



Flora of NZ - Native plant identification studyguide - Ferns

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

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Introduction

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

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

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

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

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

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

The New Zealand Botanic Region

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

About the Network

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

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

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

That work has included:

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

What is a threatened plant?

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

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

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

Adiantum formosum

Common Name(s):

Giant maidenhair, Plumed maidenhair

Current Threat Status (2012):

At Risk - Relict

Distribution:

Indigenous. North Island only, with historic records from near Ahipara (Reef Point), Herekino, and the North Wairoa River near Dargaville. The only extant populations now known occur along either side of the Manawatu River Gorge, and in forest near the eastern and western ends, as well as around Woodville. Present in Eastern Australia (Queensland, New South Wales and Victoria) where it is abundant and under no threat.

Habitat:

A species of alluvial forest and gorge sides. Usually found in shaded sites amidst drifts of leaf litter with little (if any) associated vegetation. It rarely grows in full sun.

Features*:

Tall, widely creeping fern form diffuse patches up to 3 x 1.8 m. Rhizome buried (rarely at surface), long-creeping, much-branched to 10 mm diameter; scales golden brown with an acuminate apex and blunt marginal teeth. Fronds usually widely and irregularly placed along rhizome, up to 1.8 m tall. Stipe up to 0.9 m, wiry, basally dull black, distally glossy black, scabrous, finely tuberculate. Frond lamina 0.15-1 x 0.15-0.9 m, 2-4-pinnate, deltoid to pentagonal, firmly membranous to subcoriaceous; adaxial surfaces of rachises and pinna stalks clad with dense antrorse red-brown hairs. Higher order segments of frond (except pinnules) elliptic or triangular. Primary pinnae progressively reducing in size and degree of branching from base to apex. Pinnules symmetric, flabellate or dimidiate and rectangular to trapeziform, undersides glabrous or sparsely clothed with pale divergent (patent) hairs; distal margins irregularly lobed, dentate when sterile. Sori 1-10 on distal margins only, 1 or 2 per lobe; soral flaps lunate to subreniform, glabrous.

Flowering:

Not applicable - spore producing

Fruiting:

Not applicable - spore producing

Threats:

It would appear that this species is spreading vegetatively as preliminary studies on spore germination suggest that while viable spores are produced they cannot germinate within the typical range of New Zealand temperatures (J. E. Braggins & S. Van der Mast pers. comm.). The only known wild populations are thriving but are rather localised and vulnerable to weeds

*Attribution:

Fact Sheet Prepared for NZPCN by P.J. de Lange (Updated July 2004). Description adapted from Bostock (1998).

References and further reading:

Bostock, P.D. 1998: Adiantaceae. Flora of Australia 48: 248-263.

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. Perspectives in Plant Ecology, Evolution and Systematics 2009 Vol. 11 No. 4 pp. 285-309

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=707



Caption: Adiantum formosum

Photographer: John Barkla



Caption: Taken at Ashurst

Photographer: John Smith-Dodsworth

Asplenium flaccidum

Common Name(s):

Drooping spleenwort, hanging spleenwort

Current Threat Status (2012):

Not Threatened

Distribution:

Indigenous. Kermadec, Three Kings, North, South, Stewart, Chatham and Snares Islands. Also present in Australia and the wider Pacific

Habitat:

Coastal to montane (at the tree limit). In tall forest, scrub or rough boulder strewn ground. Mostly epiphytic on various native trees but also found on the ground.

Features*:

Mostly epiphytic. Rhizome short, stout, erect, bearing dark brown subulate scales up to 20×2 mm. Stipes 50-200 mm (or more) long, brown on underside, green above, flaccid, sparingly covered in small subulate scales with long filiform apices. Laminae lanceolate to elliptic, 150-900 (or more) \times 50-250 mm, dull green, thick, leathery, limp and pendulous, pinnate to bipinnate. Raches green, sparingly scaly. Pinnae in 5-20 (or more) pairs, linear, acuminate, long stalked, 50-150 \times 5-20 mm; degree of dissection very variable, sometimes only divided into very short obtuse segments, sometimes pinnate. Pinnules very variable in length, from oblong and obtuse to linear and acute, up to 15 \times 2 mm. Basal acroscopic pinnule occasionally much longer than that next to it. Sori submarginal, linear, 2-10 mm long. Spores (31-)36-44(-50) micrometre long, (19-)23-27(-33) micrometre wide

Flowering:

Not applicable - spore producing

Fruiting:

Not applicable - spore producing

Threats:

Not Threatened

*Attribution:

Description modified from Brownsey (1977)

References and further reading:

Brownsey, P.J. 1977: A taxonomic revision of the New Zealand species of *Asplenium*. *New Zealand Journal of Botany* 15: 39-86.

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 2009 Vol. 11 No. 4 pp. 285-309

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1521



Caption: *Asplenium flaccidum*
Photographer: Wayne Bennett



Caption: Sori, Dunedin
Photographer: John Barkla

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

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

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1776



Caption: *Cyathea dealbata*

Photographer: Wayne Bennett



Caption: *Cyathea dealbata*

Photographer: Wayne Bennett

Cyathea medullaris

Common Name(s):

black tree fern, mamaku, black mamaku

Current Threat Status (2012):

Not Threatened

Distribution:

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

Habitat:

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

Features:

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

Flowering:

None (spore bearing)

Fruiting:

None (spore bearing)

Threats:

Not Threatened.

References and further reading:

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

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

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2097



Caption: *Cyathea medullaris*
Photographer: Wayne Bennett



Caption: *Cyathea medullaris*
Photographer: Wayne Bennett

Dicksonia squarrosa

Common Name(s):

rough tree fern, harsh tree fern, wheki

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. North, South, Stewart and Chatham Islands.

Features*:

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

Flowering:

Not applicable - spore producing

Fruiting:

Not applicable - spore producing

Threats:

Not Threatened

*Attribution:

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

References and further reading:

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

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1791



Caption: *Dicksonia squarrosa*

Photographer: Wayne Bennett



Caption: *Dicksonia squarrosa*

Photographer: Wayne Bennett

Microsorium pustulatum subsp. *pustulatum*

Common Name(s):

hounds tongue, kowaowao, paraharaha

Current Threat Status (2012):

Not Threatened

Distribution:

Indigenous. New Zealand: Kermadec Islands (Raoul, Meyers only), Three Kings, North, South, Stewart, Chatham, Auckland and Antipodes Islands. Also Australia. Abundant throughout main islands of New Zealand except for Central Otago.

Habitat:

A common fern of coastal to montane area, growing either on the ground, over rocks or on tree trunks and branches. Although widespread and often found growing admixed with *Microsorium scandens*, *M. pustulatum* is more drought tolerant and seems to prefer more open, drier habitats.

Features*:

Epiphytic or rupestral scrambling or climbing fern. Rhizomes long-creeping, 4-10(-12) mm diameter, fleshy-succulent, yellow-green to golden brown, sometimes glaucescent maturing greyish-brown to grey-black, growing tips densely invested in brown-black appressed ± ovate scales, these entire or minutely toothed near apex, scales shedding over time as rhizome matures leaving small scars. Fronds joined to rhizomes, very coriaceous; stipes 20-250(-340) mm long, pale brown to almost black, ± pliant when young becoming brittle with age; laminae adaxially glabrous (except for a few scales on midrib and costae), bright glossy green (yellow green in exposed sites), abaxially paler, in outline variable ranging from undivided (especially in young plants) narrowly elliptic, 70-250 × 10-30 mm to mostly pinnate, ovate, 60-450 × 40-300 mm; midrib and veins prominent, main lateral veins mostly prominent, usually with 2 or 3 series of major areoles between costa (midrib in simply fronds); hydathodes present on blind vein endings, visible mainly on upper surface; pinnae in 1-12 pairs, 30-170 × 5-40 mm, bluntly acute, margins smooth, weakly undulose to extremely so, bases adnate. Sori prominent, round (rarely elliptic), sunk into abaxial lamina causing a prominent bulge on the adaxial laminal surface, aligned in one row either side of costa, set back from pinna margins. Spores pale, bearing wart-like protuberances.

Flowering:

Not applicable - spore producing

Fruiting:

Not applicable - spore producing

Threats:

Not Threatened

*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange (13 January 2012). Description adapted from Brownsey & Smith-Dodsworth (2000) and Bostock & Spokes (1998).

References and further reading:

Bostock, P.D.; Spokes, T.M. 1998: Polypodiaceae. Pp. 468-495. Flora of Australia 48. Australian Biological Resources Study, CSIRO Canberra

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=2201



Caption: *Microsorium pustulatum* subsp. *pustulatum* (Kowaowao)

Photographer: Wayne Bennett



Caption: *Microsorium pustulatum* subsp. *pustulatum* (Kowaowao)

Photographer: Wayne Bennett

Pteridium esculentum

Common Name(s):

bracken, rarauhe, bracken fern

Current Threat Status (2012):

Not Threatened

Distribution:

Indigenous: New Zealand: Kermadec (Raoul Island only), North, South, Stewart, Chatham and Antipodes Islands. Also South East Asia, Australia, Lord Howe, Norfolk Islands extending into western Oceania.

Habitat:

Common in mainly seral habitats from the coast to the low alpine zone.

Features*:

Fern with deeply rooted, subterranean rhizomes. Stipes and rachis chestnut brown at base, yellow-brown to russet at apex, woody, grooved, smooth, bearing sparse non-glandular hairs or ± glabrous stipe 0.2-1.3(-2.0) m or more long, 3-8(-15) mm diameter, woody. Lamina broadly elliptic or broadly ovate, 0.25-1.5-1.8 × 0.2-1.0-1.4 m wide, 3-4-pinnate at base, dark green (often glaucescent) above, paler beneath, adaxially glabrous, abaxially with sparse red-brown hairs on midribs and dense colourless appressed non-glandular hairs along veins. Longest pinnae arising at narrow angles; longest 150-650 × 80-400 mm. Secondary pinnae arising at narrow angles; longest 50-260 × 15-130 mm; basal one often much-reduced; midribs of primary and secondary pinnae narrowly winged. Tertiary pinnae decreasing markedly in length along secondary pinnae; longest 7-70 × 2-20 mm, with winged midribs. Quaternary pinnae to 12 × 4 mm; ultimate pinnules linear, straight, acute, entire, adnate and decurrent on 1 side. Sori continuous along pinna margin. Indusium > 0.2 mm wide, membranous, entire, glabrous. Spores dark yellow to orange yellow., granulose.

Flowering:

None (spore bearing)

Fruiting:

None (spore bearing)

Threats:

Not Threatened.

*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange 11 January 2011. Description adapted from Brownsey (1998) and Brownsey & Smith-Dodsworth (2000).

References and further reading:

Brownsey, P.J. 1998: Dennstaedtiaceae: Flora of Australia 48: 214-228.

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=2230



Caption: Awhitu Regional Park, Auckland region

Photographer: John Sawyer



Caption: Mt Karioi, south of Raglan

Photographer: John Sawyer

Pyrrosia eleagnifolia

Common Name(s):

leather-leaf fern, *Pyrrosia*

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. Kermadec, Three Kings, North, South, Stewart and Chatham Islands.

Habitat:

Coastal to montane. Common as an epiphyte on both indigenous and exotic trees and shrubs, also on rocks, cliffs faces and in urban areas on buildings, walls, bridges and fence posts.

Features*:

Epiphytic or rupestral rhizomatous fern. Rhizomes long-creeping, often densely interwoven, young portions densely invested in red-brown to fawn coloured scales. Stipes reduced to phyllopodia borne in intervals along rhizome. Fronds coriaceous, fleshy to almost succulent, undivided, 30-200 × 5-20(-30) mm; adaxially yellow-green to dark green (rarely glaucescent), glabrescent, initially sparsely covered in long straight to somewhat flexuous pale-yellow to translucent caducous hairs; abaxially densely covered in fawn or white-coloured stellate hairs, aside from midrib, veins not evident on either surface; lamina variable; sterile examples broadly ovate, rhomboidal, suborbicular, to elliptic (very rarely linear); fertile linear, linear-lanceolate to suborbicular. Sori without indusia, ovoid, ellipsoid to rounded, in 2-3(-4) irregular rows (rarely more) either side of midrib and set away from frond margins. Spores yellow.

Flowering:

N.A.

Fruiting:

N.A.

Threats:

Not Threatened

***Attribution:**

Fact sheet prepared for NZPCN by P.J. de Lange 9 April 2011.
Description by P.J. de Lange.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2235



Photographer: Rebecca Stanley



Caption: Rangaika, Chatham Island. June 2013.

Photographer: Jeremy Rolfe

Definitions of botanical terms

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

Glossary

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

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

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

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

| Term | Definition |
|--------------------------|---|
| Flexuose | With curves or bends. |
| Floccose | Having tufts of soft woolly hairs |
| Floret | A small flower, usually one of a cluster - the head of a daisy for example. |
| Foliaceous | Leaf-like. |
| Foliate | Having leaflets. |
| Founder effect | When a small number of plants (and therefore their genes) from a larger population are selected some genetic information is lost. |
| Froned | A leaf, the complete leaf of a fern including the stipe and lamina |
| Fulvous | Orange–yellow. |
| Funneliform | Funnel-shaped. |
| Fusiform | Broadest near the middle and tapering toward both ends. |
| Galea | Helmet- or hood-shaped. |
| Galeate | Shaped like a helmet or hood. |
| Gametophyte | A plant that produces sperm and egg cells and in which sexual reproduction takes place - in ferns this is known as the prothallus |
| Gene pool | The mixture of all genes and gene variations of a group or population. |
| Genetic diversity | The variety of genes in a plants or populations. |
| Genetic variation | Differences displayed by individuals within a plant which may be favoured or eliminated by selection. |
| geniculate | abruptly bent |
| Genus | A taxonomic rank of closely related forms that is further subdivided in to species (plural = genera). In a scientific name (e.g., <i>Sicyos australis</i>), the first word is the genus, the second the species. |
| Gibbous | Swollen or enlarged on one side, as in a gibbous moon. |
| Glabrescent | Lacking hair or a similar growth or tending to become hairless |
| Glabrous | Without or devoid of hairs, smooth. |
| Gland | A structure that secretes a sticky or oily substance. |
| Glandular | A structure that secretes a sticky or oily substance. |
| Glaucous | Covered with a fine, waxy, removable powder that imparts a white or bluish cast to the surface. |
| Gley | A soil prone to seasonal inundation. |
| Globose | Globe-shaped. |
| Glume | One of two bracts at the base of a grass spikelet. |
| Groundwater | Groundwater is the water beneath the surface that can be collected with wells, tunnels, or drainage galleries, or that flows naturally to the earth's surface via seeps or springs. Groundwater is the water that is pumped by wells and flows out through springs. |
| Gymnosperm | Plants in the class Gymnospermae that have seeds which are not enclosed in an ovary. |
| Gynodioecious | A species population containing plants that produce bisexual (perfect) flowers, and plants that produce only female (pistillate) flowers. |
| 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 <i>Cotula</i> and <i>Leptinella</i> . |
| Lobed | Part of a leaf (or other organ), often rounded, formed by incisions to about halfway to the midrib. |
| Lobule | A small lobe or sub-division of a lobe |
| Lustrous | Glossy, shiny. |
| Lycophytes | Seedless vascular plants that belong to the phylum Lycophyta (characterised by microphylls -primitive leaves found in ancient plants). |
| Lyrate | Pinnatifid or pinnatisect terminal lobe much larger than lower lobes. |
| Maculate | Blotched or spotted. |
| Mangrove | Coastal wetland dominated by Manawa or mangrove <i>Avicennia marina</i> var. <i>resifera</i> . Northern New Zealand only, salt marsh replaces it further south. |
| Margin | The edge or border of a leaf |
| Marine | Pertaining to the sea and saltwater systems. |
| Marsh | A tract of wet land principally inhabited by partially-submerged herbaceous vegetation. Has fewer woody plants than swamper 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 widest near the apex (i.e., the terminal half broader than the basal half). |
| Obtuse | Blunt or rounded at the apex, with the sides meeting at an angle greater than 90°. |
| Operculate | With a small lid. |
| Opposite | A pair of organs attached at nodes in pairs on either side of a stem or axis. |
| Orbicular | Almost or approximately circular. |
| Outbreeding depression | A reduction in vigor of offspring from distant parents. It can occur when a locally adapted population is moved and mixed with plants adapted to different conditions. |
| Outer canopy deciduous | Marked reduction in leaf number in the outer canopy in exposed high light environments over winter. |
| Oval | Planar, shaped like a flattened circle, symmetrical about both the long and the short axis; about twice as long as broad, tapering equally both to the tip and the base. Synonymous with elliptical. |
| Ovary | Part of a flower containing the ovules and later the seeds. |
| Ovate | Egg-shaped and widest at base. |
| Ovoid | Oval; egg-shaped, with rounded base and apex. |
| Pakihi | A term which in its strict sense refers to open clears within forest dominated by low scrub and rushes. However, more usually used to refer natural and induced wetlands and their associated shrublands. A vernacular most frequently used in the West Coast for impoverished soils and their associated peats, left after forest has been cleared |
| Palea | The small upper bract enclosing the flower of a grass |
| 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 |
|------------------------|--|
| Quadrat | 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 (<i>Apodasmia similis</i>) |
| Retorse | Pointing backward. |
| Retuse | A shallow notch at the rounded or blunt apex of a leaf. |
| Rhizoid | Any of various slender filaments that function as roots in mosses and ferns and fungi. |
| Rhizomatous | With underground creeping stems. |
| Rhizome | An underground stem (usually spreading horizontally or creeping) or short and erect. |
| Rhombic | Diamond-shaped. |
| Rhomboid | Diamond shaped, nearly rhombic. |
| Riparian | Relating to or living or located on the bank of a natural watercourse (as a river) or sometimes of a lake or a tidewater. |
| Riparian margin | Refers to the edges of streams, rivers, lakes or other waterways. |
| Riparian plants | Refers to plants found growing near the edges of streams, rivers or other waterways. |
| Riparian zone | A strip of land next to streams, rivers, and lakes where there is a transition from terrestrial (land vegetation) to aquatic (water) vegetation. Also known as "berm". |
| Riverine | Pertaining to rivers, streams and such like flowing water systems. |
| Rootstock | A short, erect, underground stem. |
| Rosette | A radiating cluster of leaves. |
| Rostellum | In orchids, a modified stigma that prevents self-fertilisation. |
| Rosulate | A dense radiating cluster of leaves. |
| Rugose | Wrinkled. |
| Rugulose | Having small wrinkles. |
| Runcinate | Sharply pinnatifid or cleft, the segments directed downward. |
| Runner | A trailing stem that roots at the nodes. |
| Rupestral | Growing on rocks. |
| Rushes | A group of distinctive wetland plants. They have solid stems (grasses have hollow stems), true rushes <i>Juncus</i> sp. have rounded leaves. |
| Sagittate | Shaped like the head of an arrow; narrow and pointed but gradually enlarged at base into two straight lobes directed downwards; may refer only to the base of a leaf with such lobes; cf. hastate. |
| Salt marsh | A coastal wetland, with specialized salt tolerant plants (halophytes). |
| Sapling | A juvenile tree that has reached the stage of 1 or 2 main stems but is still in the shrub layer. |
| Saprophyte | A plant lacking chlorophyll and living on dead organic matter. |
| Saprophytic | Lacking chlorophyll and living on dead organic matter. |
| Sarcotesta | The fleshy, often highly coloured outer layer of the seed coat in some species, e.g., titoki (<i>Alectryon excelsus</i>). |
| Scabrid | Roughened or rough with delicate and irregular projections. |
| Scale | Any thin, flat, membranous structure. |
| Scape | A leafless flower stem. |
| 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 |
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| Sessile | Attached by the base without a stalk or stem. |
| Seta | The stalk of a fruiting moss capsule |
| Sheath | A portion of an organ that surrounds (at least partly) another organ (e.g., the tubular envelope enclosing the stem in grasses and sedges). |
| Silicles | The flattened usually circular capsule – compared with the narrow, elongated fruit (silique) – containing the seed/seeds. A term used almost exclusively for plants within the cabbage family (Brassicaceae) |
| Silique | A capsule, usually 2-celled, with 2 valves falling away from a frame (replum) bearing |
| Simple | Of one part; undivided (cf compound). |
| Sinuate | With a wavy margin. |
| Sinus | The space or recess between lobes; in hebes a gap between the margins of two leaves of an opposite pair that may be present in the bud before the pair of leaves separate. |
| Sorus | A cluster of two or more sporangia on the margin or underside of the lamina of a fern, sometimes protected by an indusium. |
| Spathulate | Spatula or spoon-shaped, a rounded blade tapering gradually to the base. |
| Spheroidal | Almost spherical but elliptic in cross section. |
| Spicate | Arranged in a spike. |
| Spike | Flowers attached to main stem without stalks. |
| Spikelet | Collection of individual grass florets borne at the end of the smallest branch of the inflorescence. |
| Sporangia | Plural of sporangium. Structures in which spores are produced. |
| Sporangium | Structure in which spores are produced. |
| Spore | A single-celled reproductive unit similar in function to that of the seed in a flowering plant. |
| sporophyte | The spore producing plant in ferns that is usually the visible part. |
| Stamen | The male reproductive organ of a flower where pollen is produced. Consists of an anther and its stalk. |
| Stamens | The male, pollen bearing organ of a flower. |
| Standing water | Where water lies above the soil surface for much of the year. |
| Stellate | Irregularly branched or star shaped. |
| Stigma | Female part of the flower that is receptive to pollen, usually found at or near the tip (apical end) of the style where deposited pollen enters the pistil. |
| Stipe | The stalk of a frond. |
| Stipitate | Borne on a stipe or stalk. |
| Stipulate | A leaf with stipules. |
| Stipule | A scale-like of leaf-like appendage at the base of a petiole, usually paired. |
| Stolon | A stem which creeps along the ground, or even underground. |
| Stoloniferous | Producing stolons |
| Stramineous | Chaffy, like straw or straw-colored. |
| Stria | A fine line or groove. |
| Striae | Fine lines or grooves. |
| Striate | Fine longitudinal lines or minute ridges |
| Style | The elongated part of the flower between the ovary and the stigma. |
| Sub- | A prefix meaning under, somewhat or almost. |
| Subglabrous | Very slightly, but persistently, hairy. |
| Suborbicular | Slightly rounded in outline |
| Substrate | The surface upon which an orchid grows. |
| Subtended | Immediately beneath, occupying a position immediately beneath a structure, i.e., flower subtended by bract |
| Subulate | Slender and tapering to a point. |
| Succession | Progressive replacement of one species or plant community type by another in an ecosystem. |
| Successional | Referring to species, plant communities or habitats that tend to be progressively replaced by another. |
| Succulent | Fleshy and juicy. |
| Summer-green | Used in New Zealand to indicate herbs or sub-shrubs that die down to a root stock or rhizomatous network. |
| Supplementary planting | Returning to a revegetation site and creating gaps, or filling existing gaps, with different plants of plants, usually later successional plants which may not have survived being planted in the first phases of the project. |
| Surface water | Water present above the substrate or soil surface. |
| Surveillance | Regular survey for pests inside operational and managed areas e.g. nurseries, standout areas on parks. |
| Survey | Collection of observations on the spatial distribution or presence or absence of species using standardised procedures. |
| Sustainable Land Management | The use of farming practices which are sustainable both financially and environmentally including management of nutrient runoff, waste disposal or stock effluent, reducing impacts of nutrients on waterways, preventing erosion and soil loss, and protecting native forest and wetland habitats from stock damage. |
| Swamp | Low land that is seasonally flooded; has more woody plants than a marsh and better drainage than a bog. They are more fertile and less acidic than bogs because inflowing water brings silt, clay and organic matter. Typical swamp plants include raupo, purei and harakeke (flax). Zonation and succession often leads through manuka to kahikatea swamp forest as soil builds up and drainage improves. |

| Term | Definition |
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| 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 taxogenetics. |
| 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 partitioned once – literally one tube (compare – multitubular – many tubes) |
| Utricle | A thin loose cover enveloping some fruits (eg., Carex, Uncinia) |
| Valvate | Opening by valves. |
| Vascular plant | A plant that possesses specialised conducting tissue (xylem and phloem). This includes flowering plants, conifers and ferns but excludes mosses, algae, lichens and liverworts. |
| Velutinous | Thickly covered with delicate hairs; velvety. |
| Ventral | Of the front or inner (adaxial) surface relative to the axis. (cf. dorsal) |
| Vermiform | Worm-shaped. |
| Vernicose | Glossy, literally as if varnished, e.g., Hebe vernicosa has leaves 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. |