

Ben Lomond National Park Management Plan

1998



Parks and Wildlife Service
Department of Primary Industries,
Water and Environment

Ben Lomond National Park - Management Plan, 1998

BEN LOMOND NATIONAL PARK MANAGEMENT PLAN 1998

This Management Plan for the Ben Lomond National Park has been prepared in accordance with the requirements of part IV of the *National Parks and Wildlife Act 1970*.

A draft of this plan was released for public comment in accordance with statutory requirements from 7 June 1997 until 19 September 1997. This plan is a modified version of that draft, having been varied to take account of public input during that period and the views of the National Parks and Wildlife Advisory Council.

Unless otherwise specified, this plan adopts the interpretation of terms given in Section 3 of the *National Parks and Wildlife Act 1970*. The term "Minister" when used in the plan means the Minister administering the Act. The term "Park" refers to the Ben Lomond National Park.

In accordance with Section 23(2) of the *National Parks and Wildlife Act 1970*, the managing authority for the Park, in this case the Director of National Parks and Wildlife, shall carry out his or her duties in relation to the Park for the purpose of giving effect to, and in accordance with the provisions of, this Management Plan. The position of Director is held by the Director, Parks and Wildlife Service, Department of Primary Industries, Water and Environment.

In accordance with Section 23(2) of the *National Parks and Wildlife Act 1970*, and with Section 6 and Section 23(5) of the *Ben Lomond Skifield Management Authority Act 1995*, the managing authority for the Skifield Development Area within the Park, the Ben Lomond Skifield Management Authority, shall carry out its duties in relation to that portion of the Park within the Skifield Development Area for the purposes of giving effect to, and in accordance with the provisions of, this Management Plan.

References in the management plan to the managing authority are references either to the Ben Lomond Skifield Management Authority or the Director, depending on the context or the circumstances at the time.

APPROVAL

This management plan was approved by His Excellency the Governor-in-Council on 2 November 1998 and took effect on 16 December 1998, being seven days after publication of that approval in the *Government Gazette*.

The provisions of Section 28 of the plan, which authorise the exercise of certain statutory powers, were approved by both Houses of the Parliament of Tasmania on 22 June 1999 in accordance with Section 21(3AA) of the *National Parks and Wildlife Act 1970* and gazetted in accordance with Section 21(3A) of the Act.

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Introduction

The first formally adopted management plan for the Ben Lomond National Park was approved by the Governor-In-Council on 12 January 1982. This plan updates and replaces the 1982 Management Plan. Since the 1982 Management Plan was adopted, there have been considerable changes in the Park, concentrated in the Skifield Development Area designated in that plan. As required in the 1982 plan, a Skifield Development Plan has been prepared for the area. New ski lifts, visitor facilities including a public shelter, a licensed inn and accommodation, sewerage system, road and access improvements, and other developments have been undertaken.

The Director of the Parks and Wildlife Service (holding the statutory position of Director of National Parks and Wildlife) is the managing authority for the Ben Lomond National Park. However, under the *Ben Lomond Skifield Management Authority Act 1994*, the Ben Lomond Skifield Management Authority is the managing authority for the Skifield Development Area of the Park except in relation to powers conferred on the Minister and on the Director by the *National Parks and Wildlife Act 1970* and the *Aboriginal Relics Act 1975* with respect to matters relating to fauna, flora, Aboriginal sites and Aboriginal relics. Responsibility for preparation of a management plan lies with the Director in accordance with Section 20(1) of the *National Parks and Wildlife Act 1970*.

References in the management plan to the managing authority are references either to the Ben Lomond Skifield Management Authority or the Director, depending on the context or the circumstances at the time.

This Management Plan is comprised of three parts. Part A gives an account of those features of the Park for which management objectives and prescriptions are developed. Part B sets out the values and management objectives. Part C sets out the prescriptions for management necessary for achieving the management objectives for the Park. Parts B and C constitute the plan as required by the *Act*. The plan may only be varied in accordance with the procedures set out in Sections 19 and 20 of the *National Parks and Wildlife Act 1970* and, in any case, will be reviewed five years after the time of approval of the plan by the Governor.

Many organisations and individuals have assisted in the preparation of this plan by providing information and comments on earlier drafts. Their time and effort is gratefully acknowledged.

Part A Management Context

1 Location, Regional Context And Access

1.1 Location and Regional Context

Ben Lomond National Park is located in north east Tasmania. It lies some 65 kilometres south of Bass Strait and 50 kilometres inland from Tasmania's east coast. The Park is approximately a one hour drive from Launceston and three hours from Hobart (See Map 1).

The Ben Lomond National Park is an invaluable reserve for the conservation of the flora community and species diversity of Tasmania's alpine areas, representing the north-east alpine complex. The area referred to as the Ben Lomond Terrain consists of an outstanding variety of glacial and periglacial features which are considered of national significance.

Ben Lomond is the main focus of downhill skiing in Tasmania. The skifield on Ben Lomond is Tasmania's only downhill skiing area which offers some of the facilities expected of a contemporary skifield.

Issues and Implications

The location of the skifield in a sensitive and unique alpine environment in a national park means that any development must be carefully planned and controlled to contain environmental changes to acceptable and clearly defined limits.

1.2 Vehicular Access

The Ben Lomond road, which gives access to the plateau, is the only generally used road in the Park. It enters the Park on its northern boundary and reaches the plateau after a spectacular series of zig-zags called Jacob's Ladder. The Ladder is a spectacular feature in its own right. The Government allocated substantial funds in 1995/96 for the first stage of its upgrading.

There is also a number of old tracks which enter the park but are now disused. These are mainly on the south eastern corner of the Park. A fire trail lies along much of the western boundary of the Park, sometimes crossing into the Park.

Issues and Implications

Road management and maintenance requires careful and detailed analysis.

The alignment of the Jacob's Ladder section of the Ben Lomond access road does not conform with minimum engineering standards. The narrow formation width and unstable slopes, coupled with icy conditions and a lack of safety barriers on some sections poses safety risks. This section of the road causes considerable traffic flow problems during the ski season.

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Map 1

Upkeep of the road is costly especially because Jacob's Ladder is not completely stable, regularly experiencing rockfalls. However, engineering investigations have determined that upgrading the road, rather than constructing a new route, is the most practicable solution.

Co-ordinated management of vehicle access and parking, and shuttle bus operations could also improve access to the skifields.

1.3 Walking Access

There are a limited number of walking tracks or routes within the Park which have been in use for many years, some of which are marked by pole lines and cairns. There is a track from Carr Villa to the lodges near Legges Tor. Tracks or routes leading to the plateau on its western and southern sides, such as Stack's Bluff via Rossarden, cross through or originate in State Forest to enter the Park. Several cross country skiing and summer walking routes traverse the plateau itself. Within the Ski Village there is a system of boardwalks connecting the main facilities. In snow conditions, visitors also leave the boardwalk to reach facilities not connected by it.

Issues and Implications

Within the village and on the ski slope runout area, there are several areas of conflict in movement patterns between vehicles, pedestrians and skiers. The two main areas of conflict are the arrival/departure area and the slope runout area.

Particularly in the vicinity of the slope runout area, pedestrian and skier circulation is somewhat confused. The arrangements with the lift ticketing booths and the public shelter mean that pedestrians (including skiers wishing to buy tickets) are obliged to walk through the runout area for the main ski slopes. Mixing of pedestrians and skiers is undesirable as it carries with it the potential for injuries. In addition, heavy foot traffic reduces the quality of snow.

The agreement of adjacent land holders needs to be obtained if tracks or routes entering the Park from their land are to be permitted or encouraged.

Generally, the provision of walking tracks, tourist trails and cross country ski routes is limited and could be improved considerably.

2 Area, Boundaries & Tenure

2.1 Area and Boundaries

The Ben Lomond National Park, a State reserve, covers an area of 16 456 ha. The boundaries of the Park are set out on Plan Number LD 775 registered in the Central Plan Office, Department of Primary Industries, Water and Environment (Map 1).

An area of the Park has been designated as the Skifield Development Area, managed by the Ben Lomond Skifield Management Authority. The boundaries of the Skifield Development Area of the Park are set

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Map 2 Skifield Development Area

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out on Plan Number LD 1579, registered in the Central Plan Office, Department of Primary Industries, Water and Environment (Map 2).

The Park is in the municipality of Northern Midlands.

Except along the north west boundary and small isolated blocks of private land on the western, north east and southern boundaries, the Park is entirely surrounded by State Forest. As a result of the Regional Forest Agreement, an area of land on the north western boundary of the Park has been referred to the Resource Planning and Development Commission for determination of its appropriate reserve category.

2.2 Reservation History

The value of the area for wildlife came to the notice of the Animals and Birds Protection Board and the first Sanctuary of 22 864 ha for animals and birds was proclaimed on 11 September 1934. A number of reductions and additions to the Sanctuary followed. In addition, an area of the mountain of 16032 ha was proclaimed a Scenic Reserve under the *Scenery Preservation Act 1915* on 23 July 1947. The Scenic Reserve was also subject to revocations and reinstatements.

As a result of the various changes in area and status, the areas of the Sanctuary and the Scenic Reserve differed. Of the Sanctuary, 2665 ha was outside the Scenic Reserve and became a separate Conservation Area under the provisions of the *National Parks and Wildlife Act 1970*. This land is also subject to a State Forest reservation proclaimed 24 April, 1940.

After the area became a National Park, under the *National Parks and Wildlife Act 1970*, an area including Stacks Bluff was added in 1975 (Statutory Rule No. 182 of 1975) and an area in the vicinity of Stein Crag was added in 1979 (Statutory Rule No. 12 of 1979).

Issues and Implications

The Public Land Use Commission (1995) recommends that the Ben Lomond Conservation Area be revoked and that any natural and cultural values in that area be protected by Forestry Tasmania under its special management zoning system in a forest management plan. The northern portion of the Conservation Area is now subject to a forest management plan.

2.3 Private Licences and Leases

Around thirty licences to occupy or leases of sites within the Park boundaries have been issued to persons or organisations connected with activities on the mountain. This excludes engine sheds, ticket offices and the like.

Two firms are licensed to operate ski lifts on the ski slopes. Another firm has a licence to hire ski equipment and conduct a ski school. A fourth company operates a licensed hotel, the Ben Lomond Creek Inn, and on two other sites nearby, accommodation facilities and staff accommodation.

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The use of over snow transport within the park requires an annual licence by the managing authority. All such vehicles must be registered in accordance with the requirements of the Department of Transport.

Issues and Implications

The licences and leases have been issued under a number of different Acts and amendments to Acts over a number of years. Differences in management policies, and consequent differences in intent and emphasis in the drafting of licences and leases has led to inconsistencies. Some licence and lease conditions are out of date and many having varying conditions and lengths of tenure though issued for essentially the same purposes.

The existence of two lift operations has hindered the most appropriate development of the ski slopes. However, the policy of the Skifield Development Plan is for a single operator. Achieving this presents considerable difficulties in the short to medium term. Until it is achieved, management of the slopes is fraught with difficulties.

2.4 Exercise of Statutory Powers

Section 24(1) of the *National Parks and Wildlife Act 1970* governs the exercise of certain statutory powers (as defined in the Act) in State reserves, including National Parks, and requires that any that are to be exercised be authorised in the management plan. To take effect, such provisions in the management plan permitting the use or a development of a State reserve other than under the powers conferred by the *National Parks and Wildlife Act 1970*, must be approved by both Houses of Parliament (Section 21(2) & (3) of the Act).

Powers of any agencies related to matters such as search and rescue and law enforcement do not require authorisation in the management plan.

3 Geology, Geomorphology And Soils

3.1 Geology and Geomorphology

Ben Lomond National Park is predominantly an alpine plateau at more than 1500 m above sea level. It is surrounded on all sides by precipitous escarpments. The following account is predominantly drawn from Davies and Davies (1989).

The basement rocks are slates, siltstones, greywackes and quartzite of the Mathinna Beds (Fish and Yaxley, 1966), folded intensely, and subsequently intruded by granite. Peneplanation followed and later Permian and Triassic rocks were deposited. These were intruded by dolerite during the Jurassic Period with sills up to 300m thick, forming the main rock of the plateau. As the magma cooled it developed a system of cracks outlining polygons a metre or two across.

The igneous rocks conform to and mimic the sedimentary structure, and while maintaining a generally horizontal structure, these rocks were extensively faulted and uplifted (Caine, 1983). The forces which produced the fault, also broke the dolerite into rectangular blocks a few

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centimetres to a few metres across along joints mostly trending north-west or north-east. The joints have controlled the main stream directions and the shape of the plateau edge, as well as being responsible for the great escarpments which delimit the plateau. The waters of several small lakes and creeks on the plateau flow to a central valley to form the Nile River, which winds its way through the deep Speke Gorge on the western side of the mountain.

Geologically, the Ben Lomond plateau is predominantly dolerite. The only exception is a highly localised area of exposure of the Parmeener super-Group (Forsyth et al, 1974) in the creek bed of Rafferty Creek under Coalmine crag and around the flanks of the Ben Lomond plateau. This exposure includes a narrow coal sequence, once worked commercially (Plomley, 1989). Immediately upslope of the exposure, hornfels occur mixed with dolerite. Scattered occurrences of hornfels are also found associated with 'sorted polygons' in the upper catchment of Storys Creek.

During the Pleistocene epoch, approximately one fifth of the area of the State was covered with ice (Fish and Yaxley, 1966). A small ice-cap existed on Ben Lomond, which was the only plateau in the north-east to be glaciated. The effects of these glaciers accounts for much of the contrast between the alpine scenery of Ben Lomond and that of the other mountains in the north-east. There are large areas of exposed bedrock with little detrital cover, which have no equivalents on the other mountains (Caine, 1983).

The glacial history of the area is however largely unknown as few features identifiable as glacial forms exist. The main evidence of glacial action are the erosional features, such as smooth bedrock surfaces on the plateau, and a small number of moraines at lower elevations. In several places, there are recessional moraines. Below Hamilton Crags a small mountain glacier excavated an armchair-shaped depression (cirque) and at its downstream extremity deposited a terminal moraine.

Relict periglacial depositional features are also found on the Ben Lomond plateau. The most notable are the blockfields, found on the floors of most of the valleys of the plateau (Bradbury, 1993). Approximately 26% of the Ben Lomond plateau is covered by such blockfields (Caine, 1983). The largest area of bare blockfield is found in the Rodway Valley between the northern and southern plateau. Here there are more than 50 ha of non-vegetated blockfields, with a further 40 ha elsewhere on the northern plateau. The southern plateau has almost as much bare blockfield, but there are few extensive contiguous areas. Vegetated blockfields are found around the bare areas and on the valley floors.

Evidence that a periglacial climate still exists on the plateau is the presence of 'sorted polygons'. This small scale patterned ground is found only on very small but widely dispersed parts of the mountain plateau and is formed by frost action in dolerite debris.

Issues and Implications

Bradbury (1993) has identified several significant geoheritage sites at Ben Lomond. The entire plateau and area above 800 metres, referred to as the Ben Lomond Terrain, consists of an outstanding variety of glacial and periglacial features which are considered of national significance. The blockfields found on Ben Lomond are reputedly one of the most extensive allochthonous blockfields in the world.

The geology has implications for slope grooming and erosion, presenting difficulties not encountered elsewhere.

3.2 Soils

The information set out below on soils within the Park is predominantly drawn from Davies and Davies (1989).

The soils of the Ben Lomond plateau vary markedly in response to topography, drainage and geology. Much of the plateau is devoid of soils and characterised by dolerite rock exposure and boulderfields. Organic soils (peats) vary from shallow (<10cm) to deep (>60cm), and are usually black to dark brown and often consist of a fibrous surface layer over a muck peat. The deep peats are most extensively developed on the western side of Rodway Valley near Rafferty Creek and Talus Creek, where numerous tarns occur.

Mineral soils are also found, particularly in the better drained sites. Shallow uniform textured clay loams, and loams derived from dolerite are commonly found on well drained flats and slopes, typically yellow-brown to yellow-red in colour and less than 30cm deep.

Smooth exposures of dolerite bedrock devoid of soils, are widespread on both the northern and southern parts of the plateau, particularly on crests. Deep (ie. >50cm) uniform and gradational textured soils derived from dolerite are also found but these tend to be restricted to well drained lower slopes and flats. These soils are also typically yellow-brown to yellow-red in colour. In some circumstances, the mineral soils contain a shallow organic surface horizon.

A few centimetres to a metre or two below the surface of the blockfields there is a layer of peat between the boulders, and this rests on a layer of smaller blocks held together by sand, silt or clay. In one place the peat has been estimated by radiocarbon dating to be about 3,000 years old. Finer material has washed out and travelled down the streams to form the small delta in Lake Youl, and to provide sand for the low dunes on the shore of Lake Youl. These sands derived from dolerite have a high erosion hazard. Highly erodable, deep uniform textured sands and sandy loams derived from sandstone are restricted to a small area on Rafferty Creek. These soils are almost devoid of vegetation.

All of the soils are acidic and moderately to strongly leached.

Issues and Implications

Erosion is the main soil management issue in the Park, particularly in the alpine areas where the impacts of roads, tracks, construction works, and slope grooming must be very carefully managed. Ongoing work is required to control erosion problems and prevent future degradation.

4 Climate

There are no permanent weather stations on the Ben Lomond plateau, the nearest comprehensive station being located at Mt Barrow. Climatic data for the ski village, from 1981 to 1985, has been summarised by Faulkner (1986).

The present climate of Ben Lomond is a maritime periglacial one in which freeze-thaw cycles and high soil and atmospheric humidity are common. Freezing does not penetrate far into the soil (Caine, 1983).

Rainfall is primarily frontal or orographic, and is heaviest during the winter months. The winter rainfall is mainly a result of a series of cold fronts constantly sweeping across the State. Occasionally depressions in Bass Strait produce heavy rainfall and snow in the north-east accompanied by strong easterly winds (Faulkner, 1986).

Noble (1981) recorded summer rainfall for three years at several stations on the north face of Ben Lomond. Using a regression analysis, he arrived at a rainfall of 1277 mm for 1260 m altitude. However, the actual plateau is up to 200 m higher than this, and it is probable that an increase in rainfall would be experienced at this higher altitude.

There are few records of temperature on Ben Lomond, but they have been made intermittently during winter at 1555m elevation near Giblin Peak (Caine, 1983). The coldest temperatures, and the greatest number of days per month of frost, coincide with the heaviest precipitation in July and August.

Extrapolations from stations at low elevations suggest a January average temperature of about 10°C. Minimum temperatures below -6°C are uncommon, based on records on Ben Lomond from 1981 to 1985 (Faulkner, 1986) In July 1981, a minimum of -18°C was recorded at the Ben Lomond ski village.

Snow falls on average one day in four during July and August. Faulkner reported that the heaviest early season snowfalls come with north-easterly winds, but as the season progresses, the westerly winds dominate the snowfall pattern. The dominant westerly airflow is changed by localised site factors. During winter, most winds come from either the north-west or south-west which together account for nearly half the windy days recorded. Wind also occasionally blows from the north-east and to a lesser extent west and south-east. Ben Lomond is subject to very strong winds.

Issues and Implications

Visitor interest in skiing means Park use is inherently seasonal and subject to unpredictable weather and climatic conditions, and consequently snow cover. Weather conditions sometimes prevent visitor access and pose safety risks for inexperienced or ill prepared visitors.

In other places, the possible effects of global warming on the future of skifields is being seriously considered. The same issues are confronted by the Ben Lomond skifield.

Good statistics on snowfall and snow cover patterns would be useful in forward planning of the skifield area. At present, such information is poor and unreliable.

Figure 1 WINTER CLIMATIC STATISTICS (1981-1985) - BEN LOMOND VILLAGE (from Faulkner, 1986)

	June	July	Aug	Sept	Oct
Mean Maxima °C	2.6	2.0	1.8	3.8	7.2
Mean Minima °C	-1.6	-3.4	-1.9	-0.9	-0.0
Extreme Maxima °C	7.5	11.1	9.0	11.2	13.0
Extreme Minima °C	-5.5	-11.0	-7.4	-7.0	-6.0
Light Frost Days	26.2	30.2	30.1	29.6	27.5
Heavy Frost Days	24.5	29.4	26.3	21.7	18.5
Freeze Days	17.8	16.5	12.8	5.4	2.2

5 Flora

The Ben Lomond National Park provides a representative reserve of Tasmania's north-east alpine complex. Much of the Ben Lomond plateau is stony with areas of low and often stunted forms of vegetation. However the remainder of the mountain contains a variety of habitats ranging from alpine moorland to dense forest. Most of the information on vegetation set out below is drawn from Davies and Davies (1989). Species are listed in Appendix I.

A total of 222 plant species have been recorded on the Ben Lomond plateau, represented by 152 dicotyledons, 62 monocotyledons, 1 gymnosperm and 7 fern and fern ally families. The five most common families (Asteraceae, Poaceae, Epacridaceae, Cyperaceae and Proteaceae) account for about half the total number of species recorded, with most families only represented by one or two species. Some introduced plants have naturalised on the plateau from introduced grasses, clovers and straw used to stabilise soil and revegetate areas affected by slope grooming, road works and other site disturbances. Vegetation communities of the Ben Lomond plateau are shown on Map 3. The forest communities of the Park were mapped as part of the Regional Forest Agreement process.

The most common species recorded on the plateau in the 1989 Davies and Davies study were the herbs *Poa gunnii* and *Gentianella diemensis*, which occurred in 79% and 75% of the sampling sites respectively. Of the shrubs, *Richea scoparia* was the most frequent (in 71% of sites), followed by *Orites acicularis* and *Pentachondra pumila* (both in 70% of sites), *Baeckea gunniana* (69%) and *Epacris serpyllifolia* (68%). The cushion plants *Abrotanella forsteroides* and *Pterygopappus lawrencii* are abundant through out the plateau.

One species, the rock cushion plant *Chionohebe ciliolata*, is notable. In Tasmania, it is known only from a small localised area within the Park, near Stonjeks Lookout at Hamilton Crags. It is also found on the south island of New Zealand, although future taxonomic work may

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identify the Tasmanian species as a new Tasmanian endemic. If so, the conservation of the species would be even more important, requiring greater care with management and protection. East of the Ford River, is the main stronghold of the rare endemic *Oreomyrrhis sessiliflora*. Two other species of interest collected during the Davies and Davies survey were an as yet undescribed *Carex* species, and *Colobanthus curtisiae*, an endangered species which has affinities with the New Zealand species *Colobanthus strictus*. The flowering specimen was collected from the edge of Rafferty Creek. Two forms of *Leptospermum rupestre* have been recorded, the normal green form, and a grey form, the latter possibly resulting from hybridisation with *Leptospermum lanigerum* which grows at a lower altitude around the plateau.

Davies and Davies (1989) identified 22 plant communities on the plateau. Four of the communities are not adequately reserved in State reserves in Tasmania. These are:

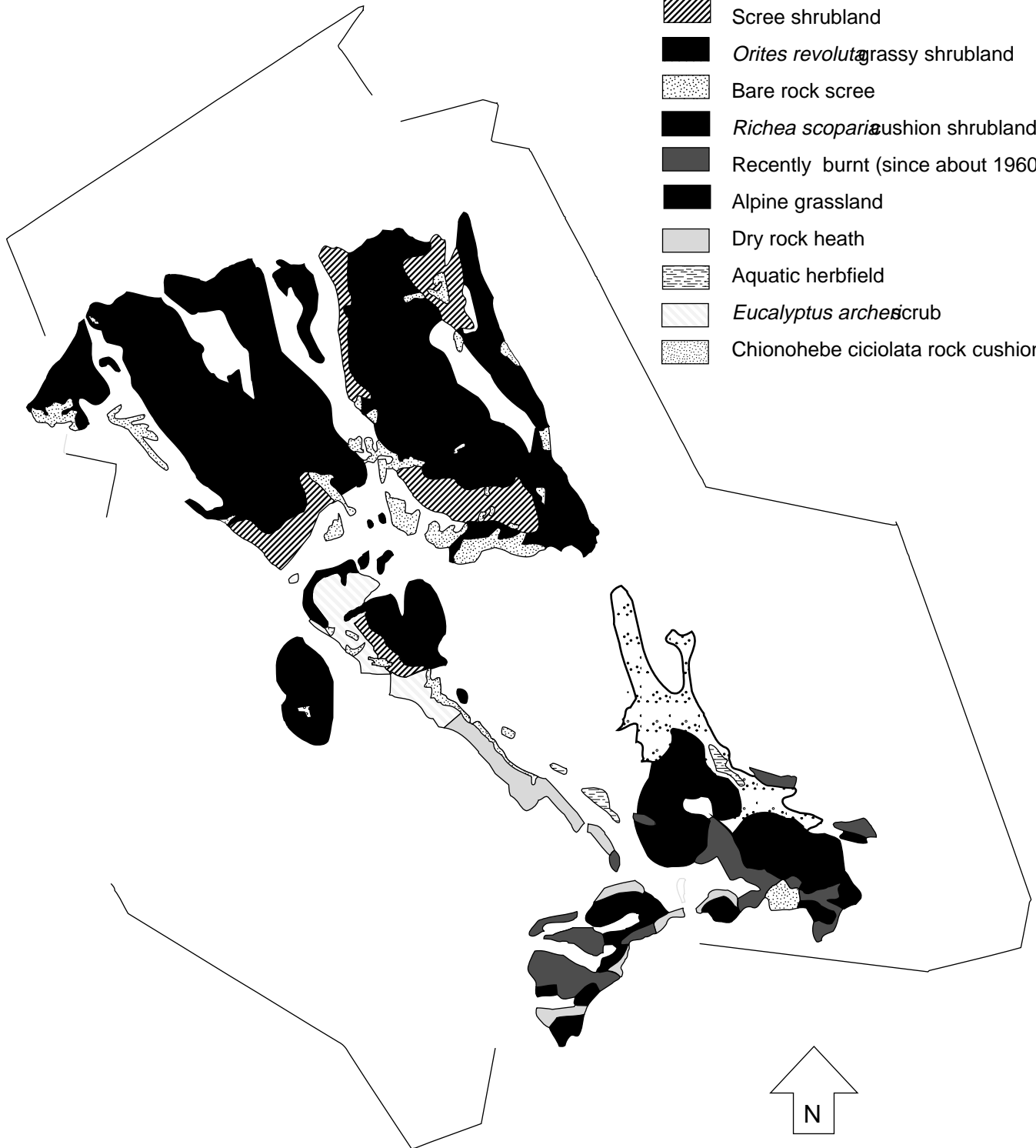
<i>Chionohebe ciliolata</i>	Rock cushion
<i>Montia australasica</i>	Open stony herbfield
<i>Poa costiniana</i> - <i>Poa gunnii</i>	Alpine grassland
<i>Richea scoparia</i> - <i>Poa costiniana</i>	Grassy shrubland

Below the escarpment edge, the shrubs *Tasmannia lanceolata* (mountain pepper) *Westringia rubiaefolia*, and *Orites revoluta* are abundant and also occur in the higher forests. A narrow band of *Eucalyptus archeri* forms the upper limit of tree growth at altitudes varying from 1175 to 1300m. It also occurs in and around the rare wet sedgeland which occur above 1050m but below the treeline. Just below the *E. archeri* band nearly pure stands of *E. delegatensis* (gummed-topped stringy bark) occur. *E. dalrympleana* (mountain white gum) occurs occasionally in these forests below 1000m, locally abundant only at lower altitudes. Common shrubs in the upper *E. delegatensis* forests are *Cyathodes parvifolia* (pink mountain berry), *C. glauca* (cheeseberry), *Pultenaea juniperina* (prickly beauty), and *Lomatia tinctoria* (guitar plant), becoming abundant in the lower forests. Below the *E. delegatensis* forests are extensive *E. amygdalina* (black peppermint) forests in which *E. dalrympleana* also occurs. The latitudinal boundary between the *E. delegatensis* and *E. amygdalina* forests varies considerably around the mountain.

Issues and Implications

The Ben Lomond National Park is an invaluable reserve for the conservation of the community and species diversity of Tasmania's alpine areas. Management of the Park needs to consider these values and encourage further research and inventory of the flora in the Park. Fire management, erosion control, weed and disease control, and development control are important for conservation of the flora of the Park.

- Low altitude grassy alpine shrubland
- High altitude grassy alpine shrubland
- Skeletal rock herbfield
- Scree shrubland
- Orites revoluta* grassy shrubland
- Bare rock scree
- Richea scoparia* cushion shrubland
- Recently burnt (since about 1960)
- Alpine grassland
- Dry rock heath
- Aquatic herbfield
- Eucalyptus archeri* scrub
- Chionohebe ciciolata* rock cushion



Ben Lomond National Park
Map 3
 Vegetation of the
 Ben Lomond Plateau
 Davies & Davies, 1989

6 Fauna

The vertebrate and invertebrate fauna of the Park is not well known. The following account sets out the information on the subject that is available. Because of the decreasing area of natural habitat in north-eastern Tasmania the importance of the Park for regional wildlife conservation is likely to increase. Mammals known from the Park are listed in Appendix II (Rounsevell, Taylor, & Hocking, 1991).

6.1 Mammals

Of the larger mammals Bennett's wallabies *Macropus rufogriseus* and wombats *Vombatus ursinus* are generally common whilst pademelons *Thylogale billardierii* are abundant in the wet gullies and areas with thick undergrowth. Wombats and wallabies are regularly seen in the ski village during winter, even under blizzard conditions. Forester or eastern grey kangaroos *Macropus giganteus* have been recorded along the south west edge of the Park and the long-nosed potoroo *Potorous tridactylus* is also found. The Tasmanian bettong *Bettongia gaimardi* has been reported in the Park. Both the common brushtail possum *Trichosurus vulpecula* and the common ringtail possum *Pseudocheiridis peregrinus* occur in the Park. Sugar gliders *Petaurus breviceps* have also been recorded. The native rats such as the velvet-furred rat *Rattus lutreolus* and the long-tailed rat *Pseudomys higginsii* are also found in dense vegetation. The latter is probably also widespread in dolerite scree slopes.

Of the remaining smaller mammals, the brown bandicoot *Isodon obesulus* and the rare white-footed dunnart *Sminthopsis leucopus* have been recorded from the Park. The eastern quoll *Dasyurus viverrinus* and the Tasmanian devil *Sarcophilus harrisii* are common predators in the Park, while the tiger quoll *Dasyurus maculatus* also occurs. Eastern quoll inhabit the ski village during winter, sometimes sighted during daylight hours, and dusky antechinus *Antechinus swainsonii* occasionally visit lodges. The echidna *Tachyglossus aculeatus* has been recorded and platypus *Ornithorhynchus anatinus* have been sighted in the Upper Ford River, even in winter.

Issues and Implications

Details of mammal populations are incomplete and faunal survey and research work remains to be carried out.

6.2 Birds

No systematic study of the birds of the Park has been made. Wedge-tailed eagles have been regularly reported in the past. A list of the species known to occur is included in Appendix III.

Issues and Implications

Management of the Park needs to ensure protection of endangered, vulnerable or rare birds. Bird survey and research work remains to be carried out.

6.3 Reptiles, Amphibians and Fish

Little is known of the reptiles from Ben Lomond. Tiger snakes *Notechis ater* are relatively common below the tree line. Of particular interest, is the endemic alpine skink *Niveoscincus greeni*. The species occurs along the stony banks of alpine streams and scree and boulder fields. It has been recorded from several other mountain top areas in the State.

Amphibians recorded from Ben Lomond are the brown tree frog *Litoria ewingi*, the common eastern froglet *Ranidella signifera* and the endemic Tasmanian froglet *Ranidella tasmaniensis*.

In 1988, research by the Inland Fisheries Commission found no fish in Lake Youl or Lake Baker. Trout are likely in streams below the plateau.

Issues and Implications

Management of the Park needs to ensure protection of any endangered, vulnerable or rare reptiles, amphibians, and fish. Reptile and amphibian survey and research work remains to be carried out.

6.4 Invertebrates

There has been some study of the limited range of invertebrate animals in the Park, for example the Odonta (dragonflies).

An undescribed stone fly *Austropentura* sp. occurs in the Park and is restricted to the highland regions of north east Tasmania. Another undescribed stone fly *Cardioperla* n. sp. is considered rare (susceptible) (Invertebrate Advisory Committee, 1994).

Issues and Implications

Considering the Tasmanian invertebrate fauna totals an estimated 32,000 species, knowledge of such fauna in the park is extremely limited. Further invertebrate survey and research work is needed.

Studies indicate that dragonflies are particularly vulnerable to disturbance such as the creation of picnic areas adjacent to streams.

6.5 Introduced Species

Feral cats *Felis catus* have been reported in the Park but the numbers and distribution of the cats are unknown. Cats pose a serious threat to native fauna, particularly birds and smaller mammals and reptiles.

Fallow deer *Dama dama dama* are found near the Park, but there are no records of deer within it. Rabbits *Oryctolagus cuniculus cuniculus* are found in the Park, particularly where the Park borders farmland.

The brown trout *Salmo trutta* is found in limited numbers in the rivers of the Park but not on the plateau.

Issues and Implications

Deer, cats, rabbits and trout have impacts on native species and ecosystems.

7 History And Development

7.1 Aboriginal History

The Ben Lomond National Park lies within the territory of the Ben Lomond tribe (Kee, 1991). The tribe occupied some 260 square kilometres of terrain around Ben Lomond. The boundaries of their territory were the South Esk River to the east and south, and to the north, the edge of the rainforest which passes in a line south of Mt Barrow, Ben Nevis and Mt Saddleback (Kee, 1991). To the south was the territory of the North Midlands tribe and to the north and east lay the territory of the North East tribe.

It is estimated that the Ben Lomond tribe comprised some three or four bands with an estimated total population of between 150 to 200 people (Jones, 1974). In other areas, such as the territory of the Oyster Bay tribe to the south east, bands comprised a number of family groups, with band numbers ranging between 30 to 80 people (Brown, 1991). Similar band sizes may have occurred in the territory of the Ben Lomond tribe. Davies and Davies (1989) citing Plomley (pers. com.) suggest that the Ben Lomond plateau may have formed part of the territory of the PLANG.UM.MAIR.REEN.NER band. Although bands were based in their own territory, they also moved over the territories of other friendly bands (Brown, 1991). It is apparent that the Ben Lomond tribe moved to the coast via the South Esk and Georges Rivers (Kee, 1991).

Aboriginal people chose campsites on the valley floors of rivers and creeks. They preferred to stay on land that was north facing and gently sloping. Consequently, sites are most dense along river and creek valley floors and adjacent gently sloping, north facing hill slopes and on the break of slope on forest/marsh edges (Ranson, pers. comm.). Large sites are very uncommon on steep slopes (Brown, 1986). Davies and Davies (1989) record an Aboriginal quarry site below Coalmine Crag. Very little is known of the material culture of the Ben Lomond Tribe. In 1830, Batman encountered some huts in the foothills on the southern side of Ben Lomond and he records that the area was "a usual beat for them" (Kee, 1991). Gilbert Robertson reported "fresh smokes raised by the natives under Ben Lomond" in 1829 (Kee, 1991). Historic records document Aboriginal burning at high altitudes in a number of places in Tasmania (Plomley, 1966).

A notable member of the Ben Lomond tribe was Walter George Arthur, son of Rolepa, a leading man of the tribe. Walter Arthur was an activist for the rights of Aboriginal people at Wybalenna on Flinders Island. At one time, with seven others, he petitioned Queen Victoria noting that they were free people who had defended themselves before giving up their country and making an agreement with Governor Arthur (Reynolds, 1995).

Issues and Implications

There is a statutory obligation to comply with the *Aboriginal Relics Act 1975* to ensure Aboriginal sites are protected. Coupled with the fact that so little is known and so little evidence remains, full assessment of possible Aboriginal heritage must be undertaken if any development is

proposed in the Park. Assessment needs to be undertaken in cooperation with the Tasmanian Aboriginal community.

7.2 European Exploration, Recreation and Skifield Development

Ben Lomond was named by Colonel Patterson, the founder, in 1804, of the first settlement in northern Tasmania. The area was surveyed by means of a rough sketch which appeared in a field book of Surveyor-General Grimes, dated 1807. The nomenclature of key places in the Park, and their derivations, are listed in Appendix IV.

Although a fair amount of rural development took place in the surrounding country side, the mountain itself remained comparatively unknown till the summer of 1905-6, when Colonel Legge explored the plateau five times, and assessed the heights of the principal crags. Coal was once mined commercially near Rafferty Creek below Coalmine Crag (Plomley, 1989).

In 1929 the Northern Tasmanian Alpine Club (NTAC) was formed at the suggestion of Mr Fred Smithies, O.B.E. After exploring several snowfields in the State, the club finally selected Ben Lomond. Initially, it pioneered trips to the mountain via English Town approaching the mountain from the western side to reach the plateau. In 1931 club members began improving a track, formerly used by landowners, trappers and others, which ran from the Upper Blessington road through Satan's Gully to Carr Villa on the edge of the tree line at c1200 metres above sea level. In the autumn of 1932, a chalet was built at Carr Villa, and in the summer of 1933-34 members worked on the construction of a road from Upper Blessington to Carr Villa. By April 1934, a car had been driven to the top of the first hill. In addition, during this period the track to Carr Villa was upgraded and used for horses. Money for the road was sought from Government in June 1937 but apparently only a little was forthcoming and that was not until 1940. Nonetheless work continued in 1937-38. Following the war, the NTAC from its own resources resumed the construction and upgrading of the road to Carr Villa. Although only a jeep track was built, this convinced Government of the feasibility of constructing an all weather road and it arranged for the survey of an appropriate line. After a delay of several years the club took over the survey and established the present route. Subsequently the Government called tenders for the construction of the road and the club was the successful tenderer. The road to Carr Villa was finally completed in 1953.

A walking track from Carr Villa to the vicinity of Legges Tor was built by the club, its marking with cairns and poles being recorded in the club minutes of 1935. A grant for upgrading this track was provided by Government in 1938. In spite of this, a club member, L.T. Branagan died in a blizzard in 1939 whilst travelling from Carr Villa to a hut near the summit. Government made a further grant for the track in 1939.

The summit hut had been built early in 1937 from materials carried in by horses from English Town. This was followed by the construction of a private lodge in 1938 in the lee of Giblin Peak called "The Chateau". Following the war, with growing interest in skiing, the rest of the huts in the vicinity of Legges Tor were built and the Parliamentary Standing Committee of 1950 recommended that Ben Lomond should be developed as a ski resort. In 1955 the Australian National Championships were

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held on the mountain and Ben Bullen, the last of the lodges in the summit area was built to accommodate competitors.

In order to further encourage the development of skiing at Ben Lomond, the Northern Scenery Board suggested, in 1963, the establishment of a ski village on the mountain, but below the Summit. This suggestion was accepted by the Government, which assisted financially in having the existing road extended to the top of the plateau via the steep "Jacobs Ladder". This road was opened in 1966 and sites for lodges in the ski village were pegged out during the following year.

Since that time, there have been considerable developments in the Park, concentrated in the Skifield Development Area. In 1982, a management plan was approved. As required in that plan, a Skifield Development Plan was prepared for the area and adopted in 1993. New ski lifts, visitor facilities including a public shelter, a licenced inn and accommodation, sewerage system, road and access improvements, and other developments have been undertaken. By Act of Parliament in 1995, a Ben Lomond Skifield Management Authority was established to manage the Skifield Development Area.

Issues and Implications

Some of the lodges have been given a listing by the National Trust. However, a detailed and comprehensive heritage assessment will be necessary, in accordance with the guidelines of the ICOMOS Burra Charter, to determine any heritage significance of lodges.

The pattern of development of summit lodges and the ski village poses problems in meeting contemporary standards in environmental management. For example, the summit lodges are not and cannot practicably be connected to the village sewerage scheme. In such an important and environmentally sensitive environment, minimum acceptable standards must be set and complied with.

8 Fire

While current archaeological evidence suggests the area was not much used by Aborigines, the area may have been fired for hunting and gathering purposes. The Ben Lomond alpine flora has probably been subjected to drought and fire over a long period of time (Davies and Davies, 1989). However some areas of the Park appear not to have been fired for hundreds of years. Rainforest and some alpine communities found in the Park are very vulnerable to the effects of fire. On the plateau, areas associated with poor drainage, blockfields, or topographic protection may have been free of fire for long periods of time. On the other hand, some plant communities possess evolutionary adaptations to fire and some animal species are adapted to particular fire regimes or particular seral stages of plant communities produced by fire. This is why both Aborigines and European trappers used fire to encourage particular animal species.

According to Noble (1981), the first 30 years of the 1800s saw a change from an Aboriginal to a European burning regime, thought to result in a decrease in frequency of burning. He identified numerous areas of past

fire, particularly on the southern end of the plateau. Davies and Davies (1989) report similar observations, including what appear to be spot fires occurring 20 to 30 years ago. Davies and Davies (1989) suggest that the northern part of the plateau has a lower fire frequency than the southern end, possibly because of higher rainfall and the barrier of large blockfields.

A fire trail lies along much of the western boundary of the Park and, where necessary, has been constructed just within it.

Within the ski village, two lodges have burned in recent years. There is a fire hydrant system in the village.

Issues and Implications

Within the Park, the main risk of fire is from Park users although, infrequently, lightning strikes may also be a cause. There is also the possibility of escape of fuel reduction burns being undertaken within the Park. From outside the Park, escaped regeneration, or fuel reduction burns, both in State Forest and on private land could pose a threat to the Park, as could arson.

There has not been a wildfire or a prescribed fire recorded in the Park since 1978. While this indicates that the risk of wildfire is not high, any fire which does start in the forest on the slopes of the massif, or enters the Park from below, will be extensive, intense, very difficult to suppress and likely to burn into fire sensitive communities. It is not possible to undertake fuel reduction burning on the slopes of the massif within the Park, nor is it practical to construct further fire trails or fire breaks. Fire which starts within the alpine communities will be much easier to deal with. Suppression of such fires by direct attack is quite possible and therefore should have high priority.

While fire can be used to manipulate habitats for conservation or other purposes, such an approach can only be adopted after comprehensive research has established its validity as a safe and effective management tool. Consequently, research into fire ecology is important.

Fire safety and fire fighting capabilities in the ski village need to be sufficient to respond to the likely risks.

9 Phytophthora

The plateau area of the Ben Lomond National Park is believed climatically unsuitable for the fungal disease *Phytophthora cinnamomi*. However below the plateau, the Park is vulnerable to the disease, though it is unlikely to be of any ecological significance. The presence and extent of infection within the Park is unknown.

Recently, an undescribed *Phytophthora* species has been discovered near Pine Lake on the Central Plateau, at an altitude of over 1100 metres. Whether this new species can cause disease in native plant species in Tasmania has not been determined. If it does, this could pose a threat to vegetation at similar altitudes in the Ben Lomond National Park.

Issues and Implications

Every care must be taken to avoid the introduction of *Phytophthora* species. Use of infected machinery or visitor equipment, and the importation of infected gravel and soil are the most likely vectors of introduction of the disease. There can be significant costs in enforcing hygiene measures which need to be weighed against the risks and likely consequences of any infection.

10 Recreation And Tourism

10.1 Regional Role

The Ben Lomond National Park provides both an inland alternative to and complements the east coast parks of Mt William National Park and Douglas-Apsley National Park. The natural features of the Park and its winter climate ensure that the Park is an important winter skiing destination for Tasmanians, on occasions attracting skiers from elsewhere. The proximity to Launceston also attracts people on sight seeing excursions when snow is plentiful. However, the skifield is not significant nationally because of its unreliable snow conditions and limited skifield terrain capacity. The average ski season is about nine weeks, with some seasons extending to sixteen weeks. In some years, there is no ski season.

Outside the ski season, visitor numbers are low.

Issues and Implications

The unreliability of snow conditions from year to year and limited vertical terrain for ski runs constrains the attractiveness of the skifield to a wide market.

There is, as yet unrealised, potential for increased recreation and tourism during the summer months. However, there are limits on commercial operation of facilities in summer including lack of grid power and visitor numbers likely to remain below the critical mass necessary for profitable returns. Nevertheless, in keeping with the State's ecotourism strategy (Department of Tourism, Sport and Recreation, 1994), and **Strategies for Growth** (Department of Tourism, Sport and Recreation, 1995), the natural attractions of the Park, with careful planning and management, can provide visitors with relaxation, recreation, and an appreciation of some of the environmental values of Tasmania's alpine country.

10.2 Visitor Activities, Facilities and Services

The major visitor activity in Ben Lomond National Park is downhill skiing. Cross country skiing is becoming increasingly popular and the extensive snowfields of the mountain are commonly used for this.

Rock climbing on the cliffs of Ben Lomond is a popular activity and a guide to 100 of the climbs has been prepared by a group of climbers. A

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shelter, which is also open for public use, has been constructed by climbing groups in the vicinity of Carr Villa.

Interpretation facilities in the Park are limited to a few signs. The Map and Notes for the Ben Lomond National Park, accompanied by notes concerning the features and facilities of the area, is out of print. However, the Ben Lomond Plateau Ski and Walk Map, published in 1988 by the then Department of Lands, Parks and Wildlife is available.

Coaches provide a bus service between Launceston and the ski village during the winter months. The ski village is located 600m east of Legges Tor, the second highest peak (1572m) in Tasmania. The ski village includes club and private lodges which provide the majority of accommodation, a ski rentals and ski school business, which also includes staff accommodation, ski patrol facility, and ski lift ticket offices. There is a public shelter in the ski village which provides for day use and evening activities. The shelter contains public toilets, nappy change, change rooms, lockers and hot and cold water.

The shelter is linked to the hotel, the Ben Lomond Creek Inn. The Creek Inn provides full meal service and regular evening entertainment. The Inn also operates six alpine units accommodating up to six people each.

There is area available for further commercial accommodation and two potential sites remain for development as club lodges.

The skifields above the village are serviced by eight lifts, two of which are operated by Tasmanian Ski Lifts. The other six lifts are operated by Alpine Enterprises. A ski school and ski equipment hire business also operates on the slopes. This business provides limited catering for take-away food and drink.

There is a designated camping area within the Park below the plateau, just off the Ben Lomond Road. At the top of Jacobs Ladder, a lookout provides panoramic views.

Issues and Implications

During the skiing season, congestion frequently occurs in the car parking areas although a program of upgrading has commenced. Some visitors come ill prepared for the conditions they encounter. Day visitors are often inexperienced in driving in snow conditions and deterred by the need for chains and the challenging Jacobs Ladder section of the access road.

There is no budget accommodation available for the general public.

With no real advantage to the skier and a number of disadvantages, two separate lift operators hinders effective use of the slopes. The policy is to move to a single lift operation but achieving a single lift operator on the slopes has proved difficult and will require time.

Interpretation facilities and information are very limited. There is a lack of non-skifield orientated facilities and services such as nature trails and interpretation.

On the skifield, services such as water and sewerage are stretched during busy periods and may not cope with increased numbers unless upgraded or extended. The reliance on gas and diesel generation of power deters provision of visitor services outside peak times.

10.3 Visitor Numbers

The visitor statistics available for the Park are not comprehensive nor collected in a comparable form from year to year.

The main visitation to the park is in winter by skiers and others involved in snow sports. Summer visitors come for the spectacular views, wildflowers, and easy walking on the plateau.

Use of the ski slopes depends on the season. In a good ski season approximately 40,000 visitors arrive in the Park during the season. In an average year, visitor numbers range between 25 - 30, 000. In poor years, between 10 - 20,000 visitors are usual. However, in a bad year, such as occurred in 1993, there may be no skiing at all and few visitors other than members of ski lodges.

Issues and Implications

Unreliable and frequently low numbers of visitors to the skifield place strains on the commercial viability of skifield operations. On the other hand, during brief peak use times, services and facilities can be stretched to and sometimes beyond acceptable limits.

Use of the Park outside the ski season is limited and consideration of the needs and interests of summer visitors could encourage wider use.

11 Skifield Infrastructure

11.1 Water Quality And The Ski Village Water Supply

The ski village has a reticulated water system. The storage for this is a dam which has been twice enlarged since its construction.

Park staff have collected baseline data on water quality within the Park. Water quality testing at the supply intake for the village has revealed no serious problems.

The Forestry Commission (1993) recommended a minimum reserve width of 40 metres each side of rivers which are important for town water supplies. This is to retain forest vegetation to *provide a physical barrier to the movement of soil and water, and also filter out sediment* (Michaelis, 1984). Destruction of vegetation by fire along rivers and streams also can reduce water quality, decreasing soil infiltration rates and increasing erosion (Michaelis, 1984).

Issues and Implications

The volume of the ski village's future water supply requirements has not been resolved and further development of accommodation may necessitate additional water storage capacity. The capability of the area to supply water sustainably may set limits on the scale and types of development that can occur. Furthermore, any development within the Park will need to be carefully undertaken, and visitor behaviour closely monitored to prevent it causing any deterioration of water quality. The catchment of the existing water storage is small. Within it are located a number of ski lifts which pose a potential risk of fuel spills contaminating the water supply.

11.2 Sewerage

The ski village is connected to a sewerage scheme. The six outlying lodges, on the summit area above the ski village, use pit toilets.

The existing sewerage treatment plant (STP) was upgraded during 1991. It has the capacity to handle 60-75 cubic metres of raw sewerage but the capacity is dependent on water temperature. A report on treatment and improvements was prepared by consultants in 1995 (Gutteridge Haskins and Davey, 1995).

Issues and Implications

Some effluent quality problems can arise because the STP is only operated during the winter months and as such the plant is recommissioned every season.

If operation of the existing plant were improved, it would produce an effluent quality superior to the present discharge licence requirement and present effluent quality. Only relatively minor plant modifications and changes to the plant operation are required.

If further development beyond the capacity already provided for by the sewerage treatment plant is to occur, the plant will require upgrading and extension.

11.3 Power

There is no grid electricity reticulated to the Park. Energy on the skifield is provided by gas or diesel generated electricity. There is no centralised reticulation of gas or diesel generated power.

A detailed energy options paper has been prepared for the Ben Lomond Skifield Management Authority and implementation plans are being considered.

Issues and Implications

Connection of the skifield to the State power grid would be of benefit to the ski area. The reliance on gas for lighting and heating and diesel powered generators for power poses some problems. The noise and fumes from the operation of the latter reduce the amenity of the area and there are risks of fire and pollution from spills associated with the use and transport of both gas and diesel. Power generated from either fuel

source is very costly when compared with grid power. However, in most respects gas is satisfactory given the circumstances of the skifield.

The capital cost of connecting to grid power is very large and considerably more costly than the capital cost of establishing gas or diesel based operations. With present economic circumstances and priorities, provision of grid power cannot be funded by government. Above ground power lines could be visually intrusive, while excavated trenches for power cables could be extremely expensive. On-ground cables may be possible.

11.4 Communication

A number of club lodges and commercial facilities on the skifield have radio telephones. The Northern Repeater Association maintains a communication facility and aerial on Legges Tor. Radio communications between the skifield and below the plateau are frequently unreliable.

The Ben Lomond Skifield Management Authority has investigated alternative communication options and is seeking funding for improvement in communications.

Issue and Implications

The unpredictability of weather and climatic conditions encountered on the skifields means that reliable communication is essential to ensure rapid response to situations that arise and to ensure efficient management of skifield operations, particularly vehicular access and parking.

12 Administration & Staffing

12.1 Ben Lomond Skifield Management Authority

A Ben Lomond Skifield Management Authority was established under the *Ben Lomond Skifield Management Authority Act 1994*, taking effect in August 1995. The Authority is responsible for the planning, management and monitoring of the Skifield Development Area, by means of and consistent with this Management Plan and the Skifield Development Plan.

The *Ben Lomond Skifield Management Authority Act 1994* does not affect the status under Part III of the *National Parks and Wildlife Act 1970* of any part of the Skifield Development Area. Nor does it affect the powers conferred on the Minister and on the Director by that Act and the *Aboriginal Relics Act 1975* with respect to matters relating to fauna, flora, aboriginal sites and aboriginal relics.

12.2 Associations and Committees

The Ben Lomond Ski Association promotes skiing and other winter sports, seeks to maintain and improve skiing and develop, beautify and conserve ski areas on Ben Lomond, encourages safety, and represents ski racing.

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The Ben Lomond Village Committee represents the various lodges within the ski village.

The Ben Lomond Ski Patrol is a voluntary organisation dealing with any mishaps resulting from downhill skiing. The responsibility for the Ski Patrol is split. Volunteer members are rostered for duty when the ski lifts are in operation during peak weekend periods. Government funded services are provided during the week by paid ski patrollers. It is important that an integrated efficient service is provided and responsibilities clearly defined.

The Ben Lomond Business Association co-ordinates the commercial development and promotion of the area as a skiing resort. Any commercial enterprise is eligible to join.

12.3 Administration

Administratively, the Park is managed as part of the Central North District of the Northern Region of the Parks and Wildlife Service. In addition to the Park, Rangers are responsible for reserves as distant as Low Head at the mouth of the Tamar River and Liawenee in the central plateau. Ranger duties include park protection, park development, maintenance of facilities, assistance to visitors and the implementation of any management, interpretation or other plans.

Within the Skifield Development Area, the Ben Lomond Skifield Development Authority is the managing authority (see 12.1). The Authority employs a skifield manager.

12.4 Management Facilities

Rangers reside in Launceston. The skifield manager, employed by the Ben Lomond Skifield Management Authority, is also based in Launceston except during the ski season. Then the manager is based at the manager station located in the Park near Carr Villa. The building includes a small office and is only suitable for single persons accommodation. Limited workshop and storage facilities are provided nearby. On the plateau, there is no shelter in the ski village for Service staff or for the skifield manager. Some equipment, such as snow mobiles, is stored in the ski patrol building.

12.5 Funding

Funding for the Park comes predominantly from Consolidated Revenue which provides for maintenance of such things as buildings, roads, and tracks, as well as the cost of running vehicles, providing fuel and power, and salaries. Funding available from this source is limited.

Funds for capital works are usually derived from Loan Funds and Special Treasury Funds. Such funds also are limited at present.

The Skifield Management Authority is separately funded. Some funds are provided through the State budget and the Authority generates its own funds from a variety of sources. The issue of funding of the Authority is under review.

Park entry fees apply to the Park. Within the Skifield Development Area, the Ben Lomond Skifield Management Authority can set its own

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fees and charges independent to those which apply to access national parks. Consequently, these fees and charges may apply in addition to those of park entry fees.

Part B Park Values, Vision, and Management Objectives

13 Park Values and Vision

13.1 Park Values

In Tasmania, the purpose of a National Park is (Regional Forest Agreement, 1997):

A large, natural area of surface and/or subterranean land containing a representative or outstanding sample of major natural regions, features or scenery, and which should be managed for the protection and maintenance of natural and cultural values with the provision for ecologically sustainable recreation consistent with the conservation of the area's values.

The Ben Lomond National Park is an invaluable reserve for protection of conservation and scientific values. The Park is a unique repository of a diverse range of plant species and communities of Tasmania's alpine areas, representative of the north-east alpine complex. The area referred to as the Ben Lomond Terrain consists of an outstanding variety of glacial and periglacial features which are considered of national significance.

The forested catchments of the lower slopes and the alpine plateau remain in a substantially natural condition and together with dramatic cliffs, rock outcrops and boulder fields represent a scenic natural area of great value for recreation and tourism. The plateau includes Tasmania's second highest mountain and during winter sometimes receives good snowfalls. The Park attracts predominantly Tasmanian visitors for downhill and cross country skiing, walking and other recreational and tourism activities which rely on the environmental values of the area.

13.2 Park Vision

This Management Plan forms the basis for realising the following vision of the Park's character for future generations:

- The environmental features and values of the Park are well researched and protected, both for the purposes of conservation and for the enjoyment of visitors.
- Most of the Park is untouched by development so that a visitor would experience a sense of isolation and remoteness reflecting the undisturbed ongoing processes of nature.
- Within carefully defined areas, a well planned and designed, ecologically sustainable skifield and other visitor activity areas are developed and well maintained, based on and respecting climatic conditions and environmental features and values.

- Visitors experiences are founded on sustainably managed Park features and values, supported by high quality facilities and services, and are enhanced with interpretation and information to extend their enjoyment and understanding of the Park's features and values.

14 Management Objectives

14.1 Principal Objectives

- Conserve and maintain, in perpetuity, the biophysical processes and biodiversity of the Park, including indigenous species, communities, ecosystems, and genetic diversity.
- Conserve the geological, geomorphological, pedological, hydrological, scenic and landscape features of the Park.
- Delineate and provide for the development of an ecologically sustainable skifield and other recreation and tourism opportunities and facilities based on appreciation and enjoyment of Park values.

14.2 Associated Objectives

- Enrich visitor experiences and understanding of Park values through education and interpretation.
- Identify and protect the Aboriginal and historic heritage of the Park.
- Encourage and facilitate research, study, and monitoring within the Park which increases knowledge and understanding of the Park, contributes to its preservation, or assists management of the Park and its use for tourism and recreation.
- Prevent degradation and rehabilitate and restore existing damaged and degraded areas of the Park.
- Protect water quality within the Park.

Part C Management Prescriptions

15 Boundaries And Tenure

- If the opportunity arises, incorporate within the Park any areas which will improve its reservation of important conservation, scenic, or other values.

16 Management Zones

16.1 Zoning Objectives

Although the management objectives set out in Part B apply to the entire Park, different conditions prevail in different areas of the Park. Therefore, to ensure appropriate management of the variations in environmental and recreational features and values, management zones have been designated.

The zones take account of, and are intended to protect Park values. They have been developed to reflect different conditions or requirements for management as set out in the management objectives. The many factors determining the location of the zones are set out and discussed in Part A and B.

No restricted zone, as provided for by Section 25 of the Act, has been designated. However, there are a number of important, sensitive areas within the Natural Zone which will be monitored and if necessary public access will be restricted to protect these areas.

- The objectives of zoning are to:
 - take account of localised features, conditions, and values;
 - protect environmental processes and diversity; and
 - provide a range of recreational and tourism opportunities consistent with the values of the Park.

16.2 Management Zones

- Two management zones are designated (Map 4). These are:
 - Skifield Development Area Zone
 - Natural Zone.
- If the need to restrict access in any Zone of the Park should arise, declare restrictions under the provisions of Regulation 12 of the *National Parks and Reserves Regulations 1971*, or revise the Management Plan if permanent restricted areas are necessary.

16.3 Skifield Development Area Zone

The Skifield Development Area Zone generally includes the catchment of Meadow Vale excepting approximately 25 hectares in the vicinity of Hamilton Crag which is the only Tasmanian location of the cushion plant *Chionohebe ciliolata*. The boundaries of the Zone are set out on Plan No. LD 1579 held in the central plan register of the Department of Primary Industries, Water and Environment (see Map 2).

Within the Zone, lie most of the snowfields best suited to downhill skiing on the mountain, and an established ski village. A wide range of visitor and recreational facilities may be provided in the area and the basis of the detailed planning for these is given in later Sections of this plan. East of the Ford River, is the main stronghold of the rare endemic *Oreomyrrhis sessiliflora*.

Objectives

- The management objectives for the Zone are to:
 - provide public access to the skifield;
 - carefully plan development of the skifield;
 - protect the alpine environment and rehabilitate damaged areas;
 - provide a range of recreational and tourism opportunities throughout the year; and
 - provide the principal visitor and management services and facilities for the Park.

Policies

- Development within the Skifield Development Area will conform to a Skifield Development Plan prepared in accordance with the prescriptions of Section 23.
- Within the Zone, special management zones may be designated to effectively plan and manage visitor services, facilities and activities (See Section 23).
- Concentrate development and use in the Skifield Development Area to designated locations, and prevent piecemeal uncoordinated development. Contain all of the main services and facilities for visitors to the Park and for management purposes within this Zone.
- Encourage summer use of the Skifield Development Area and its facilities, in accordance with the provisions of this plan and the Skifield Development Plan.
- Within the Skifield Development Area, restrict use and developments east of the Ford River to those which, in the assessment of the Parks and Wildlife Service, do not in any way threaten the plant species *Oreomyrrhis sessiliflora*.

Map 4 Management zones

16.4 Natural Zone

Much of the Park remains a substantially unaltered natural landscape with important ecological values. This constitutes the Natural Zone, which includes all of the Park not included in the Skifield Development Area Zone. It contains the full range of habitats, landforms and environmental conditions to be found within the Park.

Objectives

- The management objectives for the Zone are to:
 - preserve environmental features and processes in a substantially unaltered and undisturbed condition;
 - use the Zone as a benchmark against which areas subject to development and concentrated use can be monitored and
 - consistent with the foregoing, allow a range of compatible tourism and recreational opportunities.

Policies

- Limit facilities in the Natural Zone to:
 - picnic facilities and the vehicular access to them;
 - camping facilities and, where appropriate, vehicular access to them;
 - walking tracks and cross country skiing routes;
 - day huts/emergency shelters;
 - interpretation facilities; and
 - essential management facilities.
- On the plateau in the Natural Zone, above 1240 metres AHD, limit facilities to signs and marked walking or cross country skiing routes.
- Do not permit buildings for accommodation purposes in the Natural Zone.
- Limit signs in the Natural Zone to those giving necessary information on directions, safety of users or protection of the Park.
- The Zone may be used for training camps or other infrequent, special occasions, but only under conditions to be set out on a permit issued by the Director.
- Apart from tracks necessary for fire management (See Section 20) or for access to small areas designated for picnicking or camping, do not develop vehicular tracks in this Zone.

Actions

- Undertake rehabilitation and revegetation works on unwanted tracks and other disturbed areas if erosion or other problems are identified. Otherwise, allow to regenerate naturally.

17 Access

The major vehicular access to the Park and its skifields is the Ben Lomond road. This road lies within the Skifield Development Area. The Ben Lomond Skifield Management Authority is the managing authority for the Area.

Weather conditions are severe at times, the topography is difficult for road construction, and continuous maintenance is necessary. The need for additional road works has been identified. Money has been allocated for the first stage of upgrading the Jacobs Ladder section of the road.

17.1 Roads and Vehicular Tracks

Policies

- Within the Skifield Development Area, detailed requirements for traffic management, road circulation and parking will be dealt with by the Skifield Development Plan.
- Ensure the entrance to the ski village provides efficient pedestrian circulation and vehicular movement and parking.
- To the extent possible given weather conditions, safety, and limited funds, endeavour to keep the road to the ski village trafficable at all times while the skifield is operating.
- Before construction of any new vehicular tracks in any part of the Park, or re-routing of existing tracks, survey the proposed route for disease risk, habitat and species significance, and Aboriginal and historic heritage significance.

Actions

- Prepare and progressively implement a road maintenance and upgrading program, as funding permits.

17.2 Managing Vehicle Access

Policies

- Vehicle access to the Park boundary through State Forest or private land will only be permitted by agreement with the relevant land holder.
- Traffic management will be used to ensure efficient and safe traffic flow on Jacob's Ladder. During peak periods, priority will be given to public vehicles.
- At the discretion of the managing authority, restrict or close vehicle access to meet safety, parking management, or other management requirements.
- An entry charge to the Park will apply at a level determined from time to time by the Minister.

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- All public vehicle access on Jacob's Ladder and the plateau road will be subject to any applicable requirements of the Department of Transport.
- Shuttle bus and other public vehicle operations will conform to standards and guidelines issued by the managing authority and all relevant Acts and regulations.
- Limit use of oversnow vehicles within the Skifield Development Area to emergency use for safety or search and rescue (including training), any licensed or leased use for the purposes and in the manner set out in the licence or lease, or for management or service purposes by the managing authority.
- Conditions for use of oversnow vehicles will require protection of visitors and wildlife from disturbance and noise and protection of vegetation and soil.
- Except for approved management purposes, vehicles in the Skifield Development Area, other than authorised oversnow vehicles, will be restricted to designated roads, tracks, parking and standing areas.
- In the Natural Zone, limit use of oversnow vehicles to emergency use for safety or search and rescue (including training), or for other unavoidable management purposes.
- Except for approved management purposes, vehicles in the Natural Zone, other than oversnow vehicles provided for above, will be restricted to designated roads, tracks, parking and standing areas.
- Throughout the Park, manage access in accordance with the prescriptions of the Management Plan.
- During snow periods, restrict vehicular access for maintenance and servicing on the ski slopes to authorised oversnow vehicles.

Actions

- Install a road counter to monitor vehicle movements on the access road year round.
- Designate maintenance and service vehicle access routes on the slopes. Include access routes for oversnow vehicles and tracks to be constructed for vehicular access in non-snow times.
- Securely gate and lock non-public tracks retained or constructed within the Park for fire management or other purposes permitted by this Management Plan. Permanently block all other tracks into the Park.

17.3 Walking Tracks

Policies

- Identify the scale and range of walking experiences to be provided, including disabled access, existing gaps in walking track opportunities including summer use of the Park, and the target market for tracks, in a walking track management strategy for the Park.
- In the strategy, adopt a classification system for tracks that can be used for both management and public information purposes, based on the work undertaken on tracks in the World Heritage Area (Parks and Wildlife Service, 1994).
- Include provisions for maintenance and rehabilitation of tracks in the strategy.
- Link the strategy to the **Tasmanian Walking Tracks Strategy and Marketing Plan** (Hepper et al, 1997)
- Give priority to upgrading existing tracks in or adjacent to the Skifield Development Area before any new tracks are constructed elsewhere in the Park.
- Before construction of any new walking tracks in any part of the Park, or re-routing of existing tracks, survey the proposed route for disease risk, habitat and species significance, and Aboriginal and historic heritage significance.
- Upgrade tracks and routes in the Natural Zone to ensure safety of users and protection of the environment. Improve but limit track marking to that which is required for safety. Ensure track upgrading accords with the prescriptions of this Management Plan.
- Liaise with the relevant land holder on access and management of walking tracks to the Park through State Forest or private land.

Actions

- Mark tracks to provide for visitor safety. In the snowfields, use snow poles and confine these pole lines to marking routes to shelter.

18 Protection Of Natural Systems And Species

18.1 Introduced Plants and Animals

Policies

- Undertake monitoring and research to assess problems caused by introduced plants and animals and to determine the most appropriate eradication, control and containment programs and priorities.
- Except for approved plants introduced and limited to designated areas of the skifield for the purposes of slope grooming and rehabilitation in accordance with the guidelines (Sutton, 1993), eradicate introduced plants and animals from the Park where this is feasible and warranted by the damage being caused by them.
- Only attempt eradication where non target species are not threatened by the proposed methods, unless the threat from the introduced species is greater than the threat from eradication methods.
- If eradication is not possible, the objective will be control and containment.
- Enforce Regulation 4 of the *National Parks and Reserves Regulations 1971*, prohibiting the entry into the Park of stock, pets and other domestic animals.

18.2 Human Impact

Human activity in the Park may cause adverse impacts on both the Park and on visitors enjoyment and appreciation of the area. Some of these impacts may not be immediately apparent, and regular monitoring by Park staff will be necessary to identify any that occur. Other, more readily apparent impacts can be limited by appropriate management actions.

Policies

- Ensure all development accords with the prescriptions of this Management Plan (see also Section 24).
- Update the Skifield Development Plan, and prepare or update any other plan, or standards and guidelines for the Park, in accordance with this Management Plan.
- Only permit airdrops within the Park for management or emergency purposes.
- For environmental protection and safety reasons, the maximum party size for licensed day or overnight walking, skiing, or other activities in the Natural Zone will be thirteen, with a maximum of ten clients and at least one guide per five clients.

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- Encourage the general public to observe a similar party size limit of thirteen.
- Subject to regulation 5E of the *National Parks and Reserves Regulations 1971*, require Park users to remove their own rubbish, subject only to the provisions of the Skifield Development Plan for the Skifield Development Area.

Actions

- Provide minimal impact toilets in areas designated for visitor use.
- Implement an education and interpretative program to inform Park visitors of appropriate minimal impact use of the Park.
- Designate camping areas within the Park and if necessary define tent sites to prevent the piecemeal spread of camping sites.
- Forbid open fires in the Park except in designated fireplaces provided by the managing authority (refer to Section 20).

18.3 Geoheritage

Policies

- Protect and further research the geological, geomorphological and soil features of the Park. Ensure the features of international and national significance are given particular protection (refer to Section 27 for research priorities).
- To prevent erosion, require any development to rehabilitate areas disturbed during construction or use.
- Limit manipulation of the geoheritage features of the Park to works approved in accordance with this plan and the Skifield Development Plan.
- Undertake any rehabilitation works determined necessary in accordance with the relevant prescriptions of the Management Plan.

Actions

- Identify and monitor areas and causes of erosion and where necessary implement stabilisation and rehabilitation works. Give priority to actively eroding areas.

18.4 Flora and Fauna

The alpine area of the Ben Lomond plateau contains important flora species and communities and has high conservation importance. The fauna of the Park is less well researched, but also has known conservation values.

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Because of the limited knowledge of the fauna occurring in the Park, and their habitat requirements, further research is needed to give a more comprehensive basis for management decisions.

Management of the Park needs to consider the values of the flora and fauna and encourage further research and inventory of them in the Park. Fire management, weed and disease control, and development control are important for conservation of the flora and fauna of the Park.

Policies

- Strictly limit modification of the alpine area by human activity in the Natural Zone to that permitted by this Management Plan.
- Avoid or limit modifications by human activity within the Skifield Development Area to actions approved in accordance with this plan and the Skifield Development Plan.
- Ensure fire management in the Park, including fuel reduction burning, conforms with the prescriptions set out in Section 20.
- As far as practicable, protect alpine and other fire sensitive plant communities and species from the destructive effects of fire.
- Ensure any habitat management burning identified as necessary for species or habitat manipulation or protection is subject to the provisions of Section 20.

Actions

- Undertake a fauna inventory of the Park.

19 Aboriginal and Historic Heritage

Policies

- Assess and protect historic heritage values in accordance with both the objectives and prescriptions of this Management Plan and the guidelines established by the ICOMOS Burra Charter.
- Ensure assessment processes are credible and open to public scrutiny.
- Assess and protect Aboriginal heritage values in accordance with both the objectives and prescriptions of this Management Plan and any agreed national or state charter or guidelines for Aboriginal sites.
- Do not publicise sites of Aboriginal significance unless the site has been assessed, in cooperation with the Aboriginal community, for educational or interpretative use. Where

applicable, make use of any agreed Aboriginal interpretation strategy.

- Report all Aboriginal sites discovered in the Park to the Director, in accordance with the *Aboriginal Relics Act 1975*.
- Consult the Aboriginal community on any undertaking or development which may impinge upon Aboriginal sites.
- To protect Aboriginal and historic heritage, ensure all proposed landscape modification, development, or maintenance within the Park is subject to the prescriptions of Section 24.
- Do not deliberately disturb Aboriginal sites for management, development or research purposes unless there is no technically feasible alternative and a permit has been issued under the *Aboriginal Relics Act 1975*.

Actions

- Compile an inventory of historic heritage structures and places in the Park.
- In cooperation with the Aboriginal community, undertake an Aboriginal heritage audit of the Park.

20	Fire Management
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Well planned fire management needs to be undertaken to protect life and property both within the Park and on adjacent lands, and to limit damage to Park values from fires which may occur. Fire management in the ski village presents a different set of issues than fire management over the broad area of the Park.

Policies

- Fire management will be undertaken in consultation with relevant authorities and local landholders including Forestry Tasmania.
- Fire management will accord with this Management Plan.
- Fire management and suppression procedures will accord with the Inter-Agency Fire Management Protocol agreed between the Parks and Wildlife Service and Forestry Tasmania.
- All fire management actions including habitat management burning, fuel reduction burning, water hole and fire track construction or maintenance will be undertaken in accordance with the prescriptions set out in Section 24.3.
- Within the Skifield Development Area, the principal fire management objective will be to protect life and property from wildfire.

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- Fuel reduction burning may occur within the Park. In cooperation with Forestry Tasmania and adjacent private land owners, the Service may undertake fuel reduction around strategic sections of the park boundary to minimise the risk of wildfire crossing the Park boundary in either direction.
- To lessen the risk of arson or inadvertent ignition causing a wildfire, private vehicle access may be limited to designated roads. No other vehicular access to the Park will be permitted except where authorised by the managing authority.
- Existing vehicular tracks will be maintained if they are required for fire management.
- New fire management vehicular tracks will only be constructed within the Park after assessment of requirements and impacts confirms the need.
- Earth moving machinery will only be used for fire management or suppression on approved fire trails or, in emergencies, in accordance with the Inter-Agency Fire Management Protocol.
- All equipment and vehicles must be cleaned before entry into areas known to be free from *Phytophthora cinnamomi* (see Section 21).
- As far as is practical, rainforest and other fire sensitive plant communities and species will be protected from the destructive effects of fire.
- When fire danger conditions warrant, Park staff may close all or some of the Park by restricting access under Section 12 of the *National Parks and Reserves Regulations 1971*.

Actions

- Prepare a Ski Village fire prevention and response plan in consultation with village lodges and businesses, and ensure implementation of provisions of the plan.
- Fit fire management tracks with secure locked gates.
- Permanently block access to vehicular tracks in the Park not designated for public use or management purposes.
- To limit the risk of wildfire, and in accordance with Regulation 5C of the *National Parks and Reserves Regulations 1971*, only permit open fires in the Park in designated fireplaces provided by the managing authority
- Explain fire management policies and fire safety procedures to visitors as part of an interpretive program for the Park.

21 Phytophthora

As there is no known method to prevent the spread, by natural means, of *Phytophthora cinnamomi* or to eliminate the disease from more than a small infected area, management needs to be directed towards slowing, as much as possible, its spread through human activity. As surveys and monitoring of any *Phytophthora cinnamomi* infection discovered within the Park are undertaken, management prescriptions may need to be revised in the light of data collected. Catchment management plans for the protection of *Phytophthora* susceptible rare or threatened plant species can be prepared and methods for eradication of new spot infections are being developed. The following prescriptions are based on the available, limited knowledge of the possibility of infection within the Park and methods of containing it.

Policies

- Prior to the construction of any new walking tracks, or the re-routing of existing tracks, undertake a survey of the proposed route by an experienced botanist to determine disease risk along the route. Subject track works to the prescriptions set out in Section 25.
- Except for authorised management, research, or emergency purposes, do not allow vehicles in the Natural Zone of the Park.
- Use the recommendations of the ***Phytophthora cinnamomi* Hygiene Manual** (Parks and Wildlife Service, 1994) to reduce the risk of introducing or spreading the disease.

Actions

- Securely gate and lock vehicular tracks retained within the Park for fire management, and limit access in accordance with the prescriptions of the fire management plan.
- Permanently block access to vehicular tracks in the Park not designated for public use or fire management purposes.
- Inform visitors of the *Phytophthora* threat to the Park.
- Monitor the Park for the presence of *Phytophthora*.

22 Interpretation And Education

Objectives

- The objectives of interpretation and education are to:
 - Improve pre-visit awareness of facilities, requirements, and opportunities;
 - Provide orientation for visitors including location of visitor facilities and features of the Park;

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- Enhance visitor understanding and enjoyment of the Park by explaining environmental and heritage features and values.
- Increase the safety of visitors by alerting them to essential precautions; and
- Protect the Park and adjacent lands by informing visitors of Park etiquette and minimal impact practices.

Policies

- Set out possible hazards likely to be encountered by visitors. Detail appropriate ways for visitors to prepare for their visit to the Park, and to handle emergency situations which may occur during their visit.
- Give priority in visitor information and interpretation to visitor orientation and safety and to protection of the Park's environmental assets.
- Ensure the location, scale, form, materials, and colour of structures for interpretative purposes, including signs, accords with this Management Plan and the requirements of the Skifield Development Plan.
- Use the **Departmental Signs Manual** (Parks, Wildlife and Heritage, 1991) as a guide for signs.
- Ensure interpretation includes the non-skifield values and visitor opportunities of the Park.
- Ensure that Aboriginal interpretation accords with the prescriptions of Section 19 of this management plan.

Actions

- Prepare and implement an interpretive plan to guide development of interpretation in the Park.
- Provide interpretation facilities and activities in the Skifield Development Area in accordance with the interpretation plan.

23 Planning The Skifield Development Area

As prescribed in the 1982 Management Plan, a Skifield Development Plan has been prepared to cover planning in the Skifield Development Area. This plan will require review and revision from time to time. The following prescriptions provide the principles on which the Skifield Development Plan and any revision of it will be based.

Objectives

- The objectives of planning the Skifield Development Area are to:

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- maintain or improve the quality of skiing, snow activities and visitor facilities;
- provide for and encourage visitors in all seasons of the year;
- protect and conserve environmental and heritage values;
- provide benefit and safe enjoyment for Tasmanians and visitors;
- develop a coordinated approach to planning, development and management; and
- keep costs to a reasonable level.

Policies

- Long-term development and management in the Skifield Development Area will be guided in a co-ordinated and integrated manner by the Skifield Development Plan. The plan will define planning and design objectives, environmental standards, and the extent and quality of visitor and management facilities and services.
- Take account of contemporary knowledge on the likely impacts of global warming in preparing or revising the Skifield Development Plan.
- The Skifield Development Plan will accord with the provisions of this Management Plan. In the event of any inconsistency, this management plan takes precedence.
- Release a draft of the Skifield Development Plan for public comment for a period of not less than thirty days, and subsequently at any time modifications are proposed to the plan. Take comments into account in finalising and approving the plan.
- As necessary, apply special management zones within the Skifield Development Area to define permitted uses and developments.
- Within the Skifield Development Area, the planning, design, implementation, maintenance and monitoring of developments and activities will be subject to the powers of the Director, National Parks and Wildlife, with respect to matters relating environmental and heritage management, including fauna, flora, Aboriginal sites and Aboriginal relics.
- Do not permit development of new visitor facilities or accommodation or extensions to existing accommodation unless they are connected to the sewerage scheme or otherwise meet contemporary standards of sewage treatment in environmentally sensitive areas.
- Remove redundant facilities, lodges and the like unless they have been assessed in accordance Section 19 to be of heritage significance worthy of retention.
- Require that eventually lift operations on the ski slopes are licenced to a single operator. Only permit actions or

developments on the ski slopes which realistically will not prevent the realisation of this aim nor have unnecessary environmental impacts.

- Manage the ski slopes in accordance with a Ski Slope Plan prepared in accordance with and reflecting in content contemporary standards in Australian ski slope management.
- Slope grooming works will accord with the detailed requirements set out in the standards and guidelines issued by the Parks and Wildlife Service (Sutton, 1993).
- Do not permit developments, including in-season track cutting of snow for cross country tracks east of the Ford River.

Actions

- Review and as necessary revise the Skifield Development Plan five year after its formal acceptance by the Minister.
- Prepare a Ski Slope Plan.

24 Developing & Managing Recreation And Tourism

24.1 Development of Visitor Facilities, Activities and Services

Policies

- Cooperatively formulate an integrated approach to development of recreation and tourism within the Skifield Development Area and throughout the Park as a whole.
- Actively develop and promote opportunities for visitor use of the Park in all seasons of the year.
- Ensure all development is compatible with conservation of environmental, historic and Aboriginal heritage values, protection of water quality, protection of recreational and tourism character, and maintenance of scenic quality.
- Require all development to adopt environmentally "best practice" methods within the sustainable carrying capacity of the locality they occupy for:
 - aesthetic appropriateness;
 - sewage treatment;
 - stormwater management;
 - water supply;
 - energy generation;
 - vehicle storage and maintenance;
 - fuel delivery and storage; and
 - storage and disposal of solid and liquid wastes.

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- Set out the general priorities for development of visitor facilities in the Skifield Development Area in the Skifield Development Plan.
- Develop visitor facilities only in accordance with the prescriptions for the management zone where the facilities are to be located.
- The managing authority may invite proposals for the provision of facilities and services, in accordance with its powers.

Actions

- In consultation with the management authority for the Park, the management authority for the Skifield Development Area, and Tourism Tasmania, and consistent with this management plan, prepare a visitor and tourism strategy for the Park.
- Regularly and systematically record visitor numbers.

24.2 Assessing Proposals For Facilities, Activities and Services

Policies

- Require proposals to develop tourism and recreational services, activities and facilities in Ben Lomond National Park to:
 - be lodged as an application for assessment and approval;
 - be based on the features and values of the Park;
 - ensure the viability, diversity and values of environmental features and processes are sustainable;
 - clearly foster visitor appreciation and understanding of the Park's features and values in accordance with the interpretation plan;
 - provide efficient, high quality service to the public;
 - adopt environmentally sustainable operating practices, use environmentally "best practice" goods and technologies, and explain the principles underlying these to visitors;
 - behave and operate in a manner compatible with protection of historic and Aboriginal heritage features and values, and teach this to visitors;
 - avoid impact on the legitimate enjoyment and experience of the Park's features and values by others;
 - contribute to any external costs (for example road upgrading) resulting from the proposal;
 - conform with the intent and provisions of the Management Plan, Skifield Development Plan, and other plans, standards and guidelines; and
 - be sustainably achievable within the realistic capacity of management resources.
- To limit unwarranted expenditure of time and resources, and with the approval of the managing authority, proposals to develop tourism and recreational services, activities and facilities may be lodged as concept proposals for initial

consideration prior to the submission of final detailed proposals.

- Services, activities, and facilities will be complementary to satisfactory existing ones or replace or enhance them when they are unsatisfactory.
- In addition to this Management Plan, proposals to develop services, activities, or facilities will be assessed according to any detailed requirements issued by the managing authority from time to time. Proponents will need to obtain these requirements before submitting a proposal.
- All commercial development proposals for services, activities, and facilities will submit a detailed business and financial plan showing at least a three year projection of operations, demonstrating economic viability while according with this Management Plan.
- The extent of any financial, infrastructure, managing authority services, or environmental resource subsidy of a tourism or recreation proposal will be made explicit and public.
- The managing authority will not provide funds to underwrite commercial development.
- The management authority will be under no obligation to accept any development proposal.
- Ensure the content and presentation of the educational and interpretive component of recreation and tourism in the Park accords with the interpretation plan for the Park.
- Determine and take account of visitor needs, expectations and preferences in recreation and tourism proposals.
- Assess the impacts on the geoh heritage of the Park before any development proposals proceed.

24.3 Managing Development Works

Objectives

- The objectives of managing development works are to:
 - protect and preserve environmental and heritage values
 - protect and preserve the special recreational and tourism character of the Park
 - provide visitors with services and facilities which increase their appreciation and understanding of the Park.

Policies

- Assess all proposals for any development, landscape modification, research, management or maintenance work involving any ground breaking, structural disturbance, or

environmental manipulation of any kind in accordance with procedures approved by the managing authority.

- Depending on the scale or some other feature of proposed development, require the preparation of a comprehensive environmental and heritage effects assessment in accordance with guidelines established by the managing authority. Make the assessment available for public scrutiny.
- In addition to the procedures set out in this Management Plan, development approval will require that proposals conform to applicable State legislation. In particular, under Section 27(1) and (2) of the *Environmental Management and Pollution Control Act 1994*, Level 2 developments may be called in for assessment under that Act.
- Require the design and construction of any development works within the Park to follow the provisions of any relevant codes, standards and guidelines issued by the managing authority, as amended from time to time.
- Where they clearly apply, ensure compliance with relevant Australian standards.
- In addition to conforming with the Skifield Development Plan and the Ski Slope Plan, require a written permit from the Director of National Parks and Wildlife for slope grooming of the skifields. Undertake only that work specified in the permit and in accordance with any conditions.
- The managing authority may require the modification of any private or commercial facility or building. Such modifications may be required for the sake of aesthetic appearance, safety, convenience of visitors, protection of the environment or for any other purpose connected with the proper management of the Park.

Actions

- Prepare and regularly review codes, standards and guidelines for development works.

25 Leases And Licences

Policies

- Permit existing leases and licences to occupy land or provide services to run their course in accordance with the conditions applying to them unless they conflict with some aspect of this plan or the Skifield Development Plan.
- Permit the continued use of unsewered lodges by the present lease or licence holder in accordance with the conditions of the lease or licence but do not permit transfer or continuation beyond the current holder if they remain unsewered or otherwise

unable to meet contemporary standards of sewage treatment in environmentally sensitive areas.

- Any new or renewed lease or licence to occupy land or provide services will conform with the intent and provisions of the Management Plan, Skifield Development Plan, and other plans, standards and guidelines, and include relevant conditions consistent with them in agreements and contracts.
- Limit granting or renewing of leases to within the Skifield Development Area Zone.
- Do not permit private dwellings anywhere in the Ben Lomond National Park.
- Consistent with this management plan, permit licences to provide services within the Park, provided that they relate to tourism, recreation, education or scientific study and assist the management of the Park.
- Licences to provide services will be consistent with the prescriptions for the Zone in which the services occur.

Actions

- Update existing licences and leases to conform with this Management Plan. Where appropriate, insert performance clauses in new or renewed licences and leases.

26 Skifield Development Area Infrastructure
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26.1 Water Supply And Quality

In view of the paucity of existing flow data for the stream feeding the village water supply it is not possible to determine the need, if any, for additional works to augment the existing dam. Water supply storage capacity will be dependent on domestic demand requirements plus a reserve for fire fighting purposes.

The water supply receives no treatment but current tests show the water to be pure. There is a potential risk of pollution from fuel spills.

Policies

- Determine toilet systems and locations in consultation with the Department of Community and Health Services and with relevant professional advice.
- Base upgrading of water supply and storage on reliable assessment of needs and supply options and on the sustainable environmental capacity of the site.
- Use suitably qualified people, experienced in alpine conditions and requirements, to undertake design and documentation for upgrading of water supply and storage.

- Use relevant health standards to determine treatment requirements of the water supply.
- Require all new development works or modifications or extensions to existing developments to use available low water consumption technology to minimise water consumption.
- Consider the installation of water tanks associated with buildings in all future development applications.

Actions

- Undertake water sampling to establish baseline data. Analyse all samples using a recognised laboratory for bacteriological contamination.
- Collect flow data from streams potentially suitable for supplying the ski village and comprehensively assess supply needs and allowable draw-off.
- Take any necessary measures to protect the water supply from pollution from fuel spills or other sources.

26.2 Sewerage

Policies

- Require all new development or modifications or extensions to existing development to be connected to and fully meet costs associated with connection to the existing sewerage system, or otherwise meet contemporary standards and costs of sewage treatment in environmentally sensitive areas, including rehabilitation works.
- Use relevant professionals, experienced in alpine conditions and requirements, to review sewerage services and if necessary propose upgrading, extension, or maintenance measures.
- Require sewage treatment measures to be based on the sustainable environmental capacity of the site.

Actions

- Prepare a new operating manual and initiate an operator training program to ensure operators are well versed in the principles of effective operation of the sewerage treatment plant.

26.3 Power

Policies

- Require the development of new, or the rationalisation of existing power sources on the mountain to conform with professional and comprehensive energy auditing and energy provision recommendations prepared for the Skifield Development Area.
- Require the development of new, or the rationalisation of existing power sources on the mountain to be based on the sustainable environmental capacity of the site.
- Apply all statutory requirements and any standards and guidelines issued by the managing authority for the use of gas and diesel fuel for power generation or other purposes on the mountain, including the delivery and storage of fuels.

Actions

- Sound proof generators and other motors used on the mountain to meet acceptable noise levels determined by the managing authority.

26.4 Communications

Policies

- Ensure effective communications systems for communication between managing authority staff, and with concession operators, at all key locations within the Park, irrespective of weather conditions.
- Require shuttle buses and shuttle bus terminus locations to maintain ready communications with each other and with road access and parking managers at all times.
- Radio equipment may be installed in appropriate places in the park, as an aid to management, first aid, search and rescue and fire control.
- Use of communication devices and systems will be subject to any applicable laws and regulations.
- The Northern Repeater Association may retain its facilities in accordance with any requirements determined by the managing authority. The managing authority may approve improvements or extensions to the facilities in conformity with the Management Plan.

27	Research
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27.1 Procedures

Policies

- Require all manipulative research proposed within the Park to obtain prior approval of detailed study proposals and methods before research begins. Require a written permit from the managing authority, before fieldwork commences on manipulative research not undertaken by staff of the managing authority. Subject all proposals for manipulative research to the prescriptions set out in 24.3.
- Require that researchers submit to the managing authority not less than three copies of all work produced during the period of the research. Specify conditions in the permit on the form of submission, its timing, confidentiality, and any other matters which the managing authority may determine.
- Do not issue permits for the collection of material within the Park where the managing authority determines that it is possible and appropriate to collect the material outside the Park.
- Only permit research which does not have long term adverse effects on the environmental, heritage or aesthetic values of the Park.
- Consult the Aboriginal community on any proposed research on Aboriginal heritage.

27.2 Scope of Monitoring and Research

Policies

- Encourage research which improves the inventory and understanding of environmental and heritage features of the Park, uses the Park as a scientific reference area, or assists management of the Park.
- All research proposed in this Management Plan is subject to the availability of funding.
- Priority areas for research will include:
 - systematic recording and analysis of visitor numbers, behaviour, skifield utilisation, and environmental impacts to provide information useful for the management of the Park;
 - systematic recording and analysis of visitor attitudes and expectations to provide information useful for the management of the Park;
 - systematic recording of snowfall and snow cover;

- monitoring and research on the distribution, numbers and control of feral animals, introduced plants, and diseases, directed towards determining appropriate management measures;
- the relationship between fire and plant species and communities, particularly to guide fire management practices;
- the effect of fire on soils and soil development, particularly to guide fire management practices;
- the distribution, numbers, behaviour and habitat requirements of faunal species; and
- the effectiveness of revegetation techniques for groomed or other disturbed areas.

28 Statutory Powers

- Subject to this management plan, the Minister administering the *Inland Fisheries Act 1995* is authorised to exercise in relation to all land covered by the plan any statutory power under that Act except that exotic fish must not be released into any water body within the Park. In so far as an exercise of such a power relates to works or activities or the granting of any right for any commercial purpose within the Park, it is subject to the prior agreement of the Director of National Parks and Wildlife.
- Forestry Tasmania is authorised to use, improve, repair and maintain its approved road (in the vicinity of the Nile River traversing the Park in a north-south direction) where the road crosses the Park, subject to the prior agreement of the Director of National Parks and Wildlife.

29 Administration

29.1 Implementation

- The prescriptions of this plan are subject to the provision of funding and other resources sufficient to meet them, and may be prioritised by the managing authority at the managing authority's discretion according to resource availability.

29.2 Staffing

- Subject to funding, maintain staff at levels sufficient for proper administration and maintenance of the Park in accordance with the management plan.
- Train staff to understand and implement the objectives and prescriptions of the Management Plan.
- Encourage volunteers when suitable, planned and programmed works and adequate supervision are available.

29.3 Staff Accommodation, Other Management Facilities, and Equipment

- The managing authority may provide facilities necessary for Park management within the Skifield Development Area.
- Provide residential accommodation for managing authority staff as the need arises.
- Workshop and office facilities will remain in the area of the existing managing authority residence.
- On-mountain facilities office and emergency accommodation facilities may be developed.
- Provide sufficient vehicles, storage and equipment for the proper management of the Park commensurate with management requirements and funding provisions.

29.4 Safety, Search and Rescue

Tasmania Police and the State Emergency Service are responsible for search and rescue within the Park.

- Promote the safety of visitors, within the normal risks associated with the activity being undertaken, by education.
- Establish a risk management and asset management program to minimise the risk to public safety.
- Provide interpretive and educational material for visitors, setting out hazards likely to be encountered. Detail appropriate ways for visitors to prepare for their visit to the Park, and to handle emergency situations which may occur during their visit.
- The managing authority will cooperate in search and rescue operations.
- Progressively increase resources for the Park to assist in meeting the demands of emergencies. Provide radio communications and rescue equipment and prepare contingency plans. Continue to train park staff in search and rescue.
- Prepare emergency accommodation and emergency evacuation plans to cover situations where people are inadvertently trapped on or must be quickly evacuated from the skifield. Prepare the plans in consultation with commercial operators and private lodges who may be called upon to assist with such accommodation or evacuation.
- Provide office, equipment storage, treatment rooms and on-duty volunteers accommodation for the operation of the ski patrol.

29.5 Law Enforcement

- Within the Park, authorised staff of the Parks and Wildlife Service will be responsible for enforcing the provisions of the *National Parks and Wildlife Act 1970*, the *Aboriginal Relics Act 1975*, the *National Parks and Reserves Regulations 1971*, and the *Wildlife Regulations 1971*.
- Within the Skifield Development Area, authorised staff of the Ben Lomond Skifield Management Authority will be responsible for enforcing the provisions of the *Ben Lomond Skifield Management Authority Act 1994*.
- The provisions of the *Fisheries Act 1959* and its regulations will be policed by staff of the Inland Fisheries Commission or where agreed by the Commission, staff of the Parks and Wildlife Service may be empowered to police these provisions.
- Other law enforcement is the responsibility of Tasmania Police.

30 Revision Of Plan

- This Management Plan may only be varied in accordance with the procedures set out in Sections 19 and 20 of the *National Parks and Wildlife Act 1970*.
- Review this plan five years after gazettal of its approval by the Governor, or sooner if research, monitoring or other circumstances show this to be needed.

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Appendix I Vascular Plants Of The Ben Lomond Plateau
(Davies and Davies, 1989; Davies, 1990)

Key (e) endemic (i) introduced

DICOTYLEDONS

APIACEAE (UMBELLIFERAE)

- Hydrocotyle sibthorpioides* Lamk.
- Oreomyrrhis ciliata* Hook. f.
- (e) *Oreomyrrhis sessiliflora* Hook f.

ASTERACEAE (COMPOSITAE)

- (e) *Abrotanella forsteroides* (Hook.f.) Benth
- (e) *Bedfordia salicina* (Labill.) DC.
 - Brachyscome spathulata* Guad. ssp. *glabra* (DC.) Stace
 - Brachyscome tenuiscapa* Hook.f.
 - Brachyscome tenuiscapa* Hook.f. var. *tenuiscapa*
 - Celmisia asteliifolia* Hook.f.
 - Cotula alpina* Backh. ex Hook.f.
 - Cotula filicula* (Hook.f.) Benth
 - Craspedia alpina* Backh. ex Hook.f.
 - Erigeron pappocromus* Labill.
- (e) *Ewartia catipes* (DC.) P. Beauv
- (e) *Ewartia planchonii* (Hook.f.) P. Beauv
 - Gnaphalium argentifolium* Wakef.
 - Gnaphalium collinum* Labill. var. *monocephalum* Hook.f.
 - Gnaphalium traversii* Hook.f.
 - Gnaphalium umbricola* J.H. Willis
 - Helichrysum rutidolepis* DC.
 - Helichrysum scorpioides* Labill.
- (i) *Hypochoeris radicata* L.
- (i) *Lagenifera stipitata* (Labill.) Druce
 - Leptorhynchos squamatus* (Labill.) Less.
 - Microseris lanceolata* (Walp.) Shulz-Bip.
 - Olearia algida* Wakef.
- (e) *Olearia ledifolia* (DC.) Benth
- (e) *Olearia obcordata* (Hook.f.) Benth
 - Olearia phlogopappa* (Labill.) DC
- (e) *Olearia tasmanica* (Hook.f.) W.M. Curtis
- (e) *Ozothamnus antennaria* [*Helichrysum antennarium* (DC.) F. Muell. ex Benth.]
- (e) *Ozothamnus rodwayi* [*Helichrysum backhousii* (Hook.f.) F. Muell. ex Benth.]
- (e) *Ozothamnus rodwayi* var. *rodwayi* [*Helichrysum backhousii* (Hook.f.) F. Muell. ex Benth. var. *backhousii*]
- (e) *Ozothamnus rodwayi* var. *kingii* W.M. Curtis [*Helichrysum backhousii* (Hook.f.) F. Muell. ex Benth. var. *kingii* W.M. Curtis]
- Ozothamnus hookeri* [*Helichrysum hookeri* (Sonder) Druce]
- (e) *Pterygopappus lawrencii* Hook.f.
- Senecio gunnii* (Hook.f.) Belcher
- (i) *Senecio jacobaea* L.
 - Senecio lautus* Forst. f. ex Willd.
 - Senecio pectinatus* DC. var. *pectinatus*

BRASSICACEAE (CRUCIFERAE)

- Cardamine gunnii* Hewson
- Cardamine lilacina* Hook.
- Cardamine paucijuga* Turcz.

CAMPANULACEAE

- (e) *Wahlenbergia saxicola* A.DC.
- Wahlenbergia stricta* Sweet

CARYOPHYLLACEAE

- (e) *Colobanthus curtisiae* J.G. West
- (i) *Sagina apetala* Ard.
- Scleranthus biflorus* (Forst. & Forst. f.) Hook.f.

CLUSIACEAE (GUTTIFERAE)

- Hypericum japonicum* Thumb.

DROSERACEAE

- Drosera arcturi* Hook.

EPACRIDACEAE

- (e) *Cyathodes dealbata* R.Br.
- (e) *Cyathodes parvifolia* R.Br.
- (e) *Cyathodes straminea* R.Br.
- (e) *Epacris gunnii* Hook.f.
- Epacris petrophila* Hook.f.
- Epacris serpyllifolia* R.Br.
- Leucopogon pilifer* Wakefield
- Lissanthe montana* R.Br.
- (e) *Monotoca empetrifolia* R.Br.
- Pentachondra pumila* (Forst. & Forst. f.) R.Br.
- (e) *Richea acerosa* (Lindley) F. Muell.
- Richea gunnii* Hook.f.
- (e) *Richea scoparia* Hook.f.
- (e) *Richea sprengelioides* (R.Br.) F.Muell.
- Sprengelia incarnata* Smith
- Sprengelia incarnata* Smith var. *incarnata*
- Sprengelia incarnata* Smith var. *montana* R.Br.
- (e) *Trochocarpa thymifolia* (R.Br.) Sprengel

ERICACEAE

- Gaultheria depressa* Hook.f.
- (e) *Pernettya lanceolata* (Hook.f.) B.L. Burtt & A.W. Hill
- (e) *Pernettya tasmanica* Hook.f.

ESCALLONIACEAE

- (e) *Anopterus glandulosus* Labill.

EUPHORBIACEAE

- Poranthera microphylla* Brongn

FABACEAE (LEGUMINOSAE)

Almalaea subumbellata
Daviesia latifolia R.Br.
Oxylobium ellipticum (Labill.) R.Br.
Pultenaea juniperina Labill.

- (i) *Trifolium* sp

GENTIANACEAE

Gentianella diemensis (Griseb.) J.H. Willis

GERANIACEAE

Geranium potentilloides L'Herit. ex DC.
Pelargonium australe Willd.

GOODENIACEAE

Scaevola hookeri (Vriese) F.Muell. ex Hook.f.
Velleia montana Hook.f.

HALORAGACEAE

- Gonocarpus montanus* (Hook.f.) Orch.
Gonocarpus serpyllifolius Hook.f.
(e) *Myriophyllum austropygmaeum* Orch.
Myriophyllum pedunculatum Hook.f. var. *pedunculatum*

LAMIACEAE (LABIATAE)

- (e) *Westringia rubiaefolia* R.Br.

LOGANIACEAE

Mitrasacme serpyllifolia R.Br.

MYRTACEAE

- Baeckea gunniana* Schauer
(e) *Eucalyptus archeri* Maiden & Blakely
(e) *Eucalyptus coccifera* Hook.f. (Introduced to Ski Village)
Eucalyptus dalrympleana Maiden ssp. *dalrympleana*
(e) *Eucalyptus delegatensis* R. Baker ssp. *tasmaniensis* Boland
Leptospermum lanigerum (Aiton) Smith
(e) *Leptospermum rupestre* Hook.f.

ONAGRACEAE

- Epilobium curtisiae* Raven
(e) *Epilobium fugitivum* Raven & Engelhorn
Epilobium sarmentaceum Hausskn.
Epilobium tasmanicum Hausskn.
Epilobium willisii Raven & Engelhorn

PITTOSPORACEAE

Billardiera longiflora Labill.
Pittosporum bicolor Hook.

PLANTAGINACEAE

- (e) *Plantago daltonii* Decne.
(e) *Plantago paradoxa* Hook.f.
(e) *Plantago tasmanica* Hook.f.
(e) *Plantago tasmanica* Hook.f. var. *archeri* (Hook.f.) W.M. Curtis

POLYGONACEAE

- (i) *Acetosella vulgaris* L.

PORTULACACEAE

Montia australasica (Hook.f.) Pax & Hoffm.

PROTEACEAE

- (e) *Bellenden montana* R.Br.
Grevillea australis R.Br.
Grevillea australis R.Br. var. *brevifolia* Hook.f.
Grevillea australis R.Br. var. *erecta* Hook.f.
Hakea lissosperma R.Br.
(e) *Orites acicularis* R.Br.
(e) *Orites revoluta* R.Br.
Persoonia gunnii Hook.f.

RANUNCULACEAE

- Ranunculus collinus* R.Br. ex DC.
Ranunculus gunnianus Hook.
Ranunculus lappaceus Smith
(e) *Ranunculus nanus* Hook.
Ranunculus scapigerus Hook.
(e) *Ranunculus setaceus* Rodway
(e) *Ranunculus triplodontus* Melville

RHAMNACEAE

- (e) *Cryptandra alpina* Hook.f.

ROSACEAE

- (e) *Acaena montana* Hook.f.
Acaena novae-zelandiae Kirk
(e) *Rubus gunnianus* Hook.

RUBIACEAE

- Asperula gunnii* Hook.f.
Asperula gunnii Hook.f. var. *gunnii*
Asperula pusilla Hook.f.
Coprosma moorei F.Muell. ex Rodway
Coprosma nitida Hook.f.
Coprosma perpusilla Colenso
Coprosma pumila Hook.f.
(e) *Galium australe* DC
Galium ciliare Hook.f.

RUTACEAE

- Boronia citriodora* Gunn ex Hook.f.
Boronia pilosa Labill. var. *pilosa*
(e) *Phebalium montanum* Hook
Phebalium squameum (Labill.) Engl.
Phebalium squameum (Labill.) Engl. ssp. *squameum* (Labill.) Engler

SANTALACEAE

- (e) *Exocarpos humifusus* R.Br.
Exocarpos nanus Hook.f.

SCROPHULARIACEAE

- Chionohebe ciliolata* (Hook.f.) B. Briggs & Ehrend
Euphrasia collina R.Br.
(e) *Euphrasia collina* R.Br. ssp. *diemenica* (Sprengel) W.R. Barker
Euphrasia gibbsiae Du Rietz
(e) *Euphrasia gibbsiae* Du Rietz ssp. *comberi* (Du Rietz) W.R. Barker
(e) *Euphrasia striata* R.Br.
Gratiola nana Benth.
(e) *Ourisia integrifolia* R.Br.
Veronica calycina R.Br.

STACKHOUSIACEAE

Stackhousia monogyna Labill.

STYLIDIACEAE

Stylidium graminifolium Swartz

THYMELAEACEAE

- Kelleria dieffenbachii* (Hook.) Endl.
(e) *Pimelea sericea* R.Br.

TREMADRACEAE

- (e) *Tetratheca procumbens* Gunn ex Hook.f.

VIOLACEAE

Hymenanthera dentata R.Br. ex DC.
Viola betonicifolia Smith
Viola hederacea Labill.

WINTERACEAE

Tasmania lanceolata (Poiret) A.C. Smith

MONOCOTYLEDONS

CENTROLEPIDACEAE

- (e) *Centrolepis monogyna* (Hook.f.) Benth.
(e) *Centrolepis muscoides* (Hook.f.) Hieron.

CYPERACEAE

Carex archeri Boott
Carex breviculmis R.Br.
Carex aff. *diandra*
Carex gaudichaudiana Kunth
Carex raleighii Nelmes
Carpha alpina R.Br.
Isolepis crassiuscula Hook.f.
Isolepis montivaga (S.T. Blake) K.L. Wilson
Isolepis subtilissima Boeck.
Oreobolus distichus F.Muell.
Oreobolus pumilio R.Br.
Schoenus calyptratus Kuk.
Uncinia compacta R.Br.
Uncinia nervosa Boott

JUNCACEAE

- (e) *Juncus astreptus* L. Johnson
- Juncus sandwithii* Lourteig
- Luzula acutifolia* Nordensk. ssp. *acutifolia*
- Luzula australasica* Steudel
- Luzula densiflora* (Nordensk.) Edgar
- Luzula novae-cambriae* Gandoger

LILIACEAE

- Astelia alpina* R.Br.

ORCHIDACEAE

- Caladenia lyallii* Hook.f.
- Chiloglottis cornuta* Hook.f.
- Chiloglottis grammatus* G.W. Carr ined.
- Prasophyllum alpinum* R.Br.
- Prasophyllum suttonii* R. Rogers & B. Rees

POACEAE (GRAMINEAE)

- (i) *Agrostis gigantea* Roth
- Agrostis muelleriana* Vick.
- Agrostis parviflora* R.Br.
- Agrostis venusta* Trin.
- (i) *Anthoxanthum odoratum* L.
- Austrofestuca hookeriana* (F.Muell.) S.W.L. Jacobs
- Danthonia diemenica* D. Morris
- (e) *Danthonia dimidiata* Vick.
- Danthonia laevis* Vick.
- Danthonia nivicola* Vick.
- Danthonia nudiflora* P. Morris
- (e) *Danthonia pauciflora* R.Br.
- Danthonia penicillata* (Labill.) P. Beauv.
- Danthonia racemosa* R.Br.
- Danthonia setacea* R.Br. var. *setacea*
- Danthonia tenuior* (Steudel) Conert
- Deschampsia caespitosa* (L.) P. Beauv.
- Deyeuxia brachyathera* (Stapf) Vick.
- Deyeuxia carinata* Vick.
- Deyeuxia frigida* F.Muell. ex Benth.
- Deyeuxia gunniana* (Nees) Benth.
- Deyeuxia monticola* (Roemer & Schultes) Vick.
- (e) *Hierochloa fraseri* Hook.f. ex Rodway
- Hierochloa redolens* (Vahl) Roemer & Schultes
- (i) *Poa annua* L.
- Poa costiniana* Vick.
- Poa fawcettiae* Vick.
- (e) *Poa gunnii* Vick.
- Poa hiemata* Vick.
- Poa hookeri* Vick.
- Poa labillardieri* Steudel
- Poa rodwayi* Vick.
- Stipa rudis* Sprengel ssp. *australis* J. Everett & S. Jacobs
- Trisetum spicatum* (L.) Richter ssp. *australiense* Hulten

RESTIONACEAE

Empodisma minus (Hook.f.) L. Johnson & Cutler
Restio australis R.Br.

GYMNOSPERMS

PODOCARPACEAE

Podocarpus lawrencei Hook.f.

PTERIDOPHYTES

ASPIDIACEAE

Polystichum proliferum (R.Br.) C. Presl

BLECHNACEAE

Blechnum penna-marina (Poir.) Kuhn

GLEICHENIACEAE

Gleichenia alpina R.Br.

GRAMMITIDACEAE

Grammitis poeppigiana (Mett.) Pichi-Serm.

HYMENOPHYLLACEAE

Hymenophyllum peltatum (Poir) Desv.

ISOETACEAE

(e) *Isoetes gunnii* A. Braun

LYCOPODIACEAE

Lycopodium australianum Herter
Lycopodium fastigiatum R.Br.
Lycopodium scariosum Forst. f.

Appendix II	Mammals of Ben Lomond National Park (Rounsevell, Taylor, & Hocking, 1991)
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Platypus	<i>Ornithorhynchus anatinus</i>	N
Dusky antechinus	<i>Antechinus swainsonii swainsonii</i>	Nes
Tiger cat	<i>Dasyurus maculatus maculatus</i>	N
Eastern quoll	<i>Dasyurus viverrinus</i>	Ne
Tasmanian devil	<i>Sarcophilus harrisii</i>	Ne
White-footed dunnart	<i>Sminthopsis leucopus leucopus</i>	Nes
Southern brown bandicoot	<i>Isoodon obesulus affinis</i>	Nes
Eastern barred bandicoot	<i>Perameles gunnii</i>	N
Common wombat	<i>Vombatus ursinus tasmaniensis</i>	Nes
Sugar glider	<i>Petaurus breviceps breviceps</i>	I
Common ringtail possum	<i>Pseudocheirus peregrinus viverrinus</i>	Nes
Common brushtail possum	<i>Trichosurus vulpecula fuliginosus</i>	Nes
Eastern pygmy-possum	<i>Cercartetus nanus nanus</i>	Nes
Little pygmy-possum	<i>Cercartetus lepidus</i>	N
Tasmanian bettong	<i>Bettongia gaimardi</i>	Ne
Long-nosed potoroo	<i>Potorous tridactylus apicalis</i>	Nes
Bennetts wallaby	<i>Macropus rufogriseus rufogriseus</i>	Nes
Red-bellied pademelon	<i>Thylogale billardierii</i>	Ne
Goulds wattled bat	<i>Chalinolobus gouldii</i>	N
Chocolate wattled bat	<i>Chalinolobus morio</i>	N
Small forest eptesicus	<i>Eptesicus vulturinus</i>	N
King River bat	<i>Eptesicus regulus</i>	N
Large forest eptesicus	<i>Eptesicus darlingtoni</i>	N
Tasmanian pipistrelle	<i>Falsistrellus tasmaniensis</i>	N
Lesser long-eared bat	<i>Nyctophilus geoffroyi pacificus</i>	N
Goulds long-eared bat	<i>Nyctophilus gouldi</i>	N
Long-tailed mouse	<i>Pseudomys higginsi</i>	Ne
Rabbit	<i>Oryctolagus cuniculus cuniculus</i>	I
Cat	<i>Felis catus</i>	I

KEY

Distribution (Smith, 1990)

N	native: indigenous; neither deliberately nor accidentally introduced since 1788
Ne	native, endemic species: wild populations of the species live only in Tasmania
Nes	native, endemic sub-species: wild populations of the sub-species live only in Tasmania
I	introduced: introduced by humans; feral (as well as domestic) populations live in Tasmania

Appendix III List Of Birds, Ben Lomond National Park

Thomas (1979)

wedge-tailed eagle	<i>Aquila audax</i>	Nes
yellow-tailed black cockatoo	<i>Calyptorhynchus funereus</i>	N
green rosella	<i>Playtcerus caledonicus</i>	Ne
fan-tailed cuckoo	<i>Cacomantis flabelliformis</i>	Nm
shining bronze cuckoo	<i>Chrysococcyx lucidus</i>	Nm
southern boobook	<i>Ninox novaeseelandiae</i>	Nes
laughing kookaburra	<i>Dacelo novaeguineae</i>	I
superb fairy-wren	<i>Malurus cyaneus</i>	Nes
striated pardalote	<i>Pardalotus striatus</i>	Nm
scrubtit	<i>Acanthornis magnus</i>	Ne
brown thornbill	<i>Acanthiza pusilla</i>	Nes
yellow wattlebird	<i>Anthochaera paradoxa</i>	Ne
little wattlebird	<i>Anthochaera chrysoptera</i>	Nes
yellow-throated honeyeater	<i>Lichenostomus flavicollis</i>	Ne
strong-billed honeyeater	<i>Melithreptus validirostris</i>	Ne
black-headed honeyeater	<i>Melithreptus affinis</i>	Ne
crescent honeyeater	<i>Phylidonyris pyrrhoptera</i>	Nes
eastern spinebill	<i>Acanthorhynchus tenuirostris</i>	N
flame robin	<i>Petroica phoenicea</i>	Nm
spotted quail-thrush	<i>Cinclosoma punctatum</i>	Nes
grey shrike-thrush	<i>Colluricincla harmonica</i>	N
grey fantail	<i>Rhipidura fuliginosa</i>	Nes(m)
black currawong	<i>Strepera fuliginosa</i>	Ne
grey currawong	<i>Strepera versicolor</i>	Nes
forest raven	<i>Corvus tasmanicus</i>	N
Richard's pipit	<i>Anthus novaeseelandiae</i>	N
welcome swallow	<i>Hirundo neoxena</i>	Nm
blackbird	<i>Turdus merula</i>	I

KEY

Distribution (Smith, 1990)

N	native: indigenous; neither deliberately nor accidentally introduced since 1788
Ne	native, endemic species: wild populations of the species live only in Tasmania
Nm	native, migratory: a native species or sub-species, all or most of which migrate annually to and from Tasmania
Nes	native, endemic sub-species: wild populations of the sub-species live only in Tasmania
Nes(m)	native, endemic sub-species (partly migratory): an endemic Tasmanian sub-species in which some individuals seasonally migrate, but many stay throughout the year
I	introduced: introduced by humans; feral (as well as domestic) populations live in Tasmania

Appendix IV	Nomenclature
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The following explanation of names given to features of the Ben Lomond plateau was furnished by Colonel Legge to the authors of a paper read before the Royal Society of Tasmania in 1913:

"As I regarded the Ben Lomond Plateau as the most remarkable geographical feature in the State, it seemed fitting that the majority of the names should have some historical significance:

1. *The lake - source of the Nile, its gorge, the 'cirque' in the escarpment, and the isolated fell adjoining the river's descent through the latter, were named after explorers connected with discoveries at the sources of the parent river in Africa.*
2. *Dominant and commanding features of the great escarpment, as also important surface characteristics of the plateau: after governors, officials, surveyors, etc. of the State.*
3. *Other features of the plateau: after fellow explorers and assistants in the survey.*
4. *The remarkable eroded-down valley, dissecting the plateau, at the upper entrance of Speke Gorge: after our good Queen (Victoria Valley was the name applied by Legge to a valley of the Nile north-west of Speke Gorge).*
5. *The lofty cliff buttress as seen from the Break-'O-Day Valley, often standing up alone against the cloud in the amphitheatres, after the lonely and mysterious 'Sentinel of Egypt' - the 'Sphinx'."*

Prominent scenic features of the park are therefore named as follows:

Baker Lake	after the explorer of the Great Nile, Samuel Baker.
Ben Lomond	by Col. Patterson circa 1804..
Cotton Moor	for Major H.C. Cotton, Deputy Surveyor-General, late 1840's.
Denison Crag	for Governor Sir William Denison, 1847-55.
Foster Vale	for C.R. Foster who made arrangements and supplied horses for Legge's transport.
Giblin Fells & Peak	for explorer and mountaineer L.F. Giblin and his father the Judge and Chief Justice, W.R. Giblin.
Grant Cirque	for Captain James Grant who explored the African Nile with Speke.
Hamilton Crags	for Governor Sir Robert Hamilton, 1887-93.
Johnston Moore	for R.M. Johnston, Government Geologist and Statistician.
Legges Tor	by L. Giblin in 1906 for Col. W.V. Legge.
Lewis Creek	for Sir Neil Lewis, Premier 1899-1903 and 1909-1912.
Nile River	for the African River.
Piesse Vale	for E.L. Piesse, later to become a prominent public servant who accompanied Legge and Giblin.
Rodway Valley	for L. Rodway, Government botanist.
Speke Gorge	for Capt. John Speke who explored the African Nile.
Sprent Plains	for Surveyors James Sprent and son Charles, both early Surveyors-General.
Storrs Creek/Bluff	for John Story, a friend of Col. Legge.
Strickland Gorge	for Sir Gerald Strickland, the Governor at the time 1904 -1909.

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Twelvetrees Moor	for W.H. Twelvetrees, Government Geologist.
Whymper Crags	for Edward Whymper, first conqueror of the Matterhorn.
Wilmot Bluff	for Governor Sir Eardley-Wilmot 1843-46.
Lake Youl & Youls Tarn	for J.A. Youl who had property north of Ben Lomond, and who died in 1904.
Stein Crags	for Sir Aural Stein, famous archaeological explorer.
Markham Heights	for Sir Albert Markham, Arctic explorer.