



## Native NZ plants in the Myrtle family



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Made on the New Zealand Plant Conservation Network website – [www.nzpcn.org.nz](http://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](http://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.

# *Kunzea amathicola*

## Common Name(s):

rawiritoa

## Current Threat Status (2013):

At Risk - Declining

## Distribution:

Endemic. New Zealand: North and South Islands - most westerly from Te Pahi south to Wellington, and from Farewell Spit south and west to West Whanganui Inlet. Also recorded from Kawau and Hauturu (Little Barrier Islands) and once from the northern Hauraki Plains

## Habitat:

Coastal to lowland. A species mostly inhabiting mobile sand, sand dunes and sandy soils. Occasionally extending inland onto clay soils (at Unuwahao (Te Pahi), Around the Kaipara Harbour, Wellington and around Puponga)

## Features\*:

Shrubs or trees up to 15 m tall; heterophyllous. Those with persistent juvenile foliage mostly present in exposed conditions and unstable habitats, or at the margins of adult stands, usually forming domed, spreading shrubs up to 2 × 3 m with numerous erect to ascending, often interwoven branches; those with adult foliage forming single to multi-trunked trees up to 18 × 8 m, with very broad, spreading canopies. Trunk 1–2, 0.10–0.85 m d.b.h. Bark grey or grey-brown, ± elongate, tessellated, firmly attached, detaching basally with age, and peeling upwards along trunk in broad, tabular strips. Branches numerous, erect to suberect not spreading, often interwoven, arching and spreading; branchlets numerous, slender, branchlet indumentum copious, persistent; hairs silky, antrorse-appressed, usually flexuose, 0.23–0.50 mm long. Leaves sessile to shortly petiolate, well-spaced to crowded along branchlets, dark glossy green above, paler beneath. Juvenile lamina 2.4–5.3 × 1.2–2.3 mm, ovate, broadly ovate, rhomboid to obovate, adult lamina 6.0–12.5 × 1.8–3.8 mm, oblong, oblong-obovate, broadly oblanceolate to broadly lanceolate; apex of both juvenile and adult lamina obtuse, rounded to subacute, rostrate, base attenuate to narrowly attenuate; lamina margin completely obscured by a dense covering of antrorse-appressed hairs aligned in a thick, up to 0.6 mm wide, white, plumose band meeting with abaxial midrib hairs at the leaf apex. Inflorescence usually a well-spaced, elongate, 5–20-flowered botryum up to 200 mm long. Inflorescence axis densely invested with silky, antrorse-appressed, weakly flexuose hairs. Pherophylls persistent, foliose, spreading, dark glossy green, oblong, oblong-obovate, broadly obovate to elliptic; strongly recurved, to about half of total length or flat; juvenile lamina 2.0–5.3 × 1.2–2.3 mm, adult lamina 4.1–6.0 × 1.6–3.1 mm; apex obtuse, cuspidate, base attenuate; lamina margin obscured by dense covering of antrorse-appressed hairs. Pedicels 1.3–4.9 mm long, sparsely to densely invested in antrorse-appressed, weakly flexuose, silky hairs. Flower buds pyriform to hemispherical, apex usually flat or weakly domed prior to bud burst; calyx valves not meeting. Flowers 6.8–12.5 mm diameter. Hypanthium 1.9–4.0 × 3.0–5.6 mm, dark green or red-green; broadly obconic, turbinate to hemispherical, usually densely covered in silky, antrorse-appressed hairs, sometimes glabrous. Calyx lobes 5–8, 0.6–1.4 × 0.6–1.8 mm, ovate, ovate-truncate to broadly obtuse, pale green to red-green; margins glabrescent. Receptacle green at anthesis, darkening to crimson after fertilisation. Petals 5–8, 1.8–3.7 × 2.0–4.0 mm, white, orbicular to broadly ovate, apex rounded, margins ± finely and irregularly denticulate or crimped, oil glands colourless. Stamens 38–90, filaments white. Anthers dorsifixed, 0.40–0.60 × 0.20–0.35 mm, ellipsoid, ovoid-ellipsoid or broadly scutiform, latrorse. Pollen white. Anther connective gland either absent or if present prominent, deep golden-yellow to orange when fresh, drying orange to pink, spheroidal, rather finely papillate. Ovary 5–6 locular, each with 23–42 ovules in two rows on each placental lobe. Style 2.0–3.2 mm long at anthesis, white or pinkish-white; stigma broadly capitate, at least 1.5 × width of style, flat, greenish-white or pale pink, flushing red after anthesis, surface finely granular-papillate. Fruits 2.4–4.8 × 3.6–6.0 mm, dark green to chesnut-brown maturing grey, broadly obconic, turbinate or hemispherical, rarely broadly cupular; finely hairy to glabrescent. Seeds 1.2–1.7 × 0.3–0.6 mm, oblong, oblong-obovate, narrowly ellipsoid to cylindrical; testa semi-glossy, orange-brown to dark brown; surface coarsely reticulate.

## Flowering:

July - June

## Fruiting:

August - June

## Threats:

*Kunzea amathicola* as *K. aff. ericoides* (a) (AK 286081; “sand”) is appropriately listed under as ‘At Risk / Declining’ by de Lange et al. (2013). Although widespread this species mostly now occupies highly fragmented and/or relict habitats, in many it is still being cleared for firewood. Very few stands of this species are reserved – the best of these are probably those at Farewell Spit and the adjacent Puponga area.

## \*Attribution:

Fact Sheet prepared for NZPCN by P.J. de Lange 1 September 2014. Description modified from de Lange (2014).

## References and further reading:

de Lange, P.J.; Rolfe, J.R.; Champion, P.D.; Courtney, S.P.; Heenan, P.B.; Barkla, J.W.; Cameron, E.K.; Norton, D.A.; Hitchmough, R.A. 2013: Conservation status of New Zealand indigenous vascular plants, 2012. *New Zealand Threat Classification Series 3*. Department of Conservation, Wellington.

de Lange, P.J. 2014: A revision of the New Zealand *Kunzea ericoides* (Myrtaceae) complex. *Phytokeys* 40: 185p doi: 10.3897/phytokeys.40.7973.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=7639](http://nzpcn.org.nz/flora_details.asp?ID=7639)



**Caption:** Intact capsule, Pilch Point, June 2008

**Photographer:** Simon Walls

## *Kunzea ericoides*

### Common Name(s):

Manuoa, Titira, Atitira, Kanuka

### Current Threat Status (2012):

Not Threatened

### Distribution:

Endemic. New Zealand: Northern South Island only - north of the Buller and Wairau Rivers. Most common in North West Nelson.

### Habitat:

Coastal to lowland shrubland, regenerating forest and forest margins, also present in montane forest, ultramafic shrubland and very occasionally present in subalpine shrubland.

### Features\*:

Trees up to 18 m. Trunk 1–4, 0.10–0.85 m d.b.h. Early bark brown to grey-brown, ± elongate, usually firmly attached, margins elongate sinuous, ± entire with scarcely any flaking; old bark similar. Branches slender, initially ascending soon spreading, apices often pendulous. Branchlets numerous, slender, glabrescent; indumentum sparse, deciduous, hairs divergent 0.02–0.05 mm long; leaves of branchlets densely crowded along stems. Leaves sessile, ± glabrous, except for the margins; lamina 4.0–25.0 × 0.5–1.8 mm, green to yellow-green, linear, linear-lanceolate, to narrowly lanceolate, straight or with upper ¼ weakly recurved, apex acute, sometimes cuspidate, base attenuate; lamina margins initially finely sericeous, glabrate or glabrous; hairs forming a fine, discontinuous band failing just short of lamina apex. Inflorescence a compact corymbiform to shortly elongate 3–15-flowered botryum up to 60 mm long. Pherophylls foliose ± persistent, 1 per flower; lamina 3.0–7.8 × 0.9–1.4 mm, elliptic, lanceolate to narrowly lanceolate, apex acute, base attenuate; Pedicels 1.6–3.8 mm long at anthesis, usually glabrous. Flower buds pyriform to narrowly obconic, apex of mature buds weakly domed to flat, calyx lobes distant. Flowers 4.1–8.3 mm diam. Hypanthium 1.4–3.2 × 1.9–4.1 mm; sharply obconic, apex terminating in 5 persistent suberect to spreading calyx lobes; hypanthium glabrous (very rarely with basal ¼ finely, sparsely covered in minute hairs). Calyx lobes 5, suberect to spreading, 0.4–1.0 × 0.4–1.0 mm, orbicular, obtuse to broadly deltoid, red-green, pink or crimson, margins glabrous or finely ciliate. Receptacle green or pink at anthesis, darkening to crimson or dark magenta after fertilisation. Petals 5, 1.4–2.6 × 1.5–2.0 mm, white, orbicular, suborbicular to narrowly ovate, spreading, apex rounded, entire or very finely denticulate, oil glands usually not evident when fresh, ± colourless. Stamens 10–34 in 1–2 weakly defined whorls, filaments white. Anthers dorsifixed, 0.35–0.48 × 0.16–0.24 mm, broadly ellipsoid. Pollen white. Anther connective gland prominent, pink or pinkish-orange when fresh, drying red to orange, ± spheroidal ± coarsely papillate. Ovary 4–5 locular, each with 16–24 ovules in two rows on each placental lobe. Style 1.5–2.2 mm long at anthesis; stigma capitate, about 1¼ × the style diam., flat, cream or white, flushing pink after anthesis, surface very finely granular-papillate. Fruits rarely persistent, 1.9–3.4 × 1.8–3.9 mm, glabrous, dark green to reddish-green, maturing brown to grey-brown to grey-black, cupular, barrel-shaped, shortly cylindrical to hemispherical, calyx valves erect with the apices incurved, split concealed by dried, erect, free portion of hypanthium. Seeds 1.00–1.05 × 0.32–0.50 mm, semi-glossy, orange-brown to dark brown, obovoid, oblong, oblong-ellipsoid, or cylindrical and ± curved, surface coarsely reticulate.

### Flowering:

October-February

### Fruiting:

November-March

### Threats:

Not threatened, though some stands are at risk from clearance for farmland or through felling for firewood.

### \*Attribution:

Fact Sheet prepared for NZPCN by P.J. de Lange 25 August 2014. Description modified from de Lange (2014).

### References and further reading:

de Lange, P.J. 2014: *A revision of the New Zealand Kunzea ericoides* (Myrtaceae) complex. *Phytokeys* 40: 185p doi: 10.3897/phytokeys.40.7973.

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 11: 285–309

### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=885](http://nzpcn.org.nz/flora_details.asp?ID=885)



**Caption:** *Kunzea ericoides* - tree showing weeping branches characteristic of this species

**Photographer:** Peter de Lange



**Caption:** Marahau

**Photographer:** Peter de Lange

# *Kunzea linearis*

## Common Name(s):

rawiri manuka

## Current Threat Status (2012):

At Risk - Declining

## Distribution:

Endemic. New Zealand: North Island from Te Pahi to northern Waikato with on disjunct outlier in the north-eastern Wairarapa (see de Lange 2014).

## Habitat:

Coastal shrublands and cliff faces, usually on sand, sand podzols, and/or sandy peats. Rarely on podzolised clays or sandstone bluffs. Occasionally found inland.

## Features\*:

Erect shrubs or small trees up to 12 m. Trunk 1–4), mostly erect, 0.10–0.60 m d.b.h. Bark dark brown to brown, ± elongate, coarsely tessellated usually firmly attached, though peeling inwards leaving centrally attached lunate flakes. Branches numerous; ascending to upright, plumose; branchlets plumose, slender; branchlets sericeous, indumentum copious, hairs antrorse-appressed, weakly flexuose, up to 0.68 mm long. Leaves sessile, hairy, rarely glabrous, densely crowded along branchlets toward apices; lamina 9.3–19.5 × 0.3–1.2 mm, initially silvery-grey (due to dense hair covering), maturing dark green to glaucous green above (as hairs are shed); linear, apex sharply acute, cuspidate, base attenuate; lamina margins copiously covered in silvery-grey hairs, these forming a thick band and fusing with the abaxial midrib hairs just short of lamina apex, and along decurrent leaf bases. Inflorescence spiciform 3–12-flowered botrya 20–80 mm long or an elongated, spiciform, 10–40-flowered botryum up to 180 mm long. Flowers of smaller botrya crowded, those of elongated botrya regularly spaced up to 20 mm apart; terminal portion of both short and elongated spiciform botrya inflorescence types often bearing undeveloped flowers and active vegetative growth. Inflorescence axis densely invested in antrorse-appressed, weakly flexuose, silky hairs. Pherophylls, leaf-like, 1–2 per flower, hairy (rarely glabrous); lamina 6.0–12.8 × 0.9–2.2 mm, dark silvery-green, silvery-grey or glaucous (depending on extent of hair covering), linear to linear-falcate; apex acute, base attenuate; lamina margin densely covered by antrorse-appressed, sericeous hairs, rarely glabrous. Pedicels sessile to subsessile, up to 1.2 mm long, copiously invested with silky, antrorse-appressed, weakly flexuose hairs. Flower buds ovoid, double conic to pyriform, apex sharply erect; calyx lobes pinched at base inwards, touching prior to bud burst. Flowers 1.9–5.7 mm diam. Hypanthium 2.0–4.0 × 2.5–4.1 mm, copiously covered in silvery-white to silvery-grey hairs or glabrous; barrel-shaped, cupular or narrowly campanulate, rim bearing 5 persistent sharply erect calyx lobes; hypanthium usually completely covered in a dense covering of long, silky, antrorse-appressed silvery hairs. Calyx lobes 5, erect, 1.0–1.6 × 0.2–0.6 mm, narrowly deltoid to deltoid with acute tips, red-green, densely covered in long, silky, silvery, antrorse-appressed, hairs or glabrous. Receptacle green or pink at anthesis, usually darkening to crimson after fertilisation. Petals 5–6, 0.9–2.0 × 0.7–1.9 mm, cream, pale pink or cream basally flushed pink, narrowly ovate to suborbicular, suberect, apex rounded, margins ± finely and irregularly crumpled, oil glands colourless. Stamens 32–46(–60) in 1–2 weakly defined whorls, arising from receptacular rim, filaments cream. Anthers dorsifixed, 0.04–0.06 × 0.02–0.04 mm, testiculate, latrorse. Pollen white. Anther connective gland prominent, pale pink or golden-yellow when fresh, drying yellow to pale orange, spheroidal, finely to coarsely papillate. Ovary 3–5 locular, each with 18–30 ovules in two rows on each placental lobe. Style 0.8–2.0 mm long, cream or pale pink; stigma narrowly capitate, as wide as, or slightly wider than style, ± flat, greenish-white or pink, flushing red after anthesis, surface finely granular-papillate. Fruits 1.6–2.9 × 2.3–4.1 mm, initially silvery-white or silvery-grey due to dense hair covering, maturing grey-brown to grey-black, barrel-shaped to narrowly obconic, rarely campanulate to cupular, calyx valves prominently erect. Seeds 0.50–1.10 × 0.48–0.70 mm, obovoid, oblong, oblong-ellipsoid, or cylindrical; testa semi-glossy, orange-brown to dark brown, surface coarsely reticulate.

## Flowering:

October-February

## Fruiting:

December-June

## Threats:

Primarily threatened through loss of habitat. The preferred coastal habitat of *K. ericoides* var. *linearis* is actively threatened by coastal resort development, and farming throughout its range. Also plants are cut for firewood. Very few populations occur on protected land. Hybridism with other *Kunzea* spp. is a major problem in urban settings such as Auckland.

## \*Attribution:

Fact Sheet prepared for NZPCN by P.J. de Lange 1 September 2014. Description modified from de Lange (2014).

## References and further reading:

de Lange, P.J. 2014: *A revision of the New Zealand Kunzea ericoides* (Myrtaceae) complex. *Phytokeys* 40: 185p doi: 10.3897/phytokeys.40.7973.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=130](http://nzpcn.org.nz/flora_details.asp?ID=130)



**Caption:** *Kunzea ericoides* var. *linearis* bark

**Photographer:** Peter de Lange

# *Kunzea robusta*

## Common Name(s):

manuka, kanuka, kopuka, rawirinui, maru, manuka rauriki

## Current Threat Status (2013):

Not Threatened

## Distribution:

Endemic. New Zealand: North and South Islands.

## Habitat:

Coastal to lowland shrubland, regenerating forest and forest margins, also present in montane forest, ultramafic shrubland and very occasionally present in subalpine shrubland (up to 900 m a.s.l.).

## Features\*:

Trees 8–30 m tall. Trunk 1–6, 0.10–1.0 m d.b.h. Bark stringy, or coarsely tessellated, coriaceous, firmly attached above, detaching basally, often hanging semidetached; peeling upwards along trunk in narrow to broad, tabular strips up to 4 m long. Branches initially erect, soon arching outwards and spreading; branchlets numerous, slender; sericeous, indumentum copious, hairs either long or short antrorse-appressed; if long, then weakly flexuose 0.15–0.38 mm long; if short, not flexuose, 0.09–0.15 mm long. In eastern Coromandel Peninsula and coastal East Cape to Mahia Peninsula, branchlet indumentum in mixtures of divergent 0.03–0.08 mm long hairs, and sparse, 0.1–0.2 mm long, antrorse-appressed hairs. In the Rangitikei region, branchlet hairs of seedling and juveniles divergent, short 0.04–0.10 mm long. Leaves sessile to shortly petiolate, light green or dark green above, paler beneath; oblanceolate, broadly oblanceolate, broadly lanceolate, lanceolate to linear-lanceolate, rarely elliptic to obovate; apex subacute to acute, rarely obtuse, rostrate or shortly apiculate, base attenuate to narrowly attenuate; lamina margin initially finely covered with a thin, interrupted band of spreading to antrorse-appressed hairs not or rarely meeting at apex; hairs shedding with age. Lamina of juvenile plants from coastal areas and northern North Island 14.6–28.4 × 1.6–2.5 mm; from inland areas, 3.2–6.3 × 0.7–1.5 mm; adult lamina of plants from coastal areas and northern North Island 4.9–20.1 × 0.9–3.0 mm; from inland areas, 5.8–12.3 × 1.2–2.2. Inflorescence mostly a compact corymbiform to shortly elongate 1–30-flowered botryum up to 60 mm long; extending near end of flowering season as an 4–12-flowered, elongate botryum up to 80 mm long;. Pherophylls deciduous or persistent; squamiform grading into foliose; squamiform pherophylls 0.4–1.2 × 0.3–0.6 mm, broadly to narrowly deltoid or lanceolate, apex acute, subacute to obtuse, margins finely ciliate; foliose pherophylls 6.0–17.9 × 1.1–1.8 mm, elliptic, oblanceolate, broadly lanceolate to lanceolate, apex obtuse, base attenuate; margin densely covered by antrorse-appressed hairs. Pedicels 1.2–5.2 mm long at anthesis. Flower buds pyriform to obconic, apex flat or weakly domed prior to bud burst; calyx valves not meeting. Flowers 4.3–12.0 mm diameter. Hypanthium 2.1–4.1 × 3.0–5.2 mm, broadly obconic to turbinate, sometimes cupular, rim bearing five persistent calyx lobes. Hypanthium surface when fresh faintly ribbed and sparingly dotted with pink or colourless oil glands, these drying dull yellow-brown or brown; either finely pubescent with the ribs and veins conspicuously covered in longer silky, antrorse-appressed hairs, or glabrous; hypanthium similar when dry though with the ribs more strongly defined and clearly leading up to calyx lobes. Calyx lobes 5, coriaceous, 0.52–1.1 × 0.60–1.4 mm, broadly ovate, ovate-truncate to broadly obtuse, glabrate. Receptacle green or pink at anthesis, darkening to crimson after fertilisation. Petals 5–6, 1.5–3.8 × 1.3–3.6 mm, white, rarely pink, orbicular, suborbicular to ovate, apex rounded to obtuse, oil glands colourless. Stamens 15–58 in 2 weakly defined whorls, filaments white. Anthers 0.38–0.63 × 0.18–0.32 mm, ellipsoid to ovoid-ellipsoid or deltoid. Pollen white. Anther connective gland prominent, light pink, salmon pink, yellow to orange when fresh, drying dark orange, orange-brown or dark brown, spheroidal, finely rugulose or papillate. Ovary 5–6 locular. Style 2.0–3.5 mm long at anthesis, white or pinkish-white; stigma broadly capitate, flat, greenish-white or pale pink, flushing red after anthesis. Fruits 2.2–4.6 × 3.2–5.3 mm, maturing greyish white, obconic, broadly obconic to ± turbinate, rarely cupular; hairy, (rarely glabrous). Seeds 0.9–1.1 × 0.35–0.48 mm, oblong, oblong-obovate, oblong-elliptic; testa semi-glossy, orange-brown to dark brown, surface coarsely reticulate.

## Flowering:

August–June

## Fruiting:

Jul–May

## Threats:

Not Threatened.

## \*Attribution:

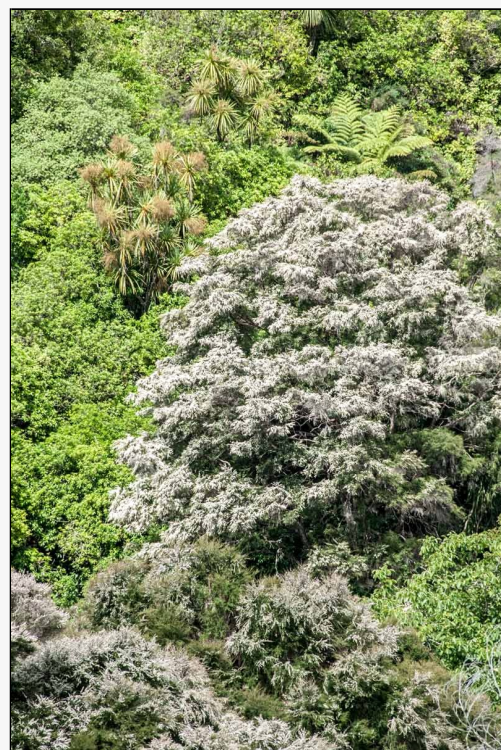
Fact Sheet prepared for NZPCN by P.J. de Lange 10 September 2014. Description modified from de Lange (2014).

## References and further reading:

de Lange, P.J. 2014: *A revision of the New Zealand Kunzea ericoides* (Myrtaceae) complex. *Phytokeys* 40: 185p doi: 10.3897/phytokeys.40.7973.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=7644](http://nzpcn.org.nz/flora_details.asp?ID=7644)



**Caption:** Mohaka River viaduct.  
**Photographer:** Jeremy Rolfe



# *Kunzea salterae*

## **Distribution:**

Endemic. New Zealand: Moutohora (Whale Island)

## **Habitat:**

A local endemic that is widespread in dune and geothermal fields shrubland and regenerating forest of Moutohora (Whale Island).

## **Features\*:**

Shrubs to small trees 0.1–10 × 2–6 m with broad, spreading, somewhat pendulous crowns, or completely decumbent and sprawling. Trunk up to 0.3 m d.b.h., widely spreading to suberect, flexuose. Bark initially firm, sinuous-fluted, elongate, cracking transversely with apices gradually detaching as small lunate flakes. Branches suberect to widely spreading, ascending or pendulous, branchlets slender; sericeous, indumentum copious rarely glabrate to glabrous, sericeous; initial hairs on emergent growth, straight, antrorse-appressed to 0.55 mm, deciduous; otherwise divergent persistent 0.04–0.1 mm, apices ± curled, often admixed antrorse-appressed, straight to somewhat sinuous hairs up to 0.28 mm. Leaves ± spreading to patent; lamina 4–18 × 0.6–2.0 mm, bright green, yellow-green, bronze-green to dark green; linear-lanceolate to narrowly oblanceolate, apex acute to subacute, cuspidate, rarely obtuse to rounded; base attenuate; lamina margin sparsely to densely, sericeous, hairs antrorse-appressed, to 0.5 mm, in 1–2 irregular rows just failing short of leaf apex. Inflorescence a 2–8-flowered corymbiform botryum to 45 mm long. Pherophylls deciduous squamiform, rarely foliose, 0.6–1.8 mm long; squamiform pherophylls brown or amber, broadly deltoid to oblong-ovate, glabrous except for finely ciliate margin and apex; foliose pherophylls bright green, linear, margins and apex finely ciliate. Pedicels 1.1–3.0 mm long, invested in divergent to subantrorse sericeous hairs. Flower buds pyriform to clavate, apex domed with calyx valves not or scarcely meeting. Fresh flowers 9–12 mm diam. Hypanthium 2.1–3.8 × 1.8–3.2 mm, reddish-brown; narrowly obconic to funnellform terminating in a slightly thicker rim bearing five persistent calyx lobes; surface smooth, sparsely hairy to glabrate; hairs subantrorse to antrorse, flexuose. Calyx lobes 5, upright 0.6–0.9 × 1.1–1.3 mm, persistent, broadly to narrowly triangular, glabrate except for ciliate apex. Receptacle dark red at anthesis. Petals 5, spreading, 1.4–1.6 × 1.4–1.6 mm, white, rarely basally flushed pink, orbicular to suborbicular, apex obtuse to rotund, margins finely crimped, oil glands colourless or rose-pink, scarcely evident when fresh. Stamens 28–38 in 1–2 weakly defined whorls, filaments white rarely tinged rose-pink toward base. Anthers dorsifixed, 0.11–0.16 × 0.10–0.14 mm, scutiform to ovoid, latrorse. Pollen white. Anther connective gland prominent, pale orange to pink when fresh, drying orange-brown, spheroidal, finely papillate, somewhat farinose. Ovary 3–4 locular, each locule with 8–10 ovules in two rows on each placental lobe. Style 2.1–3.2 mm long at anthesis, white basally flushed with pink; stigma capitate, up to 1 × style diam., flat, abruptly broadened, pale cream, finely papillate rugulose. Fruits 2.0–2.7 × 2.0–4.0 mm, light brown to grey, cupular to suburceolate. Seeds 0.80–1.00 × 0.45–0.48 mm, narrowly oblong, oblong, oblong-obovate to falcate-oblong or elliptic, testa semi-glossy, orange-brown; surface coarsely reticulate, central portion of cells furnished with short, tubular-spiny, protuberances.

## **Flowering:**

August–April

## **Fruiting:**

August–September

## **Threats:**

*Kunzea salterae* is appropriately listed (as *K. aff. ericoides* var. *microflora* (AK 289816; Moutohora) listed as 'At Risk / Naturally Uncommon qualified IE [Island Endemic], OL [One Location] by de Lange et al. 2013.

## **\*Attribution:**

Fact Sheet prepared for NZPCN by P.J. de Lange 25 August 2014. Description modified from de Lange (2014).

## **References and further reading:**

de Lange, P.J. 2014: *A revision of the New Zealand Kunzea ericoides* (Myrtaceae) complex. *Phytokeys* 40: 185p doi: 10.3897/phytokeys.40.7973.

de Lange, P.J.; Rolfe, J.R.; Champion, P.D.; Courtney, S.P.; Heenan, P.B.; Barkla, J.W.; Cameron, E.K.; Norton, D.A.; Hitchmough, R.A. 2013: Conservation status of New Zealand indigenous vascular plants, 2012. *New Zealand Threat Classification Series* 3. Department of Conservation, Wellington.

## **For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=7641](http://nzpcn.org.nz/flora_details.asp?ID=7641)

## *Kunzea serotina*

### Common Name(s):

makahikatoa

### Current Threat Status (2013):

Not Threatened

### Distribution:

Endemic. New Zealand. North and South Islands from Central Volcanic Plateau south through central North Island and east to the southern Wairarapa, thence easterly from Marlborough to Central Otago

### Habitat:

*Kunzea serotina*, in the North Island part of its range is mostly a montane to subalpine species, extending into lowland sites in forest flats and other places where temperature inversions occur. In the South Island it is more wide ranging but still most confined to mountain areas and intermontane basins.

### Features\*:

Erect, columnar to tightly pyramidal, fastigiata, densely branched shrubs or trees 3–20 × 2–4 m developing with time into less densely branched, open pyramidal crowns. Trunk usually single, very rarely 2–3 arising from base, 0.10–0.86 m d.b.h., with basal portion of trunk covered in numerous, curled, chartaceous bark remnants. Bark chartaceous, greyish-white to pinkish-white, heavily cracked, often crumpled, detaching as inrolled, curled, sinuous, irregular pieces, pieces often congregating in branch forks and forming deep drifts at trunk base. Branches numerous arising at or near trunk base; short and stout, obliquely ascending, fastigiata; branchlets numerous, very leafy; indumentum copious, sericeous; persistent, divergent 0.05–0.08 μm, apices curved or slightly curled. Leaves heterophyllous; seedling, subadult leaves and that of reversion shoots, spreading to patent; lamina 0.8–7.8 × 0.6–1.2 mm, red-green, pale green suffused with red, rarely bright green, linear-lanceolate to lanceolate; flat or involute, apex acute to obtuse, finely cuspidate; adult leaves, usually densely aggregated along brachyblasts, lamina 2.0–6.3 × 0.8–1.8 mm, dark glossy green or bronze-green, linear-oblong, oblanceolate to obovate; strongly recurved from about ½ of total length, apex initially acute to subacute, maturing obtuse to rounded, often cuspidate; base attenuate; glandular punctate, glabrous, very rarely with fine antrorse hairs near base; lamina margin sparsely hairy, usually in one interrupted row failing well short of leaf apex. Inflorescence a compact 1–12-flowered corymbiform botryum up to 25 mm long, borne on alternate, distinctly spiralled, densely leafy, brachyblasts up to 15 mm long. Pherophylls deciduous, mostly foliose, 0.9–2.5 mm long, green to bronze-green, spatulate, spatulate-orbicular, rarely pandurate or lanceolate, margins and apex finely ciliate. Flower buds clavate to pyriform, apex flat to weakly domed prior to bud burst, calyx valves not or scarcely meeting. Fresh flowers 2.8–8.8 mm diam. Hypanthium 1.6–3.4 × 1.5–3.8 mm, dark green or red-green, drying brown-green to red-brown; urceolate to campanulate terminating in a distinctly thicker rim bearing five persistent calyx lobes; copiously dotted with red oil glands, finely puberulent to ± glabrescent; hairs if present short, divergent. Calyx lobes 5, upright, 0.8–1.2 × 0.7–1.2 mm, persistent, ovate to broadly ovate, central portion of lobe pale green or yellow-green, with margins usually cream to pale pink, surface glandular punctate, oil glands usually pink in exposed situations otherwise ± colourless, glabrous except ciliate margins. Receptacle pink at anthesis, darkening to dark crimson magenta after fertilisation. Petals 5–6, 1.4–2.0 × 1.2–2.0 mm, white, sometimes basally flushed pink, narrowly orbicular to broadly ovate or cuneate, apex obtuse to rounded, margins ± frayed to finely and irregularly toothed, oil glands yellow when fresh, when dried very pale yellow to colourless. Stamens 20–38 in 1–2 weakly defined whorls, arising from receptacular rim, filaments white occasionally tinged rose-pink toward base. Anthers dorsifixed, 0.04–0.06 × 0.02–0.04 mm, testiculate to ellipsoid. Pollen white. Anther connective gland prominent, orange often flushed rose when fresh, drying dark orange-brown or purple, spheroidal, distinctly papillate. Ovary 3–5 locular, each with 10–23 ovules in two rows on each placental lobe. Style 0.6–1.2 mm long, white; stigma capitate, scarcely wider than style, usually flat to very weakly domed, greenish-white, cream or pale pink, surface finely papillate. Fruits rarely persistent 1.2–3.0 × 1.2–3.4 mm, light brown to grey, finely hairy, urceolate to shortly-campanulate, rarely cupular, splits concealed by dried, suberect to erect, free portion of hypanthium and incurved calyx lobes. Seeds 0.60–1.00 × 0.48–0.60 mm, narrowly oblong, oblong, oblong-obovate, orange-brown to dark brown, surface coarsely reticulate.

### Flowering:

November - May

### Fruiting:

January - December

### Threats:

Not Threatened

### \*Attribution:

Fact Sheet prepared for NZPCN by P.J. de Lange 25 August 2014. Description modified from de Lange (2014).

### References and further reading:

de Lange, P.J. 2014: *A revision of the New Zealand Kunzea ericoides* (Myrtaceae) complex. *Phytokeys* 40: 185p doi: 10.3897/phytokeys.40.7973.

### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=7640](http://nzpcn.org.nz/flora_details.asp?ID=7640)



**Caption:** In cultivation ex Te Porere. Jul 2007.

**Photographer:** Jeremy Rolfe

## *Kunzea sinclairii*

### Common Name(s):

Great Barrier Island kanuka

### Current Threat Status (2012):

At Risk - Naturally Uncommon

### Distribution:

Endemic. New Zealand: Aotea Island / Great Barrier Island, where it is only known from the central portion of the island (de Lange & Norton 2004).

### Habitat:

Rhyolite endemic, largely confined to exposed outcrops of this rock on the central portion of the island but also extending down gorges and in open clay pans and low windswept scrub in places formerly forested (see de Lange & Norton 2004).

### Features\*:

Mostly decumbent, trailing, silvery grey to grey, shrubs up to 3 × 1 m, very rarely forming trees up to 6 m tall; irrespective of stature, branches widely spreading and densely leafy, sometimes rooting on contact with soil or rock. Trunk 1–4, 0.05–0.16 m d.b.h. Bark dark brown to grey-brown, coarsely stringy to tessellated and distinctly corky-coriaceous, usually firmly attached, if detaching, then usually doing so along transverse cracks. Branches numerous, prostrate and widely spreading, new growth subscentent (in tree forms this habit is retained resulting in arching, pendulous branches); branchlets numerous, widely spreading to subscentent, often coarsely interwoven, leaves usually densely crowded along stems; branchlets sericeous, indumentum copious, silky, hairs antrorse-appressed, weakly flexuose up to 0.06 mm long. Leaves heterophyllous, mostly sessile, sometimes shortly petiolate (up to 1.6 mm long). Seedling and juvenile leaves dark green to glaucous, glabrous up to 25.0 × 3.5 mm, oblanceolate to lanceolate, apex acute, base attenuate. Mature leaf lamina 5.6–20.6 × 2.0–4.5 mm, initially silvery-white (due to dense hair covering), maturing silvery-grey to reddish grey (as some hairs are shed); lamina broadly lanceolate, elliptic to obovate, rarely oblong-obovate, apex sharply acute, often cuspidate, base attenuate; hairs of midribs and margins converging at leaf apex. Inflorescence a compact, corymbiform 4–20-flowered botryum 7.0–20.0 mm long; on occasion inflorescences may form elongated botrya on late season vegetative growth. Inflorescence axis densely invested with antrorse-appressed, weakly flexuose, silky hairs. Pherophylls deciduous, rarely present at flowering; foliose pherophylls 1.0–1.2 × 0.2–0.4 mm, oblong to oblong-lanceolate, very rarely broadly spatulate, cuspidate, copiously invested in sericeous, antrorse-appressed hairs; squamiform pherophylls 0.3–1.0 × 0.4–0.8 mm, broadly to narrowly ovate or lanceolate, apex acute, subacute to obtuse, margins finely ciliate. Pedicels 2.8–7.3 mm long, invested with silky, antrorse-appressed, weakly flexuose, hairs becoming glabrate. Flower buds 2.3–4.9 × 2.1–4.2 mm, ovoid to pyriform, apex flat to weakly domed prior to bud burst with calyx lobes held flat across surface, rarely meeting. Flowers 5.7–10.2 mm diameter. Hypanthium 1.9–3.6 × 2.1–4.2 mm, silvery-white to silvery grey or reddish-grey due to copious covering of hairs; narrowly obconic to obconic or cupular, surface covered in long, silky, antrorse-appressed silvery hairs. Calyx lobes 5, erect to suberect, or spreading, 1.1–1.6 × 0.9–1.8 mm, broadly obtuse, red-green to pale green with a white or pink membranous margin; lobe margins finely ciliate. Receptacle greenish pink or pink at anthesis, darkening to crimson after fertilisation. Petals 5–6, 2.0–3.6 × 2.1–3.3 mm, white, very rarely basally flushed pink, broadly ovate, suborbicular to orbicular, rarely ± cuneate-truncate, apex rounded, margins ± finely and irregularly crumpled or frayed, oil glands not evident in fresh or dried material. Stamens 18–46 in 1–2 weakly defined whorls, filaments white. Anthers dorsifixed, 0.06–0.1 × 0.06–0.09 mm, broadly ellipsoid to scutiform, latrorse. Pollen white. Anther connective gland pale pink when fresh, drying pale orange, spheroidal, coarsely papillate. Ovary 3–5 locular, each with 18–34 ovules in two rows on each placental lobe. Style 1.8–3.0 mm long at anthesis, white basally flushed pink or pale pink; stigma narrowly capitate, as wide as or scarcely wider than style, ± flat, greenish-pink or pink, flushing red after anthesis, surface finely granular-papillate. Fruits 2.2–3.6 × 2.7–3.9 mm, graphite grey, maturing to charcoal fading to greyish-white; narrowly obconic to obconic, rarely cupular, copiously covered in short, silky, antrorse-appressed hairs. Seeds 0.52–1.09 × 0.38–0.72 mm, obovoid, oblong, or oblong-ellipsoid; testa semi-glossy, orange-brown to dark brown, surface coarsely reticulate.

### Flowering:

September to January

### Fruiting:

February to July

### Threats:

Common within open rhyolite rock habitat (90.5 ha (0.3 %) of the island (de Lange & Norton (2004)). As a consequence of past kauri logging, and associated burning, this species has extended its range to include open clay pans, windswept ridges tops, kauri log scoured gorges and other temporarily open sites. In these areas the species is declining through natural regeneration, and in many of these sites it is out-numbered by the hybrids *K. robusta* × *Kunzea sinclairii*. This hybrids though common does not pose a risk; ecological and genetic studies suggest hybrids are declining in abundance as a consequence of natural succession to taller forest (de Lange & Norton 2004).

### \*Attribution:

Fact Sheet prepared for NZPCN by P.J. de Lange 1 September 2014. Description modified from de Lange (2014).

### References and further reading:

de Lange, P.J.; Norton, D.A. 2004: The ecology and conservation of *Kunzea sinclairii* (Myrtaceae), a naturally rare plant of rhyolitic rock outcrops. *Biological Conservation* 117: 49–59.

<http://www.sciencedirect.com/science/journal/00063207/117/1>

de Lange, P.J. 2014: A revision of the New Zealand *Kunzea ericoides* (Myrtaceae) complex. *Phytokeys* 40: 185p doi: 10.3897/phytokeys.40.7973.

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 11: 285–309

### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=555](http://nzpcn.org.nz/flora_details.asp?ID=555)



**Caption:** Mt Young, Great Barrier Island

**Photographer:** Gillian Crowcroft

# *Kunzea tenuicaulis*

## Common Name(s):

Geothermal kanuka, Geothermal kunzea, Prostrate kanuka

## Current Threat Status (2012):

At Risk - Naturally Uncommon

## Distribution:

Endemic. New Zealand: North Island - Central Volcanic Field from Kawerau south to Tokaanu on the southern side of Lake Taupo.

## Habitat:

*Kunzea tenuicaulis* is one of the dominant shrub or small trees inhabiting active geothermal fields and the ground in the immediate vicinity of these.

## Features\*:

Decumbent, trailing subshrubs, shrubs or small trees 0.1–8.0 × 2.0–8.0 m. For those specimens with a tree habit, crown widely spreading, often arching to pendulous. For those specimens found around active fumaroles or on open, geothermally heated ground, growth habit varying from completely decumbent and densely branched, with stems sprawling across ground, to semi-erect, densely branched, widely spreading, often pendulous. Trunk in tree forms 0.1–0.6 m d.b.h., at first erect, soon widely spreading and curving to somewhat sinuous, branching close to base, thinning in close canopies only; in decumbent plants trunk virtually indistinguishable, trailing to semi-erect, curved and somewhat sinuous. Bark greyish brown to brown, initially firm, elongate, over time cracking transversely with margins gradually detaching and rolling-in, upper bark surface often with much secondary peeling and transverse cracking. Branches narrow, long, flexuous, in decumbent plants prostrate, trailing, widely spreading, and arching, pendulous; branchlets slender, leafy; indumentum dense, hairs divergent, 0.03–0.08 mm. Leaves heterophyllous, seedling and subadult leaves 0.9–4.5 × 0.2–0.6 mm, red-green or bright green; lamina finely linear-lanceolate, long persistent in stressed habitats; adult leaves 1.1–10.0 × 0.8–2.8 mm, dark glossy green, to bronze-green, oblanceolate, obovate to obovate-rostrate; usually recurved from about ½ of total length, apex obtuse, rounded, rarely subacute, cuspidate; base attenuate; lamina margin sparsely to densely, finely sericeous; hairs appressed to weakly spreading, white, aligned in 1 row not quite meeting at cuspidate leaf apex. Inflorescence a compact, 1–10-flowered corymbiform botryum up to 25 mm long; axis densely invested with divergent hairs. Pherophylls deciduous, 0.5–1.0 mm long, initially foliose soon squamiform; foliose pherophylls pale green, oblong, oblong-obovate to oblanceolate; squamiform pherophylls brown or pink, broadly deltoid to oblong-ovate, glabrous except for the finely ciliate margin and apex. Pedicels 1.0–2.4 mm long at anthesis, finely hairy. Flower buds clavate to pyriform, apex distinctly domed prior to bud burst, calyx valves ± meeting. Flowers 3.3–9.0 mm diam. Hypanthium 1.8–3.3 × 1.7–3.1 mm, dark green often basally mottled red, drying brown to grey; narrowly cupular to campanulate terminating in a slightly thicker rim bearing five persistent calyx lobes; surface smooth, puberulent. Calyx lobes 5, upright, 0.4–0.8 × 0.4–1.0 mm, oblong, oblong-ovate to broadly triangular, ± subtended by a faint to prominent groove at the external junction with the hypanthium. Receptacle green or pale pink at anthesis, darkening to crimson-red or magenta after fertilisation. Petals 5–6, 1.4–2.0 × 1.4–2.0 mm, white, pinkish white, or pink, orbicular, cuneate, apex obtuse to rotund, oil glands not evident when fresh, drying colourless. Stamens 10–32 in 1–2 weakly defined whorls, filaments white tinged rose-pink toward base. Anthers 0.04–0.08 × 0.02–0.04 mm, testiculate, latrorse. Pollen white. Anther connective gland prominent, orange when fresh, drying pale brown, spheroidal, distinctly papillate. Ovary 3–5 locular, each with 15–22 ovules in two rows on each placental lobe. Style 2.0–3.6 mm long, white; stigma capitate, scarcely wider than style, pale cream to pink, surface papillate to rugulose. Fruits ± persistent, 1.0–3.3 × 1.6–3.2 mm, light brown to grey, usually barrel-shaped, rarely cupular. Seeds 0.80–1.00 × 0.45–0.50 mm, narrowly oblong, oblong, oblong-obovate to falcate-oblong, orange-brown, surface coarsely reticulate.

## Flowering:

August–January

## Fruiting:

December–February

## Threats:

Not seriously threatened. It is listed because of its virtual restriction to active/senescent geothermal fields and their immediate environs. Hybridism might be a threat in some populations abutting urban areas, e.g., Taupo. Certainly hybrids are locally common in the Rotorua area, reflecting perhaps, the extensive volcanic and human-induced disturbance of that region.

## \*Attribution:

Fact Sheet prepared for NZPCN by P.J. de Lange 25 August 2014. Description modified from de Lange (2014).

## References and further reading:

de Lange, P.J. 2014: A revision of the New Zealand *Kunzea ericoides* (Myrtaceae) complex. *Phytokeys* 40: 185p doi: 10.3897/phytokeys.40.7973.

de Lange, P.J.; Datson, P.M.; Murray, B.G.; Toelken, H.R. 2005: Hybridism in the *Kunzea ericoides* complex (Myrtaceae): an analysis of artificial crosses. *Australian Systematic Botany* 18: 117–131.

de Lange, P.J.; Smissen, R.D.; Wagstaff, S.J.; Keeling, D.J.; Murray, B.G.; Toelken, H.R. 2010: A molecular phylogeny and infrageneric classification for *Kunzea* (Myrtaceae) inferred from rDNA ITS and ETS sequences. *Australian Systematic Botany* 23: 309–319.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=554](http://nzpcn.org.nz/flora_details.asp?ID=554)



**Caption:** Overhead view of flower.  
**Photographer:** Jeremy Rolfe

# *Kunzea toelkenii*

## **Distribution:**

Endemic. New Zealand: North Island - Bay of Plenty near Thornton and in islands of the Ohiwa Harbour (formerly from Papamoa to Thornton and Ohiwa Harbour)

## **Habitat:**

Active sand dunes.

## **Features\*:**

Shrubs up to 4 × 6 m; 'juveniles' usually prostrate and trailing up to 4 m diam., often flowering, eventually developing several, central, ascending branches; 'adults' forming widely spreading (up to 2 m diam.), flat-topped shrubs, with pendulous branches and branchlets; trunk bases usually bearing epicormic, prostrate growth spreading up to 4 m diam. Trunk 1–10, ascending to suberect, highly contorted, twisted, bent, and spiralled, 0.10–0.40 m d.b.h.; mostly arising from the top of a broad rootstock. Bark coriaceous, grey or grey-brown, ± elongate, cracking into highly irregular pieces with rather sinuous margins; detaching inwards. Branches numerous, widely spreading, ± serpentine, flexuose, pendulous and interwoven; branchlets numerous, slender, pendulous, leafy; those of epicormic growth, straight, prostrate or pendulous if arising from basal half of trunk,; indumentum copious; hairs of two types: long, appressed, flexuose to 0.26 mm long, and smaller divergent hairs, with curled and spiralled apices 0.04–0.18 mm. Leaves with lamina 2.6–8.5 × 0.6–2.5 mm, dark glossy green or bright-green, obovate, clavate, to broadly oblanceolate; apex sharply acute to apiculate, base attenuate; glabrous; lamina margin finely to densely sericeous, hairs weakly flexuose, to 0.5 mm long, aligned in 1–2 uninterrupted rows meeting just short of leaf apiculus. Inflorescence 1–10-flowered corymbiform botryum up to 40 mm long; inflorescences at the ultimate branchlet terminus uncommon (except in trailing epicormic growth), these elongated (up to 80 mm long) bearing well developed terminal vegetative growth, often with the uppermost flowers male. Pherophylls deciduous, initially foliose, soon squamiform, 0.4–1.6 mm long, foliose pherophylls green to bronze-green, shortly lanceolate to obovate, squamiform pherophylls amber-brown to brown, narrowly deltoid to ovate. Pedicels 1.6–3.8 mm long copiously invested with short, divergent to subantrorse, silky hairs. Flower buds bluntly clavate to obconic, rarely pyriform, apex flat prior to bud burst with calyx valves not meeting. Flowers 3.6–9.0 mm diam., often functionally male toward end of flowering season. Hypanthium 1.7–3.2 × 2.8–4.3 mm, green, dark green or red-green; obconic to funneliform, bearing five persistent calyx lobes; surface smooth, finely and rather densely puberulent; hairs silky. Calyx lobes 5, upright, 0.8–1.2 × 0.7–1.2 mm, persistent, ovate, broadly ovate to ovate-deltoid, glabrous except for ciliate margins. Receptacle pink at anthesis, darkening dark magenta or maroon-black at fertilisation. Petals 5–6, 1.5–2.8 × 1.5–2.6 mm, white, orbicular to very broadly ovate, apex obtuse to rotund, margins ± entire, oil glands colourless. Stamens 20–50 in 1–3 weakly defined whorls, filaments white. Anthers dorsifixed, 0.06–0.09 × 0.05–0.08 mm, testicular-oval to testicular-ellipsoid, latrorse. Pollen white. Anther connective gland prominent, pale lemon to pink when fresh, drying yellow to pale orange, spheroidal, finely papillate. Ovary absent in male flowers, 3–5 locular, each with 12–24 ovules in two rows on each placental lobe. Style absent in male flowers, 1.0–1.8 mm long, white; stigma capitate, scarcely wider than style, flat, greenish-white, cream or pale pink, surface papillate. Fruits 2.1–3.0 × 2.5–3.7 mm, light brown to grey, obconic, broadly obconic, to cupular. Seeds 0.50–1.02 × 0.52–0.68 mm, oblong, oblong-obovate, testa semi-glossy, amber, orange-brown to brown, surface coarsely reticulate.

## **Flowering:**

September - November

## **Fruiting:**

October - September

## **Threats:**

As *Kunzea* aff. *ericoides* (a) (AK 255350; Thornton) *Kunzea toelkenii* is listed by the New Zealand Threatened Vascular Plant Panel (de Lange et al. 2013b) as 'Acutely Threatened/Nationally Vulnerable', qualified 'Range Restricted (RR)'. For a detailed assessment of this listing see de Lange (2014).

## **\*Attribution:**

Fact Sheet prepared for NZPCN by P.J. de Lange 25 August 2014. Description modified from de Lange (2014).

## **References and further reading:**

Beadel S.M. 1985: The vegetation of the Coastal Reserves between Golf Links Road (Rangitaiki Plains) and Otaramakau, Whakatane District. Prepared for D.J. Shaw Associates, Resource Management, Research, Planning Consultants, Rotorua. 25 pp.

Beadel S.M. 1987: An account of some sand dune communities of the eastern Bay of Plenty. *Rotorua Botanical Society Newsletter No. 11*: 29–39.

de Lange, P.J.; Rolfe, J.R.; Champion, P.D.; Courtney, S.P.; Heenan, P.B.; Barkla, J.W.; Cameron, E.K.; Norton, D.A.; Hitchmough, R.A. 2013: Conservation status of New Zealand indigenous vascular plants, 2012. *New Zealand Threat Classification Series 3*. Department of Conservation, Wellington.

de Lange, P.J. 2014: A revision of the New Zealand *Kunzea ericoides* (Myrtaceae) complex. *Phytokeys* 40: 185p doi: 10.3897/phytokeys.40.7973.

## **For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=7642](http://nzpcn.org.nz/flora_details.asp?ID=7642)

## *Kunzea triregensis*

### Common Name(s):

Three Kings kanuka

### Current Threat Status (2013):

At Risk - Naturally Uncommon

### Distribution:

Endemic. Three Kings Islands - North East, Manawatahi / Great Island, South West and West Islands

### Habitat:

Coastal forest - on Manawatawhi / Great Island forms the dominant tree canopy

### Features\*:

Shrubs or trees up to 18 × 3 m. Trunk 1–4, 0.10–0.85 m d.b.h. Bark grey or grey-brown, ± elongate, tessellated, usually bearing a few transverse cracks, firmly attached, detaching basally with age, and peeling upwards along trunk in broad, tabular strips. Branches numerous; upright to somewhat spreading; branchlets numerous, slender; branchlets sericeous, indumentum copious; hairs long appressed, usually flexuose (220–)480(–520) μm long. Leaves sessile; lamina 6.0–13.5 × 1.1–2.3 mm, dark glossy green above, paler beneath with leaf margins and midrib appearing distinctly white because of dense hair growth; lamina lanceolate to narrowly lanceolate; usually strongly recurved for about half of total length; apex acute to narrowly acute, base attenuate; lamina margin completely obscured by dense covering of antrorse-appressed hairs aligned in a thick, up to 0.6 mm wide, almost plumose, white band meeting at leaf apex.

Inflorescence an elongated 3–20-flowered botryum up to 200 mm long, basal portion sometimes bearing compact, lateral 3-flowered corymbiform botrya, or with the basal and terminal portions occasionally bearing lateral elongate botrya; distal portions often interrupted by sections of leafy perules between which are spaced further flowers; or interrupted by short floral shoots bearing elongated 3–6-flowered botrya up to 20 mm long; terminal portion often bearing undeveloped flowers and vegetative terminal growth. Inflorescence axis densely invested in antrorse-appressed, weakly flexuose, hairs.

Pherophylls persistent, foliose, 6.0–12.8 × 0.9–2.2 mm, dark glossy green, elliptic, broadly lanceolate to lanceolate; apex acute, base attenuate; lamina margin obscured by dense covering of antrorse-appressed, silky hairs. Pedicels subsessile to pedicellate 0.4–3.7 mm long copiously invested in antrorse-appressed, weakly flexuose, silky hairs. Flower buds double-conic to ovoid, calyx lobes prior to bud burst held flat or suberect with lobes ± meeting. Flowers 6.3–12.3 mm diameter. Hypanthium 1.6–4.4 × 2.0–4.6 mm, dark green or red-green; hemispherical to broadly obconic, sometimes campanulate or rarely cupular, densely to sparsely covered in silky, appressed antrorse hairs. Calyx lobes 5, erect, 0.5–1.3 × 0.3–0.8 mm, deltoid to ovate-deltoid, green to red-green; margins pale green often flushed pink, glabrescent. Receptacle green at anthesis, darkening to crimson after fertilisation. Petals 5–6, 1.3–4.3 × 1.9–4.8 mm, white, orbicular to broadly ovate, apex rounded, margins ± finely and irregularly denticulate, oil glands colourless. Stamens 30–53 in 1–3 weakly defined whorls, filaments white. Anthers dorsifixed, 0.05–0.10 × 0.06–0.08 mm, testicular-ellipsoid, latrorse. Pollen white. Anther connective gland prominent, pink or golden-yellow when fresh, drying yellow to pale orange, spheroidal, finely to coarsely papillate. Ovary 4–5 locular, each with 20–38 ovules in two rows on each placental lobe. Style 1.9–3.1 mm long, white or pinkish-white; stigma broadly capitate, wider than style, ± flat, greenish-white or pale pink, flushing red after anthesis, surface granular-papillate. Fruits 1.9–5.2 × 2.0–4.9 mm, dark chestnut-brown, maturing grey, hemispherical, broadly obconic, campanulate to cupular. Seeds 0.50–1.10 × 0.50–0.80 mm, oblong, oblong-obovate; testa semi-glossy, orange-brown to dark brown; surface coarsely reticulate.

### Flowering:

July–May

### Fruiting:

October–May

### Threats:

*Kunzea triregensis* as *K. aff. ericoides* (e) (AK 226797; Three Kings) is appropriately listed by de Lange et al. (2013) as 'At Risk/Naturally Uncommon' qualified 'IE' (Island Endemic) and 'OL' (One Location) because the species is confined to one island group. In its island habitat *Kunzea triregensis* forms the dominant vegetation of Manawatawhi / Great Islands.

### \*Attribution:

Fact Sheet prepared for NZPCN by P.J. de Lange 25 August 2014. Description modified from de Lange (2014).

### References and further reading:

de Lange, P.J.; Rolfe, J.R.; Champion, P.D.; Courtney, S.P.; Heenan, P.B.; Barkla, J.W.; Cameron, E.K.; Norton, D.A.; Hitchmough, R.A. 2013: Conservation status of New Zealand indigenous vascular plants, 2012. *New Zealand Threat Classification Series 3*. Department of Conservation, Wellington.

de Lange, P.J. 2014: A revision of the New Zealand *Kunzea ericoides* (Myrtaceae) complex. *Phytokeys* 40: 185p doi: 10.3897/phytokeys.40.7973.

### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=7643](http://nzpcn.org.nz/flora_details.asp?ID=7643)



**Caption:** In cultivation ex Great Island.

**Photographer:** Jeremy Rolfe



**Caption:** In cultivation ex Great Island.

**Photographer:** Jeremy Rolfe

## *Leptospermum scoparium* var. *incanum*

### Common Name(s):

manuka, tea tree, kahikatoa

### Current Threat Status (2012):

At Risk - Declining

### Distribution:

Endemic. Confined to the upper Northland peninsula where it is abundant from Te Pahi to Ahipara, and thence along the eastern coastline to Whangaroa. South of these stations it is locally present in mainly coastal shrublands, dunefield but also in some inland gumland scrub habitats. Exact southern limits are not, as yet clear.

### Habitat:

Abundant in coastal situations, within dunefield, associated shrublands, gumland and on the margins of peat bogs.

### Features\*:

Shrub or small tree up to 5 m in height. Bark grey, peeling in long flakes, which become curled, and papery with age. Wood red. Branches numerous, arising from base, often suckering when covered in sand, and/or sprouting adventitious roots. Young branches, young leaves and flower buds clad in long silky, grey hairs. Leaves leathery (almost woody), very dark green, becoming subglabrous, narrowly lanceolate 10-15 x 1-2 mm, apex drawn out into a long stiff, sharp point, midrib not especially obvious, leaf margin finely crenate. Flowers solitary in leaf axils, up to 20 mm diam. Receptacle red or pink. Petals usually flushed pink or wholly pink, occasionally white or dark red. Stamens numerous. Capsule, long persistent and woody, 8 - 7 mm. Seeds numerous, straw-like, compressed 2 x 0.3 mm.

### Flowering:

Throughout the year but with a peak in late winter early spring.

### Fruiting:

The capsules are long persistent so invariably mature plants always possess at least some capsules.

### Threats:

Not threatened, though some stands are at risk from clearance for farmland or through felling for firewood.

### \*Attribution:

Fact Sheet prepared for NZPCN by P.J. de Lange 1 February 2004. Description by P.J. de Lange.

### References and further reading:

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 11: 285-309

### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=2186](http://nzpcn.org.nz/flora_details.asp?ID=2186)



**Caption:** Planted trees at Cape Reinga, Far North

**Photographer:** John Sawyer



**Caption:** Te Kao, Far North

**Photographer:** John Sawyer

## *Leptospermum scoparium* var. *scoparium*

### Common Name(s):

manuka, tea tree, kahikatoa

### Current Threat Status (2012):

Not Threatened

### Distribution:

Indigenous to New Zealand and Australia. Most Australian forms of *L. scoparium* do not match the range seen in New Zealand. However, plants from Tasmania are very similar to, if not identical with some South Island forms, differing mainly by their wider leaf base, and longer, more pungent leaf apex. Manuka was also collected once from Rarotonga by Thomas Cheeseman in the 1800s. It has not been found there since, and is assumed to have been a failed introduction. Further study using DNA sequencing is underway to resolve the status of *L. scoparium* forms both here and in Australia.

### Habitat:

Abundant from coastal situations to low alpine habitats.

### Features\*:

Decumbent shrub, subshrub, shrub, or small tree up to 5 m in height and in decumbent forms 2-4 m across. Bark light grey to charcoal grey, peeling in long papery flakes, these curling with age. Wood red. Branches numerous erect, spreading or decumbent, arising from base, sometimes sprouting adventitious roots and/or layering on contact with soil. Young branches, young leaves and flower buds densely to sparingly clad in long silky, white hairs. Leaves leathery, pale to dark green, glabrescent to glabrous, linear-filiform, narrowly lanceolate, lanceolate, oblanceolate, to elliptic or obovate (5-)10-15(-20) x 1-2-5(-8) mm, invariably apex drawn out into a long stiff, pungent point, midrib usually distinct sometimes obscure, leaf margin finely crenate, veins simple, scarcely branched. Flowers solitary in leaf axils, (8-)10-20(-25) mm diam. Receptacle dark red, crimson or pink. Petals white, sometimes flushed pink or dark red. Stamens numerous.

### Flowering:

Throughout the year

### Fruiting:

The capsules are long persistent so invariably mature plants always possess at least some capsules.

### Threats:

Not threatened, though some stands are at risk from clearance for farmland or through felling for firewood.

### \*Attribution:

Fact Sheet prepared for NZPCN by P.J. de Lange 1 February 2004. Description by P.J. de Lange.

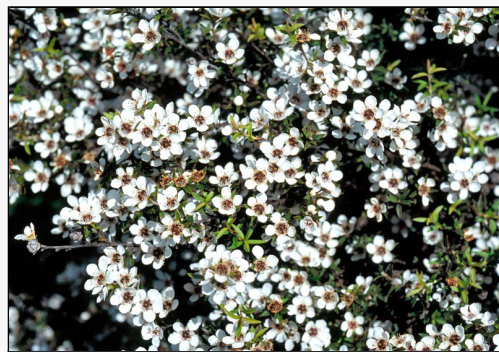
### References and further reading:

Gardner, R. 2002. Notes towards an excursion Flora .Manuka *Leptospermum scoparium* myrtaceae. Auckland Botanical Society Journal, 57: 147-149

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. Perspectives in Plant Ecology, Evolution and Systematics 11: 285-309

### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=2302](http://nzpcn.org.nz/flora_details.asp?ID=2302)



Photographer: © John Braggins



Caption: Flowers of *Leptospermum scoparium* var. *scoparium*

Photographer: Wayne Bennett



# *Lophomyrtus bullata*

## Common Name(s):

Ramarama, bubble leaf

## Current Threat Status (2012):

Not Threatened

## Distribution:

Endemic. North and South Islands. Scarce in the South Island where it ranges to about North Canterbury and Greymouth

## Habitat:

Coastal to montane forest and shrubland. Often a locally conspicuous component of the understorey of lowland Podocarp riparian forest. *Lophomyrtus bullata* also occasionally grows on suitable sites in slope forest, and in wetter areas is sometimes a common component of regenerating shrubland in cut over forest. Where it meets with rohu ( *Lophomyrtus obcordata* ) the hybrid *L. ×ralphii* is often commonly found. Sometimes *Lophomyrtus xralphii* is locally dominant occurring in places where ramarama is scarce or has seemingly died out.

## Features\*:

Shrub or tree up to 6 m tall or more. Trunk slender, up to 0.2 m diameter. Bark reddish, fibrous, flaking in small irregular shards, underbark pink. Branches numerous, erect, compactly branched, branchlets initially 4-angled becoming terete with age, rather brittle, finely hairy, hairs ± persistent. Leaves opposite, coriaceous, finely hirsute when young (hairs somewhat stiffly erect to sericeous, appressed, caducous), maturing glabrous, surface minutely glandular-punctate, oil glands colourless, leaf lamina and petiole decurrent with branchlet; petiole 2-5(-10) mm long, rather brittle; leaf lamina 15-30(-50) × 10-15(-40) mm, broadly ovate to suborbicular, bullate, apex obtuse or acute and then often minutely apiculate, adaxially dark green to yellow green, mottled and/or spotted with red, maroon or purple-black circular blemishes, abaxially pink or red-tinged. Flowers 4-merous, 12-14 mm diameter, borne in axillary, solitary monads, on slender, 12-14(-18) mm long, hirsute pedicels. Hypanthium subturbinate, not extending beyond ovary summit, calyx lobes 4, 1.5-2.2 mm long, persistent, spreading, elliptic-oblong, obtuse to subacute. Petals 8-10 × 6-9 mm, suborbicular, white, margins entire to slightly irregular, ciliate, oil glands colourless. Stamens 80-100(-200 or more), free, in 4 (or more) weakly defined whorls, filaments 8-12 mm long, anthers cream, dorsifixed, latrorse. Ovary inferior, 2-3-locular, ovules numerous, in a single row on each linear placenta. Style 10-12 mm long, slender, white, stigma capitate, scarcely dilated. Fruit a broadly ovoid, dark red or black 6-8 mm long berry. Seeds numerous, reniform, 2.7-5.5 mm diameter, testa dark brown, glossy ± smooth, very hard. Seed description modified from Webb & Simpson (2001).

## Flowering:

November - March

## Fruiting:

January - June

## Threats:

Not Threatened

## \*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange 9 February 2011. Seed description modified from Webb & Simpson (2001).

## References and further reading:

Webb, C.J.; Simpson, M.J.A. 2001: Seeds of New Zealand Gymnosperms and Dicotyledons. Christchurch, Manuka Press.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=1388](http://nzpcn.org.nz/flora_details.asp?ID=1388)



**Caption:** *Lophomyrtus bullata*  
**Photographer:** Wayne Bennett



**Caption:** *Lophomyrtus bullata*  
**Photographer:** Wayne Bennett

# *Lophomyrtus obcordata*

## Common Name(s):

Rohutu, New Zealand myrtle

## Current Threat Status (2012):

Not Threatened

## Distribution:

Endemic. North and South Islands. Patchy and often absent over large parts of the country. More common in the eastern North and South island though locally prominent in some parts of western Northland and Auckland.

## Habitat:

Coastal to montane in forest - though mostly found in coastal and lowland forested habitats. *Lophomyrtus obcordata* is often rather local over large parts of its range though it seems to be reasonably common on the Pouto and Kaipara Peninsula where it grows on stable sand dunes in a forest dominated by an as yet unnamed species of *Kunzea ericoides* (known as rawirinui to northern Maori and referred to by de Lange & Murray 2004, de Lange et al., 2005 and de Lange et al. 2010 as *Kunzea* aff. *ericoides* (a)). *Lophomyrtus obcordata* is also occasionally dominant in alluvial forest remnants of the eastern South Island. In these places it is often parasitised by the dwarf mistletoe *Korthalsella lindsayi*.

## Features\*:

Shrub up to c.6 m tall. Trunk slender, up to 0.2 m diameter. Bark greyish pink, chartaceous, flaking in large, irregular shards, underbark pale cream. Branches numerous, erect, compactly branched to spreading. Branchlets initially 4-angled maturing subterete, rather brittle, minutely pubescent. Leaves opposite (sometimes in fascicles), coriaceous, puberulent when young (hairs patent), becoming glabrous with age, glandular punctate, oil glands colourless, leaf lamina and petioles shortly decurrent with branchlet; petiole 0.7-1.0 mm long, brittle; leaf lamina 5-12 × 5-10 mm, obcordate, cuneately narrowed to base, adaxially dark green to grey-green (sometimes tinged red), paler beneath (sometimes tinged pink). Flowers 4-merous, 6-8 mm diameter, borne in axillary, solitary monads on slender, 10-14(-20) mm long, pubescent pedicels. Hypanthium subturbinate, not extending beyond ovary summit, glandular punctate, oil glands colourless (rarely pink tinged), calyx lobes 4, 1.0-1.8 mm long, persistent, spreading, pubescent, oblong, acute. Petals 6-8 × 5-8 mm, suborbicular, white, margins entire to slightly irregular, oil glands colourless. Stamens 60-80(-100 or more), free, in 4 weakly defined whorls, filaments 6-8 mm long, anthers cream, dorsifixed, latrorse. Ovary inferior, 2-3-locular, ovules numerous, in a single row on each linear placenta. Style 6-8 mm long, slender, white, stigma capitate, scarcely dilated. Fruit a broadly ovate, bright to dark red (rarely black or violet) 6-7 mm long berry. Seeds numerous, reniform, 2.0-4.3 mm diameter, testa pale brown, glossy ± smooth, very hard.

## Flowering:

November - March

## Fruiting:

January - May

## Threats:

Not Threatened

## \*Attribution:

Fact sheet including description prepared for NZPCN by P.J. de Lange 9 February 2011. Seed description which is modified from Webb & Simpson (2001).

## References and further reading:

de Lange, P.J.; Murray, B.G. 2004: Chromosome numbers of New Zealand *Kunzea* (Myrtaceae). *Australian Journal of Botany* 52: 609-617.

de Lange, P.J.; Datson, P.M.; Murray, B.G.; Toelken, H.R. 2005: Hybridism in the *Kunzea ericoides* complex (Myrtaceae): an analysis of artificial crosses. *Australian Systematic Botany* 18: 117-131.

de Lange, P.J.; Smissen, R.D.; Wagstaff, S.J.; Keeling, D.J.; Murray, B.G.; Toelken, H.R. 2010: A molecular phylogeny and infrageneric classification for *Kunzea* (Myrtaceae) inferred from rDNA ITS and ETS sequences. *Australian Systematic Botany* 23: 309-319.

Webb, C.J.; Simpson, M.J.A. 2001: *Seeds of New Zealand Gymnosperms and Dicotyledons*. Christchurch, Manuka Press.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=943](http://nzpcn.org.nz/flora_details.asp?ID=943)



**Caption:** Bark. Upper Hutt, eb 2011.

**Photographer:** Jeremy Rolfe



**Caption:** Stevensons Island, Lake Wanaka.

**Photographer:** John Barkla

# *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:

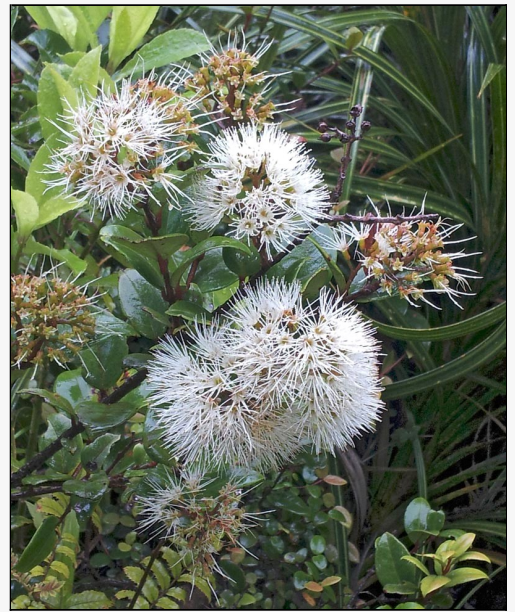
Although not threatened, *Metrosideros albiflora* is often absent from large parts of potential range. It is most common in central and western Northland and the Coromandel Peninsula. Adult vines are often browsed by possums.

## \*Attribution:

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

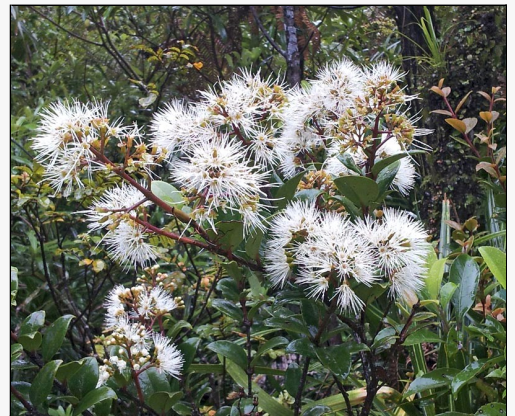
## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=979](http://nzpcn.org.nz/flora_details.asp?ID=979)



**Caption:** Waipoua.

**Photographer:** Peter de Lange



**Caption:** Waipoua.

**Photographer:** Peter de Lange

# *Metrosideros bartlettii*

## Common Name(s):

rata moehau, Bartlett's rata

## Current Threat Status (2012):

Threatened - Nationally Critical

## Distribution:

Endemic. North Island, Northland, Te Pahi, where it is only known from three forest remnants near Spirits Bay. These are Radar Bush, Kohuronaki and Unuwahao Bush.

## Habitat:

An emergent or canopy tree of northern coastal and lowland broad-leaved forest. Usually starting life as an epiphyte on puriri (*Vitex lucens*), taraire (*Beilschimedia tarairi*), rewarewa (*Knightia excelsa*) and tree ferns (*Cyathea* spp.). Occasional specimens have been found growing terrestrially on rock outcrops, boulders and cliff faces.

## Features\*:

Tree up to 30 m with a trunk up to 1.5 m diameter, often initially epiphytic on trees or tree ferns; bark pale grey to whitish, spongy, separating into soft flakes, shedding freely; young twigs dark red, 4-angled to rounded and with long-persistent, white spreading hairs. Leaves on petioles 4–5 × 1 mm, lamina 30–50 × 15–26 mm, elliptic to ovate, base cuneate, apex acute to attenuate, often twisted; young leaves pale green to yellow-green, somewhat glossy, petioles, margins and midribs pubescent, with the hairs tending to persist on midribs and petioles; mature leaves dark green above pale beneath, upper surface glossy, veins evident, lower surface glossy, entire vein network evident, oil glands obscure, midrib raised below, impressed above. Inflorescences with 3–4 pairs of cymules, ± densely tomentose, tomentum of spreading white hairs; bracts and bracteoles shedding early during inflorescence maturation; peduncles up to 9 × 1 mm. Flowers white; pedicels up to 3 × 1 mm; hypanthium 2.5–3.0 × 2.0–2.5 mm; sepals triangular, spreading, 1.0–1.5 × 1.0–1.5 mm; petals elliptic to ovate, 2.5–3.0 × 1.8–.0 mm; stamens 5–9 mm long; style 10–11 mm long. Fruit hypanthium puberulent, 2.0–2.5 × 2.5–3.0 mm, sepals persistent, deflexed, capsules exserted for 1.5–2.5 mm. Seeds pale orange-yellow, 2.3–3.0 mm long, narrowly elliptic to narrowly oblong, straight or slightly curved.

## Flowering:

October - November

## Fruiting:

March - April

## Threats:

There are now only 25 adult Bartlett's rata left in the wild (down from the 34 known in 1992), mostly on private land and isolated from other specimens. There is negligible viable seed set because there is not an abundance of nectar-feeding birds to pollinate the flowers and Bartlett's rata is self-incompatible. There is also minimal genetic variation, and most of this occurs on private land. Aside from these problems, the species is at severe risk from browsing animals and fire. Indeed, uncontrolled possums are currently wiping out this tree at the largest population known, which occurs on private land. Bartlett's rata is occasionally cultivated, but most cultivated specimens come from a single tree.

## \*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange (30 September 2003). Description adapted from Dawson (1985) supplemented with observations made from herbarium and fresh material.

## References and further reading:

Dawson, J.W. 1985: *Metrosideros bartlettii* (Myrtaceae) a new species from North Cape, *New Zealand. New Zealand Journal of Botany* 23: 607–610.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=24](http://nzpcn.org.nz/flora_details.asp?ID=24)



**Caption:** Te Pahi forest, Northland

**Photographer:** John Sawyer



**Caption:** Te Pahi forest, Northland

**Photographer:** John Sawyer

# *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](http://nzpcn.org.nz/flora_details.asp?ID=980)



**Caption:** *Metrosideros carminea*

**Photographer:** Peter de Lange



**Caption:** Carmine rata

**Photographer:** DoC

# *Metrosideros colensoi*

## Common Name(s):

Rata

## Current Threat Status (2012):

Not Threatened

## Distribution:

Endemic. New Zealand: North Island (from central Northland south), South Island (Nelson and Marlborough to Westland and southern Marlborough / North Canterbury (Napenape)

## Habitat:

Lowland to montane forest (particularly a vine seen in riparian and alluvial forest). Especially common in limestone areas on rock outcrops, in gorges, cliff faces and around cave entrances.

## Features\*:

Slender to very slender vine up to 10 m tall. Bark grey to pale grey, ± tessellated, and flaking in tabular shards. Initial stems sparingly branched but soon much-branched, widely spreading, apices trailing and pendent. Branchlets subterete, pilose-pubescent (indument in mixtures or fine, short and long pilose brownish hairs). Leaves not markedly dimorphic, close-set to overlapping (± imbricate), submembranous to subcoriaceous, petiolate, ± subsessile; petioles 1-3 mm long, subterete; juvenile lamina 4-10 × 2-8 mm, ovate-lanceolate, base cuneate to almost truncate, apex acute to acuminate, initially yellow-green, adaxially maturing to green, abaxially paler, both surfaces finely covered in minute oil glands, and initially densely pubescent, ± glabrescent; adult lamina 8-20 × 5-20 mm, otherwise similar. Inflorescences terminal and lateral, white (rarely pink), comprising small, few-flowered cymes; peduncles and pedicels pubescent, peduncles 10-30 mm long, pedicels up to 3 mm long; hypanthia 5 mm long, narrowly-urceolate or -subglobose to ± funnellform, pubescent, hypanthium rim exceeding disc, calyx lobes 1.5-2.0 mm long, narrow deltoid, acute to acuminate, initially forward projecting, spreading with age. Petals 1.5-2.2 × 1.5-2.2 mm, orbicular, not or only scarcely exceeding calyx lobes. Stamens numerous, filaments 8-12 mm long, anthers yellow. Style 10-14 mm long, stigma capitate. Capsule 4-6 mm diameter, narrowly urceolate to subglobose, externally 3-ribbed, 3-valved. Seeds 0.6-1.1 mm long, narrowly elliptic, narrowly obovate or oblong, apex usually curved orange to orange-brown, unfilled seeds dark orange-brown.

## Flowering:

August to October

## Fruiting:

December - April

## Threats:

Not Threatened

## \*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=981](http://nzpcn.org.nz/flora_details.asp?ID=981)



**Caption:** Auckland.

**Photographer:** Peter de Lange



**Caption:** Auckland.

**Photographer:** Peter de Lange

## *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](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](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](http://nzpcn.org.nz/flora_details.asp?ID=983)



**Caption:** *Metrosideros fulgens*  
**Photographer:** Wayne Bennett



**Caption:** *Metrosideros fulgens*  
**Photographer:** Wayne Bennett

# *Metrosideros kermadecensis*

## Common Name(s):

Kermadec pohutukawa

## Current Threat Status (2012):

At Risk - Naturally Uncommon

## Distribution:

Endemic. Kermadec Islands: Raoul, North and South Meyer Islands, Herald Islets (Napier, Nugent and Dayrell)

## Habitat:

The dominant canopy tree on Raoul Island where it is found from the coastline to the highest peaks. Forms the main tree of both dry and wet forest types. It was supposedly also present on Macauley Island although there are no herbarium specimens known to substantiate this claim.

## Features\*:

Multitrunked (rarely single) tree up to 20 m tall usually with a broadly spreading, domed canopy; trunk up to 3 m diameter, if more than one usually much smaller; trunk surface often covered in adventitious roots. Bark mostly firm, tessellated to platy, grey, grey-brown or whitish, often covered in sparse to dense growths of lichens, liverworts and mosses. Branches erect to spreading, sometimes scrambling across forest floor in which case often rooting freely where touching the ground. Branchlets terete, numerous toward branch ends. Young branchlets, leaf undersides, inflorescence-axes, hypanthia, and sepals densely clad in tomentum, tomentum initially white, maturing dirty grey. Petioles 5-7 mm long, terete to subterete, very coriaceous; lamina 20-50 × 10-30 mm, dull dark green above with appressed, greyish indumentum along the midrib, sometimes extending along the upper surface of the base of the leaf, orbicular, suborbicular, broadly ovate- to elliptic-oblong, apex obtuse to retuse, base obtuse to cuneately-narrowed, coriaceous, margins weakly to strongly recurved. Inflorescence complex, comprising 2 or more terminal compound corymbiform cymes each bearing numerous flowers; pedicels rigidly stout, 8-12 mm long. Hypanthium obconic to turbinate, sepals coriaceous to subcoriaceous, deltoid to triangular, gland-tipped; petals caducous, fleshy, scarlet, crimson to pink, 2.2-3.2 × 2.0-3.0, orbicular, suborbicular to oblong, glabrescent. Stamens numerous, filaments crimson, 10-23 mm long; anthers versatile, yellow, 1.0 × 0.2-0.4 mm. Nectarial disc initially green at anthesis, maturing red or red-green. Ovary 3-locular, adnate to hypanthium; capsules long-persistent, woody, 3-valved, 6.0-7.2 mm long, receptacle distinctly exerted, outer surface and inner sepals and hypanthial rim covered in appressed white to greyish-white tomentum. Seeds numerous, 2.5-4.5 mm long, yellow to pale orange, very narrowly elliptic to linear, 2-4-angled, body often twisted, laterally compressed, apex curved or hooked.

## Flowering:

Throughout the year

## Fruiting:

Throughout the year

## Threats:

Not Threatened. It is listed as Range Restricted because it is an island endemic which globally occupies such a small area. This is the dominant tree on Raoul Island and it is also prominent on the nearby Meyer Islands and Napier, Dayrell and Nugent in the Herald Islets.

## \*Attribution:

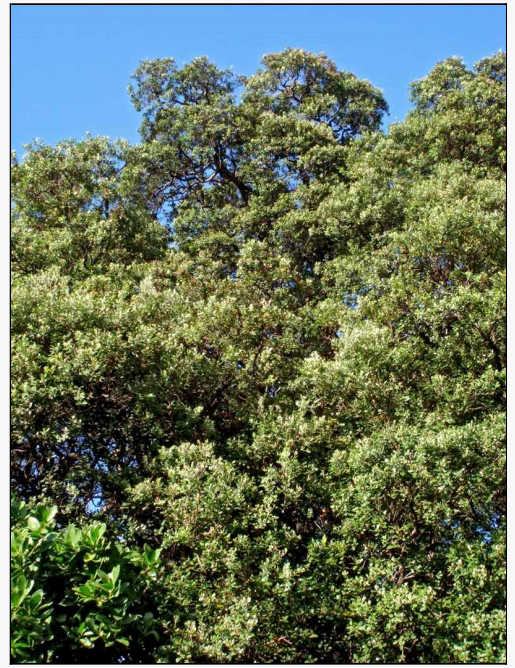
Fact sheet prepared for NZPCN by P.J. de Lange (8 June 2009). Description adapted from Allan (1961) supplemented with data obtained from herbarium specimens, fresh material and observations made on Raoul Island.

## References and further reading:

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

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=586](http://nzpcn.org.nz/flora_details.asp?ID=586)



**Caption:** Raoul Island.

**Photographer:** Peter de Lange



**Caption:** Raoul Island. Spent capsules.

**Photographer:** Peter de Lange

# *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](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.

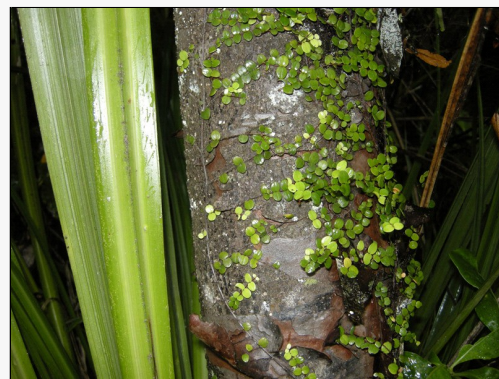
## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=984](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.

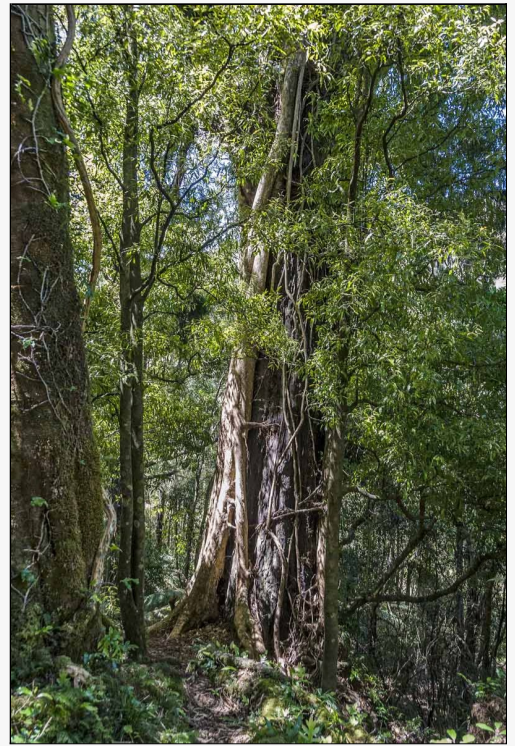
Beddie, A.D. 1953. Root behaviour in *Metrosideros*. *Wellington Botanical Society Bulletin*, 26: 2-6

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

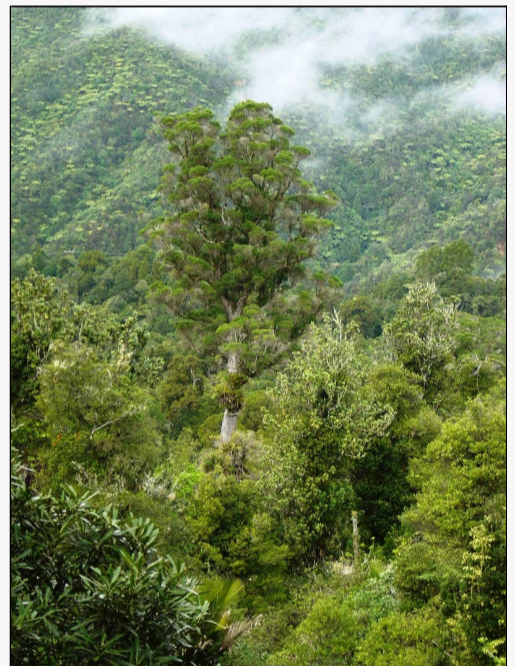
## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=977](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](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

# *Neomyrtus pedunculata*

## Common Name(s):

Rohutu, myrtle

## Current Threat Status (2012):

Not Threatened

## Distribution:

Endemic. North, South and Stewart Islands from near Kaitaia (Mangamuka) south but generally scarce in Northland and Auckland.

## Habitat:

Coastal to montane forest and shrubland. Often a conspicuous component of the understorey of lowland Podocarp riparian forest but also an frequent component of grey scrub in some parts of the South Island. Unless flowering or fruiting *Neomyrtus* is often overlooked or mistaken for the superficially similar *Lophomyrtus obcordata* with which it often grows.

## Features\*:

Shrub or small tree up to 8 m tall. Trunk slender, c.0.1 m dbh. Bark pale-grey to almost silvery, chartaceous, flaking in small irregular shards. Branches few to many, upright to spreading, often openly branched. Branchlets glabrous, 4-angled, rather brittle, either sparse and so openly branched or densely and then compactly interwoven. Brachyblasts usually sparingly leafy except toward actively growing apices. Leaves opposite, coriaceous, glandular punctate, oil glands colourless, leaf lamina and petiole decurrent with branchlet; petioles 3-6 mm long, somewhat brittle; lamina 6-15(-20) × 4-10(-15) mm, obovate-oblong to obovate, adaxially glabrous, silvery green, pale green to yellow-green, red to purple-black spotted, abaxially pale silvery green to white, glabrescent (initially finely hairy, hairs sericeous, ± finely appressed, caducous). Flowers 5-merous, in axillary, usually solitary (rarely paired) monads, borne on slender, 10-15(-20) mm long pedicels. Hypanthium subturbinate, not extending beyond ovary summit, calyx lobes 5, persistent, deltoid, spreading. Petals 5-8(-10) × 6-9 mm, orbicular, white, margins entire to slightly irregular, oil glands colourless. Stamens 40-60(-80), free, in 3-4 (or more) weakly defined whorls, filaments 5-9 mm long, anthers cream, basifixed, latrorse. Ovary unilocular, weakly septate, ovules borne on 2 parietal placentas. Style 8-10 mm long, slender, white, stigma capitate, scarcely dilated. Fruit a broadly ovoid, yellow, orange or red 6-8 mm long berry. Seeds 1-7(-11) varying in shape depending on number of seeds present per berry, mostly reniform, 1.5-2.5 mm diameter, testa brown, glossy smooth and very hard.

## Flowering:

November - April

## Fruiting:

February - June

## Threats:

Not Threatened

## \*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange 9 February 2011. Seed description which is modified from Webb & Simpson (2001).

## References and further reading:

Webb, C.J.; Simpson, M.J.A. 2001: Seeds of New Zealand Gymnosperms and Dicotyledons. Christchurch, Manuka Press.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=1392](http://nzpcn.org.nz/flora_details.asp?ID=1392)



**Caption:** Leaf detail, Tutoko Valley, Fiordland

**Photographer:** Jesse Bythell



**Caption:** *Neomyrtus pedunculata*

**Photographer:** Keir Morse

# *Syzygium maire*

## Common Name(s):

swamp maire, maire tawake, waiwaka

## Current Threat Status (2012):

Not Threatened

## Distribution:

Endemic. North and South Island from Te Pahi south to Rarangi (near Blenheim). Now often scarce or absent over large parts of its former range due to the clearance of swamp forest.

## Habitat:

Mostly found in coastal and lowland riparian forest in waterlogged ground, on the margins of swamps and streamsides. Also found in some of montane forest and cloud forest of Northland (e.g., Tutamoe) and the western Waikato (Pirongia, Taumatotara and Tawarau) where high rainfall and poor drainage provide ideal conditions for this tree to establish on hill slopes, tablelands and with karst landscapes.

## Features\*:

Glabrous tree to c.16 m high. Trunk up to 0.8 m dbh, solitary or with several arising from base, often with knees and where the root plate is exposed frequently bearing pneumatophores. Bark smooth, pinkish grey, grey-brown or white, flaking in soft or brittle, irregular shards. Branches numerous, spreading, branchlets numerous, spreading, 4-angled. Leaves opposite, subcoriaceous, adaxially yellow-green to green, glossy often bearing small galls and leaf blisters, midrib impressed, side veins slightly impressed scarcely evident when viewed from above; abaxial surface pale green, midrib prominently raised, side veins evident when fresh or dried; margins entire, sinuate or undulate; petioles 5-10 mm long, slender, brittle. Lamina 15-60 × 10-25 mm, usually elliptic, sometimes broadly elliptic. Inflorescences in cymose 5-30-flowered clusters, up to 100 mm diameter.

Pseudopedicels slender. Hypanthium 2-3 mm long at anthesis, obconic; calyx lobes very short and broad, persistent on fruit. Petals 2-3 mm diameter, orbicular, white, forming calyptum in bud, caducous. Stamens numerous, 5-12(-18) mm long, white, in 6-8 (or more) indistinct whorls, filaments 4.5-17.5 mm long, white, anthers basifixed, pollen white. Style 5-18 mm long, distinctly broader than stamens and tapering, cream to yellow-green. Ovary adnate to base of hypanthium. Fruit 10-15 mm diameter, subglobose, broad-ellipsoid or elliptic-ovoid, flesh deep crimson, glossy. Seed 1, 6-11 mm long, obovate, testa dull, very hard, covered in fibres, striped pale orange-yellow and pale brown, brown or grey-brown.

## Flowering:

November - July

## Fruiting:

January - December

## Threats:

Not Threatened. However, many populations now qualify as "Living Dead" as they persist (and are in slow terminal decline) as remnants within partially drained farmland (previously riparian forest). In some parts of its range it is listed as regionally threatened, e.g., Auckland and Wellington.

## \*Attribution:

Factsheet prepared by: P.J. de Lange (5 November 2005). Description based on Webb et al. (1988), Webb & Simpson (2001) and observations made from fresh material.

## References and further reading:

Cameron, E.K., Cutting, M. 1995. Maire tawake at Browns bay Auckland. *Auckland Botanical Society Journal*, 50: 66-70.

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## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=1313](http://nzpcn.org.nz/flora_details.asp?ID=1313)



**Caption:** *Syzygium maire*

**Photographer:** Wayne Bennett



**Caption:** Flower of *Syzygium maire*

**Photographer:** Wayne Bennett