4 Impact Assessment

The proposal will result in:

- **tree removal:** the removal of 36 Snow Gum trees, eight of which are described as small and/or very young trees, and the pruning of branches on eight trees
- **rock removal:** the removal of the tops of 56 rocks
- **bridge construction:** The temporary damage to and shading of approximately 80 m^2 of Tall Alpine Heath in association with the proposed bridge.

4.1 IMPACTS ON VEGETATION COMMUNITIES

The proposal will result in the temporary damage to and shading of approximately 80 m^2 of Tall Alpine Heath in association with the proposed ski bridge. There will also be some temporary damage to shrubs immediately surrounding the rock to be blasted, however these impacts are expected to be minor as the shrubs can generally be pulled back from the rock prior to the blast.

Whilst 36 Snow Gum trees will be removed and eight will have at least one branch pruned, this is a minor impact in the context of the abundance of other Snow Gum trees within the study area and immediate surrounds. The impacts on Snow Gums will be offset by the planting of 88 Snow Gums adjacent to the Bloody Mary Ski Run.

The vegetation to be affected by the action proposed is widespread within the study area and elsewhere within the Perisher Resort Area. In this context the impacts on vegetation communities in association with the proposal is a relatively minor and acceptable impact.

4.2 IMPACTS ON FLORA SPECIES OF CONSERVATION SIGNIFICANCE

One threatened flora species, *R. anemoneus*, was opportunistically detected just to the north of the study area during the survey period. Approximately 20 plants were observed in this location. *R. anemoneus* is now common throughout the locality and, given the absence of any plants in close proximity to the actions proposed, it is unlikely that any *R. anemoneus* plants will be affected by the proposal.

Podocarpus lawrencei occurs within the study area and surrounds particularly in association with boulderfields. *Podocarpus lawrencei* is considered to be of conservation significance, particularly where it occurs as a shrubland (DEC 2006) or closed heath, and where it is associated with, and a major foraging resource for, Mountain Pygmy-possum populations. The proposal may result in the pruning of a few *Podocarpus lawrencei* shrubs where it is growing over rocks to be blasted. However it will not affect more than a few plants and will not affect any potentially significant stands of the species. The impacts of the proposal on *Podocarpus lawrencei* are minor in the context of the abundance of the species within the study area and elsewhere in the locality.

4.3 IMPACTS ON ENDANGERED ECOLOGICAL COMMUNITIES

The Upland Bog and Wet Heath within the study area and surrounds comprise two endangered ecological communities:

- The *Montane Peatland and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps bioregions endangered ecological community* (EEC) (hereafter referred to as the Montane Peatland and Swamps) which is listed on the TSC Act; and
- The *Alpine Sphagnum Bogs and Associated Fens* EEC (hereafter referred to as the Alpine Sphagnum Bogs and Associated Fens) which is listed on the EPBC Act.

The proposal has been designed to avoid any adverse impacts on the Upland Bog and wet heath within the study area. This is primarily by designing the proposal to avoid the need for summer time vehicle access. Access for the tree removal will be on foot during autumn, with only the larger trunks being removed off site. Larger trunks will be cut into manageable pieces and stacked for later over-snow removal. The access for the rock blasting and bridge construction will be over snow, so as to remove the need for vehicle access, and thus to avoid the potential for adverse impacts on Upland Bog and other vegetation communities. There will be minor temporary impacts to some bog shrubs where they occur immediately around rocks to be blasted however the impacts will be minor and will not result in any significant adverse impacts on the bog.

The bed, banks, floodplains and associated vegetation of the Snowy River and all its tributaries potentially comprise part of the *Aquatic Ecological Community in the Natural Drainage System of the Catchment of the Snowy River in NSW* EEC (hereafter referred to as the Snowy River Aquatic Ecological Community), which is listed under the *Fisheries Management Act 1994*. Blue Cow Creek and tributaries potentially comprise this EEC. The impacts associated with the proposed snow bridge will be very minor and will not result in any significant impacts on the Snowy River Aquatic Ecological Community. In the context of the other impacts on the Snowy River, in association with Guthega Pondage, and natural events such as the 2003 wildfires, or major flood events, the potential indirect impacts on water quality, and thus on the Snowy River Aquatic Ecological Community, associated with the proposal are negligible.

4.4 IMPACTS ON FAUNA HABITATS

Whilst the study area provides habitat for a range of native fauna species, including threatened species such as the Broad-toothed Rat, Mountain Pygmy-possum, Gang-gang Cockatoo and Flame Robin, similar habitats are widespread in adjacent areas and within the locality and will continue to be available to these species.

The impacts associated with the proposal are limited to the removal of a very small amount of native vegetation, and a relatively small number of trees and rocks. Some sheltering and foraging habitat will be affected. However, this is a very small proportion of the sheltering and foraging habitat available to these species in the study area and surrounds, and is not likely to adversely impact on fauna generally, or any threatened species.

The proposal will not affect any known Broad-toothed Rat nests or burrowing sites for the Guthega Skink. All of the rocks to be affected were searched around their bases for evidence of Broad-toothed Rat nests and Guthega Skink burrows. Whilst Broad-toothed Rat scats were found around some of the rocks to be affected, no large concentrations of scats, or other evidence which would suggest nesting

activity was observed. One potential reptile burrow site in the location of the proposed bridge (see Photo 12) was targeted during the reptile surveys. However, only Southern Water Skinks and Broad-toothed Rat scats were observed at this site with no evidence of the Guthega Skink recorded at this site or elsewhere within the study area during the survey period.

Whilst the proposal will result in the blasting of the tops of six rocks in one of the boulderfields within the study area (see Photos 5 and 6), this is unlikely to affect the thermal properties of this boulderfield or otherwise adversely affect the ability of Mountain Pygmy-possums to use this secondary habitat. Whilst increased grooming and snowrider activity may compress the snow in this area, it represents a small part of the boulderfield, which appears to be quite deep in this area. As such, it is considered unlikely that the any compression of the surface snow would adversely affect the capacity of this area to provide potentially suitable sheltering habitat for Mountain Pygmy-possums.

The blasting associated with the rock removal will be undertaken in low snow conditions at the end of winter. It is unlikely, although possible that some Mountain Pygmy-possums, may be hibernating within the study area during that time. It is highly unlikely that the proposed rock blasting will be sufficiently close to any hibernating Mountain Pygmy-possums to kill them, given the small area to be affected relative to the size of the boulderfields within the study area and immediate surrounds, which are secondary boulderfields of lower importance to the species than the nearby primary sites associated with Mt Blue Cow and the Parachute area. It is also unlikely given that any hibernating Mountain Pygmy-possums would be likely to be deep within the boulderfield, where it is likely to be warmer, than near the surface, where the blasting will take place. The noise associated with the blasting may cause any Mountain Pygmy-possums in the immediate vicinity to come out of hibernation or torpor, which can place stresses on individual animals. However, given the relatively short duration of the proposed blasting (a week or so to complete all 56 rocks and less than a day to complete rocks 8-12 which are within a boulderfield), the relatively small area of boulderfield to be affected, and the secondary nature of the potential habitat to be affected, the potential for adverse impacts on any individual Mountain Pygmy-possums is likely to be minor.

None of the trees to be pruned in association with the proposal are hollow-bearing and consequently there will be no loss of this resource for hollow-dependant threatened fauna.

The proposal will not result in significant modifications to the hydrological environment nor will it create permanent barriers which prevent the movement and dispersal of fauna species. On the contrary, the proposal involves compensatory plantings of trees adjacent to Bloody Mary ski run. This action will theoretically enhance connectivity for some fauna species between the patches of remnant native vegetation within the area.

Under these circumstances, the impacts of the proposal on fauna habitats are considered to be relatively minor and acceptable.

Notwithstanding this conclusion, given the small potential for blasting to kill or injure any Mountain Pygmy-possums that may be in close proximity to blasting, it is proposed to undertake a search of the areas immediately surrounding those rocks that are within a boulderfield (rocks 8-12) immediately prior to the proposed blasting. If any Mountain Pygmy-possums are detected, then blasting will be delayed until such time as the Mountain Pygmy-possums have moved from the area.

4.5 THREATENED SPECIES LIKELIHOOD OF OCCURRENCE

As a result of database searches and field surveys, the threatened species and communities identified in **Table 4** are known or considered likely to occur within the study area or immediate surrounds (Appendix A). The potential impact of the proposal on these species has been assessed (Appendix C) pursuant to relevant statutory assessments.

Table 4: Threatened and migratory species and ecological communities with the potential to be affected by the proposal

Scientific Name	Common Name	FM Act	TSC Act	EPBC Act	Occurrence
Flora					
Ranunculus anemoneus	Anemone Buttercup	—	—	V	Known
Fauna					
Burramys parvus	Mountain Pygmy-possum	—	E	E	Potential
Mastacomys fuscus	Broad-toothed Rat	—	—	V	Known
Callocephalon fimbriatum	Gang-gang Cockatoo	—	—	V	Known
Petroica phoenicea	Flame Robin	—	—	V	Known
Loipholis guthega	Guthega Skink	—	—	E	Potential
Threatened Ecological Communities					
Montane Peatlands and Swamps		—	E	—	Known
Alpine Sphagnum Bogs and Associated Fens		—	—	E	Known
Snowy River Aquatic Ecological Community		E	—	—	Known

V = Vulnerable, E=Endangered

4.6 CONCLUSION OF SEVEN-PART TEST

An assessment of significance under Section 5A of the EPA Act was undertaken on those species and threatened communities known within the study area and immediate surrounds or with potential to occur there (**Table 4**). The outcome of this assessment was that it is unlikely that the development would significantly impact on those threatened species and endangered ecological communities assessed (Appendix C).

A Species Impact Statement is not required for the proposal.

Recommendations have been provided in Section 5 to ameliorate the potential impacts of the proposal.

4.7 CONCLUSION OF EPBC ASSESSMENT

An assessment of significance under the EPBC Act was undertaken on threatened species known within the study area and immediate surrounds or with potential to occur there (**Table 4**).

The outcome of this assessment was that it is highly unlikely that the development would significantly impact on those threatened species assessed (Appendix C). A referral to the Commonwealth under the EPBC Act is not considered necessary.

Recommendations have been provided in Section 5 to ameliorate the potential impacts of the proposal.

5 Recommendations

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

Vegetation and Habitat Management

1. All disturbance should be kept to the minimum required to achieve the proposal
2. Native vegetation adjacent to the study area should be protected during the construction phase of the proposal. Construction materials, machinery or other substances should not be stored in any undisturbed areas of native vegetation to avoid physical damage to the vegetation there
3. The fragments of rock created during blasting should be placed around the bases of the affected rocks to provide supplementary fauna habitat.

Mountain Pygmy-possum

4. Given the small potential for blasting to kill or injure any Mountain Pygmy-possums that may be in close proximity to blasting a search of the areas immediately surrounding those rocks that are within a boulderfield (rocks 8-12) should be undertaken immediately prior to the proposed blasting). The snow should be cleared, as necessary to gain access to the bases of the affected rocks. These areas should be searched with the aid of a burrow scope for Mountain Pygmy-possums. If any Mountain Pygmy-possums are detected, then blasting will be delayed until such time as the Mountain Pygmy-possums have moved from the area.

6 Conclusion

This report describes the biological environment and assesses the potential effects on threatened and migratory species, endangered populations and ecological communities of the proposal to undertake tree and rock removal works and installation of a skier bridge as part of the re-establishment and widening of the Powder Valley Traverse, Guthega, Perisher Ski Resort.

The study area and immediate surrounds was found to support four vegetation communities, Tall Alpine Heath with and without Eucalypts, Open Heath, Upland Bog – Wet Heath, and Rocky Outcrop Heath – Podocarp Heath. These vegetation communities extend well beyond the study area, and with the exception of Rocky Outcrop Heath – Podocarp Heath, are extensive in the locality.

The Upland Bog which occurs within the study area comprise the *Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps* EEC, which is listed on the TSC Act, and the *Alpine Sphagnum Bogs and Associated Fens* EEC, which is listed on the EPBC Act. The proposal has been designed to avoid any adverse impacts on these communities.

The assemblage of aquatic fauna which occur within Blue Cow Creek, which traverses the study area, is likely to comprise the endangered ecological community *Aquatic Ecological Community in the Natural Drainage System of the Catchment of the Snowy River in NSW* which is listed under the *NSW Fisheries Management Act 1994*. The proposal will not have any adverse impacts on this community.

Seventy-three plant species were recorded within the study area including 68 native species and five introduced species. One threatened flora species, *R. anemoneus* was detected at one location to the immediate north of the study area. *R. anemoneus* is located well beyond the proposed activities and will not be affected by the proposal.

Whilst the study area provides known and potential habitat for a number of threatened fauna species including the Broad-toothed Rat, Mountain Pygmy-possum, Guthega Skink, Gang-gang Cockatoo, and Flame Robin, it does not provide any critical habitats, nor any other important resources for any threatened fauna species, that are not available extensively immediately beyond the study area and in the locality generally. Whilst the proposal will have some minor and largely temporary impacts on fauna habitats, these impacts are considered acceptable given their minor and temporary nature, and in the context of extensive areas of suitable habitat that will continue to be available to these species in contiguous areas.

Following the application of the seven factors from Section 5A of the *NSW Environmental Planning and Assessment Act 1979*, as required by the *NSW Threatened Species Conservation Act 1995* and the *NSW Fisheries Management Act 1994,* in accordance with relevant assessment guidelines, it is concluded that the proposal is unlikely to have a significant effect on threatened species, endangered populations, ecological communities, or their habitats.

A Species Impact Statement is not required for the proposal.

Following consideration of the administrative guidelines for determining significance under the *Commonwealth Environment Protection & Biodiversity Conservation Act 1999*, 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 not necessary.

Notwithstanding the relatively minor impacts on vegetation and fauna habitats associated with the proposal, the proposal includes the offsetting of these impacts through the tree and heath plantings adjacent to Bloody Mary ski run.

The impact mitigation and amelioration measures described in Section 5 above are also recommended to be incorporated into the proposal.

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