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DEVELOPMENT ASSESSMENT AND
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STATEMENT OF ENVIRONMENTAL EFFECTS

UPGRADE OF SNOWMAKING INFRASTRUCTURE 'TOPPA'S DREAM', BLUE COW PERISHER SKI RESORT KOSCIUSZKO NATIONAL PARK



Prepared for:
Perisher Blue Pty Ltd



AUGUST 2018
Project: 24-18

STATEMENT OF ENVIRONMENTAL EFFECTS

UPGRADE OF SNOWMAKING INFRASTRUCTURE 'TOPPA'S DREAM', BLUE COW PERISHER SKI RESORT KOSCIUSZKO NATIONAL PARK

This report has been prepared by:

A handwritten signature in black ink, appearing to read 'I. Pasalich'.

Ivan Pasalich
Principal
Dabyne Planning Pty Ltd

AUGUST 2018
Project: 24-18

Dabyne Planning Pty Ltd
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CONTENTS

1	Introduction	2
1.1	Executive Summary	2
2	The Locality and The Site	4
2.1	The Locality	4
2.2	The Site	4
3	Description of the Development	9
3.1	Purpose of the Development	9
3.2	General Description	10
3.3	Construction Timing	11
3.4	Access & Machinery	11
3.5	Rehabilitation Works	12
4	Key Matters for Consideration	14
4.1	Biodiversity	14
4.2	Aboriginal Cultural Heritage	15
5	Environmental and Planning Legislation	18
5.1	Environmental Planning and Assessment Act, 1979	18
5.1.1	Section 4.15(1)(a)(i) – Environmental Planning Instruments	18
5.1.2	Section 4.15(1)(a)(ii) – Draft Environmental Planning Instruments	21
5.1.3	Section 4.15(1)(a)(iii) – Development Control Plans	21
5.1.4	Section 4.15(1)(a)(iiia) – Planning Agreements	21
5.1.5	Section 4.15(1)(a)(iv) – Regulations	22
5.1.6	Section 4.15(1)(b)– Likely Impacts	22
5.1.7	Section 4.15(1)(c)– Suitability of the Site	22
5.1.8	Section 4.15(1)(d)– Submissions	22
5.1.9	Section 4.15(1)(e)– Public Interest	22
5.2	Biodiversity Conservation Act, 2016	22
5.3	Environment Protection and Biodiversity Act, 1999	23
5.3.1	National Heritage Listing	23
5.3.2	Listed threatened species and communities	25
6	Conclusion	27
	Appendix A Plans	
	Attachment 1: Site Plan	
	Attachment 2: Snowmaking Infrastructure Plans	
	Appendix B Photographs	
	Appendix C Biodiversity Development Assessment Report	
	Appendix D Site Environmental Management Plan	
	Appendix E AHIMS Search Results	

1. INTRODUCTION

1.1 Executive Summary

Dabyne Planning Pty Ltd has been engaged by Perisher Blue Pty Ltd (Perisher Blue), the operator of the Perisher Ski Resort to prepare a Statement of Environmental Effects (SEE) to accompany a Development Application (DA) to the NSW Department of Planning and Environment (DPE).

The Development Application is for the upgrade of snowmaking infrastructure to provide improved snowmaking coverage on the Toppa's Dream Moguls Course, located adjacent to the Ridge Chair, within the Blue Cow ski area of the Perisher Ski Resort.

The proposal is to replace the existing manually operated snowmaking system with an automated system and to extend the infrastructure to provide additional snowmaking coverage over the moguls course, located to the skiers right of the Showboat ski run and Ridge Chair.

The proposed snowmaking system will include the replacement of manually operated hydrants and use of hoses with an extended underground pipeline servicing four (4) automatically controlled fan guns. The new pipeline is approximately 250m in length in total and will connect to the existing main located at the edge of the ski run at two locations.

Improved snowmaking infrastructure that includes replacing manual hydrants is required to provide more reliable snow cover in marginal conditions, to allow for the moguls course to be able to be used earlier and longer into the season. The installation of automated hydrants will also improve operational safety for the snowmakers and remove above ground hoses which are operational hazards.

The environmental impacts associated with the snowmaking installation upgrades have been largely mitigated by locating the snowmaking pipeline along previously disturbed areas, where the least impact on native vegetation can be achieved.

As the site is wholly located within an area mapped as comprising high biodiversity value, the Biodiversity Offsets Scheme (BOS) is triggered under the Biodiversity Conservation Act, 2016 (BC Act, 2016).

Consequently a Biodiversity Development Assessment Report (BDAR) has been prepared by Ryan Smithers, Senior Ecologist with Eco Logical Australia and an Accredited Person. The BDAR outlines the measures taken to avoid, minimise and mitigate impacts to the vegetation and habitats present within the development site during the design, construction and operation of the development. The residual unavoidable impacts of the proposed development were calculated in accordance with the Biodiversity Assessment Method (BAM) by utilising the Biodiversity Assessment Method Credit Calculator (BAMC). The BAMC calculated that a total of three (3) ecosystem credits and seven (7) species credits are required to offset the unavoidable impacts to the vegetation and habitat present within the development site.

Payment of the offset credits will be made to the Biodiversity Conservation Fund (BCF) prior to works commencing.

A detailed description of the proposal is provided in Section 3 of the report.

The purpose of this SEE is to:

- describe the land to which the DA relates.
- describe the form of the proposed works.
- define the statutory planning framework within which the DA is to be assessed and determined; and
- assess the proposed development against the matters for consideration listed under Section 4.15(1) of the Environmental Planning and Assessment Act, 1979 (EP&A Act, 1979).

The report has been prepared in accordance with the requirements of Schedule 1 of the Environmental Planning and Assessment Regulations 2000.

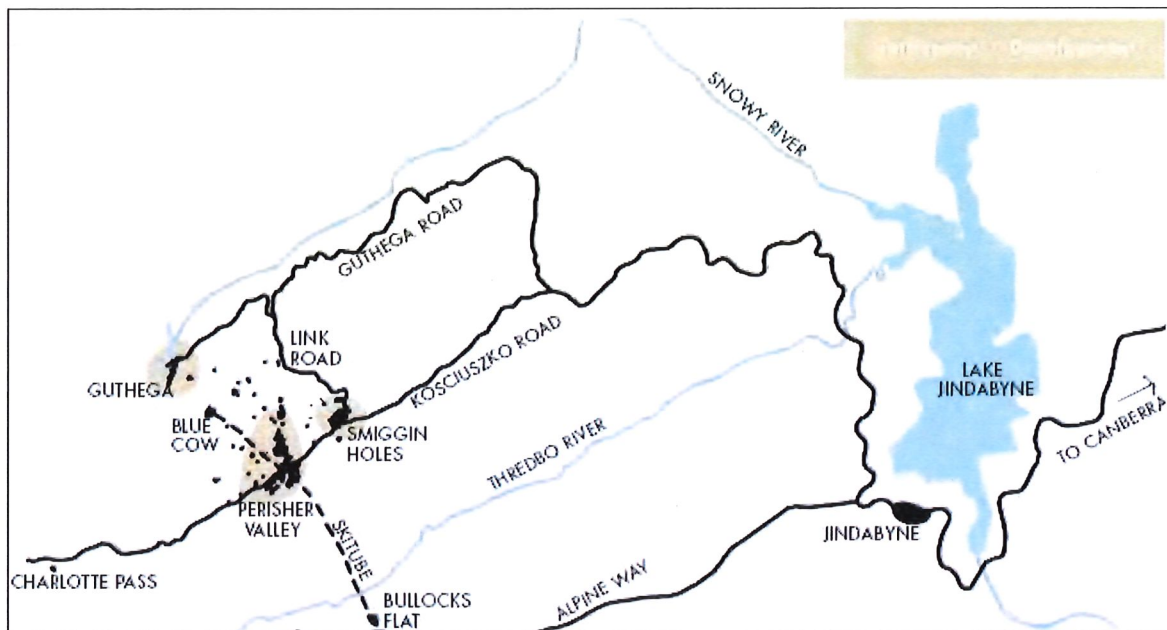
2. THE LOCALITY AND THE SITE

2.1 The Locality

The proposed installation of upgraded snowmaking infrastructure is located within the Blue Cow ski area of the Perisher Ski Resort.

Perisher Ski Resort is located within the Perisher Range Resorts, approximately 35kms from Jindabyne. Access to the resort is via Kosciuszko Road.

The location of the resort is illustrated in context with the regional locality below:



*Figure 1: Location of Perisher Valley in context with the Region
(source: Perisher Range Resorts Master Plan)*

2.2 The Site

The subject site comprises of an FIS standard moguls course, being the premier moguls course in Australia. The course, referred to as 'Toppa's Dream' is located within the Blue Cow ski area of the Perisher Ski Resort, with the proposed upgraded snowmaking installation located skiers right of the Showboat ski run and the lower portion of the Ridge Chair as shown in figure 2 below.

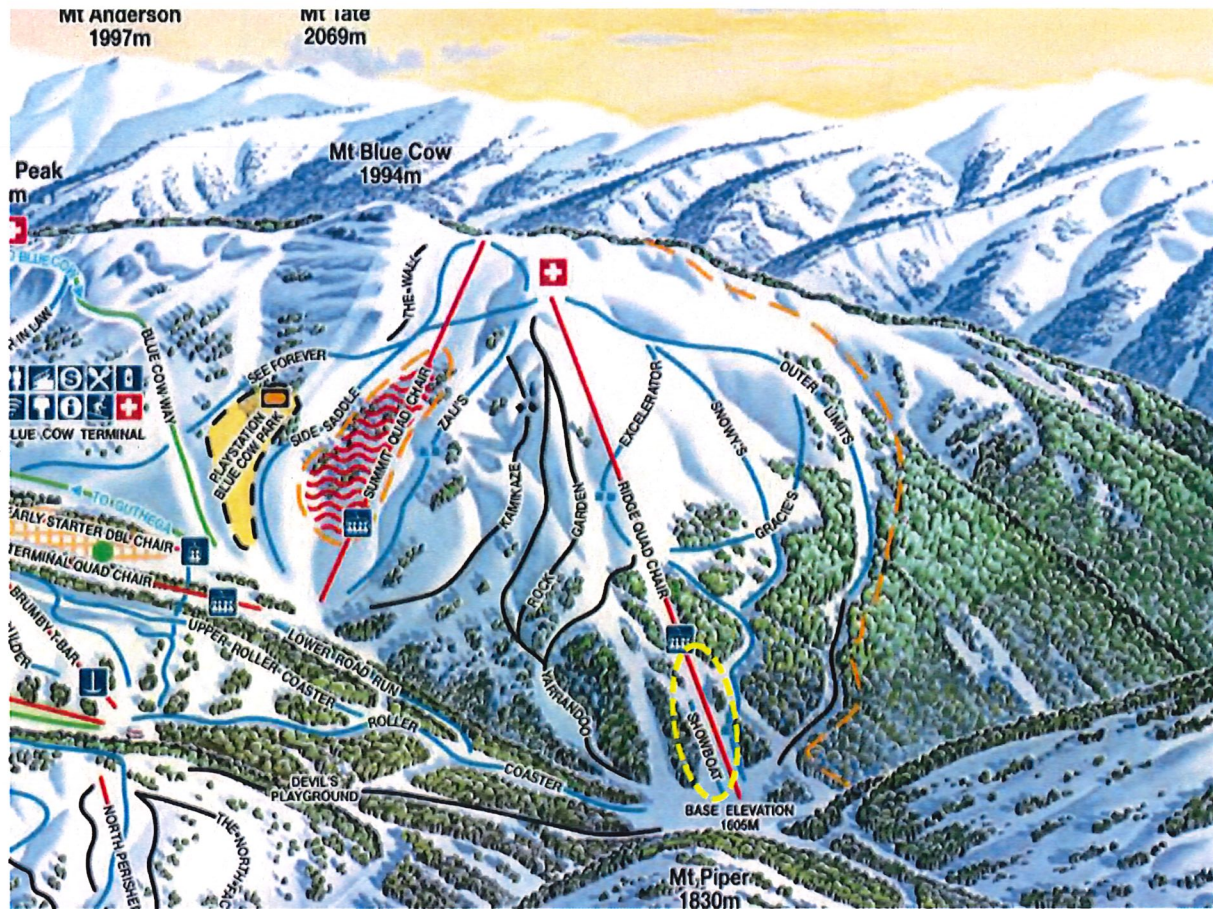


Figure 2: Perisher Ski Trail Map with the subject site area highlighted
(Source: Perisher Blue Pty Ltd)

The Toppa's moguls course was upgraded in 2002/03 with manually operated snowmaking infrastructure installed in 2006/07.

The location of the moguls course is better illustrated in the Ski Patrol maps provided by Perisher in figure 3 below.

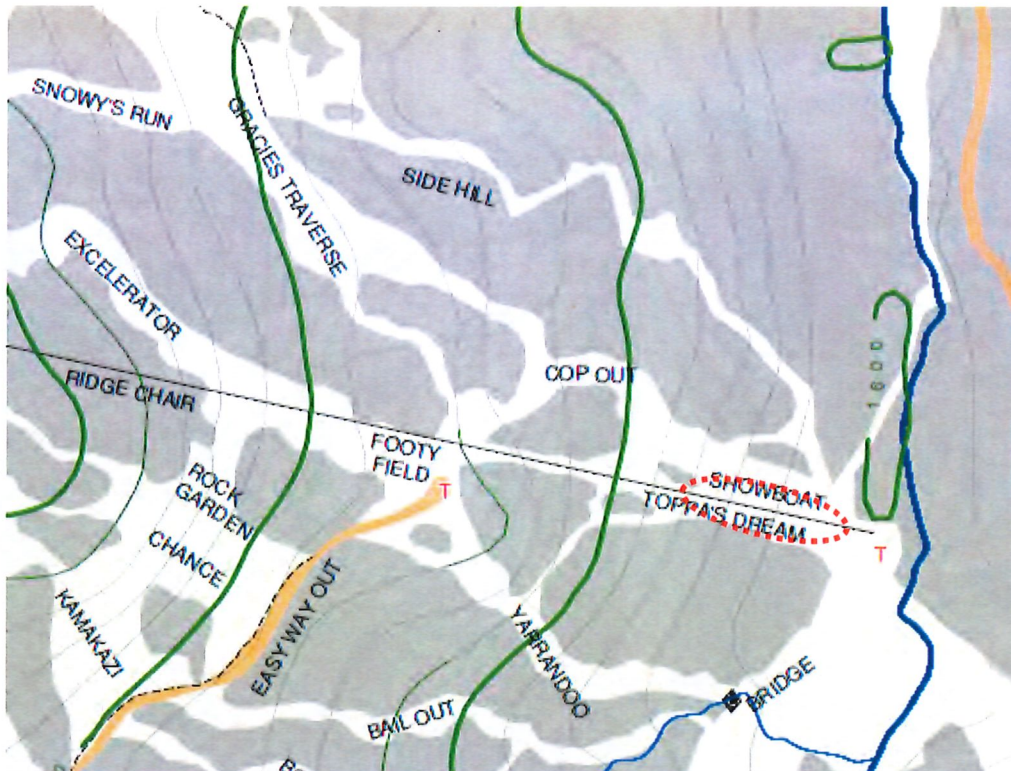


Figure 3: Perisher Ski Patrol Map with the subject site area highlighted
(Source: Perisher Blue Pty Ltd)

The subject site has been mostly previously disturbed, comprising of one Plant Community Type (PCT):

- *PCT 645 - Alpine Snow Gum shrubby open woodland at high altitudes in Kosciuszko NP, Australian Alps Bioregion*

Aerial maps are provided in figures 4 & 5 with the subject site highlighted.



Figure 4: Aerial map of the subject site in context with the locality



Figure 5: Aerial map of the subject site

The site is located between 1620m and 1720m contour, between 120m above the base of the Ridge Chair and 260m, as illustrated in figure 6 below.

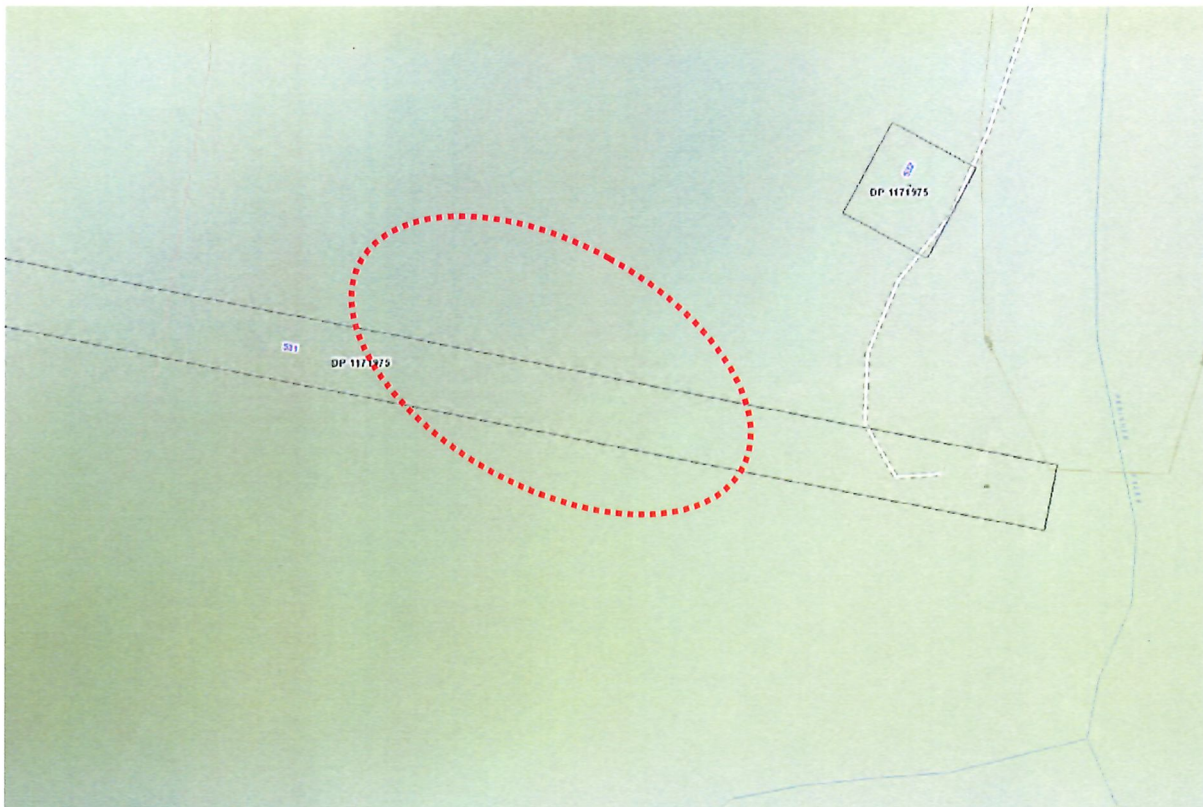


Figure 6: Topographic map of the subject site and its location in context with the locality

3. DESCRIPTION OF THE DEVELOPMENT

3.1 Purpose of the Development

The purpose of the development is to upgrade snowmaking infrastructure to provide improved snowmaking coverage on the Toppa's Dream Moguls Course, an FIS standard course, being the premier moguls course within Australia.

The proposal is to replace the existing manually operated snowmaking system with an automated system and to extend the infrastructure to provide additional snowmaking coverage over the moguls course, located to the skiers right of the Showboat ski run and Ridge Chair.

This is consistent with the Perisher Ski Slope Master Plan (PSSMP), as shown in the extract provided in figure 7 below.

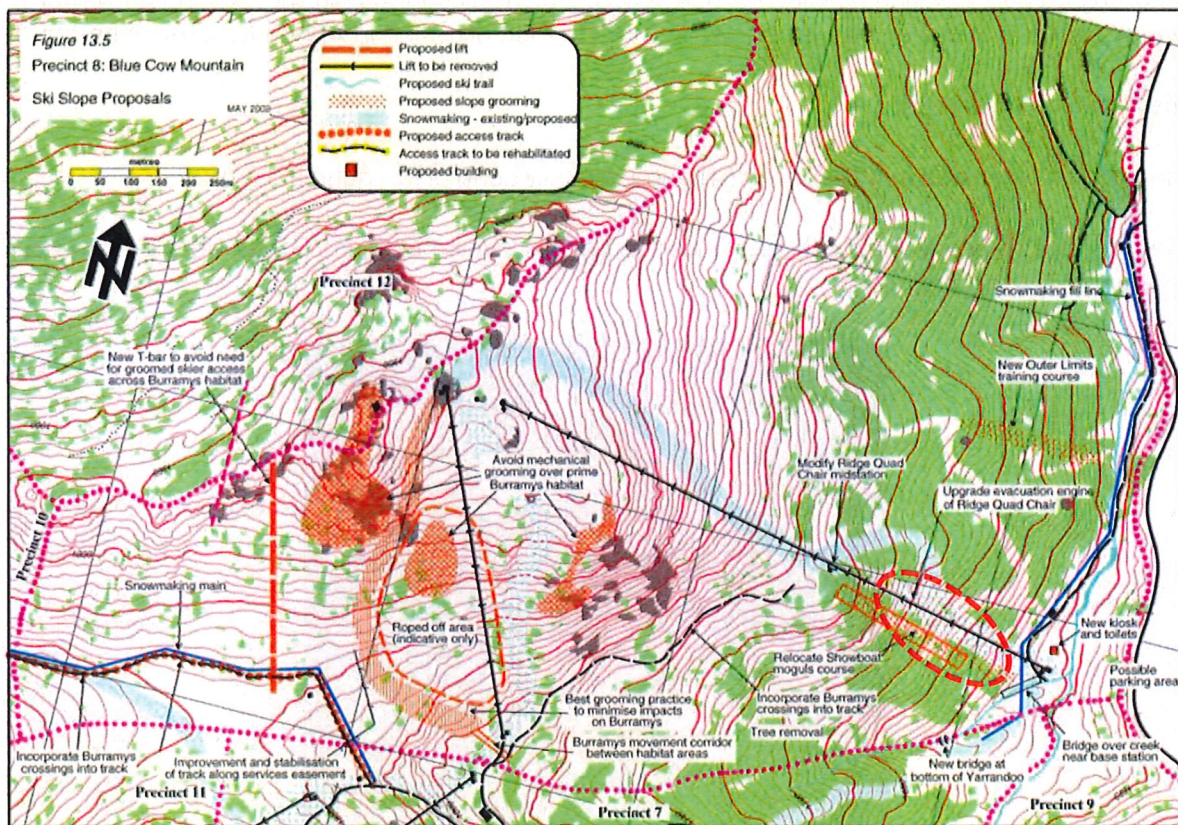


Figure 7: Ski Slope Proposal for the Perisher Valley Precinct (source: PSSMP)

The purpose of upgrading snowmaking infrastructure for the moguls course is to allow for earlier access to the course for training and competition and to improve seasonal length and viability; improve and maintain the quality of the course during the season by topping up natural snow in areas.

The benefits of an automated snowmaking system includes the efficient gains by being able to precisely adjust to varying weather conditions more quickly and accurately to control water flow rates, water temperature, air flow rates and air pressure. Further efficiencies are achieved by significantly reducing the start-up and shut down process associated with the existing manual

snowmaking system which can take anywhere from one to three hours, where an automated system can take as little as 15 minutes.

These efficiencies decrease energy costs related to pumping excess water or compressing excess air with the new technical improvements requiring much less air.

The automation of snowmaking also allows for a reduction in the dependence on manual labour which reduces operating costs as well as achieving improved occupational health and safety benefits in extreme cold conditions. This is particularly relevant as the moguls course has a steep cross-slope which can be hazardous for snowmaking operators when traversing to install manual hydrants and hoses.

3.2 General Description

The proposed installation of snowmaking infrastructure includes installing approximately 250m of combined snowmaking pipeline infrastructure which will connect to the existing snowmaking mains adjacent to the ski run, as shown in the Site Plan provided in Appendix A (Attachment 1).

Snowmaking Hydrants:

The proposal includes installing four (4) automatically control fan guns (F1 – F4).

The fan guns to be installed are similar to the type as shown in figure 8 with details provided in Appendix A (Attachment 2).



Figure 8: Typical fan gun to be used

The proposed fan guns require a concrete pit, measuring 1.9m x 1.9m and 1.4m in depth. The fan guns are mounted on a tower and stand about 3.5m above ground level.

Snowmaking Pipeline and Laterals:

The new snowmaking main servicing the hydrants will comprise of a water pipe (100mm in diameter), 415V Electricity cable within a 125mm conduit and two 50mm conduits to house new optic fibre and data cables. A new main extension will services proposed fan guns F1 to F3, while fan gun F4 will be serviced by a lateral from the new mains.

The laterals will include a water pipe (50mm in diameter), Electricity, optical fibre and data cables.

Details of the trench are provided in Appendix A (Attachment 2).

The disturbance width corridor required for the trenching of the main pipelines is 8m due to the temporary bench required with the lateral requiring 4.5m.

3.3 Construction Timing

The proposed construction timing of the project has been scheduled to start during the summer of 2018/19 and be completed and ready for the 2019 winter season.

3.4 Access & Machinery

Access to the site can be achieved from two directions. To access the site from below, the access road that connects with the Link Road and crosses the Perisher Creek can be used to achieve access to the Showboat ski slope and bottom of the Ridge Chair, as shown in yellow in figure 9 below.

To access the site from above, the access track that connects with the Blue Cow access road that extends across the bottom of Zalis ski run can be used to achieve access to the Excelerator ski run and Ridge Chair, as shown in purple in figure 9 below.



Figure 9: Existing access tracks and ski slopes to be used to access the subject site

The machinery proposed to be used for the snowmaking will include a 30 tonne excavator as a temporary bench across the slope will need to be formed to provide a safe operating platform to enable the trench to be dug across the relatively steep cross slope. A smaller excavator (i.e. 13 tonne) will be used for the installation of hydrants plus transporting and holding steel pipe for it to be welded into position.

In addition, HD carriers will be used where required.

Stockpiling and material storage will occur within the already disturbed ski slope areas and at the bottom the Ridge Chairlift.

3.5 Rehabilitation Works

Once the excavation works are completed, the trenches will be backfilled with top soil will be laid on top to match existing surface levels. The temporary bench will also be removed and also levelled to match existing surface levels.

This process will include preparing the soil and reseeding with native Poa seed. Mulching of exposed areas will be undertaken following seeding with weed free straw.

In previously undisturbed areas, revegetation will be undertaken immediately following completion of works to provide stabilisation of cleared areas prior to winter. This will include sod replacement techniques employed where possible, recognising the slope is relatively dry.

General rehabilitation techniques, access and timing are also covered in the SEMP provided in Appendix D, with further technical details to be provided prior to construction, based on the

current best practice initiatives based in both the PSSMP and DECCW (OEH) Rehabilitation Guidelines, and where they are not inconsistent with the BDAR in accordance with the BOS under the BC Act, 2016.

This rehabilitation work will be undertaken notwithstanding the obligations as set out in the BDAR and specifically Table 29.

4. KEY MATTERS FOR CONSIDERATION

4.1 Biodiversity

In accordance with the Biodiversity Values Map under the BC Act, 2016, the subject site is wholly located within an area currently mapped as comprising high biodiversity value as per the extract of the map provided below in figure 10.

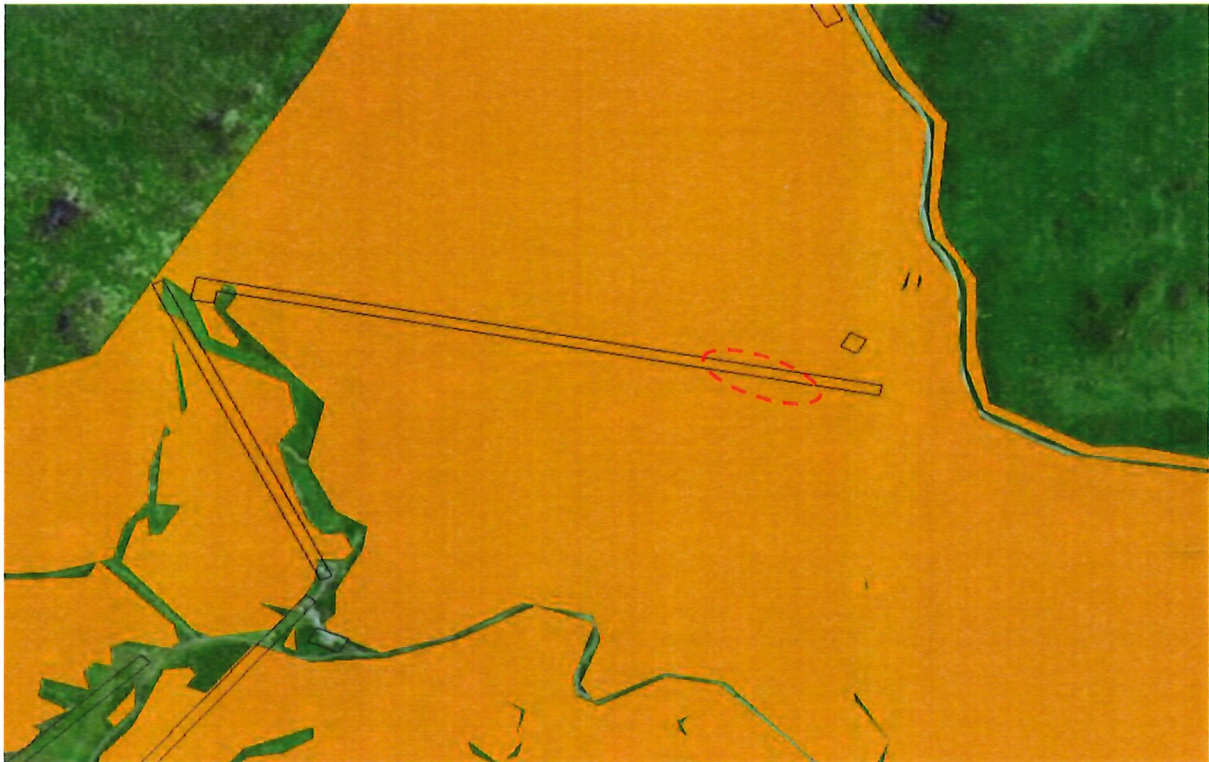


Figure 10: Biodiversity Values Map with the subject site highlighted (Source: OEH)

Consequently, the BOS is triggered and a BDAR has been prepared by Ryan Smithers, Senior Ecologist with Eco Logical Australia and an Accredited Person.

The BDAR outlines the measures taken to avoid, minimise and mitigate impacts to the vegetation and habitats present within the development site during the design, construction and operation of the development. The residual unavoidable impacts of the proposed development were calculated in accordance with the BAM by utilising the BAMC. The BAMC calculated that a total of three (3) ecosystem credits and seven (7) species credits are required to offset the unavoidable impacts to the vegetation and habitat present within the development site.

As a result of payment to the BCF for these offset credits, the physical implementation of offsets within the resort is not required. Furthermore, payment of these offset credits is an alternative to the retirement of biodiversity credits in accordance with Division 6 of the BC Act, 2016.

Serious and irreversible impacts values were also considered as part of the assessment under the BDAR and the report concluded that the proposal will not result in any serious and irreversible impacts.

A copy of the BDAR is provided in Appendix C.

4.2 Aboriginal Cultural Heritage

The identification and mapping of known and potential area of Aboriginal cultural heritage values was undertaken by Navin Officer Heritage Consultants as part of the Perisher Range Resorts Environmental Study, undertaken in 2000 by Connell Wagner.

The study included a predictive model that mapped the zones of Archeological Sensitivity as provided below in figure 11.

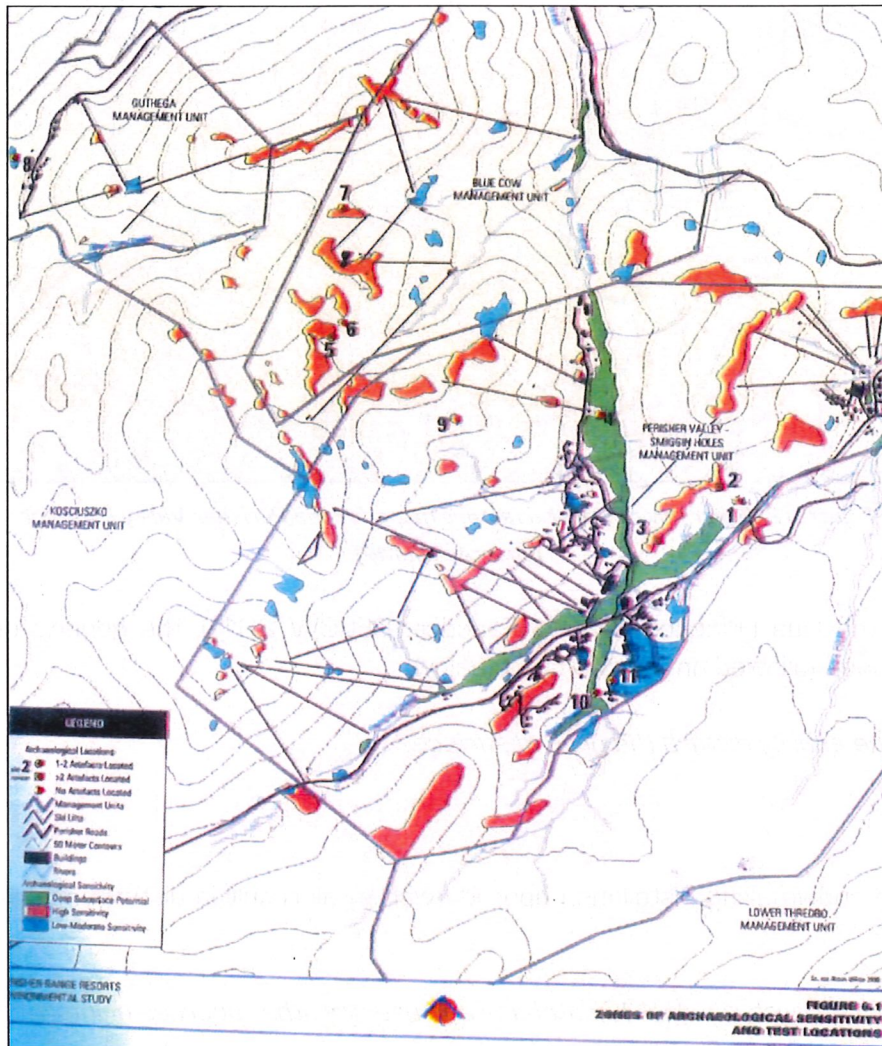


Figure 11: Zones of Archeological Sensitivity

(source: Perisher Range Resorts Environmental Study, Connell Wagner, 2000)

Based on the above map, the proposed works are not located within any identified areas of low-moderate sensitivity, high sensitivity or deep subsurface potential as shown above. The below extract of the 'Other Environmental Factors Map' for the Perisher Valley Precinct as identified in the PSSMP provides a better scale and resolution. This map is based on the predictive model undertaken by Navin Officer for Connell Wagner.

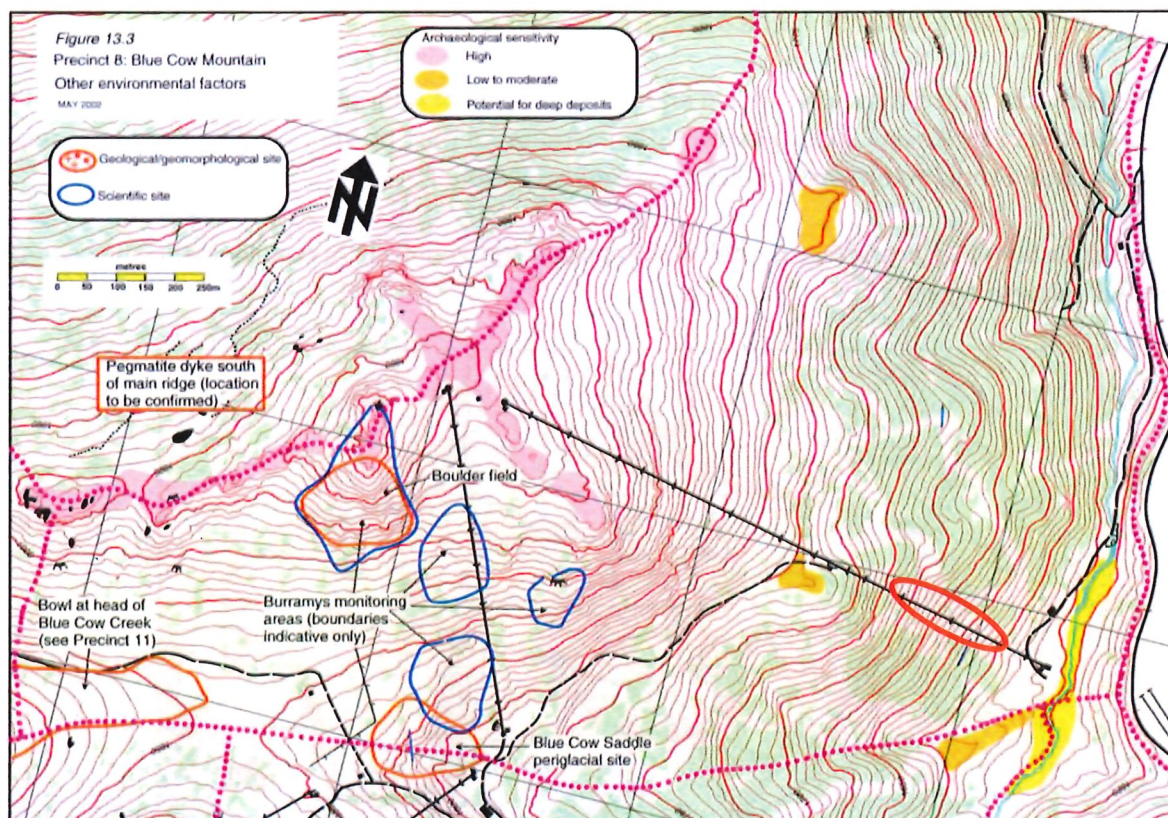


Figure 12: Other environmental factors maps for the Perisher Valley Precinct
(source: PSSMP)

In regard to the Due Diligence Code of Practice, DECCW 2010, the generic due diligence process has been followed and documented below.

Step 1. Will the activity disturb the ground surface?

Comment:

The proposed snowmaking installation upgrade works will result in disturbance of the ground surface.

Step 2. Step 2a. Search the AHIMS database and use any other sources of information of which you are already aware.

Comment:

This search has been undertaken and provided in Appendix E. The search has identified that no Aboriginal sites or places have been recorded within the subject site and buffer area.

Step 2b. Activities in areas where landscape features indicate the presence of Aboriginal objects?

Comment:

As discussed above, Navin Officer Heritage Consultants undertook an Aboriginal Cultural Heritage Study for the Perisher Range Resorts Area in 2000 that formed part of the Perisher Range Resorts Environmental Study (undertaken in 2000 by Connell Wagner).

This study included a predictive model based on the results from a program of subsurface testing across selected landform variables.

Based on this work, four zones of archeological sensitivity were identified, including areas of high archeological sensitivity, areas of low to moderate archeological sensitivity, areas with potential for deep subsurface archeological deposits and areas of no or negligible potential.

The requirement for further surface archeological survey was therefore determined to be low within landscape features that comprised of moderate to high slope gradients and areas of poorly drainage ground, as well as grassland and herbfields on treeless frost hollow floor or areas with predominant or closed heath vegetation.

In accordance with Step 2a of the Code, the Navin Officer 2000 study is a form of 'other sources of information', which is to be considered.

This study provides a much greater level of detail and certainty with regard to identifying specific landscape features within the Perisher Range Resorts that indicate the likely presence of Aboriginal objects (and includes mapping) than what is offered under the generic features listed under the code.

Accordingly, this study has been used to determine the appropriate site specific landscape features that indicate the likely existence of Aboriginal objects.

As the proposed works will be located outside of the areas identified as potential for either low to moderate archaeological sensitivity or high archaeological sensitivity, further archaeological assessment is therefore not warranted.

Therefore after completing steps 2a and 2b, it is reasonable to conclude that there are no known Aboriginal objects or a low probability of objects occurring in the area of the proposed activity, the development can therefore proceed with caution without applying for an AHIP.

This fulfils all reasonable steps in undertaking a due diligence assessment.

In the unlikely event that Aboriginal items are uncovered during excavation, all work shall cease at that location and the NSW Office of Environment and Heritage (OEH) shall be notified.

5. ENVIRONMENTAL AND PLANNING LEGISLATION

5.1 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

5.1.1 SECTION 4.15(1)(a)(i) - ENVIRONMENTAL PLANNING INSTRUMENTS

The only applicable Environmental Planning Instrument to the proposed development and site is State Environmental Planning Policy (Kosciuszko National Park - Alpine Resorts) 2007 (SEPP Alpine Resorts). The relevant clauses contained within SEPP Alpine Resorts are addressed below:

Clause 11 - Land Use Table:

The land use table for the Perisher Range Alpine Resort specifies that 'Snow-making infrastructure' is permitted with consent.

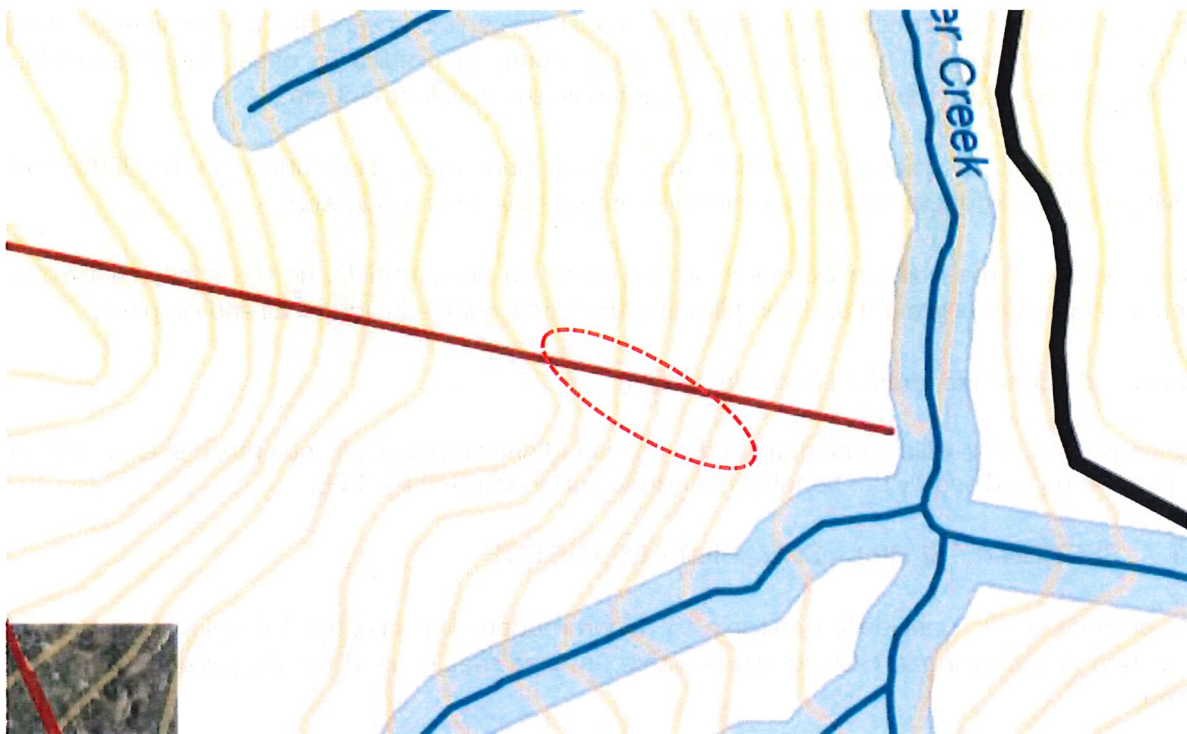
Clause 14 - Matters for consideration:

Matter for Consideration	Response
Cl. 14 (1) In determining a development application that relates to land to which this Policy applies, the consent authority must take into consideration any of the following matters that are of relevance to the proposed development:	
(a) the aim and objectives of this Policy, as set out in clause 2,	<i>The proposed installation of upgraded snowmaking infrastructure is considered to be consistent with the aims and objectives of the Policy.</i>
(b) the extent to which the development will achieve an appropriate balance between the conservation of the natural environment and any measures to mitigate environmental hazards (including geotechnical hazards, bush fires and flooding),	<i>The proposed development does not require any measures to mitigate environmental hazards (eg geotechnical, bush fires or flooding) that would impact on the conservation of the natural environment.</i>

<p>c) having regard to the nature and scale of the development proposed, the impacts of the development (including the cumulative impacts of development) on the following:</p> <p>(i) the capacity of existing transport to cater for peak days and the suitability of access to the alpine resorts to accommodate the development,</p> <p>(ii) the capacity of the reticulated effluent management system of the land to which this Policy applies to cater for peak loads generated by the development,</p> <p>(iii) the capacity of existing waste disposal facilities or transfer facilities to cater for peak loads generated by the development,</p> <p>(iv) the capacity of any existing water supply to cater for peak loads generated by the development,</p>	<p><i>The proposed installation of upgraded snowmaking infrastructure is not expected to generate any additional demand on the capacity of the existing transport, reticulated effluent management system, existing waste disposal facility or existing water supply system at the resort.</i></p>
<p>(d) any statement of environmental effects required to accompany the development application for the development,</p>	<p><i>This Statement of Environmental Effects satisfies this sub-clause.</i></p>
<p>(e) if the consent authority is of the opinion that the development would significantly alter the character of the alpine resort—an analysis of the existing character of the site and immediate surroundings to assist in understanding how the development will relate to the alpine resort,</p>	<p><i>The proposed installation of upgraded snowmaking infrastructure will not significantly alter the character of the alpine resort.</i></p>
<p>(f) the Geotechnical Policy—Kosciuszko Alpine Resorts (2003, Department of Infrastructure, Planning and Natural Resources) and any measures proposed to address any geotechnical issues arising in relation to the development</p>	<p><i>The proposed works are located within the 'G' line.</i></p> <p><i>To cover any potential Geotechnical issues, a Geotechnical Assessment and Form 4 Certificate has been prepared and provided separately with the DA.</i></p>
<p>(g) if earthworks or excavation works are proposed—any sedimentation and erosion control measures proposed to mitigate any adverse impacts associated with those works,</p>	<p><i>Excavation works are required for the trenching of the installation of the snowmaking infrastructure. Sedimentation and erosion controls are outlined in the SEMP provided in Appendix D and these will mitigate any adverse impacts associated with such works.</i></p>
<p>(h) if stormwater drainage works are proposed—any measures proposed to mitigate any adverse impacts associated with those works,</p>	<p><i>The proposal does not require any stormwater drainage works.</i></p>

<p>(i) any visual impact of the proposed development, particularly when viewed from the Main Range,</p>	<p><i>The only visible components of the proposal will be the snowmaking fan guns, which include green covers in summer.</i></p> <p><i>These features are common throughout the resort and part of the character of ski slopes.</i></p> <p><i>The proposed components will not be visible from the main range due to their location.</i></p>
<p>(j) the extent to which the development may be connected with a significant increase in activities, outside of the ski season, in the alpine resort in which the development is proposed to be carried out,</p>	<p><i>The proposed snowmaking infrastructure is only utilised for the ski season and will therefore not increase activities outside of the ski season.</i></p>
<p>(k) if the development involves the installation of ski lifting facilities and a development control plan does not apply to the alpine resort:</p> <p>(i) the capacity of existing infrastructure facilities, and</p> <p>(ii) any adverse impact of the development on access to, from or in the alpine resort,</p>	<p><i>The development does not involve the installation of a ski lift.</i></p>
<p>(l) if the development is proposed to be carried out in Perisher Range Alpine Resort:</p> <p>(i) the document entitled Perisher Range Resorts Master Plan, as current at the commencement of this Policy, that is deposited in the head office of the Department, and</p> <p>(ii) the document entitled Perisher Blue Ski Resort Ski Slope Master Plan, as current at the commencement of this Policy, that is deposited in the head office of the Department,</p>	<p><i>The proposed installation of upgraded snowmaking infrastructure is generally consistent with the PSSMP.</i></p>
<p>(m) if the development is proposed to be carried out on land in a riparian corridor:</p> <p>(i) the long term management goals for riparian land, and</p> <p>(ii) whether measures should be adopted in the carrying out of the development to assist in meeting those goals.</p>	<p><i>The proposed installation of upgraded snowmaking infrastructure is located over 80m to the closest unnamed watercourse, an upper tributary to Perisher Creek and therefore is not located within a riparian corridor as shown in figure 13 below.</i></p>
<p>(2) The long term management goals for riparian land are as follows:</p>	
<p>(a) to maximise the protection of terrestrial and aquatic habitats of native flora and native fauna and ensure the provision of linkages, where possible, between such habitats on that land.</p>	<p><i>Not applicable</i></p>

(b) to ensure that the integrity of areas of conservation value and terrestrial and aquatic habitats of native flora and native fauna is maintained,	
(c) to minimise soil erosion and enhance the stability of the banks of watercourses where the banks have been degraded, the watercourses have been channelised, pipes have been laid and the like has occurred.	
(3) A reference in this clause to land in a riparian corridor is a reference to land identified as being in such a corridor on a map referred to in clause 5.	



*Figure 13: Location of proposed works in relation to the mapped Riparian Corridors
(source: Dept of Planning & Environment)*

5.1.2 SECTION 4.15(1)(a)(ii) – DRAFT ENVIRONMENTAL PLANNING INSTRUMENTS

There are no draft Environmental Planning Instruments that are applicable to the site or proposed development.

5.1.3 SECTION 4.15(1)(a)(iii) – DEVELOPMENT CONTROL PLANS

There are no Development Control Plans applicable to the Kosciuszko Alpine Resorts under State Environmental Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007.

5.1.4 SECTION 4.15(1)(a)(iiia) – PLANNING AGREEMENTS

There are no Planning Agreements applicable to the Kosciuszko Alpine Resorts under State Environmental Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007.

5.1.5 SECTION 4.15(1)(a)(iv) – REGULATIONS

The development application has been made in accordance with the requirements contained in Clause 50(1A) of the Environmental Planning and Assessment Regulation 2000.

5.1.6 SECTION 4.15(1)(b) – LIKELY IMPACTS

Natural and Built Environment:

Impacts on the natural environment and in particular biodiversity have been assessed as part of the BDAR provided in Appendix C.

This assessment determined that the proposal will not result in severe and irreversible impacts and includes mitigation measures as well as payment of credits to offset the unavoidable impacts to the vegetation and habitat present within the development site.

Along with the payment of offset credits and the mitigation measures outlined in the BDAR and SEMP, the likely impacts on the natural environment have been mitigated.

The impacts on the built environment are expected to be negligible, as the infrastructure is predominantly underground and compliments the existing infrastructure already in place.

Social and Economic impacts in the locality:

The social and economic impacts from the upgraded snowmaking infrastructure is expected to be positive as outlined by the benefits described in Section 3 of the SEE.

5.1.7 SECTION 4.15(1)(c) – SUITABILITY OF THE SITE

The subject site is considered suitable to accommodate the proposed development as the upgraded snowmaking infrastructure is within an area that is used for the purpose of mogul skiing.

5.1.8 SECTION 4.15(1)(d) – SUBMISSIONS

Not applicable.

5.1.9 SECTION 4.15(1)(e) – THE PUBLIC INTEREST

The above assessment has demonstrated that the proposal satisfies the objectives and relevant clauses prescribed under State Environmental Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007 and is therefore considered to be within the public interest.

5.2 BIODIVERSITY CONSERVATION ACT, 2016

The subject site is wholly located within an area currently mapped as comprising high biodiversity value and therefore the BOS is triggered under the BC Act, 2016.

Accordingly, a BDAR has been prepared by Ryan Smithers, Senior Ecologist with Eco Logical Australia and an Accredited Person.

The BDAR outlines the measures taken to avoid, minimise and mitigate impacts to the vegetation and habitats present within the development site during the design, construction and operation of the development. The residual unavoidable impacts of the proposed development were calculated in accordance with the BAM by utilising the BAMC. The BAMC calculated that a total of three (3) ecosystem credits and seven (7) species credits are required to offset the unavoidable impacts to the vegetation and habitat present within the development site.

The payment for these credits to the BCF is the only offset obligation available to the Applicant, given that the retiring of credits is not available with no ability to create offset sites under a Biodiversity Stewardship Agreement within a National Park.

As a result of payment to the BCF for these offset credits, the physical implementation of offsets within the resort is not required. Furthermore, payment of these offset credits is an alternative to the retirement of biodiversity credits in accordance with Division 6 of the BC Act, 2016.

The BDAR fulfils the obligations under the BC Act, 2016 and is provided in Appendix C.

5.3 ENVIRONMENT PROTECTION AND BIODIVERSITY ACT, 1999 (COMMONWEALTH)

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act, 1999) provides for the protection of the environment, especially matters of national environmental significance (NES). Under the EPBC Act, a person must not take an action that has, will have, or is likely to have a significant impact on any of the matters of NES without approval from the Australian Government Environment Minister or the Minister's delegate.

A referral must be made for actions that are likely to have a significant impact on the following matters protected by Part 3 of the EPBC Act:

- World Heritage properties (sections 12 and 15A)
- National Heritage places (sections 15B and 15C)
- Wetlands of international importance (sections 16 and 17B)
- Listed threatened species and communities (sections 18 and 18A)
- Listed migratory species (sections 20 and 20A)
- Protection of the environment from nuclear actions (sections 21 and 22A)
- Commonwealth marine environment (sections 23 and 24A)
- Great Barrier Reef Marine Park (sections 24B and 24C)
- The environment, if the action involves Commonwealth land (sections 26 and 27A), including:
 - actions that are likely to have a significant impact on the environment of Commonwealth land (even if taken outside Commonwealth land);
 - actions taken on Commonwealth land that may have a significant impact on the environment generally;
- The environment, if the action is taken by the Commonwealth (section 28)
- Commonwealth Heritage places outside the Australian jurisdiction (sections 27B and 27C)

A search of the matters of national environmental significance database for Smiggin Holes was undertaken and identified that two of the above matters are relevant to the proposed development as addressed below.

5.3.1 National Heritage Listing

Under the EPBC Act, 1999, the 'Australian Alps National Parks and Reserves – Kosciuszko National Park' was included on the National Heritage List on the 7 November 2008. The Alps were listed for their outstanding natural and cultural heritage significance to the nation.

Under the EPBC Act, a referral must be made for actions that are likely to have a significant impact on a National Heritage Place, such as the Australian Alps.

To determine whether an action is likely to have a significant impact, the significant impact criteria provided in the Commonwealth Department of Environment and Heritage 'EPBC Act Policy Statement 1.1: Significant Impact Guidelines for Matters of National Environmental Significance, May 2006' applies.

The Guidelines state that an action is likely to have a significant impact on the National Heritage values of a National Heritage place if there is a real chance or possibility that it will cause:

- one or more of the National Heritage values to be lost;
- one or more of the National Heritage values to be degraded or damaged; or
- one or more of the National Heritage values to be notably altered, modified, obscured or diminished.

An assessment of impact against the National Heritage List Criteria and the National Heritage values of the Australian Alps has been undertaken and provided in the following table below:

National Heritage Assessment Table

Criterion	Impact on Values
(a) the place has outstanding heritage value to the nation because of the place's importance in the course, or pattern, of Australia's natural or cultural history	<p><i>The Australian Alps National Parks is listed under this criterion for its glacial and periglacial features; fossils; karst areas; biological heritage; moth feasting; transhumant grazing; scientific research; water harvesting; and recreation.</i></p> <p><i>The proposed development within the Perisher Ski Resort would not conflict with any of the above values of the AANP.</i></p>
(b) the place has outstanding heritage value to the nation because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history	<p><i>The Australian Alps is listed under this criterion for its landscape and topography; glacial and periglacial features; fossils; alpine and sub-alpine systems; and eucalypt flora communities.</i></p> <p><i>The proposed development would generate minimal impacts on the overall landscape of the Australian Alps and would not conflict with any of the above heritage values.</i></p>

<p>(c) the place has outstanding heritage value to the nation because of the place's potential to yield information that will contribute to an understanding of Australia's natural or cultural history</p>	<p><i>Not Applicable.</i></p>
<p>(d) the place has outstanding heritage value to the nation because of the place's importance in demonstrating the principal characteristics of: (i) a class of Australia's natural or cultural places, or (ii) a class of Australia's natural or cultural environments</p>	<p><i>The Australian Alps are listed for the North-East Kosciuszko Landscape values.</i></p> <p><i>The subject site is located within the Perisher Range Resorts and are not located within the North-Eastern area of Kosciuszko National Park.</i></p>
<p>(e) the place has outstanding heritage value to the nation because of the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group</p>	<p><i>The Australian Alps are listed under this criterion for their powerful, spectacular and distinctive landscape that is highly valued by the community.</i></p> <p><i>These aesthetic characteristics include the KNP main range for its mountain vistas, panoramas, snow covered crests, slopes and valleys, alpine streams and rivers and lakes.</i></p> <p><i>The proposed development would not impact on any of these heritage values.</i></p>
<p>(f) the place has outstanding heritage value to the nation because of the place's importance in demonstrating a high degree of creative or technical achievement at a particular period</p>	<p><i>Not Applicable.</i></p>
<p>(g) the place has outstanding heritage value to the nation because of the place's strong or special association with a particular community or cultural group for social, cultural or spiritual reasons</p>	<p><i>The Australian Alps have a special association with the Australian community because of their unique landscapes, the possibility of experiencing remoteness and as the only opportunity for broad-scale snow recreation in Australia. The AANP is widely recognised by Australians as the 'high country' and many community groups have a special association with the AANP for social and cultural reasons.</i></p> <p><i>The proposed development would not impact on the above values.</i></p>
<p>(h) the place has outstanding heritage value to the nation because of the place's special association with the life or works of a person, or group of persons; of importance in Australia's natural or cultural history</p>	<p><i>The place is listed under this criterion for its association with the life or works of prominent people such as Baron Ferdinand Von Mueller, Eugen Von Guerard, writers 'Banjo' Patterson, Elyne Mitchell and David Campbell.</i></p> <p><i>The proposed development would not have any impact on the life or works of people with importance to the AANP.</i></p>

(i) the place has outstanding heritage value to the nation because of the place's importance as part of Indigenous tradition.	<i>Not Applicable.</i>
---	------------------------

The above assessment has concluded that the proposed development will not have a significant impact on the values of the Australian Alps National Park and therefore referral and approval under the EPBC, Act 1999 is not required.

5.3.2 Listed threatened species and communities

An assessment of the impact of the proposed development in regards to the EPBC Act, 1999 Administrative Guidelines on Significance as set out in the 'Significant Impact Criteria' has been undertaken and provided in the BDAR provided in Appendix C.

The assessment has concluded that the proposed development is unlikely to have a significant impact on matters of National Environmental Significance or Commonwealth land, following consideration of the administrative guidelines for determining significance under the EPBC Act, 1999 and hence a referral to the Commonwealth Minister is not required.

6. CONCLUSION

The proposed upgraded snowmaking infrastructure will provide additional and improved snowmaking coverage to the Toppa's Dream Moguls Course, an FIS standard moguls course located adjacent to the Showboat ski run and Ridge Chairlift, within the Blue Cow ski area of the resort.

Improved snowmaking infrastructure that includes replacing manual hydrants is required to provide more reliable snow cover in marginal conditions, to allow for the moguls course to be able to be used earlier and longer into the season. The installation of automated hydrants will also improve operational safety for the snowmakers and remove above ground hoses which are operational hazards.

To minimise impacts on the environment, the new pipeline upgrade works have been located within partially disturbed areas with the use of a lateral proposed to further reduce impacts.

Where impacts on native vegetation are unavoidable, payment of offset credits will be made to the BCF.

Any associated impacts with the installation of the snowmaking infrastructure will be further minimised through the application of the measures identified in the Site Environmental Management Plan.

To ensure that all the environmental and associated legislation is complied with and fulfilled, the proposed development has been considered in regard to Section 4.15 of the Environmental Planning and Assessment Act, 1979, Biodiversity Conservation Act, 2016, Environment Protection and Biodiversity Conservation Act, 1999 and State Environmental Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007.

The proposal has been found to be consistent with the above legislation and relevant Environmental Planning Instrument, as detailed in this SEE.

On balance, the proposed development will generate positive social and economic impacts by providing improved snowmaking coverage for an FIS standard moguls course whilst minimising impacts on the natural and built environment.

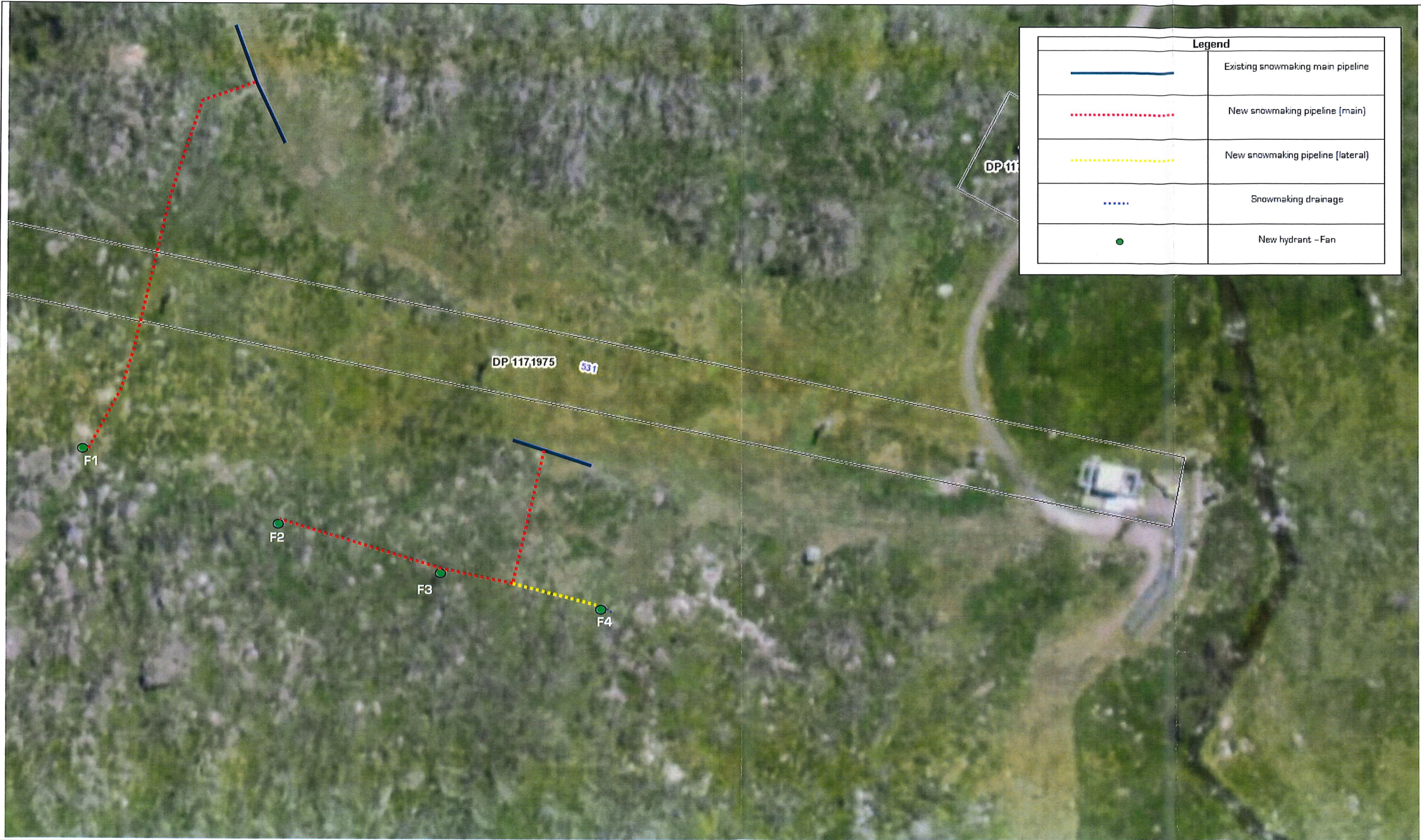
APPENDIX A

PLANS

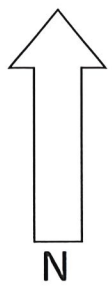


ATTACHMENT 1

Site Plan



Legend	
	Existing snowmaking main pipeline
	New snowmaking pipeline (main)
	New snowmaking pipeline (lateral)
	Snowmaking drainage
	New hydrant - Fan



Site Plan

Snowmaking - Toppas Dream, Ridge Chairlift, Perisher Ski Resort

1.6.18

Dwg 1/1



ATTACHMENT 2

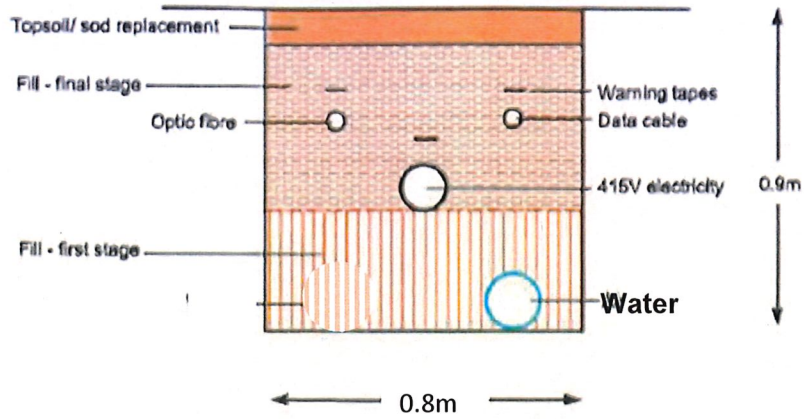
Snowmaking Infrastructure Plans

Trench Details

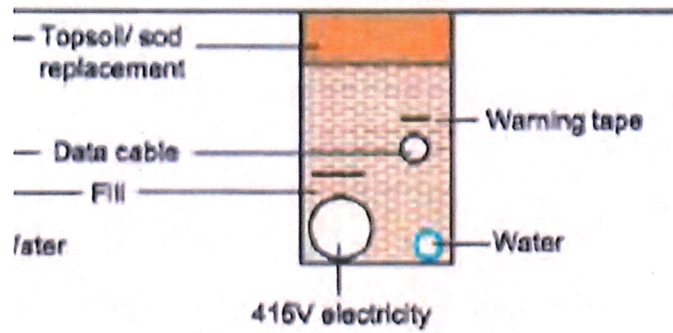
Provided by Perisher Ski Resort

Snowmaking Pipeline - Toppa's Dream, Perisher Ski Resort

(a) Main line trench



(b) Lateral trench



APPENDIX B

PHOTOGRAPHS



Figure 1: Snowmaking main to service hydrant F1 (looking north)



Figure 2: Hydrant F1 location

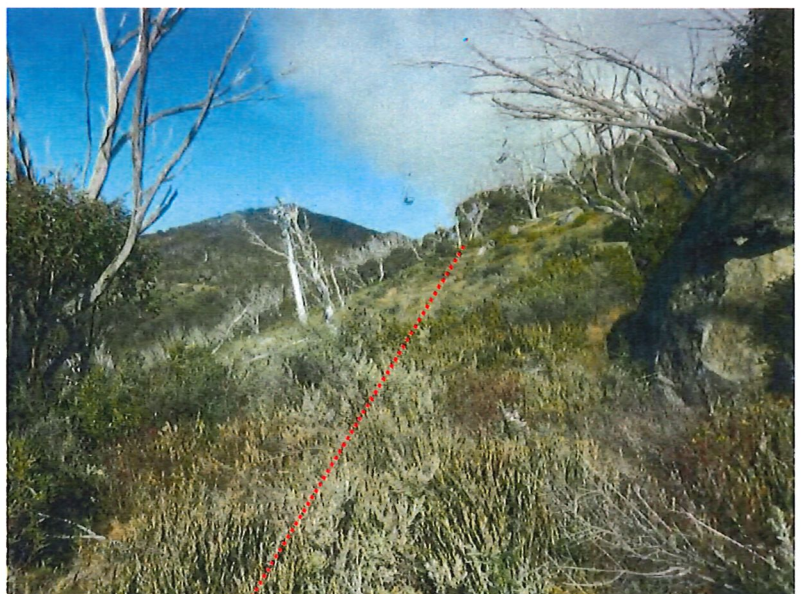


Figure 3: Snowmaking main to service hydrant F1 (looking south)

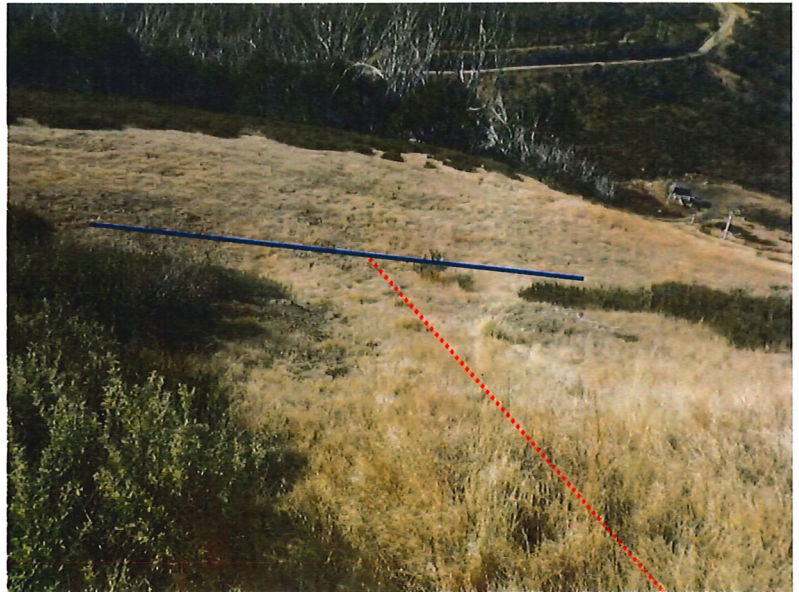


Figure 4: Snowmaking main to connect to existing main



Figure 5: Existing snowmaking main and hydrant pit



Figure 6: Snowmaking main to service hydrants F2-F4 (looking south)



Figure 7:
Snowmaking main
and lateral to service
hydrants F2-F4
(looking south)



Figure 8:
Snowmaking main to
service hydrants F2-
F4 (looking north)



Figure 9: Hydrant F3
location



Figure 10: Hydrant
F2 location



Figure 11: Hydrant
F4 location

APPENDIX C

BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT



Toppas Dream Snowmaking, Perisher Ski Resort
Biodiversity Development Assessment Report

Perisher Blue Pty Limited

DOCUMENT TRACKING

Item	Biodiversity Development Assessment Report
Project Name	Toppas Dream Snowmaking, Perisher Ski Resort
Project Number	18-HNG 10385
Date	16 August 2018
Project Manager	Ryan Smithers
Prepared by	Ryan Smithers
Reviewed by	Meredith Henderson
Approved by	Ryan Smithers
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Disclaimer

This document may only be used for the purpose for which it was commissioned and in accordance with the contract between Eco Logical Australia Pty Ltd and Perisher Blue Pty Ltd. The scope of services was defined in consultation with Perisher Blue Pty Ltd by time and budgetary constraints imposed by the client, and the availability of reports and other data on the subject area. Changes to available information, legislation and schedules are made on an ongoing basis and readers should obtain up to date information.

Template 29/9/2015

Executive Summary

Eco Logical Australia Pty Ltd (ELA) was engaged by Perisher Blue Pty Limited to prepare a Biodiversity Development Assessment Report (BDAR) for the proposed installation of snowmaking infrastructure on Toppas Dream ski run (the development site), beside Ridge Chairlift, at Perisher Ski Resort.

This report has been prepared to meet the requirements of the Biodiversity Assessment Method 2016 (BAM) established under Section 6.7 of the NSW *Biodiversity Conservation Act 2016* (BC Act).

The development site is approximately 0.2 ha in size. The proposed development has been located to take advantage of existing disturbed areas, and as such, the vast majority of the development site comprises partially degraded native vegetation which is recovering from historic disturbance.

The development site supports one Plant Community Type (PCT) PCT 645 *Alpine Snow Gum shrubby open woodland at high altitudes in Kosciuszko NP, Australian Alps Bioregion* in two condition states, degraded and good.

PCT 645 does not conform to any Endangered Ecological Communities (EEC) listed under the NSW BC Act or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Targeted surveys within the development site and immediate surrounds identified two threatened fauna species, the *Mastacomys fuscus* (Broad-toothed Rat) and *Petroica phoenicea* (Flame Robin), as occurring within the development site. The cryptic *Cyclodomorphus praealtus* (Alpine She-oak Skink) was assumed to be present in the more open and grassy habitats within the development site. A number of other threatened species are known to occur in adjoining habitats and/or have the potential to occur within the development site.

This BDAR outlines the measures taken to avoid, minimise and mitigate impacts to the vegetation and habitats present within the development site during the design, construction and operation of the development. The residual unavoidable impacts of the proposed development were calculated in accordance with the BAM by utilising the Biodiversity Assessment Method Credit Calculator (BAMC). The BAMC calculated that a total of three ecosystem credits and seven species credits are required to offset the unavoidable impacts to the vegetation and habitats present within the development site.

Serious and Irreversible Impact (SAIL) values have been considered as part of this assessment. The proposal will not result in any SAIL.

Following consideration of the administrative guidelines for determining significance under the EPBC Act, it is concluded that the proposal is unlikely to have a significant impact on matters of National Environmental Significance (MNES) or Commonwealth land, and a referral to the Commonwealth Environment Minister is therefore not required.

Contents

1. Stage 1: Biodiversity assessment	1
1.1 Introduction.....	1
1.1.1 General description of the development site	1
1.1.2 Development site footprint.....	1
1.1.3 Sources of information used	1
1.2 Legislative context	7
1.3 Landscape features.....	7
1.3.1 IBRA regions and subregions.....	7
1.3.2 Native vegetation extent.....	8
1.3.3 Rivers and streams	8
1.3.4 Wetlands	8
1.3.5 Connectivity features	8
1.3.6 Areas of geological significance and soil hazard features	8
1.3.7 Site context	8
1.4 Native vegetation	10
1.4.1 Survey effort.....	10
1.4.2 Plant Community Types present	10
1.4.3 Vegetation integrity assessment.....	16
1.4.4 Use of local data.....	16
1.5 Threatened species.....	16
1.5.1 Ecosystem credit species.....	16
1.6 Species credit species	17
1.6.1 Targeted surveys	17
1.6.2 Expert reports	18
2. Stage 2: Impact assessment (biodiversity values)	22
2.1 Avoiding impacts	22
2.1.1 Locating a project to avoid and minimise impacts on vegetation and habitat	22
2.1.2 Designing a project to avoid and minimise impacts on vegetation and habitat	23
2.1.3 Prescribed biodiversity impacts	24
2.2 Assessment of Impacts	27
2.2.1 Direct impacts	27
2.2.2 Change in vegetation integrity	28
2.2.3 Indirect impacts.....	28
2.2.4 Prescribed biodiversity impacts	28
2.2.5 Mitigating and managing impacts.....	31
2.2.6 Serious and Irreversible Impacts (SAIL).....	31
2.3 Risk Assessment.....	31
2.4 Adaptive management strategy	36
2.5 Impact summary.....	36
2.5.1 Serious and Irreversible Impacts (SAIL).....	36
2.5.2 Impacts requiring offsets	37

2.5.3 Impacts not requiring offsets	37
2.5.4 Areas not requiring assessment	37
2.5.5 Credit summary	37
2.6 Consistency with legislation and policy	40
3. Recommendations	40
4. Conclusion	40
5. Bibliography	41
Appendix A: Definitions	43
Appendix B: Vegetation plot data.....	46
Appendix C: EPBC Act Significant Impact Criteria	51
Appendix D: Fauna species detected during the survey period	56
Appendix E: Biodiversity credit report	57

List of Figures

Figure 1: Site Map	4
Figure 2: Location Map.....	5
Figure 3: Proposed development.....	6
Figure 4: Native Vegetation Extent	9
Figure 5: Plot locations.....	12
Figure 6: Plant Community Type	13
Figure 7: Vegetation Zones	14
Figure 8: Targeted surveys	20
Figure 9: Species polygons	21
Figure 10: Indirect impact zones.....	30
Figure 11: Impacts requiring and not requiring offset.....	39

List of Tables

Table 1: Legislative context.....	7
Table 2: IBRA regions	7
Table 3: IBRA subregions.....	7
Table 4: Native vegetation extent.....	8
Table 5: Rivers and streams	8
Table 6: Percent native vegetation cover in the landscape.....	8
Table 7: Patch size.....	10
Table 8: Full-floristic PCT identification plots.....	10
Table 9: Vegetation integrity plots.....	10
Table 10: Plant Community Types.....	10
Table 11: Threatened Ecological Communities.....	11
Table 12: PCT selection justification	11
Table 13: Vegetation integrity.....	16
Table 14: Predicted ecosystem credit species	16
Table 15: Candidate species credit species.....	17

Table 16: Targeted surveys	17
Table 17: Weather conditions	18
Table 18: Survey effort	18
Table 19: Species credit species included in the assessment	18
Table 20: Justification for exclusion of candidate species credit species	19
Table 21: Locating a project to avoid and minimise impacts on vegetation and habitat	22
Table 22: Designing a project to avoid and minimise impacts on vegetation and habitat	23
Table 23: Prescribed biodiversity impacts	24
Table 24: Locating a project to avoid and minimise prescribed biodiversity impacts	25
Table 25: Designing a project to avoid and minimise prescribed biodiversity impacts	26
Table 26: Direct impacts to native vegetation	27
Table 27: Direct impacts on threatened ecological communities	27
Table 28: Direct impacts on threatened species and threatened species habitat	27
Table 29: Change in vegetation integrity	28
Table 30: Direct impacts on prescribed biodiversity impacts	28
Table 31: Indirect impacts	29
Table 32: Likelihood criteria	31
Table 33: Measures proposed to mitigate and manage impacts	32
Table 34: Consequence criteria	35
Table 35: Risk matrix	35
Table 36: Risk assessment	36
Table 37: Impacts to native vegetation that require offsets	37
Table 38: Impacts on threatened species and threatened species habitat that require offsets	37
Table 39: Ecosystem credits required	37
Table 40: Species credit summary	38
Table 41: Species matrix (species recorded by plot)	47
Table 42: Plot location data	49
Table 43: Vegetation integrity data (Composition, Structure and function)	49
Table 44: Fauna species recorded within the development area or immediate surrounds	56

Abbreviations

Abbreviation	Description
BAM	Biodiversity Assessment Method
BAMC	Biodiversity Assessment Method Credit Calculator
BC Act	NSW Biodiversity Conservation Act 2016
BDAR	Biodiversity Development Assessment Report
CEEC	Critically Endangered Ecological Community
DNG	Derived Native Grassland
DoEE	Commonwealth Department of Environment and Energy
DPE	NSW Department of Planning and Environment
EEC	Endangered Ecological Community
ELA	Eco Logical Australia Pty Ltd
EP&A Act	NSW Environmental Planning and Assessment Act 1979
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
FM Act	NSW Fisheries Management Act 1994
GIS	Geographic Information System
GPS	Global Positioning System
IBRA	Interim Biogeographic Regionalisation for Australia
LGA	Local Government Area
NSW	New South Wales
NOW	NSW Office of Water
OEH	NSW Office of Environment and Heritage
PCT	Plant Community Type
SEPP	State Environmental Planning Policy
SSD	State Significant Development
SSI	State Significant Infrastructure
TEC	Threatened Ecological Community
VIS	Vegetation Information System
WM Act	NSW Water Management Act 2000

1. Stage 1: Biodiversity assessment

1.1 Introduction

This Biodiversity Development Assessment Report (BDAR) has been prepared by Ryan Smithers, who is an Accredited Person (BAAS17061) under the NSW *Biodiversity Conservation Act 2016* (BC Act).

1.1.1 General description of the development site

The proposed development is for the installation of snowmaking infrastructure on Toppas Dream ski run, beside Ridge Chairlift, at Perisher Ski Resort.

The proposed snowmaking infrastructure will connect into the existing main along Showboat ski run. The proposal also includes two sections of new snowmaking pipeline (mains and laterals), and four hydrants and fan guns. The majority of the native vegetation to be affected by the proposed development is shrubland derived from the clearing of subalpine woodland that was undertaken for the establishment of the Toppas Dream and Showboat ski runs.

The environmental impacts associated with the snowmaking installation have been avoided and mitigated primarily by locating the snowmaking infrastructure within the disturbed ski slopes, where the least impact on native vegetation can be achieved.

This report includes two base maps, the Site Map (Figure 1) and the Location Map (Figure 2).

1.1.2 Development site footprint

The proposed development is shown in Figure 3. The design of the proposed development has been informed by Perishers extensive experience undertaking similar developments within the resort area, and has incorporated a range of mitigation methods including:

- Welding the snowmaking main sections in the disturbed areas on the existing ski slopes to minimise disturbance during construction.
- Limiting stockpiling and material storage to the already disturbed areas on the existing ski slopes.

The effect of the proposal design and mitigation methods is such that vegetation disturbance will be limited to the 8 m wide corridor along the alignment of the proposed snowmaking pipeline (mains), and 4 m wide corridor along the alignment of the proposed snowmaking pipeline (laterals), as shown in Figure 3.

Any tree removal will be undertaken by hand with the cut timber removed from the site manually or left nearby where there will be no damage to surrounding vegetation.

The proposed development is further illustrated in Photos 1-4.

1.1.3 Sources of information used

The following data sources were reviewed as part of this report:

- Ecology Australia (2002)
- McDougall and Walsh (2007)
- Additional GIS datasets including cadastre, contours, imagery and drainage.



Photo 1: The new snowmaking main to the proposed Fan Gun 1 will entirely traverse areas that have been disturbed in association with historic slope grooming and other developments.



Photo 2: The existing snowmaking main is located within that part of the Showboat ski run that is dominated by exotic grasses.



Photo 3: The new snowmaking main to the proposed Fan Gun 1 will affect some clumps of small rocks that are the result of historic slope grooming activities.



Photo 4: The new snowmaking main and lateral to the proposed Fan Gun s 2-4, also traverses shrubland derived from the clearing of the adjoining snow gum woodland. A small area on the margins of the less disturbed woodland including a few trees will be affected.

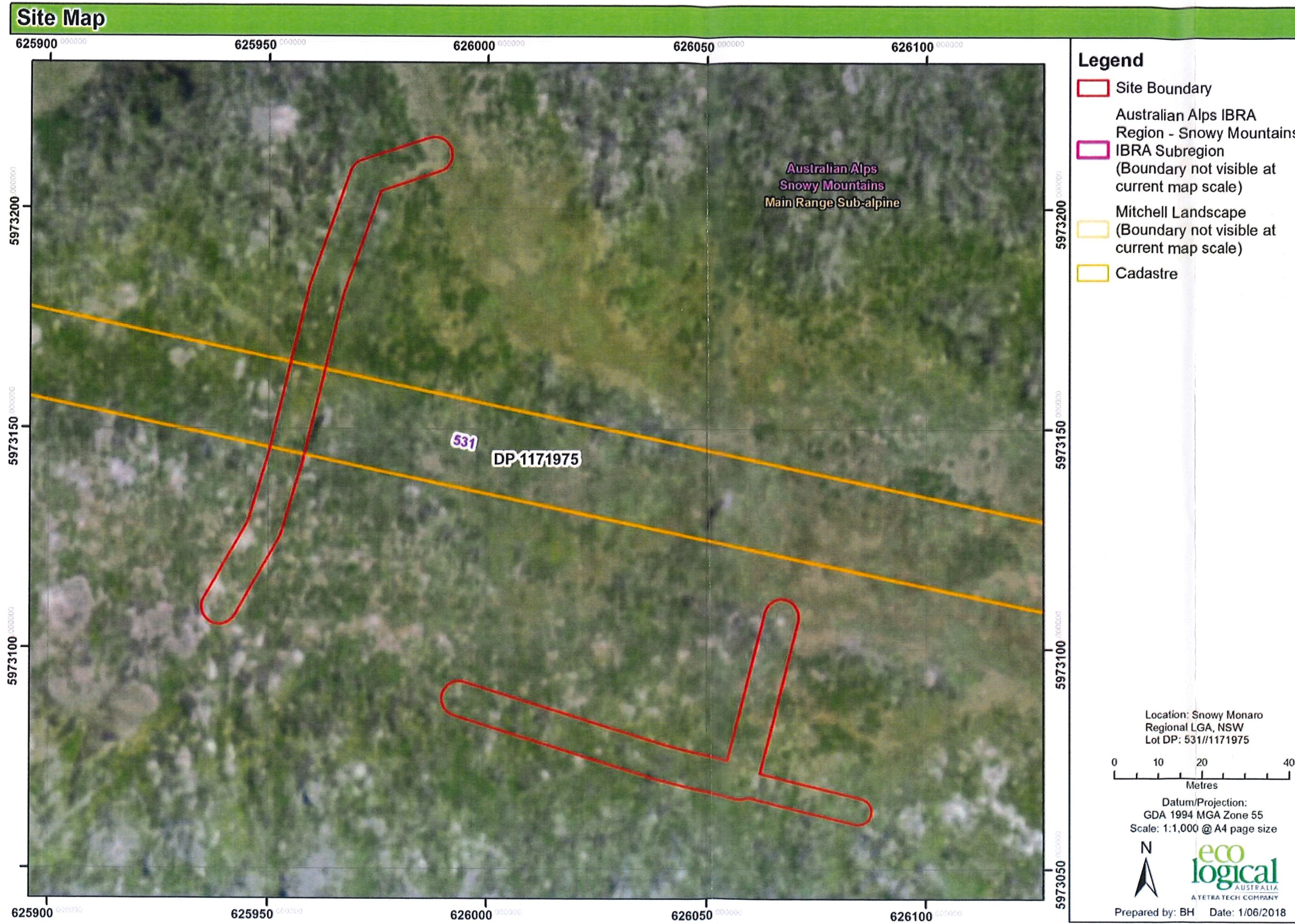


Figure 1: Site Map

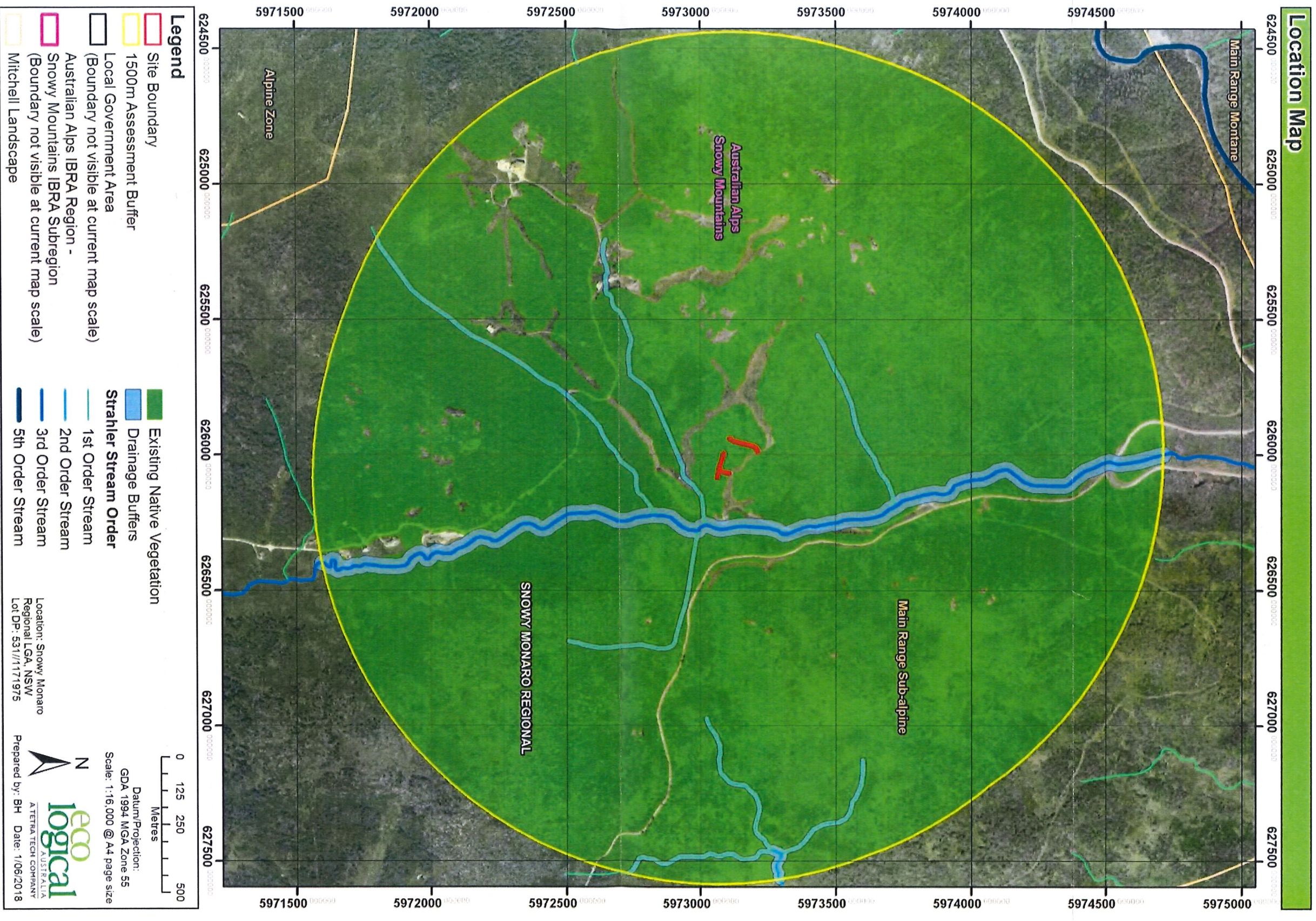


Figure 2: Location Map

Development Proposal

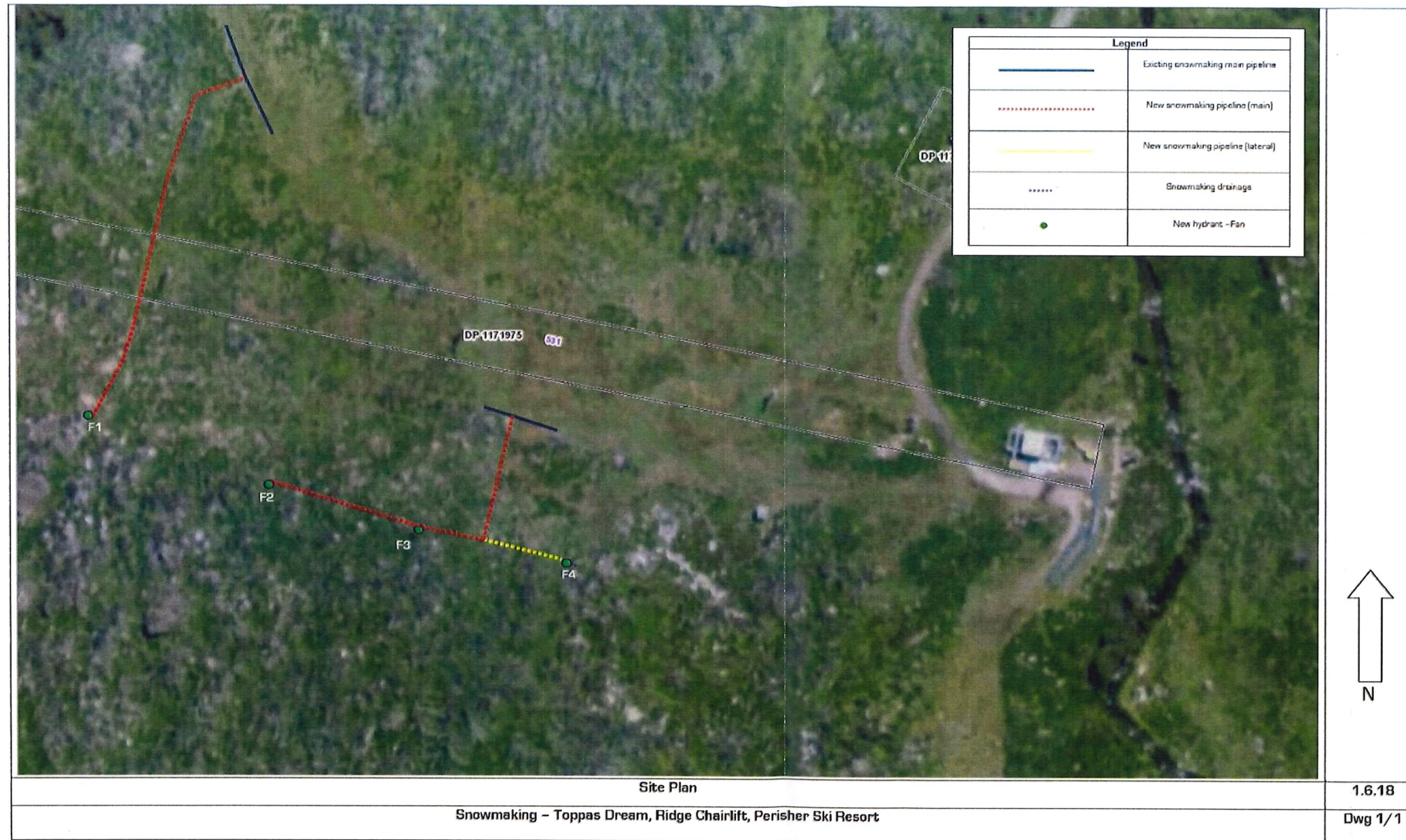


Figure 3: Proposed development

1.2 Legislative context

Table 1: Legislative context

Name	Relevance to the project	Report Section
Commonwealth		
<i>Environment Protection and Biodiversity Conservation Act 1999</i>	Matters of national Environmental Significance (MNES) have been identified on or near the development site. This report assesses impacts to MNES and concludes that the development is unlikely to have a significant impact on MNES. An assessment of the proposal against relevant significant impact criteria is provided in Appendix C.	App C
State		
<i>Environmental Planning and Assessment Act 1979</i>	The proposed development requires consent and is to be assessed under Part 4 of the EP&A Act. The EPA Act places a duty on the determining authority to adequately address a range of environmental matters including the maintenance of biodiversity and the likely impact to threatened species, populations and communities.	1 and 2
<i>Biodiversity Conservation Act 2016</i>	The proposed development involves clearing of vegetation identified as high conservation value on the Biodiversity Values Land Map and thus requires submission of a Biodiversity Development Assessment Report.	1 and 2
Planning Instruments		
SEPP Alpine Resorts - Kosciuszko National Park—Alpine Resorts	State Environmental Planning Policy (Kosciuszko National Park—Alpine Resorts) 2007 identified the Minister for Planning as the determining authority for development within the NSW Alpine Resorts. SEPP 73 requires the Minister for Planning to refer for comment any development application in the Alpine Resorts to the Director General of the NSW Office of Environment and Heritage (OEH).	1 and 2
Snowy River Shire Local Environment Plan 2013	The subject site is zoned E1 National Parks and Nature Reserves under the Snowy River Shire Local Environment Plan 2013.	-

1.3 Landscape features

1.3.1 IBRA regions and subregions

The development site falls within the IBRA region and subregions as outlined in Table 2 and Table 3.

Table 2: IBRA regions

IBRA region	Area within development site (ha)
Australian Alps	0.2

Table 3: IBRA subregions

IBRA subregion	Area within development site (ha)
Snowy Mountains	0.2

1.3.2 Native vegetation extent

The extent of native vegetation within the development site and buffer is outlined in Table 4 and Figure 4.

Table 4: Native vegetation extent

Area within the development site (ha)	Area within the 1,500 m buffer area (ha)	Area within the 500 m buffer (ha)
0.2	738	NA

There are no differences between the mapped vegetation extent and the aerial imagery.

1.3.3 Rivers and streams

The development site is near to an unnamed 1st order tributary of Perisher Creek as outlined in Table 5. However, the proposal will not directly impact on this watercourse or its riparian buffer.

Table 5: Rivers and streams

River/stream	Order	Riparian buffer
Perisher Creek tributary	1	10 m

1.3.4 Wetlands

The development site does not contain any local wetlands, SEPP14 wetlands or any other Important Wetlands.

1.3.5 Connectivity features

The development site does not contain any connectivity features that may be affected consistent with section 9.2.1.6 of BAM.

1.3.6 Areas of geological significance and soil hazard features

The development site does not contain areas of geological significance or soil hazard features.

1.3.7 Site context

1.3.7.1 Method applied

The site-based method has been applied to this development.

1.3.7.2 Percent native vegetation cover in the landscape

The current percent native vegetation cover in the landscape was assessed in a Geographic Information System (GIS) using aerial imagery sourced from SIX Maps and the mapping of Ecology Australia (2002). The results of this analysis are shown in Table 6.

Table 6: Percent native vegetation cover in the landscape

Area within the development site (ha)	Cover within the 1,500 m buffer area (%)	Cover within the 500 m buffer (%)
0.2	95	NA

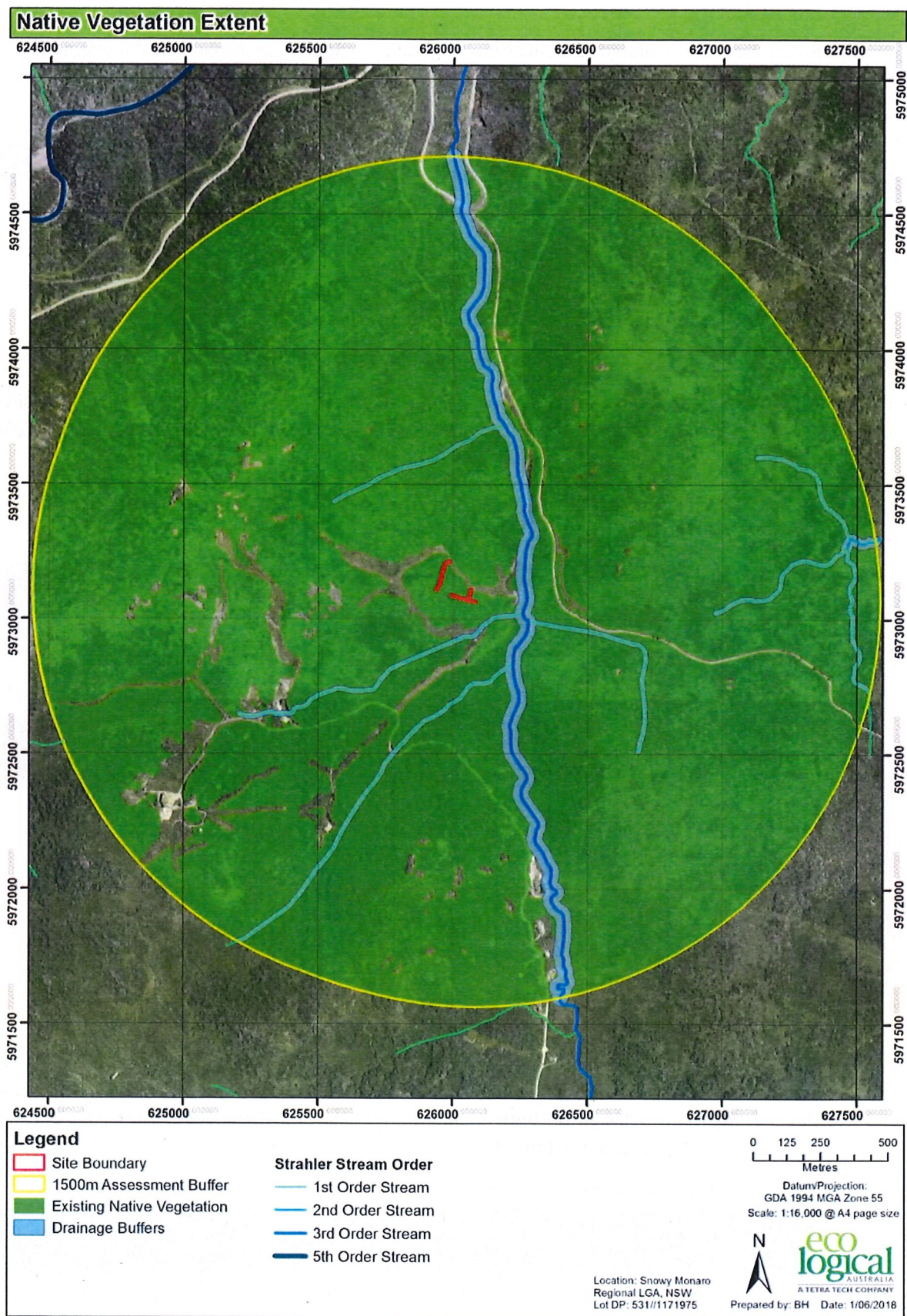


Figure 4: Native Vegetation Extent

1.3.7.3 Patch size

Patch size was calculated using available vegetation mapping for all patches of intact native vegetation on and adjoining the development site (Table 7).

Table 7: Patch size

Patch	Patch size area (ha)
1	>101

1.4 Native vegetation

1.4.1 Survey effort

A vegetation survey was undertaken within the development site by Ryan Smithers on 21 May 2018.

A total of two full-floristic vegetation plots were surveyed to identify PCTs and TECs on the development site (Table 8, Figure 5). A total of two vegetation integrity plots were undertaken on the development site in accordance with the BAM (Table 9).

All field data collected at full-floristic and vegetation integrity plots is included in Appendix B.

Table 8: Full-floristic PCT identification plots

PCT ID	PCT Name	Number of plots surveyed
645	Alpine Snow Gum shrubby open woodland at high altitudes in Kosciuszko NP, Australian Alps Bioregion	2

Table 9: Vegetation integrity plots

Veg Zone	PCT ID	PCT Name	Condition	Area (ha)	Plots required	Plots surveyed
1	645	Alpine Snow Gum shrubby open woodland at high altitudes in Kosciuszko NP, Australian Alps Bioregion	Derived shrubland	0.14	1	1
2	645	Alpine Snow Gum shrubby open woodland at high altitudes in Kosciuszko NP, Australian Alps Bioregion	Good	0.06	1	1

1.4.2 Plant Community Types present

One PCT was identified within or immediately adjacent to the development site (Table 10, Figure 6). in two condition states, as shown in Figure 7. Justification for the selection of the PCT occurring on the development site is based on both a quantitative analysis of the full-floristic plot data and expert judgement and is provided in Table 12.

Table 10: Plant Community Types

PCT ID	PCT Name	Vegetation Class	Vegetation Formation	Area	Percent cleared
645	Alpine Snow Gum shrubby open woodland at high altitudes in Kosciuszko NP, Australian Alps Bioregion	Grassy Woodlands	Subalpine Woodlands	0.2	5

Table 11: Threatened Ecological Communities

PCT ID	BC Act			EPBC Act		
	Listing status	Name	Area (ha)	Listing status	Name	Area (ha)
645	Not listed	Not listed	0.2	Not listed	Not listed	0.2

Table 12: PCT selection justification

PCT ID	PCT Name	Selection criteria	Species relied upon for identification of vegetation type and relative abundance
645	Alpine Snow Gum shrubby open woodland at high altitudes in Kosciuszko NP, Australian Alps Bioregion	IBRA region, landform, soils vegetation formation, vegetation class and quantitative analysis	<i>Eucalyptus niphophila</i> , <i>Hovea montana</i> , <i>Olearia phlogopappa</i> , <i>Oxylobium ellipticum</i> , <i>Ozothamnus secundiflorus</i> , <i>Pimelea ligustrina</i> , <i>Poa fawcettiae</i> , <i>Poa ensiformis</i> , <i>Tasmannia xerophila</i> subsp. <i>xerophila</i> .

In determining the PCT for the development site, various attributes were considered in combination to assign vegetation to the best fit PCT. Attributes included dominant species in each stratum, community composition, soils and landscape position. Plot data was analysed in a quantitative analysis tool developed by ELA using the characteristic species present in each structural layer for all PCTs in the region sourced from the Bionet Vegetation Information System (VIS). This quantitative analysis was used to assist in determining PCTs that may be present. The tool uses positive characteristic species of PCTs and matches them to the flora species collected in plots. The tool then provides a total number of characteristic species present in the canopy, mid-storey and ground-layer and matches those communities that fit most strongly with the PCTs available. The higher the number of characteristic species the greater the fit for that community. It can be the case that a community matches strongly floristically with a PCT, however does not match well with other characteristics such as structure, landscape position or region. Therefore, this tool assists in the decision-making process, but is not the sole determining factor. Rather the tool assists expert judgement.

ELA considered the vegetation within the development site to comprise the PCT *Alpine Snow Gum shrubby open woodland at high altitudes in Kosciuszko NP, Australian Alps Bioregion* (Photo 5 and Photo 6). A quantitative analysis of the plot data obtained from the development site identified a best fit (the highest match of characteristic species) for both PCT 645 and PCT 643. However, the vegetation within the development site better matched the vegetation structure, landforms, vegetation formation, and vegetation class, of PCT 645.

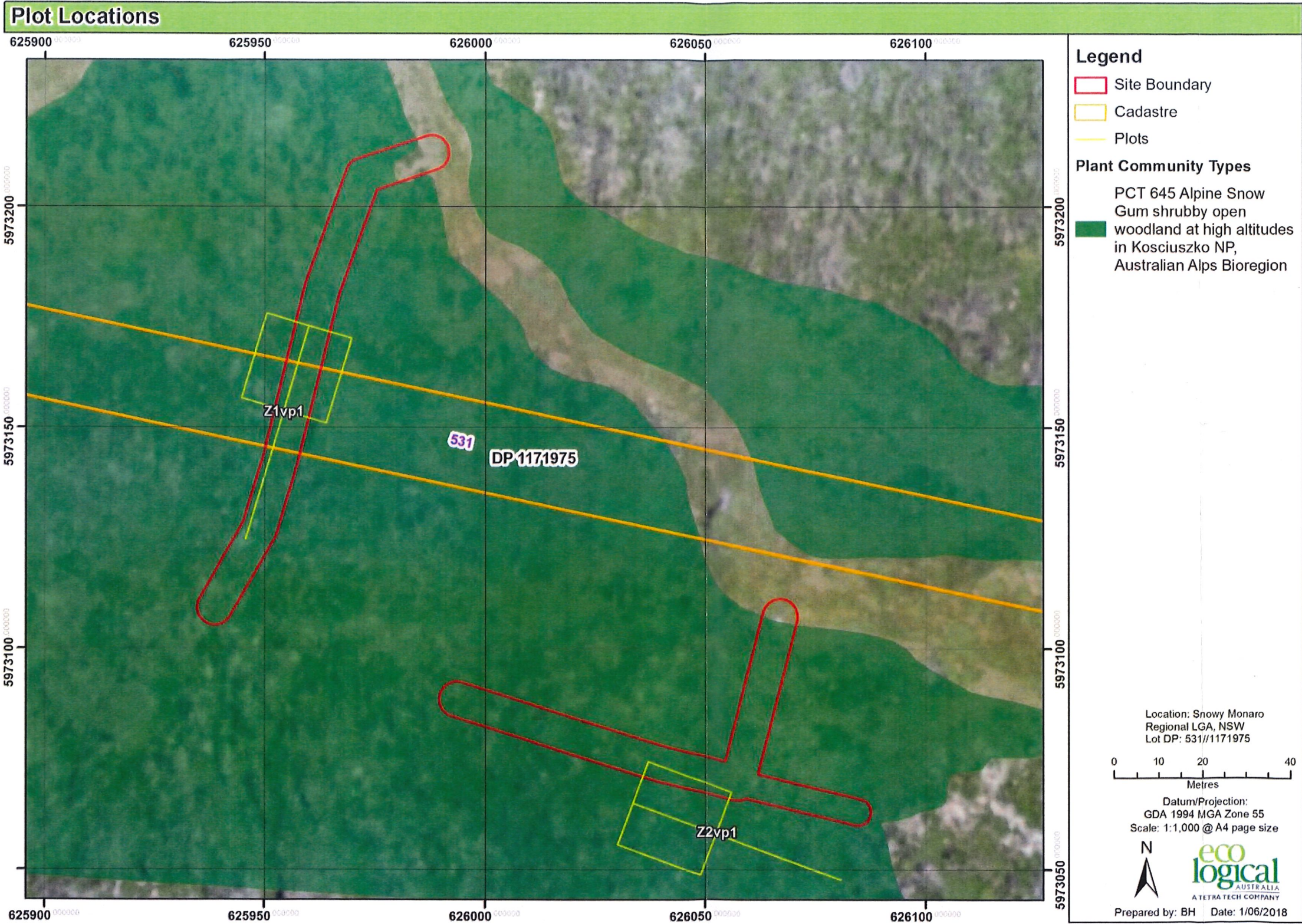


Figure 5: Plot locations

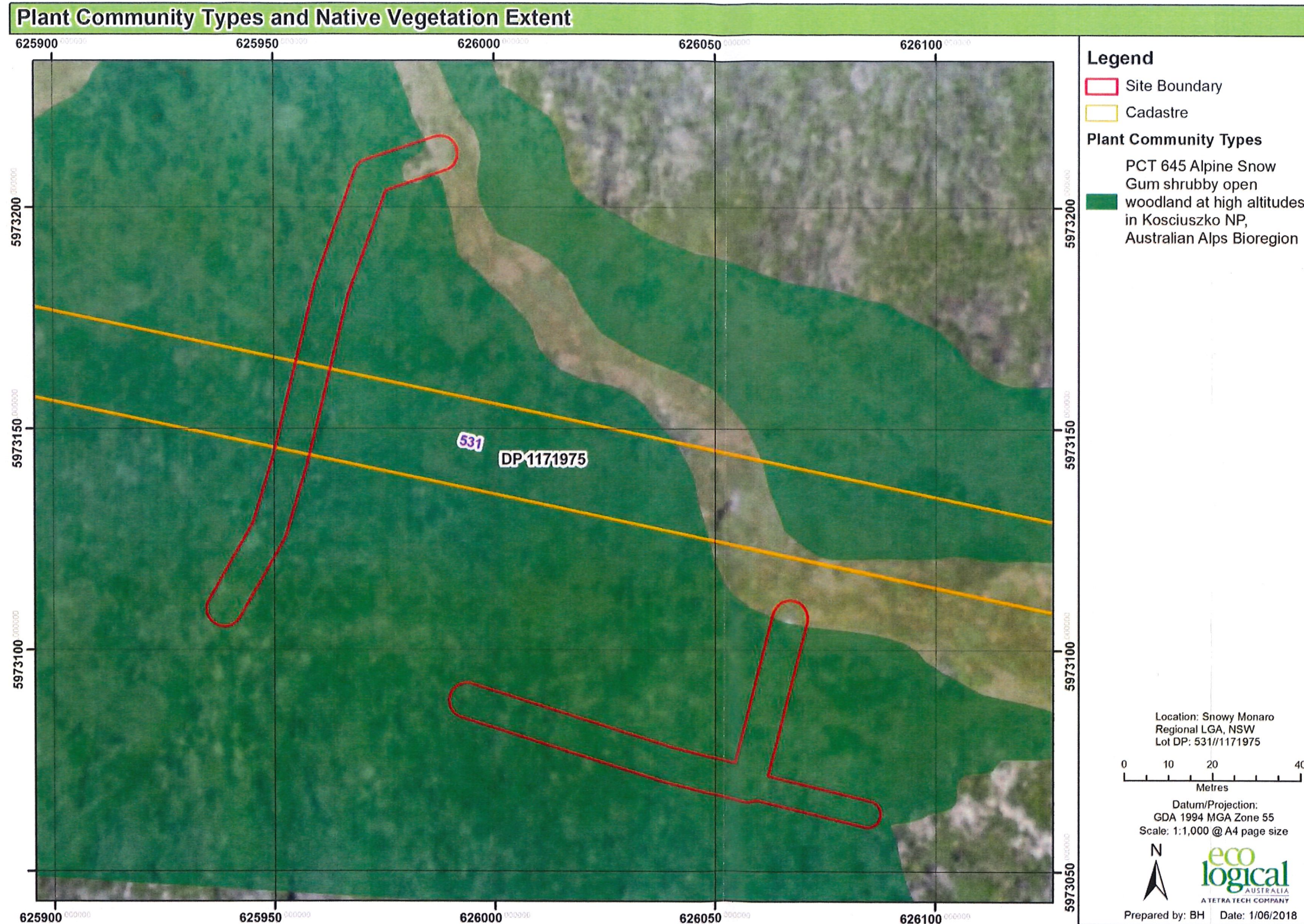


Figure 6: Plant Community Type

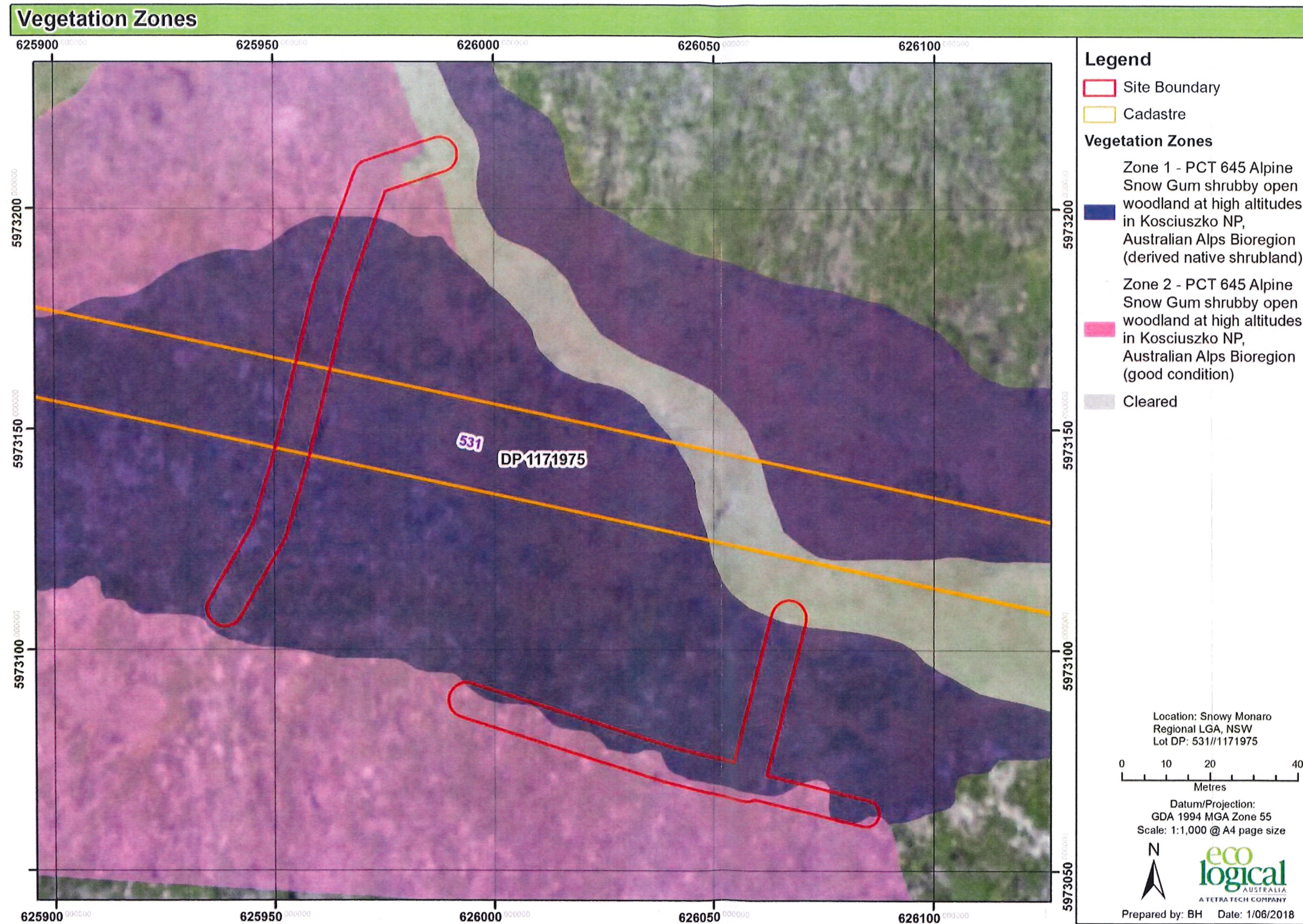


Figure 7: Vegetation Zones



Photo 5: Shrubland derived from PCT 645 Alpine Snow Gum shrubby open woodland at high altitudes in Kosciuszko NP, Australian Alps Bioregion dominates the development site (Zone 1).



Photo 6: Good condition PCT 645 occurs on the margins of the development site (Zone 2) and dominates the surrounding areas.

1.4.3 Vegetation integrity assessment

A vegetation integrity assessment using the Credit Calculator (BAMC) was undertaken and the results are outlined in Table 13.

Table 13: Vegetation integrity

Veg Zone	PCT ID	Condition	Area (ha)	Composition Condition Score	Structure Condition Score	Function Condition Score	Current vegetation integrity score
1	645	Degraded	0.14	70.1	36	33.4	43.9
2	645	Good	0.06	39.4	66	47.7	49.9

1.4.4 Use of local data

Use of local data instead of benchmark integrity scores is not proposed.

1.5 Threatened species

1.5.1 Ecosystem credit species

Ecosystem credit species predicted to occur at the development site, their associated habitat constraints, geographic limitations and sensitivity to gain class is included in Table 14.

Table 14: Predicted ecosystem credit species

Common Name	Species	Habitat Constraints	Geographic limitations	Sensitivity to gain class	NSW listing status	EPBC Listing status
Dusky Woodswallow	<i>Artamus cyanopterus cyanopterus</i>	-	-	Moderate	Vulnerable	Not Listed
Gang-gang Cockatoo	<i>Callocephalon fimbriatum</i>	-	-	Moderate	Vulnerable	Not Listed
Varied Sittella	<i>Daphoenositta chrysoptera</i>	-	-	Moderate	Vulnerable	Not Listed
Eastern False Pipistrelle	<i>Falsistrellus tasmaniensis</i>	-	-	High	Vulnerable	Not Listed
Little Eagle	<i>Hieraetus morphnoides</i>	-	-	Moderate	Vulnerable	Not Listed
Scarlet Robin	<i>Petroica boodang</i>	-	-	Moderate	Vulnerable	Not Listed
Flame Robin	<i>Petroica phoenicea</i>	-	-	Moderate	Vulnerable	Not Listed

No ecosystem credit species have been excluded from the assessment.

1.6 Species credit species

Species credit species predicted to occur at the development site (i.e. candidate species), their associated habitat constraints, geographic limitations and sensitivity to gain class is included in Table 15.

Table 15: Candidate species credit species

Common Name	Species	Habitat Constraints	Geographic limitations	Sensitivity to gain class	NSW listing status	EPBC Listing status
Mountain Pygmy-possum	<i>Burramys parvus</i>	-	sth - nth range between Dead Horse Gap and Mt Jugungle	High	Endangered	Endangered
Gang-gang Cockatoo (breeding)	<i>Callocephalon fimbriatum</i>	-	-	High	Vulnerable	Not Listed
Alpine She-oak Skink	<i>Cyclodomorphus praealtus</i>	-	-	High	Endangered	Endangered
Little Eagle (Breeding)	<i>Hieraaetus morphnoides</i>	-	-	Moderate	Vulnerable	Not Listed
Guthega Skink	<i>Liopholis guthega</i>	Granite substrate and decomposing granite soils Rocky areas including sub-surface boulders	-	High	Endangered	Endangered
Alpine Tree Frog	<i>Litoria verreauxii alpina</i>	-	above 1000 m asl	High	Endangered	Vulnerable
Broad-toothed Rat	<i>Mastacomys fuscus</i>	-	-	High	Vulnerable	Vulnerable
Southern Corroboree Frog	<i>Pseudophryne corroboree</i>	NA/Swamps Within 200m of high montane and sub-alpine bog or ephemeral pool environments	above 1000 m asl	Very High	Critically Endangered	Critically Endangered

1.6.1 Targeted surveys

Targeted surveys for species credit species were undertaken at the development site on the dates outlined in Table . The locations of the targeted surveys are shown on Figure 8, with the results of the surveys shown as individual species polygons on Figure 9. Fauna species identified within the development site or immediate surrounds are identified in Appendix D.

Table 16: Targeted surveys

Date	Surveyors	Target species
22 May 2018	Ryan Smithers	Broad-toothed Rat, Little Eagle (Breeding), Gang-gang Cockatoo (breeding)

Weather conditions during the targeted surveys are outlined in Table 17.

Table 17: Weather conditions

Date	Rainfall (mm)	Minimum temperature 0C	Maximum temperature 0C
22 May 2018	0	10	11

Survey effort undertaken at the development is outlined in Table 18.

Table 18: Survey effort

Method	Habitat (ha)	Stratification units	Total effort	Target species
Targeted flora surveys	0.2	-	2 person hours	Anemone Buttercup, Leafy Anchor Plant
Targeted surveys for raptor nests, hollow-bearing trees and Broad-toothed Rat scats	0.2	Suitable habitats within and immediately surrounding the site	1 person hour	Broad-toothed Rat, Little Eagle and Gang-gang Cockatoo

The targeted surveys resulted in the detection of one species credit species, the Broad-toothed Rat. The characteristic scats of the Broad-toothed Rat were scattered throughout Zone 1 and to a lesser extent Zone 2, in low densities around rocks. Whilst the Alpine She-oak Skink was not detected within the development site, it has been assumed to be present in Zone 1 given the open nature of the shrubland, and the reasonable abundance of tussock grasses. This species is very difficult to survey for given its highly cryptic nature. Whilst it is assumed that the Alpine She-oak Skink could occur within development site from time to time, Alpine She-oak Skink individuals would not be restricted to the development site, nor considered likely to be adversely affected by the proposed development.

The nearest records of the Guthega Skink are 1.5 km to the south, just to the south of Blue Calf Pass. The species has not been recorded in the Blue Cow area despite targeted surveys by ELA in 2015 (ELA 2015). It is considered unlikely that the species would occur within the development site, given the marginal nature of the habitats there, particularly the typically dense shrub cover and general absence of the species preferred rock habitats. Targeted surveys for the species could not be undertaken during the survey period as weather conditions were too cold to confidently survey for the species. It is proposed to undertake targeted surveys for the species in October or November 2018.

Targeted surveys were not undertaken for the Mountain Pygmy-possum, Alpine Tree Frog, or Southern Corroboree Frog given the absence of important or suitable habitats for these species. Justification for the exclusion of candidate species credit species is identified in Table 20. Following completion of targeted surveys, the species credit species included in the assessment are outlined in Table 19.

Table 19: Species credit species included in the assessment

Common Name	Species	Species presence	Geographic limitations	Habitat (ha)	Biodiversity Risk Weighting
Alpine She-oak Skink	<i>Cyclodomorphus praealtus</i>	Assumed	-	0.14	2
Broad-toothed Rat	<i>Mastacomys fuscus</i>	Yes	-	0.2	2

1.6.2 Expert reports

Expert reports have not been used for this assessment.

Table 20- Justification for exclusion of candidate species credit species

Common Name	Species	NSW listing status	EPBC Listing status	Justification for exclusion of species
Mountain Pygmy-possum	<i>Burramys parvus</i>	Endangered	Endangered	The nearest core habitats for the species are at Blue Cow Mountain. Given the absence of preferred sheltering or foraging habitat within the development site of immediate surrounds it is considered highly unlikely that the species would occur there.
Gang-gang Cockatoo (breeding)	<i>Callocephalon fimbriatum</i>	Vulnerable	Not Listed	No hollow-bearing trees suitable for breeding were detected within the development site or immediate surrounds despite targeted surveys.
Little Eagle (Breeding)	<i>Hieraetus morphnoides</i>	Vulnerable	Not Listed	No raptor nests were detected within the development site or immediate surrounds despite targeted surveys.
Guthega Skink	<i>Liopholis guthega</i>	Endangered	Endangered	The nearest records of the Guthega Skink are 1.5 km to the south, just to the south of Blue Calf Pass. It is considered unlikely that the species would occur within development site, given the marginal nature of the habitats there. Targeted surveys could not be undertaken during the survey period, which was in late May, when weather conditions were too cold to confidently survey for the species. It is proposed to undertake targeted surveys for the species in October or November 2018.
Alpine Tree Frog	<i>Litoria verreauxii alpina</i>	Endangered	Vulnerable	The species has disappeared from much of its former range in the last 20 years and is restricted to a few breeding sites in murky ponds. There is no suitable breeding habitat for the species within the study area and it is highly unlikely that it would occur there.
Southern Corroboree Frog	<i>Pseudophryne corroboree</i>	Critically Endangered	Critically Endangered	The Southern Corroboree Frog is limited to sphagnum bogs of the northern Snowy Mountains, in a strip from the Maragle Range in the northwest, through Mt Jagungal to Smiggin Holes in the south. Its range is entirely within Kosciuszko National Park. This species is all but extinct in the wild. It is no longer present at its former southern limit at Smiggin Holes. It is considered highly unlikely that it would occur within the development site.

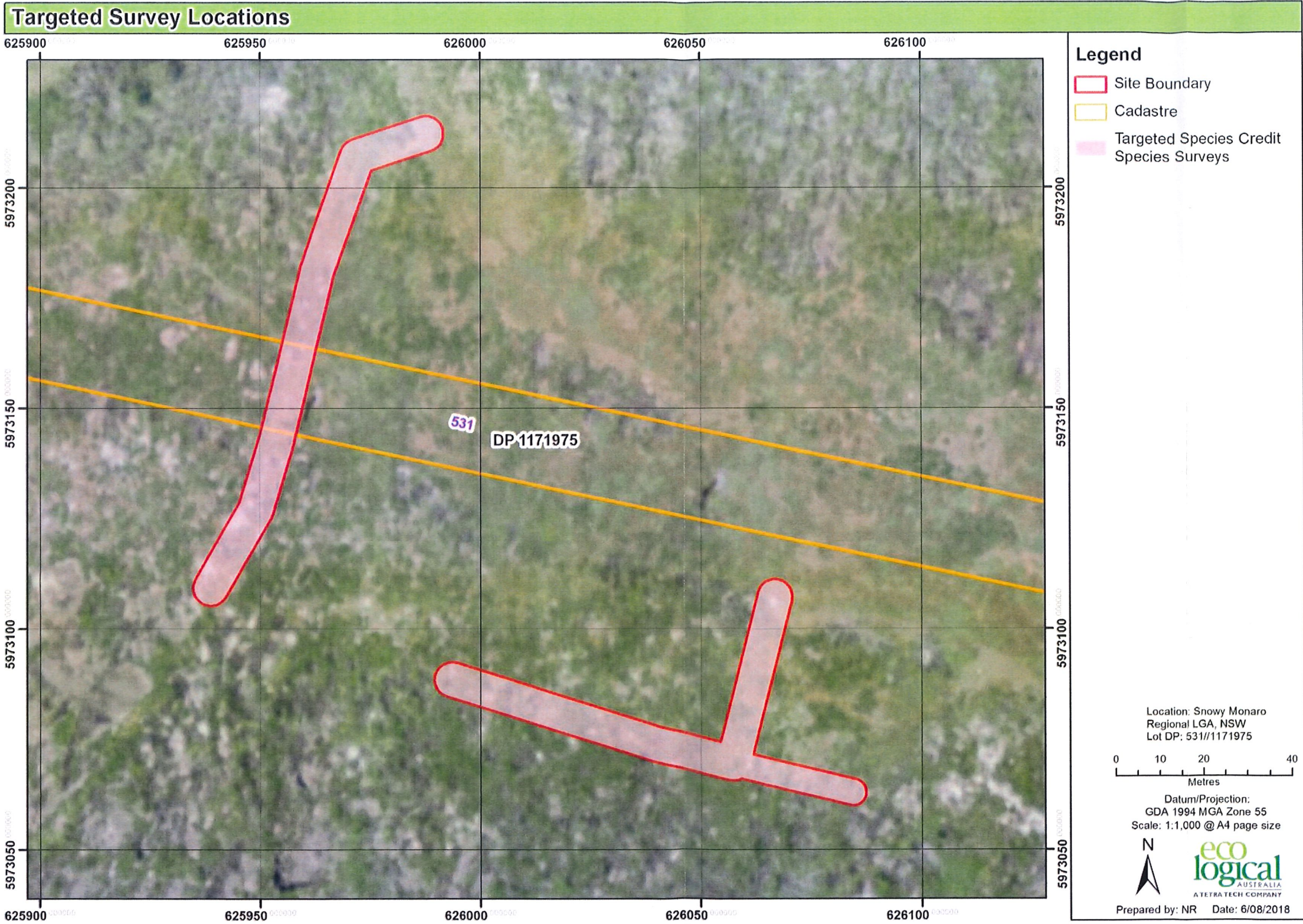


Figure 8: Targeted surveys

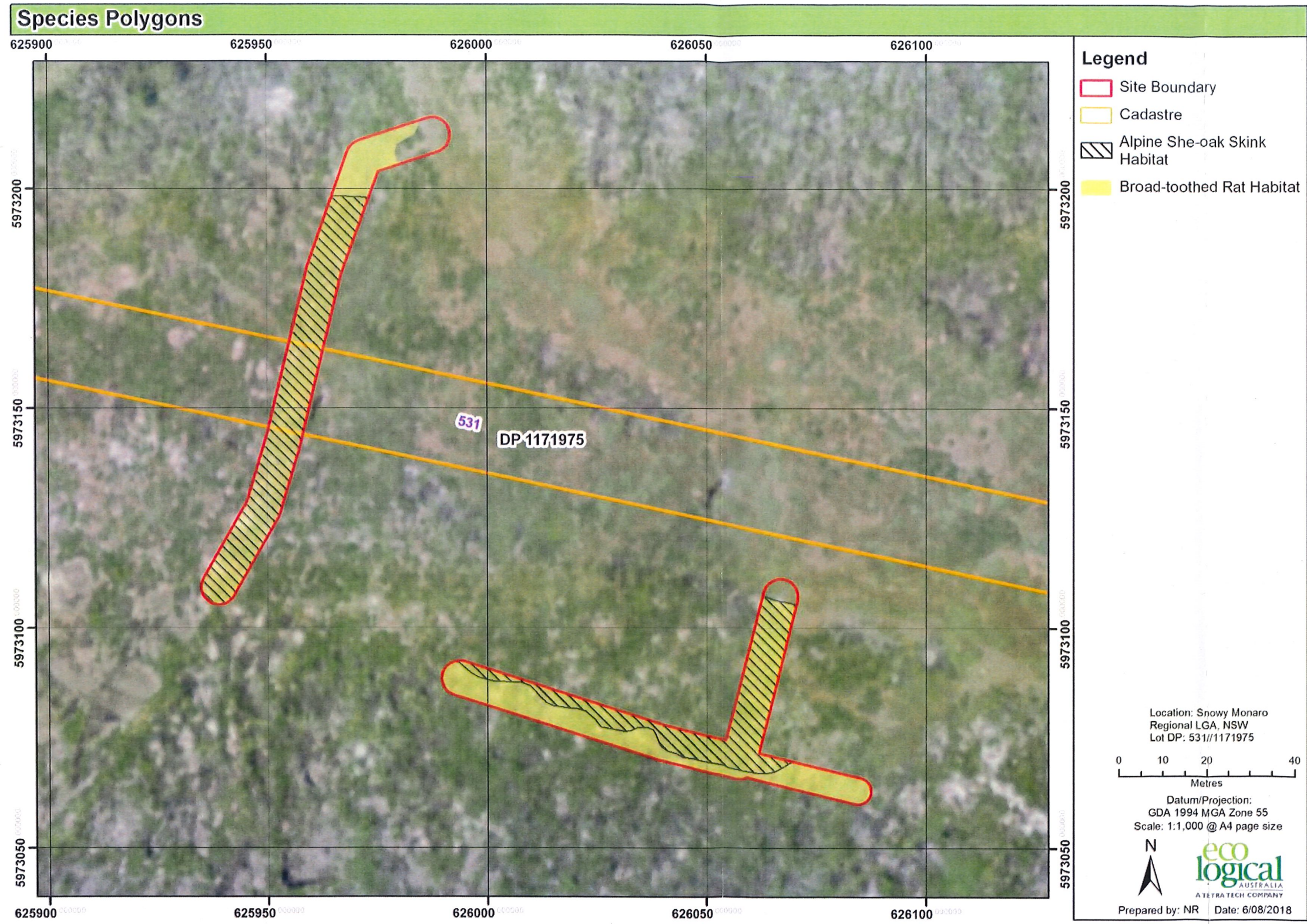


Figure 9: Species polygons

2. Stage 2: Impact assessment (biodiversity values)

2.1 Avoiding impacts

2.1.1 Locating a project to avoid and minimise impacts on vegetation and habitat

The development has been located in a way which avoids and minimises impacts as outlined in Table 21.

Table 21: Locating a project to avoid and minimise impacts on vegetation and habitat

Approach	How addressed	Justification
locating the project in areas where there are no biodiversity values	Not possible.	It is not possible to locate the proposal in an area where there is no biodiversity value.
locating the project in areas where the native vegetation or threatened species habitat is in the poorest condition	The proposal has been located to take advantage of existing disturbances associated with the existing ski slopes.	The proposal has made use of existing disturbed areas as far as is possible. Alternative alignments/footprints would result in more disturbance.
locating the project in areas that avoid habitat for species and vegetation in high threat categories (e.g. an EEC or CEEC), indicated by the biodiversity risk weighting for a species	The proposal has been located as far as is possible to avoid and minimise impacts to threatened species habitats. The proposal will utilise construction techniques such that the disturbance footprint will be limited to a maximum of 8 m in width. Post construction rehabilitation will promote the recovery of the affected area post disturbance.	The area to be affected has been subject to similar impacts historically and has recovered well without the impact minimisation and rehabilitation strategies that have been incorporated into the proposal.
locating the project such that connectivity enabling movement of species and genetic material between areas of adjacent or nearby habitat is maintained	Minimising the width of the disturbance footprint and post construction rehabilitation.	The proposal will only result in a disturbance footprint of up to 8 m wide, which will be rehabilitated post construction and is not expected to adversely impact on connectivity for any fauna species.

2.1.2 Designing a project to avoid and minimise impacts on vegetation and habitat

The development has been designed in a way which avoids and minimises impacts as outlined in Table 22.

Table 22: Designing a project to avoid and minimise impacts on vegetation and habitat

Approach	How addressed	Justification
reducing the clearing footprint of the project	The proposal will utilise construction techniques such that the disturbance footprint will be limited to a maximum of 8 m in width.	The techniques have been developed by Perisher in conjunction with OEH and DPE over many years to minimise impacts associated with snowmaking infrastructure.
locating ancillary facilities in areas where there are no biodiversity values	Construction equipment will be located in the disturbed areas associated with the existing ski slopes.	This approach will minimise the disturbance footprint.
locating ancillary facilities in areas where the native vegetation or threatened species habitat is in the poorest condition (i.e. areas that have a lower vegetation integrity score)	Construction equipment will be located in the disturbed areas associated with the existing ski slopes.	This approach will minimise the disturbance footprint.
locating ancillary facilities in areas that avoid habitat for species and vegetation in high threat status categories (e.g. an EEC or CEEC)	Construction equipment will be located in the disturbed areas associated with the existing ski slopes. No high threat status vegetation would be affected.	This approach will minimise the disturbance footprint.
providing structures to enable species and genetic material to move across barriers or hostile gaps	Minimising the width of the disturbance footprint and post construction rehabilitation.	The proposal will only result in a disturbance footprint of up to 8 m wide, which will be rehabilitated post construction and is not expected to adversely impact on connectivity for any fauna species.
making provision for the demarcation, ecological restoration, rehabilitation and/or ongoing maintenance of retained native vegetation habitat on the development site.	The proposal will utilise construction techniques such that the disturbance footprint will be limited to a maximum of 8 m in width. Post construction rehabilitation will promote the recovery of the affected area post disturbance.	The impact minimisation and rehabilitation techniques to be used have been developed by Perisher in conjunction with OEH and DPE over many years. The rehabilitation will be consistent with the rehabilitation guidelines for Kosciuszko National Park (KNP).
Efforts to avoid and minimise impacts through design must be documented and justified	The efforts to avoid and minimise impacts have been documented in Section 1.1.2 and 2.1 of this report.	

2.1.3 Prescribed biodiversity impacts

The proposed development will have minor prescribed biodiversity impacts as outlined in Table 23.

Table 23: Prescribed biodiversity impacts

Prescribed biodiversity impact	Description in relation to the development site	Threatened species or ecological communities effected
<p>impacts of development on the habitat of threatened species or ecological communities associated with:</p> <ul style="list-style-type: none"> • karst, caves, crevices, cliffs and other geological features of significance, or • rocks, or • human made structures, or • non-native vegetation 	<p>The proposal will result in the removal or further disturbance to some small rocks (see Photo 3), that have already been affected by historic slope grooming activities.</p>	<p>The proposal will have minor impacts on the Broad-toothed Rat which utilises the shelter provided by the rocks. However, there is extensive rock outcropping surrounding the development site that will not be affected by the proposed development, and the impacts on the local population of the Broad-toothed Rat are expected to be negligible.</p>
<p>impacts of development on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range</p>	<p>The proposal will only result in a disturbance footprint of up to 8 m wide, which will be rehabilitated post construction and is not expected to adversely impact on connectivity for any fauna species.</p>	<p>The proposal will not have adverse impacts on connectivity for any threatened species or ecological community.</p>
<p>impacts of development on movement of threatened species that maintains their lifecycle</p>	<p>NA</p>	<p>NA</p>
<p>impacts of development on water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities (including from subsidence or upsidence resulting from underground mining)</p>	<p>The proposal will not affect any waterbodies. Similar works are regularly undertaken throughout the resort area and have been for many years without substantial adverse impacts on water quality.</p>	<p>The proposed works are not anticipated to have any substantial or long-term adverse impacts on waterbodies or hydrological processes or any bog that may be located downslope of the development site.</p>
<p>impacts of wind turbine strikes on protected animals</p>	<p>NA</p>	<p>NA</p>
<p>impacts of vehicle strikes on threatened species or on animals that are part of a TEC.</p>	<p>The proposal is not likely to result in any vehicle strikes on fauna species. It is likely that any animals sheltering within the development footprint will move to adjoining habitats as a result of the noise and vibration associated with the proposed works.</p>	<p>Broad-toothed Rat; Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps bioregions; Alpine Sphagnum Bogs and Associated Fens</p>

2.1.3.1 Locating a project to avoid and minimise prescribed biodiversity impacts

The development has been located in a way which avoids and minimises prescribed biodiversity impacts as outlined in Table 24.

Table 24: Locating a project to avoid and minimise prescribed biodiversity impacts

Approach	How addressed	Justification
locating the envelope of surface works to avoid direct impacts on the habitat features	The proposal has been located to take advantage of existing disturbances. However, the proposal will result in further disturbance to some small rocks that have already been affected by historic slope grooming activities.	There is extensive rock outcropping surrounding the development site that will not be affected by the proposed development, and the impacts on the local population of the Broad-toothed Rat are expected to be negligible.
locating the envelope of sub-surface works, both in the horizontal and vertical plane, to avoid and minimise operations beneath the habitat features, e.g. locating long wall panels away from geological features of significance or water dependent plant communities and their supporting aquifers	The proposal avoids geological features of significance or water dependent plant communities and their supporting aquifers.	NA
locating the project to avoid severing or interfering with corridors connecting different areas of habitat, migratory flight paths to important habitat or preferred local movement pathways	Minimising the width of the disturbance footprint and post construction rehabilitation.	The proposal will only result in a disturbance footprint of up to 8 m wide, which will be rehabilitated post construction and is not expected to adversely impact on connectivity for any fauna species.
optimising project layout to minimise interactions with threatened and protected species and ecological communities, e.g. designing turbine layout to allow buffers around features that attract and support aerial species, such as forest edges, riparian corridors and wetlands, ridgetops and gullies	The proposal has been designed as far as is possible to avoid and minimise impacts to bog, rocks, and threatened species habitats.	There is extensive rock outcropping surrounding the development site that will not be affected by the proposed development, and the impacts on the local population of the Broad-toothed Rat are expected to be negligible.
locating the project to avoid direct impacts on water bodies	The proposal will not result in any direct impacts on waterbodies.	NA

2.1.3.2 Designing a project to avoid and minimise prescribed biodiversity impacts

The development has been designed in a way which avoids and minimises prescribed biodiversity impacts as outlined in Table 25.

Table 25: Designing a project to avoid and minimise prescribed biodiversity impacts

Approach	How addressed	Justification
engineering solutions, e.g. proven techniques to minimise fracturing of bedrock underlying features of geological significance, water dependent communities and their supporting aquifers; proven engineering solutions to restore connectivity and favoured movement pathways	The proposal will not result in any fracturing of geological features of significance or water dependent plant communities and their supporting aquifers.	NA
design of project elements to minimise interactions with threatened and protected species and ecological communities, e.g. designing turbines to dissuade perching and minimise the diameter of the rotor swept area, designing fencing to prevent animal entry to transport corridors	The proposal has been designed as far as is possible to avoid and minimise impacts on threatened species.	There is extensive rock outcropping surrounding the development site that will not be affected by the proposed development, and the impacts on the local population of the Broad-toothed Rat are expected to be negligible.
design of the project to maintain environmental processes critical to the formation and persistence of habitat features not associated with native vegetation	The proposal will not jeopardise any critical environmental processes.	NA
design of the project to maintain hydrological processes that sustain threatened species and TECs	The proposal will not affect any hydrological processes that sustain threatened species and TECs.	NA
design of the project to avoid and minimise downstream impacts on rivers, wetlands and estuaries by control of the quality of water released from the site.	The proposal will include sediment controls to limit the potential for sedimentation and water quality impacts downstream during construction, particularly in the event of major rainfall.	Similar techniques have been used to good effect for many years in association with similar developments within the Perisher Resort Area.

2.2 Assessment of Impacts

2.2.1 Direct impacts

The direct impacts of the development on:

- native vegetation is outlined in Table 26
- threatened ecological communities are outlined in Table 27
- threatened species and threatened species habitat is outlined in Table 28
- prescribed biodiversity impacts are outlined in Section 0

Table 26: Direct impacts to native vegetation

PCT ID	PCT Name	Vegetation Class	Vegetation Formation	Direct impact (ha)
645	Alpine Snow Gum shrubby open woodland at high altitudes in Kosciuszko NP, Australian Alps Bioregion	Grassy Woodlands	Subalpine Woodlands	0.2

Table 27: Direct impacts on threatened ecological communities

PCT ID	BC Act			EPBC Act		
	Listing status	Name	Direct impact (ha)	Listing status	Name	Direct impact (ha)
645	Not listed	Not listed	0.2	Not listed	Not listed	0.2

Table 28: Direct impacts on threatened species and threatened species habitat

Common Name	Species	Direct impact number of individuals / habitat (ha)	NSW listing status	EPBC Listing status
Alpine She-oak Skink	<i>Cyclodomorphus praealtus</i>	0.14	Endangered	Endangered
Broad-toothed Rat	<i>Mastacomys fuscus</i>	0.2	Vulnerable	Vulnerable

2.2.2 Change in vegetation integrity

The change in vegetation integrity as a result of the development is outlined in Table 29. Whilst, given the proposed impact mitigation and rehabilitation methods, the future integrity score is unlikely to be zero, it has been calculated as zero for the purposes of this assessment. It is likely that future assessments will utilise a future integrity score that is more reflective of the vegetation condition in the medium-term post development.

Table 29: Change in vegetation integrity

Veg Zone	PCT ID	Condition	Area (ha)	Current vegetation integrity score	Future vegetation integrity score	Change in vegetation integrity
1	645	Degraded	0.14	43.9	0	-43.9
2	645	Good	0.06	49.9	0	-49.9

2.2.3 Indirect impacts

The indirect impacts of the development are outlined in Table 31. Indirect impact zones are shown on Figure 10. Given the minor nature of the proposed development and the proposed mitigation measures indirect impacts are only anticipated to extend up to 2 m into vegetation surrounding the proposed development footprint.

2.2.4 Prescribed biodiversity impacts

The development site has the prescribed biodiversity impacts as outlined in Table 30.

Table 30: Direct impacts on prescribed biodiversity impacts

Prescribed biodiversity impact	Nature	Extent	Frequency	Duration	Timing
impacts of development on the habitat of threatened species or ecological communities associated with: <ul style="list-style-type: none"> • karst, caves, crevices, cliffs and other geological features of significance, or • rocks, or • human made structures, or • non-native vegetation 	Removal or further disturbance to a small amount rocks	0.14	One off	During proposed 3 week construction period	During construction

Table 31: Indirect impacts

Indirect impact	Project phase	Nature	Extent	Frequency	Duration	Timing
sedimentation and contaminated and/or nutrient rich run-off	Construction	minor	minor	During and after any heavy rainfall	3 week maximum	Intermittently during construction phase
noise, dust or light spill	Construction	minor	minor	Intermittently during construction phase	3 week maximum	Intermittently during construction phase
inadvertent impacts on adjacent habitat or vegetation	Construction	minor	minor	Not expected but possible	3 week maximum	Not expected
transport of weeds and pathogens from the site to adjacent vegetation	Construction	Not expected	Not expected	Not expected but possible	Not expected	Not expected
vehicle strike	Construction	minor	minor	Not expected but possible	3 week maximum	Not expected
trampling of threatened flora species	Construction	Not expected	Not expected	Not expected	3 week maximum	Not expected
rubbish dumping	Construction	Not expected	Not expected	Not expected	Not expected	Not expected
wood collection	Construction	Not expected	Not expected	Not expected	Not expected	Not expected
bush rock removal and disturbance	Construction	Not expected	Not expected	Not expected	Not expected	Not expected
increase in predatory species populations	Construction	Not expected	Not expected	Not expected	Not expected	Not expected
increase in pest animal populations	Construction	Not expected	Not expected	Not expected	Not expected	Not expected
increased risk of fire	Construction	minor	minor	Intermittently during construction phase	3 week maximum	Intermittently during construction phase
disturbance to specialist breeding and foraging habitat, e.g. beach nesting for shorebirds.	Construction	Not expected	Not expected	Not expected	Not expected	Not expected

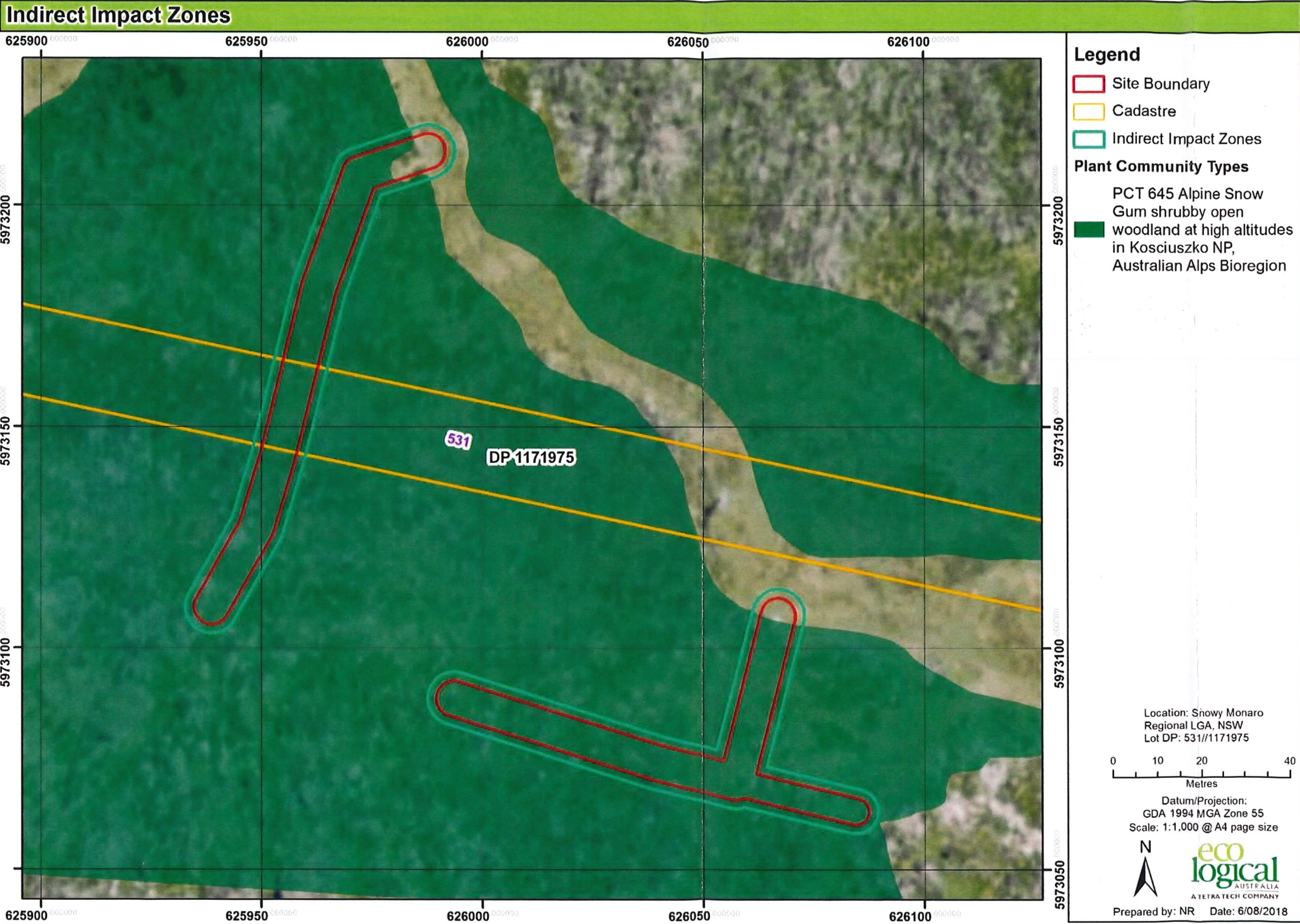


Figure 10: Indirect impact zones

2.2.5 Mitigating and managing impacts

Measures proposed to mitigate and manage impacts at the development site before, during and after construction are outlined in Table 33.

2.2.6 Serious and Irreversible Impacts (SII)

The development does not have any candidate Serious and Irreversible Impacts (SII).

2.3 Risk Assessment

A risk assessment has been undertaken for any residual impacts likely to remain after the mitigation measures (Section 2.2.5) have been applied. Likelihood criteria, consequence criteria and the risk matrix are provided in Table 32, Table 33, Table 34, Table 35 and Table 36 respectively.

Table 32: Likelihood criteria

Likelihood criteria	Description
Almost certain (Common)	Will occur, or is of a continuous nature, or the likelihood is unknown. There is likely to be an event at least once a year or greater (up to ten times per year). It often occurs in similar environments. The event is expected to occur in most circumstances.
Likely (Has occurred in recent history)	There is likely to be an event on average every one to five years. Likely to have been a similar incident occurring in similar environments. The event will probably occur in most circumstances.
Possible (Could happen, has occurred in the past, but not common)	The event could occur. There is likely to be an event on average every five to twenty years.
Unlikely (Not likely or uncommon)	The event could occur but is not expected. A rare occurrence (once per one hundred years).
Remote (Rare or practically impossible)	The event may occur only in exceptional circumstances. Very rare occurrence (once per one thousand years). Unlikely that it has occurred elsewhere; and, if it has occurred, it is regarded as unique.

Table 33: Measures proposed to mitigate and manage impacts

Measure	Risk before mitigation	Risk after mitigation	Action	Outcome	Timing	Responsibility
Displacement of resident fauna	Low	Low	Immediately prior to any impacts on rocks, the affected rocks should be tapped or nudged with the excavator to encourage any fauna that may be sheltering beneath the rock to move away.	Fauna within the footprint should move and thus any injury to fauna species during construction should be avoided.	During construction	Perisher
timing works to avoid critical life cycle events such as breeding or nursing	Low	Low	None proposed	NA	NA	NA
instigating clearing protocols including pre-clearing surveys, daily surveys and staged clearing, the presence of a trained ecological or licensed wildlife handler during clearing events	Low	Low	Where trenches are left open overnight, structures should be placed at regular intervals to enable fauna to exit the trench. Trenches should be inspected in the morning and late afternoon and any animals that have fallen into the trenches removed. Similarly, trenches should be checked for animals immediately prior to back-filling.	Injury to fauna species during construction should be avoided.	During construction	Perisher
installing artificial habitats for fauna in adjacent retained vegetation and habitat or human made structures to replace the habitat resources lost and encourage animals to move from the impacted site, e.g. nest boxes	Low	Low	None proposed	NA	NA	NA
clearing protocols that identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance; for example, removal of native vegetation by chain-saw, rather than heavy machinery, is preferable in situations where partial clearing is proposed	Medium	Low	Identify with rope and pole line the limit of the proposed disturbance corridor prior to construction	Risk of disturbance beyond proposed disturbance corridor is reduced	Prior to construction	Perisher

Measure	Risk before mitigation	Risk after mitigation	Action	Outcome	Timing	Responsibility
sediment barriers or sedimentation ponds to control the quality of water released from the site into the receiving environment	Low	Low	Sediment control measures as necessary such as fencing and hay bales	Risk of sedimentation of water quality impacts substantially reduced	During post-construction	Perisher
noise barriers or daily/seasonal timing of construction and operational activities to reduce impacts of noise	Low	Low	Restrict work to daylight hours	Noise impacts mitigated	During construction	Perisher
light shields or daily/seasonal timing of construction and operational activities to reduce impacts of light spill	Low	Low	Restrict work to daylight hours	Light impacts mitigated	During construction	Perisher
adaptive dust monitoring programs to control air quality	Low	Low	None proposed	NA	NA	NA
programming construction activities to avoid impacts; for example, timing construction activities for when migratory species are absent from the site, or when particular species known to or likely to use the habitat on the site are not breeding or nesting	Low	Low	None proposed	NA	NA	NA
temporary fencing to protect significant environmental features such as riparian zones	Low	Low	The limits of the proposed disturbance footprint will be delineated with rope and pole line	Protection of vegetation and habitats beyond the disturbance footprint	Prior to and during construction	Perisher
hygiene protocols to prevent the spread of weeds or pathogens between infected areas and uninfected areas	Medium	Low	Any machinery or vehicles involved with the proposed works that are not owned by Perisher will be washed down to remove all soil and vegetative matter before entering the site to limit spread of weeds and disease such as <i>Phytophthora cinnamomi</i>	Risk of weed or pathogen spread substantially reduced	Prior to and during construction	Perisher

Measure	Risk before mitigation	Risk after mitigation	Action	Outcome	Timing	Responsibility
staff training and site briefing to communicate environmental features to be protected and measures to be implemented	Medium	Low	Brief all workers as to limit of disturbance footprint and other environmental safeguards	Risk of disturbance beyond proposed disturbance corridor is reduced	Prior to and during construction as necessary	Perisher
development control measures to regulate activity in vegetation and habitat adjacent to residential development including controls on pet ownership, rubbish disposal, wood collection, fire management and disturbance to nests and other niche habitats	NA	NA	NA	NA	NA	NA
making provision for the ecological restoration, rehabilitation and/or ongoing maintenance of retained native vegetation habitat on or adjacent to the development site	Medium	Low	Post construction rehabilitation consistent with standard Perisher rehabilitation strategies	Post construction vegetation within the development footprint with high medium-term recovery potential.	Immediately post construction	Perisher

Table 34: Consequence criteria

Consequence category	Description
Critical (Severe, widespread long-term effect)	Destruction of sensitive environmental features. Severe impact on ecosystem. Impacts are irreversible and/or widespread. Regulatory and high-level government intervention/action. Community outrage expected. Prosecution likely.
Major (Wider spread, moderate to long term effect)	Long-term impact of regional significance on sensitive environmental features (e.g. wetlands). Likely to result in regulatory intervention/action. Environmental harm either temporary or permanent, requiring immediate attention. Community outrage possible. Prosecution possible.
Moderate (Localised, short-term to moderate effect)	Short term impact on sensitive environmental features. Triggers regulatory investigation. Significant changes that may be rehabilitated with difficulty. Repeated public concern.
Minor (Localised short-term effect)	Impact on fauna, flora and/or habitat but no negative effects on ecosystem. Easily rehabilitated. Requires immediate regulator notification.
Negligible (Minimal impact or no lasting effect)	Negligible impact on fauna/flora, habitat, aquatic ecosystem or water resources. Impacts are local, temporary and reversible. Incident reporting according to routine protocols.

Table 35: Risk matrix

Consequence	Likelihood				
	Almost certain	Likely	Possible	Unlikely	Remote
Critical	Very High	Very High	High	High	Medium
Major	Very High	High	High	Medium	Medium
Moderate	High	Medium	Medium	Medium	Low
Minor	Medium	Medium	Low	Low	Very Low
Negligible	Medium	Low	Low	Very Low	Very Low

Table 36: Risk assessment

Potential impact	Project phase	Risk (pre-mitigation)	Risk (post mitigation)
Vegetation clearing	Construction	Medium	Very Low
sedimentation and contaminated and/or nutrient rich run-off	Construction	Medium	Very Low
noise, dust or light spill	Construction	Low	Very Low
inadvertent impacts on adjacent habitat or vegetation	Construction	Medium	Very Low
transport of weeds and pathogens from the site to adjacent vegetation	Construction	Medium	Very Low
vehicle strike	Construction	Medium	Very Low
trampling of threatened flora species	Construction	Low	Very Low
rubbish dumping	Construction	Low	Very Low
wood collection	Construction	Low	Very Low
bush rock removal and disturbance	Construction	Low	Very Low
increase in predatory species populations	Construction	Low	Very Low
increase in pest animal populations	Construction	Low	Very Low
increased risk of fire	Construction	Low	Very Low
disturbance to specialist breeding and foraging habitat, e.g. beach nesting for shorebirds.	Construction	Medium	Very Low
sedimentation and contaminated and/or nutrient rich run-off	Construction	Medium	Very Low

2.4 Adaptive management strategy

This section is required for those impacts that are infrequent, cumulative or difficult to predict. Impacts associated with the proposed development have been considered extensively and addressed in Section 2.2.5 and further consideration of infrequent, cumulative or difficult to predict impacts is not considered to be necessary.

2.5 Impact summary

Following implementation of the BAM and the BAMC, the following impacts have been determined.

2.5.1 Serious and Irreversible Impacts (SAII)

The development does not have any Serious and Irreversible Impacts (SAII).

2.5.2 Impacts requiring offsets

The impacts of the development requiring offset for native vegetation are outlined in Table 37 and shown on Figure 11. The impacts of the development requiring offset for threatened species and threatened species habitat are outlined in Table 38 and on Figure 11.

Table 37: Impacts to native vegetation that require offsets

PCT ID	PCT Name	Vegetation Class	Vegetation Formation	Direct impact (ha)
645	Alpine Snow Gum shrubby open woodland at high altitudes in Kosciuszko NP, Australian Alps Bioregion	Grassy Woodlands	Subalpine Woodlands	0.2

Table 38: Impacts on threatened species and threatened species habitat that require offsets

Common Name	Species	Direct impact number of individuals / habitat (ha)	NSW listing status	EPBC Listing status
Alpine She-oak Skink	<i>Cyclodomorphus praealtus</i>	0.14	Endangered	Endangered
Broad-toothed Rat	<i>Mastacomys fuscus</i>	0.2	Vulnerable	Vulnerable

2.5.3 Impacts not requiring offsets

All impacts on native vegetation will be offset. There are small areas in the northern extremities of the development site that are cleared in association with the existing Showboat ski run and support exotic grasses, as shown in Figure 11. These areas do not require offsets.

2.5.4 Areas not requiring assessment

There are small areas in the northern extremities of the development site that are cleared in association with the existing Showboat ski run and support exotic grasses, as shown in Figure 11. These areas do not require assessment.

2.5.5 Credit summary

The number of ecosystem credits required for the development are outlined in Table 39. The number of species credits required for the development are outlined in Table 40. A biodiversity credit report is included in Appendix E.

Table 39: Ecosystem credits required

PCT ID	PCT Name	Vegetation Formation	Direct impact (ha)	Credits required
645	Alpine Snow Gum shrubby open woodland at high altitudes in Kosciuszko NP, Australian Alps Bioregion	Alpine Bogs and Fens	Subalpine Woodlands	3

Table 40: Species credit summary

Common Name	Species	Direct impact number of individuals / habitat (ha)	Credits required
Alpine She-oak Skink	<i>Cyclodomorphus praealtus</i>	0.14	3
Broad-toothed Rat	<i>Mastacomys fuscus</i>	0.2	4

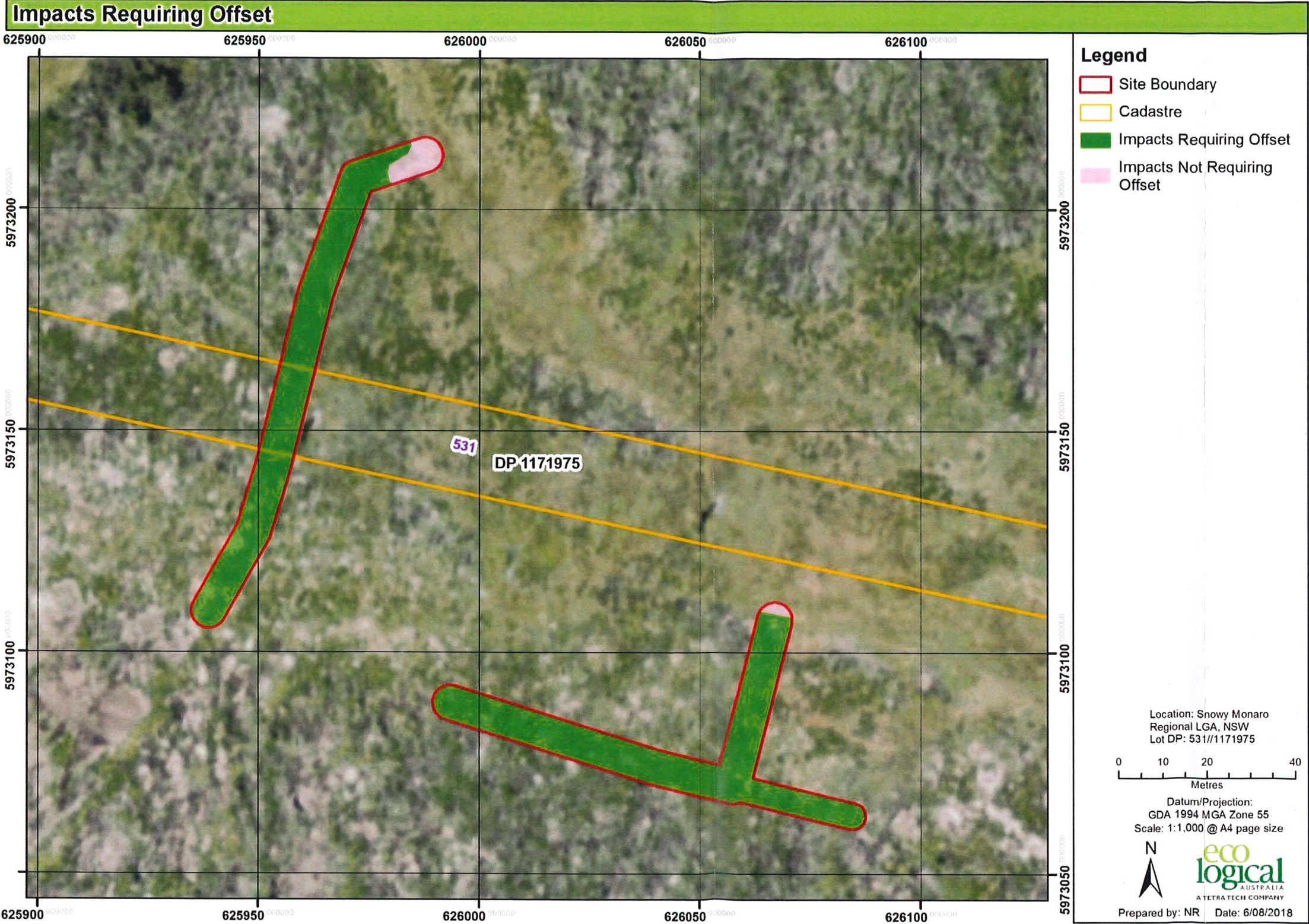


Figure 11: Impacts requiring and not requiring offset

2.6 Consistency with legislation and policy

An impact assessment under the EPBC Act was undertaken on MNES known to occur within the development site or immediate surrounds or with potential to occur there. These MNES were:

- Guthega Skink
- Alpine She-oak Skink
- Broad-toothed Rat.

The outcome of this assessment was that it is highly unlikely that the development would significantly impact on those MNES assessed (Appendix C).

A referral to the Commonwealth under the EPBC Act is not considered necessary.

3. Recommendations

To further ameliorate the potential impacts of the proposed development and to improve environmental outcomes, the following recommendations for impact mitigation and amelioration are suggested as modifications to the proposal and/or as conditions of consent.

- The mitigation measures identified in Table 33 should be incorporated into the proposal
- A targeted survey for the Guthega Skink should be undertaken within the development site during suitable weather conditions in October or November 2018 and prior to commencing construction on the proposed development.

4. Conclusion

Eco Logical Australia Pty Ltd was engaged by Perisher Blue Pty Limited to prepare a Biodiversity Development Assessment Report for the proposed installation of snowmaking infrastructure on Toppas Dream ski run, beside Ridge Chairlift, at Perisher Ski Resort.

This report has been prepared to meet the requirements of the Biodiversity Assessment Method 2016 established under Section 6.7 of the NSW *Biodiversity Conservation Act 2016*.

This BDAR outlines the measures taken to avoid, minimise and mitigate impacts to the vegetation and habitats present within the development site during the design, construction and operation of the development. The residual unavoidable impacts of the proposed development were calculated in accordance with the BAM by utilising the Biodiversity Assessment Method Credit Calculator. The BAMC calculated that a total of three ecosystem credits and seven species credits are required to offset the unavoidable impacts to the vegetation and habitat present within the development site.

Serious and Irreversible Impacts (SAIL) values have been considered as part of this assessment. The proposal will not result in any SAIL.

Following consideration of the administrative guidelines for determining significance under the EPBC Act, it is concluded that the proposal is unlikely to have a significant impact on matters of National Environmental Significance or Commonwealth land, and a referral to the Commonwealth Environment Minister is therefore not required.

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Appendix A: Definitions

Terminology	Definition
Biodiversity credit report	The report produced by the Credit Calculator that sets out the number and class of biodiversity credits required to offset the remaining adverse impacts on biodiversity values at a development site, or on land to be biodiversity certified, or that sets out the number and class of biodiversity credits that are created at a biodiversity stewardship site.
BioNet Atlas	The BioNet Atlas (formerly known as the NSW Wildlife Atlas) is the OEH database of flora and fauna records. The Atlas contains records of plants, mammals, birds, reptiles, amphibians, some fungi, some invertebrates (such as insects and snails) and some fish
Broad condition state:	Areas of the same PCT that are in relatively homogenous condition. Broad condition is used for stratifying areas of the same PCT into a vegetation zone for the purpose of determining the vegetation integrity score.
Connectivity	The measure of the degree to which an area(s) of native vegetation is linked with other areas of vegetation.
Credit Calculator	The computer program that provides decision support to assessors and proponents by applying the BAM, and which calculates the number and class of biodiversity credits required to offset the impacts of a development or created at a biodiversity stewardship site.
Development	Has the same meaning as development at section 4 of the EP&A Act, or an activity in Part 5 of the EP&A Act. It also includes development as defined in section 115T of the EP&A Act.
Development footprint	The area of land that is directly impacted on by a proposed development, including access roads, and areas used to store construction materials.
Development site	An area of land that is subject to a proposed development that is under the EP&A Act.
Ecosystem credits	A measurement of the value of EECs, CEECs and threatened species habitat for species that can be reliably predicted to occur with a PCT. Ecosystem credits measure the loss in biodiversity values at a development site and the gain in biodiversity values at a biodiversity stewardship site.
High threat exotic plant cover	Plant cover composed of vascular plants not native to Australia that if not controlled will invade and outcompete native plant species.
Hollow bearing tree	A living or dead tree that has at least one hollow. A tree is considered to contain a hollow if: (a) the entrance can be seen; (b) the minimum entrance width is at least 5 cm; (c) the hollow appears to have depth (i.e. you cannot see solid wood beyond the entrance); (d) the hollow is at least 1 m above the ground. Trees must be examined from all angles.
Important wetland	A wetland that is listed in the Directory of Important Wetlands of Australia (DIWA) and SEPP 14 Coastal Wetlands
Linear shaped development	Development that is generally narrow in width and extends across the landscape for a distance greater than 3.5 kilometres in length
Local population	The population that occurs in the study area. In cases where multiple populations occur in the study area or a population occupies part of the study area, impacts on each subpopulation must be assessed separately.
Local wetland	Any wetland that is not identified as an important wetland (refer to definition of Important wetland).

Terminology	Definition
Mitchell landscape	Landscapes with relatively homogeneous geomorphology, soils and broad vegetation types, mapped at a scale of 1:250,000.
Multiple fragmentation impact development	Developments such as wind farms and coal seam gas extraction that require multiple extraction points (wells) or turbines and a network of associated development including roads, tracks, gathering systems/flow lines, transmission lines
Operational Manual	The Operational Manual published from time to time by OEH, which is a guide to assist assessors when using the BAM
Patch size	An area of intact native vegetation that: a) occurs on the development site or biodiversity stewardship site, and b) includes native vegetation that has a gap of less than 100 m from the next area of native vegetation (or ≤ 30 m for non-woody ecosystems). Patch size may extend onto adjoining land that is not part of the development site or stewardship site..
Proponent	A person who intends to apply for consent to carry out development or for approval for an activity.
Reference sites	The relatively unmodified sites that are assessed to obtain local benchmark information when benchmarks in the Vegetation Benchmarks Database are too broad or otherwise incorrect for the PCT and/or local situation. Benchmarks can also be obtained from published sources.
Regeneration	The proportion of over-storey species characteristic of the PCT that are naturally regenerating and have a diameter at breast height < 5 cm within a vegetation zone.
Remaining impact	An impact on biodiversity values after all reasonable measures have been taken to avoid and minimise the impacts of development. Under the BAM, an offset requirement is calculated for the remaining impacts on biodiversity values.
Retirement of credits	The purchase and retirement of biodiversity credits from an already-established biobank site or a biodiversity stewardship site secured by a biodiversity stewardship agreement.
Riparian buffer	Riparian buffers applied to water bodies in accordance with the BAM
Sensitive biodiversity values land map	Development within an area identified on the map requires assessment using the BAM.
Site attributes	The matters assessed to determine vegetation integrity. They include: native plant species richness, native over-storey cover, native mid-storey cover, native ground cover (grasses), native ground cover (shrubs), native ground cover (other), exotic plant cover (as a percentage of total ground and mid-storey cover), number of trees with hollows, proportion of over-storey species occurring as regeneration, and total length of fallen logs.
Site-based development	a development other than a linear shaped development, or a multiple fragmentation impact development
Species credits	The class of biodiversity credits created or required for the impact on threatened species that cannot be reliably predicted to use an area of land based on habitat surrogates. Species that require species credits are listed in the Threatened Biodiversity Data Collection.
Subject land	Is land to which the BAM is applied in Stage 1 to assess the biodiversity values of the land. It includes land that may be a development site, clearing site, proposed for biodiversity certification or land that is proposed for a biodiversity stewardship agreement.

Terminology	Definition
Threatened Biodiversity Data Collection	Part of the BioNet database, published by OEH and accessible from the BioNet website.
Threatened species	Critically Endangered, Endangered or Vulnerable threatened species as defined by Schedule 1 of the BC Act, or any additional threatened species listed under Part 13 of the EPBC Act as Critically Endangered, Endangered or Vulnerable.
Vegetation Benchmarks Database	A database of benchmarks for vegetation classes and some PCTs. The Vegetation Benchmarks Database is published by OEH and is part of the BioNet Vegetation Classification.
Vegetation zone	A relatively homogenous area of native vegetation on a development site, land to be biodiversity certified or a biodiversity stewardship site that is the same PCT and broad condition state.
Wetland	An area of land that is wet by surface water or ground water, or both, for long enough periods that the plants and animals in it are adapted to, and depend on, moist conditions for at least part of their life cycle. Wetlands may exhibit wet and dry phases and may be wet permanently, cyclically or intermittently with fresh, brackish or saline water
Woody native vegetation	Native vegetation that contains an over-storey and/or mid-storey that predominantly consists of trees and/or shrubs

Appendix B: Vegetation plot data

Table 41: Species matrix (species recorded by plot)

Family	Species	Common name	Exotic	High Threat Weed	Stratum	Form	PCT 645		Plot 1		Plot 2	
							Abundance	Cover	Abundance	Cover	Abundance	Cover
Polygonaceae	Acetosella vulgaris	Sheep Sorrel	Yes	Yes	G	-	2	1000	0.1	20		
Poaceae	Agrostis capillaris	Browntop Bent	Yes	Yes	G	-	10	2000				
Poaceae	Anthoxanthum odoratum	Sweet Vernal Grass	Yes	-	G	-	1	500				
Rubiaceae	Asperula gunnii	Mountain Woodruff	-	-	G	FG	2	300	1	100		
Rubiaceae	Asperula pusilla	Alpine Woodruff	-	-	G	FG	3	500				
Cyperaceae	Carex bichenoviana		-	-	G	GG	0.2	50	0.1	20		
Asteraceae	Craspedia aurantia		-	-	G	FG	0.1	5				
Onagraceae	Epilobium spp.		-	-	G	-	0.1	2				
Myrtaceae	Eucalyptus niphophila		-	-	O	TG			45	30		
Geraniaceae	Geranium potentilloides		-	-	G	FG	0.1	2				
Asteraceae	Coronidium monticola		-	-	G	-	0.2	50				
Fabaceae (Faboideae)	Hovea montana		-	-	G	SG	50	200	50	500		
Apiaceae	Hydrocotyle algida	Pennywort	-	-	G	FG	0.1	20				
Clusiaceae	Hypericum perforatum	St. Johns Wort	Yes	Yes	G	-	2	300				

Family	Species	Common name	Exotic	High Threat Weed	Stratum	Form	PCT 645
Asteraceae	<i>Hypochoeris radicata</i>	Catsear	YES	-	G	-	1 300
Violaceae	<i>Melicytus dentatus</i>	Tree Violet	-	-	G	SG	1 0.1 1
Asteraceae	<i>Olearia phlogopappa</i>	Dusty Daisy-bush	-	-	M	SG	3 50 10 100
Proteaceae	<i>Orites lancifolius</i>	Alpine Orites	-	-	-	SG	0.1 1
Fabaceae (Faboideae)	<i>Oxylobium ellipticum</i>	Common Shaggy Pea	-	-	G	SG	0.2 5 5 100
Asteraceae	<i>Ozothamnus secundiflorus</i>	Cascade Everlasting	-	-	M	SG	10 50 2 30
Thymelaeaceae	<i>Pimelea ligustrina</i>		-	-	G	SG	1 30 3 50
Poaceae	<i>Poa fawcettiae</i>	Smooth Blue Snowgrass	-	-	G	GG	3 100 15 300
Poaceae	<i>Poa ensiformis</i>	Purple-sheathed Tussock-grass	-	-	G	GG	0.1 20 5 200
Dryopteridaceae	<i>Polystichum proliferum</i>	Mother Shield Fern	-	-	G	EG	0.1 1 0.1 1
Araliaceae	<i>Polyscias sambucifolia</i>	Elderberry Panax	-	-	M	SG	
Asteraceae	<i>Senecio gunnii</i>		-	-	G	FG	0.2 50
Asteraceae	<i>Senecio linearifolius</i>	Fireweed Groundsel	-	-	G	FG	0.1 20
Caryophyllaceae	<i>Stellaria pungens</i>	Prickly Starwort	-	-	G	FG	0.2 50 0.3 30
Winteraceae	<i>Tasmania xerophila</i> subsp. <i>xerophila</i>	Alpine Pepperbush	-	-	M	SG	1 10 15 50

Family	Species	Common name	Exotic	High Threat Weed	Stratum	Form	PCT 645
Violaceae	<i>Viola betonicifolia</i>	Native Violet	-	-	G	FG	0.1 10

Tree (TG), Shrub (SG), Grass & Grasslike (GG), Forb (FG), Fern (EG), Other (OG), G (Groundcover), M (mid-storey), O (over-storey).

Table 42: Plot location data

Plot no.	PCT	Condition	Easting	Northing	Bearing
1	645	Degraded	625962	5973167	165
2	645	Good	626012	5973090	100

Table 43: Vegetation integrity data (Composition, Structure and function)

Composition (number of species)										
Plot	Tree	Shrub	Grass	Forb	Fern	Other				
1	0	7	3	11	1	0				
2	1	8	3	2	1	0				
Structure (Total cover)										
Plot	Tree	Shrub	Grass	Forb	Fern	Other				
1	0	66	3	6	0.1	0				
2	45	85	20	1	0.1	0				

Function											
Plot	Large Trees	Hollow trees	Litter Cover	Length Fallen Logs	Tree Stem 5-9	Tree Stem 10-19	Tree Stem 20-29	Tree Stem 30-49	Tree Stem 50-79	Tree Regen	High Threat Weed Cover
1	No	No	52	15	Yes	No	No	No	No	Yes	14
2	No	No	79	35	Yes	Yes	No	No	No	Yes	0.1

Appendix C: EPBC Act Significant Impact Criteria

The EPBC Act Administrative Guidelines on Significance set out 'Significant Impact Criteria' that are to be used to assist in determining whether a proposed action is likely to have a significant impact on matters of national environmental significance. Matters listed under the EPBC Act as being of national environmental significance include:

- Listed threatened species and ecological communities;
- Listed migratory species;
- Wetlands of International Importance;
- The Commonwealth marine environment;
- World Heritage properties;
- National Heritage places;
- Nuclear actions; and
- Great Barrier Reef.

Specific 'Significant Impact Criteria' are provided for each matter of national environmental significance except for threatened species and ecological communities in which case separate criteria are provided for species listed as endangered and vulnerable under the EPBC Act.

The Commonwealth listed species which are known or considered to have the potential to occur within the study area are the Broad-toothed Rat, Guthega Skink, and Alpine She-oak Skink.

The relevant Significant Impact Criteria have been applied to determine the significance of impacts associated with the proposal.

Matters to be considered	Impact
Any environmental impact on a World Heritage Property or National Heritage Places	No. The proposed action does not impact on a World Heritage Property or a National Heritage Place as addressed in the SEE. (listed natural: Australian Alpine National Parks and Reserves; nominated historic: Snowy Mountains Scheme NSW).
any environmental impact on Wetlands of International Importance	No. The proposal will not affect any part of Ramsar wetland.

any impact on
Commonwealth Listed
Critically Endangered or
Endangered Species;

Yes. The study area does provide potential habitat for the following Commonwealth listed endangered species: Alpine She-oak Skink and Guthega Skink

The significant impact criteria for endangered species are discussed below:

a. lead to a long-term decrease in the size a population of a species,

The Guthega Skink has not been detected within the development site and the proposed works will be at least 1.5 kms from the nearest known Guthega Skink burrow. Whilst several small areas of rock fragments will be affected by the proposed development, they are well away from any locations where the species has been observed. The proposed action will only affect a insignificantly small amount of the potential foraging habitat for the species in the locality. Under these circumstances, the proposed action is considered unlikely to lead to a long-term decrease in the size of the population of the Guthega Skink.

The impacts associated with the proposed action will result in the removal of only an insignificantly small area of the dense groundcovers the Alpine She-oak Skink is associated with. The habitats within the study area will continue to be available to the species after the completion of the proposed action. It is considered highly unlikely that the proposed works would result in injury or death of any Alpine She-oak Skink individuals as the disturbances associated with the proposed works are likely to temporarily deter any individuals from the locations where works are being undertaken. Under these circumstances, it is considered highly unlikely that the proposed action will lead to a long-term decrease in the size of the Alpine She-oak Skink population.

b. reduce the area of occupancy of the species

The proposed action will be limited to the removal of a relatively small amount of rocks in the context of the extent of this resource in the locality and is highly unlikely to affect any key habitat resources for the Alpine She-oak Skink or Guthega Skink; nor affect their ability to access habitats within or beyond the development site.

Under these circumstances, the proposed action is highly unlikely to reduce the area of occupancy of the local populations of the Alpine She-oak Skink or Guthega Skink.

c. fragment an existing population into two or more populations

The proposed action will be limited to the removal of a relatively small amount of rocks and vegetation in the context of the extent of these resources in the locality and is highly unlikely to affect any key habitat resources for the Alpine She-oak Skink or Guthega Skink; nor affect their ability to access habitats within or beyond the development site.

Under these circumstances, the proposed action will not fragment an existing population of the Alpine She-oak Skink or Guthega Skink into two or more populations.

d. adversely affect habitat critical to the survival of a species

No habitat within the development site is considered likely to be critical to the survival of the Alpine She-oak Skink or Guthega Skink. There are thousands of hectares of similar habitats in the alpine and subalpine zones of the Australian alps, including elsewhere within the Perisher Resort area.

e. disrupt the breeding cycle of a population

It is possible although unlikely that the Guthega Skink or Alpine She-oak Skink may breed within the development site, however any local population of these species is highly unlikely to be limited to the development site, which represents only a small proportion of the potential habitat available to these species in the locality.

Under these circumstances, it is highly unlikely that the proposed action would disrupt the breeding cycle of a population of the Alpine She-oak Skink or Guthega Skink.

f. modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline

Matters to be considered	Impact
	<p>The proposed action will modify a very small area of potential habitat for the Alpine She-oak Skink and Guthega Skink, which is unlikely to be important to these species in the context of the extent of potential habitat in the locality.</p> <p>Under these circumstances, it is highly unlikely that the proposed action would modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the Alpine She-oak Skink or Guthega Skink is likely to decline.</p> <p>g. result in invasive species that are harmful to an endangered species becoming established in the endangered or critically endangered species' habitat</p> <p>The proposed action is unlikely to result in invasive species that are harmful becoming established in potential habitat of the Alpine She-oak Skink or Guthega Skink.</p> <p>h. introduce disease that may cause the species to decline</p> <p>The proposed action is unlikely to introduce disease that may cause the Alpine She-oak Skink or Guthega Skink to decline.</p> <p>i. interfere substantially with the recovery of the species.</p> <p>As the proposed action is not considered to decrease or fragment any existing populations, the recovery of the Alpine She-oak Skink or Guthega Skink is unlikely to be adversely impacted.</p>

any impact on
Commonwealth Listed
vulnerable Species;

Yes. The study area provides known habitat for one Commonwealth listed vulnerable species: the Broad-toothed Rat.

The significant impact criteria in terms of the vulnerable species are discussed below:

a. lead to a long-term decrease in the size of an important population of a species.

Whilst the proposed action will affect some known Broad-toothed Rat habitat, it will affect only a very small amount of the potential habitat for the species in the immediate area. As such, the proposed works are unlikely to adversely affect a significant proportion of the home range of one or more Broad-toothed Rat individuals and will not result in habitat fragmentation which could isolate individuals or a population of the Broad-toothed Rat. The noise and vibration associated with the proposed works is likely to temporarily deter any Broad-toothed Rat individuals that may be near the affected areas. As such, it is unlikely that any individuals would be killed during the implementation of the proposed action.

Under these circumstances the proposed action will not lead to a long-term decrease in the size of an important population of the Broad-toothed Rat.

b. reduce the area of occupancy of an important population

It is highly likely that the Broad-toothed Rat will continue to occur within the development site after the implementation of the proposed action. The species continues to be locally common in the Perisher Resort Area where there have been many similar and larger developments over many decades. As such, the proposed action is highly unlikely to reduce the area of occupancy of the Broad-toothed Rat.

c. fragment an existing important population into two or more populations

The proposed action will not fragment an existing important population of the Broad-toothed Rat into two or more populations. The species population extends beyond the development site and the Perisher Resort Area.

d. adversely affect habitat critical to the survival of a species

No habitat within the development site is considered to be critical to the survival of the Broad-toothed Rat.

e. disrupt the breeding cycle of an important population

The proposed action and affected area is too small to disrupt the breeding cycle of a population of the Broad-toothed Rat.

f. modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline

The proposed action will not modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the Broad-toothed Rat is likely to decline.

g. result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat

The proposed action will not result in invasive species that are harmful becoming established in habitat for the Broad-toothed Rat.

h. interferes substantially with the recovery of the species.

Whilst there have been documented declines in some Broad-toothed Rat populations within the Snowy Mountains, these declines have been attributed to factors such as major bushfire events and early snow thaws, and not impacts of the nature of those proposed. In any case, the local population of the Broad-toothed Rat appears to continue to be relatively large on the basis of the abundance of the species scat throughout the Perisher Resort Area, including within the village, and in areas that have been subject to the sorts of activities proposed. As such, it is considered highly unlikely that proposed action will substantially interfere with the recovery of the Broad-toothed Rat.

Matters to be considered	Impact
Any impact on a Commonwealth Endangered Ecological Community	No endangered ecological communities occur within the development site.
any environmental impact on Commonwealth Listed Migratory Species;	No. The proposed action will not have any adverse impacts on any listed migratory species.
does any part of the Proposed action involve a Nuclear Action;	No. The project does not include a Nuclear Action.
any environmental impact on a Commonwealth Marine Area;	No. There are no Commonwealth Marine Areas within the study area.
In addition, any direct or indirect impact on Commonwealth lands	No. The project does not directly or indirectly affect Commonwealth land.

Appendix D: Fauna species detected during the survey period

Table 44: Fauna species recorded within the development area or immediate surrounds

Category	Common Name	Scientific Name	Detection Method
Mammals	Broad-toothed Rat	<i>Mastacomys fuscus</i>	Scats
	Bush Rat	<i>Rattus fuscipes</i>	Observed (dead)
	Common Wombat	<i>Vombatus ursinus</i>	Scat
	Deer*	Cervidae	Scat
	Rabbit*	<i>Oryctolagus cuniculus</i>	Scat
	Red Fox*	<i>Vulpes vulpes</i>	Scat
Birds	Australian Magpie	<i>Gymnorhina tibicen</i>	Call recognition
	Crimson Rosella	<i>Platycercus elegans</i>	Observed
	Flame Robin	<i>Petroica phoenicea</i>	Observed
	Little Raven	<i>Corvus mellori</i>	Observed

Bold denotes threatened species. * Denotes exotic species.

Appendix E: Biodiversity credit report



BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id	00011773/BAAS17061/18/00011774	Proposal Name	Toppas Dream Snowmaking	BAM data last updated *	24/02/2018
Assessor Name	Ryan Smithers	Assessor Number	BAAS17061	BAM Data version *	3
Proponent Names		Report Created	06/08/2018	* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.	

Candidate Serious and Irreversible Impacts

Nil

Nil

Additional Information for Approval

PCTs With Customized Benchmarks

No Changes

Predicted Threatened Species Not On Site

BAM Biodiversity Credit Report (Like for like)

No Changes

Ecosystem Credit Summary

PCT	TEC	Area	Credits
645-Alpine Snow Gum shrubby open woodland at high altitudes in Kosciuszko NP, Australian Alps Bioregion	Not a TEC	0.2	3.00

Credit classes for Like-for-like options

645	Any PCT in the below Class	And in any of below trading groups	Containing HBT	In the below IBRA subregions
	Subalpine Woodlands (including PCT's 644, 645, 650, 677, 679, 952, 1190, 1191, 1196, 1199)	Subalpine Woodlands - < 50% cleared group (including Tier 7 or higher).	No	Snowy Mountains,Bondo, Monaro, Murrumbateman, Snowy Mountains and South East Coastal Ranges. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary



BAM Biodiversity Credit Report (Like for like)

Mastacomys fuscus/
Broad-toothed Rat

645_Good



eco
logical
AUSTRALIA
A TETRA TECH COMPANY



APPENDIX D

SITE ENVIRONMENTAL MANAGEMENT PLAN

CONTENTS

1	Introduction	1
1.1	Background	1
1.2	SEMP Context	1
1.3	SEMP Objectives	2
2	Environmental Actions	3
2.1	Environmental Actions	3
2.2	Soil, Water and Construction Management	11
2.2.1	Erosion and Sedimentation Control	11
2.3	Indigenous Heritage	13
3	Responsibilities and Requirements	14
3.1	On-Site Structure & Requirements	14
3.2	Legislative Requirements	14
3.2.1	Relevant Legislation	14
4	Implementation	16
4.1	Emergency Response Contacts	16
4.2	Environmental Training	16
4.3	Communication	17
4.3.1	External Stakeholders	17
4.3.2	Liaison with EPA	17
4.3.3	Complaints Register	17
4.4	Working Hours	17
4.5	Auditing	17

1. INTRODUCTION

1.1 Executive Summary

Dabyne Planning Pty Ltd has been engaged by Perisher Blue Pty Ltd (Perisher Blue) the operator of Perisher Ski Resort to prepare a Site Environmental Management Plan (SEMP) to accompany a Statement of Environmental Effects for the installation of upgraded snowmaking infrastructure on Toppa's Dream moguls course, located adjacent to the Showboat ski run and Ridge Chair, within the Blue Cow ski area of the Perisher Ski Resort.

The project is anticipated to commence in the summer of 2018/19 and be completed within one summer.

1.2 SEMP Context

This SEMP is to be read in conjunction with:

- Statement of Environmental Effects prepared by Dabyne Planning, August 2018 (which this SEMP forms part of).
- Perisher Blue Ski Resort: Ski Slope Master Plan 2002 (PBSSMP) which outlines best practice for development within the Resort.

The following construction practices identified in the PBSSMP are relevant to the proposal, as follows:

- Movement on Tracks
- Movement off Tracks
- Planning and Design of erosion and sediment control works
- Sediment control
- Rock removal
- Trench construction
- Topsoil Management
- Stockpile Management
- Protection of Trees
- Rehabilitation of well-drained areas
- Fencing and Protection of sensitive areas
- Washing of construction equipment

The guidelines for the above construction practices are contained within Appendix A of the PSSMP.

1.3 SEMP Objectives

The objectives of this SEMP are to:

Upgrade of Snowmaking Infrastructure at Toppa's Dream, Perisher Ski Resort ♦ SEE Appendix D: SEMP

- ensure compliance with the requirements of all relevant environmental legislation;
- identify specific responsibilities for ensuring the safeguards are implemented;
- ensure that works are managed to reduce adverse impacts on the environment;
- ensure environmental safeguards are implemented correctly; and
- provide a basis for the auditing, monitoring and reporting of environmental performance.

2. ENVIRONMENTAL ACTIONS

2.1 Environmental Actions

The environmental actions required for the proposed works are listed in Table 1 below.

This table also provides the timeframe and frequency for the actions and subsequent monitoring, as well as the designation of responsibilities.

This provides an all-inclusive checklist for the efficient use by Contractors and relevant staff.

Table 1 Environmental Actions Checklist

Flora

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/ date)
PRIOR TO CONSTRUCTION			
All site personnel shall observe the limits of the works area and be made aware of the importance of vegetation of significant value during the site induction.	Site Environmental Manager	Site Induction / Prior to Commencement / During Construction	
Identify sensitive areas during site induction.	Site Environmental Manager	Site Induction / Prior to Commencement	
DURING CONSTRUCTION			
To reduce the risk of further spread of weeds; machinery and vehicles used on site are to be thoroughly washed before entering Kosciuszko National Park; and footwear and equipment are to be washed prior to being utilised to ensure they area free of weed seeds.	Site Supervisor/ Contractor	Prior to Park Entry	
POST CONSTRUCTION			
The site is to be progressively stabilised as works are completed.	Site Supervisor	Upon Completion	
The condition of rehabilitated areas shall be monitored seasonally until permanent vegetation cover is achieved.	Site Environmental Manager	Following Summer	
Follow up weed control (spot spraying) is to be carried out if deemed necessary.	Site Environmental Manager	Following Summer	

Fauna

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/ date)
DURING CONSTRUCTION			

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/date)
Accidental leakages and spillage of concrete, fuel or lubricant from machinery shall be dealt with by taking immediate measures to contain the spill.	Site Supervisor	During Construction	
Any disturbed areas that are left open overnight are to be inspected early in the morning for trapped fauna. If significant fauna are found, sheets of hessian or similar are to be left in sections of the disturbed areas to assist escape.	Site Supervisor	At the Start of Each Day	
POST CONSTRUCTION			
Areas which have been disturbed are to be rehabilitated immediately following the completion of works.	Site Environmental Manager / Site Supervisor	Upon Completion	

Erosion and Sedimentation

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/date)
PRIOR TO CONSTRUCTION			
Where areas are to be disturbed, temporary sediment control structures are to be implemented.	Site Environmental Manager / Site Supervisor	Prior to Commencement	
DURING CONSTRUCTION			
Wherever practicable, during the course of construction, exposed areas shall be provided with a cover to minimise erosion and sedimentation.	Site Supervisor	During Construction	
Erosion and sedimentation controls shall be monitored on a daily basis or immediately following a rainfall event.	Site Environmental Manager	Following Rainfall/ Daily	
Construction activities shall be programmed to minimise the area of disturbed ground that is exposed to erosion at any one time.	Site Supervisor	During Construction	
POST CONSTRUCTION			

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/ date)
All exposed soil areas shall be appropriately stabilised to prevent erosion.	Site Supervisor	During Construction / Prior to Rainfall	
All exposed soil areas shall be appropriately revegetated following stabilisation to prevent erosion.	Site Environmental Manager / Site Supervisor	Upon Completion	

Water Quality

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/ date)
DURING CONSTRUCTION			
Spills of any liquids shall not be hosed or flushed away but swept or collected.	Site Supervisor	During Construction	
Equipment shall be properly maintained to prevent water pollution. All plant and equipment should be inspected daily to avoid leakage of fuel, oil or hydraulic fluid.	Site Supervisor	During Construction	
No maintenance other than emergency repairs shall be undertaken on site.	Site Supervisor	During Construction	
All plant/ equipment shall be washed out in an appropriately protected area to prevent erosion and pollution to existing drains or natural areas.	Site Supervisor	During Construction	
Spill kits shall be readily accessible.	Site Supervisor	Prior to Commencement	

Site Working Area

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/ date)
DURING CONSTRUCTION			
All flammable and/or explosive materials shall be kept in an approved Workcover area.	Site Supervisor	During Construction	

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/date)
Ensure that access to the site is restricted to authorised personnel only.	Site Supervisor	During Construction	
Ensure site and associated plant and equipment is secured when site activities conclude at the end of the day.	Site Supervisor	End of Each Day	
POST CONSTRUCTION			
Upon completion of construction, the site working areas shall be removed, and the area reinstated as found originally.	Site Supervisor	Upon Completion	

Air Quality

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/date)
DURING CONSTRUCTION			
Materials transported in open trucks shall be covered to prevent generation of dust.	Site Supervisor	During Construction	
The tailgates of all vehicles transporting material from the construction site shall be securely fixed prior to loading and immediately after unloading.	Site Supervisor	During Construction	
POST CONSTRUCTION			
Areas no longer required for construction activity shall be progressively stabilised as soon as practicable to assist in controlling dust.	Site Supervisor	Upon Completion	

Fuel, Chemicals & Hazardous Material (Explosives)

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/date)
DURING CONSTRUCTION			

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/ date)
A container of spill absorbent is to be made available and used for emergency spills of fuel, oil or other chemicals.	Site Supervisor	Prior to Commencement	
No fuel will be store on site.	Site Supervisor	During Construction	
POST CONSTRUCTION			
Any contaminated material (empty drums, rag, contaminated soil etc) shall be removed immediately from the site and disposed of in accordance with the appropriate regulations.	Site Supervisor	End of Each Day	

Plant and Equipment

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/ date)
DURING CONSTRUCTION			
All plant and equipment used on the subject site is to be placed in existing disturbed corridors to prevent minimal disturbance to the native vegetation.	Site Supervisor	Prior to Commencement / During Construction	
Emergency procedures shall be displayed in a prominent position in the site working area.	Site Supervisor	Prior to Commencement / During Construction	
POST CONSTRUCTION			
All work sites shall be restored in a satisfactory manner and where necessary in accordance with the appropriate regulations.	Site Supervisor/ Environmental Manager	Upon Completion	

Waste Management

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/ date)
DURING CONSTRUCTION			
All litter generated on site is to be placed in small garbage bags. At the end of each day, these bags are to be disposed of in appropriate bins.	Site Supervisor	End of Each Day	

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/date)
A daily inspection shall be carried out to ensure the worksite is left in a rubbish free state.	Site Supervisor	End of Each Day	
All employees shall be informed of the need to maintain a clean worksite.	Site Supervisor	Prior to Commencement / During Construction	
Any excess spoil is to be removed from the site and deposited at the Smiggin Holes stockpile site.	Site Supervisor	During Construction	
All loads of rubbish removed shall be securely covered to ensure no spillage.	Site Supervisor	During Construction	
To the furthest extent possible, efforts shall be made to reduce, reuse and recycle materials used onsite.	Site Supervisor	During Construction	
POST CONSTRUCTION			
The worksite shall be left in a tidy and rubbish free state upon completion of the Project.	Project Manager	Upon Completion	

European and Aboriginal Heritage

ACTION CHECKLIST	Who's Responsible	When to be undertaken	DONE (Initial/date)
DURING CONSTRUCTION			
All efforts and actions to minimise ground disturbance should be taken. This includes installation of infrastructure and positioning laydown areas an ancillary construction activities to previously disturbed areas.	Project Manager	During Construction	
All staff and contractors working on the site shall be advised of the need to notify their supervisor and cease work, if either indigenous or non-indigenous heritage items are encountered.	Project Manager	Prior to Commencement	
Any evidence of Aboriginal relics discovered during construction shall be reported to OEH. Work in subject area to cease.	Project Manager	During Construction	

Noise and Vibration

ACTION CHECKLIST	WHO'S Responsible	When to be undertaken	DONE (Initial / date)
PRIOR TO CONSTRUCTION			
All equipment to be used shall be correctly maintained and in good working order.	Site Supervisor	Prior to Commencement	
DURING CONSTRUCTION			
All construction activities shall be restricted to the hours as stipulated in the development consent issued by the Department of Planning & Infrastructure.	Project Manager	During Construction	
All site works shall be ceased by 30 May unless otherwise agreed to in writing by the Department of Planning & Environment.	Project Manager	30 May of that Year	

2.2 Soil, Water & Construction Management

A comprehensive manual for soil, water and construction management procedures in relation to all the components of snowmaking infrastructure are provided Appendix A of the PSSMP. The manual provides an 'Environmental Best Practice' for Construction Practices specifically tailored for the resort, which has been adopted by the OEH (NPWS).

The construction methods prescribed in Appendix A of the PSSMP are to be read in conjunction with the above Environmental Actions Checklist.

For the purposes of clarity and consistency the specific controls required for the development are expanded and discussed below.

2.2.1 Erosion and Sedimentation Control

Appropriate environmental management controls may be required to manage soil and surface water during the construction of the development. Temporary controls will include either a straw bale filter, installed as illustrated Diagram A or a sediment fence in accordance with Diagram B below.

Diagram A: Standard Straw Bale Filter Installation

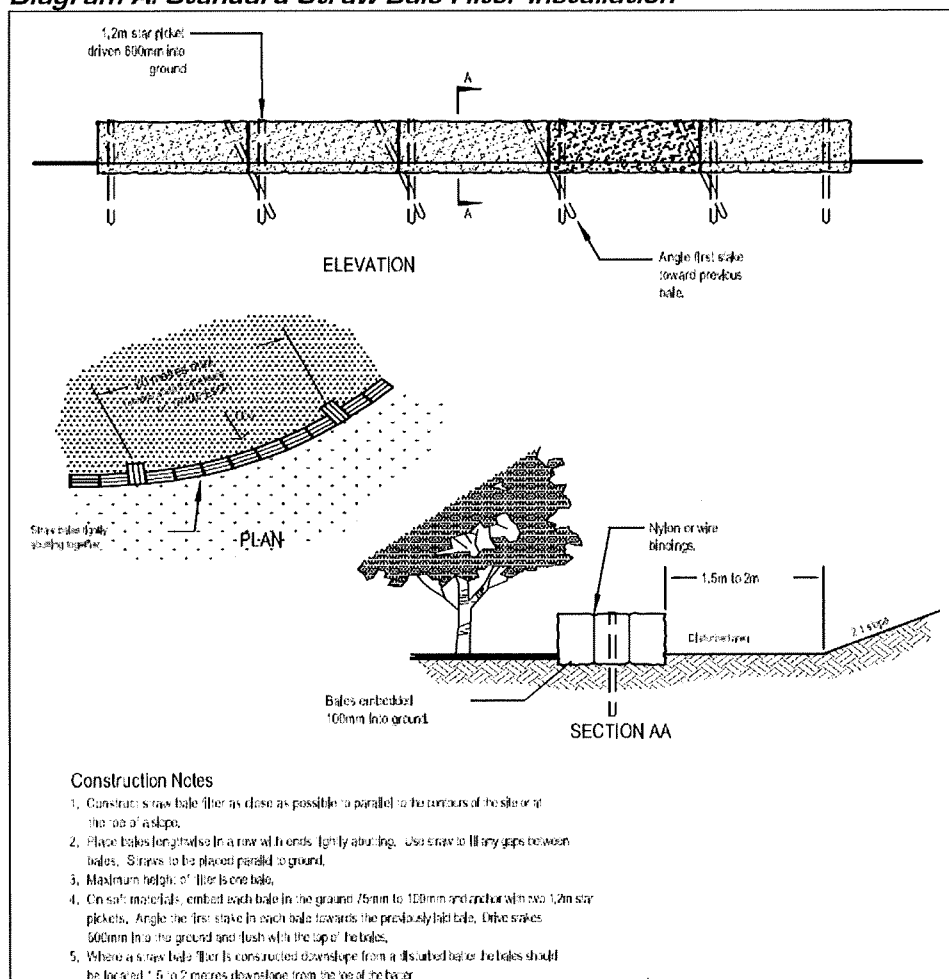
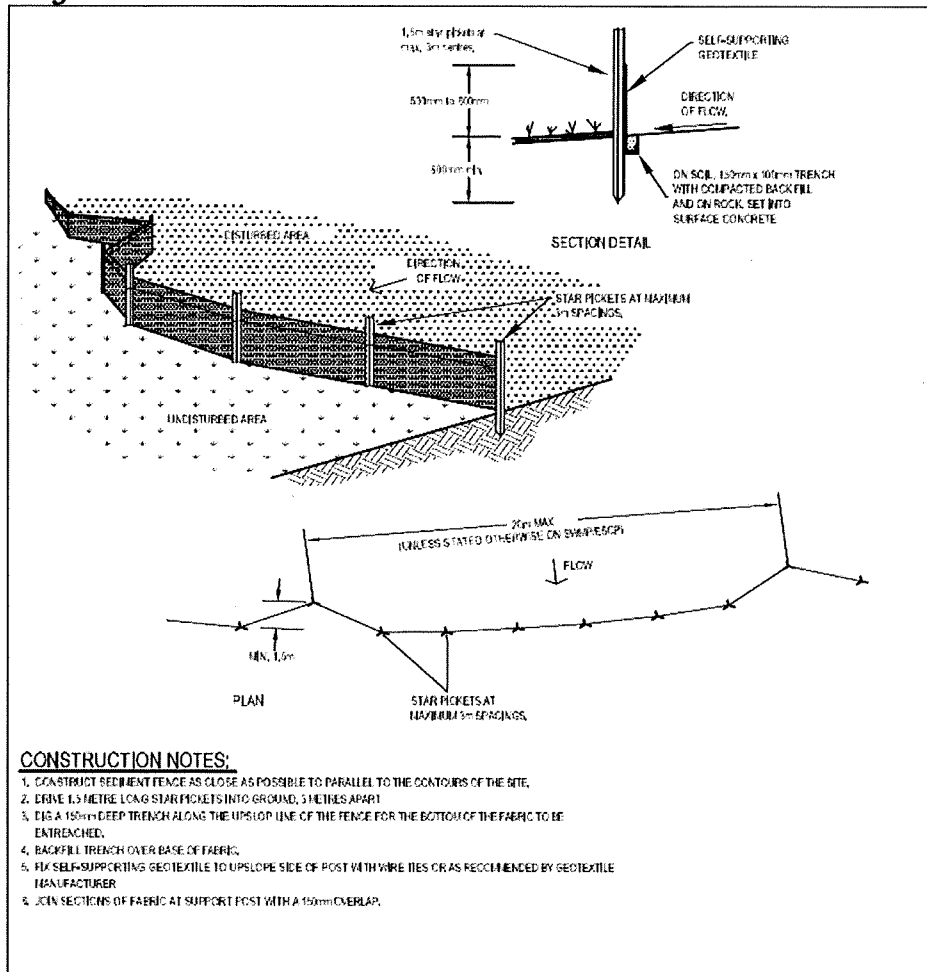


Diagram B: Standard Sediment Fence Installation



Due to the linear nature of the project and each hydrant requiring the same controls, it is not considered necessary to specifically locate these controls in plan form (eg by way of an Erosion and Sedimentation Control Management Plan). The controls are however to be installed in accordance with the following suite of criteria:

- Both straw bale and sediment control fencing should be installed on the low side of the work site;
- Both straw bale and sediment control fencing should be installed as close as possible to follow the existing contours of the site;
- A provision for the diversion of water, and stabilisation of channels, around the excavation site should be installed; and
- Areas where soil is to be stockpiled is to be surrounded by sediment control fencing and protected from runoff water.

For trenching a combined use of straw bale filter fencing in drier areas and sediment fencing in wetter areas is to be used.

All excavated material is to be placed on the high side of the trench and/or used for creation of temporary bench; stockpiling should only occur where there are open disturbed areas rather than stockpiling continuously along the trench.

The fencing shall be placed at regular intervals across the contour of the slope and should be installed to protect any drainage lines or watercourses downslope.

2.3 Indigenous Heritage

Should any material suspected of being an Aboriginal object become unearthed in the course of works associated with the proposed works, all work at that location shall cease immediately as per Section 90 of the *National Parks and Wildlife Act 1974*, and the Office of Environment and Heritage (OEH) shall be contacted immediately to arrange for representatives to inspect the site.

3 Responsibility and Requirements

3.1 On-site Structure and Responsibility

Table 2: Allocation and Responsibility

Environmental Responsibilities		
Title	Name and Contact No.	Responsibility
General Manager of Operations for Perisher	Michael Fearnside - 6459 4408 / 0428 484 273	Project Manager: <ul style="list-style-type: none"> • Oversee the project and manage contractors. • Liaise with Perisher Blue staff and Contractors. • Respond to complaints & inquiries of environmental matters. • Liaise with DPE and NPWS.
Mountain Manager, Perisher	Andrew Kennedy - 6459 4408	Site Supervisor: <ul style="list-style-type: none"> • Day to day supervision of the project. • Ensure conditions of consent are complied with. • Implementation and maintenance of environmental controls as detailed in the SEMP.
Environmental Manager, Perisher	Tanya Bishop - 6459 4504 / 0424 946 365 (or delegate)	Site Environmental Manager: <ul style="list-style-type: none"> • Site induction. • Staff training. • Oversee environmental management of the project. • Audit implementation and maintenance of environmental controls as detailed in the SEMP. • Manage rehabilitation and offsets program. • Monitor the site.

3.2 Legislative Requirements

The following legislation applies to the proposed development:

3.2.1 Relevant Legislation

Environmental Planning Legislation

Environmental Planning and Assessment Act, 1979 (NSW)

Conservation and Heritage Legislation

National Parks and Wildlife Act, 1974 (NSW)

Biodiversity Conservation Act, 2016 (NSW)

Upgrade of Snowmaking Infrastructure at Toppa's Dream, Perisher Ski Resort ♦SEE Appendix D: SEMP

Environment Protection and Biodiversity Conservation Act, 1999 (Cwlth)

Pollution and Waste Management Legislation

Protection of the Environment Operations Act, 1997 (NSW)

4. Implementation

4.1 Emergency Response Contacts

The following key environmental emergency response contacts are provided as follows:

Key Environmental Emergency Response Contacts

Organisation	Emergency Phone	Non Emergency Phone
NSW Police	000	Jindabyne: 6456 2244
NSW Fire Brigade	000	Perisher: 6457 5037 Jindabyne: 6456 2476
NSW Ambulance	000	Perisher: 131 233
Medical Centres	Perisher (Winter Only): 6457 5266 Jindabyne: 6457 1221	
National Parks and Wildlife Service (NPWS)/DECCW	1800 629 104	Perisher: 6457 5214 Jindabyne 6450 5555
Roads and Traffic Authority	Traffic incidents & road conditions: 131 700 Road closures and special events: 132 701	
Environment Protection Authority Environment Line	131 555	
NRMA Road Service	Jindabyne: 6456 2170	

4.2 Environmental Training

All the contractors and staff involved with the works are to be made aware of the relevant requirements of this SEMP. Site induction is to be undertaken prior to the commencement of works by the Perisher Environmental Manager.

It is the responsibility of the Environmental Manager to ensure that all staff and subcontractors working on the site are provided with environmental training to achieve a level of awareness and competence appropriate to their assigned activities. Persons, including subcontractors' personnel, without appropriate environmental training should not be permitted to work on the site.

The Environmental Manager should establish and maintain a register of environmental training carried out including dates, names of persons trained and trainer details.

Site induction is to include:

- a) Environmental awareness, the principal of due diligence, and other relevant codes of practice.
- b) Specific environmental issues including:
 - *This SEMP*
 - *Relevant legislation (as identified in this Report)*
 - *Emergency preparedness/procedures*
 - *Incident reporting*
 - *Community consultation*
 - *Site environmental procedures*

4.3 Communication

4.3.1 External Stakeholders

Given the location and extent of the proposed works on the ski slopes, consultation is not considered necessary, outside of the regulatory authorities.

4.3.2 Liaison with EPA

The Project Manager must notify the EPA Regional Manager of pollution incidents on or around the site (or the EPA Pollution Line on telephone 131 555 should the incident occur outside normal EPA business hours), which have occurred in the course of the activities (to comply with the PEOA), in the following circumstances:

- if the actual or potential harm to the health or safety of human beings or ecosystems is not trivial,
- if actual or potential loss or property damage (including clean-up costs) associated with a pollution incident exceeds \$10,000.

The Project Manager should notify OEHL verbally within 2 hours and in writing within 24 hours of any pollution incidents that involve the EPA.

4.3.3 Complaints Register

Any complaints made by the community & other stakeholders shall be recorded on a complaints register managed by the Project Manager.

All complaints should be responded to within 24 hours of receipt.

4.4 Working Hours

As per the Department of Planning & Environment standard condition of consent, the proposed working hours for the project will be between 7am and 6pm on Mondays to Saturdays with no work be carried out on Sundays or public holidays.

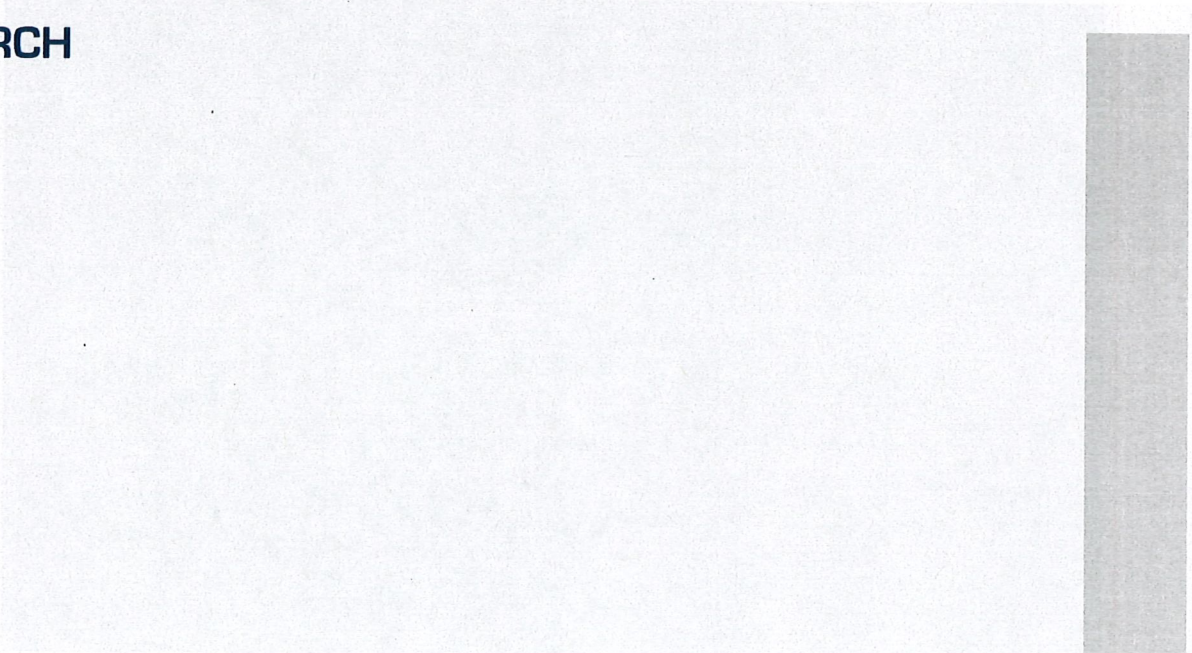
Should these hours need to be varied, the Project Manager will request a variation from the Department of Planning & Environment in accordance with the conditions of consent.

4.5 Auditing

The Contractor and Site Supervisor in consultation with the Site Environmental Manager will both undertake an audit of the works to ensure the environmental safeguards and controls are being implemented effectively.

APPENDIX E

AHIMS SEARCH



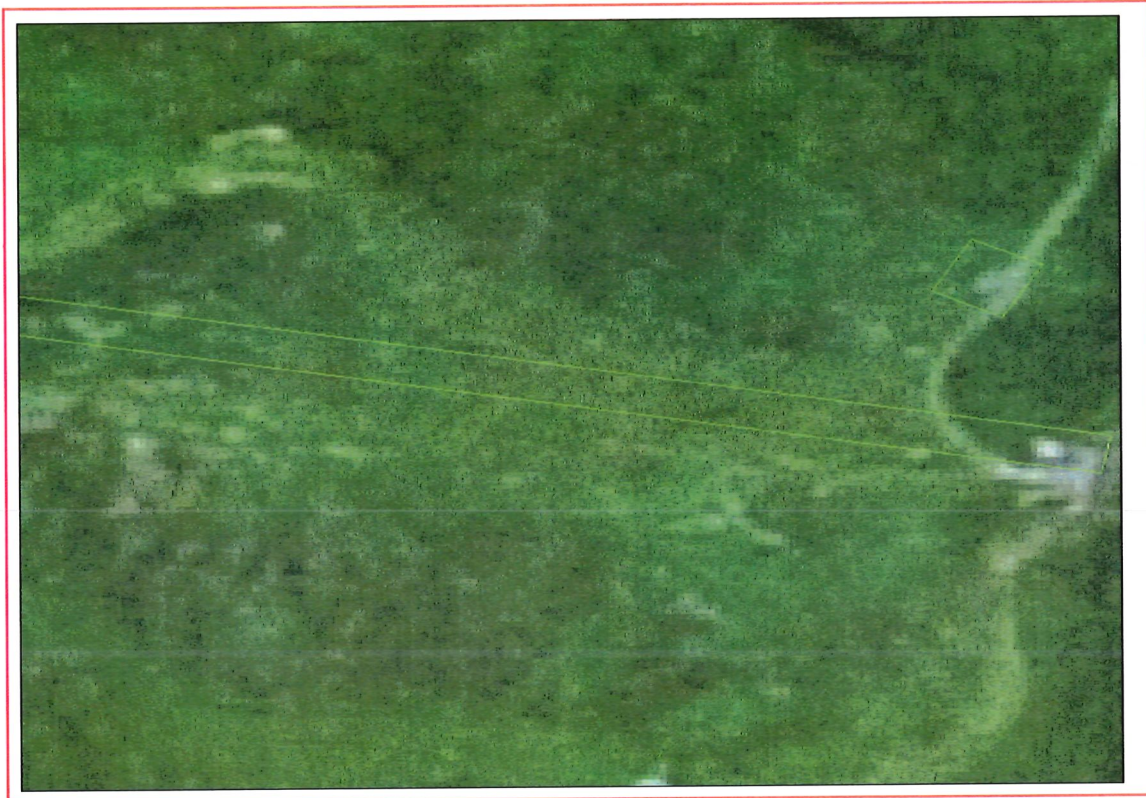
dabyne planning

Date: 16 May 2018

Attention: Ivan Pasalich
Email: ivan@dabyneplanning.com.au
Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -36.3798, 148.4037 - Lat, Long To : -36.3777, 148.407 with a Buffer of 50 meters, conducted by Ivan Pasalich on 16 May 2018.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette](http://www.nsw.gov.au/gazette) (<http://www.nsw.gov.au/gazette>) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.