

# Alpine Plants



Parks and Wildlife Service Tasmania

DEPARTMENT of TOURISM, PARKS  
HERITAGE and the ARTS

Alpine plants are a hardy lot and despite the harsh conditions of the alpine zone, numerous plant species survive and thrive. While the alpine and subalpine areas occupy a small proportion of Tasmania's land surface (about 3%), they support many species found nowhere else in the world with the proportion of these endemic species increasing as you go west. Much of the alpine zone can be found on mountains in the western half of the state. However, the most extensive area of true alpine vegetation is at Ben Lomond National Park in the north east.

## Climate

Extreme cold, rain, ice and ferocious winds are features of the Tasmanian alpine zone. The southerly winds have the greatest influence on the vegetation as these strong winds bring the colder conditions. As a consequence plants are eroded away from their south western corners and grow to the northeast. The maritime climate of Tasmania limits snow cover to short periods so that fjeldmark (areas of masses of gravel and pebbles with small isolated plants, mosses and lichens), and snowpatch herbfields are uncommon. Snowpatch herbfields have a semi-permanent snow cover in winter. The snow acts like a blanket allowing frost intolerant plants to survive.

## A rocky landscape

Periodic scraping by glaciers has inhibited soil development over most of the western and central Tasmanian alpine zones. As most of the ice disappeared from Tasmania 10,000 years ago (not a long time in geological terms) there has been little opportunity for weathering to provide any depth of soil. The soils of the Tasmanian alpine zone therefore are usually either rocky or highly organic, and are extremely shallow. The highly organic soil is derived from plant remains and is known as peat. Because of the shallow soils, shallow rooting plants are better suited to the alpine environment.

## A mosaic of plant communities

A feature of alpine areas is the great variation in the vegetation over short distances. Several distinct plant communities commonly occur together in a mosaic, including native pine shrubberies, short woody heath and very short herbfields or alpine moorlands.



Snow berry (*Gaultheria hispida*)  
(Drawing courtesy J. Eberhard)

## A splash of colour

The diverse plants of the highland heaths offer a stunning display of summer flowers. They range from dense shrubberies up to 2 m tall in sheltered areas to sparse, open small shrubberies containing grassy species, sedges and small ferns.

Plants you are likely to find in highland heath include the spectacular honey richea (*Richea scoparia*), pineapple grass (*Astelia alpina*), snow berry (*Gaultheria hispida*) and mountain rocket (*Bellenden montana*). Snow gums (*Eucalyptus coccifera*) occur as shrubs on the margins of the alpine zone but are most common as a tree in subalpine forest.

## An abundance of white

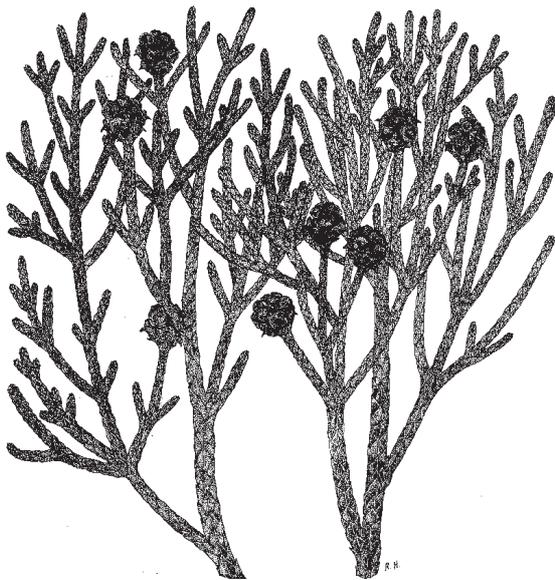
Most of the flowers of the plants in the alpine zone are white. White flowers attract a large range of insects to assist pollination whereas coloured flowers often target specific species of insect or bird. Some plants, such as eyebrights have white flowers with purple lines running into them. These lines are referred to as 'bee lines' and insects follow them to find nectar. In the process they are covered in pollen, which they take to the next flower.

## Compact cushions

A number of alpine shrub species from different plant families in Tasmania have evolved dense, 'bolster' or 'cushion' like forms known as cushion plants. Most of these plants are endemic (only occurring in Tasmania). The compact form of cushion plants gives a smooth outer surface to the plant that protects them from severe cold winds and ice. Cushion plants grow in a variety of environments. They are at their most spectacular where they form extensive sheets on thin, peaty soils on the alpine plateau. At Newdegate Pass in Mt Field National Park they have modified the drainage by forming a series of stepped dams called 'string bogs'.

## Ancient pines

The conifers are very ancient plants that dominated the world's landscape at the time of the dinosaurs. They pre-date the evolution of today's flowering plants. Conifers are well adapted to the extremes of alpine conditions in Tasmania, but are restricted in distribution because many alpine areas have had a history of fire. Many species, especially conifers, are very slow to recover from fire. The alpine conifers are the most frost hardy species in Tasmania. They are also able to cope with heavy snowfall with less damage due to their more flexible branches. Tasmanian alpine conifers include the creeping pine (*Microcachrys tetragona*), the cheshunt pine (*Diselma archeri*), King Billy pine (*Athrotaxis selaginoides*) and the pencil pine (*Athrotaxis cupressoides*).



*Pencil pine (detail). (Drawing courtesy R. Hale)*



*'Bee lines' are a feature of the Tasmanian eyebright. (Drawing courtesy J. Eberhard)*

## Looking after alpine plants

The greatest threat to alpine plants is fire. Most species take several decades or even centuries to recover from a burn. Some unfortunately are permanently removed. About one-third of the Tasmanian highlands have been damaged by fires in the last two centuries. One of the reasons there is a fuel stove only policy in place across the World Heritage Area is to protect the fragile alpine ecosystems from damage created by wood collection and open fires. Soil in the alpine zone is highly organic and fires often burn the peat itself.

## Step carefully

Trampling is another threat, particularly to wet moorland, alpine shrublands and herbfields. In some situations fewer than 30 people walking over the same route through an alpine area can kill the plants and create a visible pathway through the vegetation. Recovery of the pads can take many years or even decades, and in some situations deep erosion gullies can be created where surface water begins to flow along these paths. It is recommended that bushwalkers stick to the tracks and camp in designated camping areas.

## Further information

Kirkpatrick, J. *Alpine Tasmania. An illustrated guide to the flora and vegetation* (colour photographs by Peter Dombrovskis). Oxford University Press, Melbourne.

Burns, D. *Significant Flora of Cradle Mountain*. Parks and Wildlife Service, Tasmania.

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