Native plants of Coatesville North Auckland

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

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.

Abrodictyum elongatum

Common Name(s):
Bristle fern

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. New Zealand: North, South and Chatham Islands. Scarce on the Chatham Islands where it is only known from Rekohu (Chatham Islands)

Habitat:
Coastal to montane in closed and open forest and gumland scrub. Usually on semi-shaded mossy clay banks, in overhangs on rock, soil, clay or along stream side banks. Often in rather dry or seasonally dry, semi-shaded sites. This species appears to resent poorly drained habitats.

Features*:
Terrestrial tufted fern. Rhizomes short, stout, erect, bearing numerous dark brown hairs. Fronds submembranous, ± cartilaginous, dark olive-green, adaxially glossy, surfaces often covered in epiphyllous liverworts and mosses. Stipes 50-200 mm long. Rachises winged only near apices. Laminae 60-150 × deltoid, 3-pinnate. Primary and secondary pinnae overlapping, stalked; ultimate segments broad, deeply toothed, the veins forking several times in each. Sori sessile, borne in notches of lamina segments, several on each primary pinnae. Indusia tubular, mouth slightly flared, receptacle exserted.

Flowering: N.A.

Fruiting: N.A.

Threats:
Not Threatened

Caption: Lowry Kauri Forest, Glen Murray
Photographer: Peter J. de Lange October 1988

Caption: Long Bay, Coromandel
Photographer: John Smith-Dodsworth

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange (21 April 2011). 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

Ebihara, A.; Dubuisson, J-Y.; Iwatsuki, K.; Hennequin, S.; Ito, M. 2006: A taxonomic revision of the Hymenophyllaceae. Blumea 51: 2-57

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=2274

Agathis australis

Common Name(s):
kauri, kauri pine

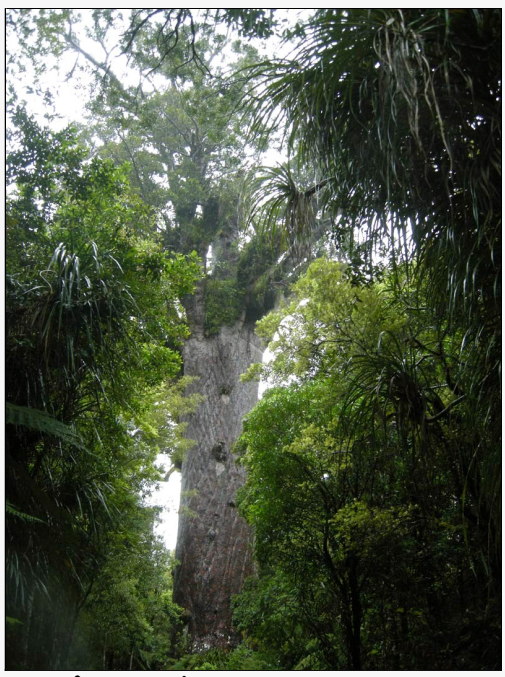
Current Threat Status (2012):
Non Threatened

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

Astelia trinervia

Common Name(s):
Kauri grass

Current Threat Status (2012):
Non Threatened

Distribution:
Endemic. In the North Island common from Te Paki to near Awakino in the West and Tauranga in the East. In the South Island known only from North West Nelson

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1539

Caption: Astelia trinervia
Photographer: Wayne Bennett

Caption: Astelia trinervia
Photographer: Wayne Bennett

Blechnum blechnoides

Common Name(s):
Shore hard fern

Current Threat Status (2012):
Non Threatened

Threats:
Not Threatened but often patchy in its distribution and quite uncommon north of Auckland

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=2069

Caption: Auckland Islands
Photographer: John Barkla

Caption: Bluff
Photographer: John Smith-Dodsworth

Blechnum chambersii

Caption: Stokes Valley, Lower Hutt. Mar 2013.
Photographer: Jeremy Rolfe

Caption: Blechnum chambersii
Photographer: Wayne Bennett

Common Name(s):
Lance fern, nini, rereti

Current Threat Status (2012):
Non Threatened

Distribution:
Indigenous. New Zealand: North, South, Stewart and Chatham Islands. Also Australia and some Pacific Islands

Habitat:
Coastal to montane. Usually inhabiting forested areas where it commony grows along shaded river and streams sides, or within the spray zone of waterfalls; or forms a dominant part of the ground cover in riparian forest. It also very common in coastal and lowland forest on shaded cliff faces. It becomes especially luxuriant in limestone country whereit is often a conspicuous fern of cave entrances and overhangs.

Features*:
Rhizome erect to suberect. Fronds dimorphic, 0.12–0.65 m long, 20–100 mm wide, emergent fronds green, often tinged pinkish, mature fronds dark green, often tinged maroon. Stipe 0.02–0.15 m long, stramineous, becoming purple-black towards base; scales linear-lanceolate, subulate, broadly based, entire, reddish-brown. Lamina narrowly linear-lanceolate, pinnate with 17–40 or more pairs of pinnae. Rachis and costae stramineous, often dark purplish towards base on undersurface, glabrous or with very sparse short acuminate red-brown scales. Sterile pinnae oblong, weakly falcate, obtuse or acuminate, 15–32 × 5–10 mm, adnate with broad bases; margins crenate to serrate; basal pinnae shorter, more obtuse. Fertile pinnae linear, 12.0–45.0 × 1.0–2.5 mm, reduced and often sterile towards lamina base.

Flowering:
N.A.

Fruiting:
N.A.

Threats:
Not Threatened

***Attribution:**
Fact Sheet Prepared for NZPCN by: P.J. de Lange (19 September 2012). Description adapted from Chambers & Farrant (1998)

References and further reading:
Chambers, T.C.; Farrant, P.A. 1998: Blechnaceae. Flora of Australia 48: 359-384. ABRS/CSIRO Australia, Victoria

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1542

Blechnum discolor

Common Name(s):
Crown fern, petipeti, piupiu

Current Threat Status (2012):
Non Threatened

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1544

Caption: Lake Rotoroa, Nelson Lakes National Park
Photographer: John Sawyer

Caption: Boulder Hill, Lower Hutt. Mar 2013.
Photographer: Jeremy Rolfe

Blechnum nigrum

Common Name(s):
black hard fern

Current Threat Status (2012):
Non Threatened

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1551

Caption: Mangaone track. Nov 1984.
Photographer: Jeremy Rolfe

Caption: Coromandel
Photographer: John Smith-Dodsworth

Cardiomanes reniforme

Common Name(s):
Kidney fern, Konehu, Kopakopa, Raurenga

Current Threat Status (2012):
Non Threatened

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

Habitat:
Coastal to montane. usually in dense forest but also found on boulders, rock falls, cliff faces and in some shrub land, and early stage successional forest. rarely in pine plantations.

Features*:
Terrestrial or epiphytic fern forming extensive, interwoven creeping patches, Rhizomes long-creeping, much branched and/or interwoven. Stipes 50-250 mm long, very brittle, margins prominently winged. Fronds bright yellow-green to dark green, glossy. Laminae 30-100(-120) × 40-130 mm, reniform to almost orbicular, entire (not divided), venation conspicuous. Sori crowded along lamina margin, slightly sunken into lamina. Indusia cupular, not widened at mouth, receptacle exserted.

Flowering:
Not applicable - spore producing

Fruiting:
Not applicable - spore producing

Threats:
Not Threatened

Caption: Ruahine Range
Photographer: John Sawyer

Caption: Ruahine Range
Photographer: John Sawyer

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange (20 April 2011). 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=1322

Coprosma arborea

Common Name(s):
Mamangi, tree coprosma

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. New Zealand: Three Kings and North Island, where found from Te Paki south to near Waitomo in the west and about Gisborne in the East

Habitat:
Coastal to lower montane forest - but mostly coastal to lowland. Often forming the subcanopy in coastal kauri forest or mixed pohutukawa-hardwood forest. rarely, such as on Waiheke Island, forming a distinct forest type where it dominates the canopy.

Features*:
Tree 8-12 m tall; trunk 200-500 mm diameter; branches rather close-set, suberect to spreading; branchlets slender, pubescent. Petioles winged in upper ½, 8-20 mm long. Stipules short, triangular, connate near base, ciliolate, with prominent denticle. Adult lamina submembranous to subcoriaceous, glabrous, somewhat glossy, 50-80 × 30-48 mm, yellow-green, dark green above, usually mottled maroon or purple, pale wine-red below, ovate to broad-elliptic to oblong, sometimes suborbicular; apex rounded or retuse, sometimes apiculate or mucronulate; cuneately or abruptly narrowed to petiole; margins thickened, indistinctly waved, often subcrenulate; juvenile lamina 12-30 × 10-18 mm, spathulate, maroon, dark green mottled with maroon, undersides dull wine-red. Reticulations of lamina obscure above, usually distinct below. Male flower in dense glomerules, terminal on main and axillary branches; calyx-teeth linear, obtuse, ciliolate; corolla funnelform, lobes ovoid, acute, more or less = tube. Female flowers in clusters of 2-4; calyx-teeth obtuse, ciliolate; corolla-tube short, lobes long, acute. Drupe fleshy, 6-8 mm long, white, broad-oblong.

Flowering:
September - December

Fruiting:
January - December

Threats:
Not Threatened

Caption: Coprosma arborea (Mamangi)
Photographer: Wayne Bennett

Caption: Fruit
Photographer: John Smith-Dodsworth

***Attribution:**
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=2306

Coprosma grandifolia

Common Name(s):
Kanono, manono, large-leaved coprosma, raurekau

Current Threat Status (2012):
Non Threatened

Distribution:
Endemic. North to South Islands. In the South Island extending to Lake Ianthe in the west and the Marlborough Sounds in the east.

Habitat:
Common in the understorey of forest, and in sheltered shady sites from the coast to montane and cloud forest. In areas of high rainfall can be a major component of shrublands, and within regenerating forest. Often common along the margins of logging tracks and roads.

Flowering:
(March-) April (-June) but may also occasionally flower in September.

Fruiting:
(September-) October-January (-April)

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1717

Caption: Leaf of Coprosma grandifolia
Photographer: Wayne Bennett

Caption: Coprosma grandifolia
Photographer: Wayne Bennett

Coprosma microcarpa

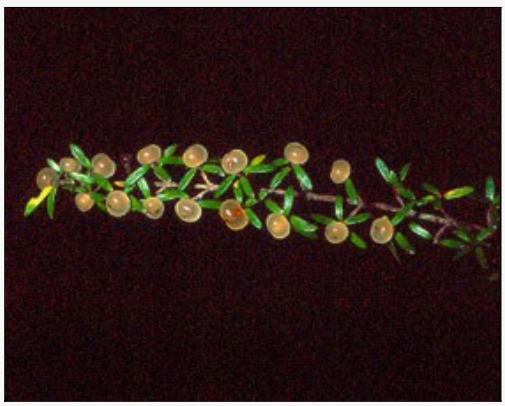
Common Name(s):
Small seeded coprosma

Current Threat Status (2012):
Non Threatened

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1722

Caption: Coprosma microcarpa at Kaitoke. April 2004.
Photographer: Jeremy Rolfe



Caption: Whakapapa, Ruapehu
Photographer: John Smith-Dodsworth

Cyathea colensoi

Common Name(s):
Rough tree fern, mountain tree fern

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North, South and Stewart Islands from Mt Pirongia and the Kaimai Range south.

Habitat:
Montane to subalpine in dense forest, along stream courses, often near the bush line, sometimes extending into subalpine scrub.

Features*:
Trunks prostrate, or erect (up to 1 m tall). Stipes slender, pale brown, finely rugose, bearing numerous scales. Scales pale brown to red-brown, lacking margin spines. Fronds up to 1.5 m long, held upright, 3-pinnate, soft; dead fronds falling (not persistent). Longest primary pinnae 150-400 mm long, adaxially hairy, abaxially covered in red stellate hairs and scales ending in single or stellate spines. Indusia absent; long hairs present amongst sporangia. Description adapted from Brownsey & Smith-Dodsworth (2000).

Flowering: N.A.

Fruiting: N.A

Threats:
Not Threatened

Caption: Sori.
Photographer: © John Braggins

Caption: Makarora.
Photographer: John Braggins

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange 22 March 2011. 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=1775

Cyathea cunninghamii

Common Name(s):
Gully tree fern, Slender tree fern, Ponga

Current Threat Status (2012):
Non Threatened

Distribution:
Indigenous. New Zealand: North, South and Chatham Islands (mainly western from Te Paki (Unuwhao Bush) south to Wellington, and along the north-west and western side of the South Island). Also Australia (Queensland, New South Wales, Victoria and Tasmania).

Habitat:
Coastal, lowland to montane in wet forests - especially along riversides, in gullies and in valley heads. An especially prominent species in karst country where it often fringes dolines and cave entrances.

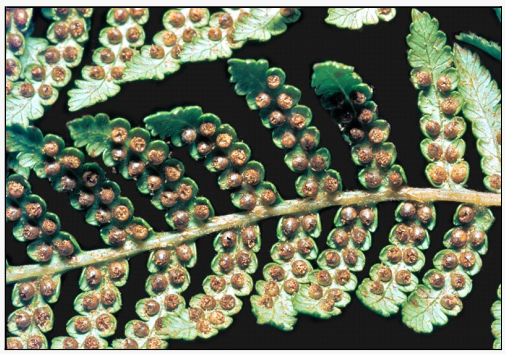
Features:
Trunks to 20 m tall, 50-150(-450) mm diameter, usually solitary, rarely bifurcated near apex, slender, bearing dark brown oval stipe scars and toward the apex dark brown, appressed stipe stubs. Stipes slender, adaxially golden-brown to yellow, abaxially black-brown, rugose, bearing scales, scales variable, up to 35 × 1-3 mm, with entire, fragile margins devoid of spines, apex terminated by 1 mm long apical seta; some scales hyaline, chartaceous, dull or glossy, dark golden-brown, others distinctly thicker, dark brown, lustrous. Fronds to 3 m long, held horizontally with distal portion slightly decurved with the apex distinctly upturned; 3-4-pinnate, soft, adaxially dark green to yellow-green, abaxially paler; dead fronds persistent only on immature plants, otherwise dehiscing to leave a short stipe base stub which soon decays leaving a small oval stipe scar. Longest primary pinnae 350-600 × 15-20(-30) mm wide, borne in the middle of the frond with pinnae either side gradually decreasing in length toward distal and proximal portions of stipe; lobes widely spaced; most basal 1-2 pairs free, others connected by narrow wing, largest lobes deeply lobulate; under surfaces bearing red and white stellate hairs and scales ending in single or stellate spines. Sori 1 per lobule; indusium cucullate, completely investing young sorus; paraphyses scarce, short, apical on receptacle; spores golden yellow to golden brown when fresh. Description adapted from Bostock (1998) and Brownsey & Smith-Dodsworth (2000) and based on measurements and notes made from fresh material.

Flowering: N.A.

Fruiting: N.A.

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=2096



Caption: Sori.
Photographer: © John Braggins

Caption: Scales and stellate hairs on abaxial surface of pinna. Chatham Island. June 2013.
Photographer: Jeremy Rolfe

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

Dacrycarpus dacrydioides

Common Name(s):
Kahikatea, white pine

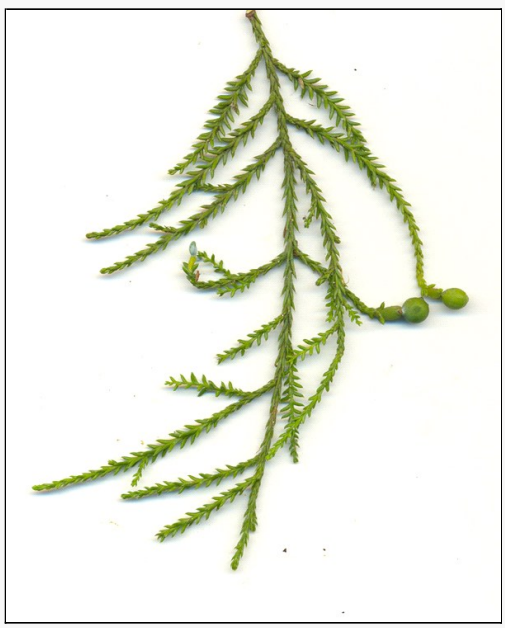
Current Threat Status (2012):
Non Threatened

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.

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

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.

Caption: Pihanga, Tongariro National Park
Photographer: John Sawyer

Caption: Pihanga, Tongariro National Park
Photographer: John Sawyer

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.

***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.

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 fibrosa

Common Name(s):
Wheki-ponga, wheki-kohoonga, golden tree fern, kuripaka

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North, South, Stewart, and Chatham islands. Uncommon north of the Waikato River and Coromandel Peninsula

Habitat:
Coastal to montane, Usually in forested situations, often in riparian sites or at gulley heads.

Features*:
Stout, non-rhizomatous tree ferns, up to 10 m tall. Trunk up to 1 m diameter, very dense, composed of tightly interwoven, red-brown rootlets, entirely without aerial buds. Fronds numerous, persistent in death, and forming a dense, pendent skirt; in life erect and arching, forming a dense, tight crown 1.2–2.8–3.6 m long, 300–480(–600) mm wide. Stipes 100(–300) mm long, pale brown to red-brown (sometimes golden-brown), smooth, base densely clad with persistent, soft, light red-brown hairs; immature rachises initially clad in soft, pale brown hairs, otherwise glabrate. Lamina (0.9–)2.5–3.3 m long, lanceolate, (2–)3–4-pinnate, abaxially glossy dark green, adaxially paler, harshly coriaceous, primary pinnae 150–280(–300) mm long, lanceolate, long tapering, ± acuminate; secondary pinnae 40–50 mm long, lanceolate, close-set to ± overlapping. Barren pinnules 5 mm long, subfalcate, acute, toothed or entire, widened and confluent at base, shallowly concavo-convex; fertile pinnules rounded, concavo-convex lobes. Sorus ± ovoid to rounded, terminating veins at fertile pinnae margins; sporangia on raised receptacle, partially obscured by in rolled pinnae margin, and submembranous inner indusium. Spores golden brown to red-brown.

Flowering:
Not applicable - spore producing

Fruiting:
Not applicable - spore producing

Threats:
Not Threatened

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange (10 October 2010).

References and further reading:
Duguid, F. 1978. Annual growth of new fronds on *Dicksonia fibrosa*. Wellington Botanical Society Bulletin, 40: 48-49

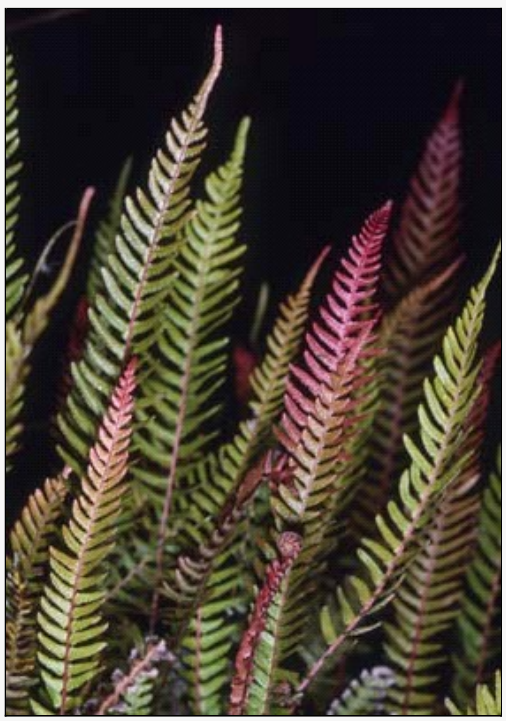
For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1789

Caption: Eastern Wairarapa. Oct 2010.
Photographer: Jeremy Rolfe

Caption: Rangaika, Chatham Island. June 2013.
Photographer: Jeremy Rolfe

Doodia australis

Caption: Kerikeri
Photographer: John Barkla



Caption: Coromandel. Dec 1982.
Photographer: Jeremy Rolfe

Common Name(s):
Rasp Fern

Current Threat Status (2012):
Not Threatened

Distribution:
Indigenous. Kermadec Islands (Raoul and Macauley Islands). New Zealand: Three Kings, North and South Islands from Te Paki south to Wellington, the Marlborough Sounds, north-west Nelson and Banks Peninsula. Abundant north of the Waikato, otherwise scarce. Present in Australia, Norfolk and Lord Howe Islands.

Habitat:
Coastal to lowland in open or forested sites, within light scrub, in rough pasture, and even known as a weedy fern of urban gardens and environments.

Features*:
Vegetative reproduction by stolons or shortly branching rhizome. Rhizome rarely prostrate and creeping; clad in dense black scales. Fertile and sterile fronds mostly similar sometimes moderately dimorphic. Fronds more or less erect or sterile fronds sometimes inclined to prostrate; harsh; lamina 110-600 mm long. Stipes and raches bearing brown scales, these more persistent at the stipe base though mostly shed at frond maturation; pubescent. Lower pinnae attached by costae, sometimes with auricles developed, or very rarely adnate to the rachis, lowest pair rarely longer than the pairs immediately above them; middle pinnae usually completely, but often partly, adnate, occasionally decurrent, rarely auriculate; upper pinnae adnate to decurrent. Pinnae c. 20-50 pairs or subopposite; middle pinnae rounded, acute or acuminate at apex. Terminal pinna 3-55 mm long (1/3 - 1/9 - 1/43 of frond length). Longest pinnae 5.0-100.0 × 2.5-10 mm. Distance between middle pinnae 1-8 mm (1/2-2X pinna width). Sori in one row, a second row often partly to nearly completely developed; discrete to more or less confluent, sometimes covering pinna midrib. Indusium c.2 mm long rarely less. more or less linear.

Flowering:
Not applicable - spore producing

Fruiting:
Not applicable - spore producing

Threats:
Not Threatened

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange (4 March 2012). Description adapted from Parris (1973) where this species was treated as Doodia media subsp. australis.

References and further reading:
Parris, B.S. 1973: The genus Doodia (Blechnaceae: Filicales) in New Zealand. New Zealand Journal of Botany 10: 585-610.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=2110

Earina aestivalis

Common Name(s):
bamboo orchid, summer earina

Current Threat Status (2012):
Not Threatened

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

Habitat:
Coastal forest, where it is usually a low epiphyte on tree trunks and branches. Occasionally found on cliff faces and rock outcrops

Caption: Orongorongo River, Wellington
Photographer: Gillian Crowcroft

Caption: Manawatu Gorge. Jan 2011.
Photographer: Colin Ogle

Features:
Epiphytic or rupestral, rhizomatous, perennial, producing numerous leafy, unbranched, long persistent, wiry, cane-like stems up to 600 mm long. Rhizomes extensive, much intertwined and firmly attached to substrate, fleshy, more or less spongy, initially creamy white maturing buff-yellow. Leaf-sheaths imbricating, persistent, distichously arranged, 5-12 mm long, 4-8 mm diameter, not split, tubular, flattened, each overlapping with and covering the lower third to one half of the leaf-sheath above, exposed surface ivory to pale whitish-yellow, distinctly dark maculate with broad, long oblong to oblong-ovoid dark purple-black spots. Leaf-sheath junction with leaf lamina distinctly flared. Leaves weakly flexuose scarcely curved in upper portion; lamina short-lived, disarticulating at leaf-sheath junction, prominent 3-nerved, 60-100 x 6-8 mm, green to dark green, lanceolate, tapering in upper third gradually to an acute, minutely acicular tip; lateral veins conspicuous, midrib of upper lamina deeply and prominently channelled. Inflorescence a racemose panicle. Panicle up to 80 mm long, mostly pendulous; racemes 2-8, usually well spaced on fine, slender, wiry axis, each 20-40 mm long; floral bracts c. 4.0-4.5 mm long, scarcely overlapping, prominently longitudinally ridged, completely covering the very short pedicels. Perianth 10-14 mm diameter, opening widely (flaring), pale, slightly greenish-cream to greenish yellow. Sepals elliptic, subacute. Petals slightly broader and more obtuse. Labellum broader and very conspicuous, yellow-orange to deep apricot, flaring widely at flowering, broadly oblong with broader proximal portion connect by a narrow waist-like neck to the almost equally broad distal lobe; base with two inconspicuous ridges leading down to a small pit-like nectary. Column shorter than labellum, narrow to base, wings absent or minute, pollinia long-oval. Capsules elliptic-ovoid, ovoid, deeply, longitudinally grooved, yellow green to green maturing grey.

Flowering:
December - March

Fruiting:
January - August

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1376

Griselinia littoralis

Common Name(s):
Broadleaf, kapuka, papauma

Current Threat Status (2012):
Not Threatened

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1957

Caption: Mt Frith, Rimutaka
Photographer: John Sawyer

Caption: Coromandel, October
Photographer: John Smith-Dodsworth

Hebe stricta var. atkinsonii

Common Name(s):
Koromiko

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. In the North Island common from the Manawatu Gorge south to Wellington. In the South Present in the Marlborough Sounds south to about Rarangi.

Habitat:
Common in successional habitats from coastal areas to lower montane habitats.

Features:
Shrub (1-)2 m tall. Branchlets finely pubescent. Stem internodes longer than stem diameter. Leaf bud without sinus. Leaves, spreading, 50-100 (-110) mm, dull yellow-green (not glossy), narrow-elliptic to linear-lanceolate, somewhat leathery, apex acute (rarely acuminate), leaf margin usually entire, occasionally toothed. Inflorescence lateral, racemose, about length of leaves, sometimes drooping, with the exception of ciliolate bracts and calyx, the remaining inflorescence structures glabrous. Flowers sweetly (sometimes over powerfully so) scented, lilac, mauve or white. Corolla tube 6 mm, exceeding calyx, narrow, cylindric, lobes rounded. Capsules < 5 mm long, glabrous, usually erect.

Flowering:
(July-) August (-October) but flowering can also occur sporadically throughout the year

Fruiting:
(September-) November (-January) but seed capsules may be found throughout the year

Threats:
Not Threatened

References and further reading:
Bayly M. and Kellow A. (2006). An Illustrated Guide to New Zealand Hebes.Te Papa Press: Wellington

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=2010

Caption: Stokes Valley. Feb 2010.
Photographer: Jeremy Rolfe

Caption: Putangirua Pinnacles, Palliser Bay. Aug 2010.
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

Hymenophyllum dilatatum

Common Name(s):
Filmy fern, Matua mauku

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic, New Zealand: North, South, Stewart, Chatham and Auckland Islands. Widespread except for the drier parts of the eastern South Island.

Habitat:
Coastal to montane in forest. Usually epiphytic or on fallen logs and banks, Very rarely on the forest floor or on boulders.

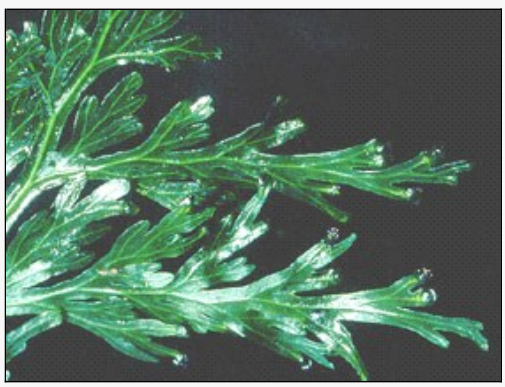
Features*:
Epiphytic (very rarely terrestrial) fern. Rhizomes long-creeping, gracile, wiry when fresh very brittle when dry. Stipes often widely spaced on rhizomes, 20-150(-200) mm long, stout, glabrous, distinctly though narrowly winged for part of length; rachises broadly winged throughout. laminae 80-400(-800) × 40-150(-160) mm, ovate, narrowly ovate to lanceolate, 3-4-pinnate, bright to dark green, glabrous. Ultimate segments rather broad, margins smooth, plane. Sori terminating ultimately segments, slightly sunk in lamina, many on each primary pinna. Indusial flaps smooth. Description adapted from Brownsey & Smith-Dodsworth (2000).

Flowering: N.A.

Fruiting: N.A.

Threats:
Not Threatened

Caption: Coromandel, June
Photographer: John Smith-Dodsworth



Caption: Coromandel, June
Photographer: John Smith-Dodsworth

***Attribution:**
Fact Sheet Prepared for NZPCN by P.J. de Lange (17 April 2011). 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=838

Hymenophyllum flabellatum

Common Name(s):
filmy fern

Current Threat Status (2012):
Not Threatened

Distribution:
Indigenous. Kermadec, North, South (except eastern part of South Island), Stewart, Chatham, Auckland and Antipodes Islands. Also Australia (Queensland, New South Wales, Victoria, Tasmania); Vanuatu, Fiji, Samoa and Tahiti.

Habitat:
Coastal to montane forest. Often epiphytic, especially on tree fern trunks, but also on shaded or sheltered, damp rocks, cliff faces, and overhanging banks

Features*:
Rhizome long creeping, wiry, branched, 0.3-0.8 mm diameter, tan-coloured, with opaque villous hairs but tomentose at the stipe junction. Fronds 20-80 mm long, peundulous, rarely suberect. Stipe wiry, flexuose, 8-20 mm long, unwinged, with scattered pale-white or yellow hairs extending along main rachis. Lamina yellow-green, very variable in size and shape, oblong-linear to ovate-lanceolate (dwarfed fronds often broadly deltoid to round), 20-270 × 10-65 mm; primary division pinnate in the lower part, deeply pinnatifid above; pinnae or primary laminal segments oblique, 1-2-pinnatifid, flabellate, ovate or rhombic. Ultimate segments linear, 0.5-2.2 mm wide, glabrous to glabrescent; margins entire, 1-2-cells thick, apex obtuse, occasionally emarginate. Sori numerous; involucre ovate to rotund, bilabiate to below the middle. 0.5-2.0 × 0.5-2.0 mm; base broadly and shallowly cuneate; margins entire; receptacle included or slightly exserted. Description adapted from Bostock & Spokes (1998) and Brownsey & Smith-Dodsworth (2000).

Flowering:
Not applicable - spore producing

Fruiting:
Not applicable - spore producing

Threats:
Not Threatened

Caption: Stokes Valley, Lower Hutt. Apr 2011.
Photographer: Jeremy Rolfe

Caption: Stokes Valley, Lower Hutt. Apr 2011.
Photographer: Jeremy Rolfe

***Attribution:**
Fact Sheet Prepared for NZPCN by P.J. de Lange (July 2009). Description adapted from Bostock & Spokes (1998) and 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

Bostock, P.D.; Spokes, T.M. 1998: Hymenophyllaceae: Flora of Australia 48: 116-148.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=840

Hymenophyllum frankliniae

Common Name(s):
Rusty filmy fern

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. New Zealand: North, South, Stewart Islands.

Habitat:
Coastal to montane. In closed forest where it is usually found epiphytic on the trunks of tree ferns (especially species of Dicksonia) and kamahi (Weinmannia racemosa). Occasionally (especially in very wet forest) it may be found growing on clay banks or amongst mosses on damp boulders.

Features*:
Epiphytic (rarely terrestrial) fern forming dense patches usually on tree ferns. Rhizomes finely hairy, long creeping, gracile. Stipes 20-90 mm long, thin, brittle, not winged, covered in minute stellate hairs; rachises narrowly winged in upper part. Laminae narrowly elliptic to narrowly ovate, 2-3-pinnate, 50-200 × 20-50 mm, dull olive-green to brown-green, densely invested in yellow-brown to red-brown stellate hairs. Ultimately segments oblong, crowded, margins smooth. Sori terminating ultimate segments, slightly sunk in lamina, many on each primary pinna. Indusial flaps with smooth margins, abaxially stellate-hairy. Description adapted from Brownsey & Smith-Dodsworth (2000).

Caption: Stokes Valley. May 2011.
Photographer: Jeremy Rolfe

Caption: Stokes Valley. May 2011.
Photographer: Jeremy Rolfe

Flowering: N.A.

Fruiting: N.A.

Threats:
Not Threatened

***Attribution:**
Fact Sheet Prepared for NZPCN by P.J. de Lange (18 April 2011). 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=839

Kunzea ericoides var. ericoides

Common Name(s):
Manuoea, Titira, Atitira, Manuka-Rauriki, Kanuka, Kopuka

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. As circumscribed here K. ericoides var. ericoides is endemic to the South Island, where it is common from North West Nelson and the Marlborough Sounds south to the upper Buller River. From here it common along the northern margin of the Buller to the upper Wairau River, from where it extends along the southern Richmond Range to Rarangi. Outliers occur in the east south of Rarangi in pockets to Kaikoura and the coastal portion of the north Canterbury foothills, and in the west around Karamea, the Lower Buller Gorge, and the upper Ahaura River. Outside this area there are a number of distinctive New Zealand variants which may warrant formal description. An allied complex of species and possibly unnamed species occurs in Australia.

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

Features*:
Shrub or tree (2-)10(-20) m tall. Usually with a single trunk. Trunk slender, erect, often multi-trunked from base. Branches numerous, slender, and pendulous, branchlets slender, brittle. Bark loose, flaking readily into tabular, fibrous shards, typically with much secondary peeling; secondary peels often inrolling, like wood shavings. Branchlets glabrescent to glabrous, hairs if present (20x magnification) are erect, sparse, and short (like stubble). Leaves bright green, linear to linear-filiform (6-)8(-12) x (0.8-)1(-1.3) mm. Inflorescences corymbiform racemes, (1-)8(-20)-flowered. Flowers (4-)6(-8) mm diam., faintly to strongly scented. Petals 5(-6), white. Stamens (9-)20(-32), antipetalous (1-)3, antisepalous variable. Ovary 5 locular, stigma broad, capitate. Capsule long persistent, grey, obconic, sepals persistent. Seeds numerous, rather fine, orange-yellow.

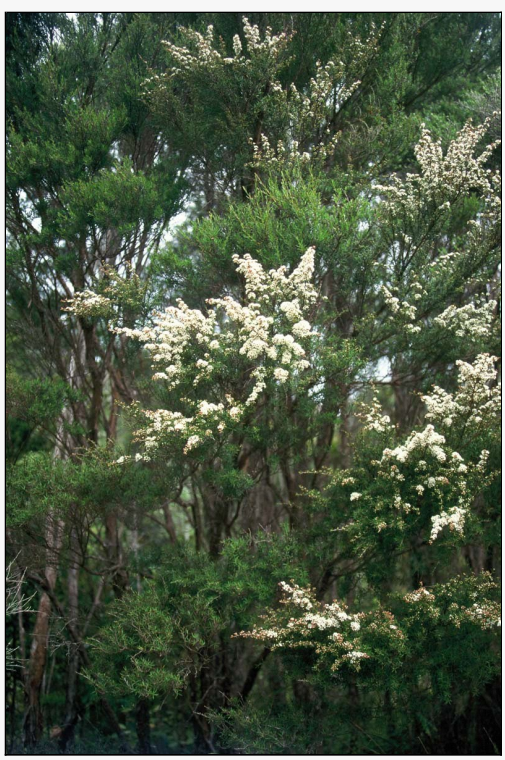
Flowering:
(October)-November-January (-February)

Fruiting:
(November-)December (-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. Description modified from de Lange (2007).

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



Caption: Marahau
Photographer: Peter de Lange

References and further reading:
de Lange PJ (2007) Biosystematics of the New Zealand *Kunzea ericoides* (A.Rich.) Joy Thomps. complex. PhD Thesis, University of Auckland, New Zealand.

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 albiflora

Caption: Photo of White rata
Photographer: DoC

Caption: Metrosideros albiflora, Windy Canyon.
Photographer: Gillian Crowcroft

Common Name(s):
white rata, rata, aka

Current Threat Status (2012):
Not Threatened

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

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

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

Flowering:
August - November

Fruiting:
January - April

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

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

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=979

Metrosideros carminea

Common Name(s):
Crimson rata, Carmine rata

Current Threat Status (2012):
Not Threatened

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

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

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

Caption: Metrosideros carminea
Photographer: Peter de Lange

Caption: Carmine rata
Photographer: DoC

Flowering:
August - November

Fruiting:
January - April

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

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

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

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=980

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):
Non 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 perforata

Common Name(s):
white rata, akatea

Current Threat Status (2012):
Not Threatened

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

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

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

Flowering:
November - March

Fruiting:
February - May

Threats:
Not Threatened

Caption: Waipoua Forest, Northland
Photographer: John Sawyer

Caption: Waipoua Forest, Northland
Photographer: John Sawyer

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

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=984

Passiflora tetrandra

Common Name(s):
Kohia, NZ passionflower, NZ passionfruit

Current Threat Status (2012):
Not Threatened

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1102

Caption: Passiflora tetrandra
Photographer: Wayne Bennett

Caption: Passiflora tetrandra
Photographer: Wayne Bennett

Phormium tenax

Caption: Phormium tenax
Photographer: Wayne Bennett

Caption: Flowers of Phormium tenax
Photographer: Wayne Bennett

Common Name(s):
Flax, Harakeke, Korari (maori name for inflorescence).

Current Threat Status (2012):
Not Threatened

Distribution:
Indigenous to New Zealand and Norfolk Island. A broad circumscription has been adopted here - many botanists feel that plants from the Chatham Islands could be distinguished at species rank from the mainland New Zealand species, other distinctive variants occur on the Three Kings and outer Hauraki Gulf Islands, and along the Kaikoura coast. Norfolk Island plants though uniform differ in subtle ways from the New Zealand forms of P. tenax. Further study into this variation is underway.

Habitat:
Common from lowland and coastal areas to montane forest, usually but not exclusively, in wetlands and in open ground along riversides.

Features:
Stout liliaceous herb, 1-5(-6) m tall. Leaves numerous, arising from fan-like bases. Individual leaves rather stiff at first, but becoming decurved, somewhat pendulous or "floppy" in upper half to a third, 1-3 x 50-120 mm, usually blue-grey (glaucous) or dark green, lamina margin, entire, somewhat thickened and pigmented black, dark red, pink, yellow or cream. Inflorescence 5(-6) m tall, somewhat woody and fleshy when fresh, long persistent, drying charcoal grey or black, with the fibrous interior becoming progressively more exposed. Peduncle 20-30 mm diam., erect, dark grey-green or red-green, glabrous. Flowers 25-50 mm long, tubular, predominantly dull red but may also be pink or yellow; tips of inner tepals slightly recurved. Ovary erect. Capsules 50-100 mm long, dark green, red-green or black, trigonous in cross-section, erect, abruptly contract at tip, not twisted, initially fleshy becoming woody with age, long persistent. Seeds 9-10 x 4-5 mm, black, elliptic, flat and plate-like, margins frilled or twisted.

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

Fruiting:
(November-) December (-March)

Threats:
Not threatened although see the discussion below about flax dieback. This die back phenomenon is characterised by abnormal yellowing of the leaves and may result in collapse of flax plants or whole populations.

References and further reading:
Boyce, et al. 1951. Preliminary note on yellowleaf disease. NZJ of Science and Technology, 32(3): 76-77

Scheele, S. 1997. Insect pests and diseases of harakeke, Manaaki Whenua Press

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=2219

Pittosporum crassifolium

Common Name(s):
Karo

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. New Zealand, Three Kings, Great Barrier and North Island. In the North indigenous from Te Paki south to about White Cliffs, and East Cape. Widely naturalised further south to Wellington. Naturalised in the South, Stewart and Chatham Islands. Also naturalised on Norfolk Island, and in Hawaii.

Caption: Masterton
Photographer: John Barkla

Habitat:
Coastal and offshore islands. Favouring steep slopes, cliff faces, boudler beaches, rock stacks and the margins of petrel burrowed land. Sometimes forms major canopy dominant on offshore islands, and on occasion can be a significant component of dune forest. Often an urban weed because its fruits/seeds are avidly taken by indigenous and exotic birds and dispersed widely.

Caption: Meola Reef, Westmere, Auckland
Photographer: John Sawyer

Features*:
Gynodioecious shrubs to small trees 1-10 m tall. Trunk stout, grey-black. often distinctly lenticillate. Branches and branchlets erect, dark grey-black or brown, immature branchlets densely invested in grey-white or white tomentum, this maturing black. Leaves alternate, usually densely crowded toward branch and branchlet apices. Petioles 4-14 x 1-3 mm, grey-white to grey-black tomentose. Leaves 30-100 x 10-30 mm, obovate to oblanceolate, apices obtuse to acute, base attenuate, margins entire, both surfaces densely white, grey-white or brown tomentose when young, soon glabrate above but remainly densely covered in dirty white or grey-white, appressed tomentum beneath, very coriaceous, margins thickened and often strongly revolute, surfaces often blistered with insect galls. Flowers in terminal 1-10-flowered fascicles; pedicels 6-50 mm, accrescent in fruit, tomentose, subtended by a whorl of leaves and numerous, 3-15 mm long, caducous, brown-tomentose, ciliate bud scales. Sepals 7-11 x 1.5-3 mm, oblong to linear-lanceolate, acute, greyish-white, dirty white or brown tomentose on outer surfaces, inner surface only toward the middle, margins ciliate. Petals 10-16 x 3-5 mm, oblanceolate to lanceolate, subacute, free to base, recurved at apices, dark red, purple, yellow, pink or white; stamens 5-9 mm long, anthers 1-3 x 0.5-1.5 mm, sagittiform to elliptic-oblong. Ovary 3-6 x 2-5 mm, white or grey-white tomentose; style 3-2.5 mm long, stigma capitate or 3-lobed truncate. Capsules woody, 10-30 x 10-30 mm, (2-)3(-4)-valved, woody, trigonous, sometimes 2-4-lobed

Flowering:
August - October

Fruiting:
September - August (Old fruits persist on trees)

Threats:
Not Threatened. However, the fruits are eaten by rats, and on rodent infested offshore islands this species rarely regenerates.

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange 30 August 2006. Description adapted from Cooper (1956).

References and further reading:
Cooper, R.C. 1956: The Australian and New Zealand species of Pittosporum. Annals of the Missouri Botanical Garden 43: 87-188

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1133

Pittosporum eugenioides

Common Name(s):
Tarata, lemonwood

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. Common in the North and South Islands.

Habitat:
Common tree of regenerating and mature forest in coastal to montane situations.

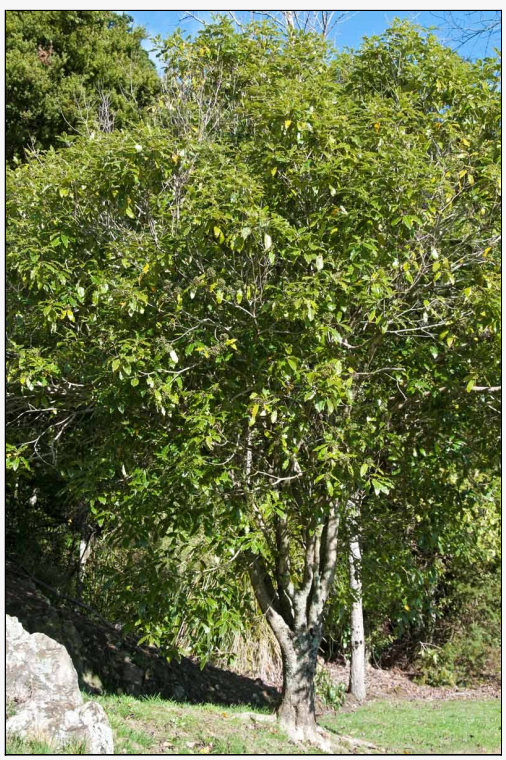
Features*:
Gynodioecious tree up to 12 m tall but usually much less. Trunk 0.6-1 m diam, stout, clad in persistent pale-grey bark, branches numerous, erect then spreading. Leaf buds sticky, resinous. Leaves borne on slender petioles 10-20 mm long, alternate, 50-100(-150) x 25-40 mm, yellow-green, green, more or less blotched and mottled with paler green or yellow-green (sometimes white), somewhat leathery, glossy, smelling strongly when crushed of ivy or resin, elliptic to elliptic-oblong, apex acute to subacute; leaf margin undulate (very rarely not so), midrib pale green. Inflorescences terminal, numerous, subcorymbose compound umbels. Flowers pale yellow to yellow, very fragrant. Peduncles 10-20 mm, pedicels 5 mm, both sparsely hairy. Sepals 2 mm, ovate to narrow-ovate, pale caducous. Petals 5, 5-7 mm long, narrow-oblong. Capsules 2-valved (rarely 3), 5-6 mm, ovoid to elliptic, caducous, seeds immersed in dark yellow viscid pulp, whole structure covered in long persistent papery endocarp.

Flowering:
October - December

Fruiting:
October - January

Threats:
Not Threatened

Caption: Masterton
Photographer: John Barkla



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

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange 30 August 2006. Description adapted from Cooper (1956).

References and further reading:
Cooper, R.C. 1956: The Australian and New Zealand species of Pittosporum. Annals of the Missouri Botanical Garden 43: 87-188

Gardner, R. 1999. Notes towards an excursion Flora. *Pittosporum eugenioides* as a wild plant. Auckland Botanical Society Journal, 54, 1

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1135

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

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

Waireia stenopetala

Common Name(s):
Yellow Beaks, Beak Orchid, Horizontal Orchid,

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. North, South, Stewart, Auckland and Campbell Islands. In the North Island known only from the eastern slopes of Mt Ruapehu and from the Tararua Range.

Habitat:
Wet, peaty places at higher altitudes in the north, down to sea level in the south.

Features*:
Summer-green, leafy, glabrous, tuberous, perennial herb. Tubers paired or in threes, globose to conical. Plant at flower up to 400 mm tall, plant sharply elongating at fruiting. All parts fleshy. Stem erect, terete. Leaves (1-)2(-3), widely spaced and reducing in size up stem, basal leaf 80-150 x 15-20 mm, dark green, narrow-lanceolate to lanceolate, concave, apex acute, dark green to bronze green, rarely flecked brown. Floral bracts closely sheathing and overtopping ovary, leaf-like, colour as for leaves. Flowers (1-)3(-6) in short racemes, inclined away from bracts. Perianth 10-20 mm long, yellow-green, or green, usually spotted red-brown. Sepals acute; dorsal sepal rather broadly ovate, cucullate, deeply concave, arching over and obscuring most of the rest of the flower; lateral sepals smaller, yellow-green or green, linear, sharply deflexed. Petals slightly shorter again, yellow-green or green, linear-lanceolate, subacute, deflexed or patent. Labellum erect, broad-ovate, narrowed abruptly to a short fixed claw; margin entire, callose ridges present and extending toward labellum apex. Column elongate-cylindric, curved, wing very narrow, finely lobed about anther. Anther terminal, papillose, with two initially coherent, pollinia per cell, finely granular. Stigma prominent, discoid; rostellum median.


Caption: Silverpeaks
Photographer: John Barkla


Caption: Auckland Island
Photographer: Jane Gosden

Flowering:
November - March

Fruiting:
January - May

Threats:
Not Threatened

***Attribution:**
Description adapted from Moore and Edgar (1997).

References and further reading:
Moore, L.B.; Edgar, E. 1970: Flora of New Zealand. Vol. II. Government Printer, Wellington.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=797

Winika cunninghamii

Common Name(s):
Winika, Pekapeka, Christmas Orchid, Bamboo Orchid

Current Threat Status (2012):
Not Threatened

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

Habitat:
Coastal to montane. Mostly epiphytic on forest tree trunks and branches, sometimes on fallen logs, and found as a also rupestral on rocks, cliff faces or banks. Occasionally colonising brick or concrete walls within urban areas.

Features*:
Epiphytic or rupestral, rhizomatous, perennial forming discrete tufted patches up to 1.5 x 2.0 m. Rhizome suberect to ascending, similar to stems, producing numerous more or less branched roots. Stems cane-like, long persistent, firm, wiry, and mostly slender, thickening towards base, up to 7 mm diameter, yellow-green, bright yellow to orange, glossy with obvious internodes and thickened nodes; unbranched in lower third, otherwise bearing numerous lateral, widely spreading, somewhat drooping branches. Leaf-sheaths tubular,minutely papillose, imbricating, covering younger stems; leaf lamina 30-50 x 3 mm, dark green, green to yellow-green darkened at junction with leaf-sheath, narrow-linear. Inflorescences 1-6-8-flowered, produced several nodes back from the active vegetative apex, usually as short, slender laterals; floral bracts inconspicuous, short, tubular; pedicel very slender, longer than ovary. Perianth 20-25(-30) mm diameter, glabrous, white (rarely cream), lip and column usually rose-pink, purplish to green. Sepals elliptic, spreading, apices more or less reflexed; lateral sepals fused under labellum and attached to column-base. Petals slightly broader. Labellum shorter, distinctly trilobed; lateral lobes small, often highly coloured, inclined to stand parallel to one another; mid-lobe white, broad, subacute, minutely crenulate; disc with 4-5 pale-coloured, low, longitudinal ridges terminating just above short claw and near to a colourful knob-like nectary situated at the end of the column-foot. Column about as long as its foot, cylindric, very narrowly winged. Capsules initially green, ovoid, maturing greyish-white, often striped with maroon or purple.

Caption: Pinehaven, Upper Hutt. Dec 2004.
Photographer: Jeremy Rolfe

Caption: Rimutaka Forest Park. Feb 1998.
Photographer: Jeremy Rolfe

Flowering:
December - June

Fruiting:
January - August

Threats:
Not Threatened

***Attribution:**
Description adapted from Moore and Edgar (1997).

References and further reading:
Moore, L.B.; Edgar, E. 1970: Flora of New Zealand. Vol. II. Government Printer, Wellington.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=798

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, elonated 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.