



Koo5 Pylon Swamp species



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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.

Agrostis stolonifera

Common Name(s):

creeping bent

Current Threat Status (2009):

Exotic

Distribution:

Common throughout.

Habitat:

Wide variety of wetland and aquatic habitats, also in drier habitats including roadsides, wasteland, grassland and open scrub. Lowland to subalpine.

Features*:

Sprawling stoloniferous, rooting at the nodes, mat or turf forming grass, 30-60 (100) cm tall. Can be submerged in clear fast-flowing streams/rivers. Leaf blade 1-20 cm long and 1-8 mm wide with an acute tip. Ligule 2-6 mm long, membranous. The flower heads are usually upright or bending upwards in a many-flowered open or contracted panicle 3-28 × 0.5-2.5-(6) cm.

Flowering:

Spring and summer

Fruiting:

Summer to autumn

*Attribution:

Prepared by Paul Champion and Deborah Hofstra (NIWA)

References and further reading:

Edgar E. and H. Connor. 2000. Flora of New Zealand. Volume 5. Manaaki Whenua Press: Lincoln, New Zealand.

Champion et al (2012). Freshwater Pests of New Zealand. NIWA publication. <http://www.niwa.co.nz/freshwater-and-estuaries/management-tools/identification-guides-and-fact-sheets/freshwater-pest-species>

Johnson PN, Brooke PA (1989). Wetland plants in New Zealand. DSIR Field Guide, DSIR Publishing, Wellington. 319pp.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2467



Caption: Invading lower shoreline at Waituna Lagoon

Photographer: Jesse Bythell



Caption: *Agrostis stolonifera*

Photographer: Trevor James (AgResearch)

Anthoxanthum odoratum

Common Name(s):

sweet vernal

Current Threat Status (2009):

Exotic

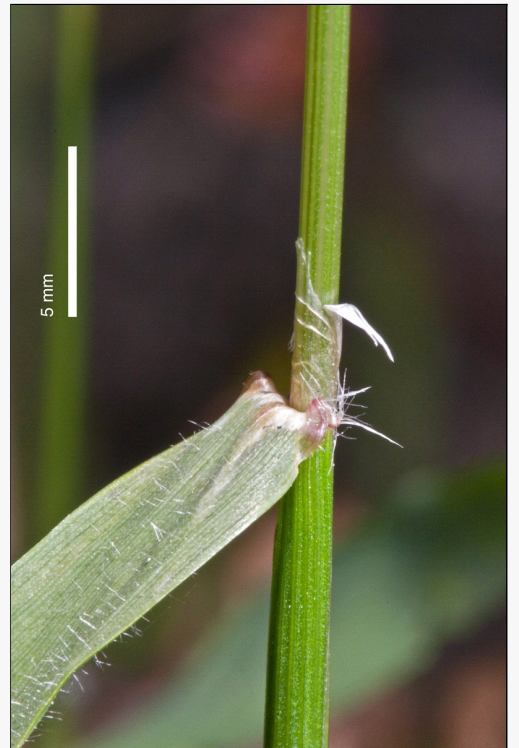
For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2529



Caption: Lower Hutt. Dec 2011.

Photographer: Jeremy Rolfe



Caption: Leaf node showing membranous ligule. Lower Hutt. Dec 2011.

Photographer: Jeremy Rolfe

Azolla pinnata

Common Name(s):

ferny azolla

Current Threat Status (2009):

Exotic

Distribution:

Abundant in the northern half of the North Island to the Rotorua Lakes with scattered sites further south to Levin.

Habitat:

Still and slow flowing water bodies in warm areas.

Features*:

Tiny free-floating aquatic fern, forming red-coloured mats (green in shaded areas). Plants 25 x 20 mm, triangular or 5-angled in outline, regularly branched. Leaves usually not overlapping, green turning red. Roots to 5 cm long; with fine, lateral rootlets.

Flowering:

N/A

Fruiting:

N/A

*Attribution:

Factsheet prepared by Paul Champion and Deborah Hofstra (NIWA).

References and further reading:

Champion et al (2012). Freshwater Pests of New Zealand. NIWA publication. <http://www.niwa.co.nz/freshwater-and-estuaries/management-tools/identification-guides-and-fact-sheets/freshwater-pest-species>.

Johnson PN, Brooke PA (1989). Wetland plants in New Zealand. DSIR Field Guide, DSIR Publishing, Wellington. 319pp.

Coffey BT, Clayton JS (1988). New Zealand water plants: a guide to plants found in New Zealand freshwaters. Ruakura Agricultural Centre. 65pp.

Popay et al (2010). An illustrated guide to common weeds of New Zealand, third edition. NZ Plant Protection Society Inc, 416pp.

Johnson, A. T., Smith, H. A. (1972). Plant Names Simplified: Their pronunciation, derivation and meaning. Landsman Bookshop Ltd: Buckenhill, UK.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=3490



Caption: *Azolla pinnata*

Photographer: Lisa Forester



Caption: *Azolla pinnata*

Photographer: Paul Champion

Carex geminata

Common Name(s):

Cutty grass, Rautahi

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. Found throughout the North, South and Stewart Islands.

Habitat:

Coastal to lower montane in freshwater wetlands, along river and stream banks, lake margins, and in damp seepages, pond margins and clearings within forest. Preferring fertile to mid-fertile wetlands.

Features*:

Rhizomatous, robust bright-green to yellow-green sedge, 0.5-1.2 m tall. Culms 1-5-3.5(-5) mm diam., triangular in cross-section, very sharply scabrid. Basal sheaths dull grey-brown or purple-brown. Leaves numerous, > culms (2-)5-9(-11), wide, double-folded, margins very scabrid. Spikes (10-)15-24, yellow-green, grass-green, or dark-green mottled red or purple, all pedunculate, pendulous, rather narrow, often twisted and "worm-like". Glumes dark red-purple, (excluding awns) more less same length as utricles, narrow-oblong, truncate or emarginate with a hispid awn of variable length. Utricles (2-)2.3-2.9(-3.5) x 1.2-1.7(-2) mm, biconvex, compressed at base, tapering evenly above, green-, red- or yellow-brown, 3-5-nerved, margins glabrous, beak minute or 0.2 mm long.

Flowering:

(September-) October-November (-December)

Fruiting:

October - March

Threats:

Not Threatened

***Attribution:**

Fact Sheet prepared by P.J. de Lange (10 August 2006). Description adapted from Moore and Edgar (1970)

References and further reading:

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

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=1409



Caption: Seeds of *Carex geminata*
Photographer: Wayne Bennett



Caption: Coromandel, March - an unnamed carex allied to *C. geminata* s.s.
Photographer: John Smith-Dodsworth

Carex virgata

Common Name(s):

swamp sedge, pukio, toitoi, toetoe

Current Threat Status (2012):

Not Threatened

Distribution:

Indigenous. New Zealand: North, South, Stewart and Chatham Islands.

Habitat:

Widespread from sea level to about 1000 m a.s.l. in open, swampy conditions and also in damp sites within lowland forest. In parts of the country this sedge is often the dominant carice of lowland alluvial forest.

Features*:

Rhizomatous, densely clumped to tussock-forming sedge. Rhizome 5 mm. diameter. Culms 150–900 mm. x c.1.5 mm, trigonous, grooved, harshly scabrid; basal sheaths shining, grey-brown to dark brown, sometimes black. Lvs much > culms, 0.5–1.2 m tall, 1.5–4.5 mm wide, channelled, light green, harsh and rigid, keel and margins strongly scabrid. Inflorescence a narrow 100–260 mm long panicle with stiff erect branchlets, the lower-most quite distant. Spikes, androgynous, 4–6 mm. long, sessile, grey- or yellow-brown, male flowers terminal, lower spikes on each branchlet subtended by a pale membranous bract with a long scabrid awn often > spike. Glume ± = or slightly < utricles, membranous, ovate, acute, dull brown, with a prominent pale midrib, this often scabrid in lowermost glumes. Utricles 2.0–2.5 x c.1.0 mm, plano-convex, ovoid, light grey with distinct brown nerves; tapering to a brown beak c.0.5 mm long with a bifid orifice and conspicuously denticulate margins; abruptly contracted to a narrow stipe c.0.2 mm. long. Stigmas 2. Nut slightly > 1 mm. long, biconvex, ovoid, dark brown.

Flowering:

October - December

Fruiting:

December - May

Threats:

Not Threatened

***Attribution:**

Fact Sheet prepared by P.J. de Lange (10 August 2006). Description adapted from Moore and Edgar (1970)

References and further reading:

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

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=1426



Caption: Flower of *Carex virgata*
Photographer: Wayne Bennett



Caption: Flower of *Carex virgata*
Photographer: Wayne Bennett

Dactylis glomerata

Common Name(s):

cocksfoot

Current Threat Status (2009):

Exotic

Habitat:

Terrestrial. A plant of coastal, lowland, montane and subalpine habitats (Timmins & MacKenzie 1995). Plant grows in scrub and forest margin, shrubland, tussockland, herbfields, fernland, sand dune hollows and riverbeds (Timmins & MacKenzie 1995).

Features:

Hairless, erect, greyish to bluish green, strongly tufted perennial grass to 1 m tall. Roots fibrous. Emerging leaf folded; ligule 2-12 mm long, membranous, often torn; sheath strongly flattened, sharply keeled. Leaves 100-450 x 2-14 mm, rough towards boat-shaped tip, harsh when old, dull beneath with prominent sharp keel. Seedhead a large panicle, with one-sided clusters of flattened spikelets. Seeds with bristly ends.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=3809



Caption: Spikelets. Whanganui. nov 2011.

Photographer: Colin Ogle



Caption: Spikelets. Whanganui. nov 2011.

Photographer: Colin Ogle

Galium palustre subsp. palustre

Common Name(s):

marsh bedstraw

Current Threat Status (2009):

Exotic

Distribution:

Throughout in lowland areas, commonest in north and west of both islands.

Habitat:

Swamps and wet grass and sedgeland near water bodies.

Features*:

Perennial; stems slender, weak and straggling, to c. 60 cm long, glabrous, or scabridulous on the acute angles. Lvs and stipules in whorls of 4-(6), subsessile or with short petiole to c. 1 mm long, 3-15 × 0.7-4.5 mm, linear, narrow-elliptic or oblanceolate, generally glabrous; margins flat, sometimes scabridulous; apex usually obtuse, sometimes subacute. Lvs of uppermost nodes often smaller. Cymes small, loose, glabrous or nearly so, often 2-5 from same axis, each with c. 3-7 fls, usually aggregated into panicles of up to 20 fls; peduncles very variable in length, to c. 2 cm long; pedicels up to 3 mm long, divaricating at fruiting; bracts leaflike at base of infl., either very reduced or 0 toward apex. Corolla 2-3-(3.5) mm diam., white; lobes ovate or ovate-oblong, acute or mucronulate. Mericarps 0.8-1.2 mm diam., globular, ± papillate.

Flowering:

Summer to autumn

Fruiting:

Summer to autumn

*Attribution:

Factsheet prepared by Paul Champion and Deborah Hofstra (NIWA). Features description from Webb et al., (1988).

References and further reading:

Webb, C.J.; Sykes, W.R.; Garnock-Jones, P.J. (1988). Flora of New Zealand Volume 4: Naturalised pteridophytes, gymnosperms, dicotyledons. Botany Division, DSIR, Christchurch.

Popay et al (2010). An illustrated guide to common weeds of New Zealand, third edition. NZ Plant Protection Society Inc, 416pp.

Johnson PN, Brooke PA (1989). Wetland plants in New Zealand. DSIR Field Guide, DSIR Publishing, Wellington. 319pp.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=3987



Caption: Galium palustre subsp. palustre

Photographer: Trevor James (AgResearch)



Caption: Flowers of Galium palustre subsp. palustre

Photographer: Trevor James (AgResearch)

Glyceria declinata

Common Name(s):

blue sweet grass, glaucous sweet grass

Current Threat Status (2009):

Exotic

Distribution:

Throughout New Zealand, including Stewart Island and Chathams.

Habitat:

Aquatic in drains and other slow flowing water bodies. Damp ground in swamps and pastures, drains and river banks.

Features*:

Perennial marginal aquatic grass with rather flaccid culms (15)-25-45 cm. Leaf blade (4)-8-17 cm, folded at first then becoming flat. Panicle 20-30-(40)cm.

Flowering:

Spring/summer.

Fruiting:

late spring-autumn

***Attribution:**

Factsheet prepared by Paul Champion and Deborah Hofstra (NIWA).

References and further reading:

Champion et al (2010). An illustrated guide to common grasses, sedges and rushes of New Zealand. NZ Plant Protection Society Inc, 182pp.

Coffey BT, Clayton JS (1988). New Zealand water plants: a guide to plants found in New Zealand freshwaters. Ruakura Agricultural Centre. 65pp.

Johnson PN, Brooke PA (1989). Wetland plants in New Zealand. DSIR Field Guide, DSIR Publishing, Wellington. 319pp.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=3971



Caption: Flower of *Glyceria declinata*

Photographer: Paula Reeves (NIWA)



Caption: Leaf of *Glyceria declinata*

Photographer: Trevor James (AgResearch)

Glyceria fluitans

Common Name(s):

floating sweetgrass

Current Threat Status (2009):

Exotic

Distribution:

Throughout New Zealand.

Habitat:

Aquatic in drains and other slow flowing waterbodies. Damp ground in swamps and pastures, drains and river banks.

Features*:

Perennial marginal aquatic grass, loosely tufted or forming loose masses in shallow water. Culm (20)-45-75 cm. , erect or spreading, sometimes prostrate or floating at base. Leaf blade bright green 10-23 cm, folded at first then becoming flat. Panicle (20)-30-55 cm.

Flowering:

Spring/summer.

Fruiting:

late spring-autumn

***Attribution:**

Factsheet prepared by Paul Champion and Deborah Hofstra (NIWA).

References and further reading:

Coffey BT, Clayton JS (1988). New Zealand water plants: a guide to plants found in New Zealand freshwaters. Ruakura Agricultural Centre. 65pp.

Johnson PN, Brooke PA (1989). Wetland plants in New Zealand. DSIR Field Guide, DSIR Publishing, Wellington. 319pp.

Champion et al (2010). An illustrated guide to common grasses, sedges and rushes of New Zealand. NZ Plant Protection Society Inc, 182pp.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=3972



Caption: *Glyceria fluitans*
Photographer: Paula Reeves (NIWA)

Glyceria maxima

Common Name(s):

floating sweetgrass, reed sweetgrass

Current Threat Status (2009):

Exotic

Distribution:

Widely naturalised, abundant in most lowland parts of North Island, more scattered and absent from much of South Island.

Habitat:

Aquatic in drains and other slow flowing waterbodies, often forming dense floating mats in open frost-free areas. Also in swamps.

Features*:

A perennial aquatic grass, to 1.8 m tall. It has an extensive root system up to c. 1 m deep, as well as sprawling underground stems. The leaves are shiny, hairless and mid-green in colour. They grow 30-60 cm above the water surface and are 0.7-2 cm wide. Leaves end in an abrupt point and their edges are rough to touch. The flower head is open, branched, and 15-45 cm long comprising a large number of spikelets that range from yellow to green in colour, with a purplish tinge. Flowering occurs in spring and summer. Small dark brown seeds are produced prolifically throughout summer and autumn.

Flowering:

Spring/summer.

Fruiting:

late spring-autumn

***Attribution:**

Prepared by Paul Champion and Deborah Hofstra (NIWA)

References and further reading:

Champion et al (2012). Freshwater Pests of New Zealand. NIWA publication. <http://www.niwa.co.nz/freshwater-and-estuaries/management-tools/identification-guides-and-fact-sheets/freshwater-pest-species>.

Coffey BT, Clayton JS (1988). New Zealand water plants: a guide to plants found in New Zealand freshwaters. Ruakura Agricultural Centre. 65pp.

Johnson PN, Brooke PA (1989). Wetland plants in New Zealand. DSIR Field Guide, DSIR Publishing, Wellington. 319pp.

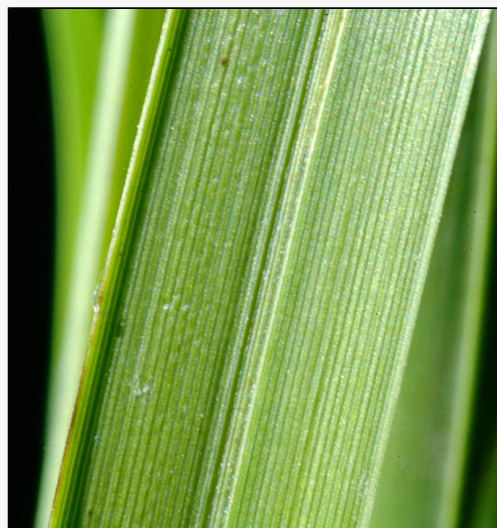
Champion et al (2010). An illustrated guide to common grasses, sedges and rushes of New Zealand. NZ Plant Protection Society Inc, 182pp.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4005



Caption: Base of leaf blade. Foxton Loop. Feb 2011.
Photographer: Colin Ogle



Caption: Lower surface of leaf blade. Foxton Loop. Feb 2011.
Photographer: Colin Ogle

Holcus lanatus

Common Name(s):

Yorkshire fog

Current Threat Status (2009):

Exotic

Distribution:

Common throughout New Zealand.

Habitat:

A wide range of disturbed wet and dry sites, often in fens.

Features*:

Tufted, sometimes stoloniferous, softly hairy, greyish green perennials, 35-110 cm. Leaf-sheath firmly membranous, striate, ± keeled above near ligule, villous with long, fine, silky hairs, basal sheaths often purplish. Ligule (0.6)-1-3 mm, ± truncate, denticulate, apex finely ciliate and occasionally with a few long hairs, abaxially villous. Leaf-blade (2.5)-4.5-15-(20) cm × (1.5)-3-10 mm, pubescent and with longer soft hairs, narrowed to acuminate tip; margins finely ciliate, and with longer hairs. Culm erect, or ascending from geniculate base, nodes and internodes pubescent. Panicle 4-18 × 1.5-7 cm, lanceolate, ovoid or sometimes oblong, dense to lax, erect or nodding; rachis and branches pubescent. Spikelets 3.8-5.5 mm, whitish, pale green, or purplish. Glumes stiff-ciliate on keels and lateral nerves of upper glume, elsewhere minutely scabrid to shortly pubescent; lower sometimes slightly shorter, narrow-lanceolate, acute to mucronate, upper broader, elliptic, mucronate, or awned to 0.8 mm. Lemma 2-2.7 mm, elliptic-lanceolate, glabrous, shining, keel sparsely finely prickletoothed, apex minutely ciliate-scabrid; lower lemma awnless, upper lemma narrower, awn stout, 1.4-2.8 mm, inserted c. 0.4 mm below tip of lemma, becoming recurved and uncinat. Palea keels sparsely short-ciliate above, apex obtusely lobed, minutely ciliate. Callus hairs few, to 1 mm. Rachilla glabrous. Anthers 1-2.2 mm. Caryopsis 1-1.5 × 0.4-0.5 mm.

Flowering:

Spring to early summer

Fruiting:

Summer to autumn

*Attribution:

Factsheet prepared by Paul Champion and Deborah Hofstra (NIWA). Features description from Edgar and Connor, (2000).

References and further reading:

Johnson, A. T. and Smith, H. A (1986). Plant Names Simplified: Their pronunciation, derivation and meaning. Landsman Bookshop Ltd: Buckenhill, UK.

Edgar E. and H. Connor. 2000. Flora of New Zealand. Volume 5. Manaaki Whenua Press: Lincoln, New Zealand.

Johnson PN, Brooke PA (1989). Wetland plants in New Zealand. DSIR Field Guide, DSIR Publishing, Wellington. 319pp.

Champion et al (2012). Freshwater Pests of New Zealand. NIWA publication. <http://www.niwa.co.nz/freshwater-and-estuaries/management-tools/identification-guides-and-fact-sheets/freshwater-pest-species>

Lambrechtsen, N.C. (1986). What grass is that? A guide to identification of some introduced grasses in New Zealand by vegetative characters. New Zealand DSIR Information Series no. 87

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=4078



Caption: *Holcus lanatus*

Photographer: John Barkla



Caption: Flower head of *Holcus lanatus*

Photographer: Trevor James (AgResearch)

Isolepis distigmatosa

Common Name(s):

none known

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. North, South, Stewart and Chatham Islands.

Habitat:

Coastal to montane in fresh water wetlands (eutrophic to oligotrophic). Often forming a floating sud around lake, pond and stream margins. Sometimes colonising old water troughs and damp pasture.

Features*:

Culms 100.0-500.0 × < 1.0-1.5 mm, tufted, leafless except for a single, basal, red-purple sheath. Inflorescence an apparently lateral, solitary head of numerous densely packed spikelets, often proliferous with 1-3 very slender branchlets each bearing a cluster of spikelets; bract subtending inflorescence variable in length, often > spikelets. Spikelets 3-5(-7) × 2-3 mm, oblong or elliptical, red-brown. Glumes c.2 mm long, ovate to obovate, subacute to obtuse, flattened at apex beside keel, light greenish-brown with red markings to almost entirely dark red-purple, with numerous, often distinct, light brown nerves; keel rather narrow, usually prominent only in upper part of glume, occasionally slightly excurrent; hyaline margins entire, usually conspicuous. Hypogynous bristles 0. Stamens usually 1, rarely 2-3 in lower flowers of spikelet. Style-branches 2, very rarely 3. Nut c.1 mm long, slightly > 0.5 mm diameter, < glume, plano-convex or biconvex, obovoid, minutely apiculate with a dark tip, cream to light grey-brown, surface shining but minutely reticulate.

Flowering:

October - January

Fruiting:

December - April

Threats:

Not Threatened

*Attribution:

Description adapted from Moore and Edgar (1970).

References and further reading:

Johnson, A. T. and Smith, H. A (1986). Plant Names Simplified: Their pronunciation, derivation and meaning. Landsman Bookshop Ltd: Buckenhill, UK.

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

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=2167



Caption: Coromandel. March
Photographer: John Smith-Dodsworth



Caption: Coromandel. March
Photographer: John Smith-Dodsworth

Juncus articulatus

Common Name(s):

jointed rush

Current Threat Status (2009):

Exotic

Distribution:

Widespread and common throughout.

Habitat:

Margins of flowing and still water bodies, drains and wet pasture, sometimes submerged or floating.

Features*:

Extremely variable perennial rush, 6-60 cm tall, dark green, usually reddish-tinged, loosely or densely tufted or forming open colonies. Stems round, rarely erect, usually flatter or prostrate and rooting at nodes, occ floating. Rhizomes usually short, occ long and forming mats. Leaves mostly along the stems, 5-20 cm long, round or compressed, with distinct hollow compartments separated by partitions (joints) usually visible externally and obvious to touch. Seedhead a loose panicle, terminal, 1-15 cm long, with many branches and clusters of small dark brown flowers. Seed capsules 2-4 mm long, triangular, glossy, dark brown to black.

Flowering:

Summer

Fruiting:

Autumn

*Attribution:

Factsheet prepared by Paul Champion and Deborah Hofstra (NIWA).

References and further reading:

Healy, A.J.; Edgar, E. (1980). Flora of New Zealand, Volume III. Adventive Cyperaceous, Petalous and Spathaceous Monocotyledons. Government Printer, Wellington. 220pp.

Johnson PN, Brooke PA (1989). Wetland plants in New Zealand. DSIR Field Guide, DSIR Publishing, Wellington. 319pp.

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For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=3328



Caption: *Juncus articulatus*
Photographer: Trevor James (AgResearch)



Caption: *Juncus articulatus*
Photographer: Trevor James (AgResearch)

Juncus effusus var. *effusus*

Common Name(s):

leafless rush

Current Threat Status (2009):

Exotic

Distribution:

Widespread and common throughout.

Habitat:

Wet pasture and a wide range of wet habitats, including peaty areas.

Features*:

Dense tuft-forming rush with short rhizomes. Stems 30-120 cm x 1.5-3 mm, cylindrical, bright or yellow-green, softer than most similar spp, easily split or compressed, smooth, shining; with continuous, cobwebby pith. No true leaves, only reddish-brown basal sheaths, closely held to stem. Seedhead not at end of stem, with many tiny green flowers along short, downward-curving branchlets. Seed capsule 2-3 mm long, oval, light brown.

Flowering:

Spring to early summer

Fruiting:

Summer to autumn

*Attribution:

Factsheet prepared by Paul Champion and Deborah Hofstra (NIWA). Features description from Healy and Edgar (1980).

References and further reading:

Healy, A.J.; Edgar, E. (1980). Flora of New Zealand, Volume III. Adventive Cyperaceous, Petalous and Spathaceous Monocotyledons. Government Printer, Wellington. 220pp.

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For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=3343



Caption: Lake Waiporohita. Feb 2011.

Photographer: Jeremy Rolfe



Caption: *Juncus effusus*

Photographer: John Smith-Dodsworth

Juncus planifolius

Common Name(s):

grass-leaved rush

Current Threat Status (2012):

Not Threatened

Distribution:

Indigenous. North, South, Stewart and Chatham Islands. Also Australia, Hawaii and South America.

Habitat:

Coastal to montane (up to 1000 m a.s.l.) in open, moist ground. Often found on fresh exposed damp clay, or along track sides or on the margins of drains. A common urban weed which has naturalised in the northern Hemisphere.

Features*:

Bright green, yellow-green to wine-red, tufted, grass-like perennial herb of rather variable stature. Stems 20.0-900.0 x 0.5-1.5 mm. Leaves numerous, all basal, up to 100 mm x 8 mm, usually less than stem, solid, flat, non-septate, lanceolate to linear-lanceolate, tapered gradually from base to the slightly dilated, acute, usually mucronate apex; sheaths broad without auricles, mostly pink-coloured, rarely cream. Inflorescence terminal, umbel-like and irregularly branched. Flowers numerous, 1.5-2.0 mm long, crowded in globose or hemispherical clusters at the ends of the numerous branchlets; tepals more or less equal, the outer acuminate, inner acute, all with light green centres and red-brown to wine-red margins. Stamens 3(-6). Capsule equal to or very slightly > tepals, lustrous brown to brownish-black, ovoid, mucronate.

Flowering:

August - April

Fruiting:

October - June

Threats:

Not Threatened

***Attribution:**

Fact Sheet prepared for NZPCN by P.J. de Lange (1 September 2006). Description based on Moore & Edgar (1970).

References and further reading:

Johnson, A. T. and Smith, H. A (1986). *Plant Names Simplified: Their pronunciation, derivation and meaning.* Landsman Bookshop Ltd: Buckenhill, UK.

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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=2175



Caption: Pauanui, February
Photographer: John Smith-Dodsworth



Caption: Fruit. Te Marua. Apr 2007.
Photographer: Jeremy Rolfe

Juncus sarophorus

Common Name(s):

Fan-flowered rush

Current Threat Status (2012):

Not Threatened

Distribution:

Indigenous. North, South, Stewart, Chatham and Campbell Islands. Also in Australia

Habitat:

Coastal to lowland in damp, open ground. Often in pasture or on the margins of coastal wetlands, and along river flats. Sometimes a troublesome weed.

Features*:

Densely tufted, tussock-forming, blue-green perennial herb. Stems tightly clumped and erect near base, usually drooping in upper half to one third. Rhizome stout, 5-10 mm diameter, horizontal. Flowering stems 1-2 m tall, 2-3 mm diameter, numerous, pliant though wiry, basally very hard, ridged, not shining; internal pith cobwebby, irregularly interrupted, rarely continuous. Leaves absent, Basal bracts basally black, otherwise dark red-purple, closely sheathing the stem, the uppermost bract usually straw-coloured and up to 250 mm long. Inflorescence lateral, many-flowered, very pale brown or cream, massed together as a dense fan-shaped head of flowers; flowers closely spaced along the numerous, stiffly erect to spreading branchlets which are pressed up hard against the very long subtending floral bract; bract overtopping flower, sometimes up to 300 mm long; flowers 2 mm long, tepals white and membranous, centrally striped green, later straw-coloured and more rigid. Stamens 3(-6). Capsule from slightly > 1.5 mm to slightly > 2 mm long, equal to or slightly > tepals, narrow, ovate-oblong, obtuse, very pale brown.

Flowering:

September - January

Fruiting:

October - May

Threats:

Not Threatened

***Attribution:**

Fact Sheet prepared for NZPCN by P.J. de Lange (1 September 2006). Description based on Moore & Edgar (1970).

References and further reading:

Johnson, A. T. and Smith, H. A (1986). Plant Names Simplified: Their pronunciation, derivation and meaning. Landsman Bookshop Ltd: Buckenhill, UK.

Moore, L.B.; Edgar, E. 1970: Flora of New Zealand. Vol. I. Government Printer, Wellington.

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=872



Caption: Coromandel, January
Photographer: John Smith-Dodsworth



Caption: In cultivation. Oct 2007.
Inflorescence.
Photographer: Jeremy Rolfe

Lemna disperma

Common Name(s):

Common duckweed

Current Threat Status (2012):

Not Threatened

Distribution:

Indigenous. North, South, Stewart and Chatham Islands (Uncommon on Stewart and Chatham Islands). Otherwise cosmopolitan.

Habitat:

Coastal to montane (up to 400 m a.s.l.). In still, fertile water usually in sunny situations (rarely in shade). Often growing intermixed with *Landoltia punctata* (G.Mey.) Les et D.J.Crawford, *Azolla filiculoides* Lam., *Wolffia australiana* (Benth.) Hartog et Plas, *Ricciocarpos natans* (L.) Corda and *Riccia fluitans* L.

Features*:

Platelets up to 6 x 4 mm, suborbicular to elliptic-obovate, nearly symmetric, bearing 1-2 vegetative buds per platelet; dorsal surface bright green to yellow-green, faintly 3-veined; ventral surface paler and often tinged with red or purple, flat to slightly convex. Root single, peltately attached, rather long for size of plant, proximal portion lying in a fine furrow in the platelet tissue; root-cap conspicuous. Inflorescence in lateral pouch, partly enclosed by spathe; spathe opened at apex. Ovule solitary. Fruit ovoid, wingless, projecting beyond the pouch margin. Seed obovate, flattened, smooth; operculum prominent, more or less flattened.

Flowering:

November - February

Fruiting:

December - April

Threats:

Not Threatened

*Attribution:

Fact sheet prepared for NZPCN by P. J. de Lange 31 August 2007.

References and further reading:

Landolt, E. 2011: Lemnaceae Pp. 274-282. Flora of Australia 39. Alismatales to Arales. ABRS/CSIRO, Melbourne, Australia.

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

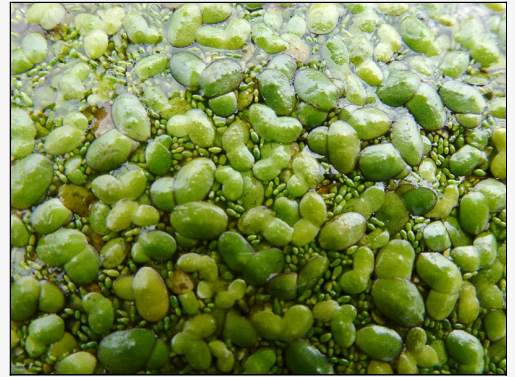
For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2022



Caption: *Lemna disperma*, *Landoltia punctata* (larger with dark margins), *Wolffia australiana* (tiny).

Photographer: Colin Ogle, farm pond near Waverley. Apr 2012.



Caption: *Lemna disperma*, *Landoltia punctata* (larger with dark margins), *Wolffia australiana* (tiny).

Photographer: Colin Ogle, farm pond near Waverley. Apr 2012.

Lupinus arboreus

Common Name(s):

tree lupin

Current Threat Status (2009):

Exotic

Habitat:

Terrestrial. Short tussockland, bare land, riverbeds, coastal sandy and well drained areas.

Features:

Short-lived, perennial shrub to 2-3 m high. Deep taproot. Stems densely silky-hairy when young, tough, erect, branching, becoming soft-woody. Leaves grey-green, hairless above, silky below, divided into 5-11 leaflets spreading out from one point finger-like; leaflets 15-40 x 3-10 mm. Flowers pea-like, 15-18 mm long, usually pale yellow (rarely white or bluish), sweetly scented, Oct-May. Seed pod stout, softly hairy, 40-80 mm long, firmly attached; splits explosively to disperse dark brown, mottled seeds, 4-6 mm long.

Flowering:

October, November, December, January, February, March, April, May

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=3143



Caption: Tairoa Peninsula, Otago
Photographer: John Sawyer



Caption: Tairoa Peninsula, Otago
Photographer: John Sawyer

Medicago sativa

Common Name(s):

lucerne

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=3461



Caption: Whanganui. Feb 2013.
Photographer: Colin Ogle



Caption: Whanganui. Feb 2013.
Photographer: Colin Ogle

Persicaria maculosa

Common Name(s):

willow weed

Current Threat Status (2009):

Exotic

Features:

Stems smooth sometimes hairy, much-branched, 15 to 90 cm tall.

Leaves alternate, pointed at both ends, 2.5 to 15 cm long, with smooth edges and usually a dark spot in the middle. Sheath at base of the leaf fringed with short bristles (Wax, Fawcett and Isely 1981).

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=3113



Caption: Hutt River. May 2006.

Photographer: Jeremy Rolfe



Caption: Hutt River north of Stokes Valley. Apr 2006.

Photographer: Jeremy Rolfe

Rubus fruticosus agg.

Common Name(s):

blackberry

Current Threat Status (2009):

Exotic

Habitat:

Terrestrial. A plant of coastal and lowland habitats. A plant that grows where there has been settlement or significant disturbance of native flora (Webb et. al. 1988). Usually prevalent on lightly grazed areas and waste land in moist situations especially higher rainfall areas. A plant that does not compete successfully with well managed good pasture. A plant of scrub and forest margins, shrubland, fernland, riverbeds and wetlands (Timmins & MacKenzie 1995). A plant of open areas, wasteland, roadsides, hedgerows, farmland, scrub, forest margins and clearings, riverbeds, gardens, embankments and swamps (Webb et. al. 1988). Areas at risk from the plant are pasture, exotic forests, open areas, roadsides, sand dunes, pasture, streambanks. A plant of roadsides, streambanks, waste areas, pastures, orchards and forestry.

Features:

Scrambling shrub, suckering, usu. semi-erect with stems arching and entangling, sometimes semi-prostrate or almost erect; stems usu. angled, flat to concave or furrowed between angles, rarely terete, sometimes striate, glabrous to moderately hairy, esp. on young growth, often with sessile glands; sometimes pruinose, with stalked glands, green to purplish, red or flecked; armature of prickles, and sometimes also pricklets or acicles. Leaves palmate with 5 leaflets; petioles and petiolules usu. pilose to tomentose and prickly; leaflets glabrous to pilose on upper surface, usu. pilose or tomentose on lower surface, dentate to 1~2-serrate or sometimes obscurely lobed or deeply 1~2-pinnatisect; terminal leaflets usu. obovate or ovate, sometimes elliptic, oblong, orbicular or deltoid, 30~160 x 15~110mm, petiolulate; stipules usu. linear or linear-lanceolate, sometimes lanceolate to elliptic. Infl. a cylindrical to pyramidal, usu. many-flowered panicle, often leafy at least in lower part, sometimes flowers 1~few, with stalked glands. Flowers 15~60mm diam. Sepals usu. lanceolate to ovate or ovate-triangular, acute and apiculate to acuminate or long-attenuate and sometimes leafy at tip, pilose to tomentose, sometimes with pricklets or stalked glands, usu. deflexed or rarely erect at fruiting. Petals rounded to notched, flat or crinkled, white to deep pink. Stamen filaments white or pink. Fruit of black, shiny or rarely pruinose drupelets, ovoid, oblong or cylindrical, 10~15mm long. (-Webb et. al., 1988)

Flowering:

November, December, January, February, March, (May)

Fruiting:

November-May

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2973



Caption: Stokes Valley. Dec 2001.

Photographer: Jeremy Rolfe



Caption: Taita Gorge, Hutt River.

Mar 2004.

Photographer: Jeremy Rolfe

Trifolium repens

Common Name(s):

white clover

Current Threat Status (2009):

Exotic

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2568



Caption: Stokes Valley. Dec 2005.

Photographer: Jeremy Rolfe



Caption: *Trifolium repens*

Photographer: John Smith-Dodsworth

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., 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.
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 fimbriellae (individual hair-like structures).
fimbriate	With fringes.
Flabellate	Fan shaped.
Flaccid	Limp, not rigid, flabby.
Flange	A projecting rim.

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

Term	Definition
Incoherent	Not sticking together.
Incursion	Entrance of a pest into an area where it is not present
Indumentum	A covering of fine hairs (or sometimes scales)
Indusia	Plural of indusium, a membrane covering a sorus of a fern
Indusium	A thin tissue that covers the sorus in many ferns. Plural: indusia.
Inflorescence	The arrangement of flowers on the stem. A flower head.
Infundibuliform	Funnel-like.
Interkeel	The space between the keel and the leaf blade
Internode	The part of an axis between two nodes; the section of the stem between leaves.
Internodes	Part of a stem between two nodes.
Intramarginal	Within or near the margin.
Involucral bracts	The scales surrounding the flower head or capitula.
Involucre	A group of bracts surrounding a flower head.
Involute	With margins rolled inward toward the upper side.
Irritable	Responding to touch.
Jugate	Paired.
Juvenile	A plant of non-reproducing size.
Keel	A prominent or obvious longitudinal ridge (as in a boat).
Labellar	Pertaining to the labellum: a lip; in orchid flowers referring to the middle petal which usually differs in size, shape or ornamentation from the two lateral petals.
Labellum	A lip; in orchid flowers referring to the highly modified middle petal which usually differs in size, shape or ornamentation from the two lateral petals.
Lacinia	A jagged lobe.
Laciniae	Jagged lobes.
Laciniate	Cut into narrow, irregular lobes or segments.
Lacustrine	Of or having to do with a lake, of, relating to, or formed in lakes, growing or living in lakes.
Lamina	The expanded flattened portion or blade of a leaf, fern frond or petal.
Lanceolate	Lance-shaped; of a leaf several times longer than wide with greatest width about one third from the base, tapering gradually to apex and more rapidly to base
Lateral	On or at the side.
Lax	With parts open and spreading, not compact.
Laxly	With parts open and spreading, not compact
Leaflet	One section of a compound leaf.
Lemma	The lower of two bracts enclosing the flower in grasses.
Lenticillate	Bark that is covered in fine lenticles (breathing pores)
Ligulate	Strap-like, tongue-shaped
Ligule	The membrane between the leaf and the stem of a grass; the "petal" of a ray floret in a composite inflorescence
Linear	Long and narrow with more or less parallel sides.
Littoral	Occurring at the border of land and sea (or lake). On or pertaining to the shore. The shallow sunlit waters near the shore to the depth at which rooted plants stop growing.
Lobe	A recognisable, but not separated, rounded division or segment of a leaf or pinna. Used to describe ferns and leaves in <i>Cotula</i> and <i>Leptinella</i> .
Lobed	Part of a leaf (or other organ), often rounded, formed by incisions to about halfway to the midrib.
Lobule	A small lobe or sub-division of a lobe
Lustrous	Glossy, shiny.
Lycophytes	Seedless vascular plants that belong to the phylum Lycophyta (characterised by microphylls -primitive leaves found in ancient plants).
Lyrate	Pinnatifid or pinnatisect terminal lobe much larger than lower lobes.
Maculate	Blotched or spotted.
Mangrove	Coastal wetland dominated by Manawa or mangrove <i>Avicennia marina</i> var. <i>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.
muricate	Rough with short, hard points like the shell of Murex, a genus of tropical sea snails with elaborately pointed shells.
Mycorrhiza	A symbiotic relationship between a fungus and a plant.
Mycorrhizal associations	Symbiotic association between fungi and plant roots which assists plant health by allowing increased ability for uptake of nutrients and promote plant growth.
Napiform	A long swollen but tapering root – like a parsnip, or carrot.
Native	Naturally occurring in New Zealand (i.e., not introduced accidentally or deliberately by humans).
naturalised	Referring to plants that have escaped from cultivation (including gardens or forest plantations) and can now reproduce in the wild (without human assistance)
Nectary	Organ that produces nectar.
Nerve	Prominent vein or rib.
Nerves	Strands of conducting and usually strengthening tissue in a leaves or similar structures
Net veins	Veins that repeatedly divide and re-unite.
Net venation	Feather-like or hand-like venation on a leaf.
Nival	Growing at high altitudes. From Latin: nivalis, snowy etc. from nix, nivis, snow.
Node	The point at which leaves, branches or roots arise on a stem.
Ob-	Prefix meaning inverted, in reverse direction.
Obcordate	Heart shaped with the notch at the apex.
Oblanceolate	Tapering and widest towards the apex or inversely lanceolate.
Oblique	Slanting; of a leaf, larger on one side of the midrib than the other, in other words asymmetrical.
Oblong	Rectangular.
Obovate	Roughly elliptical or reverse egg shaped and widest near the apex (i.e., the terminal half broader than the basal half).
Obtuse	Blunt or rounded at the apex, with the sides meeting at an angle greater than 90°.
Operculate	With a small lid.
Opposite	A pair of organs attached at nodes in pairs on either side of a stem or axis.
Orbicular	Almost or approximately circular.
Outbreeding depression	A reduction in vigor of offspring from distant parents. It can occur when a locally adapted population is moved and mixed with plants adapted to different conditions.
Outer canopy deciduous	Marked reduction in leaf number in the outer canopy in exposed high light environments over winter.
Oval	Planar, shaped like a flattened circle, symmetrical about both the long and the short axis; about twice as long as broad, tapering equally both to the tip and the base. Synonymous with elliptical.
Ovary	Part of a flower containing the ovules and later the seeds.
Ovate	Egg-shaped and widest at base.
Ovoid	Oval; egg-shaped, with rounded base and apex.
Pakihi	A term which in its strict sense refers to open clears within forest dominated by low scrub and rushes. However, more usually used to refer natural and induced wetlands and their associated shrublands. A vernacular most frequently used in the West Coast for impoverished soils and their associated peats, left after forest has been cleared
Palea	The small upper bract enclosing the flower of a grass
palea	1. The upper of the two bracts that enclose each floret in a grass spikelet. 2. A small bract at the base of a disc floret in some plants of the composite family. 3. Scales on various parts of ferns (referred to as paleate or paleaceous). From the Latin word for 'chaff'.
paleae	Plural of palea, from the Latin word for 'chaff'. 1. The upper of the two bracts that enclose each floret in a grass spikelet. 2. A small bract at the base of a disc floret in some plants of the composite family. 3. Scales on various parts of ferns (referred to as paleate or paleaceous).
Palmately	Radiating from a point, as fingers radiating from the palm of a hand.
Palmatifid	Deeply divided into several lobes arising from more or less the same level.
Palmatisect	Intermediate between palmate and palmatifid, i.e. the segments are not fully separated at the base; often more or less digitate.
Palustrine	Pertaining to wet or marshy habitats. Term covers mires and marshes
Pandurate	Fiddle-shaped.
Panicle	Highly branched (multiple raceme).

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

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

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

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

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