



# New Zealand mistletoes

## Native plants

The name 'mistletoe' is given to plants that have green leaves and can photosynthesize, but that also use specially adapted roots to extract water and nutrients from the stem tissues of their host plant.

Mistletoes grow in many countries around the world but New Zealand is home to eight unique species. Three of these species are called the *beech mistletoes* because they primarily grow on southern beech trees. They have large, showy red or yellow flowers that are pollinated by native birds. Two closely related species, the *green mistletoes*, have small (2–5 millimetres) greenish-yellow flowers that are pollinated by insects. The remaining three species are called *dwarf mistletoes* because of their very small size.

### Where are they found?

Beech mistletoes are now uncommon in many parts of New Zealand. However, they are still locally abundant in some beech forests of the South Island such as Craigieburn, Lake Ohau, the Lewis Pass, Mavora Lakes, South Westland and Fiordland.

Green mistletoes, or piritā, are the most common

mistletoes in New Zealand and are still relatively widespread throughout the North and South Islands. However, they are currently declining in many areas, especially in the North Island. Green mistletoes have been found on more than 206 different host tree and shrub species.

Dwarf mistletoes are likely to be more abundant than currently known because of the difficulty in finding the small, inconspicuous plants.

Beech mistletoe F. David



## Mistletoe facts

- Unlike some mistletoe species found in other countries, New Zealand mistletoes usually do not harm their hosts.
- A ninth mistletoe species, *Trilepidea adamsii*, was last seen in 1954 and is now presumed extinct. Its demise was probably brought about by forest clearance, over-collection, potentially possum browse and the decline of its bird pollinators.
- Beech mistletoes provide native birds with a very important source of fruit and nectar, which are otherwise scarce in beech forests. Two of the beech mistletoes have bright red flowers that appear around Christmas time and are often mistaken for rata.
- Beech mistletoes and native birds have developed a mutualism, which is a specialised relationship that benefits both species. Birds rely on the mistletoes for fruit and nectar, and mistletoes depend on birds for pollination and seed dispersal. This mutualism may be evolutionary dangerous, because if either species declines then the other is in trouble.
- Dwarf mistletoes grow on small trees and shrubs such as kanuka and manuka. They mimic the shoots of their host, and at less than 10 cm long, they can be difficult to locate.



## Did you know?

Beech mistletoes are some of the few plants in the world with “explosive” flowers. To be pollinated, these flowers must be twisted open by native birds such as tui and bellbirds. When twisted, the flower petals of the ripe buds spring open and spray the bird with pollen. This pollen can then be transferred to the next flower the bird visits, which allows that mistletoe plant to produce seeds.

Amazingly, a tiny native bee only one-quarter the size of a red mistletoe bud can also pollinate this plant by twisting open flowers. No other plant in the world is known to have this unusual pollination system!

## Threats

In recent years native mistletoes have disappeared from many areas of New Zealand, particularly in the North Island. Browsing by possums, forest clearance and over-collection have all contributed to their decline.

Another threat may be introduced mammals such as stoats and rats. These animals prey on tui and bellbirds, which beech mistletoes require for pollination. Unpollinated mistletoes cannot produce seeds, and without seeds no new plants can grow to replace old and dying mistletoes.

Fortunately, DOC has identified key sites for mistletoe protection where it undertakes pest management and monitoring to measure plant health and regeneration.

## How can you help?

Many green and dwarf mistletoes grow on private land. If you have mistletoes on your property, you can protect them by banding host tree trunks to prevent possum attacks. Better yet, control possums through trapping or poisoning!

Green mistletoes can easily be grown on a range of garden host trees by squeezing the seed from the fruit and wiping the very sticky seed onto a small branch.

Controlling other pests such as stoats and rats also helps mistletoes by benefiting birds that pollinate flowers and disperse mistletoe seeds.

## Further information

For more information about mistletoes, including information on how to propagate plants, contact your local Department of Conservation office. You can also find out more about research on mistletoes at [www.biol.canterbury.ac.nz/mistletoes/home.shtml](http://www.biol.canterbury.ac.nz/mistletoes/home.shtml)