Cool temperate rainforest of the lower Gordon River

A special rainforest

The word rainforest evokes images of a profuse diversity of plants, often draped in vines and lianas and possessing buttressed roots. While such an image is true of the tropical rainforests of northern Australia, the cool temperate rainforest communities of Tasmania are very different. Tasmania is the Australian stronghold of cool temperate rainforest, a type of rainforest characterised by an open and verdant, cathedral-like quality; a silent, cool, dark and damp place where both the trunks of trees and the forest floor are festooned with a luxuriant carpet of mosses and lichens. In autumn and early winter in particular, the rainforest floor is dappled with an array of brightly coloured fungi.

An ancient flora

Tasmania's rainforests contain some of the most ancient of Australia's flora, with species which date back over 60 million years — long before the arrival of the eucalypts and acacias which today dominate the Australian flora. The rainforest species evolved on the ancient continent of Gondwana, a landmass which once incorporated the present day continents of South America, Antarctica and New Zealand. It is not surprising, therefore, that many of the rainforest species of Tasmania have their closest relatives in these continents. Even in the frozen continent of Antarctica, pollen evidence reveals a landmass once much warmer than present and covered in a close relative of the myrtle *(Nothofagus cunninghamii)*, the species which dominates Tasmania's rainforests today.

Leatherwood

The rainforest species

The diversity of species in cool temperate rainforests is considerably lower than that of the tropical rainforests of northern Queensland. (There is, however, a rich diversity of lower plants, such as mosses, lichens and liverworts). Many of the species are endemic (i.e. restricted to the State). The dominant species of the cool temperate rainforest is myrtle (or myrtle-beech, as it is more accurately known), which can attain heights of up to 50 m and ages in excess of 500 years. The myrtle, despite its perhaps inappropriate common name, is more closely related to the beech trees of the northern hemisphere rather than the myrtles of the norhern hemisphere. Sassafras *(Atherosperma moschatum),* is commonly found in association with myrtle. Sassafras is a commercial timber used for quality furniture. The distinctive black stain often seen in its heartwood is caused by a bacterial infection. The endemic leatherwood *(Eucryphia lucida)* bears a profusion of beautiful flowers in late summer and early autumn. Its nectar forms the basis of a substantial honey industry. Along the banks of the Gordon River, the

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famous Huon pine forms an important component of the rainforest community, while at higher elevations up the Franklin and Gordon rivers, King Billy pine occurs in association with other rainforest species.

A bizarre plant that occurs among the rainforest species is the pandani *(Richea pandanifolia).* This endemic plant, which resembles the pandanus palm of tropical regions, is not a palm at all, but rather the largest member of the heath family. The long, sharp-edged leaves are retained on the trunk to provide insulation. Small pools of water which form at the base of the leaves provide a habitat for a diverse range of invertebrates.

There is a considerable diversity of rainforest understorey species, including native plum *(Cenarrhenes nitida),* native laurel *(Anopterus glandulosus)*, mountain pepper *(Tasmannia lanceolata),* white waratah *(Agastachys odorata)* and the rare whitey wood (*Acradenia frankliniae).* The Macquarie vine *(Muehlenbeckia gunnii)* is a perennial creeping vine common in the region. Its succulent, purple fruit was often eaten by the convicts of Sarah Island.

Many of these species are found along the banks of the lower Gordon River and at the Heritage Landing boardwalk. An easily accessible and interpreted rainforest walk can also be found along the track to Hogarth Falls, while a short boardwalk at Sir John Falls gives visitors who fly into the Gordon River an opportunity to see a rainforest dominated by myrtle, Huon pine and leatherwood.

A rainforest on fire

It may be difficult to imagine that a rainforest could burn, especially considering that they require over 1500 mm of rain annually. Yet following periods of warm and windy weather, the rainforest can be considerably dry and able to burn. Fire, whether deliberate or accidental can ravage rainforests. Indeed, it may take over a 100 years, even in the absence of any further fires, for a rainforest to recover from fire.

In a rainforest fire, most species will be killed because they lack the adaptive abilities of trees such as the eucalypts to survive being burnt. Following fire, regeneration of rainforest species will proceed slowly, while other light-demanding species such as eucalypts, blackwoods, dogwoods and tea-trees may invade the area and grow vigorously. Some of these species produce oils and leaf and bark litter which actually promote fire. Consequently, the chance of a regenerating forest burning is much greater than for an established rainforest. Given the massive changes in fire frequency and distribution since the arrival of Europeans, the succession to mature rainforest is not always complete.

Myrtle wilt and Phytophthora

Myrtle wilt is a disease caused by a fungal infection which can kill our majestic myrtles. Disturbance such as roading has the potential to trigger local epidemics of the disease. Phytophthora root rot, although a greater threat in drier vegetation communities, can result in the death of at least 39 known susceptible rainforest species. Caused by an introduced fungal pathogen *(Phytophthora cinnamomi)*, this serious disease can be spread in soil by earth-moving machinery, four-wheel drives and even on walkers' boots and tent pegs.

Further reading

Jarman, J.S., Brown, M.J. and Kantvilas, G. (1984). *Rainforest in Tasmania.* National Parks and Wildlife Service, Tasmania.

Pandani