

ing kanuka for such purposes, using sustainable management practices on quite modest areas, no one has yet got that off the ground on a commercial basis.

There has been a tendency in the past to regard kanuka and manuka as significant only as a 'nursery crop' allowing a 'real' forest to develop, but there is far more that makes kanuka-manuka vegetation valuable.

High density kanuka-manuka scrub/forest is very effective at holding the land in severe rainstorms — in maintaining slope stability on the steep hillslopes so prone to soil-slips when in pasture. Landcare Research has shown that the combination of canopy interception of the rain, and the strong interlocking roots, means kanuka stands 16-20 years old or more are as effective at erosion control as close-planted pines of eight or more years old. With kanuka there is the added opportunity for that stability to be maintained for centuries. Kanuka-manuka scrub/forest won't stop an existing gully eroding out, but it will stop a gully initiating on a slope that in pasture would be vulnerable to catastrophic gully-ing.

Vigorously growing stands, of kanuka especially, extract large quantities of carbon dioxide from the atmosphere to form woody branches, stems and roots. This is a valuable 'carbon sink', tending to reduce the overall effect of greenhouse gases. Could that value become tangible? If the concept of tradeable carbon 'credits' gets off the ground internationally, a good kanuka stand could have a very tangible value, perhaps up to \$200 per hectare a year by a recent calculation.

Both kanuka and manuka yield honey in

Inside a kanuka forest on Great Barrier Island.



GORDON ELL, BUSH FILMS



Kanuka



Manuka

GORDON ELL, BUSH FILMS

Telling differences between kanuka and manuka

Kanuka and manuka are distinctly different species, though they can look very similar. Kanuka grows faster and bigger than manuka, but you can't simply call it manuka for the small stuff and kanuka when it's bigger! The following features help define the differences:

- Kanuka has narrow parallel-sided leaves several times longer than wide and notably soft to the touch
- Manuka leaves are more ovoid but sharp-pointed ('lanceolate') with the prickly apex giving the foliage a harsh feel.
- Kanuka foliage is generally a rather bright olive-green. Specific colour features of kanuka and manuka vary with the seasons, and regionally.
- Manuka is duller, generally darker (not so obvious a difference when very young).

In overview manuka often has a grey-brown look, from a combination of the leaf colour and the branches/stems which typically have a covering of sooty mould (which thrives on the sugary excretion of an introduced scale insect). This mould is much more prevalent on manuka than kanuka.

- Kanuka bark is a light tawny brown. Narrow vertical strips of bark are characteristic of kanuka.
- Manuka bark is darker with a reddish tinge. It comes off in very thin flakes, wider and less regular than kanuka bark.
- Flowers of kanuka are notably smaller, 4-5 millimetres across, and creamy white.
- Manuka flowers are 10-12 millimetres across and generally pure white.
- Kanuka flowers are carried in dense elongated clusters (or 'cymes') towards the end of the branchlets
- Manuka flowers are more evenly scattered over the plants as single flowers.
- Kanuka generally flowers once a year only, in midsummer.
- Manuka flowers strongly a little earlier than kanuka, and additionally in irregular bursts at other times.
- The kanuka seed capsule is less woody, only 2-3 millimetres across and generally disappears after a month or two. Generally kanuka does not carry seed capsules, except briefly in late summer.
- Manuka has a hard woody seed capsule 5-6 millimetres across which persists on the plant for a year or more after flowering. At any time of the year you will see seed capsules of various ages.
- Kanuka generally has faster growth rates and reaches a larger size so it is commonly seen as trees, 10-15 metres tall and more, and 15-40 centimetres diameter.
- Manuka generally stops at about 6-8 metres height and 7-10 centimetres diameter.

The growth forms of kanuka and manuka are slightly different — the somewhat droopy branchlets of kanuka often contrast with more erect manuka — but there is much variation caused by the character of the site, the density of the stand, and tree age.

Some people know kanuka as 'white manuka' and the real manuka as 'red manuka', after the colour of the wood in freshly broken branchlets, but this property too is rather variable.

Nearly all of the 'manuka' firewood sold in New Zealand is really kanuka.