



## Top ten species for the 2013 Favourite Native Plant vote



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

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For the first time a fern (*Hymenophyllum malingii*) has won the Favourite Native Plant vote run each year by the New Zealand Plant Conservation Network. This diminutive and elusive filmy fern is found on the dead or dying trunks of kaikawaka or New Zealand cedar (*Libocedrus bidwillii*). The specialised habitat and appearance of this fern has prompted enthusiastic comments from voters, such as this one from Matt.

“This is a gorgeous wee gem. It stands out from the other filmy ferns in its lovely glaucous colouring. It’s really a sight to behold when found covering a whole stump like a silvery carpet.”

Another voter, Jane, wrote “This fern is more silver than silver fern! It’s highly specialised habitat requirements make it all the more rewarding to come across. Simply spectacular”

New Zealand has an abundance of filmy ferns, so called because of their very thin fronds through which sunlight can be seen. Banks Peninsula botanist Hugh Wilson wrote of *Hymenophyllum dilatatum* in his field guide to Stewart Island, “a low sun angling through a gap in the forest canopy and lighting up this fern is a particularly lovely sight.” These ferns typically inhabit moist areas in forests where they can often be seen en masse carpeting the ground or clothing the trunks of tree ferns.

Once again trees have proven popular plants with voters and nine species in the top ten 2013 Favourite Native Plant are trees. People’s reasons for nominating particular plants ranged from wishing to highlight the threats they face, because the trees remind them of a special place or because they simply love the way they look. Last year’s winner Kauri came in at number ten, with many voters continuing to express concern over its decline due to Kauri dieback disease.

The top ten species for the 2013 Favourite Native Plant are:

1. *Hymenophyllum malingii* - a filmy fern
2. *Sophora chathamica* – coastal kowhai
3. *Metrosideros bartlettii* – Bartlett’s rata (nationally critical)
4. *Metrosideros excelsa* - pohutukawa
5. *Vitex lucens* - puriri
6. *Clianthus puniceus* – kaka beak (nationally critical)
7. *Rhabdothamnus solandri* – New Zealand gloxinia
8. *Knightia excelsa* - rewarewa
9. *Metrosideros umbellata* – Southern rata
10. *Agathis australis* – kauri

# Agathis australis

## Common Name(s):

kauri, kauri pine

## Current Threat Status (2012):

Non Threatened

## Distribution:

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

## Habitat:

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

## Features\*:

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

## Flowering:

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

## Fruiting:

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

## Threats:

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

## \*Attribution:

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

## References and further reading:

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

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

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

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

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

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

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

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

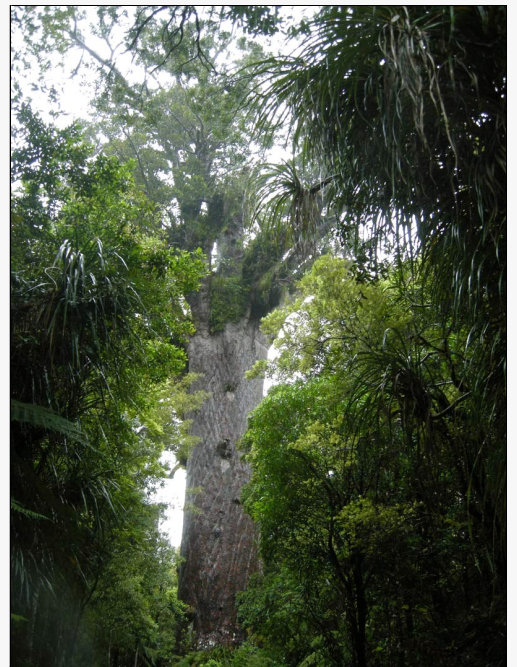
## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=2047](http://nzpcn.org.nz/flora_details.asp?ID=2047)



**Caption:** Waipoua Forest, Northland - Tane Mahuta

**Photographer:** John Sawyer



**Caption:** Waipoua Forest, Northland - Tane Mahuta

**Photographer:** John Sawyer



## *Clianthus puniceus*

### Common Name(s):

Kakabeak, kowhai ngutu kaka, kaka beak

### Current Threat Status (2012):

Nationally Critical

### Distribution:

Endemic. North Island. Exact historic range is unclear because Maori planted this species around their settlements. Indeed it has even been suggested that none of the historic sites, or the sole existing one are natural but stem from past Maori plantings. Whatever the case, the few herbarium specimens and historical writings suggest this species might have been endemic to Northland and the eastern Auckland portion of the Hauraki Gulf.

### Habitat:

Exact habitat preferences are uncertain. Historic records rarely provide any habitat details, and with many it is difficult to determine if the specimens come from Maori plantings. The only known wild population grows in short coastal scrub on talus at the base of eroding mudstone (turbidite) cliffs. Some old herbarium specimens and visits to locations where kakabeak had once been recorded from suggest that the type of habitat the species occupies now is probably indicative of its former habitat preferences.

### Features:

Shrub 0.8-3 m tall. Wood soft, stems "watery" easily broken. Branchlets weakly ascending, often decurved. Leaves 15 cm long, imparipinnate, with 15-20 pairs of subsessile leaflets. Leaflets, dull green to grey-green, upper surface dull, 150-250 mm, linear-oblong, apex retuse or rounded. Inflorescences racemose, 15-25-flowered, located in leaf axils near branch apices. Flowers 80 mm, scarlet, pink or entirely white. Standard ovate-acuminate, 60 mm, either scarlet or pink, in which case striped longitudinally with white, or entirely white and lacking stripes; wings 30 mm long, lanceolate-falcate; keel 60 mm long, falcate-acuminate, either scarlet or pink in which case the broader base is usually blotched with white, or entirely white without other markings. Pods long persistent, 80 mm, at first green and turgid, drying black and splitting open for entire length. Seeds numerous, c.1-1.5 mm diam, grey various striped or blotched with black, embedded in wispy grey, floccose hairs.

### Flowering:

May flower throughout the year. However plants are most usually found in flower between August and January

### Threats:

At serious risk of extinction. As of 2005 only one naturally occurring plant is known from the wild, at a single site near the Kaipara Harbour. At this site kakabeak is vulnerable to summer droughts, competition from weeds, and browsing animals, including rodents. Plants from this site are in cultivation.

### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=13](http://nzpcn.org.nz/flora_details.asp?ID=13)



**Caption:** Ex. Cult  
**Photographer:** Gillian Crowcroft



**Caption:** Ex. Cult  
**Photographer:** Gillian Crowcroft

### Fruiting:

Seed pods may be present at anytime of the year

# *Hymenophyllum malingii*

## Common Name(s):

Filmy fern

## Current Threat Status (2012):

Not Threatened

## Distribution:

Endemic. North and South Islands from Te Moehau and Mt Pirongia south throughout the western parts of the South Island, and also around Dunedin.

## Habitat:

Montane to subalpine. Usually on the dead or dying trunks of kaikawaka (*Libocedrus bidwillii*) but also occasionally found on Hall's totara (*Podocarpus cunninghamii*), rimu (*Dacrydium cupressinum*), Halocarpus biformis, beech (*Nothofagus* spp.) and on moss covered boulders, rocks and cliff faces

## Features\*:

Epiphytic (rarely rupestral) fern forming dense to diffuse pendulous patches. Rhizomes long-creeping, gracile, rather brittle. Stipes 30-100 mm long, thin, brittle, not winged, densely covered in grey-red stellate hairs, rachises not winged. Laminae narrowly ovate or linear, 2-3-pinnate, greyish white to red-brown, 30-200 × 5-30 mm, all parts densely invested by stellate hairs, the adaxially grey and abaxially red-brown. Ultimate segments linear, rigid, tubular (round in cross-section), margins smooth. Sori terminating ultimate segments. Indusial flaps densely hairy. Description adapted from Brownsey & Smith-Dodsworth (2000).

## Flowering:

N.A.

## Fruiting:

N.A.

## Threats:

Not Threatened

## \*Attribution:

Fact Sheet Prepared for NZPCN by P.J. de Lange (18 April 2011).  
Description adapted from Brownsey & Smith-Dodsworth (2000).

## References and further reading:

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

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=843](http://nzpcn.org.nz/flora_details.asp?ID=843)



**Caption:** Dunedin

**Photographer:** John Barkla



**Caption:** *Hymenophyllum malingii*

**Photographer:** John Barkla



## *Knightia excelsa*

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

Rewarewa, NZ honeysuckle

### **Current Threat Status (2012):**

Not Threatened

### **Distribution:**

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

### **Habitat:**

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

### **Features:**

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

### **Flowering:**

(September-)  
October-December

### **Fruiting:**

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

### **Threats:**

Not Threatened

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

[http://nzpcn.org.nz/flora\\_details.asp?ID=1383](http://nzpcn.org.nz/flora_details.asp?ID=1383)



**Caption:** Rangitoto Island

**Photographer:** John Barkla



**Caption:** Manurewa

**Photographer:** Gillian Crowcroft

# *Metrosideros bartlettii*

## Common Name(s):

Rata moehau, Bartlett's rata

## Current Threat Status (2012):

Nationally Critical

## Distribution:

Endemic. North Island, Northland, Te Pahi, where it is only known from three forest remnants near Spirits Bay. These are Radar Bush, Kohuronaki and Unuwahao Bush.

## Habitat:

An emergent or canopy tree of northern coastal and lowland broad-leaved forest. Usually starting life as an epiphyte on puriri (*Vitex lucens*), taraire (*Beilschimedia tarairi*), rewarewa (*Knightia excelsa*) and tree ferns (*Cyathea* spp.). Occasional specimens have been found growing terrestrially on rock outcrops, boulders and cliff faces.

## Features\*:

Tree up to 30 m with a trunk up to 1.5 m diameter, often initially epiphytic on trees or tree ferns; bark pale grey to whitish, spongy, separating into soft flakes, shedding freely; young twigs dark red, 4-angled to rounded and with long-persistent, white spreading hairs. Leaves on petioles 4–5 × 1 mm, lamina 30–50 × 15–26 mm, elliptic to ovate, base cuneate, apex acute to attenuate, often twisted; young leaves pale green to yellow-green, somewhat glossy, petioles, margins and midribs pubescent, with the hairs tending to persist on midribs and petioles; mature leaves dark green above pale beneath, upper surface glossy, veins evident, lower surface glossy, entire vein network evident, oil glands obscure, midrib raised below, impressed above. Inflorescences with 3–4 pairs of cymules, ± densely tomentose, tomentum of spreading white hairs; bracts and bracteoles shedding early during inflorescence maturation; peduncles up to 9 × 1 mm. Flowers white; pedicels up to 3 × 1 mm; hypanthium 2.5–3.0 × 2.0–2.5 mm; sepals triangular, spreading, 1.0–1.5 × 1.0–1.5 mm; petals elliptic to ovate, 2.5–3.0 × 1.8–.0 mm; stamens 5–9 mm long; style 10–11 mm long. Fruit hypanthium puberulent, 2.0–2.5 × 2.5–3.0 mm, sepals persistent, deflexed, capsules exserted for 1.5–2.5 mm. Seeds pale orange-yellow, 2.3–3.0 mm long, narrowly elliptic to narrowly oblong, straight or slightly curved.

## Flowering:

October - November

## Fruiting:

March - April

## Threats:

There are now only 25 adult Bartlett's rata left in the wild (down from the 34 known in 1992), mostly on private land and isolated from other specimens. There is negligible viable seed set because there is not an abundance of nectar-feeding birds to pollinate the flowers and Bartlett's rata is self-incompatible. There is also minimal genetic variation, and most of this occurs on private land. Aside from these problems, the species is at severe risk from browsing animals and fire. Indeed, uncontrolled possums are currently wiping out this tree at the largest population known, which occurs on private land. Bartlett's rata is occasionally cultivated, but most cultivated specimens come from a single tree.

## \*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange (30 September 2003). Description adapted from Dawson (1985) supplemented with observations made from herbarium and fresh material.

## References and further reading:

Dawson, J.W. 1985: *Metrosideros bartlettii* (Myrtaceae) a new species from North Cape, *New Zealand. New Zealand Journal of Botany* 23: 607–610.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=24](http://nzpcn.org.nz/flora_details.asp?ID=24)



**Caption:** Te Pahi forest, Northland

**Photographer:** John Sawyer



**Caption:** Te Pahi forest, Northland

**Photographer:** John Sawyer



# *Metrosideros excelsa*

## Common Name(s):

Pohutukawa, New Zealand Christmas tree

## Current Threat Status (2012):

Non Threatened

## Distribution:

Endemic. New Zealand: Three Kings Islands and North Island from North Cape to about Pukearuhe, (northern Taranaki) in the west and near Mahia Peninsula (in the east). However, exact southern limit is difficult to ascertain as it has been widely planted and there is evidence that old time Maori cultivated the tree in some southerly areas. Found inland around the Rotorua Lakes and at Lake Taupo - though these occurrences could stem from Maori plantings (though the association of other normally coastal species around these lakes argues against this). Now widely planted throughout the rest of New Zealand (especially around Nelson, the Marlborough Sounds, the Kaikoura Coast and on the west coast to about Hokitika).

## Habitat:

Coastal forest and on occasion inland around lake margins. Also in the far north occasionally an associate of kauri forest. In some northerly locations it forms forest type in its own right - this forest is dominated by pohutukawa, other associates often include tawapou (*Pouteria costata*), kohekohe (*Dysoxylum spectabile*), puriri (*Vitex lucens*), karaka (*Corynocarpus laevigatus*), and on rodent-free offshore islands the frequent presence of coastal maire (*Nestegis apetala*), and milk tree (*Streblus banksii*) suggests these species too may once have been important in mainland examples of pohutukawa forest.

## Features\*:

Tree up to 20 m tall with canopy spread of 10-50m. Specimens typically multi-trunked from base, trunks up to 2 m diameter, branches spreading, and often arching, sometimes looping over ground, and/or bearing "brooms" of aerial adventitious roots. Branchlets numerous, twiggy and long-persistent. Bark firm, persistent and difficult to detach, often deeply furrowed, grey to grey-brown, somewhat corky. Young branchlets tomentose, being covered in fine, deciduous, greyish-white hairs. Leaves of all but water shoots leathery, 25-120 × 25-60 mm, elliptic, oblong, rarely lanceolate, apex acute or obtuse, dark olive-green, undersides thickly clad in white tomentum, adaxial surface at first distinctly tomentose but hairs shedding with leaf maturation. Flowers borne on stout, tomentose pedicels crimson, orange, pink, yellow (or very rarely white). Hypanthium obconic, calyx lobes triangular (deltoid).

## Flowering:

(August-) November-December (-March)

## Fruiting:

(January-) March-April (-May)

## Threats:

Like all New Zealand tree *Metrosideros*, pohutukawa is most at risk from possum (*Trichosurus vulpecula*) browse. These can seriously damage and even kill trees. Often where their browsing occurs within sites of unrestricted stock and vehicle access, pohutukawa forest is in danger of becoming locally extinct. It does remain common over large parts of its range, a situation being greatly improved by the efforts of people encouraged by the national coordination of Project Crimson - a non profit organisation set up to protect, enhance and/or establish pohutukawa forest, as well as promote the species use, and its conservation.

## \*Attribution:

Fact sheet prepared for NZPCN by: P.J. de Lange (4 January 2004). Description adapted from Allan (1961).

## References and further reading:

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

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=975](http://nzpcn.org.nz/flora_details.asp?ID=975)



**Caption:** Wellington

**Photographer:** John Sawyer



**Caption:** Metrosideros excelsa

**Photographer:** Wayne Bennett

# *Metrosideros umbellata*

## Common Name(s):

Southern rata

## Current Threat Status (2012):

Not Threatened

## Distribution:

Endemic. North, South, Stewart and Auckland Islands. In the North Island locally present from Te Pahi south to Mt Pirongia, the northern Kaimai Ranges (Ngatamahinerua) and Mt Manuoha (Te Urewera National Park). In the South Island from Durville Island south and to Fiordland, with a mainly westerly distribution (absent from Marlborough), most of Canterbury and northern Otago. Common on Stewart and the Auckland Islands.

## Threats:

Not Threatened. However, rather uncommon in the North Island, and at some sites it is locally threatened by possum browse.

## References and further reading:

Beddie, A.D. 1953. Root behaviour in *Metrosideros*. Wellington Botanical Society Bulletin, 26: 2-6

de Lange, P.J. 1994. Southern rata *Metrosideros umbellata* confirmed from Mt Pirongia Western Waikato. Auckland Botanical Society Journal, 49: 57-59.

Druce, A.P. 1959. Southern rata in the Tararuas. Wellington Botanical Society Bulletin, 31: 12-15

Gardner, R.C.; de Lange, P.J.; Bowala, T.; Brown, H.A.; Keeling, J.; Wright, S.D. 2004. A Quaternary phylogeography for New Zealand inferred from chloroplast DNA haplotypes in *Metrosideros* (Myrtaceae). *Biological Journal of the Linnean Society* 83: 399-412.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=978](http://nzpcn.org.nz/flora_details.asp?ID=978)



**Caption:** Bark detail, Travers Valley, Nelson Lakes National Park  
**Photographer:** John Sawyer



**Caption:** Flowering tree, Travers Valley, Nelson Lakes National Park  
**Photographer:** John Sawyer



# *Rhabdothamnus solandri*

## Common Name(s):

New Zealand gloxinia, taurepo, kaikaiatua, mata, matata, waiuatua

## Current Threat Status (2012):

Non Threatened

## Distribution:

Endemic monotypic genus. North Island and adjacent offshore islands. From Te Pahi (North Cape) south to Manawatu Gorge, thence disjunct to just north of Pauatahanui Inlet, Porirua Harbour and at Smiths Creek near Makara, Wellington.

## Habitat:

Coastal to lowland and lower montane. Mostly a rupestral species in forest though it will extend into shrubland. *Rhabdothamnus* is especially common in the lowland karst of the western Waikato where it is a prominent shrub along the many limestone gorges, outcrops, and cave entrances of that area. Although more common in coastal and lowland situations *Rhabdothamnus* can occur well inland in situations where frost is limited, such as along the banks of the Waikato River (near Mangakino)

## Features:

Shrub up to c. 2 m. tall. Branches numerous, compact, rather brittle, grey-brown to grey, scabrous sparsely to densely hairy. Branchlets slender, oppositely arranged with branches, densely leafy or not, scabrous, densely covered in indumentum of 0.2-0.4 mm long, dark red-brown to pallid, stiff, strigose, conical, multi-celled hairs. Leaves, dark green, yellow-green to grey-green, ± coriaceous to cartilaginous, often rather brittle, midrib and veins distinct, lamina surfaces densely covered in semi-appressed to patent, dark red-brown to pallid, strigose, 0.5-0.8(-1.0 or more) mm long hairs; petioles 3-10(-15) mm long, slender, densely covered in scabrid hairs, brittle. Lamina (0.5-) 10-20-50(-65) × (0.6-)15-30-50(-60) mm, broad-ovate, suborbicular to orbicular, margins coarsely serrate-dentate. Flowers solitary, nodding, 20-25(-40) mm long, ciliolate, usually orange, but sometimes yellow, purple or pink, longitudinally striped by 12-14(-20) red or dark orange veins; pedicels 10-40 mm long, slender, purple, densely pilose-hairy, hairs pallid. Calyx 10-15 mm long, pilose, calyx lobes 6-9 mm long, ovate, deltoid to triangular-acuminate. Corolla tube 10-20 mm long, subcampanulate to funnelform; corolla lobes 5-10(-20) mm long, broadly ovate, to oblong, apex obtuse to rounded erecto-patent to spreading. Stamens 4, 12-14(-20) mm long, adnate to corolla tube, filaments slender, incurved above, dark red, glabrous; anthers cruciately paired, 0.8-1.4 mm long, pollen cream. Staminode 10-12(-18) mm long, adnate to corolla tube. Disk small, annular. Ovary ovoid, bilocular. Style curved at apex, 11-13(-19) mm long, filiform, red; stigma small, obconic, apex bilobed. Capsule 6.5-7.2(-11.4) mm long, invested by persistent calyx, ovoid, tapered to apex; placentae thick, bilobed; seeds numerous, 0.4-0.6 mm long, ellipsoid or obovoid, test reticulate, glabrous, dark red-brown. Description adapted from Allan (1961) and Webb & Simpson (2001).

## Flowering:

Throughout the year but peaking between October and February

## Threats:

Not Threatened. However seed set in this bird-pollinated species is often minimal on the mainland (see Anderson et al. 2011).

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=791](http://nzpcn.org.nz/flora_details.asp?ID=791)



**Caption:** Tamahunga, Omaha  
**Photographer:** Jeremy Rolfe



**Caption:** Tamahunga, Omaha  
**Photographer:** Jeremy Rolfe

## Fruiting:

Throughout the year



# *Sophora chathamica*

## Common Name(s):

Kowhai, coastal kowhai

## Current Threat Status (2012):

Not Threatened

## Distribution:

Endemic. A primarily coastal species known from North, South and Chatham Islands but probably only indigenous to the northern half of the North Island, where it is common in the west from the Tongaporutu River to Te Pahi. In the east it is abundant south to about Thames, so far it has not been reported south and east of there. Very common around Auckland, the Hauraki Gulf and from Port Waikato south to Kawhia. There are some inland occurrences in the lower Waikato Basin. Disjunct occurrences around Wellington, the Chatham Islands and Whanganui Inlet may result from deliberate plantings by the Maori.

## Habitat:

Primarily a species of coastal forest, often on cliff faces or banks overlooking estuarine rivers or inlets. Occasionally found in swamp forest.

## Features:

Tree up to 20 m tall, with one or more trunks. Branches spreading to upright. Juveniles weakly flexuose. Leaves on seedlings and juveniles moderately to densely leafy, 4.4-9 x 4.4-7.5 mm, orbicular to very broadly obovate, crowded, usually overlapping. Adult leaves up to 150 mm long, imparipinnate, usually pubescent, hairs, straight, appressed. Leaflets 25-55, crowded and overlapping, 6-16 x 4-8 mm, broadly elliptic, broadly obovate, broadly ovate, obovate to orbicular, distal leaflets usually smaller than proximal. Inflorescences racemose with up to 11 flowers. Calyx 8-10 x 10-13 mm, cupulate. Flowers yellow, keel petal blade 29-43 x 9-11 mm, wing petal blade 25-42 x 9-11 mm, standard petal blade 25-34 x 20-25 mm; petals with distinct claws 4-6 mm long. Fruit 50-180 mm long, 4-winged, brown, with up to 12 seeds. Seeds 5.5-8 x 4-5 mm, oblong, elliptic to orbicular, yellow to light yellow-brown.

## Flowering:

August-November

## Fruiting:

October-September

## Threats:

The main threat that faces all wild New Zealand kowhai species is the risk posed through planting for revegetation and horticultural purposes of hybrid material, foreign species, such as the Chilean Pelu (*S. cassioides*) and also of kowhai species outside their natural range. However, *S. chathamica* seems to be very common throughout its range, and is adequately protected within a range of reserves and land set aside for conservation purposes. The nativity of the Chatham Island populations is not clear, and though assumed to be planted by Maori, because this assertion needs further study and the trees are culturally significant they require direct management. Few (if any Chatham Island) plants can be said to exist in truly secure habitats.

## References and further reading:

Anonymous. 1944. Kowhai. *Wellington Botanical Society Bulletin*, 9: 4-5

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=1300](http://nzpcn.org.nz/flora_details.asp?ID=1300)



**Caption:** Waiwera River

**Photographer:** Gillian Crowcroft



**Caption:** Blind Jim's, Chatham Island

**Photographer:** Bill Clarkson

# *Vitex lucens*

## Common Name(s):

puriri

## Current Threat Status (2012):

Non Threatened

## Distribution:

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

## Habitat:

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

## Features\*:

Tree up to c. 20 m. tall with a broad spreading canopy; trunk up to c.1.5 m. diameter; bark grey-brown, firm, flaking in small irregular-shaped shards. Branches stout, spreading; branchlets 4-angled, green. Leaves opposite, glabrous, coriaceous, compound, on petioles up to 110 mm long; Leaflets 3-4-5, somewhat undulose, adaxially dark green, glossy, abaxially lighter green, mat; basal one or pair of leaflets usually much smaller than the terminal 3, digitate; lamina of 3 main leaflets 50-140 × 30-60 mm; elliptic-oblong to obovate, abruptly acute to subacuminate, margin entire. Domatia (pit-type) present at axils of costa and main veins. Inflorescence in axillary, dichotomous, (4)-10-15-flowered panicles. Calyx cupular, minutely 5-toothed; corolla dull red, pink or white, pubescent, 2-lipped, c.25-35 mm long. Upper lip entire or bifid, lower deflexed, 3-lobed. Style slender, bifid, c.25 mm long. Drupe 20-26 mm diameter subglobose, bright red, pink or white.

## Flowering:

May - October

## Fruiting:

January - October

## Threats:

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

## \*Attribution:

Factsheet prepared for NZPCN by P.J. de Lange 9 February 2011. Description adapted from Allan (1961).

## References and further reading:

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

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=1359](http://nzpcn.org.nz/flora_details.asp?ID=1359)



**Caption:** In cultivation.

**Photographer:** John Braggins



**Caption:** In cultivation.

**Photographer:** John Braggins

## 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>Basisopic</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.



Term	Definition
<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., Phyllocladus) or branch-like (e.g., Carmichaelia)
<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 Carex
<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 Euphorbia
<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>Discoid</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>Ferruginous</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.



Term	Definition
<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>Foliate</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>Fronid</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>Gynoeceium</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.

Term	Definition
<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 swamplier 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>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>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).
<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.



Term	Definition
<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 Sphagnum, widely found in many parts of the world, varying in consistency from a turf to a slime used as a fertiliser, as stable litter, as a fuel, and for making charcoal. Partially carbonized vegetable matter saturated with water; can be used as a fuel when dried. A type of soil deriving from dead organic material situated in a wet area, where the reduced amount of [[oxygen available in the wet conditions results in the organic material not decomposing as much as it usually would do so in the presence of more oxygen. Used in growing media. Represents an important carbon sink –drainage of peat releases large amounts of carbon (CO <sub>2</sub> ) to the atmosphere.
<b>Pedicel</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
<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.

Term	Definition
<b>Quadrat</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>Retorse</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>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>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>Term</b>	<b>Definition</b>
<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 of 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>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.

Term	Definition
<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>Trigonous</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., <i>Carex</i> , <i>Uncinia</i> )
<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., <i>Hebe vernicosa</i> has leaves than 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 a aquatic or semi-aquatic environment.
<b>Whipcord</b>	A shrub in which the leaves are reduced to scales that are close-set and pressed against the stem.
<b>Whorl</b>	A ring of branches or leaves arising at the same level around the stem of a plant.