



Myrtaceae in New Zealand

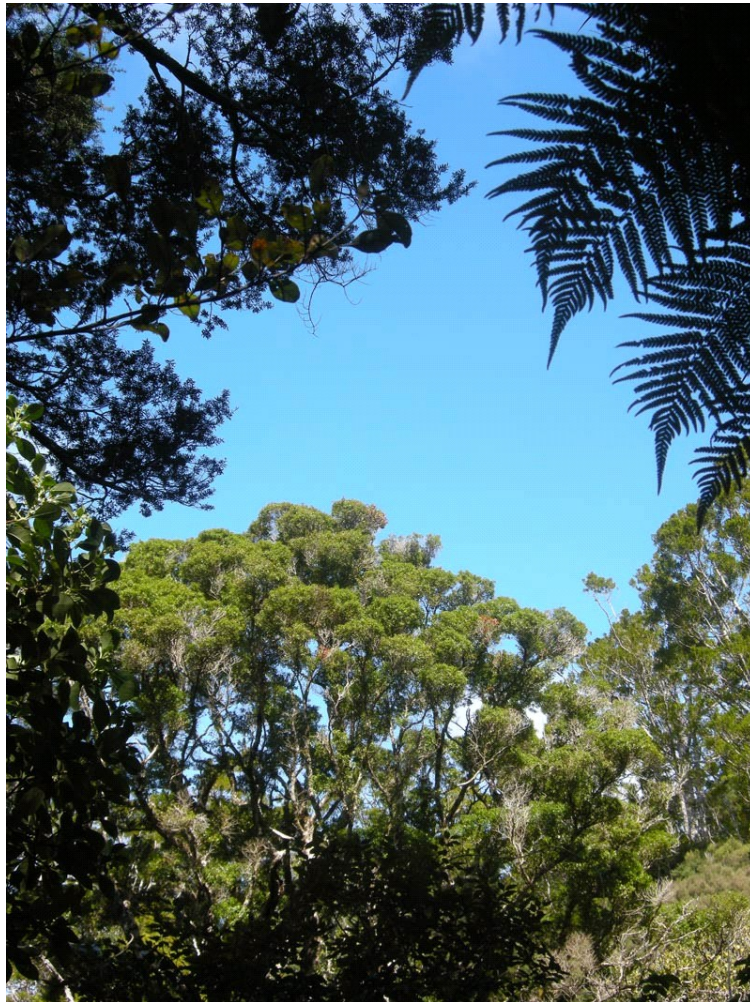


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Made on the New Zealand Plant Conservation Network website – www.nzpcn.org.nz

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Introduction

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

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

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

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

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

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

The New Zealand Botanic Region

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

About the Network

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

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

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

That work has included:

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

What is a threatened plant?

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

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

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

Agonis flexuosa

Common Name(s):

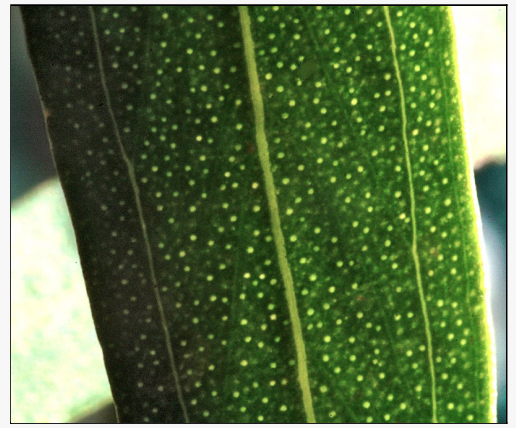
Agonis, peppermint tree, peppermint myrtle, river myrtle

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4173



Caption: Oil glands on leaf.
Whanganui. Aug 2012.

Photographer: Colin Ogle



Caption: Whanganui. Aug 2012.

Photographer: Colin Ogle

Angophora costata

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4459



Caption: Planted specimen.
Virginia Lake, Whanganui. Nov
2007.

Photographer: Colin Ogle



Caption: Planted specimen.
Virginia Lake, Whanganui. Nov
2007.

Photographer: Colin Ogle

Chamelaucium uncinatum Schauer

Common Name(s):

Geraldton wax plant

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=3681



Caption: Chamelaucium uncinatum showing flowering habit
Photographer: Peter de Lange, Ex Cult. 18 June 2006, University of Auckland



Caption: Chamelaucium uncinatum showing flowering habit and growth form
Photographer: Peter de Lange, Ex Cult. 18 June 2006, University of Auckland

Corymbia ficifolia

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4550



Caption: *Corymbia ficifolia*
Photographer: Geoff Hare



Caption: *Corymbia ficifolia* -
flowers
Photographer: Geoff Hare

Eucalyptus cinerea

Common Name(s):

silver dollar gum

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=3886



Caption: Naturalising from planted specimens (background). State Highway 3 near Whanganui. May 2012.

Photographer: Colin Ogle



Caption: Wanganui.

Photographer: Colin Ogle

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 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



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



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:

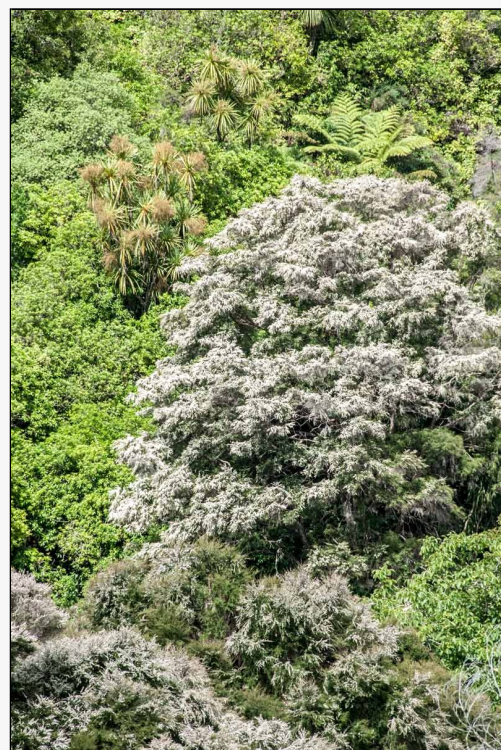
Fact Sheet prepared for NZPCN by P.J. de Lange 10 September 2014. Description modified from de Lange (2014).

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



Caption: Mohaka River viaduct.
Photographer: Jeremy Rolfe

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



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



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



Caption: Overhead view of flower.
Photographer: Jeremy Rolfe

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



Caption: In cultivation ex Great Island.

Photographer: Jeremy Rolfe



Caption: In cultivation ex Great Island.

Photographer: Jeremy Rolfe

Leptospermum laevigatum

Common Name(s):

Victorian tea tree

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=3400



Caption: Adaxial leaf surface.
Castlecliff beach, Whanganui. Sep
2012.

Photographer: Colin Ogle



Caption: Abaxial leaf surface.
Castlecliff beach, Whanganui. Sep
2012.

Photographer: Colin Ogle

Leptospermum minutifolium

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4241



Caption: Leptospermum
minutifolium

Photographer: Peter de Lange



Caption: Leptospermum
minutifolium

Photographer: Peter de Lange

Leptospermum polygalifolium subsp.
polygalifolium

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4142



Caption: *Leptospermum polygalifolium* Salisb. subsp. *polygalifolium*

Photographer: Peter de Lange



Caption: *Leptospermum polygalifolium* Salisb. subsp. *polygalifolium*

Photographer: Peter de Lange

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



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.

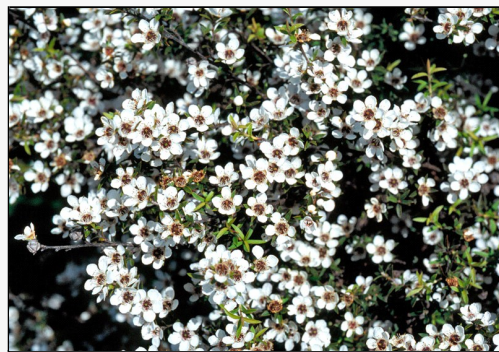
References and further reading:

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



Photographer: © John Braggins



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

Photographer: Wayne Bennett

Leptospermum spectabile

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4143



Caption: *Leptospermum spectabile*

Photographer: Peter de Lange



Caption: *Leptospermum spectabile* showing capsules and foliage

Photographer: Peter de Lange,
25 April 2006, Morningside,
Auckland

Leptospermum variable

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4175



Caption: *Leptospermum variable*
Photographer: Peter de Lange



Caption: *Leptospermum variable*
Photographer: Peter de Lange

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



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



Caption: Bark. Upper Hutt, eb 2011.

Photographer: Jeremy Rolfe



Caption: Stevensons Island, Lake Wanaka.

Photographer: John Barkla

Melaleuca armillaris

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4309



Caption: *Melaleuca armillaris*
close up of inflorescence

Photographer: Peter de Lange,
30 Sep 2006, Makarau



Caption: *Melaleuca armillaris*
shrub in flower - wild plants
growing on margin of estuarine
stream

Photographer: Peter de Lange,
30 Sep 2006, Makarau

Melaleuca citrina

Common Name(s):

common red bottle brush, crimson bottle brush, lemon bottlebrush, honey myrtle

Fruiting:

Hard persistent capsules

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=7689



Caption: Inflorescences on street berm shrub, Mount View Road, Whanganui

Photographer: Colin Ogle

Metrosideros albiflora

Common Name(s):

white rata, akatea

Current Threat Status (2012):

Not Threatened

Distribution:

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

Habitat:

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

Features*:

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

Flowering:

August - November

Fruiting:

January - April

Threats:

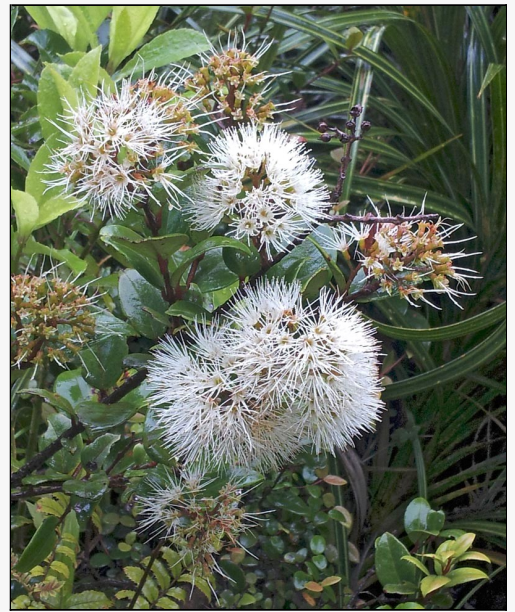
Although not threatened, *Metrosideros albiflora* is often absent from large parts of potential range. It is most common in central and western Northland and the Coromandel Peninsula. Adult vines are often browsed by possums.

*Attribution:

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

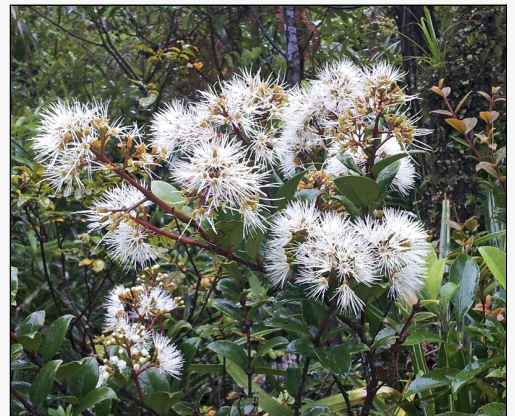
For more information, visit:

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



Caption: Waipoua.

Photographer: Peter de Lange



Caption: Waipoua.

Photographer: Peter de Lange

Metrosideros 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



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



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 ± funnelliform, 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



Caption: Auckland.

Photographer: Peter de Lange



Caption: Auckland.

Photographer: Peter de Lange

Metrosideros collina cv *Tahiti*

Common Name(s):

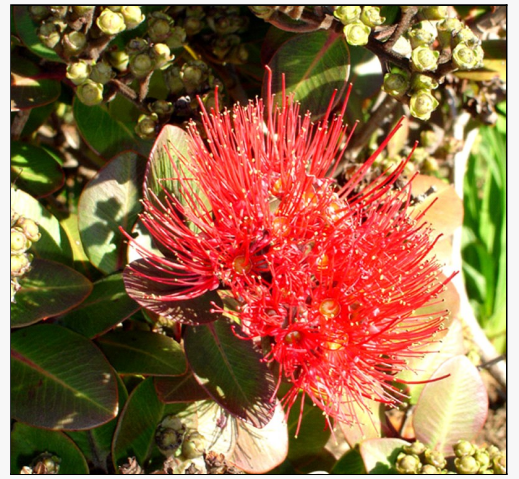
Metrosideros Tahiti

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4291



Caption: *Metrosideros collina* cv
Tahiti

Photographer: Peter de Lange



Caption: *Metrosideros collina* cv
Tahiti

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



Caption: Blue duck S.R

Photographer: Gillian Crowcroft



Caption: Blue duck S.R

Photographer: Gillian Crowcroft

Metrosideros excelsa

Common Name(s):

Pohutukawa, New Zealand Christmas tree

Current Threat Status (2012):

Not Threatened

Distribution:

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

Habitat:

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

Features*:

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

Flowering:

(August-) November-December (-March)

Fruiting:

(January-) March-April (-May)

Threats:

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

*Attribution:

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

References and further reading:

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

For more information, visit:

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



Caption: Wellington

Photographer: John Sawyer



Caption: *Metrosideros excelsa*

Photographer: Wayne Bennett

Metrosideros fulgens

Common Name(s):

rata, akatawhiwhi

Current Threat Status (2012):

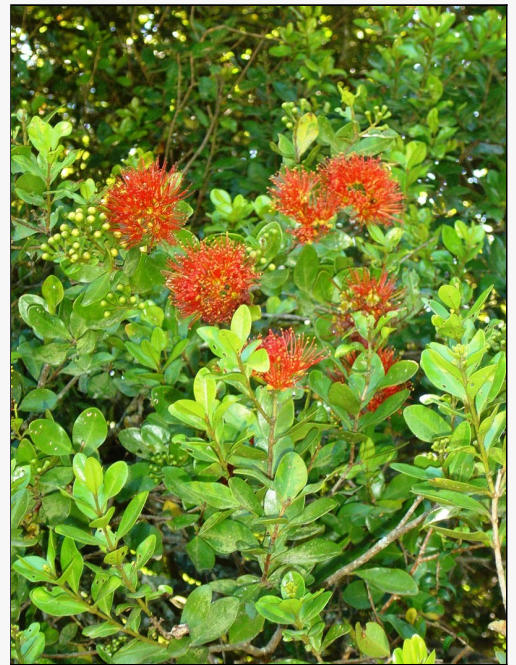
Not Threatened

Threats:

Not Threatened

For more information, visit:

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



Caption: *Metrosideros fulgens*
Photographer: Wayne Bennett



Caption: *Metrosideros fulgens*
Photographer: Wayne Bennett

Metrosideros 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:

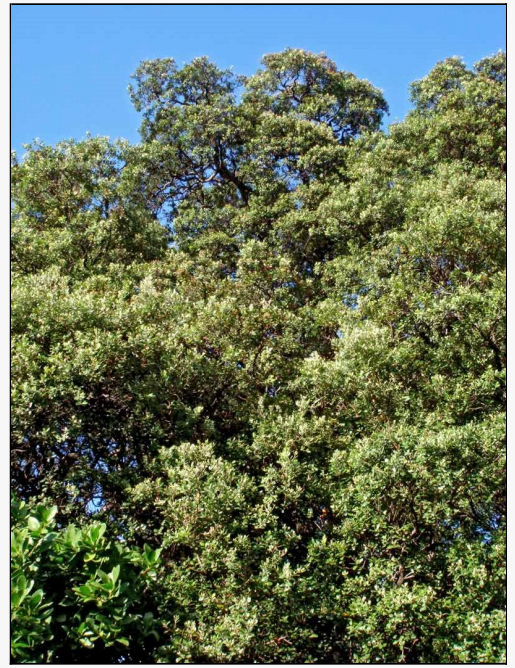
Fact sheet prepared for NZPCN by P.J. de Lange (8 June 2009). Description adapted from Allan (1961) supplemented with data obtained from herbarium specimens, fresh material and observations made on Raoul Island.

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



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 Hira-kimata (Mt Hobson). In the South Island, like all rata species, *M. parkinsonii* is impacted upon by possums.

*Attribution:

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

For more information, visit:

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



Caption: *Metrosideros parkinsonii*

Photographer: Hamish Dean



Caption: In cultivation. Nov 2006.

Photographer: Geoff Davidson

Metrosideros perforata

Common Name(s):

white rata, akatorotoro, akatea

Current Threat Status (2012):

Not Threatened

Distribution:

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

Habitat:

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

Features*:

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

Flowering:

November - March

Fruiting:

February - May

Threats:

Not Threatened

*Attribution:

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

For more information, visit:

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



Caption: Waipoua Forest, Northland

Photographer: John Sawyer



Caption: Waipoua Forest, Northland

Photographer: John Sawyer

Metrosideros robusta

Common Name(s):

Northern rata

Current Threat Status (2012):

Not Threatened

Distribution:

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

Habitat:

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

Features*:

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

Flowering:

(October-) November-January
(-February)

Fruiting:

(December-)-January
(-March)

Threats:

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

*Attribution:

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

References and further reading:

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

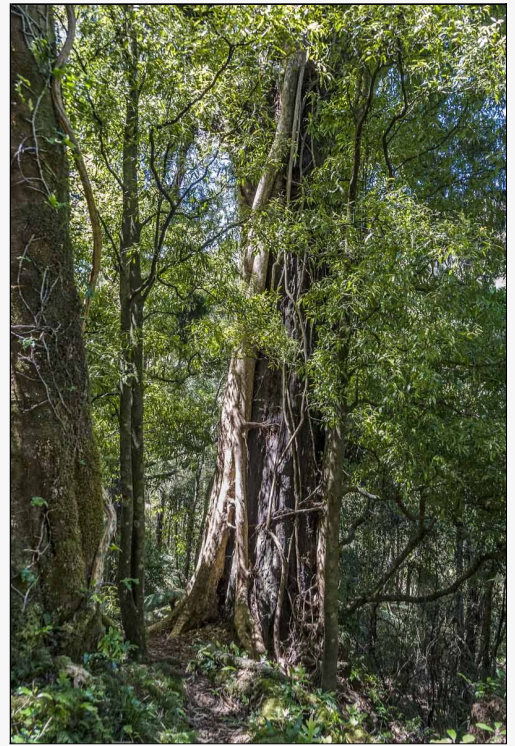
Beddie, A.D. 1953. Root behaviour in *Metrosideros*. *Wellington Botanical Society Bulletin*, 26: 2-6

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

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

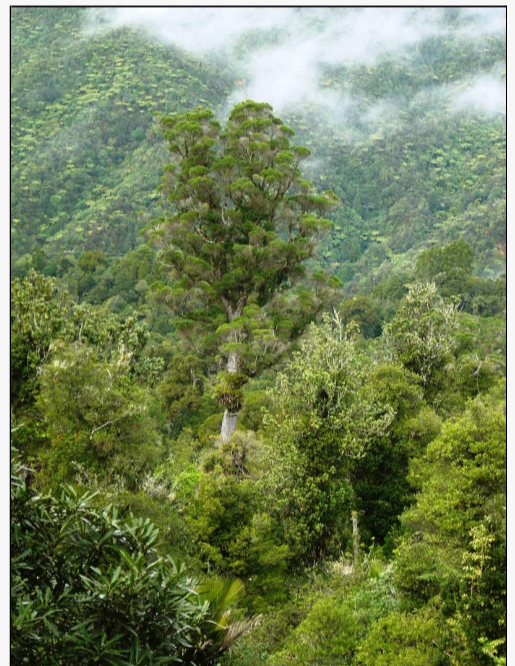
For more information, visit:

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



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

Photographer: Jeremy Rolfe



Caption: *Metrosideros robusta*
Photographer: Wayne Bennett

Metrosideros umbellata

Common Name(s):

Southern rata

Current Threat Status (2012):

Not Threatened

Distribution:

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

Threats:

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

References and further reading:

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

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

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

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

For more information, visit:

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



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



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

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



Caption: Leaf detail, Tutoko Valley, Fiordland

Photographer: Jesse Bythell



Caption: *Neomyrtus pedunculata*

Photographer: Keir Morse

Psidium cattleianum

Common Name(s):

purple guava

Current Threat Status (2009):

Exotic

Habitat:

Terrestrial.

Features:

Large shrub or tree to 6 m high. Trunk smooth, pale brown. Leaves smooth, oval to 4-5 cm long. Round fruit to 2 cm diameter becoming dark purple or sometimes yellow. edible.

Flowering:

January, February, March

Fruiting:

June-August

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2861



Caption: Robinson Crusoe Island, Chile

Photographer: John Sawyer



Caption: Robinson Crusoe Island, Chile

Photographer: John Sawyer

Syncarpia glomulifera

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4855



Caption: Whanganui. Nov 2007.

Photographer: Colin Ogle



Caption: Bark. Whanganui. Nov 2007.

Photographer: Colin Ogle

Syzygium australe

Common Name(s):

brush cherry

Current Threat Status (2009):

Exotic

Habitat:

Terrestrial.

Features:

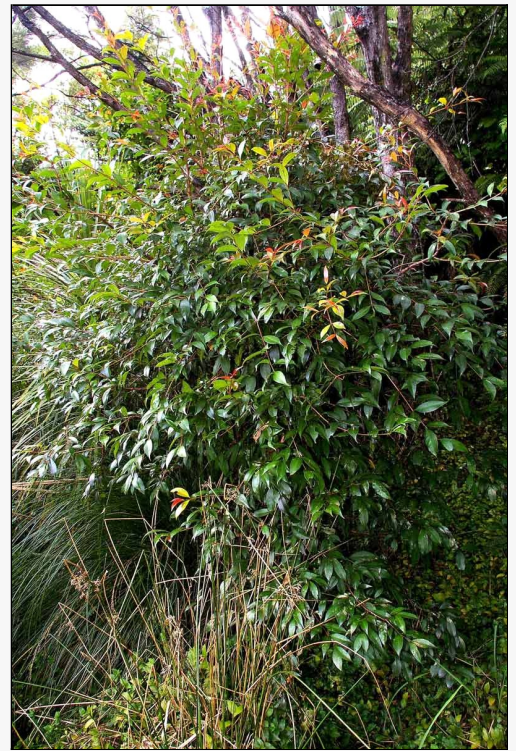
Large shrub or small tree to approx. 10m high; bark smooth, light grey; pneumatophores 0. Branchlets pendent, angular. Leaves aromatic when crushed; petiole < 10mm long. Lamina mostly 4~10 x 1~3.5cm, sometimes smaller near base of branchlets and below infl., often narrowly elliptic, sometimes elliptic or obovate, glossy, slightly undulate; veins numerous, conspicuous and parallel; base attenuate or narrowly cuneate; apex mostly cuspidate to acuminate, but sharply acute in obovate leaves. Cymes with 3~25 flowers, terminal or in the upper axils of short leafy branchlets, to about 15cm diam.; peduncles to approx. 4cm long; pedicels shorter, slender, angular. Hypanthium 4~6mm long at antithesis, obconic, generally dark red at least on exposed side; pseudopedicel hardly evident; calyx lobes 2~4mm long, broadly triangular-ovate, sometimes dark red, persistent on fruit. Petals around 4mm diam., free, suborbicular, white, caducous. Stamens to approx. 13mm long, white. Style generally = longest stamens. Fruit 1~2 x .7~1.5cm, oblong to obovoid, crimson to crimson-purple, usu. glossy. Seed 1 or few, large; cotyledons green. (Webb et al., 1988)

Flowering:

January, February, March, April, May, June, July

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2822



Caption: *Syzygium australe*
Photographer: John Smith-Dodsworth



Caption: *Syzygium australe*
Photographer: John Smith-Dodsworth

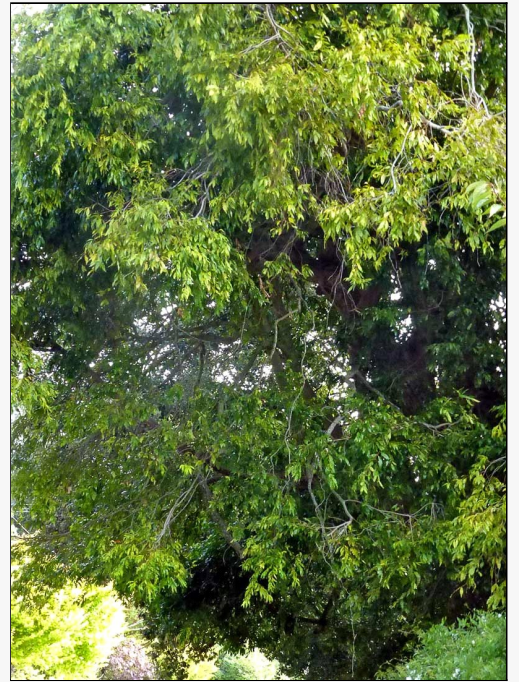
Syzygium floribundum

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4904



Caption: Whanganui. Apr 2013.

Photographer: Colin Ogle



Caption: Whanganui. Apr 2013.

Photographer: Colin Ogle

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.

Webb, C.J.; Simpson, M.J.A. 2011: *Seeds of New Zealand Gymnosperms and Dicotyledons*. Christchurch, Manuka Press.

Webb, C. J.; Sykes, W. R.; Garnock-Jones, P. J. 1988: *Flora of New Zealand. Vol. IV. Naturalised Pteridophytes, Gymnosperms, Dicotyledons*. Christchurch, New Zealand, Botany Division, D.S.I.R.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1313



Caption: *Syzygium maire*

Photographer: Wayne Bennett



Caption: Flower of *Syzygium maire*

Photographer: Wayne Bennett

Syzygium paniculatum

Current Threat Status (2009):

Exotic

Habitat:

Self establishes freely in shade, including native forest, parks, gardens

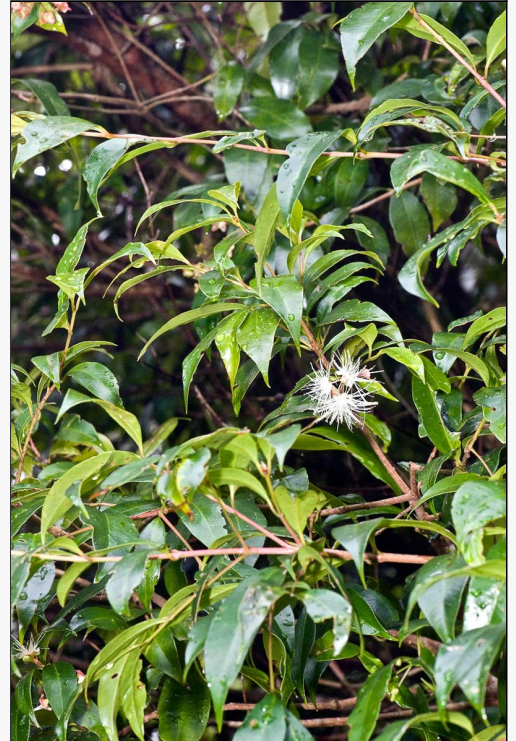
For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4856



Caption: Whanganui. Mar 2006.

Photographer: Colin Ogle



Caption: Hutt River Trail near Belmont. Mar 2011.

Photographer: Jeremy Rolfe

Syzygium smithii

Common Name(s):

lilly pilly, monkey apple

Current Threat Status (2009):

Exotic

Habitat:

Terrestrial.

Features:

Tree (6-15 m high in cultivation). Lvs very aromatic when crushed; petiole usually c. 5mm long. Lamina 4-12-(15) x 2-5-(8) cm, ovate or elliptic-ovate, coriaceous, glossy above, dotted with glands below; veins parallel and prominent below; base cuneate or narrow-cuneate; apex obtusely cuspidate or acuminate. Fls shortly pedicellate. Hypanthium (including pseudopedicel) 3-5 mm long; calyx lobes 4, deciduous. Petals 4, c. 2mm long, forming a small calyptrum, whitish. Stamens to c.3mm long whitish. Fr. subglobose to broad-oblong or obovoid, often slightly flattened, usually 1-1.7-(3) cm diam., pinkish mauve or white, with apical cavity. Seed large. (Webb et. al. 1988).

Flowering:

October, November, December, January

References and further reading:

Gardner, R. 2009. Monkey-apples: the fruit and seed of two *Syzygium* spp. (Myrtaceae). *Auckland Botanical Society Journal*, 64(1): 75-76

[Syzygium smithii - Wikipedia](#)

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2437



Caption: Thorndon, Wellington
Photographer: Clayson Howell,
Department of Conservation
(Crown copyright)



Caption: Coromandel
Photographer: John Smith-
Dodsworth

Taxandria juniperina

Common Name(s):

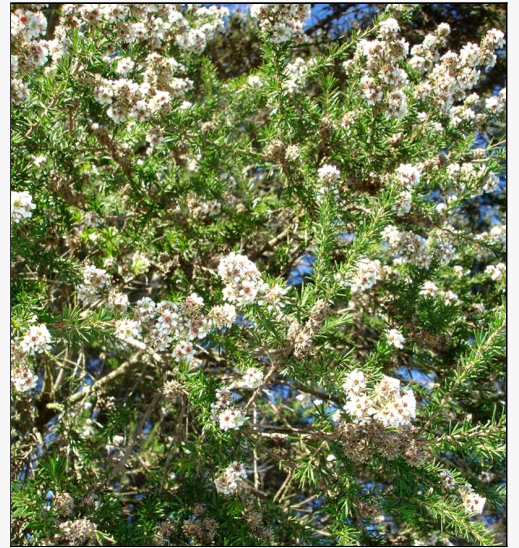
Australian cedar, juniper myrtle

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4174



Caption: *Taxandria juniperina*
Photographer: Peter de Lange



Caption: Self-established seedling
in garden rockery; 115 Mount View
Road, Whanganui
Photographer: Colin Ogle

Tristaniopsis laurina

Common Name(s):

kanooka, water gum

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4215



Caption: *Tristaniopsis laurina*

Photographer: Peter de Lange

Ugni molinae

Common Name(s):

Chilean guava

Current Threat Status (2009):

Exotic

Habitat:

Terrestrial. Thrives in low shrubland and fernland on peaty soils on the Chathams.

Features:

Aromatic bushy shrub, 1-2 m high, often suckering profusely. Shoots often reddish when young, later deep brown, densely clothed in short hairs at first. Small ovate leaves shining green with reddish margins. Small pale pink flowers hang down singly or in small clusters. The globular fruit are obviously stalked and reach 14 mm diameter, becoming dark purplish red when ripe, the flesh is white and sweet.

Flowering:

November, December, January, February, March, April.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2595



Caption: Robinson Crusoe Island, Chile

Photographer: John Sawyer



Caption: Robinson Crusoe Island, Chile

Photographer: John Sawyer

Definitions of botanical terms

A glossary has been provided below with definitions for many of the botanical terms used in the species descriptions.

Glossary

Term	Definition
Abaxial	Facing away from the stem of a plant (especially denoting the lower surface of a leaf).
Acerose	Narrow with a sharp stiff point.
Achene	A simple, dry, one-seeded (one-celled) fruit
Acicular	Needle-shaped.
Acidic	Having a low pH, opposite of basic or alkaline.
Acroscopic	Pointing towards, or on the side of, the apex
Acuminate	Gradually tapered to a point. Sharply pointed.
Acute	Pointed or sharp, tapering to a point with straight sides.
Adnate	Fusion of unlike parts, e.g. stamens fused to petals.
Adventive	A plant that grows in the wild in New Zealand but which was introduced to the country by humans.
Agglutinated	Stuck together.
Allelopath	An organism that releases compounds that are toxic to other species.
Allelopathy	The release by an organism of compounds that are toxic to other species.
Alternate	Attached singly at each node but changing from one side of a stem to the other.
Alveolate	Honeycombed with ridged partitions.
Amplexicaul	clasping or surrounding the stem
Anamorph	Asexual fruiting stage, usually of an ascomycete fungus.
Anastomosing	Rejoining after branching, as in some leaf veins.
Annual	A plant that completes its complete life cycle within the space of a year
Annual evergreen	Plants that lose their over-wintering leaves rapidly in the first half of the growing season. Annual evergreens never present a leafless appearance, but are closer in a functional sense to a deciduous plant than they are to multi-annual evergreens.
Annulus	Line of thickened cells that governs the release of spores from a sporangium
Anterior	Towards the front.
Anther	The pollen-bearing portion of the stamen.
Antheridium	Male reproductive organ formed on the prothallus of a fern
Anthesis	When the flower is fully developed and functioning. The time of pollination or bloom.
Apex	Tip; the point furthest from the point of attachment.
Apices	Plural of apex. Tip, the point furthest from the point of attachment
Apiculate	Bearing a short slender and flexible point.
Apiculus	A small, slender point.
Apomixis	A form of reproduction whereby seed is formed without the usual mode of sexual fusion
Appressed	Pressed against another organ or surface.
Aquatic	Growing, or living in, or frequenting water. Applied to plants and animals and their habitats. Opposite of terrestrial (land living).
Archegonium	Female reproductive organ of a fern formed on the prothallus
Arcuate	Curved into an arch.
Aril	An often fleshy appendage on the outside of a seed.
Artificial thinning	Selectively removing vegetation to create gaps to facilitate natural invasion of native plants, or to plant later successional plants.
Ascending	Growing obliquely upward.
Asexual	Vegetative reproduction, lacking sexual involvement by sperm or egg cells
Attenuate	Narrowing gradually
Auricle	A small, ear-shaped appendage.
Auriculate	Bearing a small, ear-shaped appendage.
Autogamous	Self-fertilising flowers.
Autotrophic	Of or relating to organisms (as green plants) that can make complex organic nutritive compounds from simple inorganic sources by photosynthesis
awn	A stiff or bristle like projection often from the tip or back of an organ
Axil	The upper angle between the leaf and the stem.
Axis	The longitudinal supporting structure around which organs are borne, e.g., a stem bearing leaves.
Barbellate	Barbed, having or covered with protective barbs or quills or spines or thorns or setae
Basal	At the base.
Basisopic	Pointing towards the base
Beak	A prominent extension of an organ
Bifid	Deeply split into two lobes.
Bifurcate	Divided into two.

Term	Definition
Biosecurity	Preventing, eradicating, controlling and managing risks posed by pests and diseases.
Biotic	Pertaining to the living parts of the environment
Bipinnate	With each primary pinna divided to the midrib into a secondary pinna
Biserrate	Doubly serrate.
Blade	The flattened part of a leaf.
Blunt	Not pointed at the ends
Bog	A quagmire covered with specialised plants including sphagnum moss, grasses, sedges, rushes, sundews, umbrella ferns and other plants; has wet, spongy ground, a marsh-plant community on wet, very acid peat. Fed only by rainfall.
Bottleneck	A genetic term; refers to the fact that in smaller populations there could be lower genetic variability
Brachyblasts	Short shoots
Bract	A reduced leaf or leaf-like structure at the base of a flower.
Bracteate	Bearing bracts: leaves or leaf-like structure reduced at the base of a flower.
Bracteolate	With small bracts.
Bracteole	A small bract.
Bracteoles	Bracts directly below the flower
Brevideciduous	Brief (1 month or less) loss of most leaves from the canopy just before flowering or during flushing of a new cohort of leaves.
Bryophyte	Plant group including mosses, liverworts and hornworts
Bryophytes	Plant group including mosses, liverworts and hornworts
Bulbil	A bud produced vegetatively on the stem or frond that is capable of breaking off and growing into a new plant
Bullate	With rounded projections covering the surface as if blistered
Caespitose	Growing in dense tufts
Calli	Circular, warty, stalked thickenings commonly found on the lip (labellum) of the orchid (plural of callus).
Callose	Hardened or thickened.
Callus	Stalked thickening on the lip (labellum) of an orchid.
Calyx	The group of sepals, or outer floral leaves, of a flower
Campanulate	Bell-shaped.
Canaliculate	With longitudinal channels or grooves.
Canopy	The uppermost cover formed by the branches and leaves of trees or the spread of bushes, shrubs and ground covers.
Canopy closure	Stage where canopies of shrub and tree species meet.
Canopy manipulation	Selectively removing vegetation to create gaps to facilitate natural invasion of native plants, or to plant later successional plants.
Capillary	Hair-like
Capitula	Plural of capitulum: A dense head-like inflorescence of many flowers as occurs in most Asteraceae (daisies)
Capitulum	A dense head-like inflorescence of many flowers as occurs in most Asteraceae (daisies)
Capsule	A dry fruit formed from two or more fused carpels that splits open when ripe.
Carbon sinks	Carbon locked away, or sequestered e.g. by trees
Carpel	One unit of the female part of a flower that consists of a basal seed-bearing ovary joined to a receptive stigma by a stalk-like style.
Cauda	Tail-like appendage. (pl. caudae; adj. caudate)
Caudex	The axis of a woody plant, esp. a palm or tree fern, comprising the stem and root.
Cauline	Belonging to the stem, as in cauline leaves emerging from the stem.
Cerise	Bright or deep red.
Chartaceous	Having a papery texture.
Chlorophyll	The green pigment of plants.
Chlorotic	Lacking chlorophyll, therefore yellowish, suffering from chlorosis.
Cilia	Short small hair-like structures on a cell or microorganism
Ciliate	With small hairs (cilia).
Ciliolate	Diminutive of ciliate, i.e., having very small hairs
Cladode	Flattened stem with the function of a leaf
Cladodes	Usually flattened, photosynthetically active branches, these may be leaf-like (e.g., Phyllocladus) or branch-like (e.g., Carmichaelia)
Clavate	Club-shaped, gradually widening towards apex.
Cleft	Having indentations that extend about halfway to the center, as in certain leaves.
Cleistogamous	Flowers that self-fertilise without opening.
Coherent	Sticking together of like parts.
Column	Stamen and stigmas fused to form a single organ.

Term	Definition
Columnar	Shaped like a column
Composite	many small flowers tightly packed together e.g., daisy flowers.
Compound	Composed of several similar parts (cf simple)
Concave	Curved inward.
Concolorous	Of the same colour.
Conical	Cone-shaped.
Connate	Fusion of like parts.
Conspecific	Individuals of the same species.
Cordate	Heart-shaped with the notch at the base.
Coriaceous	Leather-like; thick, tough, and somewhat rigid.
Corolla	The whorl of petals of a flower.
Corymb	Modified raceme where stalks of lower flowers are elongated to same level as the upper flowers.
Cosmopolitan	A species or other taxonomic group that is distributed widely throughout the world.
Costa	The midrib
Crenate	With rounded teeth (bluntly toothed) along the margin.
Crisped	Margin tightly wavy or crinkled, curled or wavy.
Cristate	With a crest.
Crown	The growing point of an upright rhizome or trunk. This usually produces a tuft or ring of fronds.
Crura	The two small projections at the mouth of a utricle in Carex
Cucullate	Hood-shaped.
Culm	The erect stem of a grass.
Cuneate	Wedge-shaped.
Cupular	Cup-shaped.
Cuttings	Stems and/or leaves taken from plants for propagation
Cyathium	A cup-like structure that surrounds the inflorescence in Euphorbia
Cyme	Inflorescence at the terminus of a branch and where new flowering branches emerge laterally below the flower.
Cytorace	Populations (or infraspecific taxa) that differ in chromosome number or chromosome morphology, e.g., <i>Nematoceras trilobum</i> agg. has two cytoraces, a diploid and a tetraploid (in which the chromosomes are doubled).
Cytotype	Populations (or infraspecific taxa) that differ in chromosome number or chromosome morphology, e.g., <i>Nematoceras trilobum</i> agg. has two cytotypes, a diploid and a tetraploid (in which the chromosomes are doubled).
Deciduous	Marked leaflessness in winter, and greater than 90% leaves lost by beginning of spring flush.
Decrescent	Diminishing.
Decumbent	With a prostrate or curved base and an erect or ascending tip.
Decurrent	Attached by a broadened base.
Decurved	Curved downward.
Deflexed	Bent abruptly downward.
Dehiscence	The time of opening at maturity to release the contents, e.g., a capsule releasing the seeds.
Dehiscent	Splitting open at maturity to release contents (of a fruit).
Deltoid	Shaped broadly like an equilateral triangle.
Dentate	Toothed along the margin with the teeth pointing outward, not forward.
Denticles	minute teeth
Denticulate	having a very finely toothed margin
Dichotomous	Divided into two equal branches.
Digitiform	Finger-like.
Dioecious	Having male and female flowers on separate plants of the same species.
Diploid	With two complete sets of chromosomes in each cell.
Disarticulating	Separating at a joint.
Discoid	Disc-shaped.
Disjunct	A species or other taxonomic group that occupies areas that are widely separated and scattered and therefore have a discontinuous distribution.
Distal	Toward the apex, away from the point of attachment (cf. proximal).
Distichous	In two rows on opposite sides of the axis.
Divaricating	Branching at a very wide angle with stiff intertwined stems.
Domatia	small structures on the lower surface of a leaf in some woody dicotyledons, located in the axils of the primary veins and usually consisting of depressions partly enclosed by leaf tissue or hairs.

Term	Definition
Dorsal	Of the back or outer surface relative to the axis. (cf. ventral)
Drupe	A stone fruit, the seed enclosed in a bony covering (endocarp) which is surrounded by a + fleshy layer (mesocarp)
Early successional species	Plants which are able to colonise an open area after disturbance but which are often temporary and are replaced by taller plants in time and shaded out.
Echinate	having sharply pointed spines or bristles.
Ecological district	A characteristic landscape and biological community defined in the PNA (Protected Natural Area) programme.
Ecological restoration	Attempt to reinstate original (pre-disturbance) state of a habitat, plant community or ecosystem.
Ecosourced	Plants sourced from seed collected from similar naturally growing plants in the area of the planting site.
Ecosourcing	Using native plants grown from locally grown seeds. Eco-sourced plants help to preserve the ecological distinctiveness of an area, and ecosourced plants fare better and are adapted to survive in the local conditions.
Eglandular	Without glands.
Elaiosome	Fleshy, oil-rich structure attached to seed that attracts ants which act as dispersers.
Ellipsoid	Elliptic in long section and circular in cross-section.
Elliptic	Broadest at the middle
Emarginate	With a notch at the apex.
Emarginated	Having a shallow notch at the tip, as in some petals and leaves.
Emergent	In an aquatic sense - wetland herbs that are rooted in the substrate below water level, but carry leaves and stems above the water level e.g. rushes and raupo. Found on the shallow margins of lakes, ponds and waterways. In a forest sense - tree that is appearing above the surrounding canopy.
Emergent marginals	An aquatic plant having most of its structure above water. Other aquatic plants are submerged or floating.
Endemic	Unique or confined to a place or region, found naturally nowhere else.
Endophyte	An endosymbiont (usually a bacterium or fungus) that lives within a plant for at least part of its life without causing any apparent disease.
Endophytes	Endosymbionts (usually bacteria or fungi) that live within plants for at least part of their lives without causing any apparent disease.
Endosperm	The nutritive tissue of a seed, consisting of carbohydrates, proteins, and lipids.
Enrichment planting	Returning to a revegetation site and creating gaps, or filling existing gaps, with different plants of plants, usually later successional plants which may not have survived being planted in the first phases of the project.
Ensiform	Sword shaped
Entire	Smooth. Without teeth, notches or divisions.
Entomophilous	Pollinated by insects.
Epicalyx	Calyx-like structure outside, but close to, the true calyx.
Epigeal	Growing on or close to the ground or emerging from the ground after germination (often used for cotyledons).
Epiphyte	A plant that grows upon another plant but is not parasitic and does not draw nourishment from it.
Epiphytic	Growing upon another plant but not parasitic and not drawing nourishment it
Erose	Irregularly toothed, as if gnawed.
Estuarine	Pertaining to the meeting of freshwater and seawater wetlands.
Ethnobotany	The study of people's classification, management and use of plants.
Eusporangia	Sporangia that arise from groups of epidermal cells
Evanescent	Lasting a very short time or running a short distance.
Ex situ	Away from the place of natural occurrence.
Ex-situ	Maintenance of plants as live specimens or propagules in cultivation as insurance against the loss of wild populations and as source for material for translocation.
Excurrent	Having the axis prolonged to form an undivided main stem or trunk (as in conifers).
Extravaginal	Outside an enclosing sheath
Falcate	Hooked or curved like a sickle.
Fastigate	Branches erect and close to central axis.
Fen	A type of wet land that accumulates peat deposits. Fens are less acidic than bogs, deriving most of their water from groundwater rich in calcium and magnesium.
Ferruginous	Rust-like (a colour term)
Fertile frond	Fronds that bear sporangia.
Filamentous	Resembling a filament.
Filiform	Thread like, resembling a filament.
Filiramulate	Branching at a very wide angle with stiff intertwined stems.
Fimbriae	Plural of fimbria: Fringe. A fimbria is composed of many fimbriae (individual hair-like structures).
fimbriate	With fringes.
Flabellate	Fan shaped.
Flaccid	Limp, not rigid, flabby.
Flange	A projecting rim.

Term	Definition
Flexuose	With curves or bends.
Floccose	Having tufts of soft woolly hairs
Floret	A small flower, usually one of a cluster - the head of a daisy for example.
Foliaceous	Leaf-like.
Foliate	Having leaflets.
Founder effect	When a small number of plants (and therefore their genes) from a larger population are selected some genetic information is lost.
Fronnd	A leaf, the complete leaf of a fern including the stipe and lamina
Fulvous	Orange–yellow.
Funneliform	Funnel-shaped.
Fusiform	Broadest near the middle and tapering toward both ends.
Galea	Helmet- or hood-shaped.
Galeate	Shaped like a helmet or hood.
Gametophyte	A plant that produces sperm and egg cells and in which sexual reproduction takes place - in ferns this is known as the prothallus
Gene pool	The mixture of all genes and gene variations of a group or population.
Genetic diversity	The variety of genes in a plants or populations.
Genetic variation	Differences displayed by individuals within a plant which may be favoured or eliminated by selection.
geniculate	abruptly bent
Genus	A taxonomic rank of closely related forms that is further subdivided in to species (plural = genera). In a scientific name (e.g., <i>Sicyos australis</i>), the first word is the genus, the second the species.
Gibbous	Swollen or enlarged on one side, as in a gibbous moon.
Glabrescent	Lacking hair or a similar growth or tending to become hairless
Glabrous	Without or devoid of hairs, smooth.
Gland	A structure that secretes a sticky or oily substance.
Glandular	A structure that secretes a sticky or oily substance.
Glaucous	Covered with a fine, waxy, removable powder that imparts a white or bluish cast to the surface.
Gley	A soil prone to seasonal inundation.
Globose	Globe-shaped.
Glume	One of two bracts at the base of a grass spikelet.
Groundwater	Groundwater is the water beneath the surface that can be collected with wells, tunnels, or drainage galleries, or that flows naturally to the earth's surface via seeps or springs. Groundwater is the water that is pumped by wells and flows out through springs.
Gymnosperm	Plants in the class Gymnospermae that have seeds which are not enclosed in an ovary.
Gynodioecious	A species population containing plants that produce bisexual (perfect) flowers, and plants that produce only female (pistillate) flowers.
Gynoeceium	The female reproductive organs of a flower; the pistil or pistils considered as a group. Means literally "womans house" i.e., the overall structure that contains the female sex organs
Hastate	Spear like. Shaped like an arrowhead, but with basal lobes pointing outward rather than downward.
Haustorium	The absorbing organ of a parasite or hemiparasite
Hemi–parasite	Obtains water and nutrients from the roots of other plants but also manufactures food through photosynthesis.
Hemi–parasitic	Obtaining water and nutrients from the roots of other plants then manufacturing food through photosynthesis.
Herbarium	The place where collections of dried/pressed plants are kept.
Hermaphrodite	Having both male and female sexual characteristics and organs.
Heteroblastic	Exhibiting differences in leaf shapes or forms in juvenile and adult phases of the plant.
Heteroblasty	The state of being heteroblastic (i.e., exhibiting differences in leaf shapes or forms in juvenile and adult phases of the plant).
Hirsute	Hairy.
Hyaline	Membranous, thin and translucent.
Hybrid	An individual that is the offspring of a cross between two different varieties or species.
Hybridise	Breeding with a member of a different plant or type.
Hydrophyte	A plant species adapted to growing in or on water or in wet situations. Aquatic or semi-aquatic.
Hymenium	The fertile, spore–bearing layer of a fruitbody.
Hypanthium	A ring–like, cup–shaped, or tubular structure of a flower on which the sepals, petals, and stamens are borne.
Imbricate	Overlapping.
imbricating	Overlapping.
Imparipinnate	Odd–pinnate, a leaf shape; pinnate with a single leaflet at the apex.
In-situ	On site conservation relating to the maintenance of plants in the wild.
Inbreeding	Genetic similarity in offspring of closely related individuals.

Term	Definition
Incoherent	Not sticking together.
Incursion	Entrance of a pest into an area where it is not present
Indumentum	A covering of fine hairs (or sometimes scales)
Indusia	Plural of indusium, a membrane covering a sorus of a fern
Indusium	A thin tissue that covers the sorus in many ferns. Plural: indusia.
Inflorescence	The arrangement of flowers on the stem. A flower head.
Infundibuliform	Funnel-like.
Interkeel	The space between the keel and the leaf blade
Internode	The part of an axis between two nodes; the section of the stem between leaves.
Internodes	Part of a stem between two nodes.
Intramarginal	Within or near the margin.
Involucral bracts	The scales surrounding the flower head or capitula.
Involucre	A group of bracts surrounding a flower head.
Involute	With margins rolled inward toward the upper side.
Irritable	Responding to touch.
Jugate	Paired.
Juvenile	A plant of non-reproducing size.
Keel	A prominent or obvious longitudinal ridge (as in a boat).
Labellar	Pertaining to the labellum: a lip; in orchid flowers referring to the middle petal which usually differs in size, shape or ornamentation from the two lateral petals.
Labellum	A lip; in orchid flowers referring to the highly modified middle petal which usually differs in size, shape or ornamentation from the two lateral petals.
Lacinia	A jagged lobe.
Laciniae	Jagged lobes.
Laciniate	Cut into narrow, irregular lobes or segments.
Lacustrine	Of or having to do with a lake, of, relating to, or formed in lakes, growing or living in lakes.
Lamina	The expanded flattened portion or blade of a leaf, fern frond or petal.
Lanceolate	Lance-shaped; of a leaf several times longer than wide with greatest width about one third from the base, tapering gradually to apex and more rapidly to base
Lateral	On or at the side.
Lax	With parts open and spreading, not compact.
Laxly	With parts open and spreading, not compact
Leaflet	One section of a compound leaf.
Lemma	The lower of two bracts enclosing the flower in grasses.
Lenticillate	Bark that is covered in fine lenticles (breathing pores)
Ligulate	Strap-like, tongue-shaped
Ligule	The membrane between the leaf and the stem of a grass; the "petal" of a ray floret in a composite inflorescence
Linear	Long and narrow with more or less parallel sides.
Littoral	Occurring at the border of land and sea (or lake). On or pertaining to the shore. The shallow sunlit waters near the shore to the depth at which rooted plants stop growing.
Lobe	A recognisable, but not separated, rounded division or segment of a leaf or pinna. Used to describe ferns and leaves in <i>Cotula</i> and <i>Leptinella</i> .
Lobed	Part of a leaf (or other organ), often rounded, formed by incisions to about halfway to the midrib.
Lobule	A small lobe or sub-division of a lobe
Lustrous	Glossy, shiny.
Lycophytes	Seedless vascular plants that belong to the phylum Lycophyta (characterised by microphylls -primitive leaves found in ancient plants).
Lyrate	Pinnatifid or pinnatisect terminal lobe much larger than lower lobes.
Maculate	Blotched or spotted.
Mangrove	Coastal wetland dominated by Manawa or mangrove <i>Avicennia marina</i> var. <i>resiifera</i> . Northern New Zealand only, salt marsh replaces it further south.
Margin	The edge or border of a leaf
Marine	Pertaining to the sea and saltwater systems.
Marsh	A tract of wet land principally inhabited by partially-submerged herbaceous vegetation. Has fewer woody plants than swamplier habitats.
Mealy	Dry, powdery, crumbly.
Median	In the middle.
Membranous	Very thin, like a membrane.
Mid-lobe	The middle part into which a leaf is divided.
Midrib	The central or principal vein of a leaf or pinna of a fern.
Mire	Synonymous with any peat-accumulating wetland. Term covers bogs and peaty swamps, fens, carr, moor, muskeg and peatland. Term excludes marsh which is non-peat forming.

Term	Definition
Molecular techniques	Where proteins and genes are used to investigate plant relationships
Monitoring	Recording of quantitative data over time to document changes in condition or state of species or ecosystems.
Monoecious	Having male and female flowers on the same plant of the same species.
Montane	Land between 300 and 800 metres above sea level.
Mucronate	Tipped with a short, sharp, point.
Mucronulate	Having a very small mucro; diminutive of mucronate.
Multi-annual evergreen	Overlapping annual cohorts of leaves always present.
Multifid	Cleft into many lobes or segments
Multiseptate	With many septa.
muricate	Rough with short, hard points like the shell of Murex, a genus of tropical sea snails with elaborately pointed shells.
Mycorrhiza	A symbiotic relationship between a fungus and a plant.
Mycorrhizal associations	Symbiotic association between fungi and plant roots which assists plant health by allowing increased ability for uptake of nutrients and promote plant growth.
Napiform	A long swollen but tapering root – like a parsnip, or carrot.
Native	Naturally occurring in New Zealand (i.e., not introduced accidentally or deliberately by humans).
naturalised	Referring to plants that have escaped from cultivation (including gardens or forest plantations) and can now reproduce in the wild (without human assistance)
Nectary	Organ that produces nectar.
Nerve	Prominent vein or rib.
Nerves	Strands of conducting and usually strengthening tissue in a leaves or similar structures
Net veins	Veins that repeatedly divide and re-unite.
Net venation	Feather-like or hand-like venation on a leaf.
Nival	Growing at high altitudes. From Latin: nivalis, snowy etc. from nix, nivis, snow.
Node	The point at which leaves, branches or roots arise on a stem.
Ob-	Prefix meaning inverted, in reverse direction.
Obcordate	Heart shaped with the notch at the apex.
Oblanceolate	Tapering and widest towards the apex or inversely lanceolate.
Oblique	Slanting; of a leaf, larger on one side of the midrib than the other, in other words asymmetrical.
Oblong	Rectangular.
Obovate	Roughly elliptical or reverse egg shaped and widest near the apex (i.e., the terminal half broader than the basal half).
Obtuse	Blunt or rounded at the apex, with the sides meeting at an angle greater than 90°.
Operculate	With a small lid.
Opposite	A pair of organs attached at nodes in pairs on either side of a stem or axis.
Orbicular	Almost or approximately circular.
Outbreeding depression	A reduction in vigor of offspring from distant parents. It can occur when a locally adapted population is moved and mixed with plants adapted to different conditions.
Outer canopy deciduous	Marked reduction in leaf number in the outer canopy in exposed high light environments over winter.
Oval	Planar, shaped like a flattened circle, symmetrical about both the long and the short axis; about twice as long as broad, tapering equally both to the tip and the base. Synonymous with elliptical.
Ovary	Part of a flower containing the ovules and later the seeds.
Ovate	Egg-shaped and widest at base.
Ovoid	Oval; egg-shaped, with rounded base and apex.
Pakihi	A term which in its strict sense refers to open clears within forest dominated by low scrub and rushes. However, more usually used to refer natural and induced wetlands and their associated shrublands. A vernacular most frequently used in the West Coast for impoverished soils and their associated peats, left after forest has been cleared
Palea	The small upper bract enclosing the flower of a grass
palea	1. The upper of the two bracts that enclose each floret in a grass spikelet. 2. A small bract at the base of a disc floret in some plants of the composite family. 3. Scales on various parts of ferns (referred to as paleate or paleaceous). From the Latin word for 'chaff'.
paleae	Plural of palea, from the Latin word for 'chaff'. 1. The upper of the two bracts that enclose each floret in a grass spikelet. 2. A small bract at the base of a disc floret in some plants of the composite family. 3. Scales on various parts of ferns (referred to as paleate or paleaceous).
Palmately	Radiating from a point, as fingers radiating from the palm of a hand.
Palmatifid	Deeply divided into several lobes arising from more or less the same level.
Palmatisect	Intermediate between palmate and palmatifid, i.e. the segments are not fully separated at the base; often more or less digitate.
Palustrine	Pertaining to wet or marshy habitats. Term covers mires and marshes
Pandurate	Fiddle-shaped.
Panicle	Highly branched (multiple raceme).

Term	Definition
Papilla	A short rounded projection.
Papillae	A soft, fleshy projection, usually small and nipple-like.
Papillate	With short rounded projections.
Papillose	Warty, with short rounded projections or gland-dotted
Parallel venation	Veins are parallel along leaf.
Parasite	An organism that derives all its nourishment from its host.
Patent	Spreading or expanded, e.g., spreading petals.
Peat	A mass of partially carbonised plant tissue formed by partial decomposition in water of various plants and especially of mosses of the genus Sphagnum, widely found in many parts of the world, varying in consistency from a turf to a slime used as a fertiliser, as stable litter, as a fuel, and for making charcoal. Partially carbonized vegetable matter saturated with water; can be used as a fuel when dried. A type of soil deriving from dead organic material situated in a wet area, where the reduced amount of [[oxygen available in the wet conditions results in the organic material not decomposing as much as it usually would do so in the presence of more oxygen. Used in growing media. Represents an important carbon sink –drainage of peat releases large amounts of carbon (CO ₂) to the atmosphere.
Pedicel	The stalk of a single flower in an inflorescence or fruit (either in a cluster or existing singularly).
Peduncle	The stalk of a solitary flower or the main stalk of an inflorescence or flower cluster.
Pedunculate	Describing fruits, which are borne on a stalk (a peduncle).
Pellucid	Transparent.
Peltate	Shield-like, with the stalk attached well inside the margin
Pendent	Hanging down from its support
Pendulous	Hanging or drooping.
Penicillate	With a tuft of hairs at the end, like a brush.
Perennial	A plant lasting for three seasons or more
Perianth	A collective term for the calyx (sepals or tepals) and corolla (petals) of the flower, especially when these are indistinguishable
Petal	Part of flower inside the sepals; usually coloured.
Petiolate	Having a petiole.
Petiole	Leaf stalk.
phloem	The vascular tissue in land plants that is primarily responsible for the distribution of sugars and nutrients manufactured in a shoot.
Photopoint	A monitoring technique where repeat photos are taken of the same scene from the same point over a period of time in order to quantify changes.
Pilose	Bearing long, soft hairs.
Pinna	A segment of a divided lamina that is classified as primary, secondary or tertiary according to the degree of dissection of the lamina.
Pinnae	Divisions of a pinnate leaf
Pinnate	With leaflets arranged regularly in two rows on either side of a stalk as in a feather; the lamina on a fern is divided into separate pinnae
Pinnatifid	Pinnately lobed, cleft more than halfway to the midrib. Not cleft all the way to the rachis.
Pinnatisect	Pinnately divided almost to midrib but segments still confluent.
Pioneer	Plant species are hardy species that should be planted first to establish a good canopy cover that restricts weed growth and promotes natural regeneration. In natural ecosystems these are the first plants to arrive and grow on a site.
Pistil	The female reproductive organ of a flower, consisting of an ovary, style, and stigma.
Pistillate	A flower with one or more pistils, but no stamens.
Plano-convex	Flat on one side, convex on the other.
Plumose	Feathery.
Podzol	Infertile, acidic soil, strongly leached to form a whitish-grey subsoil underlain by a layer enriched in iron, aluminium and organic matter; usually under forest in a wet temperate climate.
Pole	A subcanopy size individual with a long thin trunk and foliage tuft of a potential canopy tree.
Pollinia	Compact masses of orchid pollen.
Population enhancement	Increasing a population for a specific biological purpose, e.g., when a species is already present in an area but extra individuals are added to address a sex imbalance.
Porrect	Extending forward.
Procumbent	Lying and flat along the ground but not rooting
Propagate	To reproduce a plant by sexual (i.e., from seed) or asexual (e.g., from cuttings) means.
Prostrate	A general term for lying flat along the ground. This includes procumbent (that is lying and flat along the ground but not rooting) and decumbent (with a prostrate or curved base and an erect or ascending tip).
Provenance	The place of origin (of a plant that is in cultivation).
Proximal	Toward the base or point of attachment (cf. distal).
Pseudobulb	Thickened surface stem; usually looking like a bulb.
Pseudoterminal	Falsely terminal – as in a bud which appears to occupy a terminal position but does not

Term	Definition
Puberulent	Minutely clad in short, soft hairs
Pubescence	Covering of soft, fine hairs
Pubescent	Covered in short, soft hairs.
Pungent	Ending in a stiff sharp point
Pustule	Small blister-like elevation.
Quadrante	Square, rectangular.
Raceme	An unbranched, elongated inflorescence with pedicellate flowers maturing from the bottom upward i.e., flowers attached to the main stem by short stalks.
Rachis	the axis of an inflorescence or of a compound leaf
Ray	An outer ring of strap-like florets in the head of Asteraceae (daisy) flowers.
Re-introduction	Translocating wild or cultivated individuals to sites where the taxon has been known to occur in the past, but from which it has disappeared.
Recurved	Curved backward.
Reflexed	Bent back on itself
Reniform	Kidney shaped.
Repend	With a slightly wavy margin.
Replum	The outer structure of a pod in which the valves have dehisced (persists after the opening of the fruit)
Restiad	Area dominated by rush-like plants (collectively known as restiads) of the family Restionaceae. Includes Chatham Island and North Island Sporodanthus and oiioi (<i>Apodasmia similis</i>)
Retorse	Pointing backward.
Retuse	A shallow notch at the rounded or blunt apex of a leaf.
Rhizoid	Any of various slender filaments that function as roots in mosses and ferns and fungi.
Rhizomatous	With underground creeping stems.
Rhizome	An underground stem (usually spreading horizontally or creeping) or short and erect.
Rhombic	Diamond-shaped.
Rhomboid	Diamond shaped, nearly rhombic.
Riparian	Relating to or living or located on the bank of a natural watercourse (as a river) or sometimes of a lake or a tidewater.
Riparian margin	Refers to the edges of streams, rivers, lakes or other waterways.
Riparian plants	Refers to plants found growing near the edges of streams, rivers or other waterways.
Riparian zone	A strip of land next to streams, rivers, and lakes where there is a transition from terrestrial (land vegetation) to aquatic (water) vegetation. Also known as "berm".
Riverine	Pertaining to rivers, streams and such like flowing water systems.
Rootstock	A short, erect, underground stem.
Rosette	A radiating cluster of leaves.
Rostellum	In orchids, a modified stigma that prevents self-fertilisation.
Rosulate	A dense radiating cluster of leaves.
Rugose	Wrinkled.
Rugulose	Having small wrinkles.
Runcinate	Sharply pinnatifid or cleft, the segments directed downward.
Runner	A trailing stem that roots at the nodes.
Rupestral	Growing on rocks.
Rushes	A group of distinctive wetland plants. They have solid stems (grasses have hollow stems), true rushes <i>Juncus</i> sp. have rounded leaves.
Sagittate	Shaped like the head of an arrow; narrow and pointed but gradually enlarged at base into two straight lobes directed downwards; may refer only to the base of a leaf with such lobes; cf. hastate.
Salt marsh	A coastal wetland, with specialized salt tolerant plants (halophytes).
Sapling	A juvenile tree that has reached the stage of 1 or 2 main stems but is still in the shrub layer.
Saprophyte	A plant lacking chlorophyll and living on dead organic matter.
Saprophytic	Lacking chlorophyll and living on dead organic matter.
Sarcotesta	The fleshy, often highly coloured outer layer of the seed coat in some species, e.g., titoki (<i>Alectryon excelsus</i>).
Scabrid	Roughened or rough with delicate and irregular projections.
Scale	Any thin, flat, membranous structure.
Scape	A leafless flower stem.
schizocarp	A fruit which splits when dry, from the Greek <i>skhizein</i> 'split' and <i>karpos</i> 'fruit'
schizocarps	Plural of schizocarp, a fruit which splits when dry, from the Greek <i>skhizein</i> 'split' and <i>karpos</i> 'fruit'
Scutiform	Shield-shaped.
Sedges	A group of grass-like or rush-like herbaceous plants belonging to the family Cyperaceae. Many species are found in wetlands some are forest floor plants. Leaves are usually angular. Hence the saying "rushes are round and sedges have edges".

Term	Definition
Seedling	A newly germinated plant.
Self sustaining	Able to sustain itself, or replace itself, independently of management i.e. regenerate naturally
Self thinning	Natural tree death in a crowded, even-aged forest or shrubland.
Semi-deciduous	Partial leaflessness in winter, and greater than 50% leaves lost by the beginning of spring flush.
Sepal	Outer part of flower; usually green.
Serrate	Sharply toothed with teeth pointing forwards towards apex.
Serrulate	Finely serrate, i.e., finely toothed with asymmetrical teeth pointing forward; like the cutting edge of a saw.
Sessile	Attached by the base without a stalk or stem.
Seta	The stalk of a fruiting moss capsule
Sheath	A portion of an organ that surrounds (at least partly) another organ (e.g., the tubular envelope enclosing the stem in grasses and sedges).
Silicles	The flattened usually circular capsule – compared with the narrow, elongated fruit (silique) – containing the seed/seeds. A term used almost exclusively for plants within the cabbage family (Brassicaceae)
Silique	A capsule, usually 2-celled, with 2 valves falling away from a frame (replum) bearing
Simple	Of one part; undivided (cf compound).
Sinuate	With a wavy margin.
Sinus	The space or recess between lobes; in hebes a gap between the margins of two leaves of an opposite pair that may be present in the bud before the pair of leaves separate.
Sorus	A cluster of two or more sporangia on the margin or underside of the lamina of a fern, sometimes protected by an indusium.
Spathulate	Spatula or spoon-shaped, a rounded blade tapering gradually to the base.
Spheroidal	Almost spherical but elliptic in cross section.
Spicate	Arranged in a spike.
Spike	Flowers attached to main stem without stalks.
Spikelet	Collection of individual grass florets borne at the end of the smallest branch of the inflorescence.
Sporangia	Plural of sporangium. Structures in which spores are produced.
Sporangium	Structure in which spores are produced.
Spore	A single-celled reproductive unit similar in function to that of the seed in a flowering plant.
sporophyte	The spore producing plant in ferns that is usually the visible part.
Stamen	The male reproductive organ of a flower where pollen is produced. Consists of an anther and its stalk.
Stamens	The male, pollen bearing organ of a flower.
Standing water	Where water lies above the soil surface for much of the year.
Stellate	Irregularly branched or star shaped.
Stigma	Female part of the flower that is receptive to pollen, usually found at or near the tip (apical end) of the style where deposited pollen enters the pistil.
Stipe	The stalk of a frond.
Stipitate	Borne on a stipe or stalk.
Stipulate	A leaf with stipules.
Stipule	A scale-like or leaf-like appendage at the base of a petiole, usually paired.
Stolon	A stem which creeps along the ground, or even underground.
Stoloniferous	Producing stolons
Stramineous	Chaffy, like straw or straw-colored.
Stria	A fine line or groove.
Striae	Fine lines or grooves.
Striate	Fine longitudinal lines or minute ridges
Style	The elongated part of the flower between the ovary and the stigma.
Sub-	A prefix meaning under, somewhat or almost.
Subglabrous	Very slightly, but persistently, hairy.
Suborbicular	Slightly rounded in outline
Substrate	The surface upon which an orchid grows.
Subtended	Immediately beneath, occupying a position immediately beneath a structure, i.e., flower subtended by bract
Subulate	Slender and tapering to a point.
Succession	Progressive replacement of one species or plant community type by another in an ecosystem.
Successional	Referring to species, plant communities or habitats that tend to be progressively replaced by another.
Succulent	Fleshy and juicy.
Summer-green	Used in New Zealand to indicate herbs or sub-shrubs that die down to a root stock or rhizomatous network.
Supplementary planting	Returning to a revegetation site and creating gaps, or filling existing gaps, with different plants of plants, usually later successional plants which may not have survived being planted in the first phases of the project.

Term	Definition
Surface water	Water present above the substrate or soil surface.
Surveillance	Regular survey for pests inside operational and managed areas e.g. nurseries, standout areas on parks.
Survey	Collection of observations on the spatial distribution or presence or absence of species using standardised procedures.
Sustainable Land Management	The use of farming practices which are sustainable both financially and environmentally including management of nutrient runoff, waste disposal or stock effluent, reducing impacts of nutrients on waterways, preventing erosion and soil loss, and protecting native forest and wetland habitats from stock damage.
Swamp	Low land that is seasonally flooded; has more woody plants than a marsh and better drainage than a bog. They are more fertile and less acidic than bogs because inflowing water brings silt, clay and organic matter. Typical swamp plants include raupo, purei and harakeke (flax). Zonation and succession often leads through manuka to kahikatea swamp forest as soil builds up and drainage improves.
Symbiote	An organism that has an association with organisms of another species whereby the metabolic dependence of the two associates is mutual.
Symbiotic	The relation between two different species of organisms that are interdependent; each gains benefits from the other (see also symbiosis).
Sympatric	Occupying the same geographical region.
Synangia	Structures made up of fused sporangia
Synonym	A botanical name that also applies to the same taxon.
Systematics	The study of taxonomy, phylogenetics, and taxagenetics.
Tabular	Shaped like a rectangular tablet.
Taxa	Taxonomic groups. Used to refer to a group at any level e.g., genus, species or subspecies.
Taxon	A taxonomic group. Used to refer to a group at any level e.g., genus, species or subspecies.
Taxonomy	The process or science of classifying, naming, and describing organisms
Tepal	An individual member of the perianth.
Terete	Cylindrical and tapering.
Terminal	At the tip or apex.
Ternatifid	Leaflets In threes,
Tetrad	A group of four.
Tomentum	A hairy covering of short closely matted hairs.
Translocation	The movement of living organisms from one area to another.
Trifid	Divided into three.
Trifoliate	Having three leaflets.
Trigonus	Three-angled
Tripinnate	With each secondary pinna divided to the midrib into tertiary pinnae
Triquetrous	Triangular in cross section and acutely angled.
Truncate	With the apex or base squared at the end as if cut off.
Tuberculate	Bearing small swellings.
Tubular	Tube-shaped.
turbinate	Top-shaped.
Turgid	Distended through internal pressure
Type locality	The place or source where a holotype or type specimen was found for a species.
Ultramafic	A type of dark, usually igneous, rock that is chemically dominated by magnesium and iron-rich minerals, the partially metamorphosed form of which is serpentinite.
Umbel	Umbrella like; the flower stalks arise from one point at the stem.
Undulate	Wavy edged.
Undulose	Wavy edged.
Unitubular	A tube partitioned once – literally one tube (compare – multitubular – many tubes)
Utricle	A thin loose cover enveloping some fruits (eg., Carex, Uncinia)
Valvate	Opening by valves.
Vascular plant	A plant that possesses specialised conducting tissue (xylem and phloem). This includes flowering plants, conifers and ferns but excludes mosses, algae, lichens and liverworts.
Velutinous	Thickly covered with delicate hairs; velvety.
Ventral	Of the front or inner (adaxial) surface relative to the axis. (cf. dorsal)
Vermiform	Worm-shaped.
Vernicose	Glossy, literally as if varnished, e.g., Hebe vernicosa has leaves that appear as if varnished
Verrucose	Having small rounded warts.
Verticillium	A fungus disease that will cause wilting and death.
Villous	Covered with long, soft, fine hairs.
Water table	The level at which water stays in a soil profile. The zone of saturation at the highest average depth during the wettest season.
Wetland	A site that regularly has areas of open water for part or all of the year, or has a water table within 10 cm of the surface for at least 3 months of the year. Wetland ecosystems support a range of plant and animal species adapted to an aquatic or semi-aquatic environment.

Term	Definition
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Whipcord	A shrub in which the leaves are reduced to scales that are close-set and pressed against the stem.
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Whorl	A ring of branches or leaves arising at the same level around the stem of a plant.
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