



## Aramoana weeds



## Table of Contents

|  |    |
|--|----|
| Introduction                               | 1  |
| <i>Ammophila arenaria</i>                  | 2  |
| <i>Berberis darwinii</i>                   | 3  |
| <i>Cakile edentula</i> var <i>edentula</i> | 4  |
| <i>Carpobrotus chilensis</i>               | 5  |
| <i>Carpobrotus edulis</i>                  | 6  |
| <i>Clematis vitalba</i>                    | 7  |
| <i>Cotoneaster coriaceus</i>               | 8  |
| <i>Cytisus scoparius</i>                   | 9  |
| <i>Disphyma clavellatum</i>                | 10 |
| <i>Elytrigia pycnantha</i>                 | 11 |
| <i>Erica lusitanica</i>                    | 12 |
| <i>Ipheion uniflorum</i>                   | 13 |
| <i>Juncus gerardii</i>                     | 14 |
| <i>Lupinus arboreus</i>                    | 15 |
| <i>Malva arborea</i>                       | 16 |
| <i>Passiflora antioquiensis</i>            | 17 |
| <i>Pinus radiata</i>                       | 18 |
| <i>Plantago coronopus</i>                  | 19 |
| <i>Rubus fruticosus</i> agg.               | 20 |
| <i>Senecio elegans</i>                     | 21 |
| <i>Spartina anglica</i>                    | 22 |
| <i>Tropaeolum speciosum</i>                | 23 |
| <i>Ulex europaeus</i>                      | 24 |
| <i>xCarpophyma mutabilis</i>               | 25 |
| Glossary                                   | 26 |

Made on the New Zealand Plant Conservation Network website – [www.nzpcn.org.nz](http://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](http://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.

# *Ammophila arenaria*

**Common Name(s):**

marram grass

**Current Threat Status (2009):**

Exotic

**Habitat:**

Terrestrial. Coastal plant, usually occurs on sand dunes, can occur in inland sites with low fertility.

**Features:**

Stout rhizomatous perennial grass. Rhizomes tough, creeping long distances in loose sand. Compact tufts formed, 1 m+ high. Leaves to 700 x 3-6 mm, greyish-green, tips sharp, reddish-brown sheaths overlapping; blades tightly rolled (appear cylindrical) in exposed conditions, loosely rolled in shade; densely hairy ribs above, striped below, narrow ligule 25 mm long. Seedhead a dense spike, whitish, to 30 cm long.

**Flowering:**

November, December, January, February, March

**Fruiting:**

Unknown

**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=2521](http://nzpcn.org.nz/flora_details.asp?ID=2521)



**Caption:** Marram, *Ammophila arenaria*

**Photographer:** John Barkla



**Caption:** Warrington, Otago

**Photographer:** John Barkla

## *Berberis darwinii*

### **Common Name(s):**

Darwins barberry

### **Current Threat Status (2009):**

Exotic

### **Habitat:**

Terrestrial. A lowland plant. Plant occurs in sites with low-moderate fertility. Plant found in low forest, scrub, forest margins and shrublands. Plant found in remnant forest stands, scrub, along forest and plantation margins, roadsides in Chile (Webb, Sykes and Garnock-Jones 1988). Plant found in forest margins, secon-growth bush, scrub, plantations and roadsides.

### **Features:**

Spiny evergreen shrub up to about 4m tall. The leaves are a dark glossy green and are stiff up to 3.5 by 1.5 cm with 3-5 spiny points. Spines beneath each leaf are palmate with 5 points. Flowers are orange-yellow held in a raceme and the berries are dark purple to black with a bluish white waxy bloom.

### **Flowering:**

July, August, September, October,  
November, December, January,  
February

### **Fruiting:**

November-  
February

### **For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=3509](http://nzpcn.org.nz/flora_details.asp?ID=3509)



**Caption:** Fraser's Gully, Dunedin

**Photographer:** John Barkla



**Caption:** Fruit

**Photographer:** John Barkla

## *Cakile edentula* var *edentula*

**Common Name(s):**

sea rocket

**Current Threat Status (2009):**

Exotic

**Flowering:**

(August), November,  
December, January,  
February, (June)

**Fruiting:**

(August), November,  
December, January,  
February, (June)

**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=3550](http://nzpcn.org.nz/flora_details.asp?ID=3550)



**Caption:** Sea rocket

**Photographer:** John Barkla



**Caption:** Sea rocket

**Photographer:** Johyn Barkla

## *Carpobrotus chilensis*

### **Common Name(s):**

ice plant

### **Current Threat Status (2009):**

Exotic

### **Habitat:**

Terrestrial. Coastal

### **Features:**

Mat-forming trailing perennial herb. Stems to about 6 m long, occasionally rooting, subwoody at base. Leaves sharply 3-angled. Flowers 6.5-8 cm diameter, petals purple. Seeds brown about 1mm long.

### **Flowering:**

October, November, December

### **For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=3623](http://nzpcn.org.nz/flora_details.asp?ID=3623)



**Caption:** Waste area, Castlecliff Beach, Whanganui

**Photographer:** Colin Ogle



**Caption:** Flower with bumble bee, in waste area, Castlecliff Beach, Whanganui

**Photographer:** Colin Ogle



## *Carpobrotus edulis*

**Common Name(s):**

ice plant

**Current Threat Status (2009):**

Exotic

**Habitat:**

Terrestrial. Coastal

**Features:**

Mat-forming trailing perennial herb. Stems to about 6 m long, occasionally rooting, subwoody at base. Leaves sharply 3-angled. Flowers 8-10 cm diameter, petals pale yellow turning pink with age.

**Flowering:**

October, November, December, January, February

**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=3638](http://nzpcn.org.nz/flora_details.asp?ID=3638)



**Caption:** Mangawhai, north of Auckland

**Photographer:** John Sawyer



**Caption:** Mangawhai, north of Auckland

**Photographer:** John Sawyer

# *Clematis vitalba*

## Common Name(s):

old man's beard

## Current Threat Status (2009):

Exotic

## Habitat:

Terrestrial. A plant of coastal and lowland areas. Plant grows in moderate to high fertile sites with medium to good drainage. The plant is light demanding. Plant grows in tall forest, low forest, scrub and shrubland. Occurs in reserves and forests with well-lit forest margins and wide tracks, waterways or clearings, riparian vegetation, exotic or native. The plant occurs in forest remnants.

## Features:

Deciduous, climbing, layering, vine to 20 m tall. Stems very long, woody, with 6 prominent ribs (appear as furrows in older vines) and pale, easily rubbed-off bark. Leaves opposite, comprising 5 (rarely 3) widely spaced leaflets, falling in Autumn. Leaflets thin and papery, sparsely hairy, bluntly toothed or entire. Flowers 2-3 cm diam, creamy white, fragrant, Dec-May. Seeds grey, hairy, 2-3 mm long; with distinctive white-plumes, 3-4 cm long, in dense, fluffy clusters persisting over winter.

## Flowering:

December, January, February, March, April, May

## Fruiting:

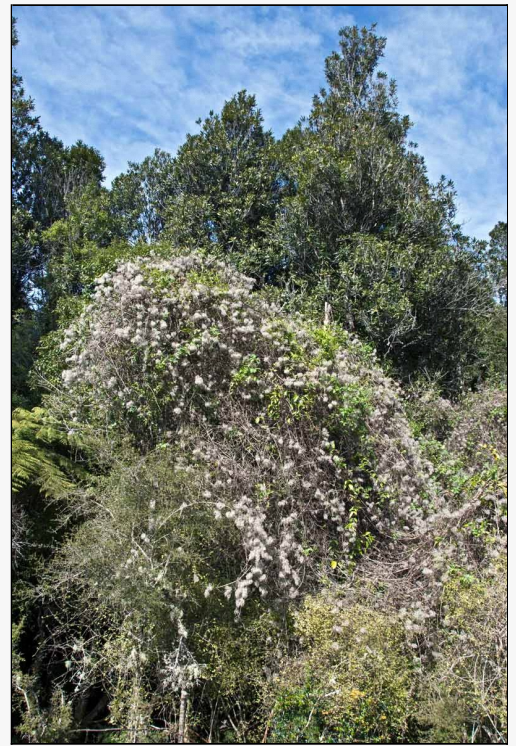
March-Oct

## References and further reading:

West, C. 1991. Literature Review of the Biology of Clematis Vitalba (old Man's Beard). Issue 725 of DSIR Land Resources vegetation report, Christchurch

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=3721](http://nzpcn.org.nz/flora_details.asp?ID=3721)



**Caption:** Stronvar, eastern Wairarapa. Seed that has persisted over winter.

**Photographer:** Jeremy Rolfe



**Caption:** Stronvar, eastern Wairarapa. Seed that has persisted over winter.

**Photographer:** Jeremy Rolfe

## *Cotoneaster coriaceous*

### **Common Name(s):**

cotoneaster

### **Current Threat Status (2009):**

Exotic

### **Habitat:**

Dry shrubland, forest margins, wasteland in urban places.

### **Features:**

Spreading evergreen shrub up to 3 m high. Young shoots buff tomentose and erect, later becoming glabrous, dark purplish and arching. Leaves up to 80m x 45 mm, slightly shining and with deeply impressed veins above, tomentose beneath, becoming less so with age. Flowers in clusters of 20-80, with spreading white petals. Fruit 5-8 mm diameter, glossy orange of scarlet red.

### **Flowering:**

November, December, January

### **Fruiting:**

February-August.

### **References and further reading:**

Dickore WB, Kasperek G. 2010: Species of *Cotoneaster* (Rosaceae, Maloideae) indigenous to, naturalising or commonly cultivated in Central Europe. *Willdenowia* 40(2): 13-45.

### **For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=3744](http://nzpcn.org.nz/flora_details.asp?ID=3744)



**Caption:** SH4 ('Parapara') dominant shrubs on very steep mudstone; fruiting

**Photographer:** Colin Ogle



**Caption:** SH4 ('Parapara') dominant shrubs on very steep mudstone; fruiting

**Photographer:** Colin Ogle

## *Cytisus scoparius*

### **Common Name(s):**

wild broom

### **Current Threat Status (2009):**

Exotic

### **Habitat:**

Terrestrial. A plant of lowland and montane habitats. Plant occurs in sites with low-moderate-high fertility. The plant normally grows in areas of high rainfall, on acid soils but never on chalks. Plant grows in shrubland, tall tussockland, short tussockland, cliff, bluff and riverbed communities (Timmins & MacKenzie 1995). The plant grows in disturbed lowland and montane habits such as pasture, waste ground, riverbeds and poorly grazed areas.

### **Features:**

Much-branched deciduous shrub up to 2m high; twigs glabrous, but sericeous when young, green, more or less 5-angled. Leaves variable, usually glabrous above and sericeous below, and 3-foliolate and petiolate when mature or on older twigs; leaves of younger twigs often 1~2 foliolate and subsessile; young leaves often sericeous above and below but sometimes glabrous; leaflets apetiollate, elliptic to obovate, usually acute, sometimes emarginate, 4~16mm long; terminal leaflet > lateral leaflets. Flowers usually solitary, rarely paired, axillary; pedicels 5~13mm long. Calyx glabrous, bilabiate, about quarter the length of corolla; upper and lower lips entire or shallowly toothed. Corolla usually golden yellow, rarely partly red or tinged mauve, 16~25mm long. Pod black, oblong, many seeded, 15~60mm long with hairy margins; seeds brown or greenish-brown, ellipsoid, compressed, about 3mm long. (- Webb et. al., 1988)

### **Flowering:**

September, October,  
November, December

### **Fruiting:**

December-January, later in  
cooler areas (Timmins &  
MacKenzie 1995).

### **For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=3839](http://nzpcn.org.nz/flora_details.asp?ID=3839)



**Caption:** Bi-coloured flowers.  
Hutt River. Oct 2012.

**Photographer:** Jeremy Rolfe



**Caption:** Bi-coloured flowers.  
Hutt River. Oct 2012.

**Photographer:** Jeremy Rolfe

# *Disphyma clavellatum*

## Common Name(s):

jellybeans

## Current Threat Status (2012):

Non Resident Native - Coloniser

## Distribution:

Indigenous: New Zealand, South Island (Waimea Inlet and Riverton Estuary). Present in Australia

## Habitat:

Saltmarsh and estuaries - often in places flooded at high tide.

## Features\*:

Trailing, succulent herb. Stem prostrate, terete, glabrous. Leaves terete or weakly 3-angled, obtuse and mucronate at apex, clavate, tapering to shortly connate base, 5-50 × 4-5-10 mm; margins papillate. Flowers 20-40 mm diameter. Calyx glabrous; sepal keels smooth. Petals purple with white base (bases turning purple when dry), in 2 rows, 10-30 mm long. Stamens 5-7 mm long; filaments hairy at base; anthers whitish yellow. Capsule 5-12 mm diameter, valves with widely divergent expanding keels; placental tubercle 2-lobed. Seeds pale brown to brown, weakly rugose or smooth, c.1 mm long.

## Flowering:

November - January

## Fruiting:

December - April

## Threats:

Not Threatened. Presumed to be a relatively recent i.e. last 50 or so years, natural arrival from Australia

## \*Attribution:

Description based on Webb et al. (1988)

## References and further reading:

Webb, C. J.; Sykes, W. R.; Garnock-Jones, P. J. 1988: Flora of New Zealand. Vol. IV. Naturalised Pteridophytes, Gymnosperms, Dicotyledons. 4. Christchurch, New Zealand, Botany Division, D.S.I.R.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=2364](http://nzpcn.org.nz/flora_details.asp?ID=2364)



**Caption:** Sandy Point on the shore of New River Estuary, Invercargill  
**Photographer:** Alice Shanks



**Caption:** Sandy Point on the shore of New River Estuary, Invercargill  
**Photographer:** Alice Shanks

## *Elytrigia pycnantha*

### **Common Name(s):**

sea couch

### **Current Threat Status (2009):**

Exotic

### **Habitat:**

Terrestrial. Coastal on foreshore waste land, consolidated sand near dunes, mudflats and roadsides.

### **Features:**

Bluish grey, tufted, rigid perennial grass to about 125 cm tall. Can form large patches from strongly spreading wiry rhizomes. Leaves glaucous, up to 25 cm long, usually rolled, occasionally flat and up to 7 mm wide, greyish to light brown. Leaves held on erect culms to 25-75 cm tall. Erect spike 5-20 cm tall with spikelets very close-set.

### **For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=3874](http://nzpcn.org.nz/flora_details.asp?ID=3874)



**Caption:** Aramoana  
**Photographer:** John Barkla



**Caption:** Newdicks Beach,  
Maketu. Apr 2008.  
**Photographer:** Matt Renner

## *Erica lusitanica*

### Common Name(s):

Spanish heath

### Current Threat Status (2009):

Exotic

### Habitat:

Terrestrial. A plant of coastal, lowland and montane habitats (Timmins & MacKenzie 1995). Plant grows in sites with low - moderate fertility (Timmins & MacKenzie 1995). The plant occurs in areas with moderate to high rainfall and also where the soil is acidic (Wilson & Galloway 1993). The plant is found in scrub and forest margin, shrubland, tussockland, herbfield and fernland (Timmins & MacKenzie 1995). The plant occurs in rough pasture, shrubland and scrub (Wilson & Galloway 1993).

### Features:

Erect shrub to about 2m high, occasionally with a trunk > 15cm diam. Shoots densely covered with short hairs, especially when young; hairs simple, of varying lengths. Leaves in whorls of 3~4, subsessile, 3~7mm long; margins revolute and contiguous, entirely concealing undersurface; apparent or false margin sometimes with sparse hairs giving a serrulate appearance, otherwise glabrous. Flowers in lateral racemes; racemes usually densely arranged so appearing as a large terminal panicle. Pedicels about 2mm long, recurved. Bracteoles situated near base, < 1mm long, generally linear, whitish, not reaching calyx. Calyx 1~1.5mm long; lobes triangular-ovate, glabrous, white, 2~3x length of tube. Corolla 3~5mm long, tubular-campanulate, white except for rose or pink flush outside in bud, glabrous; lobes very short, very broadly ovate, erect to spreading. Stamens included; anthers approx. 1mm long, dark maroon; awns whitish, echinate, 1/2 ~ 2/3 length of anther. Style slightly exerted; stigma obconic. Capsule about 3mm long, broad ellipsoid, glabrous. (- Webb et. al., 1988)

### Flowering:

March, April, May June,  
July, August, September,  
October, November,  
December

### Fruiting:

Germinable seed present in  
capsules in early spring  
(Timmins & MacKenzie  
1995).

### References and further reading:

Webb C.J., Sykes W.R., Garnock-Jones P.J. 1988. Flora of New Zealand Volume IV. Botany Division, D.S.I.R., Christchurch. 1365 p.

Wilson H.D., Galloway T. 1993. Small-leaved Shrubs of New Zealand. Manuka Press, Christchurch. 305 p.

### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=3911](http://nzpcn.org.nz/flora_details.asp?ID=3911)



**Caption:** Lower Hutt. Jul 2013.  
**Photographer:** Jeremy Rolfe



**Caption:** Lower Hutt. Jul 2013.  
**Photographer:** Jeremy Rolfe

## *Ipheion uniflorum*

**Common Name(s):**

spring star-flower

**Current Threat Status (2009):**

Exotic

**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=4106](http://nzpcn.org.nz/flora_details.asp?ID=4106)



**Caption:** *Ipheion uniflorum* wild in roadside verge

**Photographer:** Peter de Lange, 15 Sep. 2006, Captain Keatley's House, St Lukes Road, Mt Albert, Auckland



## *Juncus gerardii*

### **Current Threat Status (2009):**

Exotic

### **Habitat:**

Aquatic: Emergent.

### **Features:**

Sward forming rush with black rhizomes and erect tufts of dull green leaves, to 20 cm long and 1 mm wide. Leaves are stiff and wiry with small, rounded auricles. Stems 40 - 80 cm tall; flowers spread out on open fan-shaped branchlets. Flowers 3-4 mm long with dark tepals; hooded at tip. Light brown broad capsules are about equal to tepals.

### **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.

### **For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=3344](http://nzpcn.org.nz/flora_details.asp?ID=3344)



**Caption:** *Juncus gerardii*  
**Photographer:** John Barkla



**Caption:** *Juncus gerardii*  
**Photographer:** John Barkla

## *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](http://nzpcn.org.nz/flora_details.asp?ID=3143)



**Caption:** Tairoa Peninsula, Otago  
**Photographer:** John Sawyer



**Caption:** Tairoa Peninsula, Otago  
**Photographer:** John Sawyer

## *Malva arborea*

### **Common Name(s):**

tree mallow

### **Current Threat Status (2009):**

Exotic

### **Habitat:**

Terrestrial. Waste places, cultivated land, Coastal sites.

### **Features:**

Stout biennial herb, usually with a single stem up to 2 m tall. Stems hairy when young, becoming hairless and woody at base when older. Leaves velvety to the touch, with 5-7 lobes, up to 20 cm across. Lilac to purple flowers arranged in clusters at end and along upper parts of the stem. 6-8 seeds per fruit.

### **Flowering:**

August, September, October, November, January, February, March, April, May.

### **References and further reading:**

Ray, M.F. 1998: New combinations in *Malva* (Malvaceae: Malveae).  
Novon 8: 288-295.

Hill, S.R. 2009: Notes on California Malvaceae including nomenclatural changes and additions to the flora. Madroño 5.

### **For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=3387](http://nzpcn.org.nz/flora_details.asp?ID=3387)



**Caption:** *Malva dendromorpha*

**Photographer:** John Barkla



**Caption:** Pauatahanui Inlet. Jun 2006.

**Photographer:** Jeremy Rolfe

## *Passiflora antioquiensis*

### Current Threat Status (2009):

Exotic

### References and further reading:

Heenan, PB; Sykes, WR 2003. *Passiflora* (Passifloraceae) in New Zealand: a revised key with notes on distribution. *NZ J Botany* 41: 217-221. DOI: [10.1080/0028825X.2003.9512842](https://doi.org/10.1080/0028825X.2003.9512842)

### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=4763](http://nzpcn.org.nz/flora_details.asp?ID=4763)



**Caption:** *Passiflora antioquiensis*  
**Photographer:** John Smith-Dodsworth



**Caption:** *Passiflora antioquiensis*  
**Photographer:** John Smith-Dodsworth

## *Pinus radiata*

### **Common Name(s):**

radiata pine, P Rad

### **Current Threat Status (2009):**

Exotic

### **Habitat:**

Terrestrial. A plant of coastal and lowland habitats (Timmins & MacKenzie 1995). A plant of low fertility sites (Timmins & MacKenzie 1995). The plant occurs in scrub and forest margin, shrubland, short tussockland, sand dunes, cliffs and bluff communities (Timmins & MacKenzie 1995).

### **Features:**

Medium to large tree (40-60 m in cultivation). Needles are slender, about 15 cm long, deep or dark green and held in bunches of 3. Male cones are clustered at ends of new shoots in spring, light-brown to pinkish. Female cones are 12 by 8 cm, brown, in clusters of up to 6 and backwards pointing.

### **For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=3089](http://nzpcn.org.nz/flora_details.asp?ID=3089)



**Caption:** Seedling, Maidstone Park, Upper Hutt.

**Photographer:** Jeremy Rolfe



**Caption:** Pinus radiata

**Photographer:** John Smith-Dodsworth

## *Plantago coronopus*

### **Common Name(s):**

buck's horn plantain

### **Current Threat Status (2009):**

Exotic

### **Habitat:**

Terrestrial. Extensively naturalised in coastal areas. common around lowland lakes inland, in waste places and other modified areas.

### **Features:**

Annual or perennial herb with persistent taproot. Leaves all radical, 120 x 5 mm with 1-4 pairs of lobes or teeth. Flowering stem up to 45 cm long, usually clothed in hairs, cylindrical spike contains many flowers. Capsule up to 2 mm long, usually containing 4 small pinkish-brown seeds.

### **Flowering:**

July, August, September, October, November, December, January, February, March, April

### **For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=3082](http://nzpcn.org.nz/flora_details.asp?ID=3082)



**Caption:** Plantago coronopus

**Photographer:** John Barkla



**Caption:** Pauatahanui. 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 subsessile 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 cylindric 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 cylindric, 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](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

## *Senecio elegans*

**Common Name(s):**

purple groundsel

**Current Threat Status (2009):**

Exotic

**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=2701](http://nzpcn.org.nz/flora_details.asp?ID=2701)



**Caption:** North Otago, April  
**Photographer:** John Barkla



**Caption:** Tomahawk Beach,  
Dunedin  
**Photographer:** John Barkla



## *Spartina anglica*

### **Common Name(s):**

Spartina hybrid, cordgrass

### **Current Threat Status (2009):**

Exotic

### **Habitat:**

Aquatic: Emergent. Estuaries, mangroves and other intertidal areas with soft sediment.

### **Features:**

Stiff perennial grass 50 to 100 cm tall with fleshy rhizomes, forming large dense clumps or swards. Leaf blades 5-40cm x 5-12mm flat or inrolled, hairless and narrowed to fine hard tip. Culm erect, 5-8mm diameter at base, including closely ensheathing leaves. inflorescence 10-30cm, erect.

### **For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=2811](http://nzpcn.org.nz/flora_details.asp?ID=2811)



**Caption:** *Spartina anglica*

**Photographer:** John Smith-Dodsworth

## *Tropaeolum speciosum*

### **Common Name(s):**

Chilean flame creeper

### **Current Threat Status (2009):**

Exotic

### **Habitat:**

Terrestrial. Mainly remnant stands of forest, also scrub, sometimes found in more remote forest clearings.

### **Features:**

Climbing perennial, often to high canopy, usually hairless. Rootstock thick. Stems slender, usually with coiling tendrils to 7 cm long, watery sap. Leaves 5-fingered, each leaflet 10-35 x 5-16 mm. Flowers solitary, tubular, 15 mm diam, 5 irregular petals, bottom 3 petals with very slender claw 7-8 mm long, scarlet (occ rose), Nov-Apr. Seed capsule thinly fleshy, of 3 round parts, 1 or 2 often remaining small, 1 cm wide, deep blue.

### **Flowering:**

November, December, January, February, March, April

### **Fruiting:**

December - March

### **For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=2593](http://nzpcn.org.nz/flora_details.asp?ID=2593)



**Caption:** *Tropaeolum speciosum*

**Photographer:** John Barkla



**Caption:** Fruit. Taihape Scenic Reserve. Jan 1998.

**Photographer:** Colin Ogle

## *Ulex europaeus*

### Common Name(s):

gorse

### Current Threat Status (2009):

Exotic

### Habitat:

Terrestrial. A plant of coastal and lowland habitats. The plant occurs in sites with low - low/moderate fertility. It is common in disturbed areas and can tolerate a wide range of conditions and soil types allowing it to establish in most areas. It is more abundant in waste places, riverbeds and poorer land than it is in developed and fertile land. It occurs in scrub and forest margin, shrubland, fernland and riverbed communities and grassland, shrubland, forest margins, coastal habitats and waste places. It occurs in rough foothills and less-intensively farmed areas and is often abundant in disturbed lowland and lower montane places. It is a plant that often aggressively invades rough pasture.

### Features:

Shrub up to 2m high; main stems erect or spreading, densely branched in younger parts but eventually bare at base; young twigs and spines somewhat glaucous; hairs usu. grey. Leaves of seedlings not spinous but with 3 hairy leaflets; spines branched; terminal and lateral spines rigid, deeply furrowed, 15~30mm long; secondary spines subtending lateral up to 12mm long. Flowers solitary; bracteoles acute to rounded, 1.5~3mm wide. Calyx greenish-yellow, about 2/3~3/4 length of corolla, with generally patent hairs; calyx teeth connivent. Corolla clear yellow or golden yellow, 13~20mm long; wings > keel. Pod villous, turning dark brown to black, 13~25mm long; seeds smooth and rounded, brown or greenish-brown, shiny, few per pod. (Webb et. al., 1988).

### Flowering:

(January) May, June, July, August, September, October, November (December)

### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=2610](http://nzpcn.org.nz/flora_details.asp?ID=2610)



**Caption:** Mt Frith, Rimuataka Hill

**Photographer:** John Sawyer



**Caption:** Mt Frith, Riutaka Hill

**Photographer:** John Sawyer

## *xCarpophyma mutabilis*

**Common Name(s):**

ice plant hybrid

**Current Threat Status (2009):**

Exotic

**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=3624](http://nzpcn.org.nz/flora_details.asp?ID=3624)



**Caption:** Palliser Bay. Jan 2012.  
**Photographer:** Pat Enright

## 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   |
|----------------------------|--|
| <b>Abaxial</b>             | Facing away from the stem of a plant (especially denoting the lower surface of a leaf).  |
| <b>Acerose</b>             | Narrow with a sharp stiff point.   |
| <b>Achene</b>              | A simple, dry, one-seeded (one-celled) fruit   |
| <b>Acicular</b>            | Needle-shaped.   |
| <b>Acidic</b>              | Having a low pH, opposite of basic or alkaline.  |
| <b>Acroscopic</b>          | Pointing towards, or on the side of, the apex  |
| <b>Acuminate</b>           | Gradually tapered to a point. Sharply pointed.   |
| <b>Acute</b>               | Pointed or sharp, tapering to a point with straight sides.   |
| <b>Adnate</b>              | Fusion of unlike parts, e.g. stamens fused to petals.  |
| <b>Adventive</b>           | A plant that grows in the wild in New Zealand but which was introduced to the country by humans.   |
| <b>Agglutinated</b>        | Stuck together.  |
| <b>Allelopath</b>          | An organism that releases compounds that are toxic to other species.   |
| <b>Allelopathy</b>         | The release by an organism of compounds that are toxic to other species.   |
| <b>Alternate</b>           | Attached singly at each node but changing from one side of a stem to the other.  |
| <b>Alveolate</b>           | Honeycombed with ridged partitions.  |
| <b>Amplexicaul</b>         | clasping or surrounding the stem   |
| <b>Anamorph</b>            | Asexual fruiting stage, usually of an ascomycete fungus.   |
| <b>Anastomosing</b>        | Rejoining after branching, as in some leaf veins.  |
| <b>Annual</b>              | A plant that completes its complete life cycle within the space of a year  |
| <b>Annual evergreen</b>    | 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. |
| <b>Annulus</b>             | Line of thickened cells that governs the release of spores from a sporangium   |
| <b>Anterior</b>            | Towards the front.   |
| <b>Anther</b>              | The pollen-bearing portion of the stamen.  |
| <b>Antheridium</b>         | Male reproductive organ formed on the prothallus of a fern   |
| <b>Anthesis</b>            | When the flower is fully developed and functioning. The time of pollination or bloom.  |
| <b>Apex</b>                | Tip; the point furthest from the point of attachment.  |
| <b>Apices</b>              | Plural of apex. Tip, the point furthest from the point of attachment   |
| <b>Apiculate</b>           | Bearing a short slender and flexible point.  |
| <b>Apiculus</b>            | A small, slender point.  |
| <b>Apomixis</b>            | A form of reproduction whereby seed is formed without the usual mode of sexual fusion  |
| <b>Appressed</b>           | Pressed against another organ or surface.  |
| <b>Aquatic</b>             | Growing, or living in, or frequenting water. Applied to plants and animals and their habitats. Opposite of terrestrial (land living).  |
| <b>Archegonium</b>         | Female reproductive organ of a fern formed on the prothallus   |
| <b>Arcuate</b>             | Curved into an arch.   |
| <b>Aril</b>                | An often fleshy appendage on the outside of a seed.  |
| <b>Artificial thinning</b> | Selectively removing vegetation to create gaps to facilitate natural invasion of native plants, or to plant later successional plants.   |
| <b>Ascending</b>           | Growing obliquely upward.  |
| <b>Asexual</b>             | Vegetative reproduction, lacking sexual involvement by sperm or egg cells  |
| <b>Attenuate</b>           | Narrowing gradually  |
| <b>Auricle</b>             | A small, ear-shaped appendage.   |
| <b>Auriculate</b>          | Bearing a small, ear-shaped appendage.   |
| <b>Autogamous</b>          | Self-fertilising flowers.  |
| <b>Autotrophic</b>         | Of or relating to organisms (as green plants) that can make complex organic nutritive compounds from simple inorganic sources by photosynthesis  |
| <b>awn</b>                 | A stiff or bristle like projection often from the tip or back of an organ  |
| <b>Axil</b>                | The upper angle between the leaf and the stem.   |
| <b>Axis</b>                | The longitudinal supporting structure around which organs are borne, e.g., a stem bearing leaves.  |
| <b>Barbellate</b>          | Barbed, having or covered with protective barbs or quills or spines or thorns or setae   |
| <b>Basal</b>               | At the base.   |
| <b>Basispic</b>            | Pointing towards the base  |
| <b>Beak</b>                | A prominent extension of an organ  |
| <b>Bifid</b>               | Deeply split into two lobes.   |
| <b>Bifurcate</b>           | Divided into two.  |



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





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



| <b>Term</b>                       | <b>Definition</b>  |
|-----------------------------------|--|
| <b>Dorsal</b>                     | Of the back or outer surface relative to the axis. (cf. ventral)   |
| <b>Drupe</b>                      | A stone fruit, the seed enclosed in a bony covering (endocarp) which is surrounded by a + fleshy layer (mesocarp)  |
| <b>Early successional species</b> | 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.   |
| <b>Echinate</b>                   | having sharply pointed spines or bristles.   |
| <b>Ecological district</b>        | A characteristic landscape and biological community defined in the PNA (Protected Natural Area) programme.   |
| <b>Ecological restoration</b>     | Attempt to reinstate original (pre-disturbance) state of a habitat, plant community or ecosystem.  |
| <b>Ecosourced</b>                 | Plants sourced from seed collected from similar naturally growing plants in the area of the planting site.   |
| <b>Ecosourcing</b>                | 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.   |
| <b>Eglandular</b>                 | Without glands.  |
| <b>Elaiosome</b>                  | Fleshy, oil-rich structure attached to seed that attracts ants which act as dispersers.  |
| <b>Ellipsoid</b>                  | Elliptic in long section and circular in cross-section.  |
| <b>Elliptic</b>                   | Broadest at the middle   |
| <b>Emarginate</b>                 | With a notch at the apex.  |
| <b>Emarginated</b>                | Having a shallow notch at the tip, as in some petals and leaves.   |
| <b>Emergent</b>                   | 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. |
| <b>Emergent marginals</b>         | An aquatic plant having most of its structure above water. Other aquatic plants are submerged or floating.   |
| <b>Endemic</b>                    | Unique or confined to a place or region, found naturally nowhere else.   |
| <b>Endophyte</b>                  | An endosymbiont (usually a bacterium or fungus) that lives within a plant for at least part of its life without causing any apparent disease.  |
| <b>Endophytes</b>                 | Endosymbionts (usually bacteria or fungi) that live within plants for at least part of their lives without causing any apparent disease.   |
| <b>Endosperm</b>                  | The nutritive tissue of a seed, consisting of carbohydrates, proteins, and lipids.   |
| <b>Enrichment planting</b>        | 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.   |
| <b>Ensiform</b>                   | Sword shaped   |
| <b>Entire</b>                     | Smooth. Without teeth, notches or divisions.   |
| <b>Entomophilous</b>              | Pollinated by insects.   |
| <b>Epicalyx</b>                   | Calyx-like structure outside, but close to, the true calyx.  |
| <b>Epigeal</b>                    | Growing on or close to the ground or emerging from the ground after germination (often used for cotyledons).   |
| <b>Epiphyte</b>                   | A plant that grows upon another plant but is not parasitic and does not draw nourishment from it.  |
| <b>Epiphytic</b>                  | Growing upon another plant but not parasitic and not drawing nourishment it  |
| <b>Erose</b>                      | Irregularly toothed, as if gnawed.   |
| <b>Estuarine</b>                  | Pertaining to the meeting of freshwater and seawater wetlands.   |
| <b>Ethnobotany</b>                | The study of people's classification, management and use of plants.  |
| <b>Eusporangia</b>                | Sporangia that arise from groups of epidermal cells  |
| <b>Evanescent</b>                 | Lasting a very short time or running a short distance.   |
| <b>Ex situ</b>                    | Away from the place of natural occurrence.   |
| <b>Ex-situ</b>                    | 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.   |
| <b>Excurrent</b>                  | Having the axis prolonged to form an undivided main stem or trunk (as in conifers).  |
| <b>Extravaginal</b>               | Outside an enclosing sheath  |
| <b>Falcate</b>                    | Hooked or curved like a sickle.  |
| <b>Fastigate</b>                  | Branches erect and close to central axis.  |
| <b>Fen</b>                        | 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.  |
| <b>Ferrugineous</b>               | Rust-like (a colour term)  |
| <b>Fertile frond</b>              | Fronds that bear sporangia.  |
| <b>Filamentous</b>                | Resembling a filament.   |
| <b>Filiform</b>                   | Thread like, resembling a filament.  |
| <b>Filiramulate</b>               | Branching at a very wide angle with stiff intertwined stems.   |
| <b>Fimbriae</b>                   | Plural of fimbria: Fringe. A fimbria is composed of many fimbriae (individual hair-like structures).   |
| <b>fimbriate</b>                  | With fringes.  |
| <b>Flabellate</b>                 | Fan shaped.  |
| <b>Flaccid</b>                    | Limp, not rigid, flabby.   |
| <b>Flange</b>                     | A projecting rim.  |



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



| <b>Term</b>              | <b>Definition</b>  |
|--------------------------|--|
| <b>Incoherent</b>        | Not sticking together.   |
| <b>Incursion</b>         | Entrance of a pest into an area where it is not present  |
| <b>Indumentum</b>        | A covering of fine hairs (or sometimes scales)   |
| <b>Indusia</b>           | Plural of indusium, a membrane covering a sorus of a fern  |
| <b>Indusium</b>          | A thin tissue that covers the sorus in many ferns. Plural: indusia.  |
| <b>Inflorescence</b>     | The arrangement of flowers on the stem. A flower head.   |
| <b>Infundibuliform</b>   | Funnel-like.   |
| <b>Interkeel</b>         | The space between the keel and the leaf blade  |
| <b>Internode</b>         | The part of an axis between two nodes; the section of the stem between leaves.   |
| <b>Internodes</b>        | Part of a stem between two nodes.  |
| <b>Intramarginal</b>     | Within or near the margin.   |
| <b>Involucral bracts</b> | The scales surrounding the flower head or capitula.  |
| <b>Involucre</b>         | A group of bracts surrounding a flower head.   |
| <b>Involute</b>          | With margins rolled inward toward the upper side.  |
| <b>Irritable</b>         | Responding to touch.   |
| <b>Jugate</b>            | Paired.  |
| <b>Juvenile</b>          | A plant of non-reproducing size.   |
| <b>Keel</b>              | A prominent or obvious longitudinal ridge (as in a boat).  |
| <b>Labellar</b>          | 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.        |
| <b>Labellum</b>          | 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.                    |
| <b>Lacinia</b>           | A jagged lobe.   |
| <b>Laciniae</b>          | Jagged lobes.  |
| <b>Laciniate</b>         | Cut into narrow, irregular lobes or segments.  |
| <b>Lacustrine</b>        | Of or having to do with a lake, of, relating to, or formed in lakes, growing or living in lakes.   |
| <b>Lamina</b>            | The expanded flattened portion or blade of a leaf, fern frond or petal.  |
| <b>Lanceolate</b>        | 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                |
| <b>Lateral</b>           | On or at the side.   |
| <b>Lax</b>               | With parts open and spreading, not compact.  |
| <b>Laxly</b>             | With parts open and spreading, not compact   |
| <b>Leaflet</b>           | One section of a compound leaf.  |
| <b>Lemma</b>             | The lower of two bracts enclosing the flower in grasses.   |
| <b>Lenticillate</b>      | Bark that is covered in fine lenticles (breathing pores)   |
| <b>Ligulate</b>          | Strap-like, tongue-shaped  |
| <b>Ligule</b>            | The membrane between the leaf and the stem of a grass; the "petal" of a ray floret in a composite inflorescence  |
| <b>Linear</b>            | Long and narrow with more or less parallel sides.  |
| <b>Littoral</b>          | 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. |
| <b>Lobe</b>              | 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> .                |
| <b>Lobed</b>             | Part of a leaf (or other organ), often rounded, formed by incisions to about halfway to the midrib.  |
| <b>Lobule</b>            | A small lobe or sub-division of a lobe   |
| <b>Lustrous</b>          | Glossy, shiny.   |
| <b>Lycophytes</b>        | Seedless vascular plants that belong to the phylum Lycophyta (characterised by microphylls -primitive leaves found in ancient plants).                                       |
| <b>Lyrate</b>            | Pinnatifid or pinnatisect terminal lobe much larger than lower lobes.  |
| <b>Maculate</b>          | Blotched or spotted.   |
| <b>Mangrove</b>          | 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.              |
| <b>Margin</b>            | The edge or border of a leaf   |
| <b>Marine</b>            | Pertaining to the sea and saltwater systems.   |
| <b>Marsh</b>             | A tract of wet land principally inhabited by partially-submerged herbaceous vegetation. Has fewer woody plants than swamplike habitats.                                      |
| <b>Mealy</b>             | Dry, powdery, crumbly.   |
| <b>Median</b>            | In the middle.   |
| <b>Membranous</b>        | Very thin, like a membrane.  |
| <b>Mid-lobe</b>          | The middle part into which a leaf is divided.  |
| <b>Midrib</b>            | The central or principal vein of a leaf or pinna of a fern.  |
| <b>Mire</b>              | 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  |
|---------------------------------|---|
| <b>Molecular techniques</b>     | Where proteins and genes are used to investigate plant relationships  |
| <b>Monitoring</b>               | Recording of quantitative data over time to document changes in condition or state of species or ecosystems.  |
| <b>Monoecious</b>               | Having male and female flowers on the same plant of the same species.   |
| <b>Montane</b>                  | Land between 300 and 800 metres above sea level.  |
| <b>Mucronate</b>                | Tipped with a short, sharp, point.  |
| <b>Mucronulate</b>              | Having a very small mucro; diminutive of mucronate.   |
| <b>Multi-annual evergreen</b>   | Overlapping annual cohorts of leaves always present.  |
| <b>Multifid</b>                 | Cleft into many lobes or segments   |
| <b>Multiseptate</b>             | With many septa.  |
| <b>muricate</b>                 | Rough with short, hard points like the shell of Murex, a genus of tropical sea snails with elaborately pointed shells.  |
| <b>Mycorrhiza</b>               | A symbiotic relationship between a fungus and a plant.  |
| <b>Mycorrhizal associations</b> | Symbiotic association between fungi and plant roots which assists plant health by allowing increased ability for uptake of nutrients and promote plant growth.  |
| <b>Napiform</b>                 | A long swollen but tapering root – like a parsnip, or carrot.   |
| <b>Native</b>                   | Naturally occurring in New Zealand (i.e., not introduced accidentally or deliberately by humans).   |
| <b>naturalised</b>              | Referring to plants that have escaped from cultivation (including gardens or forest plantations) and can now reproduce in the wild (without human assistance)   |
| <b>Nectary</b>                  | Organ that produces nectar.   |
| <b>Nerve</b>                    | Prominent vein or rib.  |
| <b>Nerves</b>                   | Strands of conducting and usually strengthening tissue in a leaves or similar structures  |
| <b>Net veins</b>                | Veins that repeatedly divide and re-unite.  |
| <b>Net venation</b>             | Feather-like or hand-like venation on a leaf.   |
| <b>Nival</b>                    | Growing at high altitudes. From Latin: nivalis, snowy etc. from nix, nivis, snow.   |
| <b>Node</b>                     | The point at which leaves, branches or roots arise on a stem.   |
| <b>Ob-</b>                      | Prefix meaning inverted, in reverse direction.  |
| <b>Obcordate</b>                | Heart shaped with the notch at the apex.  |
| <b>Oblanceolate</b>             | Tapering and widest towards the apex or inversely lanceolate.   |
| <b>Oblique</b>                  | Slanting; of a leaf, larger on one side of the midrib than the other, in other words asymmetrical.  |
| <b>Oblong</b>                   | Rectangular.  |
| <b>Obovate</b>                  | Roughly elliptical or reverse egg shaped and widest near the apex (i.e., the terminal half broader than the basal half).  |
| <b>Obtuse</b>                   | Blunt or rounded at the apex, with the sides meeting at an angle greater than 90°.  |
| <b>Operculate</b>               | With a small lid.   |
| <b>Opposite</b>                 | A pair of organs attached at nodes in pairs on either side of a stem or axis.   |
| <b>Orbicular</b>                | Almost or approximately circular.   |
| <b>Outbreeding depression</b>   | 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.  |
| <b>Outer canopy deciduous</b>   | Marked reduction in leaf number in the outer canopy in exposed high light environments over winter.   |
| <b>Oval</b>                     | 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.  |
| <b>Ovary</b>                    | Part of a flower containing the ovules and later the seeds.   |
| <b>Ovate</b>                    | Egg-shaped and widest at base.  |
| <b>Ovoid</b>                    | Oval; egg-shaped, with rounded base and apex.   |
| <b>Pakihi</b>                   | 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 |
| <b>Palea</b>                    | The small upper bract enclosing the flower of a grass   |
| <b>palea</b>                    | 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'.   |
| <b>paleae</b>                   | 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).  |
| <b>Palmately</b>                | Radiating from a point, as fingers radiating from the palm of a hand.   |
| <b>Palmatifid</b>               | Deeply divided into several lobes arising from more or less the same level.   |
| <b>Palmatisect</b>              | Intermediate between palmate and palmatifid, i.e. the segments are not fully separated at the base; often more or less digitate.  |
| <b>Palustrine</b>               | Pertaining to wet or marshy habitats. Term covers mires and marshes   |
| <b>Pandurate</b>                | Fiddle-shaped.  |
| <b>Panicle</b>                  | Highly branched (multiple raceme).  |



| Term                          | Definition  |
|-------------------------------|---|
| <b>Papilla</b>                | A short rounded projection.   |
| <b>Papillae</b>               | A soft, fleshy projection, usually small and nipple-like.   |
| <b>Papillate</b>              | With short rounded projections.   |
| <b>Papillose</b>              | Warty, with short rounded projections or gland-dotted   |
| <b>Parallel venation</b>      | Veins are parallel along leaf.  |
| <b>Parasite</b>               | An organism that derives all its nourishment from its host.   |
| <b>Patent</b>                 | Spreading or expanded, e.g., spreading petals.  |
| <b>Peat</b>                   | A mass of partially carbonised plant tissue formed by partial decomposition in water of various plants and especially of mosses of the genus <i>Sphagnum</i> , 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 <sub>2</sub> ) to the atmosphere. |
| <b>Pedicele</b>               | The stalk of a single flower in an inflorescence or fruit (either in a cluster or existing singularly).   |
| <b>Peduncle</b>               | The stalk of a solitary flower or the main stalk of an inflorescence or flower cluster.   |
| <b>Pedunculate</b>            | Describing fruits, which are borne on a stalk (a peduncle).   |
| <b>Pellucid</b>               | Transparent.  |
| <b>Peltate</b>                | Shield-like, with the stalk attached well inside the margin   |
| <b>Pendent</b>                | Hanging down from its support   |
| <b>Pendulous</b>              | Hanging or drooping.  |
| <b>Penicillate</b>            | With a tuft of hairs at the end, like a brush.  |
| <b>Perennial</b>              | A plant lasting for three seasons or more   |
| <b>Perianth</b>               | A collective term for the calyx (sepals or tepals) and corolla (petals) of the flower, especially when these are indistinguishable  |
| <b>Petal</b>                  | Part of flower inside the sepals; usually coloured.   |
| <b>Petiolate</b>              | Having a petiole.   |
| <b>Petiole</b>                | Leaf stalk.   |
| <b>phloem</b>                 | The vascular tissue in land plants that is primarily responsible for the distribution of sugars and nutrients manufactured in a shoot.  |
| <b>Photopoint</b>             | 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.  |
| <b>Pilose</b>                 | Bearing long, soft hairs.   |
| <b>Pinna</b>                  | A segment of a divided lamina that is classified as primary, secondary or tertiary according to the degree of dissection of the lamina.   |
| <b>Pinnae</b>                 | Divisions of a pinnate leaf   |
| <b>Pinnate</b>                | 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  |
| <b>Pinnatifid</b>             | Pinnately lobed, cleft more than halfway to the midrib. Not cleft all the way to the rachis.  |
| <b>Pinnatisect</b>            | Pinnately divided almost to midrib but segments still confluent.  |
| <b>Pioneer</b>                | 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.  |
| <b>Pistil</b>                 | The female reproductive organ of a flower, consisting of an ovary, style, and stigma.   |
| <b>Pistillate</b>             | A flower with one or more pistils, but no stamens.  |
| <b>Plano-convex</b>           | Flat on one side, convex on the other.  |
| <b>Plumose</b>                | Feathery.   |
| <b>Podzol</b>                 | 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.   |
| <b>Pole</b>                   | A subcanopy size individual with a long thin trunk and foliage tuft of a potential canopy tree.   |
| <b>Pollinia</b>               | Compact masses of orchid pollen.  |
| <b>Population enhancement</b> | 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.   |
| <b>Porrect</b>                | Extending forward.  |
| <b>Procumbent</b>             | Lying and flat along the ground but not rooting   |
| <b>Propagate</b>              | To reproduce a plant by sexual (i.e., from seed) or asexual (e.g., from cuttings) means.  |
| <b>Prostrate</b>              | 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).   |
| <b>Provenance</b>             | The place of origin (of a plant that is in cultivation).  |
| <b>Proximal</b>               | Toward the base or point of attachment (cf. distal).  |
| <b>Pseudobulb</b>             | Thickened surface stem; usually looking like a bulb.  |
| <b>Pseudoterminal</b>         | Falsely terminal – as in a bud which appears to occupy a terminal position but does not   |



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



| <b>Term</b>                   | <b>Definition</b>  |
|-------------------------------|--|
| <b>Seedling</b>               | A newly germinated plant.  |
| <b>Self sustaining</b>        | Able to sustain itself, or replace itself, independently of management i.e. regenerate naturally   |
| <b>Self thinning</b>          | Natural tree death in a crowded, even-aged forest or shrubland.  |
| <b>Semi-deciduous</b>         | Partial leaflessness in winter, and greater than 50% leaves lost by the beginning of spring flush.   |
| <b>Sepal</b>                  | Outer part of flower; usually green.   |
| <b>Serrate</b>                | Sharply toothed with teeth pointing forwards towards apex.   |
| <b>Serrulate</b>              | Finely serrate, i.e., finely toothed with asymmetrical teeth pointing forward; like the cutting edge of a saw.   |
| <b>Sessile</b>                | Attached by the base without a stalk or stem.  |
| <b>Seta</b>                   | The stalk of a fruiting moss capsule   |
| <b>Sheath</b>                 | A portion of an organ that surrounds (at least partly) another organ (e.g., the tubular envelope enclosing the stem in grasses and sedges).  |
| <b>Silicles</b>               | 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)                   |
| <b>Silique</b>                | A capsule, usually 2-celled, with 2 valves falling away from a frame (replum) bearing  |
| <b>Simple</b>                 | Of one part; undivided (cf compound).  |
| <b>Sinuate</b>                | With a wavy margin.  |
| <b>Sinus</b>                  | 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.   |
| <b>Sorus</b>                  | A cluster of two or more sporangia on the margin or underside of the lamina of a fern, sometimes protected by an indusium.   |
| <b>Spathulate</b>             | Spatula or spoon-shaped, a rounded blade tapering gradually to the base.   |
| <b>Spheroidal</b>             | Almost spherical but elliptic in cross section.  |
| <b>Spicate</b>                | Arranged in a spike.   |
| <b>Spike</b>                  | Flowers attached to main stem without stalks.  |
| <b>Spikelet</b>               | Collection of individual grass florets borne at the end of the smallest branch of the inflorescence.   |
| <b>Sporangia</b>              | Plural of sporangium. Structures in which spores are produced.   |
| <b>Sporangium</b>             | Structure in which spores are produced.  |
| <b>Spore</b>                  | A single-celled reproductive unit similar in function to that of the seed in a flowering plant.  |
| <b>sporophyte</b>             | The spore producing plant in ferns that is usually the visible part.   |
| <b>Stamen</b>                 | The male reproductive organ of a flower where pollen is produced. Consists of an anther and its stalk.   |
| <b>Stamens</b>                | The male, pollen bearing organ of a flower.  |
| <b>Standing water</b>         | Where water lies above the soil surface for much of the year.  |
| <b>Stellate</b>               | Irregularly branched or star shaped.   |
| <b>Stigma</b>                 | 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.  |
| <b>Stipe</b>                  | The stalk of a frond.  |
| <b>Stipitate</b>              | Borne on a stipe or stalk.   |
| <b>Stipulate</b>              | A leaf with stipules.  |
| <b>Stipule</b>                | A scale-like or leaf-like appendage at the base of a petiole, usually paired.  |
| <b>Stolon</b>                 | A stem which creeps along the ground, or even underground.   |
| <b>Stoloniferous</b>          | Producing stolons  |
| <b>Stramineous</b>            | Chaffy, like straw or straw-colored.   |
| <b>Stria</b>                  | A fine line or groove.   |
| <b>Striae</b>                 | Fine lines or grooves.   |
| <b>Striate</b>                | Fine longitudinal lines or minute ridges   |
| <b>Style</b>                  | The elongated part of the flower between the ovary and the stigma.   |
| <b>Sub-</b>                   | A prefix meaning under, somewhat or almost.  |
| <b>Subglabrous</b>            | Very slightly, but persistently, hairy.  |
| <b>Suborbicular</b>           | Slightly rounded in outline  |
| <b>Substrate</b>              | The surface upon which an orchid grows.  |
| <b>Subtended</b>              | Immediately beneath, occupying a position immediately beneath a structure, i.e., flower subtended by bract   |
| <b>Subulate</b>               | Slender and tapering to a point.   |
| <b>Succession</b>             | Progressive replacement of one species or plant community type by another in an ecosystem.   |
| <b>Successional</b>           | Referring to species, plant communities or habitats that tend to be progressively replaced by another.   |
| <b>Succulent</b>              | Fleshy and juicy.  |
| <b>Summer-green</b>           | Used in New Zealand to indicate herbs or sub-shrubs that die down to a root stock or rhizomatous network.  |
| <b>Supplementary planting</b> | 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. |





| <b>Term</b>                        | <b>Definition</b>  |
|------------------------------------|--|
| <b>Surface water</b>               | Water present above the substrate or soil surface.   |
| <b>Surveillance</b>                | Regular survey for pests inside operational and managed areas e.g. nurseries, stand-out areas on parks.  |
| <b>Survey</b>                      | Collection of observations on the spatial distribution or presence or absence of species using standardised procedures.  |
| <b>Sustainable Land Management</b> | 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.  |
| <b>Swamp</b>                       | 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. |
| <b>Symbiote</b>                    | An organism that has an association with organisms of another species whereby the metabolic dependence of the two associates is mutual.  |
| <b>Symbiotic</b>                   | The relation between two different species of organisms that are interdependent; each gains benefits from the other (see also symbiosis).  |
| <b>Sympatric</b>                   | Occupying the same geographical region.  |
| <b>Synangia</b>                    | Structures made up of fused sporangia  |
| <b>Synonym</b>                     | A botanical name that also applies to the same taxon.  |
| <b>Systematics</b>                 | The study of taxonomy, phylogenetics, and taxogenetics.  |
| <b>Tabular</b>                     | Shaped like a rectangular tablet.  |
| <b>Taxa</b>                        | Taxonomic groups. Used to refer to a group at any level e.g., genus, species or subspecies.  |
| <b>Taxon</b>                       | A taxonomic group. Used to refer to a group at any level e.g., genus, species or subspecies.   |
| <b>Taxonomy</b>                    | The process or science of classifying, naming, and describing organisms  |
| <b>Tepal</b>                       | An individual member of the perianth.  |
| <b>Terete</b>                      | Cylindrical and tapering.  |
| <b>Terminal</b>                    | At the tip or apex.  |
| <b>Ternatifid</b>                  | Leaflets in threes,  |
| <b>Tetrad</b>                      | A group of four.   |
| <b>Tomentum</b>                    | A hairy covering of short closely matted hairs.  |
| <b>Translocation</b>               | The movement of living organisms from one area to another.   |
| <b>Trifid</b>                      | Divided into three.  |
| <b>Trifoliate</b>                  | Having three leaflets.   |
| <b>Trigonus</b>                    | Three-angled   |
| <b>Tripinnate</b>                  | With each secondary pinna divided to the midrib into tertiary pinnae   |
| <b>Triquetrous</b>                 | Triangular in cross section and acutely angled.  |
| <b>Truncate</b>                    | With the apex or base squared at the end as if cut off.  |
| <b>Tuberculate</b>                 | Bearing small swellings.   |
| <b>Tubular</b>                     | Tube-shaped.   |
| <b>turbinate</b>                   | Top-shaped.  |
| <b>Turgid</b>                      | Distended through internal pressure  |
| <b>Type locality</b>               | The place or source where a holotype or type specimen was found for a species.   |
| <b>Ultramafic</b>                  | 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.   |
| <b>Umbel</b>                       | Umbrella like; the flower stalks arise from one point at the stem.   |
| <b>Undulate</b>                    | Wavy edged.  |
| <b>Undulose</b>                    | Wavy edged.  |
| <b>Unitubular</b>                  | A tube partitioned once – literally one tube (compare – multitubular – many tubes)   |
| <b>Utricle</b>                     | A thin loose cover enveloping some fruits (eg., Carex, Uncinia)  |
| <b>Valvate</b>                     | Opening by valves.   |
| <b>Vascular plant</b>              | A plant that possesses specialised conducting tissue (xylem and phloem). This includes flowering plants, conifers and ferns but excludes mosses, algae, lichens and liverworts.  |
| <b>Velutinous</b>                  | Thickly covered with delicate hairs; velvety.  |
| <b>Ventral</b>                     | Of the front or inner (adaxial) surface relative to the axis. (cf. dorsal)   |
| <b>Vermiform</b>                   | Worm-shaped.   |
| <b>Vernicose</b>                   | Glossy, literally as if varnished, e.g., Hebe vernicosa has leaves that appear as if varnished   |
| <b>Verrucose</b>                   | Having small rounded warts.  |
| <b>Verticillium</b>                | A fungus disease that will cause wilting and death.  |
| <b>Villous</b>                     | Covered with long, soft, fine hairs.   |
| <b>Water table</b>                 | The level at which water stays in a soil profile. The zone of saturation at the highest average depth during the wettest season.   |
| <b>Wetland</b>                     | 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.   |



| <b>Term</b> | <b>Definition</b> |
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| <b>Whipcord</b> | A shrub in which the leaves are reduced to scales that are close-set and pressed against the stem. |
|-----------------|--|

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|--------------|--|
| <b>Whorl</b> | A ring of branches or leaves arising at the same level around the stem of a plant. |
|--------------|--|