, given the location and context of the study area (i.e. within a developed ski village), the survey effort is considered sufficient to assess the general values of the study area.

Native Vegetation Removal Reports are prepared through DEECA's NVR Map online application or requested through DEECA's Ensym NVR Tool Support team. Biosis supplies relevant site-based spatial information as inputs to DEECA and we are reliant on DEECA's output reports for all assessment pathway applications. Biosis makes every effort to ensure site and spatial information entered into the NVR Map, or supplied to DEECA, is an accurate reflection of proposed native vegetation removal.

2.6 Legislation and policy

The implications for the project were assessed in relation to key biodiversity legislation and policy including:

- Matters listed under the EPBC Act, associated policy statements, significant impacts guidelines, listing advice and key threatening processes.
- Threatened taxa, communities and threatening processes listed under Section 10 of the FFG Act and associated action statements and listing advice.
- Guidelines for the removal, destruction or lopping of native vegetation (DELWP 2017b).

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- *Planning and Environment Act 1987*, specifically Clauses 12.01-2, 52.17 and 66.02 and Overlays in the Alpine Resorts Planning Scheme.
- Noxious weed and pest animal lists under the *Catchment and Land Protection Act 1994* (CaLP Act).

2.7 Mapping

Send it Architecture supplied aerial photography and site plans (SEND12[A] - Diana Lodge, Falls Creek - Feature Survey 240301.dwg).

Mapping was conducted using hand-held GPS-enabled tablets and aerial photo interpretation. The accuracy of this mapping is therefore subject to the accuracy of the tablets (generally ± 7 metres) and dependent on the limitations of aerial photo rectification and registration.

Mapping has been produced using a Geographic Information System (GIS). Electronic GIS files which contain our flora and fauna spatial data are available to incorporate into design concept plans. However, this mapping may not be sufficiently precise for detailed design purposes.

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3 Results

The ecological features of the study area are described below and mapped in Figure 2.

Species recorded during the flora and fauna assessment are listed in Appendix 1.1(flora) and Appendix 2.1 (fauna). Unless of particular note, these species are not discussed further.

Threatened species recorded or predicted to occur in the local area are also listed in these appendices, along with an assessment of the likelihood of the species occurring within the study area.

3.1 Vegetation and fauna habitat

Most of the vegetation on the site outside of the current lodge footprint meets the definition of 'patch vegetation', all of which is consistent with Sub-alpine Woodland Ecological Vegetation Class (EVC 43), which exists within the Victorian Alps Bioregion. This EVC has a bioregional conservation status of Least Concern. The study area and surrounding assessment area has a moderate to steep slope, particularly the vegetation adjacent to the east side of the lodge to the adjoining track. The area in the immediate vicinity of the north side of the existing ski lodge is flat, graduating to a steep slope on the southern side, adjacent to Falls Creek Road. Some stick nests were observed within the site, indicating fauna utilisation. Furthermore, many of the midstorey and ground layer species create protective dense vegetation for fauna shelter.

In the more disturbed sections of the study area (i.e. adjacent to and behind the existing building) introduced plant cover is high and canopy species are absent, though the canopy of surrounding patch vegetation overhangs into these disturbed areas in small areas. These areas do not meet the definition of a patch as defined by the Guidelines. These areas are of negligible habitat value except for locally common native and introduced fauna species.

The study area features are described further in Table 2 and mapped in Figure 2. Photos of the study area and native vegetation which may be impacted or removed by the construction of the new building are provided below.

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Table 2 Summary of vegetation and habitat types within the study area

| Vegetation or habitat type | Description | Location | Significant values |
|--|---|--|--|
| Sub-alpine Woodland EVC 43 | Moderate Condition (HZ 1, 2, 3 and 4): Moderately-dense canopy layer dominated by Bogong Sally <i>Eucalyptus pauciflora</i> subsp. <i>hedraia</i> to 8-metres tall. The variably dense shrub layer contains tall Royal Grevillea <i>Grevillea victoriae</i> subsp. <i>victoriae</i> , Alpine Pepper <i>Tasmannia xerophila</i> , Leafy Bossiaea <i>Bossiaea foliosa</i> s.l. and Alpine Shaggy-pea <i>Podolobium alpestre</i> . The ground layer is interspersed with a number of native and introduced herbs and graminoids. Grasses are predominantly introduced with species including Cocksfoot <i>Dactylis glomerata</i> , Sweet Vernal-grass <i>Anthoxanthum odoratum</i> and Brown-top Bent <i>Agrostis capillaris</i> dominant. Scattered native herbs include Mountain Fireweed <i>Senecio gunnii</i> , Derwent Speedwell <i>Veronica derwentiana</i> subsp. <i>maideniana</i> and Variable Willow-herb <i>Epilobium billardioreanum</i> (see Table 9 for full species list). | A small section beside the existing building, along the slope leading to an access road behind the lodge and a steep slope from the main road to the base of the front of the lodge. | Eucalypts and shrub layer species in these areas offer possible foraging habitat for many arboreal and avian species. A number of FFG Act listed flora species occur within the study area, including Royal Grevillea, Bogong Daisy-bush <i>Olearia frostii</i> and Dusty Daisy-bush <i>Olearia phlogopappa</i> subsp. <i>flavescens</i> . |
| Predominantly introduced vegetation | These areas are dominated by weedy grasses and have been subject to previous/ongoing disturbance. Characteristic species include Milfoil <i>Achillea millefolium</i> , Cocksfoot, Flatweed, Sweet Vernal Grass and Brown-top Bent. | In previously disturbed areas in the immediate vicinity of Diana Alpine Lodge, particularly to the north and north-east of the study area. | These areas have little value for any significant fauna species. |

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Photo 1 Sub-alpine Woodland EVC 43 to the side of the lodge with existing track dividing patches of vegetation in the understorey. Photo taken 18 March 2024, looking south-west.



Photo 2 Predominantly introduced vegetation within previously disturbed areas surrounding the existing lodge, with some small plantings around the perimeter. Photo taken 18 March 2024, looking north-east.

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Photo 3 Planted vegetation in front of Diana Alpine Lodge, adjacent to Falls Creek Road.
Photo taken 18 March 2024, looking west.

3.2 Landscape context

Falls Creek is located 100 kilometres south-east of Wangaratta and 230 kilometres north-east of Melbourne (Figure 1). Long term mean annual rainfall for the Falls Creek weather station is approximately 1,400 millimetres (Bureau of Meteorology, 2024).

The highest levels of anthropogenic disturbance are centred around Falls Creek itself with the village supporting numerous buildings, car parking and roads, managed ski slopes and associated infrastructure, a network of aqueducts, water storage tanks and a wastewater treatment facility. Developed areas cleared of native vegetation are interspersed with areas of modified and intact native vegetation.

Bushfires in 2003 affected much of the vegetation surrounding Falls Creek to the east, north and south. Some vegetation to the north-west of the village was again burned during 2007.

Beyond Falls Creek the surrounding landscape is relatively intact and supports a broad range of vegetation and habitat types including significant tracts of sub-alpine, alpine and montane vegetation similar to that of the surrounding Alpine National Park. Historical disturbances and current land uses have created a mosaic of disturbed, regenerating and intact vegetation types.

3.3 Threatened species and ecological communities

Threatened species recorded or predicted to occur within 5 kilometres of the study area or from the relevant catchment (aquatic species) are listed in Appendix 1.2 (flora) and Appendix 2.2 (fauna). An assessment of the likelihood of these species occurring in the study area and an indication of where within the site (i.e. which habitats or features of relevance to the species) is included. A summary of those species recorded or with a medium or higher likelihood of occurring in the study area is provided in Table 3.

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Table 3 Summary of EPBC Act and FFG Act listed species most likely to occur in the study area

| Species name | Listing status | Area of value within the study area |
|--|---|---|
| Fauna | | |
| Gang-gang Cockatoo <i>Callocephalon fimbriatum</i> | Endangered under EPBC Act Endangered under FFG Act | May forage in canopy trees, local records exist. |
| White-throated Needletail <i>Hirundapus caudacutus</i> | Vulnerable under EPBC Act Vulnerable under FFG Act | May fly in airspace above study area. |
| Broad-toothed Rat <i>Mastacomys fuscus mordicus</i> | Endangered under EPBC Act Vulnerable under FFG Act | May forage within or move through vegetation throughout the study area. |
| Alpine Bog Skink <i>Pseudemoia cryodroma</i> | Endangered under EPBC Act Endangered under FFG Act | May forage and inhabit grassy patches and dense understorey. |
| Tussock Skink <i>Pseudemoia pagenstecheri</i> | Vulnerable under FFG Act | May forage and inhabit grassy patches and dense understorey. |
| Flora | | |
| Bogong Sally <i>Eucalyptus pauciflora</i> subsp. <i>hedraia</i> | Critically endangered under FFG Act | Recorded as the dominant canopy species throughout the study area. |
| Royal Grevillea <i>Grevillea victoriae</i> subsp. <i>victoriae</i> | Endangered under FFG Act | Recorded in the study area. |
| Bogong Daisy-bush <i>Olearia frostii</i> | Vulnerable under FFG Act | Recorded in the study area. |
| Dusty Daisy-bush <i>Olearia phlogopappa</i> subsp. <i>flavescens</i> | Endangered under FFG Act | Recorded in the study area. |

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3.3.1 Threatened ecological communities

EPBC Act listed communities

Two EPBC Act listed threatened ecological communities are recorded or predicted to occur within the 5-kilometre project search area (Appendix 1.3):

- *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* critically endangered community
- *Alpine Sphagnum Bogs and Associated Fens* endangered community.

Blakely's Red-gum *Eucalyptus blakelyi*, Yellow Box *E. melliodora* and White Box *E. albens* were not recorded within or adjoining the study area, therefore the listed community is not present in the study area. The study area is also in the wrong landscape setting for this community, i.e. it does not occur in sub-alpine landscapes.

The Alpine Sphagnum Bogs and Associated Fens Bog community can be defined by the presence of Peat Moss *Sphagnum* spp., which was not found during assessment. Additionally, no other relevant species which characterise the community were recorded during the assessment and the study area does not support

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landscape features (i.e. groundwater fed areas with impeded drainage) required for formation of the community. This community is not present in the study area.

FFG Act listed communities

Five FFG Act listed threatened ecological communities are predicted to occur within 5 kilometres of the project search area (Appendix 1.3):

- Alpine Bog Community
- Alpine Snowpatch Community
- *Caltha introloba* Herbland Community

The Alpine Bog Community is synonymous with the federally listed bog community mentioned above. The study area does support characteristic species for this community.

Alpine Snowpatch vegetation communities typically occur on the steeper sheltered alpine slopes, often with a south-eastern aspect, where snow persists into warmer periods of the year. The study area is in a sub-alpine setting (i.e. below the tree-line) and therefore does not support suitable habitat for this community.

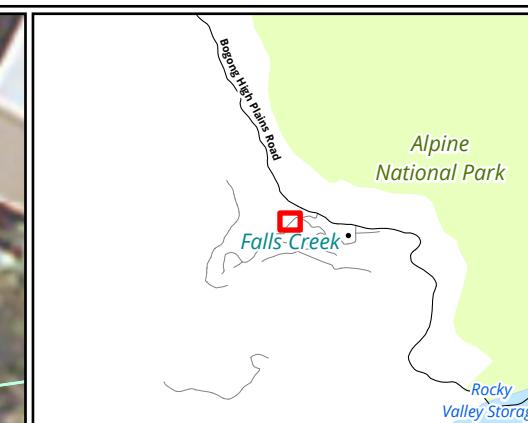
The *Caltha introloba* Community occupies a specialised type of habitat. It mainly occurs on flat rocky outwashes of some snowpatch communities in the sub-alpine zone, but has also been recorded within steep snowpatches in the alpine zone above 1800 metres. The study area contains no rocky outwash or snowpatch, therefore it does not meet the requirements to be considered part of this FFG listed community.

3.4 Further survey recommendations

No further surveys recommended.

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Legend

- Study area
- Current parcel boundary
- Threatened flora observation
- Ecological vegetation classes (EVCs)**
 - (VAIp0043) Sub-alpine Woodland
- Trees**
 - Large patch tree
 - Tree protection zone (TPZ)

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Figure 2 Ecological features of the study area

0 5 10 15 20
Metres
Scale: 1:400 @ A3
Coordinate System: GDA2020 MGA Zone 55



Matter: 40067,
Date: 13 May 2024,
Prepared for: GZ, Prepared by: SP, Last edited by: spanter
Layout: 40067_F2_Eco_features
Project: P:\40000s\40067\Mapping\40067_Diana_Lodge_NVA_SEMP_GDA2020.aprx

4 Biodiversity legislation and government policy

This section provides an assessment of the project in relation to key biodiversity legislation and government policy. It does not describe the legislation and policy in detail. Where available, links to further information are provided.

4.1 Commonwealth

4.1.1 *Environment Protection and Biodiversity Conservation Act 1999*

The EPBC Act applies to developments and associated activities that have the potential to significantly impact on Matters of National Environmental Significance (MNES) protected under the Act.

Further information including a guide to the referral process is available at <http://www.environment.gov.au/epbc/index.html>

The MNES relevant to the project are summarised in Table 4. It includes an assessment against the EPBC Act policy statements published by the Australian Government which provide guidance on the practical application of EPBC Act.

Table 4 Assessment of project in relation to the EPBC Act

| MNES | Project specifics | Assessment against significant impact guidelines |
|--------------------------------|--|---|
| EPBC Act listed species | 33 EPBC Act listed fauna species and 11 EPBC Act listed flora species are recorded or predicted to occur in the project search area. The likelihood of these species occurring in the study area is assessed in Table 10 (flora) and Table 13 (fauna). | No flora species are considered likely to occur due to absence of suitable habitat or to previous disturbance within the study area. Most fauna species are not likely to occur or only occur on an irregular basis. Of the fauna with a medium or higher likelihood of occurring, White-throated Needletail is an almost exclusively aerial species which will not be impacted by the proposed works as it is unlikely to utilise terrestrial habitat within the study area. Gang-gang Cockatoo is likely to utilise the study area for occasional foraging but given scale of proposed habitat removal in the context of available habitat of similar or higher quality in the surrounding area, the proposed works are unlikely to impact on this species. Broad-toothed Rat prefers moderate to dense grass or sedge cover within forested areas, it is unlikely the study area will support a permanent or significant population of the species. Alpine Bog Skink prefers grassy patches within alpine and sub-alpine grasslands, it is unlikely the study area will support a |

| MNES | Project specifics | Assessment against significant impact guidelines |
|--|--|---|
| | | permanent or significant population of the species. |
| EPBC Act listed ecological communities | Two EPBC Act listed ecological communities are recorded or predicted to occur in the 5 km project search area. | Remnant Blakely's Red-gum, Yellow Box and White Box trees were not recorded within or adjoining the study area, and the ecological community does not occur in subalpine areas. Therefore, the critically endangered community is not present in the study area. Due to the absence of key indicator species, including Peat Moss <i>Sphagnum</i> spp. and other characteristic species, the critically endangered community is not present in the study area. |
| Migratory species | Ten migratory species are recorded or predicted to occur in the 5 km project search area (Table 14). | While some of these species would be expected to use the study area on the rare occasion, it does not provide important habitat for an ecologically significant proportion of any of these species. |
| Wetlands of international importance (Ramsar sites) | There are seven Ramsar sites within broad proximity to the study area, the nearest of which is Balmah Forest, 150-200 km downstream of the study area. | The study area does not drain directly into either Ramsar site. The development is not likely to result in a significant impact. |

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On the basis of criteria outlined in the relevant Significant Impact Guidelines it is considered unlikely that a significant impact on a Matter of National Environmental Significance would result from the proposed action. Referral of the proposed action to the Australian Government Minister for the Environment to determine whether the action requires approval under the EPBC Act is therefore unlikely to be required.

4.2 State

4.2.1 Flora and Fauna Guarantee Act 1988 (FFG Act)

The FFG Act is a key piece of Victorian legislation on the conservation of threatened species and communities and on the management of potentially threatening processes. Under the Act a permit is required from DEECA to 'take' protected flora species. Permit exemptions under the Act generally apply to the non-commercial removal of protected flora from private land, unless there is 'critical habitat' that has been declared on the land. Authorisation under the Act is required to collect, kill, injure or disturb listed fish on private or public land.

Link for further information: <https://www.environment.vic.gov.au/conserving-threatened-species/victorias-framework-for-conserving-threatened-species>

The FFG Act defines public land as Crown land or land owned by, or vested in, a public authority, while private land is defined as any land other than public land. A public authority is defined in the FFG Act as a body established for a public purpose by or under any Act and includes:

- an Administrative Office

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- a Government Department
- a municipal council
- a public entity
- a State-owned enterprise.

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There are nine protected flora species present (Appendix 1.1). A protected flora permit from DEECA will be required if any of these species will be affected by the proposal, as the study area is on private leased Crown land and is therefore considered to be public land for the purpose of the FFG Act.

4.2.2 Catchment and Land Protection Act 1994 (CaLP Act)

The CaLP Act identifies and classifies certain species as noxious weeds or pest animals, and provides a system of controls on noxious species. Declared noxious weeds identified in the study area are listed in Appendix 1.1 Table 9 and established pest animals are listed in Appendix 2.1 (Table 12).

The proponent must take all reasonable steps to 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 State is responsible for eradicating State prohibited weeds from all land in Victoria.

Further information is at <http://agriculture.vic.gov.au/agriculture/pests-diseases-and-weeds>

4.2.3 Planning and Environment Act 1987 (incl. Planning Schemes)

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. Of particular relevance to the development proposal are controls relating to the removal, destruction or lopping of native vegetation contained within the Alpine Resorts Planning Scheme (the Scheme), including permit requirements. The Scheme (Clause 73.01) defines 'native vegetation' as 'Plants that are indigenous to Victoria, including trees, shrubs, herbs, and grasses'. It is an objective of Clause 12.01-2 of the State Planning Policy Framework (Native Vegetation Management) that removal of native vegetation results in no net loss in the contribution made by native vegetation to Victoria's biodiversity.

Clause 52.17 (Native Vegetation) requires a planning permit to remove, destroy or lop native vegetation including some dead native vegetation subject to exemptions. Decision guidelines that must be considered by the referral or responsible authority are contained in Section 7 of the Guidelines, and referred to in Clause 52.17-4. Clause 52.17 does not apply if a Native Vegetation Precinct Plan corresponding to the land is incorporated in the Scheme. Where native vegetation does not meet the definition of a patch or scattered tree as described in Section 3.1 there is no offset requirement under the Guidelines. However, a permit is still required to remove, destroy or lop native vegetation that is not a patch or scattered tree under Clause 52.17 subject to exemptions.

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

- the class of application is on the detailed assessment pathway
- a property vegetation precinct plan applies to the site or
- the native vegetation is on Crown land occupied or managed by the Responsible Authority.

Design and Development Overlay – Schedule 2

This overlay aims to ensure that new development in the Falls Creek Village is sensitive in scale and location to the landscape, trees, and views of the village, that buildings are sited appropriately in response to site topography, and works are designed in a manner that encourages the retention of indigenous vegetation. Section 2.2 of the overlay specifically deals with retention of native vegetation, and encourages designs to meet the following requirements:

- Construction should result in no net loss of native vegetation, and must be done in accordance with the Guidelines.
- Development should be level with or below the top of the tree line.
- Development should retain, where feasible, all native vegetation on site that is performing a screening function.
- Visual interruptions to the treed skyline must be avoided.
- Vehicle and pedestrian access points to new buildings must be combined, where possible, to minimise vegetation losses and visual impacts to the village's street frontages.

Victoria's Guidelines for the removal, destruction or lopping of native vegetation

The Guidelines are incorporated into the Victoria Planning Provisions and all planning schemes in Victoria (DELWP 2017b). The Guidelines replaced the previous incorporated document titled Permitted clearing of native vegetation – Biodiversity assessment guidelines (DEPI 2013) on 12 December 2017.

The purpose of the Guidelines is to guide how impacts to biodiversity should be considered when assessing a permit application to remove, destroy or lop native vegetation. The objective for the guidelines in Victoria is 'No net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation'.

A detailed assessment of the implications for the project under the Guidelines is provided in Section 5 of this report. Under the Guidelines, there are three assessment pathways for assessing an application for a permit to remove native vegetation: basic, intermediate and detailed.

A detailed determination of the assessment pathway for the planning application relevant to the proposed development is provided in Section 5.2. In summary, the planning application for removal of native vegetation must meet the requirements of, and be assessed in, the Intermediate Assessment Pathway.

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5 Victoria's Guidelines for the removal, destruction or lopping of native vegetation.

The Guidelines set out and describe the application of Victoria's statewide policy in relation to assessing and compensating for the removal of native vegetation in order to achieve the objective of 'no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation' (DELWP 2017b).

This objective is to be achieved through Victoria's planning system using an assessment approach that relies on strategic planning and the permit and offset system. The key policy for achieving no net loss to biodiversity is the three-step approach of avoid, minimise and offset:

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

Steps that have been taken during the design of the development to ensure that impacts on biodiversity from the removal of native vegetation have been minimised include:

- As much as possible, the design for the new development utilises area with existing disturbance including the existing building footprint and existing site cut.
- An arborist has been commissioned to provide further advice for avoidance of impacts on large trees surrounding the proposed building footprint.
- Building design and construction has been planned so as to avoid major earthworks that may impact on adjacent trees.
- Locating temporary site storage and materials stockpiles on existing disturbed land to minimise impacts on native vegetation and fauna habitat.

The Department of Energy, Environment and Climate Action provides biodiversity information tools to assist with determining the assessment pathway associated with the removal of native vegetation and the contribution that native vegetation within the study area makes to Victoria's biodiversity.

All planning permit applications to remove native vegetation are assigned to an assessment pathway determined by the extent and location of proposed native vegetation removal. The assessment pathway determines the information to be provided in a planning permit application and the decision guidelines DEECA as a referral authority will use to assess the permit application.

The biodiversity information tools have two components:

Site-based information

The site-based information is observable at a particular site. Biosis has collected the requisite site-based information for the assessment against the Guidelines.

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Landscape scale information

Landscape scale information requires consideration of information beyond the site. This information is managed by DEECA and can be accessed via the NVR Map.

The following section summarises the results of the site-based assessment and the outputs generated by the Native Vegetation Removal Report, which identifies the assessment pathway on which the planning application will be assessed. The full Native Vegetation Removal Report can be viewed in Appendix 4.

5.1 Proposed removal of native vegetation

The extent of native vegetation patches and the location of large trees within patches and any scattered trees within the study area were mapped (Figure 2), and the vegetation condition was assessed in relation to standard methods (DSE 2004) and pre-determined EVC benchmarks:

<https://www.environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks>. DEECA's NVR Map was also used to determine vegetation extent and condition.

The proposed removal of native vegetation was assessed in accordance with the concept design provided (SEND12[A] - Diana Lodge, Falls Creek - Feature Survey 240301.dwg) and with consideration to results of the arborist assessment (Appendix 3). The development proposes to remove 0.015 hectares of native vegetation, comprising entirely patch vegetation (Figure 3). Two large trees within patches are proposed to be removed. Spatial data (shapefiles) of proposed vegetation removal were submitted to DEECA's native vegetation support team, which provided a Native Vegetation Removal Report for the project. This is provided in Appendix 4 and summarised in the following sections 5.2-5.4.

5.1.1 Vegetation quality assessment

A continuous area of the same EVC is termed a 'habitat zone'. Different habitat zones exist where there are different EVCs present and/or discrete (non-continuous) patches of the same EVC. A separate vegetation quality assessment was conducted for each habitat zone. The results of the vegetation quality assessment are provided in Table 5.

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Table 5 Vegetation quality assessment of native vegetation within the study area

| EVC 43: Sup-Alpine Woodland | | | |
|-----------------------------|-----------------------|-----------|-------|
| | | Max Score | Score |
| Site Condition | Large Trees | 10 | 10 |
| | Tree Canopy Cover | 5 | 5 |
| | Lack of Weeds | 15 | 0 |
| | Understorey | 25 | 15 |
| | Recruitment | 10 | 6 |
| | Organic Litter | 5 | 3 |
| | Logs | 5 | 0 |
| | Total Site Score | | 39 |
| Landscape Value | Patch Size | 10 | 1 |
| | Neighbourhood | 10 | 3 |
| | Distance to Core Area | 5 | 3 |
| | Total Landscape Score | | 7 |
| Habitat points = #/100 | | 100 | 46 |
| CONDITION SCORE | | 1 | 0.46 |

A total of 13 large trees within patches of native vegetation is within the study area. The locations of large trees within patches are shown in Figure 2 and the circumference of the two large trees deemed lost is provided below in Table 6.

Table 6 Circumference of large trees deemed lost within the study area

| Tree # | Scientific name | Common name | Circumference (cm) | Status |
|--------|--|--------------|--------------------|---------------|
| 1 | <i>Eucalyptus pauciflora</i> subsp. <i>hedraia</i> | Bogong Sally | 129 | To be removed |
| 2 | <i>Eucalyptus pauciflora</i> subsp. <i>hedraia</i> | Bogong Sally | 173 | To be removed |

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Legend

- Study area
- Current parcel boundary
- Impact area
- Patch vegetation proposed for removal

Large patch trees

- To be lost
- To be retained

Ecological vegetation classes (EVCs)

- (VAIp0043) Sub-alpine Woodland

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Figure 3 Vegetation proposed to be removed within the study area

0 5 10 15 20
Metres

Scale: 1:400 @ A3
Coordinate System: GDA2020 MGA Zone 55



Matter: 40067,
Date: 06 May 2024,
Prepared for: GZ, Prepared by: SP, Last edited by: spanter
Layout: 40067_F3_Veg_removal
Project: P:\40000s\40067\Mapping\40067_Diana_Lodge_NVA_SEMP_GDA2020.aprx

5.2 Determining the assessment pathway

Applications to remove native vegetation are categorised into one of three assessment pathways: basic, intermediate or detailed. Two factors are used to determine the assessment pathway for a permit application, the **location** and **extent** of the native vegetation proposed to be removed. Location has been divided into three possible categories by DEECA, and has been pre-determined by DEECA for all locations in Victoria. The location of a particular site is determined using the location map available in the NVR Map online application tool (<https://mapshare.vic.gov.au/nvr/>).

The extent of native vegetation proposed to be removed determines the assessment pathway by considering the following:

- The total area (hectares) of native vegetation (including any patches and scattered trees) proposed to be removed.
- Whether any large trees are proposed to be removed, either as scattered trees or occurring in patches.

It is proposed to remove <0.5 hectares trees of native vegetation and two large from within Location category 1, therefore the application for removal of this native vegetation must meet the requirements of, and be assessed in, the Intermediate Assessment Pathway.

5.3 Offset requirements

In order to ensure a gain to Victoria's biodiversity that is equivalent to the loss resulting from the proposed removal of native vegetation, compensatory offsets are required. Losses and gains are measured in general or species habitat scores or units. The offset must also include at least one large tree for every large tree removed.

Under the Guidelines any losses of vegetation within sites that are assessed under the basic/intermediate assessment pathway can be offset by the provision of a 'general offset'. The general offset requirements are provided in Appendix 4 and summarised in Table 7.

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Table 7 Summary of DEECA Native Vegetation Removal Report

| Attribute | Outcome | Notes |
|--|----------------|---|
| Location category | Location 1 | The native vegetation is not in an area mapped as an endangered Ecological Vegetation Class (as per the statewide EVC map), sensitive wetland or coastal area. Removal of less than 0.5 hectares in this location will not have a significant impact on any habitat for a rare or threatened species. |
| Native vegetation removal extent | 0.015 hectares | Including two large trees within patches. |
| Assessment Pathway | Intermediate | Location 1, less than 0.5 hectares and including one or more large trees for removal. |
| Strategic Biodiversity Value Score | 0.270 | Low score driven by disturbed context of the village. |
| Modelled habitat for threatened species | No | Extent is below 0.5 hectares and removal will not have a significant impact on any habitat for a rare or threatened species. |

| Attribute | Outcome | Notes |
|--|---|---|
| Offset type | General | General habitat units only |
| Offset amount: general habitat units | 0.007 units | 0.007 general habitat units required |
| General offset vicinity | North East Catchment Management Authority (CMA) or Falls Creek Alpine Resort (Unincorporated) | The offset site must be located within the same Catchment Management Authority boundary or municipal district as the native vegetation to be removed. |
| General offset minimum Strategic Biodiversity Value Score | 0.216 | The offset must have a minimum Strategic Biodiversity Value Score |
| Large tree attributes | Two large trees | The offset must include protection of at least one large tree for every large tree to be removed. |

5.4 Proposed offset strategy

The proponent may seek to purchase offset credits from the Victorian native vegetation credit register. A search of the Native Vegetation Credit Register confirms that the offset units that meet requirements outlined in Section 5.3 are available for purchase. An extract from the NVCR is provided in Appendix 5.

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6 Key ecological values and recommendations

The majority of the study area has been highly modified due to removal of native vegetation and the development of a ski lodge within the site. Small areas of native vegetation persist on the north-eastern edge and slope at the northern end of the study area (Figure 2). These small patches contain a moderate number of the understorey species that define this vegetation type and all structural habitat components are present.

This section identifies the key ecological features of the study area, provides an outline of potential implications of proposed development on those values and includes recommendations to assist Send It Architecture to minimise impacts on biodiversity during the construction phase of the new apartments.

Based on the construction footprint provided, potential impact on biodiversity values include:

- Removal of 0.015 hectares of native vegetation with a strategic biodiversity value score of 0.27.
- Removal of habitat for threatened species or potential for indirect impacts, including:
 - Potential habitat for the EPBC Act listed fauna species: Gang-gang Cockatoo, White-throated Needletail, Broad-toothed Rat and Alpine Bog Skink.
 - Habitat for one species listed under the FFG Act: Tussock Skink.
- Mortality of wildlife during construction works, particularly resident and relatively sedentary species such as reptiles and frogs.

The primary measure to reduce impacts on biodiversity values within the study area is to avoid and minimise removal of native vegetation and terrestrial habitat. It is critical that this be considered during the design and construction phase of the project. The results of this assessment should therefore be incorporated into the project design, by adding the flora and fauna mapping information into the planning maps and investigating options to retain as much of the mapped vegetation/habitats as possible. Priority should be given to highest value areas and retaining larger areas in preference to numerous smaller ones.

All areas of vegetation/habitat nominated in the design plan as ‘retained’ are to be treated as no-go zones and are not to be encroached upon as development progresses.

A summary of potential implications of development of the study area and recommendations to minimise impacts to biodiversity values is provided in Table 8.

Table 8 Summary of key ecological values, potential implications of developing the study area and recommendations to minimise ecological impacts during the design and construction phase.

| Ecological feature (Figure 2) | Implications of development | Recommendations |
|-------------------------------|---|---|
| Native vegetation | Removal of 0.015 hectares of vegetation, comprising 0.015 hectares of patch vegetation and removal of 2 large trees within patches. The application will be assessed on the Intermediate Assessment Pathway. | Avoid and minimise removal of native vegetation, in accordance with the Guidelines. Refer to Section 5. Retained vegetation should be fenced off and treated as no-go zones. Identify and implement appropriate offsets for vegetation losses as outlined in Section 5.3. |

| Ecological feature (Figure 2) | Implications of development | Recommendations |
|--|--|--|
| Threatened species and ecological communities | Removal of habitat for threatened species: <ul style="list-style-type: none">• Gang-gang Cockatoo• White-throated Needletail• Broad-toothed Rat• Alpine Bog Skink• Tussock Skink | Avoid and minimise removal of valuable habitat features for listed fauna species, such as dense shrub and understorey layer, large White Sally individuals, etc. |

Construction and post-construction management

Specific detail relating to preventing impacts on retained native vegetation and terrestrial habitat should be addressed in a site-specific Site Environmental Management Plan (SEMP). This will include issues relating to contractors such as environmental inductions, installation of temporary fencing/signage, drainage and sediment control.

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Appendices

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Appendix 1 Flora

Abbreviations and symbols:

| Code | Meaning | Reference |
|---|--|--|
| National listings | | |
| EX | Extinct | Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) |
| CR | Critically endangered | |
| EN | Endangered | |
| VU | Vulnerable | |
| PMST | Protected Matters Search Tool | |
| State listings | | |
| x | Extinct | Victorian <i>Flora and Fauna Guarantee Act 1988</i> (FFG Act) |
| cr | Critically endangered | |
| e | Endangered | |
| v | Vulnerable | |
| t | Threatened | |
| P | Protected (public land only) | |
| Weed status (CaLP Act, DCCEEW Weeds of National Significance and DEECA Advisory List) | | |
| SP | State prohibited species | Victorian <i>Catchment and Land Protection Act 1994</i> (CaLP Act) |
| RP | Regionally prohibited species | |
| RC | Regionally controlled species | |
| R | Restricted species | |
| Other | | |
| # | Native species outside its natural range | Victorian Biodiversity Atlas (VBA) |

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Appendix 1.1 Flora species recorded from the study area

Table 9 Flora species recorded from the study area

| Status | Scientific name | Common name |
|--------------------|--|-----------------------------------|
| Indigenous species | | |
| P | <i>Acacia obliquinervia</i> | Mountain Hickory Wattle |
| | <i>Acaena novae-zelandiae</i> | Bidgee-widgee |
| | <i>Asperula</i> spp. | Woodruff |
| | <i>Bossiaea foliosa</i> s.l. | Leafy Bossiaea |
| | <i>Dianella tasmanica</i> | Tasman Flax-lily |
| | <i>Epilobium billardioreanum</i> | Variable Willow-herb |
| cr, r | <i>Eucalyptus pauciflora</i> subsp. <i>hedraia</i> | Bogong Sally |
| | <i>Geranium potentilloides</i> | Soft Crane's-bill |
| e, P, r | <i>Grevillea victoriae</i> subsp. <i>victoriae</i> | Royal Grevillea |
| | <i>Hydrocotyle laxiflora</i> | Stinking Pennywort |
| v, P, r | <i>Olearia frostii</i> | Bogong Daisy-bush |
| e, P, r | <i>Olearia phlogopappa</i> subsp. <i>flavescens</i> | Dusty Daisy-bush |
| | <i>Poa hothamensis</i> | Ledge Grass |
| | <i>Podolobium alpestre</i> | Alpine Shaggy-pea |
| P | <i>Polystichum proliferum</i> | Mother Shield-fern |
| P | <i>Prostanthera cuneata</i> | Alpine Mint-bush |
| P | <i>Prostanthera lasianthos</i> | Victorian Christmas-bush |
| | <i>Rubus parvifolius</i> | Small-leaf Bramble |
| P | <i>Senecio gunnii</i> | Mountain Fireweed |
| P | <i>Senecio linearifolius</i> var. <i>linearifolius</i> | Fireweed Groundsel (type variant) |
| | <i>Tasmannia xerophila</i> | Alpine Pepper |
| | <i>Veronica derwentiana</i> subsp. <i>maideniana</i> | Derwent Speedwell |
| Introduced species | | |
| | <i>Acetosella vulgaris</i> | Sheep Sorrel |
| | <i>Achillea millefolium</i> | Milfoil |
| | <i>Agrostis capillaris</i> | Brown-top Bent |
| | <i>Anthoxanthum odoratum</i> | Sweet Vernal-grass |
| RC | <i>Cirsium vulgare</i> | Spear Thistle |
| | <i>Crepis capillaris</i> | Smooth Hawksbeard |
| | <i>Dactylis glomerata</i> | Cocksfoot |
| | <i>Festuca rubra</i> s.l. | Red Fescue |
| | <i>Galium aparine</i> | Cleavers |
| | <i>Holcus lanatus</i> | Yorkshire Fog |
| RC | <i>Hypericum perforatum</i> subsp. <i>veronense</i> | St John's Wort |
| | <i>Hypochaeris radicata</i> | Flatweed |
| | <i>Leucanthemum X superbum</i> | Shasta Daisy |
| | <i>Lotus uliginosus</i> | Greater Bird's-foot Trefoil |
| | <i>Lysimachia arvensis</i> | Pimpernel |

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| Status | Scientific name | Common name |
|--------|--|---------------------|
| | <i>Malus</i> spp. | Apple |
| | <i>Phleum pratense</i> | Timothy Grass |
| | <i>Plantago lanceolata</i> | Ribwort |
| | <i>Poa annua</i> s.l. | Annual Meadow-grass |
| | <i>Prunella vulgaris</i> | Self-heal |
| | <i>Prunus</i> spp. | Prunus |
| RC | <i>Rubus anglocandicans</i> | Common Blackberry |
| | <i>Rumex crispus</i> | Curled Dock |
| | <i>Sonchus oleraceus</i> | Common Sow-thistle |
| | <i>Trifolium repens</i> var. <i>repens</i> | White Clover |
| | <i>Verbascum virgatum</i> | Twiggy Mullein |

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Appendix 1.2 Listed flora species

The following table includes threatened flora species that have potential to occur within the study area, sourced from the VBA and PMST (accessed on 13 March 2024). Where years are specified for the most recent database records, these refer to records from the VBA unless otherwise specified. Where no year is specified, the PMST predicts the species has potential to occur. Some flora habitat descriptions are reproduced from the Royal Botanic Gardens Victoria (VicFlora 2024) with permission.

Table 10 Threatened flora species recorded or predicted to occur within 5 km of the study area

| Scientific name | Common name | Conservation status | | Most recent database record | Other records | Habitat description | Likely occurrence in study area | Rationale for likelihood ranking |
|--|------------------|---------------------|-----|-----------------------------|---------------|--|---------------------------------|--|
| | | EPBC | FFG | | | | | |
| National significance | | | | | | | | |
| <i>Argyrotegium nitidulum</i> | Shining Cudweed | VU | | 2020 | PMST | Restricted to damp, open grassland communities between Mt Cope and Mt Nelse. | Low | No suitable habitat and generally found at higher altitudes (above the tree line) than the study area. |
| <i>Colobanthus curtisiae</i> | Snowy Colobanth | VU | | | PMST | Grassland and grassy woodland; known in Victoria from a small number of records in the Alpine National Park. | Negligible | Not known from within the resort, no suitable habitat. |
| <i>Euphrasia crassiuscula</i> subsp. <i>glandulifera</i> | Thick Eyebright | VU | cr | 1987 | PMST | Alpine grasslands, heathlands and herbfields. | Negligible | No suitable habitat. |
| <i>Euphrasia eichleri</i> | Bogong Eyebright | VU | e | 2004 | PMST | Low open heath, grassland, and Sphagnum bogs in alpine and higher subalpine tracts. | Low | No suitable habitat. |

| Scientific name | Common name | Conservation status | | Most recent database record | Other records | Habitat description | Likely occurrence in study area | Rationale for likelihood ranking |
|---|------------------------|---------------------|-----|-----------------------------|---------------|---|---------------------------------|---|
| | | EPBC | FFG | | | | | |
| <i>Leucochrysum albicans</i> subsp. <i>tricolor</i> | White Sunray | EN | e | | PMST | Grasslands of the Victorian Volcanic Plains, primarily on acidic clay soils derived from basalt, with occasional occurrences on adjacent sedimentary, sandy-clay soils. | Negligible | No suitable habitat, no records in or surrounding study area. |
| <i>Lobelia gelida</i> | Snow Pratia | VU | e | | PMST | Alpine grasslands, on heavy dark mud around seasonal pools and creek edges. | Negligible | No suitable habitat, no records in or surrounding study area. |
| <i>Prasophyllum morganii</i> | Mignonette Leek-orchid | VU | x | | PMST | Known from only one location near Cobungra in Snow Gum open forest at about 1000 m ASL. Presumed to be extinct. | Negligible | Not known from area and presumed extinct. |
| <i>Pterostylis oreophila</i> | Blue-tongue Greenhood | CR | | | PMST | Damp, shady habitat along watercourses. | Negligible | Species associated with <i>Leptospermum grandiflorum</i> thickets. No suitable habitat within the study area. |
| <i>Thesium australe</i> | Austral Toad-flax | VU | e | | PMST | Most commonly in damp grassland and woodland, including subalpine grassy heathlands. | Negligible | Minimal suitable habitat. |

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| Scientific name | Common name | Conservation status | | Most recent database record | Other records | Habitat description | Likely occurrence in study area | Rationale for likelihood ranking |
|--|-------------------|---------------------|-----|-----------------------------|---------------|---|---------------------------------|---|
| | | EPBC | FFG | | | | | |
| <i>Viola improcera</i> | Dwarf Violet | EN | | | PMST | Within Victoria only known only from 2 localities (Mt Useful and the Nunniong Plateau) where growing in high-altitude open shrubland or Snow-gum woodland). | Low | Snow-gum woodland present however habitat within the study area is highly modified. |
| <i>Xerochrysum palustre</i> | Swamp Everlasting | VU | cr | | PMST | Sedge-swamps and shallow freshwater marshes and swamps in lowlands, on black cracking clay soils. | Negligible | No suitable habitat. |
| State significance | | | | | | | | |
| <i>Eucalyptus pauciflora</i> subsp. <i>hedraia</i> | Bogong Sally | | cr | 2018 | | Restricted to Falls Creek, the Bogong High Plains and peaks near to and including Mt Bogong. | Recorded | Recorded in the study area during the current assessment. |
| <i>Grevillea victoriae</i> subsp. <i>victoriae</i> | Royal Grevillea | | e | 2021 | | Subalpine shrublands and woodlands. | Recorded | Recorded in the study area during the current assessment. |
| <i>Olearia frostii</i> | Bogong Daisy-bush | | v | 2020 | | Alpine grassland and heathland, sometimes extending into subalpine woodland. | Recorded | Recorded in the study area during the current assessment. |

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| Scientific name | Common name | Conservation status | | Most recent database record | Other records | Habitat description | Likely occurrence in study area | Rationale for likelihood ranking |
|---|------------------|---------------------|-----|-----------------------------|---------------|---|---------------------------------|---|
| | | EPBC | FFG | | | | | |
| <i>Olearia phlogopappa</i> subsp. <i>flavescens</i> | Dusty Daisy-bush | | e | 2020 | | Common throughout the alpine and subalpine areas, often in rocky areas, and usually growing in heath or shrubland above the tree line, or in shrubby substratum of Eucalyptus pauciflora woodlands. | Recorded | Recorded in the study area during the current assessment. |

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Appendix 1.3 Threatened ecological communities

The following table includes threatened ecological communities that have potential to occur within the project area, compiled with reference to characteristics of FFG Act threatened communities (DEECA 2023) and predictive output from the PMST (accessed on 13 March 2024).

Table 11 Threatened ecological communities predicted to occur within 5 km of the project area.

| Ecological community | Status | Comments |
|--|--------|---|
| Alpine Sphagnum Bogs and Associated Fens | EN | This community is typically found in alpine, sub-alpine and montane environments, often above the tree line. Can also occur in frost hollows and cold air drainage locations below the tree line (where trees are locally absent). The key defining feature is the presence of Sphagnum Moss <i>Sphagnum</i> spp., even though it is not always the dominant genus. The study area did not contain Sphagnum Moss and few other indicator species. Therefore, it does not meet the requirements to be considered part of this EPBC listed community. |
| White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland | CR | Remnant woodland eucalypts typical of this community were not recorded within or adjoining the study area and do not occur in sub-alpine areas. The study area therefore does not meet the requirements to be considered part of this EPBC listed community. |
| Alpine Bog Community | NA | The Alpine Bog Community is described as bog or marsh with the dominant vegetation including Spreading Rope-rush <i>Empodisma minus</i> , Candle Heath <i>Richea continentis</i> , Snowgrass <i>Poa costiniana</i> , Sphagnum moss <i>Sphagnum</i> spp., Alpine Baeckea <i>Baeckea gunniana</i> , Silver Astelia <i>Astelia alpina</i> var. <i>novae-hollandiae</i> and Fen Sedge <i>Carex gaudichaudiana</i> . The study area did not contain <i>Sphagnum</i> moss and few other indicator species. Therefore, it does not meet the requirements to be considered part of this FFG listed community. |
| Alpine Snowpatch Community | NA | Snowpatch vegetation communities typically occur on the steeper sheltered alpine slopes, often with a south-eastern aspect, where snow persists into warmer periods of the year. The site faces north-west and does not retain snow, therefore it does not meet the requirements to be considered part of this FFG listed community. |
| Caltha introloba Herbland Community | NA | This community occupies a specialised type of habitat. It mainly occurs on flat rocky outwashes of some snowpatch communities in the sub-alpine zone, but has also been recorded within steep snowpatches in the alpine zone above 1800 m. The study area contains no rocky outwash or snowpatch, therefore it does not meet the requirements to be considered part of this FFG listed community. |

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Appendix 2 Fauna

Abbreviations and symbols:

| Code | Meaning | Reference |
|--------------------|----------------------------------|--|
| National listings | | |
| EX | Extinct | Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) |
| CR | Critically endangered | |
| EN | Endangered | |
| VU | Vulnerable | |
| CD | Conservation dependent | |
| PMST | Protected Matters Search Tool | |
| State listings | | |
| x | Extinct | Victorian <i>Flora and Fauna Guarantee Act 1988</i> (FFG Act) |
| cr | Critically endangered | |
| e | Endangered | |
| v | Vulnerable | |
| t | Threatened | |
| P | Protected (fish only) | |
| Pest animal status | | |
| PS | Declared pest animal | Victorian <i>Catchment and Land Protection Act 1994</i> (CaLP Act) |
| N | Declared noxious aquatic species | <i>Victorian Fisheries Act 1995</i> |
| Other | | |
| * | Introduced species | Victorian Biodiversity Atlas (VBA) (DELWP 2020) |

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Appendix 2.1 Fauna species recorded from the study area

Table 12 Vertebrate fauna recorded from the study area (present assessment)

| Status | Scientific name | Common name |
|---------|------------------------------|-----------------------|
| Mammals | | |
| | <i>Oryctolagus cuniculus</i> | European Rabbit |
| Birds | | |
| | <i>Acanthiza reguloides</i> | Buff-rumped Thornbill |
| | <i>Petroica phoenicea</i> | Flame Robin |
| | <i>Platycercus elegans</i> | Crimson Rosella |
| | <i>Strepera graculina</i> | Pied Currawong |

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Appendix 2.2 Listed fauna species

The following table includes a list of threatened fauna species that have potential to occur within the study area, sourced from the VBA and PMST (accessed on 13 March 2024). Where years are specified for the most recent database records, these refer to records from the VBA unless otherwise specified. Where no year is specified, the PMST predicts the species has potential to occur.

Table 13 Threatened fauna species recorded or predicted to occur within 5 km of the study area

| Scientific name | Common name | Conservation status | | Most recent database record | Other records | Habitat description | Likely occurrence in study area | Rationale for likelihood ranking |
|---------------------------------|--------------------------|---|-----|-----------------------------|---------------|---|---------------------------------|--|
| | | EPBC | FFG | | | | | |
| National significance | | | | | | | | |
| <i>Gallinago hardwickii</i> | Latham's Snipe | VU | | 2018 | PMST | A migrant to Australia from July to April occurring in a wide variety of permanent and ephemeral wetlands. Prefers open freshwater wetlands with nearby cover, but also recorded on the edges of creeks and rivers, river-pools and floodplains. Forages in soft mud at edge of wetlands and roosts in a variety of vegetation around wetlands including tussock grasslands, reeds and rushes, tea-tree scrub, woodlands and forests. | Low | No suitable habitat within study area. |
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| <i>Rostratula australis</i> | Australian Painted-snipe | EN | cr | | PMST | Shallows of well-vegetated freshwater wetlands. | Negligible | No suitable habitat within study area. |
| <i>Calyptorhynchus lathamii</i> | Glossy Black-Cockatoo | VU | v | 2013 | | Forests and woodlands with Buloke Allocasuarina spp. | Negligible | No suitable habitat within study area. |

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| Scientific name | Common name | Conservation status | | Most recent database record | Other records | Habitat description | Likely occurrence in study area | Rationale for likelihood ranking |
|---------------------------------|---------------------------|---------------------|-----|-----------------------------|---------------|---|---------------------------------|--|
| | | EPBC | FFG | | | | | |
| <i>Callocephalon fimbriatum</i> | Gang-gang Cockatoo | EN | e | 2019 | PMST | S Vic to E NSW. Forests and woodlands from coast to alpine areas. Autumn-winter dispersal from highlands to lower elevations. Forages in eucalypts, acacias and some exotic garden trees and shrubs. | High | Suitable habitat present and recent local records. Species known from the local area. |
| <i>Neophema chrysostoma</i> | Blue-winged Parrot | VU | | | PMST | A range of coastal, sub-coastal and semi-arid regions throughout south-eastern Australia. Nests in tree hollows in coastal eucalypt forests and woodlands. Feeds on seeds of a range of native grasses and herbs. | Negligible | No suitable habitat and no local records. |
| <i>Hirundapus caudacutus</i> | White-throated Needletail | VU | v | | PMST | An almost exclusively aerial species within Australia, occurring over most types of habitat, particularly wooded areas. | Medium | Species may utilise air space above the study area, but unlikely to utilize terrestrial habitat. |
| <i>Calidris ferruginea</i> | Curlew Sandpiper | CR | cr | | PMST | Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays. | Negligible | No suitable habitat and no local records. |

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| Scientific name | Common name | Conservation status | | Most recent database record | Other records | Habitat description | Likely occurrence in study area | Rationale for likelihood ranking |
|--|-------------------------|---------------------|-----|-----------------------------|---------------|---|---------------------------------|--|
| | | EPBC | FFG | | | | | |
| <i>Calidris acuminata</i> | Sharp-tailed Sandpiper | VU | | | PMST | Prefers muddy edges of shallow fresh or brackish wetlands with inundated or emergent low vegetation. Occasionally use flooded paddocks and other ephemeral wetlands. | Negligible | No suitable habitat and no local records. |
| <i>Pycnoptilus floccosus</i> | Pilotbird | VU | v | 1997 | PMST | E Vic to SE NSW. Largely ground dwelling among leaf litter, logs and lower storey vegetation of wet sclerophyll forests and rainforest. Less often, alpine and coastal woodlands. | Low | Species associated more closely with montane environments, unlikely to occur in the modified context of Falls Creek. |
| <i>Stagonopleura guttata</i> | Diamond Firetail | VU | v | | PMST | Open forests and woodlands with a grassy ground layer. | Negligible | No suitable habitat and no local records. |
| <i>Climacteris picumnus</i> | Brown Treecreeper | VU | | | PMST | Open eucalypt forests, woodlands and Mallee, often where there are stands of dead trees. | Negligible | No suitable habitat and no local records. |
| <i>Dasyurus maculatus maculatus</i> (SE mainland population) | Spot-tailed Quoll | EN | e | | PMST | Rainforest and wet and dry sclerophyll forests and woodlands. | Low | Limited habitat and no previous records within the search area. |
| <i>Petauroides volans</i> | Southern Greater Glider | EN | e | | PMST | Wet and damp sclerophyll forest with large hollow-bearing trees. | Low | No suitable habitat and no local records. |

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| Scientific name | Common name | Conservation status | | Most recent database record | Other records | Habitat description | Likely occurrence in study area | Rationale for likelihood ranking |
|-----------------------------------|-----------------------|---------------------|-----|-----------------------------|---------------|---|---------------------------------|--|
| | | EPBC | FFG | | | | | |
| <i>Petaurus australis</i> | Yellow-bellied Glider | VU | v | | PMST | Sclerophyll forest with large hollow-bearing trees, prefers mature eucalypt dominated forest and woodland. Distributed along South-eastern Australia. | Low | No suitable habitat and no local records. |
| <i>Burramys parvus</i> | Mountain Pygmy-possum | EN | e | 2021 | PMST | Alpine rock screes and boulder fields supporting heathy vegetation. | Low | No core habitat present, but species is known to occur in the local area and may move through the study area on rare occasion. |
| <i>Potorous longipes</i> | Long-footed Potoroo | EN | e | | PMST | Temperate rainforest, riparian forest and wet and dry sclerophyll forest. | Negligible | No suitable habitat and no local records. |
| <i>Mastacomys fuscus mordicus</i> | Broad-toothed Rat | EN | v | 2019 | PMST | Sub-alpine Woodland, Heathland, Sedgeland, and sedge-dominated areas within forest. | High | Suitable habitat present and recent local records. Species known from local area. |
| <i>Pseudomys fumeus</i> | Smoky Mouse | EN | e | | PMST | Coastal heath and heathy woodland, wet forest, sub-alpine heath and dry sclerophyll forest. | Low | Limited suitable habitat and no local records. |

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| Scientific name | Common name | Conservation status | | Most recent database record | Other records | Habitat description | Likely occurrence in study area | Rationale for likelihood ranking |
|----------------------------------|----------------------|---------------------|-----|-----------------------------|---------------|--|---------------------------------|--|
| | | EPBC | FFG | | | | | |
| <i>Liopholis guthega</i> | Guthega Skink | EN | cr | 2021 | PMST | Alpine woodlands, grasslands and heathlands with sub-surface boulders. | Negligible | No suitable habitat within study area. |
| <i>Liopholis montana</i> | Mountain Skink | EN | e | | PMST | Alpine woodland and montane forest environments along the Great Dividing Range in Victoria to the upper Yarra River valley. An exceptionally low altitude population has also been recorded in the Wombat SF. Relatively little is known about the species' biology and ecology. | Low | Limited suitable habitat and no local records. |
| <i>Cyclodomorphus praealtus</i> | Alpine She-oak Skink | EN | cr | 2021 | PMST | Sparingly treed subalpine woodland, alpine heathlands and native and introduced alpine grasslands. | Negligible | No suitable habitat within study area. |
| <i>Pseudemoia cryodroma</i> | Alpine Bog Skink | EN | e | 2008 | PMST | Alpine and Sub-alpine Grassland, Heathland and Woodland. | Medium | Study area supports suitable habitat for this species. |
| <i>Litoria spenceri</i> | Spotted Tree Frog | CR | cr | | PMST | Rocky areas along streams within forest and woodland. | Negligible | No suitable habitat and no local records. |
| <i>Litoria verreauxii alpina</i> | Alpine Tree Frog | VU | cr | 2004 | PMST | Alpine and subalpine woodland, heath and grassland; breeds in a variety of natural and artificial waterbodies including dams and reservoirs. | Low | Limited suitable habitat and no local records. |
| <i>Galaxias rostratus</i> | Flat-headed Galaxias | CR | v | | PMST | Still or slow-moving waters of rivers, billabongs, lakes and swamps. | Negligible | No suitable habitat and no local records. |

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| Scientific name | Common name | Conservation status | | Most recent database record | Other records | Habitat description | Likely occurrence in study area | Rationale for likelihood ranking |
|-------------------------------------|------------------|---------------------|-----|-----------------------------|---------------|--|---------------------------------|---|
| | | EPBC | FFG | | | | | |
| <i>Maccullochella macquariensis</i> | Trout Cod | EN | e | | PMST | Streams characterised by a high abundance of large woody debris. | Negligible | No suitable habitat and no local records. |
| <i>Maccullochella peelii</i> | Murray Cod | VU | e | | PMST | A diverse range of stream habitats in the Murray-Darling basin; principally the main channels of rivers and their major tributaries. | Negligible | No suitable habitat and no local records. |
| <i>Macquaria australasica</i> | Macquarie Perch | EN | e | | PMST | Streams with clear water and deep, rocky holes with abundant cover. | Negligible | No suitable habitat and no local records. |
| <i>Thaumatoperla alpina</i> | Alpine Stonefly | EN | e | 2016 | PMST | In and around steep, stony and cool alpine streams. | Negligible | No suitable habitat and no local records. |
| State significance | | | | | | | | |
| <i>Actitis hypoleucos</i> | Common Sandpiper | | v | | PMST | Migrates to Australia from Eurasia in August where it inhabits a wide variety of coastal and inland wetlands with muddy margins before departing north in March. | Negligible | No suitable habitat and no local records. |
| <i>Ornithorhynchus anatinus</i> | Platypus | | v | 2004 | | A variety of freshwater waterbodies, particularly those with stable banks suitable for burrows, and shallow waters for foraging. | Negligible | No suitable habitat within study area. |

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| Scientific name | Common name | Conservation status | | Most recent database record | Other records | Habitat description | Likely occurrence in study area | Rationale for likelihood ranking |
|--|-------------------------|---------------------|-----|-----------------------------|---------------|--|---------------------------------|--|
| | | EPBC | FFG | | | | | |
| <i>Canis lupus dingo</i> | Dingo | | v | 2006 | | Virtually all terrestrial environments but range reduced by exclusion fencing, persecution and hybridisation with domestic dogs. | Low | As a highly mobile species Dingo may pass through on rare occasions, however the study area does not support suitable habitat. |
| <i>Eulamprus kosciuskoi</i> | Alpine Water Skink | | e | 2017 | | Alpine sphagnum bogs, wet alpine heathlands and alpine creeks and streams. | Negligible | No suitable habitat within study area. |
| <i>Pseudemoia pagenstecheri</i> | Tussock Skink | | e | 2021 | | On the ground in a range of grasslands or sparse grassy woodlands from alps to coast. | High | Study area supports potential suitable habitat. |
| <i>Austroaeschna (Austroaeschna) flavomaculata</i> | Alpine Darner Dragonfly | | v | 2012 | | Mountain streams, alpine trickles, and run-off waters, occurring in sphagnum and under rocks in alpine regions of Victoria and NSW | Negligible | No suitable habitat within study area. |
| <i>Riekoperla intermedia</i> | Stonefly | | v | 1972 | | Slow flowing stream habitats in the Falls Creek, Mount Feathertop and Mount Bogong area, Victoria. | Low | Unlikely to occupy habitat in study area. |

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Appendix 2.3 Migratory species (EPBC Act listed)

Table 14 Migratory fauna species recorded or predicted to occur within 5 km of the study area

| Scientific name | Common name | Most recent record |
|------------------------------|---------------------------|--------------------|
| Migratory species | | |
| <i>Gallinago hardwickii</i> | Latham’s Snipe | PMST |
| <i>Hirundapus caudacutus</i> | White-throated Needletail | PMST |
| <i>Apus pacificus</i> | Fork-tailed Swift | PMST |
| <i>Actitis hypoleucos</i> | Common Sandpiper | PMST |
| <i>Calidris ferruginea</i> | Curlew Sandpiper | PMST |
| <i>Calidris acuminata</i> | Sharp-tailed Sandpiper | PMST |
| <i>Calidris melanotos</i> | Pectoral Sandpiper | PMST |
| <i>Motacilla flava</i> | Yellow Wagtail | PMST |
| <i>Rhipidura rufifrons</i> | Rufous Fantail | 1965 |
| <i>Myiagra cyanoleuca</i> | Satin Flycatcher | PMST |

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Appendix 3 Arborist report

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Tree assessment

Construction

Diana Lodge

Falls Creek

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Scope:

SendIt Archi have engaged Tru Tree Care to assess trees on the site of a proposed construction site. Trees are to be assessed for their retention value and the tree protection zone and level of acceptable incursion evaluated.

Method:

Trees were inspected from the ground using a visual tree assessment method. Multiple trees with multiple stems were measured as one tree, based on the best guess of which stems were associated with underground lignotubers. DBH (diameter at breast height) of trees with multiple stems was calculated in alignment with the Australian Standard AS4970-2009 Protection of Trees on Development Sites. SRZ (structural root zone) was not calculated due to an inability to measure the tree above the root flare, as many of these trees had a buried lignotuber with stems arising out of the ground separate to adjacent stems. Regardless, the SRZ for any tree is not to be less than 1.5m radius.

An R value was assigned to each tree:

- 3 means retain tree as a priority
- 2 means retain if practicable work arounds are feasible
- 1 means retain if the tree will not adversely affect the project
- 0 means no retention value

TPZ is the tree protection zone as calculated using TreeRec online TPZ and SRZ calculator. The TPZ is a radius as measured from the centre of the tree. Due to the size and spread our distribution of trunks on many of these trees, the centre of the tree was estimated and often adjusted according to the growth of each tree. The intention being to find the approximate centre of the lignotuber.



Example of multiple trunks coming out of the ground apparently separate from each other.

Data:**Trees at northern end around driveway. Appendix 1 map**

| Tree no. | DBH (cm) | TPZ (m) | Health | R value | TPZ encroachment (%) | Comments |
|----------|----------|---------|--------|---------|----------------------|--|
| 1 | 25 | 3 | Good | 3 | 0 | No incursion |
| 2 | 40 | 4.8 | Fair | 1 | | Construction to be within 1.5m of tree |
| 3 | 54 | 6.48 | Good | 3 | 11.8 | Justifiable incursion |
| 4 | 36 | 4.32 | Fair | 2 | | Construction to be within 1.5m of tree |
| 5 | 46 | 5.52 | Fair | 3 | 14.4 | Justifiable incursion |
| 6 | 75 | 9 | Poor | 1 | 34.6 | Excessive incursion, tree in poor health |
| 7 | 35 | 4.2 | Good | 3 | 0 | No Incursion |
| 8 | 37 | 4.44 | Good | 2 | | Construction to be within 1.5m of tree |
| 9 | 55 | 6.6 | Fair | 2 | 16.9 | Justifiable incursion |
| 10 | 55 | 6.6 | Good | 3 | 11.3 | Justifiable incursion |
| 11 | 43 | 5.16 | Fair | 2 | 11.6 | Justifiable incursion |
| 12 | 59 | 7.08 | Fair | 3 | 1 | Acceptable incursion |
| 13 | 67 | 8.04 | Fair | 3 | 6.9 | Acceptable incursion |
| 14 | 21 | 2.52 | Dead | 0 | | Dead tree |
| 15 | 58 | 6.96 | Fair | 1 | | Construction to be within 1.5m of tree |
| 16 | 52 | 6.24 | Fair | 3 | 7.6 | Acceptable incursion |
| 17 | 86 | 10.32 | Good | 3 | 12.8 | Justifiable incursion |

Trees at southern end near site of proposed retaining wall. Appendix 2 map

| Tree no. | DBH (cm) | TPZ (m) | Health | R value | Comments |
|----------|----------|---------|--------|---------|-------------------------------------|
| 18 | 50 | 6 | Good | 2 | Co-dominant |
| 19 | 15 | 2 | Good | 2 | Epicormic growing off stump |
| 20 | 32 | 3.84 | Good | 2 | Juvenile epicormics |
| 21 | 39 | 4.68 | Good | 3 | Good structure, impacted by tree 22 |
| 22 | 31 | 3.72 | Good | 1 | Rubbing on tree 21 |
| 23 | 27 | 3.24 | Good | 2 | Juvenile epicormics |
| 24 | 24 | 2.88 | Good | 2 | Heavy lean towards building |

All trees in this assessment are *Euclyptus pauciflora ssp. hedraia*.

Discussion:

The 2 snowgum populations either side of the driveway at Diana consist of mostly semi mature to mature second stage lignotuber shoots. These appear to be quite old lignotubers in most cases lignotubers are mostly completely underground and the spread of shoots/stems of the trees extends to 2 metres across.

On the low side of the driveway there are 2 trunks with visible insect damage to the cambium in the mid to upper canopy, and on the high side of the driveway there is one tree with an upright limb with a small hollow. Other than this, the trees appear quite good structurally, although there are some stems rubbing each other and some crossing branches exist also.

There are some dead stems, and one entirely dead tree. Some of the trees have some of the more mature stems with quite sparse canopies, down to 40% of typical, but the less mature stems on the same tree have more dense canopies, suggesting that some of these more mature stems may die off with in the next few years leaving the semi mature stems to take over.

The trees at the southern end consist of juvenile epicormics growing from stumps or lignotubers and 4 semi mature to mature trees. These trees all have good canopy density with minimal dead wood. Notably, tree 22 is heavily rubbing on tree 21, and tree 22 should be considered for removal.

Snowgums are trees which form a lignotuber at the base, which is essentially a ball of energy reserves and dormant buds, where all the roots grow from and where the tree will most likely reshoot from in the event of stressors or loss of canopy. Most of the trees on this site have reshot from their lignotuber, and consist of multiple stems, usually of different ages and sizes. The size of these lignotubers, and in some cases, their location under soil and understory shrubs, made measuring the trunk calliper in the traditional manor impossible. This is the reason for this report being based solely on the tree protection zone (TPZ) measurements rather than also including a structural root zone (SRZ) measurement.

The site these snowgums grow on is a steep slope which is benched at at the top, bottom and through almost the centre of the site for roadways or driveways. These roadways consist of heavily compacted soil. These roadways are well established, and the trees have been growing in these conditions for decades. It is fair to assume that the trees roots will be concentrated in the uncompacted areas of the site.

The TPZ measurements in this report are not to be taken as exclusion zones for development. Due to the compacted soil and the lignotuberous growth of the snowgums, it is the opinion of the Arborist that incursion of more than 10%, perhaps up to 20% or more, of the TPZ would still be likely to result in survival of any tree. If there was sufficient damage to roots to cause stress or decline of 1 or more of the stems of the larger, multi stemmed specimens then it is likely that the tree would respond by shooting from the lignotuber in a juvenile state and surviving in that manner.

Incursions greater than 10% should be discussed with the Arborist after the set out of the building foot print, and levels of excavation have been marked out. Incursions up to 20%, which only occur within the compacted areas of the driveways, could be considered acceptable in line with the recommendations of this report.

Recommendations:

Retention of trees 1, 7, 12, 13, 16

These tree are in fair to good health and the construction will have less than a 10% incursion into the TPZ. There is uncompacted ground remaining within the TPZ that is deemed sufficient for the survival of these trees.

Retention of trees 3, 5, 9, 10, 11, 17

These trees have been identified as having TPZ incursions of greater than 10%, but less than 20%. The justification for retention of these trees is that the incursion will occur on areas of compacted soil, being the driveway, therefore it is less likely that there will be a high concentration of roots in that area. There is uncompacted ground remaining within the TPZ that is deemed sufficient for the survival of these trees.

Removal of trees 2, 4, 8, 15

These trees have been identified as having construction impact within 1.5 metres of the tree. Even with the multiple separate large stems growing from the lignotuber of the snowgum making measurement of the structural root zone by traditional methods not possible, construction impact within 1.5 metres of these trees is likely to impact the structural roots of these trees as well as create larger than acceptable incursion into the TPZ.

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Removal of tree 6

A TPZ incursion of 34.6% has been calculated for this tree, and therefore it is recommended for removal. This tree could be habitat pruned and retained at a height not exceeding 5 metres as an alternative.

Removal of tree 14

This is a dead tree with 2 trunks and a DBH of 21cm. It is of no significant habitat value and, if it is deemed to impact the construction, should be removed.

Tree protection plan

A protection plan should be developed to prevent any increased impact of trees to be retained. There is insufficient information to create that at this stage.

Trees at southern end of site

This population of trees has been measured to produce a TPZ for each tree in response to the requirement to install a retaining wall at this site cut. The TPZ of these trees is already modified around the site cut, so a modified approach is appropriate. Care should be taken to avoid cutting further into the batter within the TPZs of these trees, and changing the soil levels within the TPZs should be avoided where possible.

Limitations of this report:

This report, and the assessment it is based, on represent the arboricultural opinion of the assessor at the time of assessment. The ground based visual assessment of trees uses visual clues to determine the likelihood of failure, the likely target and therefore the likely risk. The stability of a tree in the ground including the condition of roots and soil stability, the internal structure of the tree and the upper canopy are not able to be, and are not claimed to be, addressed completely by this report.

References:

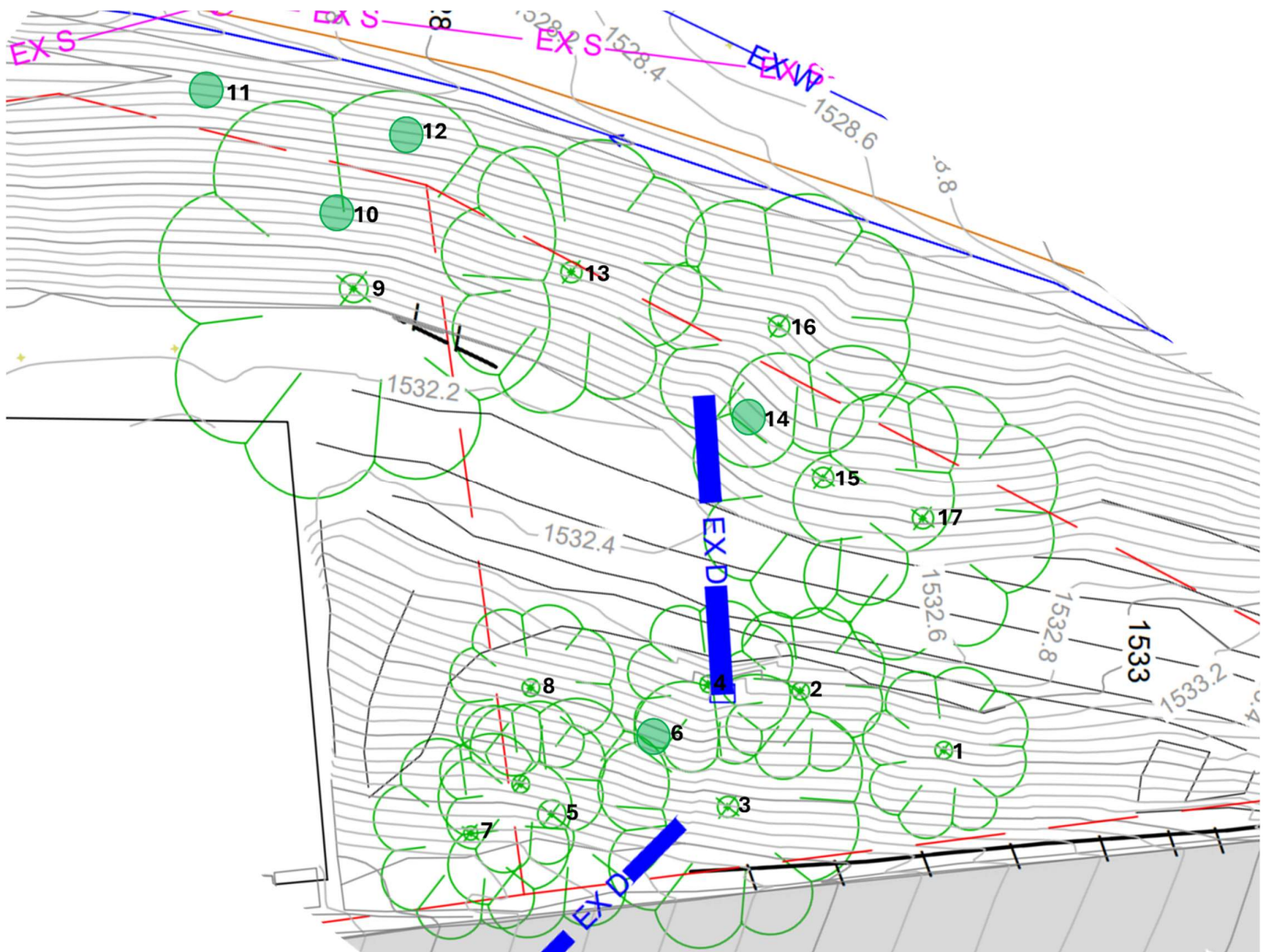
Australian Standard AS4970-2009 Protection of Trees on Construction Sites. SAI Global

Australian Standard AS4373-2007 Pruning of amenity trees. SAI Global

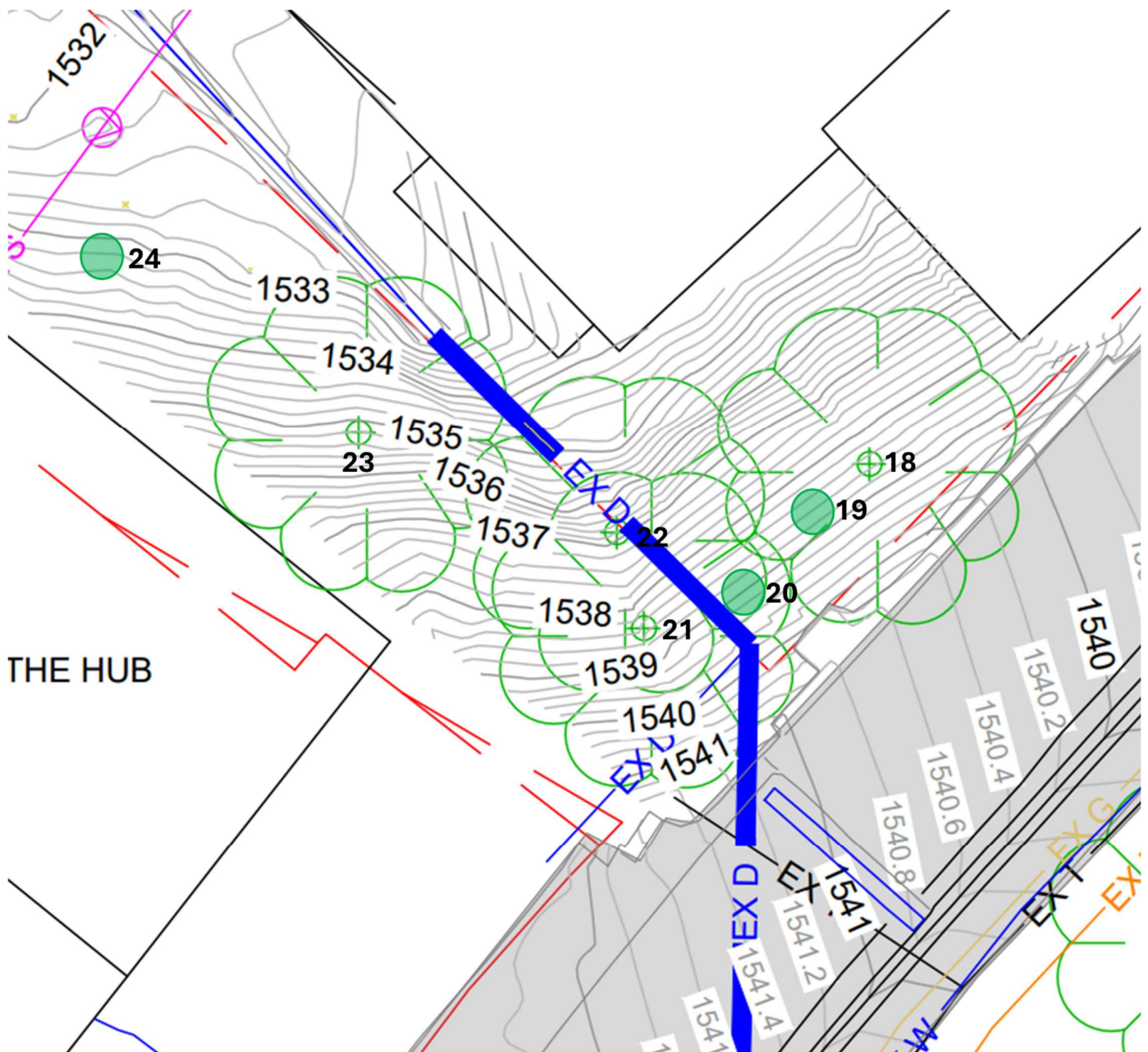
TreeTec DBH. TPZ and SRZ calculator. [DBH - Tree Protection Zone TPZ, Structural Root Zone SRZ tool. \(treetec.net.au\)](https://www.treetec.net.au)

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Appendix 1. Location of trees at northern end of site

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Appendix 2. Location of trees at southern end of site

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Appendix 3. Tree photos*Tree 1*



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Tree 4



Tree 5



Tree 6 Behind tree 5



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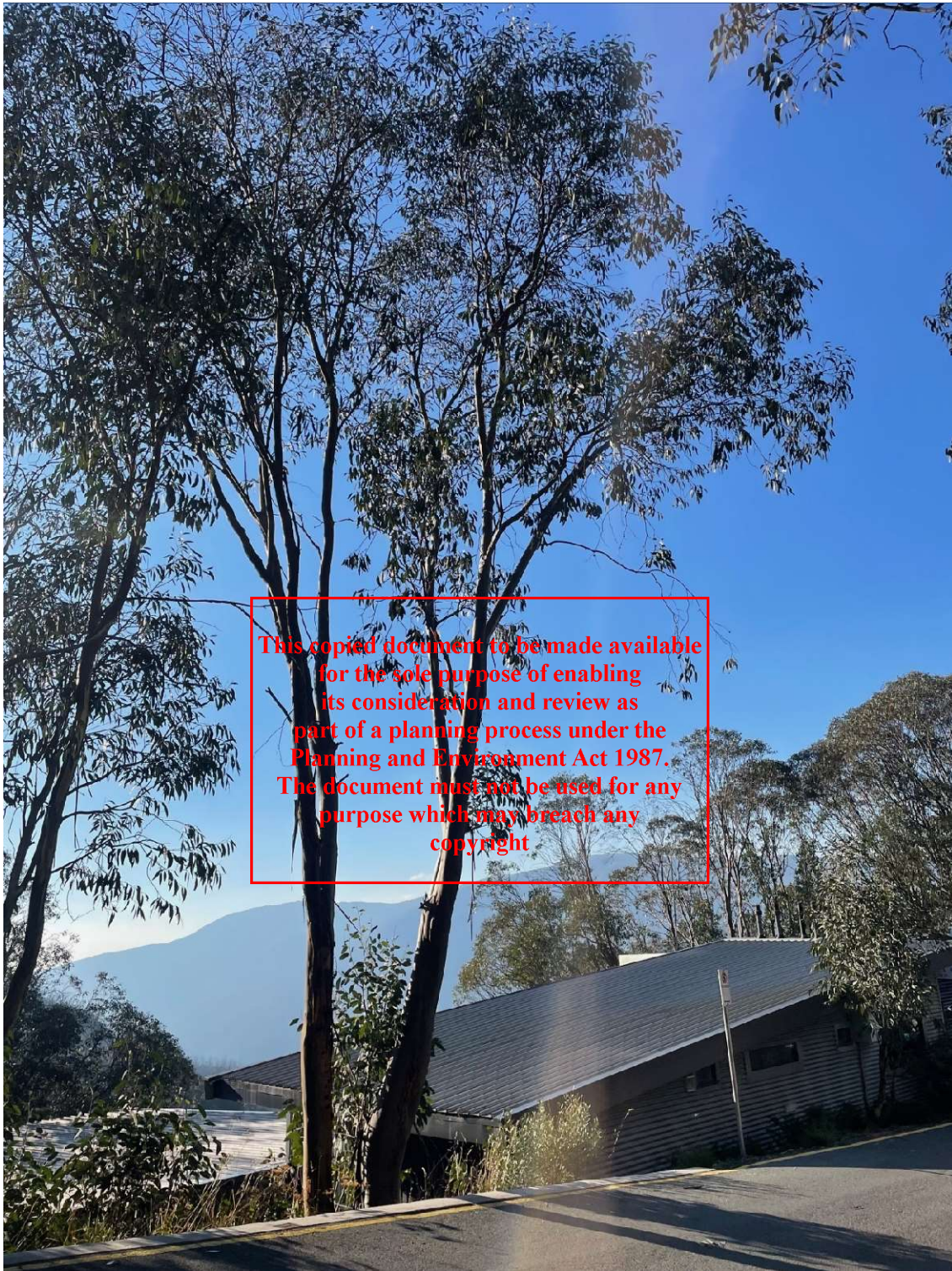
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Tree 17

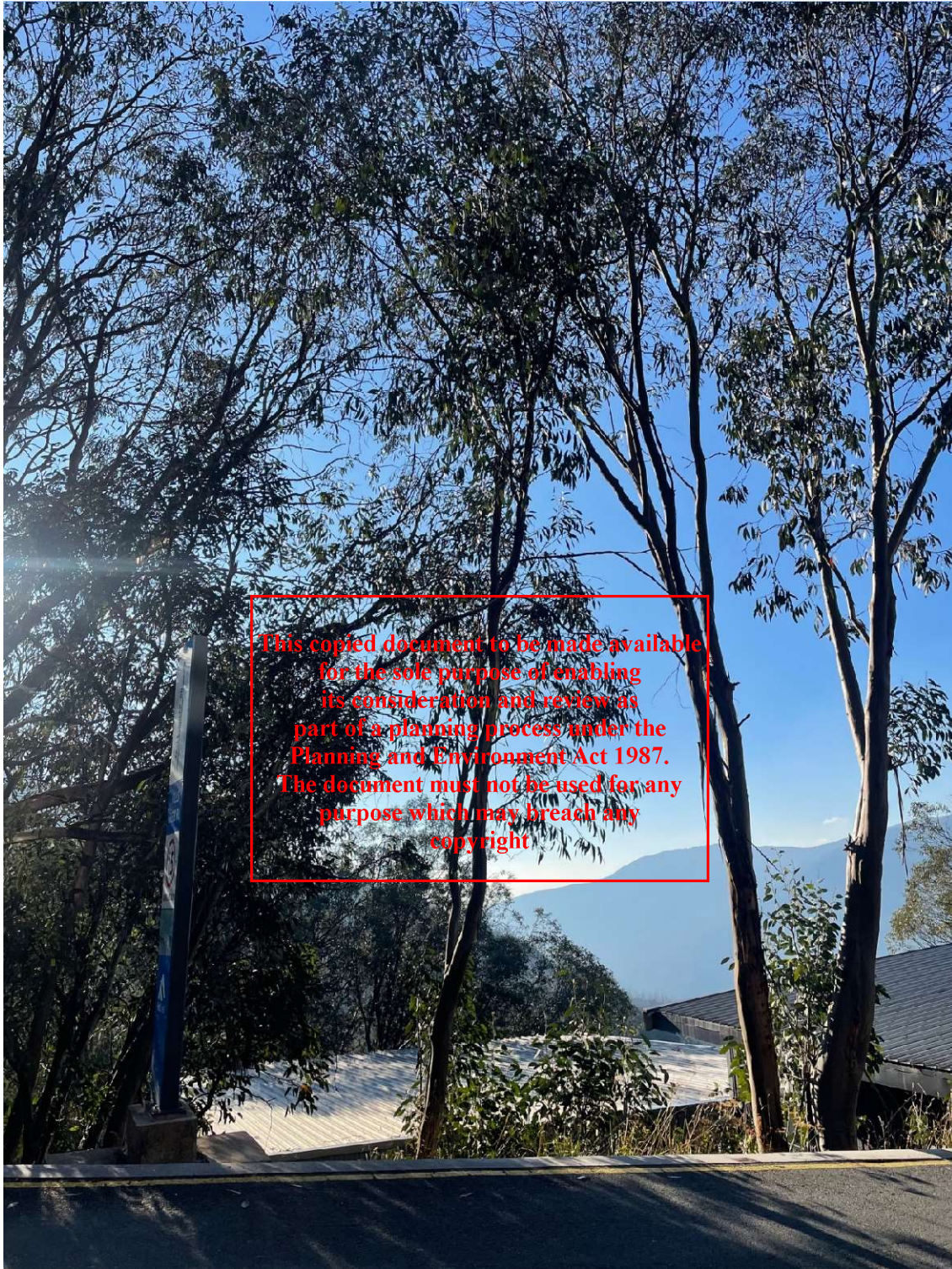
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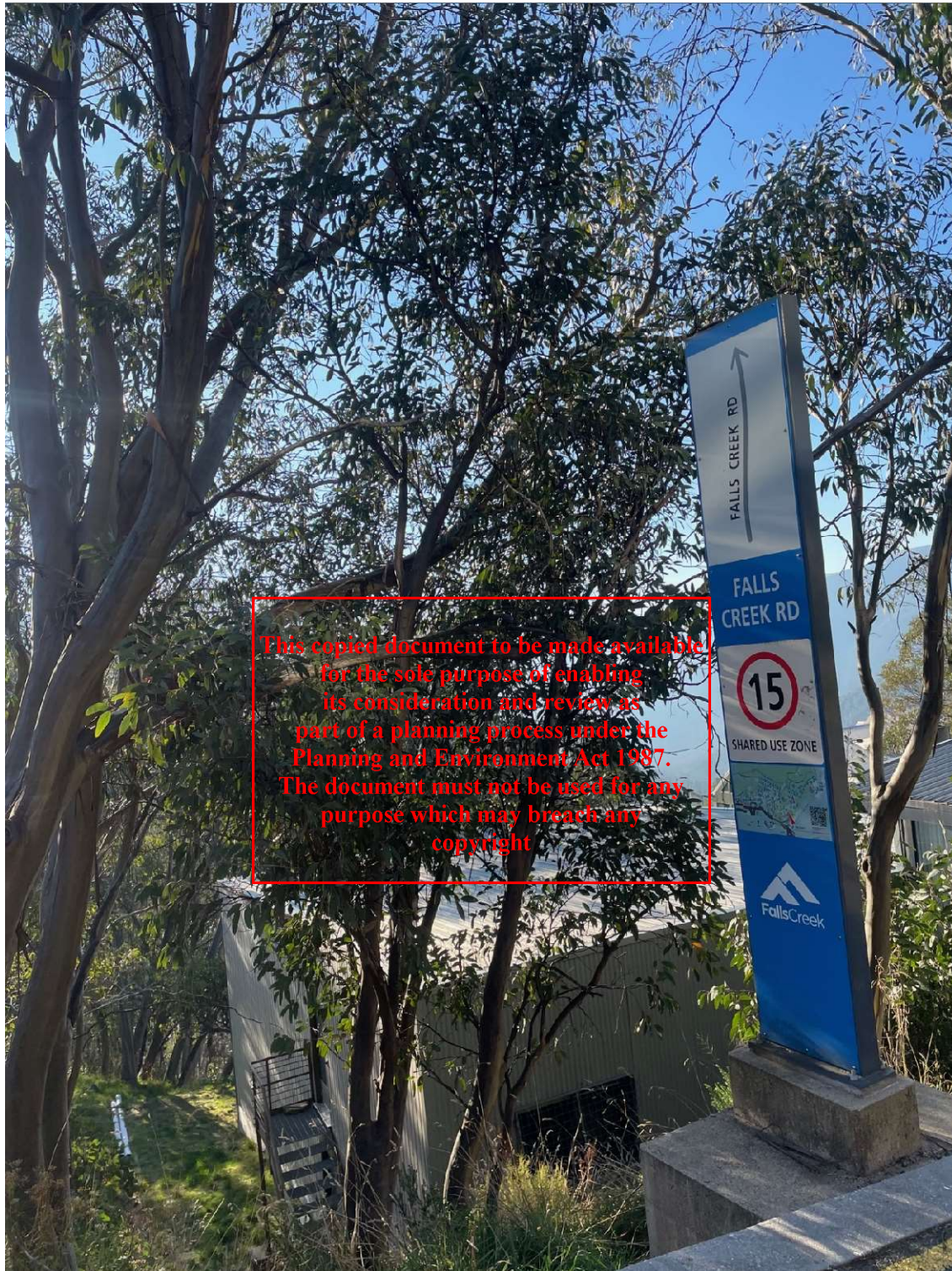


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Tree 19



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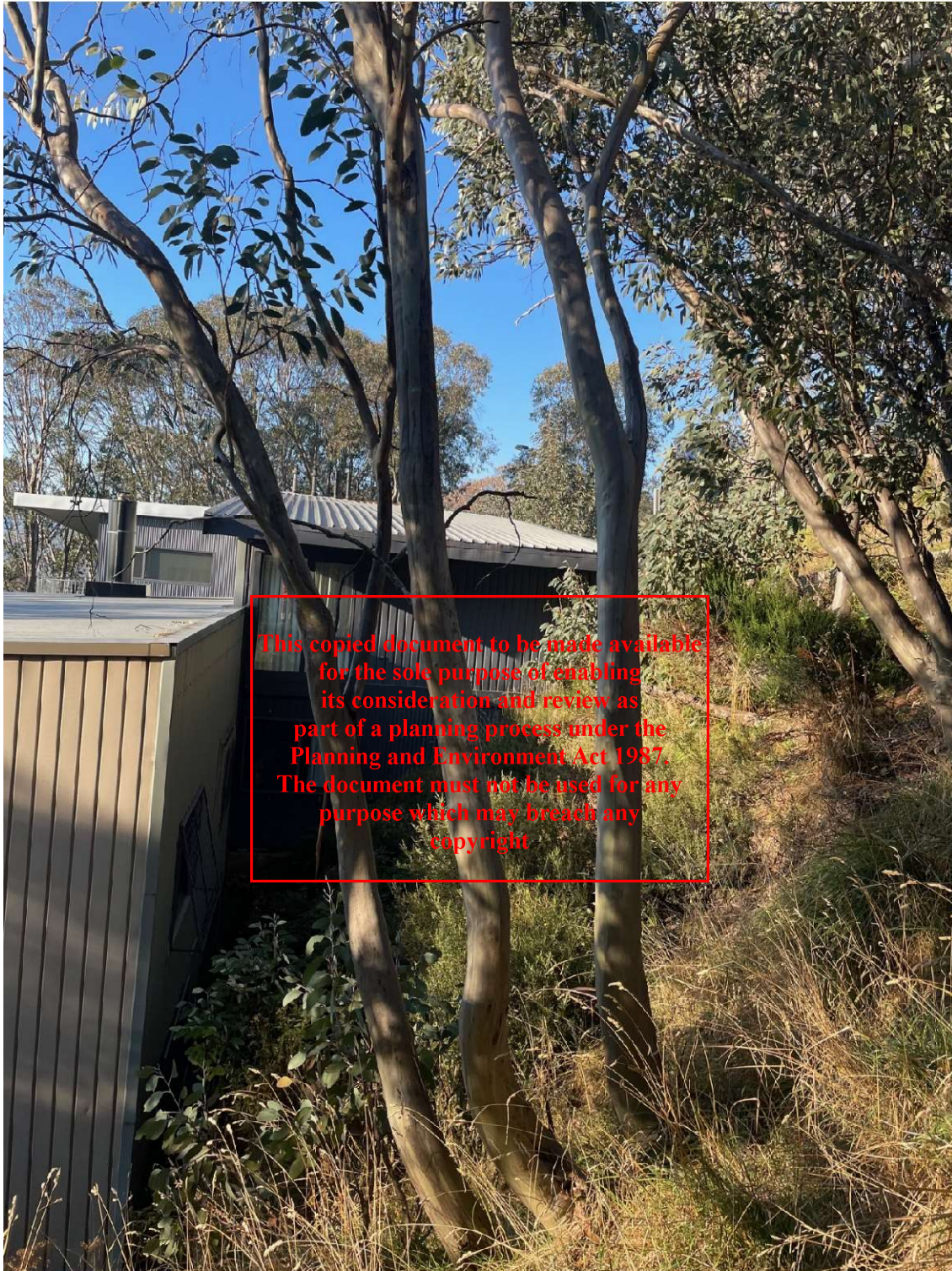
Tree 20



Tree 21



Tree 22



Tree 23



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Tree 24

Appendix 4 Native vegetation removal report

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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: 08/05/2024
Time of issue: 3:24 pm

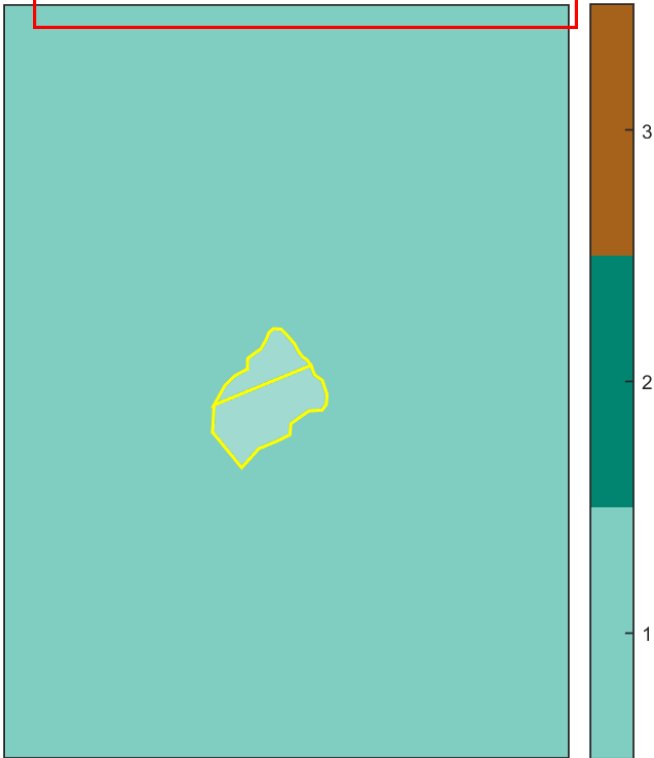
Report ID: BIO_2024_037

| | |
|------------|-----------------------------|
| Project ID | 40067_veg_clearing_20240424 |
|------------|-----------------------------|

Assessment pathway

| Assessment pathway | Intermediate Assessment Pathway |
|--|--|
| Extent including past and proposed | 0.015 ha |
| Extent of past removal | 0.000 ha |
| Extent of proposed removal | 0.015 ha |
| No. Large trees proposed to be removed | 2 |
| Location category of proposed removal | Location 1 This native vegetation is enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. |

1. Location map



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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 | 0.007 general habitat units |
| Vicinity | North East Catchment Management Authority (CMA) or Falls Creek Alpine Resort (Unincorporated) Council |
| Minimum strategic biodiversity value score ² | 0.216 |
| Large trees | 2 large trees |

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

Appendix 1 includes information about the native vegetation to be removed

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

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

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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 Intermediate Assessment Pathway and it will be assessed under the Intermediate 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 (met unless you wish to include a site assessment)
- Maps showing the native vegetation and property
- 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 defensible space statement as applicable
- A statement about the Native Vegetation Precinct Plan as applicable
- An offset statement that explains that an offset has been identified and how it will be secured.

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Melbourne 2024

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Obtaining this publication does not guarantee that an application will meet the requirements of Clauses 52.16 or 52.17 of the Victoria Planning Provisions and Victorian planning schemes or that a permit to remove native vegetation will be granted.

Notwithstanding anything else contained in this publication, you must ensure that you comply with all relevant laws, legislation, awards or orders and that you obtain and comply with all permits, approvals and the like that affect, are applicable or are necessary to undertake any action to remove, lop or destroy or otherwise deal with any native vegetation or that apply to matters within the scope of Clauses 52.16 or 52.17 of the Victoria Planning Provisions and Victorian planning schemes.

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Appendix 1: Description of native vegetation to be removed

All zones require a general offset, the general habitat units each zone is calculated by the following equation in accordance with the Guidelines:

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

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

Native vegetation to be removed

| Information provided by or on behalf of the applicant in a GIS file | | | | | | | Information calculated by EnSym | | | | | |
|---|-------|----------|----------------------------|---------------|-----------------|-----------------|---------------------------------|------------------------|-----------|----------|---------------|-------------|
| Zone | Type | BioEVC | BioEVC conservation status | Large tree(s) | Partial removal | Condition score | Polygon Extent | Extent without overlap | SBV score | HI score | Habitat units | Offset type |
| 1-A | Patch | valp0043 | Least Concern | 1 | no | 0.460 | 0.011 | 0.011 | 0.270 | | 0.005 | General |
| 2-A | Patch | valp0043 | Least Concern | 1 | no | 0.460 | 0.005 | 0.005 | 0.270 | | 0.002 | General |

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

This is not applicable in the Intermediate Assessment Pathway.

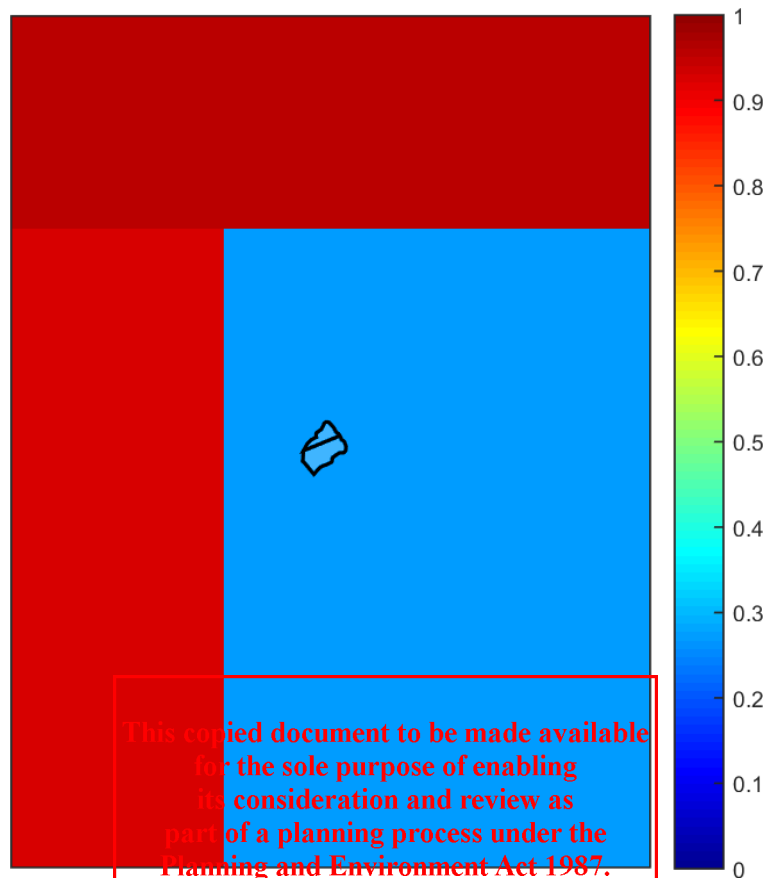
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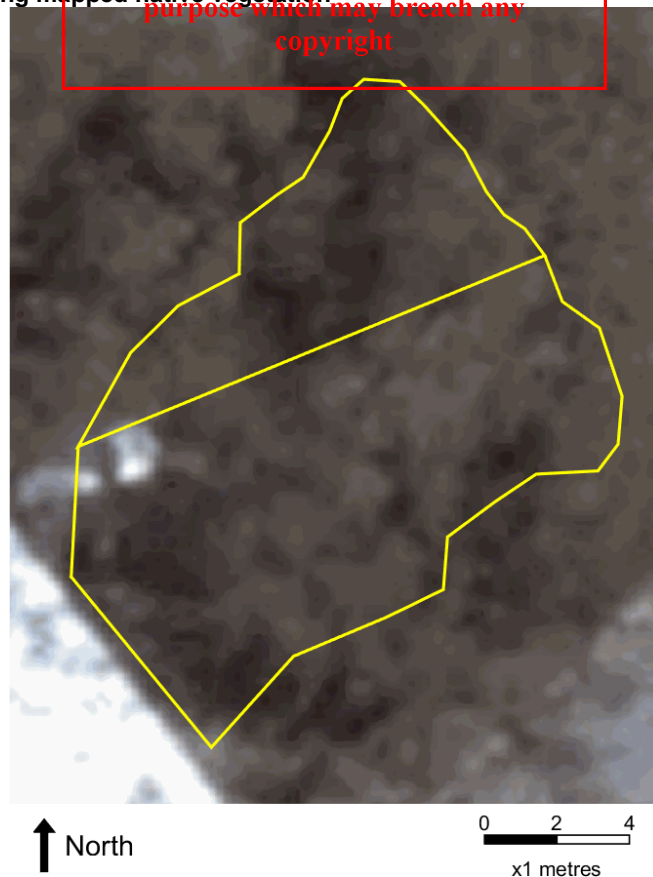
Appendix 3 – Images of mapped native vegetation

2. Strategic biodiversity values map

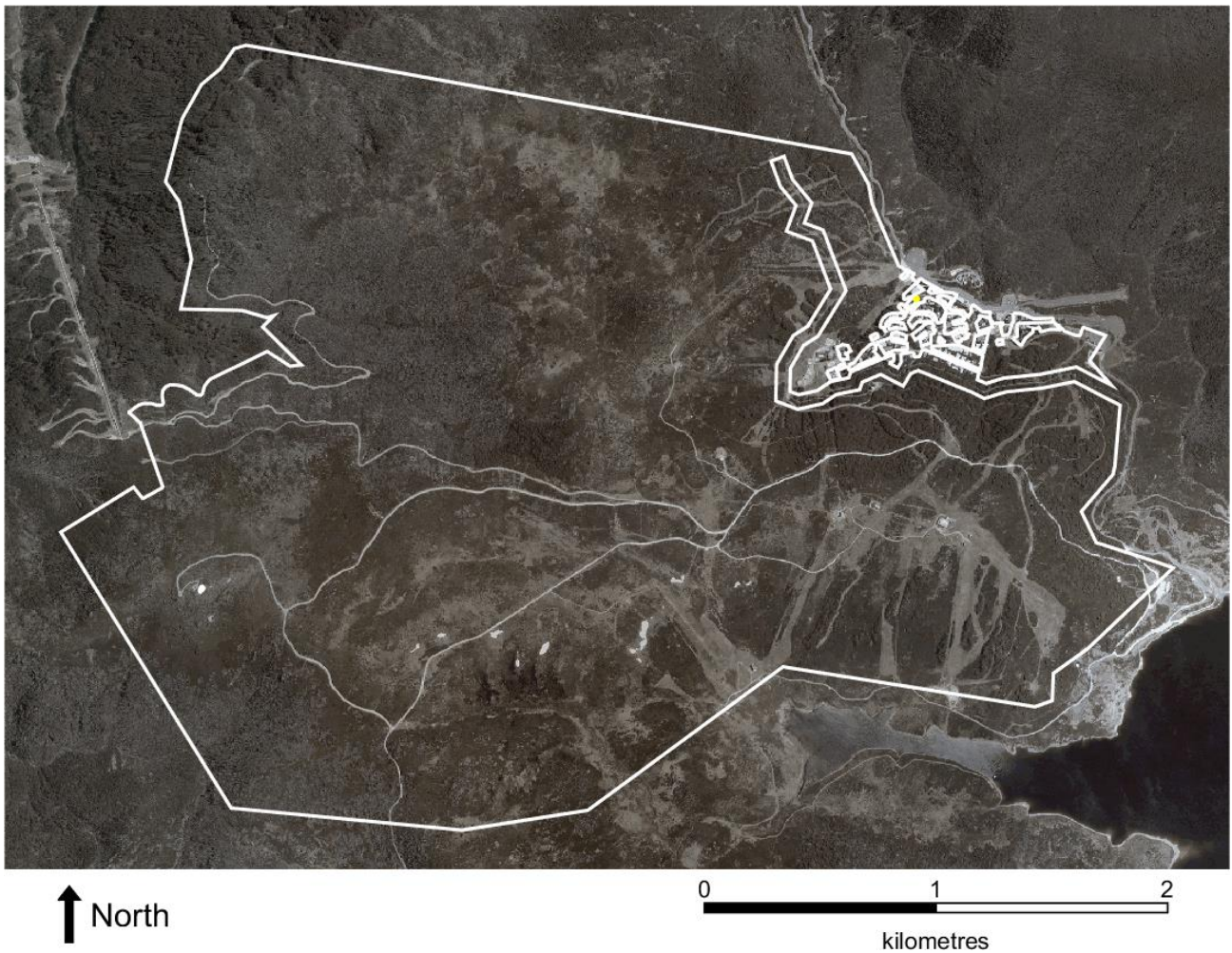


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3. Aerial photograph showing mapped native vegetation



4. Map of the property in context



Yellow boundaries denote areas of proposed native vegetation removal.

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Appendix 5 Native vegetation credit register search

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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: 08/05/2024 11:07

Report ID: 24074

What was searched for?

General offset

| General habitat units | Strategic biodiversity value | Large trees | Vicinity (Catchment Management Authority or Municipal district) |
|-----------------------|------------------------------|-------------|---|
| 0.007 | 0.216 | 2 | CMA North East or LGA Falls Creek Alpine Resort (Unincorporated) |

Details of available native vegetation credits on 08 May 2024 11:07

These sites meet your requirements for general offsets.

| Credit Site ID | GHU | LT | CMA | LGA | Land owner | Trader | Fixed price | Broker(s) |
|----------------|--------|------|------------|--------------|------------|--------|-------------|-----------|
| VC_CFL-3074_01 | 15.284 | 2890 | North East | Towong Shire | Yes | Yes | No | VegLink |
| VC_CFL-3789_01 | 15.367 | 608 | North East | Towong 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

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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 available |
| 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 |

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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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This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

Obtaining this publication does not guarantee that the credits shown will be available in the Native Vegetation Credit Register either now or at a later time when a purchase of native vegetation credits is planned.

Notwithstanding anything else contained in this publication, you must ensure that you comply with all relevant laws, legislation, awards or orders and that you obtain and comply with all permits, approvals and the like that affect, are applicable or are necessary to undertake any action to remove, lop or destroy or otherwise deal with any native vegetation or that apply to matters within the scope of Clauses 52.16 or 52.17 of the Victoria Planning Provisions and Victorian planning schemes

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