



Myrtle Hauturu

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Made on the New Zealand Plant Conservation Network website – www.nzpcn.org.nz

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Introduction

This book was compiled from information stored on the website of the New Zealand Plant Conservation Network (www.nzpcn.org.nz).

This website was established in 2003 as a repository for information about New Zealand's threatened vascular plants. Since then it has grown into a national database of information about all plants in the New Zealand botanic region including both native and naturalised vascular plants, threatened mosses, liverworts and fungi.

Funding to develop the website was provided by the New Zealand Government's Terrestrial and Freshwater Biodiversity Information System Programme (TFBIS).

The species information used on the website has come from a variety of sources. The indigenous vascular plant text was written largely by Dr Peter de Lange (former Network Vice President). Peter based the descriptions on a wide range of sources including the Flora of NZ Series (Allan 1961, Moore and Edgar 1970 and Webb et al 1987) as well as numerous other taxonomic treatments. For a full bibliography of information sources see the References at the end of this book.

Where no published treatment was available Peter used herbarium specimens and his own knowledge of the flora to prepare species pages. Various other contributors have provided text and additional information to many species pages including botanists such as Mike Thorsen, John Barkla, Cathy Jones, Simon Walls, Nick Singers and many others. The threatened fungi text was written by Eric Mackenzie and Peter Buchanan (Landcare Research).

More than 200 photographers have kindly provided images to illustrate the website and for use in this book especially John Smith-Dodsworth, Jeremy Rolfe, Peter de Lange, Wayne Bennett and Gillian Crowcroft.

The New Zealand Botanic Region

The information on the Network website, from which this book was compiled, is for species that are indigenous to or naturalised within the New Zealand Botanic Region as defined by Allan (1961). The New Zealand botanic region encompasses the Kermadec, Manawatawhi/Three Kings, North, South, Stewart Island/Rakiura, Chatham, Antipodes, Bounties, Snares, Auckland Campbell island/Motu Ihupuku and Macquarie.

About the Network

The Network has more than 800 members worldwide and is New Zealand's largest non-governmental organisation solely devoted to the protection and restoration of New Zealand's indigenous plant life.

The vision of the New Zealand Plant Conservation Network is that '*no indigenous species of plant will become extinct nor be placed at risk of extinction as a result of human action or indifference, and that the rich, diverse and unique plant life of New Zealand will be recognised, cherished and restored*'.

Since it was founded in 2003 the Network has undertaken a range of conservation initiatives in order to achieve its vision.

That work has included:

- Training people in plant conservation
- Publishing plant books, reports and posters
- Raising money for the David Given Threatened Plant Research Trust to pay for plant conservation research scholarships
- Advocacy to raise awareness of the importance of plant life in general and especially New Zealand's status as a Global Centre of Plant Diversity
- Lobbying central and regional government and business to protect indigenous plant life
- Educating people about plant life through the Network website
- Connecting people through the monthly newsletter, the Network conference and the annual general meeting

What is a threatened plant?

The NZ Threatened Plant Committee was formed in 1991 and ever since then it has met at regular intervals to review the status of indigenous vascular plants. It is made up of a small group of botanists that between them have an extensive knowledge of the native plants of New Zealand. This group is chaired by Dr Peter de Lange of the New Zealand Department of Conservation.

This committee applies a set of criteria to each native plant to determine its conservation status. The resulting list of species classified as threatened is published in the NZ Journal of Botany (see for example de Lange et al. 2009). The main threat categories used are: Extinct, Critical, Endangered, Vulnerable, Declining. Other categories used are: Recovering, Relict, Naturally Uncommon, Coloniser, Vagrant and Data Deficient. For vascular plants the threat status used in this book is taken from the 2009 conservation assessment (see de Lange et al 2009).

More recently other committees have been established to review the status of non-vascular plants but their lists are yet to be published.

Metrosideros albiflora

Common Name(s):

white rata, akatea

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. New Zealand: North Island (confined to the northern portion of the North Island where it ranges from Te Pahi south to Pukemokemoke (north of Hamilton) and the northern Kaimai Ranges)

Habitat:

Coastal to montane in forest. *Metrosideros albiflora* is virtually confined to kauri (*Agathis australis*) forest associations

Features*:

Stout vine up to 20 m. Bark initially dark brown, maturing grey, ± tessellated, and flaking in tabular shards. Juvenile and climbing vines sparingly branched, mature (adult) vines much-branched. Branchlets terete, often curved from base, stiffly erect (sometimes pendent), initially reddish and finely pubescent, soon glabrous. Leaves not markedly dimorphic, evenly spaced (i.e. not close-set), coriaceous, glabrous, petiolate; petioles 2-6 mm long, ± terete, stout; juvenile lamina 10-20 × 10-20 mm, ovate to elliptic-ovate, adaxially green to dark green, paler abaxially, oil glands minute (not evident to naked eye), margins weakly recurved, sparsely hairy, glabrescent; adult lamina 35-90 × 20-46 mm, ovate, elliptic-ovate to elliptic-lanceolate, apex abruptly narrowed, acute or subacute, base cuneate, adaxially green to dark green, abaxially paler, oil glands as for juvenile. Inflorescences in large terminal, compound cymose botryia, each carrying 6-10 white flowers. Hypanthium 8 × 5 mm, broadly urceolate to funnellform, ± fleshy, glabrous, margins exceeding ovary (so forming broad disc); calyx lobes 1.8-2.2 mm long, ovate, obtuse, patent or reflexed at maturity. Petals 5 × 5 mm, caducous, suborbicular to orbicular, margins entire; stamens numerous, 15-30 mm long. Anthers yellow. Style 20-35 mm long, stigma capitate. Capsule 5-10 mm diameter, urceolate, 3-4-valved, woody, dark brown to brown-black when mature. Seeds 1.2-2.4 mm long, narrowly elliptic or narrowly obovate, straight (often curved near apex), light orange-yellow or orange, unfilled seeds darker.

Flowering:

August - November

Fruiting:

January - April

Threats:

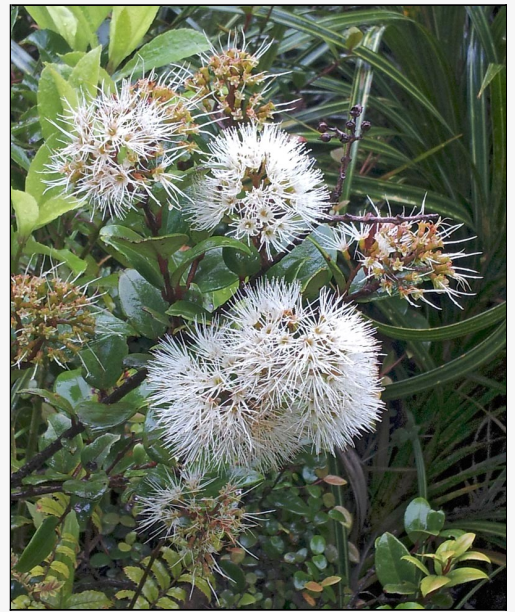
Although not threatened, *Metrosideros albiflora* is often absent from large parts of potential range. It is most common in central and western Northland and the Coromandel Peninsula. Adult vines are often browsed by possums.

*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange (6 January 2013). Description from herbarium specimens and fresh material

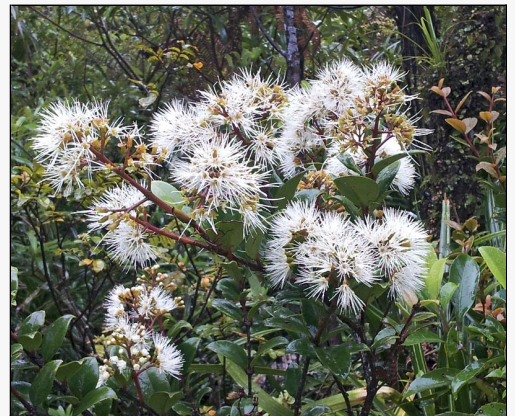
For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=979



Caption: Waipoua.

Photographer: Peter de Lange



Caption: Waipoua.

Photographer: Peter de Lange

Metrosideros carminea

Common Name(s):

Crimson rata, Carmine rata

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. New Zealand: North Island (from Te Pahi south to Taranaki in the west and Mahia Peninsula in the east)

Habitat:

Coastal to montane (mainly coastal to lowland). A vine of closed forest and forest margins (often along water ways and on ridge lines, especially on rock outcrops and cliff faces).

Features*:

Vine up to 15 m (usually less). Bark dark brown to grey, ± tessellated, and flaking in tabular shards. Growth dimorphic, juvenile and climbing vines sparingly branched, mature (adult - reproductive state) heavily branched. Branchlets terete, finely pubescent. Leaves, close-set, coriaceous, petiolate; petioles 1-3 mm. long; lamina of juveniles 10-20 × 8-18 mm, suborbicular, orbicular to broadly ovate, apices obtuse to subacute; adaxially green to dark green, abaxially paler (young foliage (and branchlet growing points) usually pink-tinged), both surfaces finely to distinctly pubescent, hairs pinkish, oil glands conspicuous abaxially not punctate,; adult lamina 15-35 × 7-30 mm, elliptic-oblong, ovate-oblong to broad ovate, apices obtuse to subacute, adaxially dark green and glossy, adaxially paler, ± glossy, ± glabrous. Inflorescences in axillary and/or terminal few- to many-flowered cymose botyria crowded toward apex of branchlets (often obscuring the foliage); peduncles and pedicels finely pubescent, peduncles 20-60 mm long, pedicels 5-10 mm long. Hypanthium urceolate or globose, initially fleshy, finely pubescent, ± glabrescent; calyx lobes 1.8-2.3 mm long, oblong, subacute. Petals 5 × 4 mm, caducous, suborbicular, carmine, shortly clawed, margins ± unevenly crenulate to indistinctly toothed or undulose; stamens numerous 10-15 mm long carmine. Capsule 6-9 mm diameter, subglobose to globose, 3(-4)-valved, exserted, ± woody, dark brown to brown-black when mature.

Flowering:

August - November

Fruiting:

January - April

Threats:

Not Threatened. *Metrosideros carminea* is however most often found as juveniles, in part because the adult vines (at least in dense forest) are often overlooked as they occur high up in the canopy. In some areas adult vines are heavily browsed by possums.

*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange (5 January 2013). Description adapted from Allan (1961) supplemented with observations made from herbarium and fresh material.

References and further reading:

Allan, H.H. 1961: Flora of New Zealand. Vol. I. Wellington, Government Printer.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=980



Caption: *Metrosideros carminea*

Photographer: Peter de Lange



Caption: Carmine rata

Photographer: DoC

Metrosideros diffusa

Common Name(s):

white rata

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. Found throughout the North, South and Stewart Islands

Threats:

Not Threatened

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=982



Caption: Blue duck S.R

Photographer: Gillian Crowcroft



Caption: Blue duck S.R

Photographer: Gillian Crowcroft

Metrosideros excelsa

Common Name(s):

Pohutukawa, New Zealand Christmas tree

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. New Zealand: Three Kings Islands and North Island from North Cape to about Pukearuhe, (northern Taranaki) in the west and near Mahia Peninsula (in the east). However, exact southern limit is difficult to ascertain as it has been widely planted and there is evidence that old time Maori cultivated the tree in some southerly areas. Found inland around the Rotorua Lakes and at Lake Taupo - though these occurrences could stem from Maori plantings (though the association of other normally coastal species around these lakes argues against this). Now widely planted throughout the rest of New Zealand (especially around Nelson, the Marlborough Sounds, the Kaikoura Coast and on the west coast to about Hokitika).

Habitat:

Coastal forest and on occasion inland around lake margins. Also in the far north occasionally an associate of kauri forest. In some northerly locations it forms forest type in its own right - this forest is dominated by pohutukawa, other associates often include tawapou (*Pouteria costata*), kohekohe (*Dysoxylum spectabile*), puriri (*Vitex lucens*), karaka (*Corynocarpus laevigatus*), and on rodent-free offshore islands the frequent presence of coastal maire (*Nestegis apetala*), and milk tree (*Streblus banksii*) suggests these species too may once have been important in mainland examples of pohutukawa forest.

Features*:

Tree up to 20 m tall with canopy spread of 10-50m. Specimens typically multi-trunked from base, trunks up to 2 m diameter, branches spreading, and often arching, sometimes looping over ground, and/or bearing "brooms" of aerial adventitious roots. Branchlets numerous, twiggy and long-persistent. Bark firm, persistent and difficult to detach, often deeply furrowed, grey to grey-brown, somewhat corky. Young branchlets tomentose, being covered in fine, deciduous, greyish-white hairs. Leaves of all but water shoots leathery, 25-120 × 25-60 mm, elliptic, oblong, rarely lanceolate, apex acute or obtuse, dark olive-green, undersides thickly clad in white tomentum, adaxial surface at first distinctly tomentose but hairs shedding with leaf maturation. Flowers borne on stout, tomentose pedicels crimson, orange, pink, yellow (or very rarely white). Hypanthium obconic, calyx lobes triangular (deltoid).

Flowering:

(August-) November-December (-March)

Fruiting:

(January-) March-April (-May)

Threats:

Like all New Zealand tree *Metrosideros*, pohutukawa is most at risk from possum (*Trichosurus vulpecula*) browse. These can seriously damage and even kill trees. Often where their browsing occurs within sites of unrestricted stock and vehicle access, pohutukawa forest is in danger of becoming locally extinct. It does remain common over large parts of its range, a situation being greatly improved by the efforts of people encouraged by the national coordination of Project Crimson - a non profit organisation set up to protect, enhance and/or establish pohutukawa forest, as well as promote the species use, and its conservation.

*Attribution:

Fact sheet prepared for NZPCN by: P.J. de Lange (4 January 2004). Description adapted from Allan (1961).

References and further reading:

Allan, H.H. 1961: Flora of New Zealand. Vol. I. Wellington, Government Printer.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=975



Caption: Wellington

Photographer: John Sawyer



Caption: *Metrosideros excelsa*

Photographer: Wayne Bennett

Metrosideros fulgens

Common Name(s):

rata, akatawhiwhi

Current Threat Status (2012):

Not Threatened

Threats:

Not Threatened

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=983



Caption: *Metrosideros fulgens*
Photographer: Wayne Bennett



Caption: *Metrosideros fulgens*
Photographer: Wayne Bennett

Metrosideros parkinsonii

Common Name(s):

Parkinson's rata

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. New Zealand: North and South Islands. In the North Island known only from Hauturu (Little Barrier Island) and Aotea Island (Great Barrier Island). In the South Island confined to the western side where it is locally common from Mt Burnett (near Collingwood) south to just north of Hokitika.

Habitat:

Coastal to montane forest. usually along ridgelines in peaty ground. In the North Island confined to montane "cloud" forest, usually in wind-pruned forest, scrubland and on the margins of cliff faces or surmounting rock outcrops

Features*:

Shrub to small spindly tree up to 10 m tall. Multi-trunked, trunks up to 60 mm d.b.h.. Bark pale grey, flaking in small tabular shards. Branches few to many, erect, Branchlets square in cross-section, 4-angled, glabrous, initially dark red, maturing brown-grey to grey. Emergent vegetative buds pink or red-tinged. Leaves coriaceous, glabrous, adaxially dark green to green, abaxially paler, oil glands minute, scarcely evident to naked eye (except abaxially) petiolate; petioles almost wanting 2.2-3.0 mm. long; lamina 25-75 × 15-30 mm, ovate-lanceolate, base truncate to subamplexicaul, apex usually abruptly narrowed, to an obtuse or subacute tip. Inflorescences cauliflorous, borne in compound, sometimes leafy cymose botyria, mostly below main vegetative branches. Flowers up to 8 per cyme, crimson. Hypanthium turbinate, margins exceeding disc, calyx lobes ovate-triangular. Ovary trilocular. Capsules 3-valved, 6-8 mm long, brown-grey to grey, subglobose to globose. Petals caducous, 5 × 5 mm, suborbicular to oblong, margins finely denticulate or subentire; stamens numerous, filaments 20-28 mm long, anthers yellow, style 23-30 mm long, stigma capitate. Seeds 1.2-2.0 mm long, narrowly obtriangular, narrowly elliptic to narrowly obovate, straight, rarely curved toward apices, orange, unfilled seeds similar but darker in colour.

Flowering:

September - December

Fruiting:

January - April

Threats:

Not Threatened. However, outside its north western South Island haunts it is only known from two small populations on Aotea Island (Great Barrier Island) and Hauturu (Little Barrier Island) where it is very uncommon. On Aotea some trees have been damaged by tracking up Mt Hiraakimata (Mt Hobson). In the South Island, like all rata species, *M. parkinsonii* is impacted upon by possums.

*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange (8 January 2013). Description from herbarium specimens and fresh material

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=976



Caption: *Metrosideros parkinsonii*

Photographer: Hamish Dean



Caption: In cultivation. Nov 2006.

Photographer: Geoff Davidson

Metrosideros perforata

Common Name(s):

white rata, akatorotoro, akatea

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. New Zealand: Three Kings, North and South Islands to about northern Otago and northern Fiordland

Habitat:

Coastal to montane. An abundant plant of open scrub, dense forest or rock-land. In forest and scrub situations climbing on other trees but also climbing up cliff faces, on rock outcrops, and forming a "shrubland" in loose talus

Features*:

Vine up to 20 m (rarely more long). Bark furrowed, dark grey to brown-black, ± tessellated, and flaking in tabular shards. Growth dimorphic, juvenile and climbing vines sparingly branched, mature (adult - reproductive state) heavily branched. Branchlets terete, ± invested in short dark brown setose hairs. Leaves close-set, coriaceous, glandular punctate (this especially evident on abaxial surface) subsessile; petioles 1.0-3.2 mm long, lamina 6-12 × 5-9 mm, broad-ovate, broad-oblong to suborbicular, obtuse, adaxially dark green, ± glabrous, abaxially very pale green; finely setose; margins recurved. Inflorescences in axillary few-flowered cymose botryia, these crowded towards apex of branchlets; peduncles and pedicels pubescent to setose; peduncles 10-40 mm long, pedicels 5-10 mm. Hypanthium broad-turbinate, initially fleshy, finely tomentose ± glabrescent; calyx lobes broadly deltoid, obtuse; petals caducous, 1.5-3.0 × 1.5-2.8 mm, suborbicular, white or pink; stamens numerous, 8-10 mm long, white (rarely pink). Capsule 4-5 mm diameter, 3-valved, subglobose, exserted, ± woody.

Flowering:

November - March

Fruiting:

February - May

Threats:

Not Threatened

*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange (5 January 2013). Description based on fresh material.

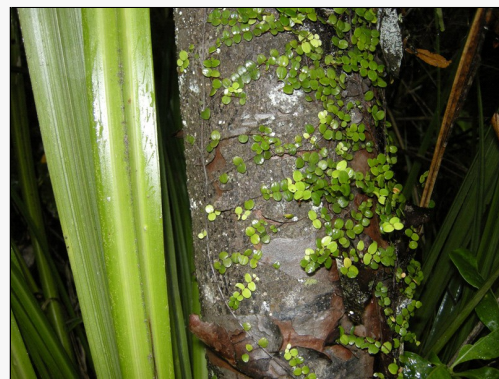
For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=984



Caption: Waipoua Forest, Northland

Photographer: John Sawyer



Caption: Waipoua Forest, Northland

Photographer: John Sawyer

Metrosideros robusta

Common Name(s):

Northern rata

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. New Zealand: Three Kings Islands, North Island (formerly widespread from Te Pahi south to Wellington, now scarce over large parts of this range, and apparently absent from the Hawkes Bay). South Island (abundant from Nelson west and south to Greymouth, from there locally common to about Hokitika, reaching a southern limit just south of Lake Mahinapua. In the east recently recorded from one site near Okiwi Bay, western Marlborough Sounds - though this site is unusual and may not be natural).

Habitat:

Coastal and Lowland forest occasionally extending to montane forest in some parts of the country. Once the co-dominant emergent tree of a distinctive vegetation type called rimu (*Dacrydium cupressinum*)/rata forest.

Features*:

Stout tree 25-40 m tall, often starting life as epiphyte, so basal trunk is hollow, and composed of interlocking roots. Trunk 2-3(-4) m diam. Bark firm, persistent, grey-brown, brown or rarely pale yellow, tessellated, shallowly furrowed, somewhat corky. Branchlets numerous, very twiggy (broom-like), puberulent with rust-brown hairs when young. Leaves (excl. water shoots) 25-50(-65) x (10-)15-25(-30) mm, leathery, dark-green, elliptic, ovate-oblong, to rhomboidal, apex obtuse, distinctly notched. Young growth pink, finely covered in rust-brown hairs, becoming glabrescent with age (hairs long persistent on midrib and leaf base). Water shoots - variable shape and size, glabrescent, pale green or yellow-green, delicate and wilting if detached from tree. Inflorescence a broad, terminal corymbiform, cymose, cluster of numerous flowers apically dominated by a temporarily dormant vegetative bud, which recommences growth following flowering. Pedicels 5-8 mm long. Hypanthia obconic, 9 mm long, sepals broad-triangular, petals shedding early, 2 x 3 mm, oblong, dark red, pink, orange or yellow, stamens numerous (25)-30-40 mm long, anthers versatile, pollen dark yellow to orange. Pistil similar length, stigma capitate. Ovary fused to hypanthium, ovules numerous. Capsules oblong 6-9 mm, distinctly raised above sepals and hypanthial rim. Seeds 2.5-5.5 mm, narrowly elliptic to linear, often twisted with apices usually curved or hooked.

Flowering:

(October-) November-January
(-February)

Fruiting:

(December-)-January
(-March)

Threats:

Northern rata is most at risk from possum (*Trichosurus vulpecula*) browse. Possums can seriously damage and kill trees, and have, in some situations been directly responsible for the regional loss of northern rata. The species remains common over large parts of range, a situation being improved by the efforts of people encouraged by the national coordination of Project Crimson. Another threat to northern rata comes from hybridization with pohutukawa (*Metrosideros excelsa*) which has now become established well south of its presumed natural southern limits. Ideally people should be discouraged from planting pohutukawa in places it is not natural to, especially when this borders habitats containing northern or southern rata (*Metrosideros umbellata*).

*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange (4 January 2004). Description adapted from Allan (1961).

References and further reading:

Allan, H.H. 1961: Flora of New Zealand. Vol. I. Wellington, Government Printer.

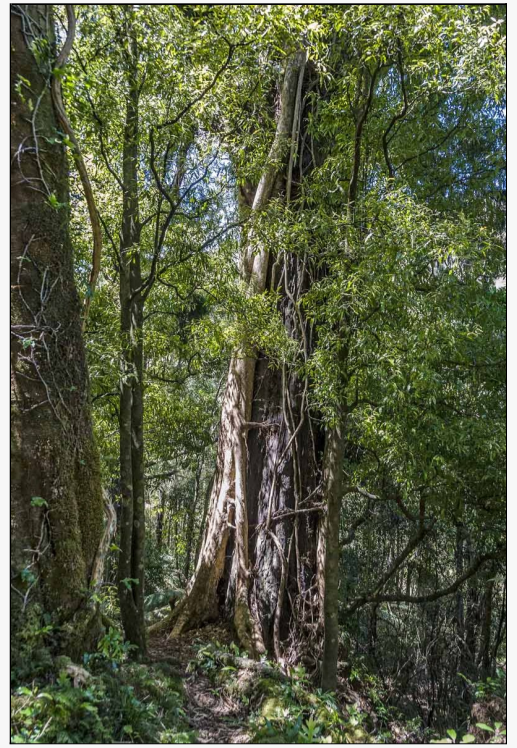
Beddie, A.D. 1953. Root behaviour in *Metrosideros*. *Wellington Botanical Society Bulletin*, 26: 2-6

Report on Northern rata dieback - *Minginui faces* by Gordon Hosking (DOC Conservation Advisory Science Notes, No. 66, 1994)

Sawyer, J.W.D., Mckessar, K. 2007. Northern rata (*Metrosideros robusta*): a species in decline? *Wellington Botanical Society Bulletin*, 50: 48-55

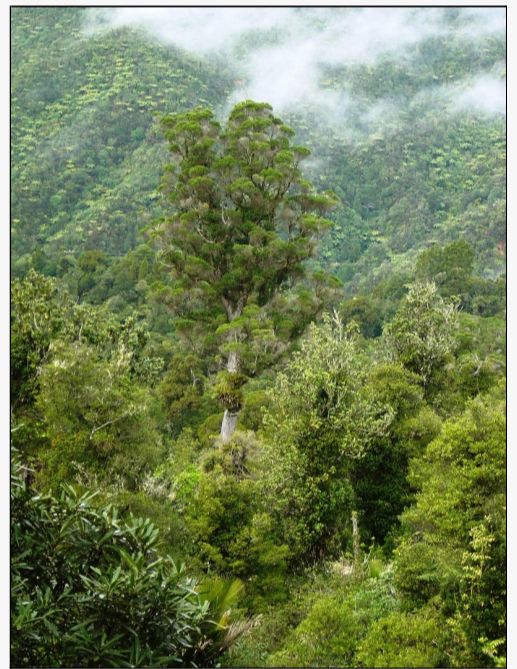
For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=977



Caption: Roots girdling trunk of rimu. Tararua Forest Park. Nov 2012.

Photographer: Jeremy Rolfe



Caption: *Metrosideros robusta*
Photographer: Wayne Bennett

Metrosideros umbellata

Common Name(s):

Southern rata

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. North, South, Stewart and Auckland Islands. In the North Island locally present from Te Pahi south to Mt Pirongia, the northern Kaimai Ranges (Ngatamahinerua) and Mt Manuoha (Te Urewera National Park). In the South Island from Durville Island south and to Fiordland, with a mainly westerly distribution (absent from Marlborough), most of Canterbury and northern Otago. Common on Stewart and the Auckland Islands.

Threats:

Not Threatened. However, rather uncommon in the North Island, and at some sites it is locally threatened by possum browse.

References and further reading:

Beddie, A.D. 1953. Root behaviour in *Metrosideros*. Wellington Botanical Society Bulletin, 26: 2-6

de Lange, P.J. 1994. Southern rata *Metrosideros umbellata* confirmed from Mt Pirongia Western Waikato. Auckland Botanical Society Journal, 49: 57-59.

Druce, A.P. 1959. Southern rata in the Tararuas. Wellington Botanical Society Bulletin, 31: 12-15

Gardner, R.C.; de Lange, P.J.; Bowala, T.; Brown, H.A.; Keeling, J.; Wright, S.D. 2004. A Quaternary phylogeography for New Zealand inferred from chloroplast DNA haplotypes in *Metrosideros* (Myrtaceae). *Biological Journal of the Linnean Society* 83: 399-412.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=978



Caption: Bark detail, Travers Valley, Nelson Lakes National Park
Photographer: John Sawyer



Caption: Flowering tree, Travers Valley, Nelson Lakes National Park
Photographer: John Sawyer