Cowan Bay Road species list: Canopy trees

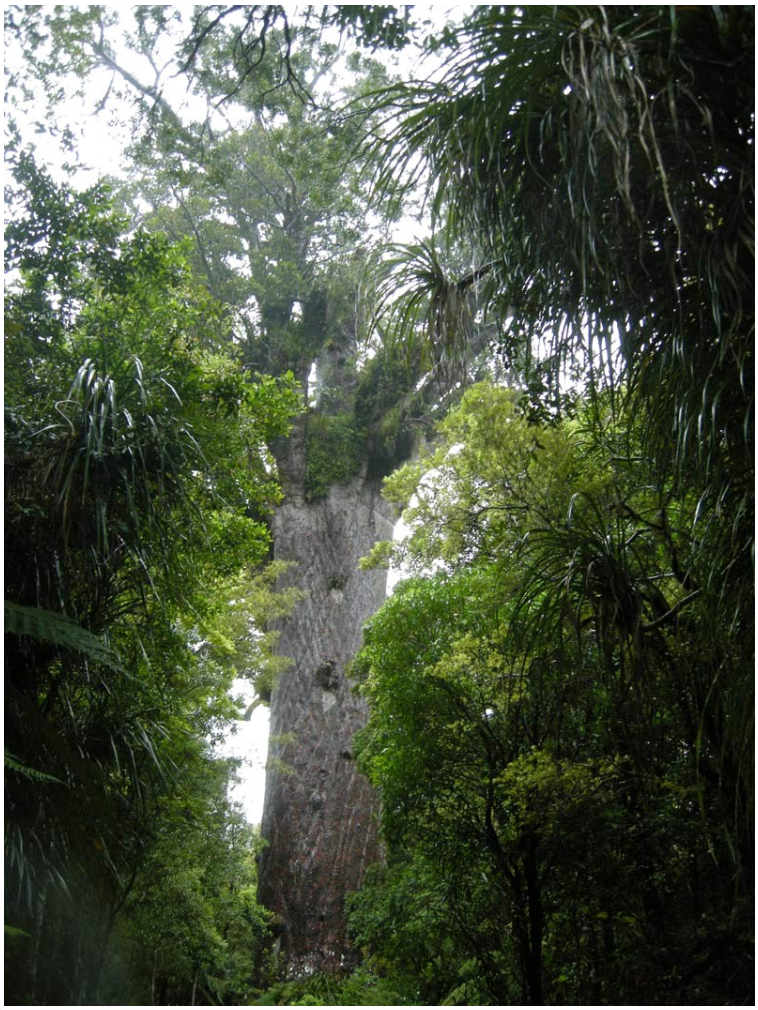


Table of Contents

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 encompases 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.

Agathis australis

Common Name(s):
kauri, kauri pine

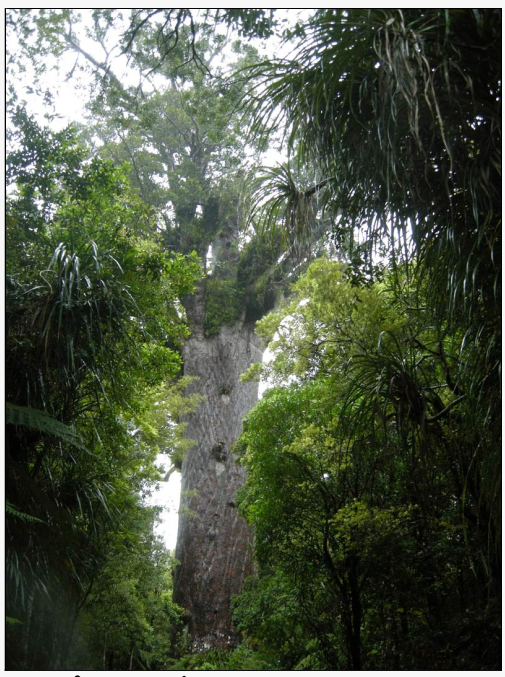
Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. Occurring from Te Paki south to Pukenui (near Kawhia) in the West and near Te Puke in the East. Over much of its former range it has been heavily logged, such that the best stands now only occur in the Coromandel and Waitakere Ranges, on Great and little Barrier Islands, and in Northland at Waipoua, Trounson, Omahuta, Puketi, Herekino, Warawara and Radar Bush forests. Despite its northerly limit this species has been successfully grown as far south as Oban, Stewart Island, and seedlings have been observed near planted adults in Wellington, Nelson and Christchurch.

Habitat:
The species forms its own forest type - Kauri forest - which is typified by dense canopies of kauri. Common associates in the northern half of its range may include taraire (Beilschmiedia tarairi), northern rata (Metrosideros robusta), rimu (Dacrydium cupressinum), towai (Weinmannia silvicola), and makamaka (Ackama rosifolia). Historically kauri forest seems to have been best developed on river terraces, coastal plains and the generally flat flood basalts of the Tangihua complex, which make the dominant geology of Waipoua, Omahuta, Puketi, Trounson. Some people believe that the hill and range occurrences, which is where most stands can now be seen, are relictual stands not truly favoured by the species, but merely examples of where it can grow, and of course locations where it was usually left because log extraction was less feasible.

Features*:
Stout, monoecious forest tree 30-60 m tall, with trunk 3-4(-7) m diam. Trunk typically devoid of branches for majority of its height. Trees at ricker development stage have a columnar growth form with trunk scarcely free of branches. As tree matures the basal branches are progressively abscissed, eventually leaving bare trunk typical of mature specimens. Bark blue-grey, falling in large thick flakes with scalloped margins, undersides of discarded bark and freshly exposed underbark rust brown. Leaves (needles) alternate to subopposite, sessile, thick and leathery; juvenile leaves 50-100 mm x 5-12 mm, lanceolate, pinkish green, often black-spotted (a fungus specific to kauri causes this); adult leaves 20-35 mm, oblong, apex obtuse. Male cones 20-50 mm long, stout, cylindrical, female cones globose 50-75 mm diam., cone-scales (carpidia) deciduous, at first broad but then gradually narrowing toward base, bearing one ovule per scale. Seeds ovoid, compressed, margins winged.

Caption: Waipoua Forest, Northland - Tane Mahuta
Photographer: John Sawyer



Caption: Waipoua Forest, Northland - Tane Mahuta
Photographer: John Sawyer

Flowering:
Female cones produced from September - December. Male cones throughout the year but most common from September to January

Fruiting:
Mature cones occur anytime from December through to May, with rare persistent examples found on trees right up to about August

Threats:
Not strictly regarded as threatened but some stands of kauri on private land remain vulnerable to illegal logging, while trees are still peridoically removed (although only by permit or with approval) for cultural purposes, such as for making waka (canoes) or other Maori buildings and structures. Some small southerly populations are rather vulnerable to goat browse destroying regenerating seedlings and saplings. More recently kauri dieback (also known as Phytophthora taxon Agathis or PTA) has caused the death of kauri trees and has become a serious issue (see the information and links provided below and see images above of lesions and thinning caused by the disease).

***Attribution:**
Fact Sheet Prepared for NZPCN by P.J. de Lange May 2004. Description adapted from Allan (1961).

References and further reading:

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

Ogden, J. 1988. Kauri: Key to Auckland's past. Auckland Botanical Society Journal, 43: 17-19.

Enright, N., Cameron, E.K. 1988. The soil seed bank of a kauri (Agathis australis) forest remnant near Aukcland, New Zealand. NZ Journal of Botany, Vol. 26, 223-236

Sem, G. and Enright, N.J. 1995. *The soil seed bank in Agathis australis(D. Don) Lindl. (kauri) forests of northern New Zealand*. New Zealand Journal of Botany, 33 (2). pp. 221-235. http://dx.doi.org/10.1080/0028825X.1995.10410485

Mirams, R.V. 1957. Aspects of the natural regeneration of the kauri (Agathis australis Salisb.). Transactions of the Royal Society of New Zealand, Vol. 84, Part 4, 661-680

Sando, C.T. Notes on Agathis australis. NZ Journal of Forestry.

J. B. Dickie and R. D. Smith (1995). Observations on the survival of seeds of Agathis spp. stored at low moisture contents and temperatures. Seed Science Research, 5, pp 5-14. doi:10.1017/S0960258500002531.

Wyse, S.V., Burns, B.R. 2013. Effects of Agathis australis (New Zealand kauri) leaf litter on germination and seedling growth differs among plant species. NZ Journal of Ecology, 37(2), 178-183

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=2047

Alectryon excelsus subsp. excelsus

Caption: Algies Bay, Auckland
Photographer: John Sawyer

Caption: Carter Scenic Reserve
Photographer: John Sawyer

Common Name(s):
New Zealand ash, titoki

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North and South Islands from Te Paki to Banks Peninsula

Habitat:
A widespread coastal to lowland forest tree. Often favouring well drained, fertile, alluvial soils along river banks and associated terraces. It is also a major component of coastal forests, particularly those developed within exposed situations or on basaltic or andesite volcanics. It is a common offshore island tree within the Hauraki Gulf. The large fruits are bird dispersed and so titoki trees often occur as a sparse components of most lowland forest types, throughout the North Island.

Features*:
Tree between 10m and 20m tall. Branches stout, erect, all parts invested with fine, velutinous, ferrugineous hairs. Bark brown. Adult leaves dark green, matt when mature, imparipinnate, alternate 80-260 mm long. Leaflets 3-7 pairs; lamina 45-105 x 19-40 mm, subcoriaceous, lanceolate, oblong or narrowly-ovate, apex, subacute often acuminate, rarely obtuse; base cuneate, truncate to oblique, upper leaf surface matt; lamina margin entire or deeply serrated 1-4 times near apex. Inflorescences axillary 90-120 mm long, sparingly branched panicles. Flowers bisexual or staminate. Petals absent. Stamens 5-8 in bisexual and 6-10 in staminate flowers, crimson. Stigma ovoid, in staminate flowers ovary tholiform, style absent, in perfect flowers broadly urceolate, style 1.5-2 mm, erect. Fruits sessile, 1-2-lobed, 14-20 x 9-14 mm, pubescent, globular, carina 3-5 mm long on one side. Seed 7-10 x 4-8 mm, subglobose, black, lustrous, sarcotesta fleshy, scarlet, papillose.

Flowering:
October - December (-June)

Fruiting:
November - August

Threats:
Not Threatened

***Attribution:**
Fact Sheet prepared by P.J. de Lange (1 August 2005). Description by P.J. de Lange based in part on de Lange et al. (1999).

References and further reading:

Cameron, E.K. 1998. Frost resistance in titoki *Alectryon*. *Auckland Botanical Society Journal 53*: 15.

de Lange, P.J.; Cameron, E.K.; Murray, B.G. 1999: *Alectryon excelsus* subsp. *grandis* (Sapindaceae): a new combination for an uncommon small tree endemic to the Three Kings Islands, New Zealand. *New Zealand Journal of Botany 37*: 7-16.

Duguid, F. 1961. Flowering in titoki. *Wellington Botanical Society Bulletin 32*: 16

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=1486

Beilschmiedia tarairi

Caption: Wenderholm
Photographer: John Barkla

Caption: Taraire leaves
Photographer: DoC

Common Name(s):
Taraire

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. Confined to the North Island where it most common north of Auckland and Thames. However it also occurs in scattered pockets in the west south of Port Waikato to the Kawhia Harbour, inland at Pukemokemoke (near Tauhei), and in the east it occurs very locally from the eastern end of Papatea Bay to East Cape.

Habitat:
Common canopy forming tree in lowland and lower montane forests north of Auckland. Often associated with kauri (Agathis australis), and pohutukawa (Metrosideros excelsa), and on basalt rocks and soils puriri (Vitex lucens).

Features:
Evergreen tree up to 22 m tall, with very broad canopy crown. Trunk to 1 m diam. Bark smooth, dark brown. Branches stout, spreading. Branchlets, young leaves, petioles and young inflorescences densely clad in reddish brown tomentum. Foliage closely alternate, erecto-patent, simple, leathery. Petioles (8-)10(-12) mm. Leaves (36-)50-72 (-85) x (26-)34-48(-56) mm, wide-elliptic to wide-obovate, dark green and glabrous above, bullate, glaucous below, with stout veins covered in reddish brown tomentum, margins entire,, apex rounded, retuse and mucronate. Inflorescence and erect, axillary panicle up to 100 mm long. Flowers sexually perfect, 3-5 mm diam., greenish, often partially clothed in dense reddish-brown tomentum, perianth cleft into 6, stamens 12. Fruit an erect, ellipsoid to ovoid drupe (28-)30(-35) x (14-)16(-18) mm, 1-seeded, pericarp fleshy, dark purple when ripe, covered in waxy glaucous bloom.

Flowering:
(September-) November (-December)

Fruiting:
March - November

Threats:
Not Threatened

References and further reading:

Wilcox, M.D. 2001. Establishment of forest monitoring plots in Kirks Bush Papakura with special reference to Taraire *(Beilschmiedia tarairi*). Auckland Botanical Society Journal, 56: 76-79.

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 2009 Vol. 11 No. 4 pp. 285-309

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1540

Beilschmiedia tawa

Common Name(s):
Tawa

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. Common throughout the North Island. In the South Island common from Cape Farewell east through the Marlborough Sounds. Extending south of their only in the east where it almost reaches Kaikoura (the southern limit is just north of the main town).

Habitat:
Major canopy dominant in the lowland and lower montane forests of the North Island and northern South island. May form pure stands but usually occurs in close association with podocarps such as rimu (Dacrydium cupressinum).

Features:
Evergreen tree up to 35 m tall. Trunk straight, 1.2-2 m diam., with buttressed base. Bark smooth, dark brown. Branches erect to spreading, slender to moderately robust. Young branchlets, leaves and inflorescences finely pubescent, hairs simple, pale golden. Foliage opposite to sub-opposite, simple, somewhat leathery when mature. Petioles (6-)8(-12) mm. Leaves (30-)40-80(-95) x (8-)11-16(-40) mm, narrowly to broadly lanceolate sometimes elliptic, yellow-green to green, glabrous when mature, undersides glaucous. margins entire, and undulate, apex acute to acuminate. Inflorescences, an erect, axillary panicle up to 100 mm long. Flowers sexually perfect, 2-4 mm diam, pale green, perianth cleft into 6 segments, ovate-oblong, stamens 12. Fruit a pendulous, ellipsoid to ovoid drupe (20-)30(-38) x (9-)12(-18) mm, 1-seeded, pericarp fleshy, dark purple-black when ripe, glaucous or shiny.

Flowering:
(October-) January (-May)

Fruiting:
(December-) January (-March)

Threats:
Not Threatened

Caption: Flowers ex Hakarimata Range.
Photographer: John Braggins

Caption: Flowers of Beilschmiedia tawa
Photographer: Wayne Bennett

References and further reading:

Moorfield, J. C. (2005). Te aka : Māori-English, English-Māori dictionary and index. Pearson Longman: Auckland, N.Z.

Landcare Research. Ngā Tipu Whakaoranga - Māori Plant Use Database. http://maoriplantuse.landcareresearch.co.nz

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 2009 Vol. 11 No. 4 pp. 285-309

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1541

Brachyglottis repanda

Common Name(s):
rangiora, bushman's toilet paper, bushman's friend

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North Island throughout. South Island - north west Nelson to just south of Greymouth in the west, and near Kekerengu in the east. Naturalised on Banks Peninsula, Otago Peninsula, and on Stewart Island at Oban.

Habitat:
Common in coastal, lowland and lower montane shrubland and open forest. Often a pioneer species.

Features:
Shrub to small tree up to 6 m or more tall. Trunk one or more arising from ground, covered in somewhat corky bark. Branches stout, spreading, rather brittle, initially densely clad in fine white to buff tomentum becoming glabrescent with age. Petiole stout, grooved, 80-100 mm long. Leaves leathery, 50-250(-300) X 50-20(-30) mm, dark green to pale green above, undersides clad in fine, appressed vivid white hairs, broad- to ovate-oblong, obtuse to subacute, obliquely cordate to truncate at base, margins distantly dentately lobed to sinuate. Inflorescence a much branched panicle. Capitula 5 mm diam., numerous, without ligules (discoid). Involucral bracts 3 mm long, narrow-oblong to narrow spathulate, margins scarious except at base. Florets 10-12, yellow. Seeds (cypsela) narrowly oblong-elliptic to oblong elliptic, 1-1.8 mm long, ribs 6, rounded, broad. Pappus 2-3 mm, buff-yellow, scabrid.

Flowering:
(July-) August-October (-November)

Fruiting:
(October-) November-December (-January)

Threats:
Not Threatened


Caption: Brachyglottis repanda
Photographer: Wayne Bennett


Caption: Brachyglottis repanda
Photographer: Wayne Bennett

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 2009 Vol. 11 No. 4 pp. 285-309

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1562

Cordyline australis

Caption: Awhitu Regional Park, Auckland region
Photographer: John Sawyer

Common Name(s):
cabbage tree, ti, ti kouka, palm lily

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. Common in the North, South and Stewart Islands. Probably naturalised on the Chatham Islands.

Habitat:
Widespread and common from coastal to montane forest. Most commonly encountered on alluvial terraces within riparian forest.

Features:
Tree up to 20 m tall, trunk stout, 1.5-2 m diam, many-branched above (prior to flowering, trunk slender and solitary, branching happens after the first flowering). Bark corky, persistent, fissured, pale to dark grey. Leaves numerous (0.2-)0.3-1(-1.5) x (0.2)-0.3(-0.6) m, dark to light green, narrowly lanceolate to lanceolate, erect to erecto-patent, scarcely inclined to droop, midrib indistinct. Petiole indistinct, short. Inflorescence a panicle. Peduncle stout, fleshy 40 mm or more in diam., panicle of numerous flowers, (0.6-)1(-1.8) x).3-0.6(-0.8) m, branching to third or fourth order, these well spaced, basal bracts green and leaf-like, ultimate racemes 100-200 mm long, 20 mm diam., bearing well-spaced to somewhat crowded, almost sessile to sessile flowers and axes. Flowers sweetly perfumed, perianth 5-6 mm diam., white, tepals free almost to base, reflexed. Stamens about same length as tepals. Stigma short, trifid.

Caption: Cordyline australis
Photographer: Wayne Bennett

Flowering:
(September-) October-December (-January)

Fruiting:
(December-) January-March

Threats:
Populations have been decimated from some parts of the country due to a mysterious illness linked to a Myoplast Like Organisim (MLO) which is believed to cause the syndrome known as Sudden Decline. Plants stricken with this illness suddenly, and rapidly, wilt, with the leaves failing off still green. If the bark is peeled off the base of the tree near the soil line blackened or rotten spots are typically present. Once stricken with Sudden Decline there is no cure and the trees can die within days. Recently there has been some evidence to suggest the severity of Sudden Decline is lessening.

References and further reading:

Beever, R. et al. 1996. Sudden decline of cabbabe tree. NZ Journal of Ecology, 20(1): 53-68

Duguid, F. 1976. *Cordyline australis* at Lake Kopureherehe. Wellington Botanical Society Bulletin, 39: 46-47

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=1744

Cordyline banksii

Common Name(s):
ti ngahere, cabbage tree, ti rakau

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. Common throughout the North Island, In the South widespread through the northern half, extending in the west to about Haast with occasional as unsubstantiated reports of it from the coastal portion of Fiordland.

Habitat:
Common in coastal, lowland, and lower montane forests. Occasionally extending into subalpine habitats in the South Island. Often found in shrublands where it is sympatric with, and often hybridises with Cordyline pumilio. Tolerant of a wide range of situations.

Features:
Shrub or small tree up to 4 m tall. Stems (1-)4(- many) 100-150 mm diam., arising from ground level, subequal, sparingly branched. Leaves numerous, 1-2 x 0.4-0.8 m, lanceolate (somewhat "paddle-shaped") broad about middle and drooping from there, narrowed above base into a long, narrow, channeled petiole. Midrib flat, prominent for entire leaf length. Inflorescence a panicle. Peduncle stout, fleshy, 30-40 x 200 mm. Panicle 1-2 m, often smaller, broadly pyramidal, openly branched to third order, lower bracts green and leaf-like. Ultimate racemes 150-300 mm, 200 mm or more in diam., bearing, numerous, well spaced sessile flowers in axes. Flowers sweetly perfumed, perianths 10 mm long, white; tepals fused near base, rather open. Stamens same length as tepals. Stigma shortly trifid. Fruit 4-5 mm diam., globose, white, bluish-white, or blue. Seeds 2 mm diam., black, glossy, 2 sides flat the other convex.

Flowering:
November - January

Fruiting:
February - April

Threats:
Common and not threatened. Does not seem so susceptible to Sudden Decline as C. australis has proved to be.

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=1745

Caption: Ruahine Range
Photographer: John Sawyer

Caption: Cordyline banksii
Photographer: Wayne Bennett

Corynocarpus laevigatus

Common Name(s):
Karaka, kopi

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. Exact indigenous distribution uncertain due to its widespread historic planting by Maori. Common from Raoul and the Three Kings Islands, throughout the North and South Islands to Banks Peninsula and Okarito. Also on the Chatham Islands. Most botanists accept it as native only to the northern half of the North Island. It is probably naturalised from deliberate Polynesian plantings on Raoul and the Chatham Islands.

Habitat:
Common in mainly coastal situations, often a major component of coastal forest, rarely dominant. Occasionally found inland, and then often in association with Maori cultural deposits.

Features*:
Leafy canopy tree up 15 m tall. Trunk stout up to 1 m diam., Bark grey. Branches stout, erect to spreading. Petioles 10-15 mm long. Leaves dark green above paler beneath, thick, leathery, (50-)100-150 (-200) x (30-)50-70 mm, glossy, elliptic to obovate-oblong, margins recurved. Inflorescence a stout, erect panicle up to 200 mm long, peduncles and pedicels short, somewhat fleshy, pale green. Flowers 4-5 mm diam., greenish-cream to off-white or pale yellow. Sepals suborbicular, petals 5, obovate-spathulate, alternating with 5 subpetaloid staminodes. Fruit an ellipsoid to ovoid drupe 25-40(-46) mm long, flesh pale yellow to orange. Endocarp a fibrous reticulum surrounding a smoother, harder papery layer beneath. This structure enclosing a single seed (kernel).

Caption: Seedlings. Lake Westmere, Whanganui. Feb 2013.
Photographer: Colin Ogle

Caption: Seedlings. Lake Westmere, Whanganui. Feb 2013.
Photographer: Colin Ogle

Flowering:
August - November

Fruiting:
January - April

Threats:
Abundant and not threatened. Often naturalising in suitable habitats.

***Attribution:**
Fact Sheet prepared for NZPCN by P.J. de Lange (1 September 2004). Description based on Allan (1961).

References and further reading:
Allan, H.H. 1961: Flora of New Zealand. Vol. 1. Wellington, Government Printer.

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=1762

Cyathea dealbata

Common Name(s):
silver fern, ponga

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. From the Three Kings Islands south to Mahers Swamp in the west and Dunedin in the east of the South Island.

Habitat:
Common, primarily coastal and lowland habitats but extending to lower montane. Preferring dry forest and shrubland, often under pines.

Features*:
Tree fern up to 10 m tall (very rarely without trunk). Trunk covered in long-persistent, peg-like, stipe bases. Stipes slender, silvery-white when young, maturing pale brown. Harsh to the touch, covered in pale-brown scales. Scales without marginal spines. Fronds up to 4 m long, horizontal, somewhat arching, 3-pinnate. Dead fronds falling. Longest primary pinnae 300-550 mm, pale green above, white below (very rarely pale green) below. Under surfaces sparingly clad in curly hairs. Indusia covering sori at maturity, opening at maturity to form a deep cup with a smooth rim.

Flowering:
None (spore bearing)

Fruiting:
None (spore bearing)

Threats:
Not Threatened.

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange March 2004. Description adapted from Brownsey & Smith-Dodsworth (2000).

References and further reading:
Brownsey, P.J.; Smith-Dodsworth, J.C. 2000: New Zealand Ferns and Allied Plants. Auckland, David Bateman

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1776


Caption: Cyathea dealbata
Photographer: Wayne Bennett


Caption: Cyathea dealbata
Photographer: Wayne Bennett

Cyathea medullaris

Common Name(s):
black tree fern, mamaku, black mamaku

Current Threat Status (2012):
Not Threatened

Distribution:
Indigenous. Occurring form the Three Kings Islands south to Stewart and the main Chatham Islands. Uncommon in the drier eastern portion of the South Island, and apparently absent from Canterbury and Otago.

Habitat:
Common in lowland forest throughout the North Island. Primarily in wetter coastal areas of the South Island.

Features*:
Tree fern up to 20 m tall. Trunk black covered with hexagonal stipe bases. Stipes thick, black, harsh to touch, covered in black scales. Scales with marginal spines. Fronds up to 5 m long, arching upwards from crown, 3-pinnate, leathery, dead fronds falling (except in very young plants). Longest primary pinnae 0.4-1 m long, undersurfaces bearing scales with marginal spines. Indusia completely covering sori at maturity, splitting irregularly.

Flowering:
None (spore bearing)

Fruiting:
None (spore bearing)

Threats:
Not Threatened.

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange March 2004. Description adapted from Brownsey & Smith-Dodsworth (2000).

References and further reading:
Brownsey, P.J.; Smith-Dodsworth, J.C. 2000: New Zealand Ferns and Allied Plants. Auckland, David Bateman

Esler, W.R. 1976. Succession of fronds of mamaku *(cyathea medullaris). Wellington Botanical Society Bulletin 39*: 41-43

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=2097

Caption: Cyathea medullaris
Photographer: Wayne Bennett

Caption: Cyathea medullaris
Photographer: Wayne Bennett

Dacrycarpus dacrydioides

Common Name(s):
kahikatea, white pine

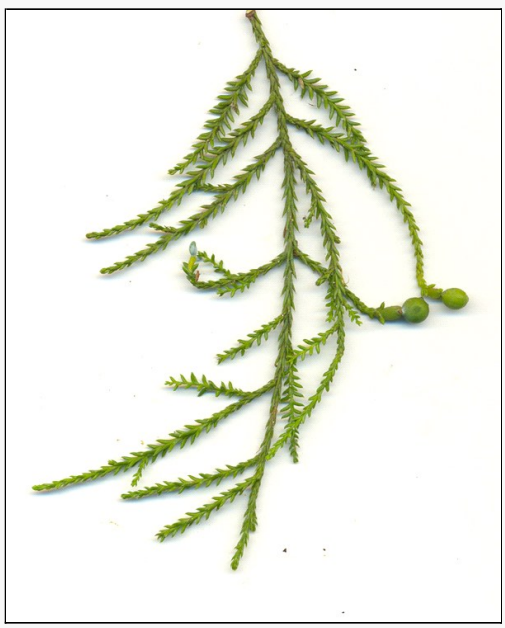
Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North, South and Stewart Islands

Habitat:
Lowland forest, formerly dominant on frequently flooded, and/or poorly drained alluvial soils. Occasionally extends into lower montane forest. Once the dominant tree of a distinct swamp forest type all but extinct in the North Island - the best examples remain on the West Coast of the South Island.

Features*:
Stout, dioecious, cohort-forming conifer, 50 (-65) m. tall. Trunk 1(-2) m diam., often fluted and buttressed. Bark grey to dark-grey, falling in thick, sinuous flakes. Wood white, odourless. Trunks bare for 3/4 of length, subadults with a distinctive columnar growth habit, branches arising from 1/3 to 1/2 of trunk length. Branchlets slender, drooping. Leaves of juveniles subdistichous, subpatent, narrow-linear, subfalcate, acuminate, decurrent, 3-7 x 0.5-1mm red, wine-red, dark-green to green.; of subadults less than or equal to 4 mm., dark green or red; those of adults 1-2 mm., imbricating, appressed, keel, subtrigonous, lanceolate-subulate to acuminate with broader base, brown-green or glaucous. Male cones terminal, oblong, 10 mm. Pollen pale yellow. Ovule, terminal, solitary glaucescent. Receptacle fleshy, oblong, compressed, warty, 2.5-6.5 mm., yellow to orange-red. Seed broadly obovate to circular (4-)4.5-6 mm diam., purple-black, thickly covered in glaucous bloom.

Caption: Fruit.
Photographer: © John Braggins



Caption: Dacrycarpus dacrydioides
Photographer: Wayne Bennett

Flowering:
October - January

Fruiting:
February - April

Threats:
Not Threatened, although as a forest-type it has been greatly reduced through widespread logging. Very few intact examples of kahikatea-dominated forest remain in the North Island.

***Attribution:**
Fact Sheet prepared for NZPCN by P.J. de Lange 12 January 2004: Description adapted from Allan (1961).

References and further reading:

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

Gardner, R. 2001. Notes towards an excursion Flora. Rimu and kahikatea (Podocarpaceae). Auckland Botanical Society Journal, 56: 74-75

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=2099

Dacrydium cupressinum

Common Name(s):
rimu, red pine

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North, South and Stewart Islands from North Cape south. Uncommon in large parts of the eastern South Island. Facultatively extinct on Banks Peninsula, where one natural tree is all that remains. Rimu is the type of the genus Dacrydium.

Habitat:
Lowland to montane forest - occasionally ascending to subalpine scrub.

Features*:
Dioecious conifer 35(-60) m tall. Adult trees with trunk bare of branches for 3/4 of length. Trunk stout, 1.5-2 m diam., bark dark brown, falling off in large thick flakes. Wood dark red. Branches in juveniles numerous, slender, branchlets pendulous. Adult branches few, spreading, branchlets slender, pendulous. Leaves dark green, bronze-green, red-green or orange, imbricate, those of juveniles 4-7(-10) mm., 0.5-1 mm wide, keeled, acute, linear-subulate, subfalcate, decurrent; those of subadults ascending, incurved 4-6 mm., rhomboid; of adults similar but appressed, 2-3 mm., rigid, subacute, trigonous. Male and Female "cones" first appear on subadults. Male cones (strobili) solitary or paired, terminal 5-10 mm., oblong. Pollen yellow. Ovules solitary, terminal on up-curved branchlets. Receptacle a fleshy red or deep-orange cup 1-2 mm long. Seed oblong or elliptic-oblong, compressed in section, 3-3.8(-4) mm long, semi-glossy, dark-brown.

Flowering:
December - March

Fruiting:
Fruits take a year or more to mature and co-occur with young female cones, they are most frequently seen between February and May.

Threats:
Not Threatened, although as a forest-type it has been greatly reduced through widespread logging. Very few intact examples of rimu-dominated forest remain in the North Island.

Caption: Pihanga, Tongariro National Park
Photographer: John Sawyer

Caption: Pihanga, Tongariro National Park
Photographer: John Sawyer

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange 3 February 2006. Description adapted from Allan (1961), Webb & Simpson (2001), fresh material and herbarium specimens.

References and further reading:

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

Gardner, R. 2001. Notes towards an excursion Flora. Rimu and kahikatea (Podocarpaceae). Auckland Botanical Society Journal, 56: 74-75

Kirk, T. 1889: The Forest Flora of New Zealand. Wellington, Government Printer.

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

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=2100

Dicksonia squarrosa

Common Name(s):
rough tree fern, harsh tree fern, wheki

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North, South, Stewart and Chatham Islands.

Features*:
Tree ferns up to 8 m tall. Rhizomatous usually forming colonial stands. Rhizomes numerous spreading from main stock 1–2 m or more distant, giving rise to subsidiary erect caudices. Trunk slender, solitary, bifurcated (sometimes several times over), up to c.200 mm diam., composed of long-persistent, black stipe bases, interwoven dark brown to black rootlets, red-brown hairs and dormant or active aerial buds. Fronds numerous, persistent or not in death, either falling or forming an untidy, tattered skirt (especially on young plants); in life erect, arching, forming an often tattered, untidy crown, 1.0–2.0(–2.6) m long, 0.5–1.0 m wide. Stipes (180–)280–300(–320) mm long, black, ± rugose, base densely clad deciduous dark red-brown to brown filiform hairs 30–40(–55) mm long; rachises initially clad in dark reddish brown hairs when young, becoming rugose with age. Lamina (0.68–)1.6–(2.28) m long, oblong-lanceolate, (2–)3–4-pinnate, adaxially light to dark glossy green, abaxially paler, harshly coriaceous; primary pinnae 250–500 mm long, deltoid-ovate to lanceolate, acuminate; secondary pinnae close-set to ± overlapping, 50–80 mm long, acute. Barren pinnules 10–18 mm, acute, often sharply toothed, widened and confluent at base, shallowly concave; fertile pinnules close-set, narrowly confluent at base, 10–15 mm long; lobes strongly concavo-convex c.5 mm. long, rounded, each bearing a sorus. Sorus ± rounded, terminating veins at fertile pinnae margins; sporangia on raised receptacle, partially obscured by in rolled pinnae margin, and delicate, submembranous inner indusium. Spores golden brown to red-brown.

Flowering:
Not applicable - spore producing

Fruiting:
Not applicable - spore producing

Threats:
Not Threatened

Caption: Dicksonia squarrosa
Photographer: Wayne Bennett

Caption: Dicksonia squarrosa
Photographer: Wayne Bennett

***Attribution:**
Fact Sheet Prepared for NZPCN by P.J. de Lange (10 November 2012). Description by P.J. de Lange.

References and further reading:

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1791

Elaeocarpus dentatus var. dentatus

Common Name(s):
hinau

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North, and South Islands

Habitat:
Common tree of mainly coastal and lowland forest though occasionally extending into montane forest.

Features*:
Tree up to 20 m tall (usually less), with broad spreading crown. Trunk 1 m diam., bark grey. Branches erect then spreading, branchlets silky hairy when young. Petioles stout, 20-25 mm long. Leaves leathery, (50-)100-120 x 20-30 mm, narrow- to obovate-oblong, broad-obovate, oblanceolate, apex obtuse or abruptly acuminate, dark green and glabrescent above, off-white, silky-hairy below; margins somewhat sinuate, recurved, serrate to subentire. Inflorescence a raceme 100-180 mm long, 8-12(-20)-flowered. Pedicels 10 mm long, silky-hairy. Flowers drooping, (8-)12(-15) mm diam., sepals lanceolate-oblong, 6 mm long, petals white, obovate-cuneate, 3-5-lobed, c. 10 mm long. Stamens 10-20. Fruit a fleshy, ovoid purple-black 12-18 x 9 mm, drupe. Endocarp deeply furrowed and wrinkled.

Flowering:
October - February

Fruiting:
December - May(-June)

Threats:
Not Threatened.

Caption: Flowers of Elaeocarpus dentatus
Photographer: Wayne Bennett

Caption: Flowers of Elaeocarpus dentatus
Photographer: Wayne Bennett

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange (4 April 2007). Description adapted from Allan (1961).

References and further reading:

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

Druce, A.P. 1993: Indigenous vascular plants of New Zealand. Ninth Revision. Unpublished Checklist held at Landcare Research, Lincoln, New Zealand.

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=1830

Fuscospora truncata

Common Name(s):
Hard beech

Current Threat Status (2012):
Not Threatened

Threats:
Not Threatened

References and further reading:

Anonymous. 1946. Note on *Nothofagus truncata*. Auckland Botanical Society Journal, 3: 5-6

Anonymous. 1957. Construction of key for the genus Nothofagus. Auckland Botanical Society Journal, 14: 2-3

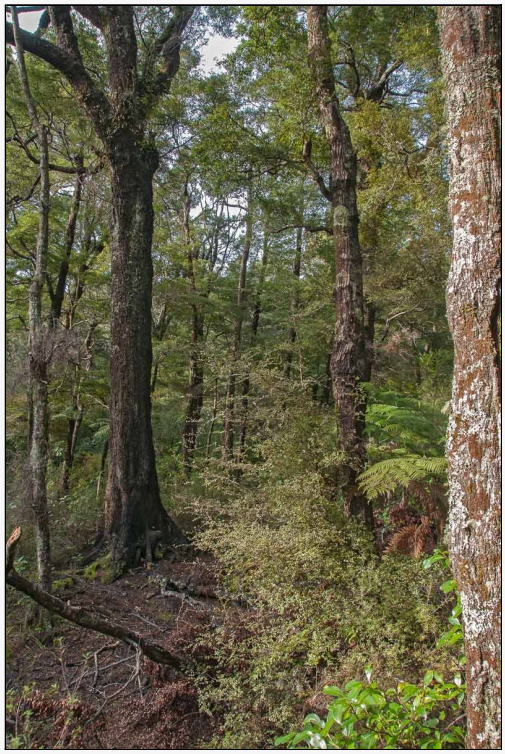
Cameron, E.K. 1997. Distribution of beech in the Waitakere Ranges. Auckland Botanical Society Journal, 52: 68-72.

Greenwood, R.M. 1959. Hard beech in the Tararuas. Wellington Botanical Society Bulletin, 31: 15-18

Heenan, P.B.; Smissen, R.D. 2013: Revised circumscription of *Nothofagus* and recognition of the segregate genera *Fuscospora*, *Lophozonia*, and *Trisyngyne* (Nothofagaceae). *Phytotaxa 146*: 1-31. http://dx.doi.org/10.11646/phytotaxa.146.1.1

Rogan, D. 1999. New northern limit for hard beech *Nothofagus truncata*. Auckland Botanical Society Journal, 54: 1

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1039



Caption: Maidstone Park, Upper Hutt. May 2013.
Photographer: Jeremy Rolfe

Caption: Saplings in understorey, Maidstone Park, Upper Hutt.
Photographer: Jeremy Rolfe

Hedycarya arborea

Common Name(s):
Porokaiwhiri, Pigeonwood

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. Three Kings, North and South Islands. In the South island uncommon in the east south of Kaikoura reaching its southern limit on that coastline on Banks Peninsula, iit is more ranging in the west reaching northern Fiordland at least.

Habitat:
A common forest tree of coastal and lowland forest, extending into montane areas in the warmer parts of the North Island

Features*:
Tree up to 12 m. tall; trunk up to 0.5m dbh, clear of branches for first few metres, ; bark dark grey to brown-grey, firm (not flaking) finely tessellated. Branches numerous, upright to spreading; branchlets finely brown-pubescent at tips. Leaves coriaceous, glabrous except for midrib and main veins and petioles, adaxially dark green, glossy or glaucescent, abaxially similar but paler and dull; petioles 10-15-20(-35)mm long; lamina 40-120(-180) × 25-30(-50-60) mm, elliptic-obovate, oblanceolate to lanceolate, cuneately narrowed to base, obtuse to subacute or acute, margins distantly serrate (with occasional subentire leaves) or toothed. Inflorescence a branched raceme; peduncles and pedicels slender, pubescent. Male with perianth c.10 mm diameter, pubescent, stamens numerous, anthers sessile. Female with perianth c.6 mm diameter; carpels up to 20. Drupe 1-seeded, ovoid, 10-15(-16) mm long, red or orange-red up to 10 per branch. Endocarp 9-14 mm long, elliptic to obovate, rarely circular, brown to grey-brown, surface ± smooth, usually with a few irregular bumps and/or longitudinal ridges. Description adapted from Allan (1961) and Webb & Simpson (2001).

Flowering:
December - February

Fruiting:
March - June

Threats:
Not Threatened

Caption: Hedycarya arborea (Porokaiwhiri)
Photographer: Wayne Bennett

Caption: Fruit of Hedycarya arborea
Photographer: Wayne Bennett

***Attribution:**
Factsheet prepared for NZPCN by P.J. de Lange 20 February 2011. Description adapted from Allan (1961) and Webb & Simpson (2001).

References and further reading:

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

de Lange, P.J.; Cameron, E.K. 1999: The Vascular Flora of Aorangi Island, Poor Knights Islands, Northern New Zealand. New Zealand Journal of Botany 37: 433-468.

de Lange, P.J.; Murray, B.G. 2002: Contributions to a chromosome atlas of the New Zealand flora – 37. Miscellaneous families. New Zealand Journal of Botany 40: 1-24.

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

Wright, A. E. 1984: Beilschmiedia Nees (Lauraceae) in New Zealand. New Zealand Journal of Botany 22: 109-125.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=805

Knightia excelsa

Common Name(s):
Rewarewa, NZ honeysuckle

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic monotypic genus. North and South Islands. Common in the North Island, but confined to the Marlborough Sounds in the South Island.

Habitat:
A common tree of coastal, lowland and lower montane shrubland, secondary regrowth, and on occasion mature forest. Frost-tender when young so generally scarce from cooler, frost-prone habitats - nevertheless it can be very common in suitable sites on the Central Volcanic Plateau of the North Island.

Features:
Tall tree with columnar (fastigiate) growth-form up to 30 m tall. Trunk up to 1 m diam. Bark dark brown. Branches erect, fastigiate, at first angled, clad in red-brown (rust-coloured), velutinous, tomentum. Juvenile leaves yellow-green, 150-300(-400) x 10-15 mm, narrowly linear-lanceolate, sometimes forked 2,3 or 4 times, margins acutely serrated. Adult leaves dark green, 100-150(-200) x 25-40 mm, broad lanceolate to narrow-oblong or oblong, sometimes obovate, occasionally forked, rigid, bluntly and coarsely serrated, covered in deciduous velutinous red-brown pubescence. Inflorescence a stout raceme up to 100(-180) mm x 60 mm, densely flowered. Pedicels and perianth clad in red-brown, velutinous tomentum. Flowers sexually perfect. Perianth 4, exterior covered in red-brown tomentum, interior dark crimson, segments at first cylindric and fused, soon separating and curling spirally. Stamens 4, filaments crimson, short, anthers long, linear, rich golden-yellow. Ovar sessile. Style long, crimson, long persistent. Fruits, follicles 30-40 mm long, 2-valved, woody, pubescent; valves tapering to persistent style. Seeds 10 mm, apex terminated by 15 mm long wing.

Flowering:
(September-)
October-December

Fruiting:
October-January (fruit takes a year to mature, so fruit and flowers may co-occur)

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1383

Caption: Rangitoto Island
Photographer: John Barkla

Caption: Manurewa
Photographer: Gillian Crowcroft

Kunzea ericoides

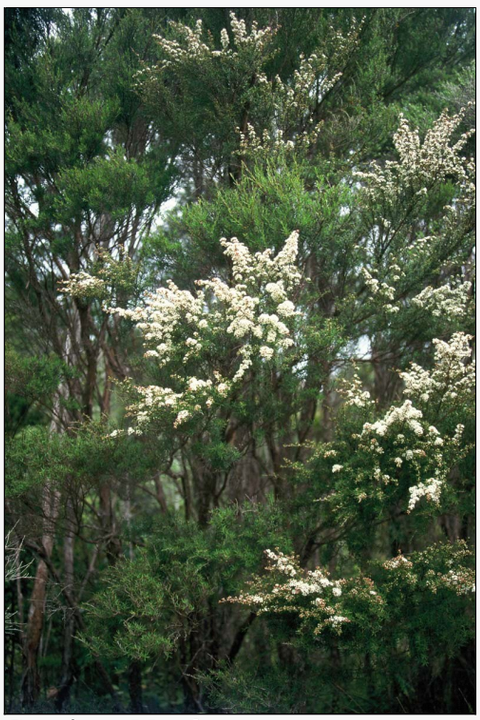
Common Name(s):
Manuoea, Titira, Atitira, Kanuka

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.

Caption: Kunzea ericoides - tree showing weeping branches characteristic of this species
Photographer: Peter de Lange



Caption: Marahau
Photographer: Peter de Lange

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.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=885

Leptospermum scoparium var. scoparium

Photographer: © John Braggins

Caption: Flowers of Leptospermum scoparium var. scoparium
Photographer: Wayne Bennett

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 usaully 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

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=2302

Metrosideros excelsa

Caption: Wellington
Photographer: John Sawyer

Caption: Metrosideros excelsa
Photographer: Wayne Bennett

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

Metrosideros robusta

Common Name(s):
Northern rata

Current Threat Status (2012):
Not Threatened

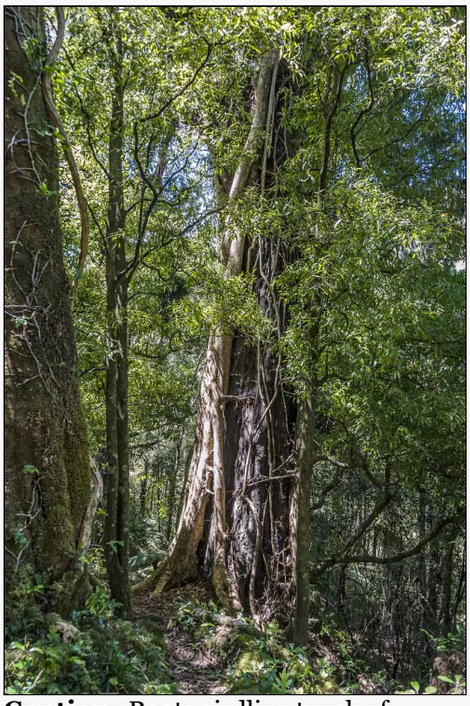
Distribution:
Endemic. New Zealand: Three Kings Islands, North Island (formerly widespread from Te Paki south to Wellington, now scarce over large parts of this range, and apparently absent from the Hawkes Bay). South Island (abundant from Nelson west and south to Greymouth, from there locally common 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)



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

Caption: Metrosideros robusta
Photographer: Wayne Bennett

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

Myrsine australis

Common Name(s):
Red mapou, red matipo, mapau, red maple

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. Three Kings, North, South and Stewart Islands.

Habitat:
Common tree of regenerating and mature forest in coastal to montane situations. Often common on northern offshore islands.

Features*:
Shrub or small tree up 6 m tall. Trunk stout, 0.2-0.6 m diam. Bark dark black or purple-black, red on younger branches. Branchlets numerous erect to spreading, very leafy. Petioles stout, fleshy, 5 mm long, often red or green mottled red. Leaves 30-60 x 15-25 mm, dark green to yellow-green variously mottled or blotched with red, or purple spots, leathery, glabrous except for finely pubescent mid vein, obovate-oblong to broad-elliptic, apex obtuse, margins entire, strongly undulate, rarely flat. Inflorescence a fascicle, usually numerous and crowded, produced along branchlets and in leaf axils. Fixed female and inconstant male flowers on different plants, 1.5-2.5 mm diam., white, cream or pale green. Pedicels short, stout, dark red or purple-black. Calyx-lobes 4, sometimes heavily reduced, long persistent. Petals 4, lanceolate, obtuse, free, revolute. Fruit a 1-seeded drupe, 2-3 mm diam., purple-black to black when mature.

Flowering:
August - January

Fruiting:
September - May

Threats:
Not Threatened

***Attribution:**
Fact Sheet Prepared for NZPCN by: P.J. de Lange 28 October 2009. Description based on 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=1007

Caption: Male flowers. Rimutaka Forest Park.
Photographer: Jeremy Rolfe

Caption: Male flowers. Rimutaka Forest Park.
Photographer: Jeremy Rolfe

Myrsine salicina

Caption: Ripe fruit, Whanganui Inlet, North West Nelson
Photographer: Simon Walls

Caption: Pinehaven. Jan 2005.
Photographer: Jeremy Rolfe

Common Name(s):
Toro

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North, South Islands from Te Paki to about Hokitika

Habitat:
Coastal to montane in forest (rarely shrubland along riversides). On occasion Myrsine salicina may form a major part of forest canopy along stream sides.

Features*:
Small diffuse to moderately densely branched conical, gynodioecious tree up to 10 m tall. Branches stout, upright, glabrous. Bark firm (not flaking) dark red, maroon-red to almost black. Leaves, fleshy-coriaceous, adaxially dark green, yellow-green or pale pinkish-green, usually blemished with maroon spots, abaxially pink to wine-red or pale green, blemising on adaxial surface apparent on abaxial surface, margins entire, flat or very slightly recurved, midrib deeply impressed adaxially, prominent ridged abaxially (side veins not evident when fresh); petioles 10-14 mm long, fleshy, stout, flattened. Lamina 70-180 × 20-30 mm, narrow-elliptic, narrow-oblong, to linear-oblong, apex obtuse, base attenuate to cuneately narrowed (gradually tapering to base). Inflorescences in ± dense 10-15(-20)-flowered fascicles. Pistillate flowers; greenish yellow to cream with maroon spotting or wine-red with purple-black spotting; calyx 1.3-1.9 mm,tube 0.2-0.6 mm, lobes 4-5, 0.7-1.0 x 0.6-0.8 mm, oblong to ± triangular, apex acute to subacute, margins minutely ciliolate; corolla 2.8-4.2 mm, tube 0.2-0.3 mm,lobes 4-5(-6), 2.0-2.4 x 1.0 mm, elliptic, apex acute. Antherodes malformed, 0.82-1.10 x 0.5-0.6 mm, apiculus strongly recurved; pollen absent. Ovary 1 x 1 mm. Stigma 0.30-0.48 mm high, spreading, outer parts appressed to ovary ± 2.5 mm diameter. Bisexual flowers with the same colouration; calyx 1.6-2.0 mm, tube 0.4-0.7 mm, lobes 4-5, 0.7-1.1 x 0.6-0.9 mm, oblong, apex acute, margins minutely ciliolate. Corolla 3.0-4.2 mm, tube 0.3-0.6 mm, lobes 4-5, 2.6-2.8 x 1.0-1.4 mm, elliptic, apex acute. Anthers 1.1-1.8 x 0.8-1.2 mm, apiculus upright; pollen white. Ovary 0.7-0.9 x 0.8-1.0 mm. Stigma 0.8-0.85 mm high, upright. Drupe (5-)8-9 mm long, obovoid, flesh red to orange (rarely maroon), on pedicels 8-10 mm long. Endocarp 5.0-6.7 × 3.5-4.5 mm, obovate to broadly obovate, dull, buff to buff brown, orange-brown or henna, bearing 1(-2) seeds.

Flowering:
August - January

Fruiting:
September - May

Threats:
Not Threatened

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange 9 February 2011. Description adapted from Allan (1961) and Webb & Simpson (2001).

References and further reading:
Allan, H.H. 1961: Flora of New Zealand. Vol. I, Wellington, Government Printer.

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=1011

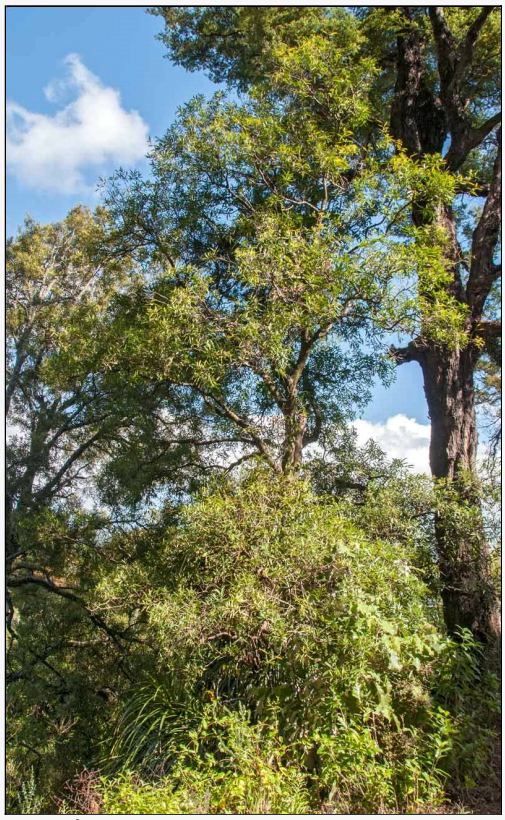
Nestegis lanceolata

Common Name(s):
White maire

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North and South Islands. Widespread and common in the North Island except in the southern part of range (Horowhenua, southern Wairarapa and Wellington areas). Very uncommon in the South Island where it is locally present in the Marlborough Sounds, reaching its southern limit along the Tuamarina River.

Habitat:
Widespread in coastal to montane forest. Commonly found on steep hill slopes and ridge lines but also can be locally common in riparian forest. As a rule white maire tends to avoid frost-prone habitats and sites that frequently flood. In the northern part of its range it is often found with narrow-leaved maire (Nestegis montana) and black maire (Nestegis cunninghamii). In some parts of eastern Northland it is also found in coastal forest with Nestegis apetala.



Caption: Upper Hutt.
Photographer: Jeremy Rolfe

Caption: Upper Hutt.
Photographer: Jeremy Rolfe

Features*:
Stout gynodioecious spreading tree up to 20 m tall usually forming a domed canopy; trunk up to c. 1 m diameter; often with several arising from base, these usually straight to somewhat arching, bark firm (not flaking), grey-brown to dark brown, tessellated. Branches slender, upright to spreading; branchlets glabrescent. Leaves glabrous, coriaceous, dark green above and ± glossy, paler beneath, margins plane (rarely weakly undulating), entire with weakly impressed to slightly raised midrib (side veins not evident when leaf fresh); borne on flexible but stout petioles 5-10 mm long; lamina of juveniles 100-400 × 4-10 mm,narrowly linear to linear, apex acute sometimes acuminate; adults lamina 40-80(-100) × 10-30 mm, narrow-ovate, ovate-lanceolate to narrow-elliptic, apex acute to subacuminate, base cuneately narrowed or attenuate; midrib ± raised to weakly impressed above, somewhat prominent below. Inflorescence a 5-10(-14)-flowered raceme, 10-20 mm long; rhachis and pedicels glabrous or minutely puberulent. Male flowers with 2(-4) exserted anthers > 2 mm long, ovary usually rudimentary (occasionally functional); female flowers with large 2-lobed stigma and more deeply lobed calyx, anthers if present rudimentary. Drupe 10-18 mm long, oblong-ovoid to ovoid, flesh pink, red, pinkish-red or orange; endocarp 6.0-15 × 3.5-9.5 mm, dull, pale orange-yellow, oblong, sometimes ovate or narrowly oblong-elliptic. Seed purple-brown. Description adapted from Allan (1961) and Webb & Simpson (2001).

Flowering:
November - January

Fruiting:
December - February

Threats:
Not Threatened

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange 9 February 2011. Description adapted from Allan (1961) and Webb & Simpson (2001).

References and further reading:
Allan, H.H. 1961: Flora of New Zealand. Vol. I, Wellington, Government Printer.

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=1033

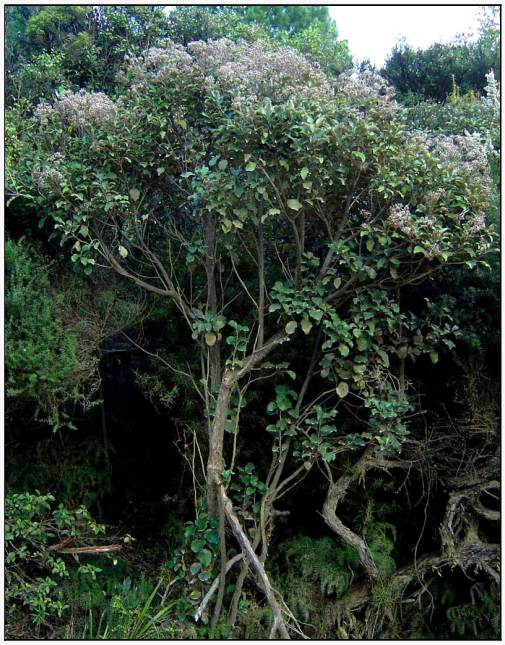
Olearia furfuracea

Common Name(s):
Akepiro

Current Threat Status (2012):
Not Threatened

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1050



Caption: Olearia furfuracea (Akepiro)
Photographer: Wayne Bennett

Caption: Flowers of Olearia furfuracea
Photographer: Wayne Bennett

Olearia rani var. rani

Common Name(s):
heketara

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. Northern North Island only, from te Paki south to the northern Waikato and near Thames

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1060

Caption: Coromandel, October
Photographer: John Smith-Dodsworth

Phyllocladus trichomanoides

Common Name(s):
Tanekaha, celery pine

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. New Zealand: North and South Islands. In the North Island widespread from Te Paki to about the northern Manawatu - after which it is scarce. In the South Island confined to the Marlborough Sounds, northern Richmond Range and North-West Nelson from Puponga south to about Kahurangi Light and across to Abel Tasman National Park.

Habitat:
Found from sea level to c.1000 m a.s.l. Tanekaha is a common tree in northern New Zealandwhere it often found growing in association with kauri (Agathis australis) on ridge lines. Tanekaha is also common in secondary regrowth forest overlying poorly draining and/or infertile soils. It can be very common in reverting fire-induced gumland scrub. In the Central North Island tanekaha-dominated forest is locally common overlying ignimbrite rock and this forest type is very much a feature of the northern Taupo - King Country - Atiamuri area where extensive tanekaha-dominated forests are present overlying such high aspect ratio ignimbrites as the Whakamaru Ignimbrite. Further south Tanekaha is rarely such a major component of the forest canopy.

Features*:
Monoecious tree up to 25 m, trunk up to 1 m diameter; phylloclades alternate, pinnately arranged on whorled rhachides up to 300 mm long. Leaves of juveniles up to 20 mm long, narrow-linear, deciduous; of adults much smaller. Phylloclades 10-15 per rhachis, irregularly and broadly rhomboid, flabellately lobed, cuneate at base; lobes obtuse to truncate, margins minutely crenulate; leaf-denticles small, subulate, 1.5-3.0 mm long, up to 1.5 mm wide. Male strobili terminal in clusters of 5-10, pedicels 3-10 mm long; staminal portion c.10 mm long, apiculus small, triquetrous; carpidia rather thick, marginal on reduced final phylloclades up to 30 mm long, in clusters of 6-8; seeds nutlike, exserted beyond white, fleshy, irregularly crenulate cupule, c.3 mm long.

Flowering:
September - December

Fruiting:
January - April

Threats:
Not Threatened

Caption: Phyllocladus trichomanoides (Tanekaha)
Photographer: Wayne Bennett

Caption: Catkins of Phyllocladus trichomanoides
Photographer: Wayne Bennett

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange 1 August 2004. Description adapted from Allan (1961).

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=1117

Podocarpus cunninghamii

Common Name(s):
Mountain totara, Hall's totara, thin-barked totara, totara-kiri-kotukutuku

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North, South and Stewart Islands.

Habitat:
Lowland, montane to lower subalpine forest (but notable more common in montane forest).

Features*:
Robust dioecious conifer up to 20 m tall. Trunk stout, 1-1.5 m diam., clad in papery, thin, freely flaking reddish-grey bark. Trunk without branches at base, branches slender, erect, spreading or somewhat drooping. Leaf bud significantly broader than the diam., of the branchlet, surrounded by caducous, papery, ovate bracts. Leaves yellow-green, green, or brownish-green, erect, leathery; juvenile 25-50 x 4-5 mm, adults 20-30 x 3-4 mm., narrow-linear to linear-lanceolate, acute to acuminate, apex very pungent, mid-vein distinct. Male cones (strobili) axillary, 10-25 mm, solitary or up to 5 on a common peduncle. Female branchlets axillary, ovules solitary or paired. Receptacle of 2-4 scales, irregularly elliptic-oblong to obovate-oblong, maturing as a red, swollen, succulent, sweet tasting "fruit" this surmounted by a 1(-2) elliptic, elliptic-oblong or ovate-oblong, (5-)6.5-8.5 mm long, grey nut brown or dark brown (green when fresh) seed.

Flowering:
(August-) October (-December)

Fruiting:
Fruits take a year or so to ripen, and may be found throughout the year, usually peaking at about the same time that cones are produced. They are most frequently seen between April and May

Threats:
Not Threatened

Caption: Seeds of Podocarpus cunninghamii
Photographer: Wayne Bennett

Caption: Podocarpus cunninghamii
Photographer: Wayne Bennett

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange (8 January 2005). Description adapted from Kirk 1889 and Allan 1961).

References and further reading:

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

Connor, H.E.; Edgar, E. 1987: Name changes and Nomina Nova IV. New Zealand Journal of Botany 25:

de Lange, P.J.; Rolfe, J.R. 2010: New Zealand Indigenous Vascular Plant Checklist. Wellington, New Zealand Plant Conservation Network. 164pp.

Gardner, R. 1990. Totara and Halls totara. Auckland Botanical Society Journal, 45: 27-28.

Kirk, T. 1889: The Forest Flora of New Zealand. Wellington, Government Printer.

Molloy, B.P.J. 1985: The continuing saga of native conifer nomenclature. DSIR Botany Division Newsletter 102: 26-27.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1174

Podocarpus totara var. totara

Common Name(s):
Totara

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. Common throughout most of the North and South Islands. Present but extremely scarce on Stewart Island (Freshwater River).

Habitat:
Widespread and at times abundant tree of lowland, montane and lower subalpine forest. May also form a vegetation type in which it is the dominant species.

Features:
Robust dioecious conifer up to 30 m tall. Trunk stout, 2-3 m diam., clad in thick, corky, furrowed and somewhat stringy reddish-grey bark. Trunk without branches at base, branches stout, erect to spreading. Leaf bud narrower than or the same diam., as branchlet, surrounded by caducous, papery, narrowly lanceolate bracts. Leaves brownish-green, erect, leathery; juvenile 20 x 1-2 mm, adults 15-30 x 3-4 mm., linear-lanceolate, acute, apex pungent, mid-vein distinct to obscure. Male cones (strobili) axillary 10-15 mm, solitary or in 4s. Female branchlets axillary, ovules solitary or paired, receptacle of 2-4 scales, acute and free at tips, maturing as a red, swollen, succulent, sweet tasting "fruit" this surmounted by a 1(-2) broadly elliptic, ovoid-oblong 3-6 mm, semi-glossy, buff, grey nut brown, henna or dark brown (green to glaucous-green) when fresh, seed.

Flowering:
(August-) October (-December)

Fruiting:
Fruits take a year or so to ripen, and may be found throughout the year, usually peaking at about the same time that cones are produced. They are most frequently seen between April and May

Threats:
Not Threatened, though as a vegetation type it is all but extinct throughout most of its former range.

Caption: Podocarpus totara var. totara at Pokemokemoke
Photographer: Wayne Bennett

Caption: Seeds of Podocarpus totara var. totara
Photographer: Wayne Bennett

References and further reading:

Gardner, R. 1990. Totara and Halls totara. Auckland Botanical Society Journal, 45:27-28.

Moorfield, J. C. (2005). Te aka : Maori-English, English-Maori dictionary and index. Pearson Longman: Auckland, N.Z.

Landcare Research. Nga Tipu Whakaoranga - Maori Plant Use Database. http://maoriplantuse.landcareresearch.co.nz/WebForms/default.aspx

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1176

Pseudopanax arboreus

Common Name(s):
Fivefinger, five finger, whauwhaupaku

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. Widespread (though rare in Central Otago). North and South Islands

Habitat:
Coastal to montane (10-750 m a.s.l.). Moist broadleaf forest. Frequently epiphytic. A frequent component of secondary forest. Streamsides and forest margins.

Features*:
Us. Dioecious. Small multi-branched tree to 8 m tall, branches and branchlets brittle. Leaves alternate, leaflets 5-7 (us. 5), palmate. Petioles c. 15-20 cm long, sheathing branchlet at base. Petiolules c. 3-5 cm long, pale green. Leaflets obovate-oblong to oblong-cuneate, thinly coriaceous, coarsely serrate-dentate, acute or acuminate to obtuse; midveins and main lateral veins obvious above and below; teminal lamina 10-20 x 4-7 cm. Inflorescence and panicle, terminal, compound; flowers usually unisexual; 8-20 primary rays (branchlets), up to 10 cm long; 15-20 secondary rays; umbellules with 10-15 flowers in each. Calyx truncate or obscurely 5-toothed; flowers c. 5 mm diam., sweet-scented; petals 5, white to pink flushed, ovate to triangular, acute; stamens 5, obvious, filaments c. = petals; ovary 2-loculed, each containing 1(-2) ovules; style branches 2, spreading. Fruit fleshy, 5-8 mm diam., style branches retained on an apical disc, very dark purple, laterally compressed. Seeds 2(-3) per fruit, wrinkled, 3-6 mm long.

Flowering:
June to August

Fruiting:
August to February

Threats:
Not Threatened. In places the petiolules of Pseudopanax arboreus (and other fleshy-leaved Pseudopanax species) are a conspicuous element of possum (Trichosurus vulpecula) diet and the forest floor can become littered with discarded leaflets.

***Attribution:**
Description adapted from Allan (1961) and Webb and Simpson (2001).

References and further reading:
Allan, H.H. 1961. Flora of NZ, Vol. I. Government Printer, Wellington

Webb, C.J. & Simpson, M.J.A. 2001. Seeds of NZ gymnosperms and dicotyledons. Manuka Press, Christchurch.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1194

Caption: Pseudopanax arboreus
Photographer: Wayne Bennett

Caption: Flowers of Pseudopanax arboreus
Photographer: Wayne Bennett

Pseudopanax crassifolius

Common Name(s):
Horoeka, lancewood

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North, South and Stewart Islands. Widespread and common

Habitat:
Lowland to montane forest. Sealevel to c. 750 m a.s.l.

Features*:
Bushy topped tree to 15 m tall, branchlets fleshy, trunk us. unbranched in lower part, to 50 cm diam., distinctly ridged when young, bark dark becoming paler with age, wood tough. Leaves alternate; leaflets 1-3 in seedling, palmate, sessile or subsessile on very short petiolule, submembranous coarsely toothed, absent from juvenile and adult. Juvenile leaves dark green, narrow-linear, deflexed, to 1 m long, coriaceous, midrib pale cream-yellow, raised, margins distantly sharply toothed, distal margin of tooth perpendicular to midvein, not swollen. Adult leaves shorter, 10-20 x 2-3 cm, dark green, very occ. trifoliate (probably due to hybridisation with oither species), narrow elliptic-cuneate to lanceolate or linear-obovate, acute or obtuse, margins entire to sunuate or coarsely serrate, subsessile or on petioles to 10 mm long, petiole base expanded around stem. Inflorescence a terminal umbel, irregularly compound; primary rays (branchlets) 5-10, c. 6 cm long; umbellules sometimes racemosely arranged. Ovary 5-loculed, each containing 1 ovule; style branches 5, connate, tips sometimes free. Fruit fleshy, subglobose, 4-5 mm diam., style branches retained on an apical disc, dark purple when ripe. Seeds 4-5 per fruit, easily separated, broadly ovate, grooved, 2.2-3.5(-5.5) mm long.

Flowering:
January-April

Fruiting:
January-April

Threats:
Not Threatened

***Attribution:**
Description adapted from Allan (1961) and Webb and Simpson (2001).

References and further reading:
Allan, H.H. 1961. Flora of NZ, Vol. I. Government Printer, Wellington

Webb, C.J. & Simpson, M.J.A. 2001. Seeds of NZ gymnosperms and dicotyledons. Manuka Press, Christchurch.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1196

Caption: Pseudopanax crassifolius
Photographer: Wayne Bennett

Caption: Seeds of Pseudopanax crassifolius
Photographer: Wayne Bennett

Quintinia serrata

Caption: Mt Karioi, south of Raglan
Photographer: John Sawyer

Caption: Tawheowheo (Quintinia serrata) in fruit Mt Karioi, Raglan
Photographer: Dean Baigent-Mercer

Common Name(s):
Tawheowheo, quintinia

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. New Zealand: North and South Islands (from about Kaitaia south to Wellington; in the South Island mostly westerly in the South Island to about Martins Bay)

Habitat:
Coastal to montane usually in forest, in the northern part of its range often confined to cooler valley heads and ridge lines or prominent on the summits of major ranges and peaks (in so called "cloud forest"). In the southern part of its range extending into coastal forest where it may form a major part of the forest understorey and/or canopy in disturbed sites

Features*:
Small tree up to 12 m tall; trunk up to 500 mm d.b.h. Bark greyish-white to grey-brown, often mottled and covered with small lichens, mosses and liverworts. branches ascending. Young branchlets, leaves, peduncles and pedicels ± viscid and invested with lepidote ± scurfy scales. Leaves alternate, exstipulate, yellow-green to dark green usually blotched dark maroon sometimes not, borne on petioles up to 20 mm long; lamina 20-160 × 10-50 mm, narrowly lanceolate, oblanceolate, narrowly oblong, elliptic, broadly elliptic-obovate to obovate-cuneate, apex obtuse, subacute to acute, margins weakly to strongly undulose or flat, obscurely to distinctly serrate, or entire (if serrate then serration apices distinctly glandular). Inflorescences racemose, axillary or terminal. Racemes 35-80 mm long, pedicels c.3-4 mm long; Flowers gynodioecious, 3-7 mm diameter, calyx tube adnate to ovary, lobes persistent; petals 1.5-3·5 mm long, white to whitish-pink, obovate-oblong, narrow ovate to ovate-oblong, imbricate; female flowers with 5 rudimentary stamen (often reduced to staminodes, sometimes completely absent); ovary 3-5-celled, style persistent; stigmas capitate, 3-5-lobed; hermaphrodite flowers similar but with 5 functional stamens and functional gynoecium. Capsules 3-5-valved, 4-6 mm long, including style, obovoid, ellipsoid or oblong. Seeds 1.3-2.0 mm long, narrowly ovate, elliptic, ovate-elliptic to oblong, compressed, surface glabrous, finely reticulate with elongated cells, orange-brown to brown.

Flowering:
September - March

Fruiting:
November - June

Threats:
Not Threatened

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange January 2012. Description adapted from Allan (1961), Dawson & Lucas (2011) and Webb & Simpson (2001).

References and further reading:

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

Dawson, J.; Lucas, R. 2011: New Zealand's Native Trees. Craig Potton Publishing, Nelson.

Eagle, A.L. 1982: Eagle's trees and shrubs of New Zealand, second series. Collins, Auckland.

Eagle, A.L. 2006: Eagle's complete trees and shrubs of New Zealand. Te Papa Press, Wellington.

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

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1220

Rhopalostylis sapida

Common Name(s):
Nikau palm

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North Island, South Island from Marlborough Sounds and Nelson south to Okarito in the west and Banks Peninsula in the east. Also on Chatham and Pitt Islands. However Chatham Islands plants have adistinct juveniel form, larger fruits, and thicker indumentum on the fronds.

Habitat:
Primarily a species of coastal to lowland forest in the warmer parts of New Zealand.

Features:
Trunk up to 15 m, stout, covered in grey-green leaf scars, otherwise green. Crownshaft 0.6(-1) m long, dark green, smooth, bulging. Fronds up to 3 m long; leaflets to 1 m, closely set (sometimes over lapping), ascending. Spathes c.300 x 150 mm., between pink and yellow, caducous. Inflorescence shortly stalked, with many branches, 200-400 mm long. Flowers sessile, unisexual, tightly packed, lilac to pink. Males in pairs, caducous, stamens 6. Females solitary, with minute staminodes, ovary 1-locular, stigmas terminal, recurved, persistent. Fruit c.10 x 7 mm, elliptic-oblong, flesh red.

Flowering:
November - April

Fruiting:
February - November

Threats:
Not Threatened

References and further reading:

Esler, A.E. 1969. Leaf fall and flowering of nikau. Wellington Botanical Society Bulletin, 36: 19-22

Greenwood, R.M. 1969. Notes on growth of young nikau plants. Wellington Botanical Society Bulletin, 36: 22-23

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1259

Caption: Rhopalostylis sapida
Photographer: Pat Enright

Caption: Rhopalostylis sapida
Photographer: Pat Enright

Schefflera digitata

Common Name(s):
Patete, pate, seven-finger

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. Widespread. North, South and Stewart Islands.

Habitat:
Lowland to montane forest (sealevel to 1000 m a.s.l.).

Features:
Dioecious(?) small tree to 8 m. Trunk irregularly branched; bark greenish, finely ridged and with scattered prominent lenticels. Petioles terete, to 25 cm long, sheathing branchlet, reddish. Petiolules to 2 cm, reddish. Leaves alternate, palmate, with (3)-10 leaflets (us. 7), upper surface evenly green in adult, underside pale, shiny, purplish in juvenile. Terminal leaflet to 20 cm long; lateral leaflets decreasing in size; obovate-cuneate, tip acuminate to obtuse; margins sharply serrate in adult, irregularly lobed to pinnatifid in juvenile. Inflorescence a panicle, axillary (occ. cauline), branches many, spreading, to 35 cm; bracts and bactlets small. Umbels many, up to 10 flowers in each; peduncles subsessile to 10 mm long, pedicels shorter. Flowers greenish cream, c. 7 mm diam. Petals 5(-6), acute. Stamens 5, filaments c. = petals. Style branches 5 (or more), connate below forming an irregular disc. Fruit subglobose,c. 3.5 mm diam., fleshy, dark purple when ripe, containing (5-)7-10(-11) seeds. Seed 2-2.5 mm.

Flowering:
February-March

Fruiting:
February-March

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1281

Caption: Waipoua Forest, Northland
Photographer: John Sawyer

Caption: Schefflera digitata (Patete)
Photographer: Wayne Bennett

Toronia toru

Common Name(s):
toru, toro, toto, mihimihi

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North Island from Te Paki south to the mouth of the Waihaha River, on the western side of Lake Taupo. However south of Auckland, toru is mostly found in the east from the Coromandel throughout the Bay of Plenty to about Atiamuri. In the western Waikato it is known locally from the northern end of the Aotea Harbour, near Kawhia (Rakaunui), Te Kauri and Whenuapo in the Taumatatotara Range

Habitat:
Coastal to montane mostly on infertile soils, in open shrubland (especially gumland), early successional forest and along ridge lines and around slip scars in kauri (Agathis australis) and/or tanekaha (Phyllocladus trichomanoides) dominated forest. It is locally abundant on silicic igneous rocks such as rhyolite, ignimbrite and pumice.

Caption: In cultivation. Nov 1981.
Photographer: Jeremy Rolfe

Caption: In cultivation. Oct 1982.
Photographer: Jeremy Rolfe

Features*:
Small dioecious (or gynodioecious) tree up to 12 m tall; trunk 1 or more arising from base, 0.2-0.3 m dbh; bark firm (not flaking), grey, grey-brown, brown or mottled grey, grey-brown. Branches usually numerous, initially upright, then spreading (sometimes decurved and/or pendulous); branchlets initially semi-terete (± compressed on one or more sides), maturing terete, minutely puberulous. Leaves alternate, semi-whorled, glabrous, ± fleshy and thickly coriaceous, bright green to yellow green (often mottled or spotted with red), glossy, midrib light green or yellow, raised, veins not evident, margins entire, thickened and often distinctly paler than rest of lamina; petioles stout, fleshy, 2-4 mm long, yellow-green or red. Lamina 160-250 mm × 8-15 mm, narrow linear-lanceolate, abruptly acute or apiculate, base attenuate (gradually narrowing to petiole). Inflorescences axillary, bracteate, 6-12(-20)-flowered racemes up to 60 mm long; rhacis and pedicels pubescent, indumentum ferruginous; bracts basal, minute, ± caducous. Flowers fragrant, tepals 5-9 mm long, linear-ovate to ovate, abaxially pubescent, indumentum ferruginous, adaxially yellow, margins undulate, ± pubescent; staminate flowers with 4 stamens, ovary rudimentary in some flowers possibly functional; pistillate flowers with 4 rudimentary stamen, ovary urceolate, subsessile, style short, stigma oblique. Drupe 1(-2)-seeded, 12-18 mm long, ellipsoid, exocarp succulent, flesh red; endocarp 9-14 mm long, elliptic (sometimes broadly elliptic or ovate) or assymetric, hard, surface reticulate and finely striate, semi-glossy, light brown to brown, retriculate.

Flowering:
September - January

Fruiting:
October - May

Threats:
Not Threatened

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange 10 February 2011. Description adapted from Allan (1961) and Webb & Simpson (2001).

References and further reading:
Allan, H.H. 1961: Flora of New Zealand. Vol. I, Wellington, Government Printer.

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=796

Vitex lucens

Common Name(s):
puriri

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. New Zealand: Three Kings Islands and North Island from Te Paki to Taranaki, Mahia Peninsula and the northern Hawkes Bay. Puriri is, as a rule, scarce south of about Opotiki and Kawhia.

Habitat:
In the northern part of its range Puriri is a common co-dominant with Taraire (Beilschmiedia tarairi) and karaka (Corynocarpus laevigatus) especially on rich fertile soils derived from basaltic and basaltic-andesitic igneous rocks. South of the northern Bay of Plenty and Raglan Harbours it is rarely found inland and is more commonly found in coastal forest where it co-habits with pohutukawa (Metrosideros excelsa) and karaka. Puriri is also an important forest tree on many of the smaller islands of the Hauraki Gulf, where it may at times be the canopy dominant.


Caption: In cultivation.
Photographer: John Braggins


Caption: In cultivation.
Photographer: John Braggins

Features*:
Tree up to c. 20 m. tall with a broad spreading canopy; trunk up to c.1·5 m. diamete; bark grey-brown, firm, flaking in small irregular-shaped shards. Branches stout, spreading; branchlets 4-angled, green. Leaves opposite, glabrous, coriaceous, compound, on petioles up to 110 mm long; Leaflets 3-4-5, somewhat undulose, adaxially dark green, glossy, abaxially lighter green, mat; basal one or pair of leaflets usually much smaller than the terminal 3, digitate; lamina of 3 main leaflets 50-140 × 30-60 mm; elliptic-oblong to obovate, abruptly acute to subacuminate, margin entire. Domatia (pit-type) present at axils of costa and main veins. Inflorescence in axillary, dichotomous, (4)-10-15-flowered panicles. Calyx cupular, minutely 5-toothed; corolla dull red, pink or white, pubescent, 2-lipped, c.25-35 mm long. Upper lip entire or bifid, lower deflexed, 3-lobed. Style slender, bifid, c.25 mm long. Drupe 20-26 mm diameter subglobose, bright red, pink or white.

Flowering:
May - October

Fruiting:
January - October

Threats:
Not Threatened. However, in some parts of Northland puriri "die-back" has been observed (the exact causes of which are much debated). Puriri is at times heavily browsed by possums, to such an extent that trees can die.

***Attribution:**
Factsheet prepare for NZPCN by P.J. de Lange 9 February 2011. 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=1359

Weinmannia silvicola

Common Name(s):
towai, tawhero

Current Threat Status (2012):
Not Threatened

Distribution:
Occurs from Te aki as far as the Waitakere Ranges.

Features*:
Tree up to 15 metres tall or larger with a trunk up to 1 m. diametre; young branchlets, petioles, peduncles and pedicels ± densely pilose-pubescent. Leaves of seedlings simple to 5-jugate, some pairs trifoliolate, membraneous; leaflets up to 3 × 1 cm., elliptic to elliptic-obovate in outline, incised-serrate. Leaves of juveniles and of reversion shoots up to 10-jugate, membraneous; leaflets ovate-elliptic to elliptic or elliptic-oblong, acute to subacute; terminal lflt up to 8 × 3 cm., on petiolule c. 1 cm. long; lateral subsessile, diminishing downward from 6 × 3 cm. to 2.5 × 2 cm. Leaves of adults of two main forms (intermediate forms not infrequent): (a) leaflets mostly obtuse, 3-5-foliolate, rarely simple, coriaceous., bluntly crenate-serrate to serrate, obovate-oblong to broad-elliptic or elliptic; terminal leaflet 4-6 × 2-3 cm., on petiolule c. 1 cm. long; lateral 4-3 × 2 cm.;- (b) leaves 3-5-foliolate, rarely simple, coriaceous, leaflets mostly acute to subacute, serrate to crenate-serrate, elliptic; terminal leaflet 4-7 × 2-3 cm., lateral 7-4 × 3-2 cm. Racemes 8-12 cm. long, many-flowered, pedicels 2-3 mm. long, numerous axis; sepals c. 1 mm. long, narrow-ovate to subulate-obtuse, persistent; petals c. 1·5 cm. long, ovate to oblong, white to pale rose; stamens exserted; styles 2.5-4 mm. long, persistent. Capsules 4-5 cm. long, glab. or nearly so; seeds with tuft of hairs at apex and base.

Threats:
Not Threatened

***Attribution:**
Description adapted from Allan (1961)

References and further reading:
Allan, H.H. 1961: Flora of New Zealand. Vol. I. Goverment Printer, Wellington.

McKenzie, R. 1960. The distributional overlap of *Weinmannia sylvicola* and*Weinmannia racemosa*. Auckland Botanical Society Journal, 17: 7-8

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1369

Caption: Towai
Photographer: Wayne Bennett

Caption: Towai
Photographer: Wayne Bennett

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.
Basiscopic	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 of 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., Nematoceras trilobum 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., Nematoceras trilobum 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.
Fastigiate	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.
Ferrugineous	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 fimbrillae (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.
Foliolate	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.
Frond	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	abrubtly bent
Genus	A taxonomic rank of closely related forms that is further subdivided in to species (plural = genera). In a scientific name (e.g., Sicyos australis), 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.
Gynoecium	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 Cotula and Leptinella.
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 Avicennia marina var. resiifera. 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 swampier 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.
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 widdest 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
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).
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.

Term	Definition
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
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.

Term	Definition
Quadrate	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.
Repand	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 oioi (Apodasmia similis)
Retrorse	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 horizontallly or creeping) or short and erect.
Rhombic	Diamond-shaped.
Rhomboid	Diomond 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 Juncus 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 (Alectryon excelsus).
Scabrid	Roughened or rough with delicate and irregular projections.
Scale	Any thin, flat, membranous structure.
Scape	A leafless flower stem.
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".
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.

Term	Definition
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 of 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.
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.

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