



# Some threatened, rare and unusual plants of the Waiouru Military Training Area



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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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## 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.

# *Amphibromus fluitans*

## Common Name(s):

Water brome

## Current Threat Status (2012):

Threatened - Nationally Vulnerable

## Distribution:

Indigenous. New Zealand, North and South Islands. In the North Island It is known from Ninety Mile Beach and Karikari Peninsula to Paekakariki and Lake Wairarapa. In the South Island known only from Maher's Swamp, near Punakaiki and from Lake Tekapo. Present in Australia where it is very uncommon. The largest populations of the species seem to be at the Waihora and Arohaki lagoons, at Lake Rerewhakaaitu in wetlands on the north eastern and eastern margin of Lake Wairarapa.

## Habitat:

Coastal to montane in moderately fertile, seasonally dry wetlands or along the edges of shallow lakes and lagoons.

## Features\*:

Somewhat flaccid to weakly tufted, stoloniferous, semi-aquatic grass, forming circular grey-green mats 70-400 x 150 mm on muddy ground (up to 400 mm tall when growing up through surrounding vegetation). Culms decumbent, rooting at lower nodes, erect or floating above. Leaf-sheath papery, smooth or scabrid, often wholly scabrid toward culm apex. Ligule 1.5-5 mm, long-tapered, acute, initially entire, becoming lacerate. Leaf-blade 50-125 x 0.6-3 mm, grey-green, flat or inrolled, upper surface somewhat scabrid, shallowly ribbed, undersides notably more scabrid and prominently ribbed, apex acute. Culm internodes mostly smooth, rarely scabrid below nodes. Panicle 65-13 mm, erect, initially enclosed below by uppermost leaf-sheath, at fruiting often expanding entirely above leaves; branches and pedicels scabrid. Spikelets 15-25 mm, 3-6-flowered, pale green. Glumes unequal, glabrous, obtuse margins ciliate-scabrid; lower 2-3 mm, 1-nerved, narrowly lanceolate, upper 2-4 mm, 3-nerved, ovate-lanceolate. Lemma 4-5.5 mm, 7-nerved, firm, green, margin rather wide, hyaline, minutely scabrid or hairy; lemma lobes 2, obtuse; awn 7-18 mm, straight, arising from lemma midpoint. Palea < lemma, keels stiffly ciliate, interkeel glabrous. Seeds 1.5-2 x 0.5-0.7 mm.

## Flowering:

September - May  
(dependent on water levels)

## Fruiting:

September - July  
(dependent on water levels)

## Threats:

Habitat loss through wetland drainage, stock grazing and competition from weeds.

## \*Attribution:

Description modified from Edgar and Connon (2000).

## References and further reading:

Edgar, E.; Connor, H.E. 2000: Flora of New Zealand Vol. V. Grasses. Christchurch, Manaaki Whenua Press. 650 pp.

Gardner, R. 2000. Notes towards an excursion Flora. *Amphibromus fluitans* (Poaceae). Auckland Botanical Society Journal, 55: 54-55

Ogle, C.C. 1987. A rarely seen native grass *Amphibromus fluitans*. Wellington Botanical Society Bulletin, 43: 29-32

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

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=47](http://nzpcn.org.nz/flora_details.asp?ID=47)



**Caption:** *Amphibromus fluitans* plants flowering on semi-dried mud of seasonal pond

**Photographer:** Colin Ogle Lake Wairarapa, Boggy Pond.



**Caption:** *Amphibromus fluitans* close up of spikelets

**Photographer:** Colin Ogle, Lake Wairarapa, Boggy Pond

# *Carex berggrenii*

## Common Name(s):

Berggrens Sedge

## Current Threat Status (2012):

At Risk - Naturally Uncommon

## Distribution:

Endemic. North and South Islands. In the North Island restricted to the Central Ranges where it is known from one site in the Moawhango. In the South Island mainly easterly from Lake Tennyson south. Apparently not known from Marlborough or Westland

## Habitat:

A montane to subalpine (rarely lowland in the southern part of its range) wetland species inhabiting lake, tarn, pond, and stream side margins. It has also been collected from turfs bordering ephemeral wetlands.

## Features\*:

Shortly rhizomatous, tufted dark purple red, wine-red, or orange red, tufted, small sedge. Culms 15-30 mm long, glabrous, terete, distinctly flattened above, almost completely enclosed by light brown leaf-sheaths. Leaves 30-60 x 1-2.5-3 mm, linear, concavo-convex, almost flat, nerves very distinct, margins not usually scabrid except towards the rather bluntly obtuse apex. Spikes 3-4(-6); terminal spike male, distinctly pedunculate; remaining spikes female, 5-8 mm long, ovate, sessile or shortly pedunculate, crowded at same level round base of male spike; leaf-like subtending bracts > inflorescence. Glumes rather < utricles, ovate, cuspidate, or entire and obtuse, membranous, red-brown with a paler brown midrib. Utricles 2-3 x 1.5 mm, biconvex or rarely subtrigonal, elliptic-oblong, turgid, red-brown to dark red-purple above, yellow below. Distinctly nerved at first, smooth at maturity, margins glabrous; beak minute with the scabrid crura very shortly bifid to almost truncate; stipe 0.2 mm long, stout. Stigmas 2-3. Nut 1.5 mm long, trigonous.

## Flowering:

October - February

## Fruiting:

October - June

## Threats:

A biologically sparse species which is not so much threatened as nationally uncommon. However, some populations are now at risk through competition from taller and faster growing wetland weed species.

## \*Attribution:

Description adapted from Moore and Edgar (1970).

## References and further reading:

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

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

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=230](http://nzpcn.org.nz/flora_details.asp?ID=230)



Photographer: John Barkla



Caption: Hawkdun Range  
Photographer: John Barkla

# Carex rubicunda

## Common Name(s):

Sedge

## Current Threat Status (2012):

Threatened - Nationally Vulnerable

## Distribution:

Endemic. North and South Islands. In the North Island known from swamps in the southern Kaingaroa Plain, the Kaimanawa and Ruahine Mountains, and wetlands within Tongariro National Park. Its exact distribution in the South Island is still unclear. It has long been known from from Lakes Te Anau and Manapouri, and has recently (2009-2010) been found at Lake Lyndon (Canterbury) and Lake Wanaka (Otago). It is likely to be found at other sites.

## Habitat:

A species of mainly montane to subalpine lake, tarn, and pond margins. Also found in other ephemeral wetlands, often in places seasonally flooded.

## Features\*:

Diminutive, shortly rhizomatous, stiffly erect, reddish brown tufted sedge with curled leaf apices frequenting lake, pond, and tarn margins, flushes, slow flowing stream and seepage in montane to subalpine conditions. Culms 10-150 x 0.5-1 mm, glabrous, terete, basal sheaths light brown to grey brown. Leaves much longer than culms, 30-300 x 0.5-1 mm, red to red-brown, rigid, plano-convex, occasionally with margins inrolled, striated on undersides, margins finely scabrid, leaf apex obtuse, twisted and curled when dry. Inflorescence 10-15 mm long, usually hidden within foliage towards base of plant. Spikes 3-4(-6), shortly pedunculate to almost sessile, pale yellow-brown, terminal spike wholly male, subterminal spike female or with some males near apex, remaining spikes female, 5-10 x 3 mm, clustered at the same level round base of male spike, all subtended by leaf-like bracts, these about same length as leaves. Glumes equal to or slightly shorter than utricles, ovate, membranous, nerved, pale pink, maturing brown, with green midribs, apices acute. Utricles 1.5-2 x 1 mm, plano-convex, obovoid, smooth or faintly nerved, gradually narrowed at either end, light brown below, trending to darker purple-brown toward the 0.3 mm long glabrous beak, apex hardly bifid, crura minutely scabrid; stipe 0.5 mm long. Stigmas 2. Nut about 1 mm long, obovoid to suborbicular, pale grey-brown.

## Flowering:

October - January

## Fruiting:

October - August

## Threats:

A locally common species of suitable habitats within the Central North Island. Some populations might be at risk from horse trampling, vehicle traffic and invasive wetland weeds. Status in the South Island needs clarification.

## \*Attribution:

Description adapted from Moore and Edgar (1970)

## References and further reading:

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

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

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=401](http://nzpcn.org.nz/flora_details.asp?ID=401)



**Caption:** Green Form. Ex L. Wanaka

**Photographer:** John Barkla



**Caption:** Carex rubicunda

**Photographer:** John Hobbs

# *Carex strictissima*

## Common Name(s):

Bastard grass, hook sedge

## Current Threat Status (2012):

Threatened - Nationally Endangered

## Distribution:

Endemic. In the North Island known only from the Central Volcanic Plateau. In the South Island it apparently has an easterly distribution, being recorded from the Nelson lakes, Canterbury, Otago and Southland.

## Habitat:

Lowland scrub, swamps, lake margins and in damp clears within lowland forest.

## Features\*:

Dark olive-green to red-green rush-like sedge, forming dense tufts. Culms 300-550(-700) mm x 1 mm, initially trigonous and scabrid but maturing as terete and smooth (except for just under the inflorescence). Basal bracts dull dark brown. Leaves much reduced, inrolled or flat, 1-2 mm wide, rigid, strongly nerved, scabrid on margins, midrib bright red. Spikes 30-100 mm long, subtended by a reddish filiform bract > spike. Female flowers 10-15, distant in longer spikes, internodes up to 14 mm long at base but decreasing to 3 mm toward apex. Glumes < or = utricles, persistent, obtuse or subacute, green to light brown, tinged pink. Utricles 6-7.5 x 2 mm, plano-convex, nerved, light brown, often pink near apex, stipe and beak up to 15 mm long.

## Flowering:

October to  
December

## Fruiting:

November to May - but as the  
inflorescence is long persistent, fruits  
may be present all year round.

## Threats:

Herbarium specimens indicate that this was never a common species. However, it is clear that it has declined over large parts of its range, and it is now very close to extinction in the North Island. The species seems to be threatened by habitat loss as a result of weed invasion and by animal browse.

## \*Attribution:

Description adapted from Moore and Edgar (1970). Fact sheet prepared by Peter J. de Lange 17 August 2006.

## References and further reading:

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

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=97](http://nzpcn.org.nz/flora_details.asp?ID=97)



**Caption:** *Carex strictissima*

**Photographer:** John Barkla



**Caption:** *Carex strictissima*

**Photographer:** John Barkla



# Carex uncifolia

## Common Name(s):

Sedge

## Current Threat Status (2012):

Threatened - Nationally Endangered

## Distribution:

Endemic. North and South Islands. In the North Island known only from the Central Volcanic Plateau from Mt Hauhangatahi and in the nearby Moawhango. In the South Island much more widespread known from the Red Hills, between the Wairau Valley and Nelson, south through Canterbury to Central Otago.

## Habitat:

A species of damp seepages, open wetlands and damp turf within tussock grassland. Also abundant in damp sites overlying ultramafic rocks.

## Features\*:

Shortly rhizomatous, dark purple red to beetroot red, densely tufted sedge up 30-70 x 30-70 mm. Culms completely obscured by light grey-brown, chartaceous, somewhat fibrillose leaf-sheaths. Leaves 0.5 mm wide, dark purple-red, maroon red to beetroot red, much > culms, plano-convex, nerved on the undersides, smooth on the upper surface, margins scabrid, apex subobtuse, often curled. Inflorescence comprised of short densely compacted spikelets, these 3-4 (-5), terminal spike male, rather slender, shortly pedunculate, glumes lanceolate, acute, red-brown; remaining spikes female; these sessile, 5-12-flowered, glumes 3.5 x 1.5 mm, dull red-brown, distinctly nerved, lanceolate, acute with the mid rib extending into a scabrid awn. Utricles 2-3.5 x 1.5 mm, biconvex to obscurely trigonous. Elliptic-lanceolate, spreading when mature, light red-brown, distinctly nerved, narrowed to a more or less scabrid beak 0.5-1 mm long, bidentate, orifice scabrid. Stigmas 3. Nut 1.5 mm long, dark grey-brown, obtusely trigonous, oblong-obovoid.

## Flowering:

September - January

## Fruiting:

October - May

## Threats:

Naturally uncommon, this species has a biologically sparse distribution, reaching its greatest abundance on ultramafites on the Red Hills, West Dome and the Livingston Range. Elsewhere it is uncommon and some populations have been lost due to weed invasion, trampling from horses and through vehicle damage.

## \*Attribution:

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

## References and further reading:

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

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

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=405](http://nzpcn.org.nz/flora_details.asp?ID=405)



**Caption:** West Dome Mossburn  
**Photographer:** Gillian Crowcroft



**Photographer:** John Barkla

# *Chaerophyllum colensoi* var. *delicatulum*

**Common Name(s):**  
mountain myrrh

**Current Threat Status (2009):**  
Threatened - Nationally Critical

**Distribution:**  
Endemic to New Zealand, where it is found in the North and South Islands, from the Hauhangaroa Range to Southland. It has a mainly easterly distribution in the South Island.

**Habitat:**  
A plant of ephemeral wetlands, subalpine flushes, and tarn margins. Strictly subalpine in the North Island but descending to lower montane habitats in the South Island.

**Features\*:**  
Diminutive, shortly rhizomatous, perennial herb arising from stout tap root, plants forming circular mats up to 50 x 50 mm (usually much less). Petioles filiform, brown-green, yellow-green to white, 10-20 mm long. Leaves radical, spreading up to 20 mm long, dark green, red-green to brown-green 1(-2) pinnate with 4-6(8) distant pairs of primary pinnae. Both leaf surfaces sparsely covered in fine hairs, lamina margin particularly so, pinnae of equal length, or broader toward middle and decreasing in length toward distal and proximal ends, linear, narrowly lanceolate to lanceolate, apex narrowly acute, deeply toothed, entire, or with prominent secondary pinnae in the basal 1-3 primary pinnae pairs. Peduncles 1-5(-15), filiform, stout or slender up to 30 mm long, decumbent to sub-erect, spreading. Involucre of 5-8 ovate-oblong bracts; bracts up to 5 mm long, pale green to yellow-green, entire. Pedicels at flowering sessile, elongating in fruit up to 6 mm. Flowers 3-8, 1.5-2 mm diameter. Petals 3-5, 0.3-0.5 x 0.3-0.5 mm, ovate, cream. Mericarps 1.5-2 x 0.6-1.3 mm, narrow-ovate to ovate, glabrous. Ribs 3-5.

**Flowering:**  
October - February

**Fruiting:**  
December - May

**Threats:**  
The open wetland turf and tarn margin habitats frequented by *O. colensoi* var. *delicatula* are extremely vulnerable to invasion by faster growing and taller weeds. In many parts of the North Island this species has gone extinct because of weed competition. *O. colensoi* var. *delicatula*, along with many other wetland marginal turf plants is also extremely vulnerable to changes in the hydrology of the wetlands they require. In many places these are now drying out too early, because of changes in adjacent land use management, so increasing their vulnerability to weed species invading and becoming permanently established.

**\*Attribution:**  
Fact Sheet prepared for NZPCN by P.J. de Lange (31 August 2006). Description based on Allan (1961) supplemented with observations taken from herbarium material.

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

Chung, K-F. 2007. Inclusion of the South Pacific alpine genus *Oreomyrrhis* (Apiaceae) in *Chaerophyllum* based on nuclear and chloroplast DNA sequences. *Systematic Botany* 32(3): 671-681.

**For more information, visit:**  
[http://nzpcn.org.nz/flora\\_details.asp?ID=83](http://nzpcn.org.nz/flora_details.asp?ID=83)



**Caption:** Close up of *Oreomyrrhis colensoi* var. *delicatula*  
**Photographer:** Colin Ogle



**Caption:** *Oreomyrrhis colensoi* var. *delicatula* specimen  
**Photographer:** Cathy Jones

## *Euchiton ensifer*

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

Creeping Cudweed

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

Threatened - Nationally Endangered

### **Distribution:**

Endemic. North and South Islands. In the North Island known from the Kaingaroa Plain (Matea Road) and Kaimanawa Ranges. In the South rather locally distributed from Nelson south to Southland but not, apparently in Westland.

### **Habitat:**

Montane to alpine in damp sites, particularly tarn and other ephemeral pond margins, or in seepages and flushes within tussock grassland. Sometimes on stream banks.

### **Features:**

Stoloniferous, creeping perennial. Stems 1-4(-6), decumbent to ascending, spreading, simple, 20-100 mm tall. Leaves mainly basal; these short-petiolate, 13-50 x 1-5 mm, narrow-elliptic to linear, cuneate, acute, mucronate, densely covered in closely appressed white indumentum on lower surface except mid-vein, almost glabrous to sparsely tomentose above; cauline leaves only slightly reducing up stem, linear, apetiolate. Capitula 1-2 mm diameter, 1-9 in loose terminal clusters; longest subtending leaves < to marginally > diameter of cluster. Involucral bracts 4.2-5 mm, elliptic-oblong, obtuse to subacute; stereome green; lamina pale brown with darker markings toward base; gap and margins tinged pale to bright rose or red-purple. Achenes 0.8-1 mm long, covered with short antrorse hairs.

### **Flowering:**

October - January

### **Fruiting:**

November - April

### **Threats:**

A naturally uncommon, biologically sparse species which, based on current information does not appear to under any serious threat. However, weeds encroaching on montane wetlands are threatening a few populations.

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

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

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

[http://nzpcn.org.nz/flora\\_details.asp?ID=255](http://nzpcn.org.nz/flora_details.asp?ID=255)



**Caption:** Euchtiton ensifer  
**Photographer:** John Smith-Dodsworth

# *Gastrodia cunninghamii*

**Common Name(s):**

black orchid, black potato orchid, pereii

**Current Threat Status (2012):**

Not Threatened

**Distribution:**

Endemic. North, South, Stewart and Chatham Islands. Uncommon north of the Waikato.

**Habitat:**

Usually montane and mostly in beech (*Nothofagus* Blume) dominated forests. Often found in montane pine forest plantations. Sometimes found at lower altitudes in dark hollows within forest, especially in naturally cold sites.

**Features\*:**

Terrestrial, saprophytic, deciduous, fleshy, perennial herb lacking chlorophyll. Rhizome mycorrhizal, tuberous, rather swollen, short-lived, extensively branched, individual sections up to 250 x 50 mm, dull pale brown to brownish-black, often covered in chartaceous scales and scale-leaves, especially toward the active apex. Plant at flowering up to 1.4 m tall. Stem 4-10 mm diameter, dark brown to brown-black with lighter brown coloured, small spots, erect, stout or slender, rather brittle when fresh. Scale leaves widely spaced, chartaceous. Flowers up to 100, unscented, erect to pendulous (rarely with the flower touching the stem axis), tuberculate, tubercles paler in colour. Perianth 14-20 x 4-6 mm, brownish, brownish-black, or greenish; lobes slightly thickened toward margins. Lateral sepals fused slightly above the gibbous base but with their margins lying close together, often more or less overlapping. Labellum 10 x 4 mm, white or cream, membranous, not irritable, completely enclosed within floral tube (apex just visible), oblong, trilobed, base thickened, twisted and fused for most of length of perianth-tube, lateral-lobes with upturned, irregular, crenate-cristate, margins; mid-lobe yellowish with flat but irregular margins, bearing several long median, cristate, yellowish calli, apex black or brown. Column much shorter than labellum, wing minute, present as a more or less curved process; anther terminal, erect and bending forwards, short and broad, operculate, filament transversely pleated at the back, pollen breaking into angular granules; stigma basal, immediately below anther, broadly ellipsoid, hollow; rostellum flap-like, positioned under anther.

**Flowering:**

October - March

**Fruiting:**

December - May

**Threats:**

Not Threatened

**\*Attribution:**

Fact Sheet prepared by P.J. de Lange (14 April 2008). Description adapted from Moore and Edgar (1970)

**References and further reading:**

Given, D.R. 1959. An unusual occurrence of *Gastrodia cunninghamii* Hooker. *Auckland Botanical Society Journal*, 16: 3-4

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

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

NZPCN *Gastrodia* Key prepared by Jeremy Rolfe (pdf, 1.2Mb)

**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=1910](http://nzpcn.org.nz/flora_details.asp?ID=1910)



**Caption:** Grove Scenic Reserve  
**Photographer:** Melissa Hutchison



**Caption:** Grove Scenic Reserve  
**Photographer:** Melissa Hutchison

# *Halocarpus bidwillii*

## Common Name(s):

Bog pine

## Current Threat Status (2012):

Not Threatened

## Distribution:

Endemic. New Zealand: North, South and Stewart Islands from the Central Volcanic Plateau and Kaingaroa Plain south but in the North Island patchy. Records of *Halocarpus bidwillii* from Te Moehau (Colville, Coromandel Peninsula) are referable to *H. biformis*.

## Habitat:

Lowland to subalpine (strictly montane to alpine in the North Island). A shrub or small tree of wetland margins, bogs, poorly draining heathland, frost-flats, river beds and also dry, stony ground and tussock grassland. *Halocarpus bidwillii* can be locally dominant

## Features\*:

Dioecious, spreading or erect, much-branched shrub or small tree up to 4.8 m tall. Trunk 0.3-0.4 m d.b.h, usually multiple, rarely solitary, sometimes spreading. Bark firm, flaking in irregular shards, exposed surface grey, usually covered in lichens, undersides red to red-brown. Branches spreading, bases sometimes layering on contact with soil (in extreme examples give rise to a ring of clonal shrubs surrounding 'parent'); branchlets initially tetragonous, becoming  $\pm$  terete with age, 1.2-2.0 mm diameter. Foliage dimorphic; juveniles linear, coriaceous, rigid, apetiolate, spreading; lamina 5.0-10.0  $\times$  1.0-1.5 mm, bronze green to yellow-green, sometimes tinged red, obtuse to subacute, midvein distinct; adults leaves closely imbricate, coriaceous; lamina 1-2 mm long, obtuse to subacute. Male strobili solitary, terminal and sessile, 2.8-4.6 mm long; apiculus obtuse. Female cones sessile, terminal, each surrounded by leaf-like, elongated bracts (1-5 of which are fertile), and terminating in a central sterile appendage. Carpidium solitary or paired, subterminal, larger than associated bracts. Epimatium adnate to base of carpidium; dorsiventrally compressed and striated, initially green, maturing dark-brown to black with the region around the micropyle swelling to form a fleshy, waxy-white (very rarely yellowish), persistent aril collar at the proximal end of the carpidium; the aril cupular to v-shaped under seed. Seed glabrous, smooth, 3.0-4.5 mm long (including aril), dark brown, black-brown to dark purple-brown, glossy, ovate-oblong, compressed.

## Flowering:

October - December

## Fruiting:

February - June

## Threats:

Not Threatened - though uncommon and in decline within some parts of its North Island, eastern and southern South Island range.

## \*Attribution:

Fact Sheet prepared for NZPCN by P.J. de Lange 12 November 2014: Description adapted from Allan (1961), Quinn (1982), Webb & Simpson (2001) and fresh and dried specimens.

## References and further reading:

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

Quinn, C.J. 1982. Taxonomy of *Dacrydium* Sol. ex Lamb. emend. de Laub. (Podocarpaceae). *Australian Journal of Botany* 30: 311-320.

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

Webb, C.J.; Simpson, M.J.A. 2001: Seeds of New Zealand Gymnosperms and Dicotyledons. Christchurch, Manuka Press.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=1379](http://nzpcn.org.nz/flora_details.asp?ID=1379)



**Caption:** Tongariro National Park, Whakapapa Walk.

**Photographer:** John Braggins



**Caption:** Bungtown Scientific Reserve

**Photographer:** John Barkla

# *Libocedrus bidwillii*

## Common Name(s):

Pahautea, kaikawaka, NZ cedar

## Current Threat Status (2012):

Not Threatened

## Distribution:

Endemic. North and South Islands. In the North from Te Moehau, Te Aroha and Mt Pirongia south.

## Habitat:

Montane to subalpine (250-1200 m.a.s.l.) but exclusively upper montane in northern part of range. Usually in mixed cloud forest, often at the margins where forest grades into subalpine scrub or wetlands. This species seems to prefer regions of moderate to high rainfall and long periods of cloud cover.

## Features\*:

Tree 25(-30) m tall and 1.0-1.5 m d.b.h., or a shrub in open conditions, evergreen, monoecious. Bark thin, scaly, greyish-brown, exfoliating in longitudinal strips. Branches long, spreading or ascending, arranged in dense tufts above each other, forming a pyramidal crown in young trees, conical or irregular with a clear bole in old trees. Foliage flattened sprays in young trees, in old trees more irregular and ascending, ultimate branchlets subopposite to alternate, 5-40 mm long, entirely covered with leaves, changing with age of plant from flattened to  $\pm$  quadrangular, persistent. Leaves decussate, on lateral branchlets, short, decurrent, imbricate, dimorphic in young trees, facials small, rhombic, 1.5-2.0  $\times$  1.0 mm, apiculate to acute, appressed, partly covered at base by larger 2.0-6.0  $\times$  1.5-2.5 mm, divergent, bilaterally flattened, slightly curved laterals with entire margins and free apices, leaves on mature trees smaller, nearly monomorphic; amphistomatic, stomata on facials at base, on laterals much reduced on adaxial side, abaxially in a short, conspicuous band of irregularly but densely arranged stomata, adaxially dull dark green or yellow-green with whitish-green stomatal band, bearing a single resin cavity, eglandular. Pollen cones terminal, solitary, 2.5-5.0 mm, subglobose to ovoid, yellowish-green maturing light brown; microsporophylls decussate, 8-14, peltate, margins entire, bearing 4 abaxial yellow, microsporangia containing spherical pollen. Seed cones terminal on branchlets with monomorphic leaves of equal size, initially consisting of 2 decussate pairs of acute, 3-4 mm long, spreading bracts subtended by 4-5 similar but gradually smaller leaf pairs, the upper pair developing within one growing season to become thinly woody, together forming a cone 8-12 mm long. Bract-scale complexes 7-10 mm long,  $\pm$  finely rugose, recurved in upper half above the abaxially exerting bract, subtended by the lower, smaller (3-4 mm long) less modified pair. Ovules 4, erect, alternating with each fertile bract. Seeds 2-4, 2-3 mm long, ovoid, flattened, with an acute apex, brown, with a whitish hilum and 2 opposite, thin, unequal, membranous wings, smaller 1 mm wide, larger, irregularly oval-oblong, 4-5  $\times$  2.3 mm, yellowish brown. Cotyledons 2, juveniles leaves only on seedlings,  $\pm$  acicular, on lower stem in whorls of 4 but soon decussate, bilaterally flattened, acuminate, the facials only slightly smaller, transitional leaves prevalent through much of life of young trees.

## Flowering:

August - November

## Fruiting:

August - July

## Threats:

Not Threatened

## \*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange (13 January 2012). Description adapted from Farjon (2005).

## References and further reading:

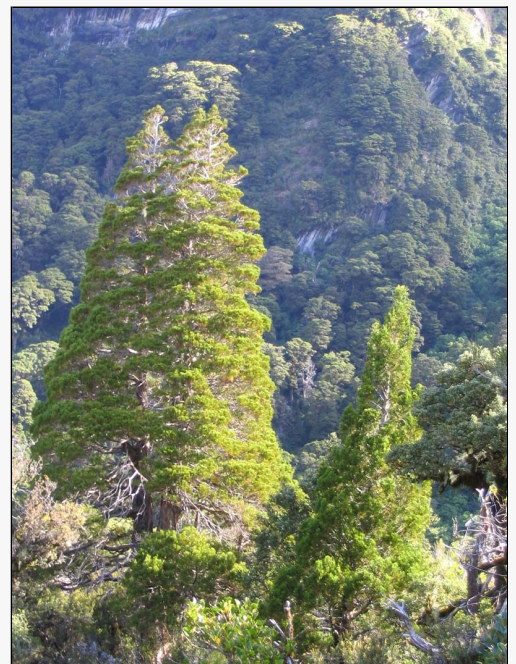
Farjon, A. 2005: A monograph of Cupressaceae and Sciadopitys. Royal Botanic Gardens, Kew. ISBN 1842460684.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=933](http://nzpcn.org.nz/flora_details.asp?ID=933)



**Caption:** Ruahine Corner  
**Photographer:** John Barkla



**Caption:** Siberia Valley  
**Photographer:** John Barkla

# *Muehlenbeckia ephedroides*

## Common Name(s):

Leafless pohuehue, leafless muehlenbeckia, Twigs

## Current Threat Status (2012):

At Risk - Declining

## Distribution:

Endemic. North and South Islands. In the North Island mainly eastern from Lake Taupo (Acacia Bay) and the northern Hawkes Bay south to Wellington and Cape Palliser. In the South Island eastern from Marlborough to Southland.

## Habitat:

Coastal to subalpine (0-1200 m a.s.l.). A species of river flats, beaches, sand spits, alluvial fans, outwash gravels and river terraces, also found in grey scrub. Favouring open, dry, free draining but fertile sites, usually on gravel and sandy soils, in habitats naturally free from other taller plants. Sometimes found on gravel roads.

## Features:

Gynodioecious, sprawling to prostrate, grey-green, grey to grey-black shrub forming dense, untidy mats up to 1.5 m or more diameter. Stems much branched, final branches c.1 mm diameter, flexuous, striate, puberulent, grey to grey-black or grey-green. Leaves 5-25 mm long, dark to grey-green, narrow-linear, glabrous to glabrate, margins revolute, ascending, distant, spaced along constricted nodes, often sparse, deciduous, sometimes absent; ochreae 1-2 mm long, chartaceous, truncate. Inflorescence a few-flowered fascicle or raceme; pedicels 1-1.5 mm, pale, bracteate, slender. Flowers with pistillate on separate plants, and staminate and perfect on the same plant; if mainly male then raceme often lax, if female then fascicle dense, mixed male and perfect racemes more or less intermediate. tepals 3-3.5 mm long, united about halfway, lobes narrow-triangular, white, greenish or pale yellow-green; stigmas frimbriate. Fruit 3 x 1.5 mm, trigonous, ovoid, lustrous black, tepals becoming swollen, white and succulent, or rarely chartaceous and dry.

## Flowering:

November - June

## Fruiting:

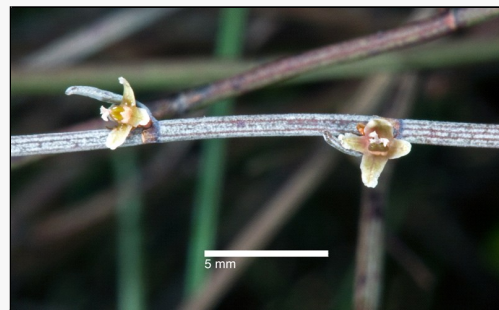
November - June

## Threats:

Most abundant within the north eastern South Island. It is highly threatened in the North Island and appears to be extinct around Lake Taupo. Small populations persist in the Hawkes Bay, southern Wairarapa and south Wellington coastline. In the South Island it appears to have suffered little obvious decline but it is rarely common. In some areas its past presence can be determined by hybrid swarms that exist between it and other New Zealand *Muehlenbeckia* species.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=287](http://nzpcn.org.nz/flora_details.asp?ID=287)



**Caption:** Female flowers. In cult. ex Pencarrow.

**Photographer:** Jeremy Rolfe



**Caption:** Fruit. In cult. ex Pencarrow.

**Photographer:** Jeremy Rolfe

# *Myosotis glauca*

## Common Name(s):

None known

## Current Threat Status (2012):

Threatened - Nationally Vulnerable

## Distribution:

Endemic, North and South Islands. In the North Island known from one site in the southern Kaimanawa Range. In the South Island known from widely scattered sites from Canterbury, Central Otago and northern Southland.

## Habitat:

Open, dry sandy, gravelly ground or clay pans. Often in wind ablated scrapes, and shows a marked preference for base rich substrates. Usually found growing in small patches often in the vicinity of scabweeds. It has also been found growing admist *Muehlenbeckia axillaris* (Hook.f.) Endl. mats.

## Features\*:

Decumbent, biennial or perennial herb, forming small, circular patches on open ground. Rosette rather open, sparsely leafy. Petiole broad 5(-10) mm long. Leaves 10-30 x 5-8 mm, glaucous green or grey, obovate to spatulate, apex obtuse or rounded, rarely subacute, base narrowly cuneate to attenuate; upper surface clad in short, stiff, sparse tightly appressed hairs. Lateral branches few, decumbent, 50-100 mm long, extending well beyond rosette leaves, rather openly branching, internodes 10-15 mm long. Stem leaves similar to rosette-leaves. Bracts up to 8 x 6 mm, rather leafy, obovate. Inflorescences cymose, cymes simple, few- to many-flowered, subtended by leafy bracts throughout, internodes < bracts, often rather short. Pedicels 1.5-2 mm long. Calyx 3-5 mm long, elongating to 4-8 mm long in fruiting material, lobes deeply cut to half calyx length, lobes subacute, hairs few, confined in lines to margins and on vertical lines of calyx, very short, stiff and coarse. Flowers white. Corolla 3 mm diameter, corolla tube cylindric 0.4-0.6 mm, lobes very narrow, apex obtuse; stamens on short filaments, anthers 0.5-0.8 mm, wholly included within corolla tube, anther tips obscured, rarely reaching scales; style 0.1-0.3, stigma capitate. Nutlets 1.2-1.5 x (0.8-)1-1.2 mm, brown-black to grey-black, broadly ovate.

## Flowering:

(August-) September to December (however sporadic flowering may occur throughout the year)

## Fruiting:

September to January (however fruits may be found throughout the year)

## Threats:

Seriously threatened by weed invasion of the dry, open sites it requires.

## \*Attribution:

Fact Sheet prepared for the NZPCN by P.J. de Lange 14 April 2006. Description by P.J. de Lange and subsequently published in de Lange et al. (2010).

## References and further reading:

de Lange, P.J.; Heenan, P.B.; Norton, D.A.; Rolfe, J.R.; Sawyer, J.W.D. 2010: Threatened Plants of New Zealand. Canterbury University Press, Christchurch.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=76](http://nzpcn.org.nz/flora_details.asp?ID=76)



**Caption:** *Myosotis glauca*, Nevis  
**Photographer:** John Barkla



**Caption:** *Myosotis pygmaea* var. *glauca* in cultivation  
**Photographer:** John Barkla



# *Myosotis tenericaulis*

**Common Name(s):**

None known

**Current Threat Status (2012):**

At Risk - Naturally Uncommon

**Distribution:**

Endemic. North, South and Stewart Islands. In the North Island apparently confined to the north-western Ruahine Range. In the South Island locally distributed from Nelson to Southland though apparently absent from Westland, Marlborough and Canterbury. Also on Stewart island. This species is easily overlooked.

**Habitat:**

Lowland to alpine (0-1400 m a.s.l.). Upper montane to alpine in the North Island, otherwise as stated. Usually on the margins of slow flowing streams, in muddy ground, on the margins of small, ephemeral pools, in wet ground at the bases of tall tussocks, in shaded sites within forests overlying poorly drained alluvium, and in alpine flushes, seepages and cushion bogs.

**Features\*:**

Decumbent, green or bronze, sprawling to weakly ascending, slender, perennial herb forming roughly circular to asymmetrical diffuse patches up to 200 mm diameter. Adventitious roots frequently produced along weakly ascending partially buried or creeping stem, or adventitious roots absent. Lateral branches 1-10 (or more), weak and somewhat flaccid, occasionally producing new rosettes where touching the ground, some branching again and on occasion flowering. Rosette-leaves obvious, or not very obvious due to creeping stem, these 6-12 x 3-6 mm, elliptic to broadly oval, gradually narrowing to slender petioles up to 40 mm long; hairs of lamina short, closely appressed, mostly evenly though sparsely covering upper surface, undersides glabrescent. Flowering branches 20-400 mm long, internodes distinctly longer than leaves; petioles becoming progressively shorter in upper cauline leaves; bracts sub- to sessile; other similar in shape and indument to rosette and basal stem leaves. Inflorescences cymose; cymes elongated, simple or branched, several-flowered, internodes long, flowers solitary, bract opposed or noticeably below bract. Pedicels 1-10 mm long in fruit. Calyx 1.5-3.5(-4) mm, lobes > 1/2 calyx length, narrow, acute, hairs short, appressed, evenly though sparsely distributed. Corolla 3-4 mm diameter, white sometimes with a yellow throat; tube 2 mm long, cylindrical; lobes 1 x 1 mm, rounded; filaments almost wanting, anthers < 1 mm long, yellow, included within tube; style up to 4 mm long, stigma capitate. Nutlets projecting from short, widely open calyx, 1.2-1.6 x 0.8-0.9 mm, ovate-elliptic to elliptic, apex obtuse, base rounded margins slightly winged.

**Flowering:**

November - March

**Fruiting:**

November - April

**Threats:**

An apparently naturally uncommon, biological sparse species. It may be threatened in some parts of its range through competition from weeds. Clarification of its conservation status is needed.

**\*Attribution:**

Fact Sheet prepared for NZPCN by P.J. de Lange 1 February 2008. Description based on Allan (1961).

**References and further reading:**

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

**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=290](http://nzpcn.org.nz/flora_details.asp?ID=290)

## *Olearia virgata*

**Common Name(s):**

Twiggy tree daisy

**Current Threat Status (2012):**

Not Threatened

**Distribution:**

Endemic. North, South and Stewart Islands. From Ohinemuri and the Whangamarino Swamp south to Wellington. In the South Island from Marlborough Sounds west until Fiordland.

**Threats:**

Not Threatened

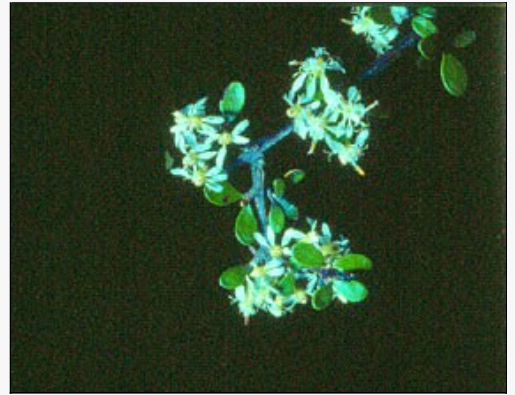
**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=1063](http://nzpcn.org.nz/flora_details.asp?ID=1063)



**Caption:** in cultivation

**Photographer:** Jesse Bythell



**Caption:** Balls clearing, December

**Photographer:** John Smith-Dodsworth

# *Ophioglossum coriaceum*

## Common Name(s):

adder's tongue

## Current Threat Status (2012):

Not Threatened

## Distribution:

Indigenous. New Zealand: Kermadec (Raoul Island), North, South, Stewart, Chatham Islands. Also Australia and South America (in Australia plants are referred to *O. lustanicum* L. which has a wider distribution though North and South America, Europe, Africa and Asia)

## Habitat:

Coastal to alpine. Throughout in mostly open or sparsely vegetated habitats including sand swales and dunes systems, grassland, forest clearings, lake, pond and river margins, peat bogs, fell field, river flats, tuft associations and occasionally as a low epiphyte.

## Features\*:

Rhizome erect, cylindrical' roots orange-brown, fleshy, spreading; horizontal ones producing vegetative buds often resulting in large colonies. Fronds 1-2(-4). Common stipe (usually ill-defined) 5-15 mm long. Sterile lamina 8-30(-90) mm long, 4-20 mm wide, fleshy, green to yellow-green, elliptic, ovate, obovate to rhomboid (rarely deltoid), acute or obtuse; base rounded, truncate, cuneate or gradually tapering into common stipe' venation single, mostly obscure, sometimes prominently reticulate; areole variable, usually as long as wide, rarely wider than long or elongated. Sporophore 5-140 mm long; fertile portion 3-20 mm long, with 4-15(-24) pairs of sporangia; sterile tip of sporophore 0.8-1.5 mm long (rarely more).

## Flowering:

N.A.

## Fruiting:

N.A.

## Threats:

Not Threatened

## \*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange 21 March 2011. Description adapted from Chinnock (1998), Brownsey & Smith-Dodsworth (2000) and also based on herbarium specimens and measurements.

## References and further reading:

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

Chinnock, R.J. 1998: Ophioglossaceae. Flora of Australia 48: 99-109. de Lange, P.J.; Heenan, P.B.; Norton, D.A.; Rolfe, J.R.; Sawyer, J.W.D. 2010: Threatened Plants of New Zealand, Christchurch, Canterbury University Press. 471pp.

de Lange, P.J.; Rolfe, J.R. 2010: New Zealand Indigenous Vascular Plant Checklist. Wellington, New Zealand Plant Conservation Network. 164pp.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=2207](http://nzpcn.org.nz/flora_details.asp?ID=2207)



**Caption:** *Ophioglossum coriaceum* growing amongst *Crassula multicaulis*

**Photographer:** Sandra Wotherspoon



**Caption:** Mt Pirongia, Ruapene  
**Photographer:** Gillian Crowcroft

## *Peraxilla tetrapetala*

### Common Name(s):

Red mistletoe, pikirangi, pirita, roeroe, pirinoa

### Current Threat Status (2012):

At Risk - Declining

### Distribution:

North and South Island, but less common in the North Island.

### Habitat:

Coastal to montane. A hemiparasite whose main hosts are mountain beech (*N. solandri* var. *cliffortioides*), black beech (*Nothofagus solandri* var. *solandri*), red beech (*N. fusca*), and silver beech (*N. menziesii*). However, it has been recorded as a parasite on a further 17 species (2 exotic) including puriri (*Vitex lucens*) and pohutukawa (*Metrosideros excelsa*).

### Features:

A shrub that can grow up to 2 m across. It usually parasitises close to the trunk of its host. It has characteristic small raised blisters or lesions on small, usually rhombic leaves. The flowers are solitary or 2-4 together and are bright red (up to 40 mm long). The ripe fruit is fleshy and green. Veins on the leaves are hardly evident and only the midrib is conspicuous. Leaf tips are never notched. Host trees are typically beech or *Quintinia*.

### Flowering:

October to January

### Fruiting:

April to June

### Threats:

A wide variety of threats are now acknowledged as working in unison to cause the national decline of this and allied leafy mistletoes species. The most obvious threat seems to be brush tailed possums (*Trichosurus vulpecula*), which heavily browse mistletoes, to such an extent that they are held as the primary cause for the loss of the beech mistletoes from large parts of the countries beech forest.

### References and further reading:

Simpson, M.J.A. 1976. *Elytranthe* in the vicinity of Nelson Lakes National Park. Wellington Botanical Society Bulletin, 39: 39-40

Urlich, S., Hopkins, C.J., Thompson, T. 2007. The survival of *Peraxilla* mistletoes in the Tararua Range. Wellington Botanical Society Bulletin, 50: 37-47

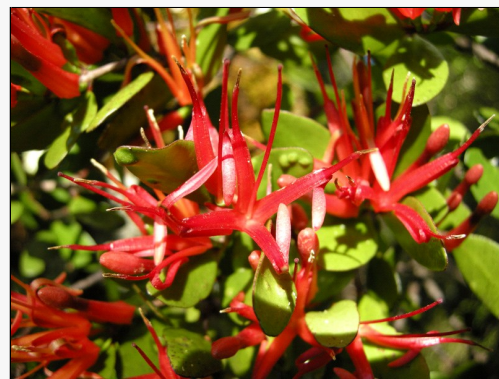
### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=192](http://nzpcn.org.nz/flora_details.asp?ID=192)



**Caption:** Fruit. Ahuriri Valley, Otago

**Photographer:** John Barkla



**Caption:** Whakapapa, Tongariro National Park

**Photographer:** John Sawyer

## *Pimelea barbata* subsp. *omoia*

### Common Name(s):

Pimelea

### Current Threat Status (2012):

At Risk - Naturally Uncommon

### Distribution:

Endemic. New Zealand: North Island (Moawhango River Gorge on the western side of the southern Kaimanawa Range)

### Habitat:

Montane. Sandstone cliffs and slopes below them, within open shrubland and short grassland

### Features\*:

Small to medium-sized prostrate to procumbent shrubs (plants sometimes forming large patches, to 1 m or more wide). Branching mainly sympodial. Young branchlets brown, densely covered by relatively long white to dull-white hairs; internodes 1.5-6.0 mm long; older stems glabrate, grey-brown to brown. Node buttresses lunate (0.4 mm long) masked by hairs on young branchlets, not very prominent on leafless stems. Leaves decussate, on very short petioles (0.4 mm), ascending, often becoming patent to deflexed. Lamina 8-12 × 3-5 mm, broad-elliptic to ovate, often rather variable in size and differing from plant to plant, slightly adaxially concave, acute, base cuneate. Adaxial leaf hairs dense. Vestiture short, white, hispid, villous, or rarely curled, usually appressed. Older leaves may be glabrate, dull-green. Mid-vein may be evident abaxially. Stomata on both adaxial and abaxial surfaces. Inflorescences terminal on branchlets, compact, 2-7-flowered. Involucral bracts 4, the same size as or larger than adjacent leaves (7-10 × 4-6 mm). Receptacle with dense, long hairs. Plants gynodioecious. Flowers white on very short pedicels (0.6 mm). Outside densely hairy, inside hairless. Female tube 4 mm long, ovary portion 2 mm, calyx lobes 1.8 × 1.2 mm; hermaphrodite tube 6.5 mm long, ovary portion 2 mm, calyx lobes 2.3 × 1.9 mm. Anther dehiscence introrse. Ovary with short sparse hairs on summit. Fruits ovoid, fleshy, red 5.0-6.0 × 3.5-4.0 mm; seeds ovoid 3.2 × 2.0 mm, crest thin.

### Flowering:

September - January

### Fruiting:

November - May

### Threats:

*Pimelea barbata* subsp. *omoia* has been formally listed as "Taxonomically Indeterminate/Naturally Uncommon in Appendix 2 of de Lange et al. (2009) as *Pimelea* aff. *aridula* (c) (CHR 402249; Moawhango) qualified OL (One Location) and St (Stable). Beyond its formal taxonomic recognition, Burrows (2011) offers no concrete data or reasons to suggest a change in this status.

### \*Attribution:

Fact Sheet Prepared for NZPCN by: P.J. de Lange (9 October 2011). Description based on Burrows (2011).

### References and further reading:

Burrows, C.J. 2011: Genus *Pimelea* (Thymelaeaceae) in New Zealand 5. The taxonomic treatment of five endemic species with both adaxial and abaxial leaf hair. *New Zealand Journal of Botany* 49: 367-412.

de Lange, P.J.; Norton, D.A.; Courtney, S.P.; Heenan, P.B.; Barkla, J.W.; Cameron, E.K.; Hitchmough, R.; Townsend, A.J. 2009: Threatened and uncommon plants of New Zealand (2008 revision). *New Zealand Journal of Botany* 47: 61-96.

### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=6712](http://nzpcn.org.nz/flora_details.asp?ID=6712)



**Caption:** Moawhango River. Nov 2011.

**Photographer:** Colin Ogle



**Caption:** Moawhango River. Nov 2011.

**Photographer:** Colin Ogle

# *Ranunculus recens*

## Common Name(s):

None known

## Current Threat Status (2012):

Threatened - Nationally Vulnerable

## Distribution:

Endemic to the North, South and Stewart Islands. In the North Island only known from one site in the Moawhango, and from the south Taranaki coastline. In the South Island known from North West Nelson, and the Otago and Foveaux Strait coastline. Local at Masons Bay on Stewart Island. Past records from the Chatham Islands remain unconfirmed and modern field surveys suggest they result from misidentification of seedlings of an complex of unnamed buttercups allied to *R. foliosus* and *R. royi*.

## Habitat:

Mainly coastal but also alpine in one North Island location. A species of turf and peaty soils developed over freshwater seepages.

## Features\*:

Tufted, non-rhizomatous herb forming small circular appressed patches 10-50 mm wide. Petiole broad, flat, usually hairy. Leaves yellow-green, dark green, sometimes blotched or entirely chocolate brown, ovate, 3-lobed to about 1.2 toward base, lobes crenate or shallowly pinnatifid, 8-15(-20) mm, sparsely hairy on margins or glabrous. Flowers solitary, 8-10 mm diam., sessile, or rarely on short hairy scapes. Sepals spreading, sparsely hairy. Petals 5, yellow, linear-oblong, nectary single, 0.5 mm from petal base, with very small scale. Receptacle hairy. achenes 30-60, somewhat flattened, glabrous, brick red with dark tips; beak curved 0.5 mm long.

## Flowering:

(September-)- October-November

## Fruiting:

October -January(-April)

## Threats:

A turf species most at risk from weeds and physical damage through trampling by stock and human traffic.

## \*Attribution:

Fact Sheet prepared by P.J. de Lange (30 August 2003). Description based on Allan (1961), Webb et al. (1988) and fresh specimens - see also de Lange & Murray (2008).

## References and further reading:

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

de Lange, P.J.; Murray, B.G. 2008: *Ranunculus ranceorum*, a new name and rank for *Ranunculus recens* var. *lacustris* G.Simpson, an elusive, rarely seen buttercup of the Fiordland lakes, South Island, New Zealand. *New Zealand Journal of Botany* 46: 1-11.

Webb, C.J.; Sykes, W.R.; Garnock-Jones, P.J. 1988: *Flora of New Zealand*. Vol. IV. Christchurch, DSIR Botany Division.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=199](http://nzpcn.org.nz/flora_details.asp?ID=199)



**Caption:** Otago Peninsula  
**Photographer:** John Barkla



**Caption:** Fruits  
**Photographer:** John Barkla

# *Thelymitra cyanea*

**Common Name(s):**

swamp sun orchid, striped sun orchid

**Current Threat Status (2012):**

Not Threatened

**Distribution:**

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

**Habitat:**

Coastal to montane (up to 800 m a.s.l.) mostly in acidic, often restiad-dominated peat bogs. Also found in damp ground within gumland scrub. This species responds well to frequent disturbance and burning but is able to tolerate dense restiad vegetation and so is often the last sun orchid to persist in dense *Sporadanthus* F.Muell dominated vegetation

**Features\*:**

Terrestrial, tuberous, glabrous, spring to summer-green perennial herb, growing in colonies of 4-20 plants arising through vegetative extension. Plants at flower up to 800 mm tall. Leaf solitary, erect, to suberect, very fleshy to subcoriaceous, longitudinally ribbed, deeply channelled and keeled with margins thickly rounded (appearing trilobed in cross-section), 50-300 x 10-18 mm, green to yellow-green, linear-lanceolate, base closely sheathing. Flowering stem stiffly erect, rather wiry, green to yellow-green. Bracts 1-2(-3), foliaceous, closely sheathing, fleshy, of similar colour to stem and leaf. Raceme bearing 1-6 flowers. Flowers 10-20 mm diameter, usually blue with darker blue or purple stripes on the petals, dorsal and lateral sepals (very rarely also on labellum); otherwise white with green or pale blue stripes or pink with brown stripes; segments widely spreading, dorsal and lateral sepals slightly narrower and longer than petals. Petals broadly elliptic. Labellum broadly obovate, often slightly crenate, or undulose, apex often mucronate. Column short up to 6 mm long, erect, white, post anther lobe greatly reduced (appearing as if absent) bearing a small area of blister-like crowded calli; column arms yellow more or less erect, ribbon-like, flattened, and twisted inwards one to one-and-a-half times in a loose spiral, apex unevenly lobed without cilia. Anther bent forward, well exposed, apex bifid (appearing as two short horns).

**Flowering:**

October - March

**Fruiting:**

December - June

**Threats:**

Not Threatened

**\*Attribution:**

Description adapted from Moore and Edgar (1970).

**References and further reading:**

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

**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=2271](http://nzpcn.org.nz/flora_details.asp?ID=2271)



**Caption:** *Thelymitra cyanea*

**Photographer:** Kevin Matthews



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# *Utricularia delicatula*

**Common Name(s):**

bladderwort

**Current Threat Status (2012):**

At Risk - Relict

**Distribution:**

Northern half of North Island (very rare); Chatham Island

**Habitat:**

Coastal to lowland restiad-dominated bogs, in open ground, especially bare, freshly exposed peat, but also found threaded through liverworts and Sphagnum moss. On Chatham Island, it has been found growing on peaty soil on the margins of streams and in similar peaty turf with *Oreomyrrhis* on rock platforms exposed to salt spray and on occasion wave wash.

**Features:**

Tiny leaves (4–6 mm long); flowers are helmet-like, usually 2–3 together, pale lilac to pale lavender, on erect slender stalks 2–3 cm tall; capsules dry, ovoid and filled with tiny seeds. Flowers occur from November to February and the globular fruit are persistent from autumn into winter.

**Flowering:**

November - February

**Fruiting:**

Autumn - Winter

**Threats:**

Habitat destruction: bog drainage; intensive farming; invasion by or regeneration of dense taller vegetation.

**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=213](http://nzpcn.org.nz/flora_details.asp?ID=213)



**Caption:** *Utricularia delicatula*  
**Photographer:** Kevin Matthews



**Caption:** Tuku, Chatham  
(Rekohu) Island  
**Photographer:** John Sawyer