

Long ago the Creator made the land, the people and the natural resources for the people to use. Spirit ancestors traveled the land and left behind reminders of where they had been, whom they had met and what they had been doing in the form of plants, animals and landforms. There are stories, songs, dances and ceremonies associated with these places, plants and animals. When we see the stars, mountains, rivers, hills, plants and animals we remember the stories of the journeys and we know how to live in this country. This is our culture.

text: Rod Mason  
illustration: Jim Williams



# CONSERVATION IN THE AUSTRALIAN ALPS



## CONSERVATION: A DEFINITION

Conservation refers to the protection, preservation and careful management of the natural or cultural environment. This includes the preservation of specific sites or works of art, as well as specific species or areas of country.

However, conservation has a different meaning for different people, thus making the management of conservation often complex and controversial. Many of the conservation issues of the Australian Alps reflect these difficulties. For the person who enjoys wilderness, conservation is the reservation of large, unspoilt tracts of land. For the scientist, it is the preservation and understanding of ecosystems and the protection of species found there. For bushwalkers and other outdoor recreationists it is conserving natural places that provide opportunities and challenges including mountains to climb, rivers to raft or slopes to ski. For the town planner, it is the protection of natural areas for practical reasons such as water catchment in the Australian Alps.

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For others it may be the protection of cultural heritage such as mountain huts. From a cultural heritage perspective, the Alps hold many remnants of the past. These remnants include Aboriginal people's campsites and art sites, early European settlers' stockyards, homesteads, mines, machinery and fences.

For all people there is a need to conserve areas of natural and cultural environments as security for the future but different groups of people do not always agree on how to best manage these sites and areas. However, with the Australian Alps identified as a significant area for all Australians to enjoy, management for conservation has become an important focus.

The appreciation and awareness of the need for conservation is not new. There are examples throughout history of people wanting to value land for its own sake. From early times individuals have been concerned about the natural condition of the world and the place of humans in it.



*In Wildness is  
the preservation  
of the World'*

The philosopher Plato in ancient Greece pondered the question of the destruction of the natural world and its effect on man. The French Government Department of Eaux et Forêts (Water and Forests) originated in the 17th century indicating an awareness of the need for managing and conserving natural assets back then. In the United States, the importance of wilderness was being recognised by the late 1800s. The American philosopher Henry David Thoreau encapsulated the thinking of many when he concluded that, 'In Wildness is the preservation of the World'. Thoreau's writings started a movement in which Americans began to develop an aesthetic and spiritual appreciation of their tracts of wilderness. This movement led to the formation of the Sierra Club by John Muir in 1892. This movement spread to Australia. As early as 1906, politicians were aware of the wilderness concept.

However, many Aboriginal people are concerned about the ongoing use of the term wilderness to parts of national parks. These people believe that the term denies any past Aboriginal association with the land so they also feel that the term does not give due recognition to the Aboriginal peoples' sustainable management of the land for thousands of years.

IN THE TIME  
BEFORE  
NATIONAL  
PARKS

Aboriginal people had a presence in the Australian Alps for thousands of years and are highly likely to have influenced the development of present day ecosystems. The way that Aboriginal people act and relate to the environment is integral to their traditions and spiritual relationships. Campsites, stone arrangements, scarred trees, graves and rock art are still scattered throughout the Alps and provide information about the way in which Aboriginal people existed in the Alps.

Once Europeans became involved in the Alps, the impact of practices became evident. Land degradation, for example, became noticeable by the late 1800s.

*The drought... in New South Wales seems to have an additional cause to... those which elsewhere occasion extraordinary dryness of soil: namely the alteration which colonisation impresses on its surface; the herbaceous, high and thick plants; the continued forest; the underwood; the brush, which so well clothed the crust and sheltered the moisture, have disappeared under the innumerable flocks and axes which the settlers have introduced. The soil, thus bared, was and is, as it were, abandoned by a most prejudicial practice, to the constant and periodic wilful incendiarism, which, instead of producing the expected and former herbage and vigour of the soil, in fact only calcines its surface and eradicates even the principle of reproduction.*

(House of Lords Sessional Papers, 1841, pp. 12-19)

The explorer Strzelecki wrote this statement after a trip in the 1830s. Strzelecki describes the loss of vegetation and the consequential drying out of the soil caused by clearing, grazing

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and subsequent burning. This was only ten years after the first European settlers arrived in the Alps, illustrating the impact that European agricultural methods had on the environment.

Other land uses were timber extraction for houses, fences and fuel, and summer cattle grazing on the high pastures. Cattle grazing was a significant income earner and employer for many of the early settlers. There was economic pressure to squeeze from the land every pound of immediate income it would yield.

Another strong force against nature conservation as we now understand it was the advent of the Acclimatisation Societies established in Australia in the mid 19th century to improve the land. They aimed to do everything to make the new country look like Britain by clearing the native forests and introducing animals and plants from Britain. Ironically these people probably believed themselves to be nature conservationists of a kind, recreating and conserving the old country.

One main supporter was Frederick McCoy, Melbourne's first Professor of Natural Science. He introduced many exotic birds, including the Common Starling and the House Sparrow, which competed for food and habitat with the native birds and are still very much a problem today. It was at this time that von Mueller introduced the problematic Blackberry – with every good intention. There are areas in the Alps today that are sadly overrun with this noxious weed, which manages to squeeze everything else out. Many farmers planted firs and pines in place of the native woodlands that once grew on the lower slopes and tablelands of the Alps, or cleared steep slopes of their protective vegetation cover.

By the 1900s there was early evidence that land use practices were having a negative impact on the natural environment. One of the indicators was large-scale erosion that in many areas continues today. The following is an account of the changes observed over five years by the son of a pastoralist.

*Jimenbuan in the early days was very different from what it was after the passing of the Sir John Roberston's Land Act, which gave selectors the privilege of taking the land selected before surveys. Some of them would put on more stock than the area they selected would carry... Before the passing of the Land Act... Matong Creek for about five miles above and below its junction with the Jimenbuan Creek was a succession of deep waterholes, there being no high banks, and grass grew to the water's edge. Hundreds of wild ducks could be seen along the waterholes, and platypus and divers were plentiful. Five years after the passing of the Act the whole length, instead of being a line of deep waterholes, became a bed of sand, owing to soil erosion caused by sheep. The water only came to the surface in flood time, when it spread sand all over the flats.*

(Crisp, 1947)

Wallace's hut is part of the cultural heritage of the Australian Alps. It is the oldest hut standing in the Alpine National Park and is classified under the National Trust. It was built from slabs of Snow Gum by the Wallace brothers in 1889, close to the Bogong High Plains Road just out of Fall Creek.





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## CONSERVATION IN THE ALPS: THE BEGINNINGS

As the evidence of human impact became more obvious and the remaining natural areas became noticeably smaller, nature conservationists in the community began to voice their concerns. Richard Helms wrote in 1893 of his concern about the burning practiced by the herdsmen or graziers in the High Country with the short-term objective of creating new palatable growth. He talks about an 'unsullied landscape' being destroyed by the activities of

*... inconsiderate people... replacing fresh and fragrant growth by dead and half burned sticks ... That ignorance and maybe greed should be allowed to interfere so drastically in the economy of nature is pernicious, and should not be tolerated.*

(Helms 1893)

Eugène von Guérard, born Austria 1811, worked in Australia 1852-81, died England 1901.  
Mount Kosciusko, seen from the Victorian Border (Mount Hope Ranges), 1866, oil on canvas, 108.2 x 153.3 cm  
Purchased, 1870.  
National Gallery of Victoria, Melbourne.

European knowledge of the environment is linked to the development of scientific concepts and scientific ways of discovering how the environment works. Lhotski, Strzelecki, von Mueller, Helms and Howitt were notable in a long list of explorers, field naturalists and scientists in the 19th century.

Through their individual searches for knowledge, they contributed to the scientific knowledge base that has become part of our understanding of the Australian Alps. A further dimension in the appreciation of the natural values of the Australian Alps can be found in the paintings of Chevalier, von Guérard and other European-born artists of the 19th century.



The first time that land within the Australian Alps was recognised for conservation purposes was in NSW between 1872 and 1890, when cave reserves were established in the Yarrangobilly area. These were established for public recreation and for the protection of the caves.

The first public proposals for reservation of land in the Victorian Alps for nature conservation came in 1898 with the establishment of Mount Buffalo National Park. The NSW government, in 1906, also attempted to establish the 'Snowy Mountains National Chase' for recreation and the preservation of game. This area was extended in 1921 and 1925 along with the additional purpose of preserving flora of the area.

In the early 1930s, a forester, B. U. Byles, conducted an investigation into soil erosion in mountain watersheds. Byles completed a report on the Murray River catchment in New South Wales. He studied the land of the Murray Catchment on foot, mile by mile for six months, recording in his notebooks the observations of each day. Byles concluded in his report: Although the area of total destruction was not as yet very great, the destructive processes could be observed almost everywhere. Byles warned that the consequences would be catastrophic if these processes were not checked:

*... throughout the Murray Plateau, the country is, on the testimony of men who mustered cattle their all their lives, definitely drier now than it was 30 years ago. They point out again and again swamps and creeks which were formerly impassable but where now a man can ride without any danger of sinking. (Byles 1932)*

In 1933, a Soil Erosion Committee was formed in NSW and began investigations into the state of the soil of the mountains. In 1938 it became the Soil Conservation Service and declared various parts of the Snowy Mountains as catchment areas, or areas of erosion hazard, under the Soil Conservation Act.

In Victoria, botanist Maisie Fawcett was seconded in 1941 from Melbourne University by the Soil Conservation Board to investigate the effects of grazing on the catchments of some of the High Country in Victoria.

Apart from field naturalists, artists and scientists, the early conservationists in the Alps fell into two groups: bushwalkers and a group concerned with the protection of water catchments.

Many bushwalkers spent their holidays exploring the Alps and it was through this exploration that they could see the changes to the natural environment. One such person was Myles Dunphy, a bushwalker and conservationist, who in 1933 called for volunteers to establish a National Parks and Primitive Areas Council (NPPAC) dedicated to the preservation of land in its primitive condition. In 1933, Dunphy drew up proposals for a Snowy-Indi Primitive Area, a million acres of mountainous country in NSW and Victoria. This proposal, endorsed by the NPPAC, publicly exhibited in 1935 and strongly supported by groups of bushwalkers and other conservationists, aroused the interest of the then Premier of NSW, William McKell. The proposal later became a move for a national park.

In 1938, various parts of the Snowy Mountains were declared as catchment areas, or areas of erosion hazard, under the Soil Conservation Act. As a response, overstocking and burning were prohibited, but unfortunately these were not policed adequately.

The Government of New South Wales in 1944 passed a Bill establishing the Kosciuszko State Park. After 100 years of European occupation, nature conservation and the protection of water catchments were becoming recognised as priority land uses. The principles of the Bill were:

*... the permanent preservation of all the water catchments, permanent reservation and development of the park for the recreation and enjoyment of the people and the continued controlled use of the park for pastoral purposes, insofar as they were consistent with the first and second principles. (Minister of Lands, 1944).*

Even though the Government supported the notion of nature conservation by reserving the land, it did not endorse its financial support. Land reserved for nature conservation needs to be adequately financed to be managed effectively. Initially Kosciusko State Park was managed by a Trust that was almost completely financed by revenue raised from the sale of grazing leases. This put the Trust in the awkward position of having to promote the continuation of a land use in conflict with nature conservation.

In Victoria in 1949, the Town and Country Planning Association recommended a number of national parks, including a 500,000 hectare Victorian Alpine National Park. Pressure from conservationists induced the Government to carry out an investigation in response to this recommendation. The subsequent report (1951-52) endorsed the recommendation of the Association, and also recommended the introduction of national parks legislation providing for a National Parks Authority. The Victorian National Parks Association, established in 1952, was to become the main body pressing for parks through lobbying of government and making submissions.

In 1956, the National Parks Authority was established, becoming in 1970, the National Parks Service. The final steps which led to the declaration of a series of parks in the Victorian Alps arose from the establishment of the Land Conservation Council in 1971, with the task of systematically assessing the best use of public land in Victoria.

Meanwhile, the Snowy Mountains Scheme was getting under way. In the Snowy Mountains Hydro-Electric Authority Act of 1949, a requirement was included for the 'Protection of Catchment Areas'. This served their interest of protecting the water to be harvested for the hydro scheme and also meant an end to livestock grazing and burning of vegetation in catchment areas. The Victorian State Electricity Commission played a similar role of eliminating grazing from some areas of the Kiewa catchment. A proposal by the Hydro Commission to develop a series of dams and aqueducts in the heart of the Kosciuszko State Park, an area which had been proposed by the National Parks and Primitive Areas Council to be set aside as 'primitive', gave the Park Trust the motivation it had previously lacked. A primitive area within the park was declared in 1963, open to skiers and walkers but out of bounds for the extension of roads and engineering works, including works by the Hydro-electric Authority

In 1965 the NSW Government drafted a National Parks and Wildlife Act, and in 1967 Kosciuszko State Park was renamed Kosciuszko National Park. The Minister for Lands of the day, a tough and energetic politician named Tom Lewis, said:

*I'm a rationalist about this. Man is an animal though we tend to forget it. He needs to survive and propagate and have a habitat like any other animal...I think man would always be clever enough to survive, but he should not take the risk of destroying too much of his environment. You can never put back what you have destroyed.*  
(Williams, Sydney Morning Herald, 22 August 1969).

Management of Kosciuszko National Park for nature conservation became a priority task for the Government and money was finally made available. After a long and passionate debate with the graziers, who continued to graze cattle illegally in the park, an investigation was begun into the issue. Its recommendation was to abolish grazing in the park.



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In 1969 the Government finally accepted this recommendation and 135 years of recorded grazing history came to an end.

Namadgi National Park in the Australian Capital Territory incorporating a significant part of the Cotter Catchment, the primary source of domestic water for Canberra and Queanbeyan, was declared in 1984. Declaration of the Namadgi National Park was the culmination of over 20 years of investigations, proposals and community concern for the establishment of a major national park in the ACT.

In 1979 the Land Conservation Council, following a number of studies which involved extensive public consultation, recommended the creation of a series of national parks and other reserves in the Victorian alpine area. Bogong, Wonnangatta-Moroka and Cobberas Tingaringy national parks were established as a result of these recommendations. Following special investigations of the alpine area, the Council further recommended in 1983, that these parks be extended and linked to form a large contiguous Alpine National Park. The Alpine National Park finally came into being in 1989, forty years after a park protecting Victoria's high country was first proposed.

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1. Mount Ginini, Namadgi National Park, Australian Capital Territory.
2. Baw Baw National Park, Victoria, established in 1979.



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Stretching from Canberra through the Brindabella Range in ACT to the Snowy Mountains of NSW and along the Great Divide through eastern Victoria, the Australian Alps national parks are unique and special. They have been important to Aboriginal people for thousands of years and their rich Aboriginal heritage is increasingly recognised and celebrated. They have a strong and fascinating European heritage and their value and significance will continue to grow in the future. As a generally well-watered, snow-clad and mountainous area in a predominantly dry and flat continent, the alpine region and its national parks are of great conservation significance as they contain:

- mainland Australia's highest peaks and most spectacular mountain scenery;
- flora and fauna, natural communities and ecological processes that are varied, endemic and in some cases threatened;
- a range of sites, places and landscapes that are valued by the community,
- a rich and diverse Aboriginal and European cultural heritage;
- a magnificent outdoor recreation and tourism resource for Australians and international visitors; and
- the headwaters of major river systems which supply snowmelt waters vital for the maintenance of ecological processes and communities, domestic use, industry, irrigation and hydro-electric production in New South Wales, Victoria, the ACT and South Australia.



## CURRENT DAY CONSERVATION



Nature conservation is now recognised by governments as the most important land use for the Australian Alps. National parks are an accepted way to manage the land for conservation. The Australian Alps national parks consist of two parks in the ACT, four in NSW and five in Victoria. Environment ACT, NSW National Parks and Wildlife Service and Parks Victoria manage these parks. It's also accepted that in order to achieve the best possible outcomes, the land needs to be managed jointly as one biogeographical region, regardless of whether land crosses different State and Territory borders.

### **The Australian Alps Cooperative Management Program**

With the signing of the first Memorandum of Understanding (MOU) in 1986, State, ACT and Australian government conservation agencies formally agreed to manage this vitally important national asset cooperatively. (This MOU was further revised and strengthened in 2003.) Following on from the MOU, The Australian Alps Liaison Committee was formed in this spirit of cooperation, to ensure that the national parks and reserves in the Australian Alps are managed as one biogeographical entity. Prior to the MOU each Park agency had its own way of dealing with challenges of park management. Now the agencies work cooperatively to protect the Alps for generations to come.

Eleven parks and reserves, protecting over 1.6 million hectares, are collectively referred to as the Australian Alps national parks. The major reserves - Kosciuszko, Namadgi, Alpine, Mount Buffalo and Baw Baw national parks - are well known to much of the community of south-eastern Australia. Tidbinbilla Nature Reserve in the ACT, Brindabella National Park, Bimberi and Scabby nature reserves in NSW, and Victoria's Avon Wilderness Park, are becoming better known.

Responsibility for day-to-day management of the Australian Alps national parks listed in the MOU remains with the relevant participating agency. The majority of works carried out in the parks is undertaken by the individual agencies in accordance with their management plans and approved strategies.

Within the Liaison Committee, a number of Reference Groups function to advise the Committee on specific matters and to assist with the implementation of the Co-operative Management Program. Each reference group has one or two park staff members from each of the agencies as members. Topics dealt with by the reference groups include: natural resource management, cultural heritage, visitor experiences and marketing, climate change, water and catchments, stakeholder engagement and communications.

### **The Vision for the Australian Alps**

The vision of the Australian Alps co-operative management program is: Agencies working in partnership to achieve excellence in conservation management of the Australian Alps national parks' natural and cultural values and sustainable use through an active program of cross border co-operation.

### **The objectives of the Memorandum of Understanding are:**

1. To pursue the growth and enhancement of inter-governmental co-operative management to protect the important natural and cultural values of the Australian Alps national parks.
2. To co-operate in the determination and implementation of best-practice management of the areas listed in the MOU to achieve:
  - protection of the unique mountain landscapes;
  - protection of the natural and cultural values of the Australian Alps;
  - provision of an appropriate range of outdoor recreation and tourism opportunities that encourage the enjoyment, education, understanding and conservation of the natural and cultural values; and
  - protection of mountain catchments.

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## NATURAL HERITAGE MANAGEMENT

Kosciuszko National Park was recognised as one of the 440 World Biosphere Reserves under the United Nations Educational, Scientific and Cultural Organisation's Man and the Biosphere Programme in 1977 and, in 1996, Blue Lake and its surrounds was listed as a Wetland of International Importance under the Ramsar Convention. The Australian Alps also have a number of native plants and animals that currently have the status of 'threatened species' under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. These include the Anemone Buttercup, the Bogong Daisy-bush, and the Silky Daisy Bush.

Despite the Australian Alps being largely protected in national parks and other conservation areas, there are many threatening processes, both natural and those imposed by human interaction, that are having an increasing impact on the vegetation. The presence of introduced plants and animals, development for skiing and other recreational activities, tourism, grazing and fires have all had or is having significant impacts on the vegetation of the Australian Alps.

## MINIMAL IMPACT AND OTHER STRATEGIES

National parks are created to protect natural and cultural heritage and to ensure the beauty of the landscape for all time.

Protection includes safeguarding against the impacts of:

- introduced plants
- soil erosion
- fragmentation of habitats
- feral animals
- pollution of waterways
- incompatible human activity.

Minimal Impact is one strategy to protect the Alps. All users of the parks are actively encouraged to reduce their impact on the environment. Educational and information brochures on minimal impact have been produced by the Alps working groups. People are asked to:

- take all rubbish out of the park
- stay on tracks
- camp away from water courses and fragile landscapes
- use fuel stoves instead of wood fires for cooking
- respect all Aboriginal and historic places by leaving them undisturbed
- do not disturb any plants, rocks, logs and animal nesting sites.

The community participates in keeping such landscapes pristine by understanding the need to balance economic gain with conservation. Some of the ways people can actively participate in conservation of the Australian Alps include:

- obeying signs;
- reporting malicious damage
- staying on roads and tracks
- subscribing to environmental groups who help fund research
- following tourist information
- not interfering with Aboriginal people's sites or other historic sites
- volunteering to help with scientific research or conservation work
- reporting weed infestations
- being well prepared when visiting the Alps
- leaving plants and animals alone
- supporting local towns and infrastructure economically
- becoming better informed about the rich history of the area
- working as rangers
- reading and disseminating information about the parks;
- supporting government initiatives to further nature conservation issues
- being a responsible water user.

### **Weeds**

Weeds generally begin their invasion in areas of bare ground where native plants have been removed or have died. There is often a high degree of spatial association between the location of certain weeds and the location of roads and ski resort development. Some common weeds in the Alps include Radiata Pine, Black Willow, English Broom, Yarrow, White Clover, St. John's Wort, Twiggy Mullein, Dandelion, Sorrel, Scotch Thistle, Lupin and Himalayan Honeysuckle. There is also an urgent need to control the invasive Orange Hawkweed that has been discovered growing in a few parts of the Australian Alps national park.

A major activity of both national park managers and private landholders is to control weeds and feral animals. The management of pest species is a community-wide problem and needs to be carried out across all land tenures and in a regional context.

Scientific studies have revealed the exact location, spread, life cycles and biology of many weed species. Using this knowledge, the best method of control is then applied to each species. Control methods include hand weeding, mechanical removal and the careful use of registered herbicides.

Community education for visitors to the Alps also helps to stop the spread of weeds and people are encouraged to report sightings of weed infestations to the rangers. Books, identification photos, information boards at tourist centres and roadside signage all help increase awareness of the problem. In future development, such as roads, walking tracks and ski slopes, will be located away from endangered plant habitats to minimise the potential for weed invasion while ongoing scientific studies and a hands-on approach by park management aim to effectively control and manage the weed invaders.

### **Feral animals**

Introduced animals are recognised as threats to natural, cultural and recreational values of the Australian Alps. Feral animals damage vegetation, cause soil erosion, effect water quality, eat native animals, compete with native animals for food and shelter, spread disease and can attack domestic livestock on adjacent farms. Feral animals that cause concern in the Australian Alps include the Black Rat, Common Starling, deer, European Brown Hare, European Honeybee, European Rabbit, feral dog, feral horse, feral pig, feral cat, goats, House Mouse and the Red Fox. Many different strategies are used to control the numbers of feral animals including education programmes, relocation, trapping, shooting and poisoning.

### **Fire**

Fires in the Alps are a natural phenomenon and a necessity for the long-term health of many of the Alps vegetation communities. However large landscape fires - such as those in 2003 - generate debate in the community about the management of these natural areas and, in particular, the management policies implemented by national parks agencies.

One view is that logging native forests and allowing grazing reduces the intensity and severity of bushfires. However, scientific studies show that logging does not reduce fires. Dense regrowth after logging can actually increase fuel loads. So do cattle which selectively graze, thus reducing the more succulent, fire resistant vegetation and promote the growth of woody, flammable shrubs.

In the early 1900s when there was extensive logging and cattle grazing and few national parks, the Black Friday fires of 1939 burnt ten times that of fires forty or so years later, when more of the Alps was protected and grazing had been withdrawn from large parts of



the mountains.

National parks agencies in Victoria, New South Wales and the Australian Capital Territory have developed fire management plans which outline a number of strategies for reducing the risk of large-scale fires and protecting human settlements and assets. Some of these strategies include fuel reduction burning, maintaining fire breaks and banning the use of fire in high fire danger periods.

Fire management plans also identify fire management practices to benefit different vegetation communities. These plans identify optimum burning regimes, that is, the ideal frequency, intensity and time of year for particular vegetation communities. Implementing fire management plans is usually finding a balance between optimum fire regimes for vegetation communities, fuel reduction burning and the particular weather conditions that presented to the managers each season. It is difficult to carry out scheduled burns if temperatures are too low or it's raining, By the same token it is dangerous to carry out scheduled burns when conditions are hot and windy. The number of days available to managers to safely and successfully carry out scheduled burns are few each year which is an ongoing challenge in implementing fire management plans. In summary, fire management is a very complex, dynamic and controversial issue for managers of the Australian Alps.

Fire at Hermit Mountain, Kosciuszko National Park, NSW.



## **Alpine resorts**

Alpine resorts provide economic benefits through tourism, employment, construction and contracted management services. They put considerable effort into reducing the impact and potential impact associated with resorts in order to ensure that they are Sustainable Mountain Resorts. Resorts have systems in place to minimise waste, water and energy consumption, control invasive species, protect waterways, natural vegetation and native animal habits and to minimise soil disturbance.

The NSW National Parks and Wildlife Service (NPWS) is responsible for managing resorts within Kosciuszko National Park. Within that area, the resorts of Charlottes Pass, Thredbo, Perisher Range, and Mt Selwyn can be equated to a country shire council of 30,000 people.

The Service manages strategic policy, public health matters, concessions and leasing administration and environmental monitoring for resorts in the Snowy Mountains, as well as the provision of municipal services to the resorts in the Perisher Range. Under the NSW Environmental Planning and Assessment Act, the Minister for Planning is the consent authority for developments in the ski resorts.

In Victoria, the alpine resorts, with the exception of Mount Buffalo, are not within the boundaries of the national parks. They are managed separately by Resort Management Boards for the individual resorts of Falls Creek, Mount Hotham, Mount Buller (Mount Stirling), Baw Baw and Lake Mountain. The Alpine Resorts Coordinating Council coordinates Victorian resort management.

The five alpine resorts are a popular recreational attraction for Victoria. Up to 900,000 people visit the resorts each winter and increasing numbers visit outside the snow season. An Alpine Resorts 2020 Strategy provides long-term direction for the development of the resorts. Key issues identified include climate change, resort use and visitation, development of the resorts, vibrant resorts, environmental management and stewardship of public land.

## **Cultural heritage**

Aboriginal people, European explorers and surveyors, graziers, prospectors, miners, timber workers, scientists, construction workers, conservationists and sightseers - all have lived, visited or worked in the mountains.

Whole landscapes can have significant cultural values. For Aboriginal people the land and people are inseparable, so a mountain might hold spiritual values while, from a European perspective, a valley that has been mined or logged will have historic value. Tangible evidence of all phases of human use of the Alps still exists today.

Sound management of cultural heritage is dependent on a thorough knowledge and understanding of the myriad of heritage places and objects, their values and their significance. It is, therefore, necessary to understand the importance of heritage places and objects to the individuals, families or communities that generated them and the ongoing nature of cultural connections. National park managers must:

- balance the conflicts between the protection of natural and cultural values and between different cultural values
- recognise and manage the interconnected nature of many natural and cultural values
- involve the community in heritage management
- manage the threats to the physical conditions of heritage places and structures
- increase the community's understanding and appreciation of heritage places, and

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## NATIONAL HERITAGE LISTING

Heritage includes places, buildings, landscapes, values, traditions and events that help us understand who we are individually, as a community and as a nation. Australia's national heritage comprises natural and cultural places that contribute to Australia's national identity. By identifying, protecting and managing our heritage we are ensuring that those places will continue to be experienced and enjoyed in to he future. Significant heritage places are identified and placed on lists that guide their protection and management by various levels of government and peak bodies.

The Australian Alps were included on the National Heritage List in November 2008, acknowledging the region's landforms, unique flora and fauna, pioneering history and recreational opportunities.

## CONSERVATION IN THE FUTURE

The management of national parks in the Alps involves some compromise. Management plans are developed through consultation with all interested groups and individuals to reach a strategy that is acceptable to the majority. Will this still be the case in 20, 50 or 100 years? The need for conservation will still be there but the circumstances will have changed. The population will have increased, natural areas will have diminished and world-wide resources will be precious.

Mt Feathertop,  
Alpine National Park, Vic.





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**Acclimatisation Societies:** between 1840 and 1860 alone, more than 60 different species were introduced to Australia. Most were brought in by acclimatization societies that worked enthusiastically to spread the world's useful and bountiful species. They included monkeys, mongoose, antelope, llama, banteng cattle, ostrich, pheasants and mute swan. Fortunately, most introductions failed despite actions to protect them, such as killing native predators including birds of prey.

**Biogeographical region:** a biogeographical region is a defined region with similar origin, climate, landform and vegetation communities. The Australian Alps bioregion extends into Victoria, New South Wales and the Australian Capital Territory. The alpine region in southern New South Wales is characterised by a series of high elevation plateaus. It contains the only alpine and the majority of the subalpine vegetation in New South Wales and is often snow covered in winter. It is dominated by eucalypt open forests and woodlands and tussock grassland. Small areas of eucalypt open woodlands and heath are present.

**Catchment areas:** a catchment is an area of land that collects water, which drains to the lowest point in the area. This could be a lake, a dam, or the sea. Rain falling on the land will make its way to this lowest point, through creeks, rivers and stormwater systems.

**Conservation:** preservation of the natural environment, works of art or artefacts.

**Frederick McCoy:** once Professor of Geology and Mineralogy and Curator of the museum at Queen's College, Belfast, McCoy became Professor of Natural Sciences at the University of Melbourne in 1854. A geologist by training and research, and a palaeontologist, McCoy lectured in geology, zoology, chemistry, mineralogy, geography and botany but, over time, tended to concentrate on geology. He was appointed director of the National Museum of Victoria in 1856. He died in his university office in 1899 while correcting students' papers in his seventy-third year at the university.

**Helms:** Born in Altona, Germany in 1842, Richard Helms first arrived in Australia in 1858, and resided in New South Wales, Victoria, Western Australia and New Zealand. He sought employment as a dentist, watchmaker, museum curator, collector, entomologist, fruit inspector and bacteriologist. He formed extensive collections of plants, beetles, butterflies and shells. He participated in a major collecting expedition to Mt Kosciuszko in 1888, visiting there again in 1893 and 1901, and was naturalist on the Elder Exploring Expedition to central Australia in May 1891 June 1892. He died in Sydney, on 17 July 1914.

**Henry David Thoreau:** an American author and philosopher who is sometimes identified as one of the first environmentalists. His essay Civil Disobedience was inspirational for Tolstoy and Mohandas Gandhi. Thoreau embarked on a two-year experiment in simple living on July 4, 1845 when he moved to the forest around the shores of Walden Pond, not far from his friends and family in Concord. Thoreau refused to pay taxes in 1846 based on his opposition of the Mexican war and, as a consequence, was jailed. Thoreau described this time in his essay: 'Civil Disobedience'.

**Howitt:** Born at Nottingham, England, Alfred William Howitt travelled to the Victorian goldfields with his father and brother in 1852. He became an accomplished bushman and had conducted two explorations when he was selected in 1861 to search for whatever remained of the Burke and Wills expedition. Travelling only with necessary equipment and with a small, handpicked crew, he made the journey to Cooper's Creek in a fraction of the time it had taken Burke. After this success he began a career in public administration, but he is best known today for his work as a pioneering anthropologist, conducted entirely in his spare time. Howitt was one of the first to scientifically study Aboriginal culture and society. His major work Kamilaroi and Kurnai (1879) was recognised as a landmark in the development of modern anthropology.

**Lhotski:** an early explorer whose journal entries provided some insight into the vegetation in parts of NSW before Europeans had effectively changed the environment.

**Maisie Fawcett:** Maisie Fawcett was born in Footscray, Victoria in 1912. Her early research was in the ecology of the High Country of Victoria. Later, with her husband Professor D. J. Carr, she researched morphological and taxonomic aspects of Eucalyptus. They edited and wrote two volumes of historical essays on Australian botany, People and Plants in Australia, and Plants and Man in Australia. They also published two books (Eucalyptus 1, and Eucalyptus 2) as well as numerous papers. Maisie died in Canberra in September, 1988.

**National park:** national parks are significant areas of public land set aside for native plants, animals and their ecosystems. National parks protect places of natural beauty and places of cultural heritage.

**Nature conservation:** protection, preservation and careful management of natural resources and the environment.

**Overstocking:** overstocking occurs when a higher number of animals are placed on the land than dictated by the grazing (or carrying) capacity. Over the short-term this is not detrimental, but repeated overstocking can lead to degradation, retrogression, and in extreme cases desertification.

**Plato:** Plato was born in 427 BC and died in 347 BC. Plato was a student of Socrates and when the master died, Plato travelled to Egypt and Italy, studied with students of Pythagoras. He spent several years advising the ruling family of Syracuse. Eventually, he returned to Athens and established his own school of philosophy at the Academy. His main interests were in the areas of philosophy, science and mathematics. He also contributed to the theory of art, in particular, dance, music, poetry, architecture, and drama. He discussed a whole range of philosophical topics including ethics and metaphysics where topics such as immortality, man, mind, and realism are argued. His discussions also covered the philosophy of mathematics, political philosophy and religious philosophy. In discussing epistemology (theory of knowledge) he looked at ideas such as a *priori* knowledge and Rationalism. In his theory of forms, Plato rejected the changeable world that we are aware of through our senses and put forward a theory of ideas that are constant and true.

**Sierra Club and John Muir:** the American John Muir (1838-1914) was a naturalist and conservationist. He has been described as The Father of the North American National Parks. As a wilderness explorer, he is known for his tours of California's Sierra Nevada and Alaska. His writings contributed to the creation of Yosemite, Sequoia, Mount Rainier, Petrified Forest, and Grand Canyon National Parks. In 1892, John Muir and other supporters formed the Sierra Club and Muir was the Club's first president, an office he held until his death in 1914.

**Snowy Mountains Scheme:** The Snowy Mountains Scheme is a dual purpose hydro-electric and irrigation system located in south-eastern Australia. It holds the south-flowing waters of the Snowy River and its tributary, the Eucumbene, at high elevations and diverts them inland to the Murray and Murrumbidgee River. This is done through two tunnel systems driven through the Snowy Mountains. The Scheme also involves the regulation and utilisation of the headwaters of the Murrumbidgee, Tumut, Tooma and Geehi Rivers. The diverted water, generates mainly peak-load electricity for the States of New South Wales and Victoria and the Australian Capital Territory as the water passes through power stations to the irrigation areas inland from the Snowy Mountains. The Scheme reached its designed capacity in 1974 after twenty-five years of construction.

**Strzelecki:** Mt. Kosciuszko was named by explorer Count Paul Edmund de Strzelecki after a Polish democratic leader, Tadeusz Kosciuszko. It appears that the peak's shape reminded Strzelecki of the tomb of Kosciuszko. Different sources provide different dates for this event with the vast majority quoting 1840 as the year in which Strzelecki names Mt Kosciuszko. The Collins publication, *Milestones in Australian History: 1788 to the Present* (compiled R. Brown, edited R. Appleton, 1986, William Collins, Sydney), states that during January 1840, Strzelecki, James Macarthur and James Ridley explored country between Westernport and Gippsland and on 15 February, Strzelecki discovers, ascends and names Mt Koscius[z]ko. The *Macquarie Encyclopedia of Australian Events: Events that Shaped the History of Australia* (devised by B. Fletcher, editors B. Fraser and A. Atkinson 1997, rev. edition, The Macquarie Library Pty Ltd, Sydney), states that in 1839, 'Paul de Strzelecki, Polish- born explorer and scientist who later took up British citizenship and was knighted, alone ascended the highest peak in the Australian Alps during a geological survey and named it after... Tadeusz Kosciuszko' (p. 42).

**von Mueller:** Ferdinand von Mueller studied pharmacy and took his Doctor of Philosophy at the University of Kiel in 1847. He came to Australia in 1848 for health reasons and became a great botanical collector and writer. He was Victorian Government Botanist from 1853, and for a time Director of the Botanic Gardens. He travelled widely in Victoria and was on the A. C. Gregory expedition to northern Australia in 1855-57. He supported botanical exploration and collecting throughout the colonies. His botanical publications are very extensive, and include *Fragmenta Phytographiae Australiae* published over the period 1858-82.

**Wilderness:** a large tract of land remote at its core from mechanised access or settlement, substantially unmodified by modern technological society or capable of being restored to that state, and of sufficient size to make practicable the long-term protection of its natural systems. A wilderness is a large area in which ecological processes continue with minimal change caused by modern development. Indigenous custodianship and customary practices have been, and in many places continue to be, significant factors in creating what non- indigenous people refer to as wilderness.



# CONSERVATION

## PLANT AND ANIMAL SPECIES

Anemone Buttercup, *Ranunculus anemoneus*  
Black Rat, *Rattus rattus*  
Black Willow, *Salix nigra*  
Blackberry, *Rubus fruticosus*  
Bogong Daisy-bush, *Olearia frostii*  
Common Starling, *Sturnus vulgaris*  
Dandelion, *Taraxacum officinale*  
Dingo, *Canis lupus dingo*  
English Broom, *Cytisus scoparius*  
European Brown Hare, *Lepus capensis*  
European Honeybee, *Apis mellifera*  
European Rabbit, *Oryctolagus cuniculus*  
Feral cat, *Felis catus*  
Feral dog, *Canis familiaris familiaris*  
Feral goat, *Capra hircus*  
Feral horse, *Equus caballus*  
Feral pig, *Sus scrofa*  
Himalayan Honeysuckle, *Leycesteria formosa*  
House Mouse, *Mus musculus*  
House Sparrow, *Passer domesticus*  
Lupin, *Lupinus angustifolius*  
Orange Hawkweed, *Hieracium aurantiacum*  
Radiata Pine, *Pinus radiata*  
Red Fox, *Vulpes vulpes*  
Scotch Thistle, *Onopordum acanthium*  
Silky Daisy Bush, *Olearia erubescens*  
Sorrel, *Acetosella vulgaris*  
Spotted-tailed Quoll, *Dasyurus maculatus*  
St John's Wort, *Hypericum perforatum*  
Twiggy Mullein, *Verbascum virgatum*  
White clover, *Trifolium repens*  
Yarrow, *Achillea millefolium*