



Waimakariri weed control surveys special natives

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

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INTRODUCTION

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

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

Funding to develop the website was provided by the New Zealand Government's Terrestrial and Freshwater Biodiversity Information System Programme (TFBIS). The website is run by a team of volunteers and is continually improving in both the richness of content and the range of functions it offers.

The species information used on the website has come from a variety of sources which are cited at the bottom of a species page.

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 John Barkla, Cathy Jones, Simon Walls, Nick Singers, Mike Thorsen and many others. The threatened fungi text was written by Eric Mackenzie and Peter Buchanan (Landcare Research) and aquatic plant information was supplied by Paul Champion from NIWA. Colin Ogle has contributed to the exotic species fact sheets.

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, Mike Thorse, Colin Ogle and John Sawyer.

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
- Educating people about plant life through the Network website
- Connecting people through our website, 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 team of botanists that between them have an extensive knowledge of the native plants of New Zealand.

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. 2018](#)). The main threat categories used are: Extinct, Nationally Critical, Nationally Endangered and Nationally 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 ['Conservation status of New Zealand indigenous vascular plants, 2017'](#) by [de Lange et al. \(2018\)](#).

Recently other committees have been established to review the status of non-vascular plants and have produced assessments for New Zealand mosses ([Rolfe et al., 2016](#)) as well as horworts and liverworts ([de Lange et al., 2015](#)).

Helichrysum dimorphum

COMMON NAME

everlasting daisy

SYNONYMS

None

FAMILY

Asteraceae

AUTHORITY

Helichrysum dimorphum Cockayne

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Lianes & Related Trailing Plants - Dicotyledons

NVS CODE

HELDIM

CHROMOSOME NUMBER

2n = 28

CURRENT CONSERVATION STATUS

2018 | Threatened – Nationally Endangered

PREVIOUS CONSERVATION STATUSES

2012 | Threatened – Nationally Vulnerable | Qualifiers: Sp

2009 | At Risk – Declining | Qualifiers: Sp

2004 | Threatened – Nationally Endangered

BRIEF DESCRIPTION

Rare climbing shrub with untidy brownish twigs inhabiting dry inland Canterbury. Leaves of two types: small (5mm) and narrow with a white underside on the base of twigs and scale-like and embedded in fuzzy stem towards the tip of twigs. Flowers small, dry, at tip of twigs.

DISTRIBUTION

Endemic to the South Island. Presently known only from the Poulter, Esk and Puffer catchments where they drain into the Waimakariri River. However, there is also an old record from Piano Flat, Southland.

HABITAT

A species of lowland to montane situations. Usually found on river terraces and alongside river gorges. Always in grey scrub, where it is primarily associated with matagouri (*Discaria toumatou* Raoul) shrubs.



At Poulter Bridge (November). Photographer: John Smith-Dodsworth



Cave Stream. Photographer: Melissa Hutchison

FEATURES

Weakly lianoid, sparingly branched scrambler, producing numerous fine stems up to 8 m long. Juvenile and shade leaves 5 x 2 mm, brown or grey-black, spreading, ovate-oblong, apex subacute and mucronate, upper leaf surface glabrous, under surface covered in white wispy hairs. Leaves of terminal branches or exposed branches, overlapping, scale -like, appressed, 3 x 1 mm, linear-lanceolate, strongly keeled, tomentose, base clad in dense, floccose tomentum. Capitula subcylindric, terminal, 3.5 mm diam., phyllaries (bracts) in 2-3 series, outer bracts oblong, inner narrow-oblong, margins finely toothed. Florets 15-25. Achenes (seeds) narrow-oblong, glabrous, pappus hairs slender and numerous.

SIMILAR TAXA

None

FLOWERING

September - February

FRUITING

October - March

LIFE CYCLE

Pappate achenes are dispersed by wind (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Easily grown from fresh seed and semi-hardwood cuttings. Established plants layer easily. Does best in semi-shade or planted at the base of a shrub through which it can sprawl. Does not like humid climates.

THREATS

Seriously threatened by aerial spraying for gorse (*Ulex europaeus* L.), and by scrub fires. This species often grows within and through matagouri (*Discaria toumatou*) so it is easily overlooked. Matagouri is easily burned and considered to be a pest in some parts of the country. Clearance of matagouri may have been a factor in the historic decline of *Helichrysum dimorphum*, and remains a serious potential threat to this day.

ETYMOLOGY

helichrysum: From the Greek words helios 'sun' and chrysos 'gold', referring to the colour of the flowers of some species

WHERE TO BUY

Occasionally sold in garden centres.

ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange 2 October 2003. Description modified from Allan (1961).

REFERENCES AND FURTHER READING

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

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

CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Helichrysum dimorphum* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network.

<https://www.nzpcn.org.nz/flora/species/helichrysum-dimorphum/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/helichrysum-dimorphum/>

Carmichaelia kirkii

COMMON NAME

Climbing broom, Kirk's broom

SYNONYMS

Carmichaelia gracilis J.B.Armstr., *C. kirkii* var. *strigosa* G.Simpson

FAMILY

Fabaceae

AUTHORITY

Carmichaelia kirkii Hook.f.

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Trees & Shrubs - Dicotyledons

NVS CODE

CRMKIR

CHROMOSOME NUMBER

2n = 32

CURRENT CONSERVATION STATUS

2012 | Threatened – Nationally Vulnerable | Qualifiers: RF

PREVIOUS CONSERVATION STATUSES

2009 | At Risk – Declining | Qualifiers: RF

2004 | Threatened – Nationally Endangered

BRIEF DESCRIPTION

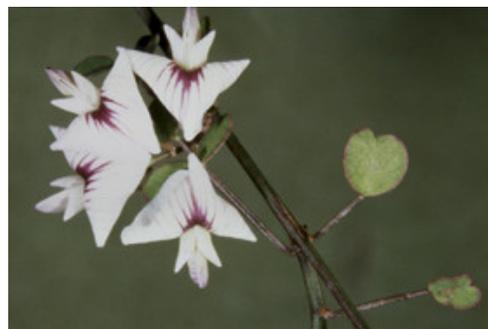
Sprawling or climbing nearly leafless greyish brown shrub. Twigs many, rounded, slightly grooved. Leaves few except in shaded sites or on young plants. Flowers whiteish with darker purple centre, pea-like, in small clusters. Fruit a small sharp-tipped dry pod partly splitting to release the small white mottled hard seeds.

DISTRIBUTION

Endemic. Eastern South Island, from the Awatere River south to Otago

HABITAT

A plant of moderate to high fertility sites. Usually associated with grey scrub communities particularly those along riverbanks and gorges, or on poorly drained river terraces. It is often associated with totara (*Podocarpus totara* var. *totara*) forest, and has also been found in carex dominated wetlands, or within kahikatea (*Dacrycarpus dacrydioides*) dominated forest.



Carmichaelia kirkii. Photographer: Colin Ogle



Photographer: Jan Clayton-Greene

FEATURES

Vine 1-3 m tall, usually climbing, scrambling or sprawling, very rarely a bushy shrub. Branches up to 40 mm diameter, ascending and spreading. Cladodes 70-420 x 1.7-3 mm, spreading, sometimes divaricate, linear, striate, terete, green to bronze-green, hairy or glabrous; leaf nodes 4-12. Leaves 1-5-foliolate, present on seedlings and adults, particularly in shaded situations, terminal leaflet larger; lamina 4.5-8 x 2.5-6 mm, obovate to broad-elliptic, fleshy, green to bronze-green, usually glabrous but sometimes sparsely hairy, apex emarginated, base cuneate; petiole 6-25 mm, green or brown-green; petiolule 0.5-0.9 mm, glabrous, light green. Leaves on cladodes reduced to scales. Stipules 0.7-1 x 0.6-0.8 mm, free, triangular. Inflorescence a 1-5-flowered raceme, cladodes bearing 1-3 racemes per node. Peduncle 2-6 mm long, glabrous or hairy, green or red. Bracts 0.5-1.2 mm long, triangular, sparsely hairy. Pedicel 2.5-4 mm long, glabrous or hairy, green or red. Bracteoles 0.5 x 0.3 mm, narrow-triangular, on or near receptacle or lower part of pedicel, green or red. Calyx 4-5 x 2 mm, campanulate, green sometimes flushed red, glabrous or hairy. Calyx lobes 1.5-2 mm, narrow-triangular, green, usually flushed red. Standard 8-9 x 8.5-12 mm, orbicular or board-obovate, patent, positioned in central part of keel, weakly keeled, margins recurved, apex emarginated, rarely mucronulate; central portion of inner surface red-purple, margins white, sometimes purple-veined; outer surface white with a darkened central part. Wings 6-8 x 2.5-3.5 mm, oblong, shorter than keel, apex obtuse; outer surface white, proximal part pale green; inner surface sometimes purple-veined. Keel 8-9 x 3-3.5 mm, apex obtuse; distal part of inner surface red-purple, proximal part white or pale green. Stamens 6-5-8.5 mm long, dorsal filaments fused for $\frac{3}{4}$ of length, outer stamens free for 2 mm. Pistil 8.5-10 mm long, exerted well beyond stamens; style bearded on upper surface. Pods 12-18 x 4-5.8 mm, broad-elliptic, spreading, dark brown, grey-brown or yellow-brown, both valves partially dehiscent. Beak 3-6 mm long, stout, pungent-tipped. Seeds 2-3.5 x 1.7-2.5 mm, 2-5 per pod, off-white with black or dark purple mottling, broad-elliptic, reniform, oblong-reniform or rounded.

SIMILAR TAXA

Carmichaelia australis R.Br., leafless clematis (*Clematis afoliata*). Climbing broom has mottled seeds and prominently beaked pods, which persist throughout the year. *Carmichaelia australis* is a shrub rather than a climber. *Clematis afoliata* is always leafless.

FLOWERING

November-January

FLOWER COLOURS

Violet/Purple, White

FRUITING

January - June

LIFE CYCLE

Seeds are possibly dispersed by wind and granivory (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Easy from seed or semi-hardwood cuttings. A beautiful lianoid shrub which is best treated as a climber, or allowed to grow up through another shrub. It does best in full sun, and though tolerant of dry conditions, grows better in moist ground. As with most *Carmichaelia* this species does not like humidity.

THREATS

Most *C. kirkii* populations occur on private land. The species is highly palatable and so vulnerable throughout its range of all browsing animals. Though recent surveys have discovered more populations leading to this species being one of few with a lower threat ranking in 2008 vs that in 2009, at many sites there is no recruitment. Several former populations appear to have gone extinct through excessive collection of specimens by botanists.

ETYMOLOGY

carmichaelia: After Carmichael, a botanist

kirkii: After Thomas Kirk (18 January 1828 - 8 March 1898), a NZ botanist and lecturer in natural sciences and regarded as a leader of botanical enquiry in NZ for over three decades. One of his most significant publications was Forest flora of NZ (1889) but he also contributed over 130 papers to the Transactions and Proceedings of the NZ Institute and other journals.

ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange 13 June 2006. Description modified from Heenan (1996).

REFERENCES AND FURTHER READING

Heenan, P. B. 1996: A taxonomic revision of *Carmichaelia* (Fabaceae-Galegeae) in New Zealand. Part 2. *New Zealand Journal of Botany* 34: 157-177

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

CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Carmichaelia kirkii* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/carmichaelia-kirkii/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/carmichaelia-kirkii/>

Coprosma wallii

SYNONYMS

None

FAMILY

Rubiaceae

AUTHORITY

Coprosma wallii Petrie

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Trees & Shrubs - Dicotyledons

NVS CODE

COPWAL

CHROMOSOME NUMBER

2n = 132

CURRENT CONSERVATION STATUS

2012 | At Risk – Declining | Qualifiers: CD, RF

PREVIOUS CONSERVATION STATUSES

2009 | At Risk – Declining | Qualifiers: CD, RF

2004 | Gradual Decline

BRIEF DESCRIPTION

Bushy dark green shrub or small tree with orange under-bark and many very wide-angled branches bearing groups of pairs of small oval leaves and bulging purple fruit. Leaves 5-10mm long, nearly as wide as long, with a triangular hairy ridge on the fuzzy stem between leaf bases. Seeds nearly round.

DISTRIBUTION

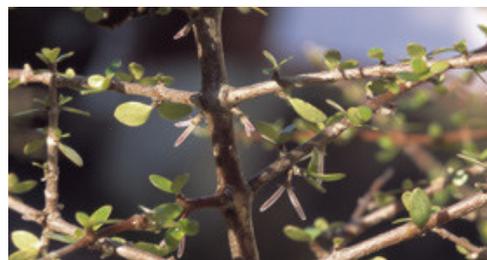
Endemic. North, South and Stewart Islands. In the North Island, rather local and with a predominantly eastern distribution from the Ripia River Headwaters to Wairarapa, with only two western populations at Erua and Paengaroa In in the South Island much more widespread in both the east and west (with new populations still being discovered mainly in the west and south). On Stewart Island, only recently (2000) discovered and still only known from one location.

HABITAT

Occupies a range of habitats from seasonally flooded, alluvial forest prone to very cold winters and dry summers, to riparian forest and subalpine scrub, or as a component of grey scrub or mixed Podocarp forest developed on steeply sloping basaltic or andesitic rock. The key feature of the majority of *C. wallii* habitat is that the substrates are rather fertile and the vegetation is limited by frost, water logging, or severe summer drought. Never associated with broad-leaved canopy trees.



In cultivation, Stokes Valley. Oct 2003.
Photographer: Jeremy Rolfe



In cultivation, Stokes Valley. Oct 2003.
Photographer: Jeremy Rolfe

FEATURES

Shrub to small tree (1.8-)2(-3) m. Trunk stout, clad in dark bubbly bark, under bark dark red. Branches stout, erect then spreading, somewhat pagodiform, branchlets stout, subtetragonous, densely clad in short, appressed, antrorse rufous hairs. Petioles pubescent, c.1 mm. Seedling and juvenile leaves, rhomboid to ovate-oblong, densely clad in long, dark, rufous appressed hairs. Adult leaves leathery, glabrous, 5-9 x 5-7 mm, broad-ovate to suborbicular, broadly ovate-oblong, obtuse, subtruncate at base, dark green to green, upper surface very shiny, veins not evident, under sides paler, midrib and secondary veins evident. Flowers 1(-2-3) on short branchlets. Male without calyx, corolla short, broadly campanulate, lobes broad-ovate, acute. Female corolla funnelform, lobes triangular, acute, Drupe ovoid, didymous, 3 x 4.5 mm, dark violet black to black.

SIMILAR TAXA

Easily recognised through a combination of its tall shrub to small tree habit, dark red under bark, leafy branches bearing numerous rather dark green, shiny, small leaves, and by the dark violet-black strongly twinned (didymous) fruits.

FLOWERING

No information

FRUITING

Fruit may be present throughout the year. However, they are most conspicuous between March and May

LIFE CYCLE

Fleshy drupes are dispersed by frugivory (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Easy from fresh seed. Can be grown from semi-hardwood cuttings. Quite fast growing, doing best in fertile, moist alluvial soils but once established remarkably tolerant of a wide variety of soils and moisture regimes.

THREATS

Although not as threatened as once believed, several North and South Island populations are in vulnerable habitats or persist as remnant stands within rough pasture and/or along roadsides. In these sites recruitment is limiting or absent. Weeds remain a long term threat at virtually all known habitats. As a somewhat cryptic plant it is also vulnerable through the failure to recognise it. Some populations on track sides and near popular scenic attractions have been damaged by track maintenance and in one site the erection of a toilet block.

ETYMOLOGY

coprosma: From the Greek kopros 'dung' and osme 'smell', referring to the foul smell of the species, literally 'dung smell'

WHERE TO BUY

Not commercially available.

ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange 1 August 2003. Description based on Allan (1961).

REFERENCES AND FURTHER READING

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

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

CITATION

Please cite as: de Lange, P.J. (Year at time of access): Coprosma wallii Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/coprosma-wallii/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/coprosma-wallii/>

Luzula celata

COMMON NAME

dwarf woodrush

SYNONYMS

None

FAMILY

Juncaceae

AUTHORITY

Luzula celata Edgar

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Rushes & Allied Plants

NVS CODE

LUZCEL

CHROMOSOME NUMBER

2n = 12

CURRENT CONSERVATION STATUS

2012 | At Risk – Declining | Qualifiers: RR

PREVIOUS CONSERVATION STATUSES

2009 | At Risk – Declining

2004 | Serious Decline

DISTRIBUTION

Endemic. South and Stewart Islands. In the South Island found east of the main divide from Marlborough to Southland.

HABITAT

Coastal to montane. Usually in shingly ground, sandy hollows, river terraces, tarn margins, often found growing within Raoulia mats.

FEATURES

An inconspicuous, creeping woodrush, forming grey-green to brownish cushion-like tufts, usually less than 4cm diameter. Sometime half buried in sand, so that only leaf tips and flowers are visible. Leaves 1-3cm long, 0.5-1mm wide, folded inwards towards base, tips pointed; margins clad in long, thickly clustered, soft white hairs. Flowering stems much shorter than leaves, scarcely elongating as fruit matures. Flowers 2mm long, 6-16 in a single cluster, with minimal stalk.

SIMILAR TAXA

Luzula ulophylla. Luzula celata has hairy leaf margins and flower hidden amongst leaves. L. ulophylla has woolly hairs on back of leaves as well as margins and flowering stems much taller than its leaves.



Luzula celata. Photographer: Cathy Jones



Photo of habitat. Photographer: Cathy Jones

FLOWERING

October to December

FLOWER COLOURS

Brown, White

FRUITING

December to April (but seedheads long persistent)

PROPAGATION TECHNIQUE

Easily grown from fresh seed and division of whole plants.

THREATS

The main threat throughout this species range is loss of habitat, caused by land development, weed invasion and general habitat degradation, especially erosion. Overstocking of paddocks containing this species has been a problem in some locations.

ETYMOLOGY

luzula: Latinized form of the Italian vernacular name (lucciola) for this plant

celata: Hidden

WHERE TO BUY

Not commercially available.

ATTRIBUTION

Fact Sheet by P.J. de Lange (1 September 2003). Description based on Moore & Edgar (1970).

REFERENCES AND FURTHER READING

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

CITATION

Please cite as: de Lange, P.J. (Year at time of access): Luzula celata Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/luzula-celata/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/luzula-celata/>

Carmichaelia uniflora

COMMON NAME

Dwarf Broom

SYNONYMS

Carmichaelia uniflora var. suteri (Colenso) G.Simpson; Carmichaelia uniflora Buchanan; Carmichaelia suteri Colenso

FAMILY

Fabaceae

AUTHORITY

Carmichaelia uniflora Kirk

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Trees & Shrubs - Dicotyledons

NVS CODE

CRMUNI

CHROMOSOME NUMBER

2n = 96

CURRENT CONSERVATION STATUS

2012 | At Risk – Declining | Qualifiers: DP

PREVIOUS CONSERVATION STATUSES

2009 | Data Deficient

2004 | Not Threatened

BRIEF DESCRIPTION

Very small (to 6cm tall) low-growing cushion with scattered erect small flattened twigs that barely poke above the surrounding vegetation. Twigs short, 1-2mm wide. Flowers usually solitary, pea-like, purple striped. Fruit a small dry sharp-tipped pod which splits widely to release the 4-6 hard seeds.

DISTRIBUTION

Endemic. New Zealand: South Island (Nelson, Canterbury, Otago, and Southland).

HABITAT

Inhabiting stable but unconsolidated, sparsely vegetated river bed gravels, outwash fans, terraces, and stony ground.



Waimakariri river, January. Photographer: John Smith-Dodsworth

FEATURES

Dwarf, rhizomatous shrub, up to 20-60 mm tall and 1 m wide, forming a dense mat or tufts of cladodes. Rhizomes becoming increasingly stout and woody with age, 50.0-200.0 × 1.0-2.5 mm. Cladodes filiform, linear, striate, compressed, erect to spreading, green to green-yellow, glabrous, 20.00-60.00 × 0.75-2.00 mm; apex subacute, yellow to yellow-green; leaf nodes 2-14. Leaves simple, broad-obovate to broad-elliptic, fleshy, entire, green, present on seedlings, absent on mature plants, 5.5-8.0 × 3.0-5.0 mm; both surfaces with scattered hairs; apex emarginate to retuse; base cuneate to narrow-obtuse; petiole sparsely hairy, 2.0-2.5 mm long. Leaves on cladodes reduced to a scale, triangular, glabrous, 0.6-1.5 × 0.8-1.4 mm; apex acute. Inflorescence a raceme, 1 per node, each with 1-2 flowers. Peduncle glabrous, occasionally sparsely hairy, green, 4-15 mm long. Bracts, triangular, glabrous, pale green, 0.5-0.8 × 0.5-0.8 mm; apex acute; margin hairy. Pedicel glabrous, occasionally sparsely hairy, pale green, 3.0-7.5 mm long. Bracteoles at top of pedicel, triangular to narrow triangular, glabrous, green and occasionally flushed red, 0.2-0.3 × 0.1-0.2 mm; apex acute; margin hairy. Calyx campanulate, c.2.5 × c.2.5 mm; inner surface glabrous, green; outer surface glabrous or sparsely hairy, green. Calyx lobes triangular, flushed red, c.0.5 mm long; apex acute; margin hairy or glabrous. Bud green. Standard obovate, patent, 8-10 × 6-8 mm; upper surface white, central area purple, sometimes purple-green veined; lower surface green, margin cream-green, sometimes purple-green veined; apex retuse; claw pale green, c. 1.5 mm long. Wings oblong, shorter than keel, 5.0-6.5 × c.2.0 mm; distal area of adaxial surface purple, proximal area green; abaxial surface white, sometimes purple-veined; auricle triangular, pale green, apex obtuse, c.1.25 mm long; claw pale green. Keel 6.0-8.0 × 2.5-3.0 mm; distal area of adaxial surface purple, proximal area pale green; distal area of abaxial surface dark, proximal area pale green; auricle triangular, pale green, c. 0.75 mm long, with obtuse apex; claw pale green, 2.0-2.5 mm long. Stamens 7.5-9.0 mm long; lower filaments connate for c. 2A length and outside filaments free for 1.5-2.5 mm. Pistil exerted beyond stamens, c.10 mm long; style with a ring of hairs below stigma; ovules 9-11. Pod elliptic-oblong, laterally compressed, weakly falcate, black, brown, or grey, one valve dehiscent from base, 7.5-13.0 × 3.0-4.0 mm; beak on adaxial suture, slightly upturned, stout, pungent, 1.5-2 mm long. Seeds oblong-reniform, 2-9 per pod, black, brown, tan, or olive green, 1.2-2.0 × 1.0-1.5 mm.

SIMILAR TAXA

Distinguished from *C. corrugate* Colenso by its narrower, thread-like rhizome; strongly dehiscent pod; cladodes which are narrower, thread-like, much less robust, often shorter, and green in colour; and by the usually single-flowered inflorescence

FLOWERING

October - March

FLOWER COLOURS

Violet/Purple, White

FRUITING

November - May

PROPAGATION TECHNIQUE

Easily grown from seed and hardwood cuttings.

THREATS

Probably threatened. However, there is insufficient data available to make an accurate assessment. It is known to be at risk from browsing animals and through competition from weeds such as pasture grasses.

ETYMOLOGY

carmichaelia: After Carmichael, a botanist

uniflora: Single-flowered

ATTRIBUTION

Description adapted from Heenan (1995)

REFERENCES AND FURTHER READING

Heenan, P.B. 1995: A taxonomic revision of *Carmichaelia* (Fabaceae - Galegeae) in New Zealand (part I). *New Zealand Journal of Botany* 33: 455-475

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

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/carmichaelia-uniflora/>

Myosotis uniflora

SYNONYMS

None

FAMILY

Boraginaceae

AUTHORITY

Myosotis uniflora Hook.f.

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Herbs - Dicotyledons other than Composites

NVS CODE

MYOUNI

CURRENT CONSERVATION STATUS

2012 | At Risk – Naturally Uncommon | Qualifiers: DP, Sp

PREVIOUS CONSERVATION STATUSES

2009 | At Risk – Naturally Uncommon

2004 | Data Deficient

DISTRIBUTION

Endemic. South Island. Eastern from Canterbury to Central Otago

HABITAT

Montane to subalpine. Favouring Stony and shingle river beds, flats and consolidated moraines.

FEATURES

Much-branched tufted perennial herb arising from a long stout central woody taproot. Plants forming compact rounded cushion up to 100 mm diameter. Stems 10-50 mm long, c.5 mm diameter, crowded, ± erect, closely covered with imbricating leaves. Leaves c.5 mm long; base 1.5 mm. wide, membranous, sheathing, fringed with long hairs; lamina narrower, triangular to subulate, ± concave, apex subacute; hairs stiff, appressed, ± overlapping. Flowering branchlets short, not projecting above cushion, their leaves lacking the broad base but otherwise similar to lower leaves. Calyx c.3 mm long, lobes c. 1/2 length, rather broad, subacute, glabrous within, the whole calyx covered outside with uniform stiff appressed overlapping hairs. Corolla yellow fading to white with age, 4-5 mm diameter, tube 5 mm long, long-cylindric, lobes c.2 × 2 mm, rotund, flat; filaments short, anthers 1.5 mm long, tips protruding just above rather large scales; style 2-3× calyx, stigma capitate. Nutlets dark, up to 2.0 × 1.5 mm.

SIMILAR TAXA

A very distinct species unlikely to be confused with any other *Myosotis*, and unique in its preference for stony river beds. In the field this species is easily recognised by the dark green cushions it forms by the closely packed stems and narrow leaves and when flowering by the conspicuous yellow flowers.

FLOWERING

September to November



Bealey River (January). Photographer: John Smith-Dodsworth



Mounds of flowering plants, Pisa Flats. Photographer: John Barkla

FLOWER COLOURS

White, Yellow

FRUITING

November to January

PROPAGATION TECHNIQUE

Difficult - should not be removed from the wild. This species can be grown in an alpine house but it is difficult to maintain.

THREATS

Although currently regarded as Not Threatened *Myosotis uniflora* is an uncommon, mostly sparsely distributed species occupying habitats that are becoming increasingly vulnerable to weed invasion, or use for viticulture. If these trends continue then it is likely that *Myosotis uniflora* will eventually be listed at some of level of threat

ETYMOLOGY

myosotis: Mouse-eared

uniflora: Single-flowered

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.

CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Myosotis uniflora* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/myosotis-uniflora/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/myosotis-uniflora/>

Olearia lineata

SYNONYMS

Olearia virgata var. *lineata* Kirk

FAMILY

Asteraceae

AUTHORITY

Olearia lineata (Kirk) Cockayne

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Trees & Shrubs - Dicotyledons

NVS CODE

OLELIN

CHROMOSOME NUMBER

2n = 108

CURRENT CONSERVATION STATUS

2012 | At Risk – Declining | Qualifiers: PD, RF

PREVIOUS CONSERVATION STATUSES

2009 | At Risk – Declining | Qualifiers: RF, PD

2004 | Sparse

BRIEF DESCRIPTION

Bushy small tree bearing masses of erect square in cross-section twigs that have clusters of small very thin leaves that are white underneath inhabiting damper sites in the southern 2/3 of the South Island. Leaves 15-40mm long by 1-2mm wide, surface not wrinkled. Flowers small, in clusters.

DISTRIBUTION

Endemic. South Island, easterly from north Canterbury south to Southland and Stewart Island.

HABITAT

Lowland to montane (10-300 m a.s.l.) grey scrub, tussock grassland and forest margins. Often on river terraces in or near seepages and ephemeral wetlands, on occasion even growing in shallow water. Also found on the margins of steep river gorges, and in and amongst rock outcrops, boulder field and at the toe of alluvial fans.



Hyde. Photographer: John Barkla



Shrubland, Millers Flat. Photographer: John Barkla

FEATURES

Small tree up to 8 m tall with narrow to broad canopy crowns. Trunk stout, erect, solitary, sometimes several arising from the ground, up to 0.6 m d.b.h. Bark grey or charcoal-grey, firm, deeply furrowed, shedding in tough, corky shards. Branches sparse to numerous, at first ascending then widely spreading; branchlets grey to charcoal grey, more or less square and angled in cross-section, deeply and longitudinally grooved, slender, at first erect then spreading, ultimately pendulous. Brachyblasts 10-30 mm long distantly spaced. Leaves 2-10-fascicled; 20-60 x 0.4-0.8 mm, linear to very narrow-linear, upper surface dark green more or less covered with finely appressed greyish-white indument, glabrate to glabrous with age, undersides clad in soft, white to greyish-white appressed tomentum, margin often strongly revolute. Capitula discoid, 1-8-fascicled, 2-4(-6) mm diameter, pedicellate, pedicels up to 40 mm long; florets 6-10, off-white to white (rarely creamy yellow), involucre bracts 2-4-seriate, narrowly lanceolate to oblanceolate, undersides finely grey-white villous. Cypselas 1-2 mm long, compressed, finely pubescent, puberulent to glabrescent, pappus hairs 2-3 mm long, off white to buff.

SIMILAR TAXA

None - the greyish coloured branches, mature trees with typically spreading canopy crowns, numerous pendulous branchlets, finely linear, greyish-green leaves, and distinctively long pedicellate flowers are unique to this species. *Olearia lineata* cv. *Dartonii* is a popular cultivar grown widely and often erroneously as this species, it has similar but wider green to grey-green leaves with very white undersides and a less pendulous more narrowly erect growth habit. It seems to be a hybrid involving *Olearia lineata* and *O. traversiorum* (F.Muell.) Hook.f.

FLOWERING

November - January

FLOWER COLOURS

White, Yellow

FRUITING

January - April

PROPAGATION TECHNIQUE

Easily grown from semi-hardwood cuttings and fresh seed. A beautiful specimen tree which is very drought tolerant once established but can also tolerate waterlogged soils, and is of course extremely cold tolerant. The fine, linear, grey-green leaves and somewhat spreading pendulous branches and stout tree habit are particularly noteworthy. It deserves to be more widely cultivated than it currently is.

THREATS

Widespread and at times locally abundant (especially in some parts of Central Otago) *O. lineata* is otherwise often known from only widely scattered sites with few individuals. Although widespread the majority of the known populations are not officially protected and recruitment is often lacking. *Olearia lineata* together with the majority of Eastern South Island endemic *Olearia* Sect. *Divaricaster* Heads is the subject of a major Department of Conservation initiated Recovery Plan. As part of that work this species has been subject to intensive survey.

ETYMOLOGY

olearia: Named after Johann Gottfried Olearius, a 17th-century German scholar, writer of hymns and author of *Specimen Florae Hallensis*

lineata: Linear, striped with a parallel line (plumb line)

ATTRIBUTION

Fact sheet prepared by P.J. de Lange for NZPCN (1 June 2013)

CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Olearia lineata* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/olearia-lineata/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/olearia-lineata/>

Isolepis basilaris

COMMON NAME

pygmy clubrush

SYNONYMS

Scirpus basilaris (Hook.f.) C.B.Clarke, *Isolepis novae-zelandiae* Colenso

FAMILY

Cyperaceae

AUTHORITY

Isolepis basilaris Hook.f.

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Sedges

NVS CODE

ISOBAS

CURRENT CONSERVATION STATUS

2018 | At Risk – Declining

PREVIOUS CONSERVATION STATUSES

2012 | Threatened – Nationally Vulnerable | Qualifiers: EF, RR, Sp

2009 | Threatened – Nationally Endangered | Qualifiers: De

2004 | Serious Decline

DISTRIBUTION

Endemic. North and South Islands from Hawkes Bay to Southland.

HABITAT

Coastal, lowland to upland habitats, up to 700m altitude. On damp, sandy or silty margins of lagoons, tarns, ephemeral lakes and rivers, freshwater or brackish.

FEATURES

Minute, moss-like, densely tufted plant forming circular patches 10–100 mm diameter and up to 60 mm tall, bright green above, reddish brown below. Rhizome < 1 mm. diameter, much branched; sheathing bract at each node loose, membranous, with red nerves. Culms < 1.5 rarely up to 30 mm long, < 0.5 mm diameter. Leaves 1–2 on each branch, much > culms, 5–60 mm long, < 0.5 mm wide, setaceous, plano-convex; sheath membranous, red-nerved.

Inflorescence an apparently lateral, single spikelet, or rarely 2, hidden among the leaves, pale green, occasionally with red markings; subtending bract leaf-like, channelled, very much > culm from which it arises and almost = leaves. Spikelets 2.5–3.5 x 1.5–2.0 mm, elliptical or oblong. Glumes 1–2 mm. long, ovate, elliptical, obtuse, white and membranous, or with patches of red on the sides; keel thick, green, occasionally slightly excurrent. Hypogynous bristles 0. Stamens 2–3. Style-branches 2–3. Nut c.0.5 x 0.5 mm, c. 2/3 length of glume, obovoid to suborbicular, plano-convex, dorsally rounded, noticeably apiculate, red-brown to dark brown, almost black, surface often shining but distinctly reticulate.



Close up of plants. Photographer: Andrew Townsend



Herbarium specimen: AK 298647.

Photographer: Jeremy Rolfe, photographed with permission of Auckland Institute and Museum.

SIMILAR TAXA

Isolepis caligenis. *Isolepis basilaris* has 1-2 leaves per tuft, very short flower stems with spikelets hidden amongst leaves and very dark brown nuts, flat on one side. *I. caligenis* has 2-5 leaves per tuft, longer flower stems and pearly grey nuts, rounded on both sides. Occasionally *Isolepis basilaris* with elongated flower stems is difficult to distinguish from *I. caligenis* if fruit is immature.

FLOWERING

September to November

FRUITING

December to April (but seedheads long persistent)

LIFE CYCLE

Nuts are dispersed by water and possibly granivory and attachment (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Easily grown from fresh seed and division of whole plants.

THREATS

Domestic and feral cattle, sheep, horses and pigs are the serious threats throughout this species range, mainly through browse, trampling, and facilitating the spread of weeds. Competition from taller vegetation is significant at many sites. Coastal development (e.g., road widening) and erosion are further common threats to most populations. In some locations plants are threatened by 4-wheel drive vehicles.

ETYMOLOGY

isolepis: From the Greek *isos* (equal) and *lepis* (scale)

basilaris: From Latin 'basis' borrowed originally from Greek, meaning basal

WHERE TO BUY

Not commercially available but plants are held by several Botanic Gardens and specialist growers.

ATTRIBUTION

Description adapted from Moore and Edgar (1970).

REFERENCES AND FURTHER READING

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

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

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

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/isolepis-basilaris/>

Pittosporum patulum

COMMON NAME

pitpat

SYNONYMS

None

FAMILY

Pittosporaceae

AUTHORITY

Pittosporum patulum Hook.f.

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Trees & Shrubs - Dicotyledons

NVS CODE

PITPAT

CHROMOSOME NUMBER

2n = 24

CURRENT CONSERVATION STATUS

2018 | Threatened – Nationally Vulnerable

PREVIOUS CONSERVATION STATUSES

2012 | Threatened – Nationally Endangered | Qualifiers: CD, RF, Sp

2009 | Threatened – Nationally Endangered | Qualifiers: CD, RF, Sp

2004 | Threatened – Nationally Endangered

BRIEF DESCRIPTION

Small tree (tree sized individuals very rare) bearing brownish green leathery leaves that are deeply lobed on juveniles but become smooth as plant ages inhabiting South island mountain valleys. Flowers reddish, on long stalks. Fruit a hard capsule, splitting into two to show the black seeds in a orange pith.

DISTRIBUTION

Endemic to South Island, found in north-west Nelson, and from eastern Nelson south to the head of Lake Hawea.

HABITAT

This is a species of subalpine scrub, and canopy gaps in mountain beech forest. It often occurs in sites that have undergone disturbance (e.g., avalanche chutes, fire induced scrub, and river margins), although it is not always required for regeneration. Strongholds of adults occur in subalpine scrub that are recruiting without disturbance, and bluffs in beech forest are similarly little-disturbed.



Pittosporum patulum. Photographer: Andrew Townsend



Pittosporum patulum. Photographer: Andrew Townsend

FEATURES

Gynodioecious tree up to 5 m tall. Trunk of juvenile and sub adults slender, becoming stouter in adults. Bark firm, pale-brown to grey-brown. Branches ascending to spreading, in juveniles absent or scarce until sub adult stage, becoming more frequent in plants bearing mature foliage; in either case branchlets marked by scars from fallen leaves. Shoots, emergent foliage and peduncles distinctly though sparsely puberulent; hairs fulvous. Leaves coriaceous, dark brown-green, chocolate-brown to dark-green, often blemished along margins with chocolate. Juvenile leaves erecto patent, ascending, 30-60 x 5-8 mm, linear, lamina coarsely toothed, very rarely pinnatifid; leaves of sub adults similar but wider, with margins less deeply toothed, and never pinnatifid; adult foliage crowded toward branchlet ends; petioles stout, 5-15 mm long, lamina 40-50 x 10-20 mm, oblanceolate, narrow-obovate to obovate, rarely elliptic, margins entire, toothed or with fine teeth in upper third, base attenuate, apex obtuse to subacute. Flowers in distinct, terminal, 4-8-10-flowered umbels. Pedicels gracile, 10-20 mm long. Flowers night-fragrant. Sepals 5, 3-6 mm long, narrow-ovate, acute, grey-green pilose hairy, becoming glabrescent. Petals 5, 6-8 mm, broadly lanceolate, apex obtuse to sub acute, recurving almost to base at anthesis, dark-red, pink, very rarely yellow. Male flowers with 5 functional stamens, anthers yellow, stigma rudimentary, rarely functional. Female flowers with 5 rudimentary stamens (often reduced to staminodes), stigma globose, functional. Capsules subglobose, 10 mm diameter, 2-valved, valves initially green, glabrescent, maturing grey-black to charcoal, woody. Mucilage dark orange to red. Seeds 5-8, irregular globose, black, surface glossy.

SIMILAR TAXA

Juvenile plants of *Pittosporum patulum* could be confused with juvenile pokaka (*Elaeocarpus hookerianus* Raoul) and *Aristotelia fruticosa* Hook.f. Species from which *P. patulum* juvenile plants can be distinguished by their tall slender, scarcely branching growth form (divaricating in pokaka and *Aristotelia fruticosa*), and dark brown-green to chocolate brown, deeply toothed, linear leaves (variable in shape and colour in pokaka and *Aristotelia fruticosa*). Adult plants are very distinctive and could not easily be confused with anything else.

FLOWERING

Late spring - mid summer

FLOWER COLOURS

Red/Pink, Yellow

FRUITING

no information

PROPAGATION TECHNIQUE

Grows readily from cuttings and fresh seed, although sometimes seed germination can vary in this species from 1-3 years. An excellent specimen tree. Although it does well in a range of conditions it prefers a fertile, moist soil.

THREATS

Pittosporum patulum is palatable. Ungulates eat juvenile foliage, and possums eat both the juvenile and adult foliage and flowers. Rodents predate seed in litter beneath adult trees, and insect browse can deform new growth. Natural disturbance has eliminated some populations.

ETYMOLOGY

pittosporum: Pitch seed

ATTRIBUTION

Fact sheet prepared for NZPCN by P.J. de Lange 30 August 2006. Description adapted from Cooper (1956).

REFERENCES AND FURTHER READING

Cooper, R.C. 1956: The Australian and New Zealand species of *Pittosporum*. *Annals of the Missouri Botanical Garden* 43: 87-188

[Townsend, A. 1999. *Pittosporum patulum* recovery plan, 1999-2009. Threatened Species Recovery Plan 28. Department of Conservation](#)

CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Pittosporum patulum* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/pittosporum-patum/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/pittosporum-patulum/>

Veronica armstrongii

COMMON NAME

Armstrong's whipcord

SYNONYMS

Leonohebe armstrongii (J.B.Armstr.) Heads, *Veronica armstrongii* Kirk nom. superf., nom. illeg., *Hebe armstrongii* (J.B.Armstr.) Cockayne et Allan

FAMILY

Plantaginaceae

AUTHORITY

Veronica armstrongii J.B.Armstr.

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Trees & Shrubs - Dicotyledons

NVS CODE

HEBARM

CHROMOSOME NUMBER

2n = 84

CURRENT CONSERVATION STATUS

2012 | Threatened – Nationally Endangered | Qualifiers: RF, RR

PREVIOUS CONSERVATION STATUSES

2009 | Threatened – Nationally Endangered | Qualifiers: RF

2004 | Threatened – Nationally Endangered

BRIEF DESCRIPTION

Spreading low shrub bearing untidy narrow short scaly twigs inhabiting the mountain valleys of western Canterbury. Twigs 1.5-2mm wide. Leaves scale-like, pointed, clasping stem, with a hairy margin (lens needed). Flowers white, in groups of 6-8 at tips of twigs.

DISTRIBUTION

Endemic. South Island, Canterbury. Initially recorded from the headwaters of the Rangitata River where it now seems to be extinct. Populations are now known from near Castlehill and in the Nigger Valley. Past records from North West Nelson are based *H. ochracea* M.B.Ashwin, those from the Clarence, *H. hectorii* (Hook.f.) Cockayne et Allan, and those from Kurow seem to be the result of accidental inclusion of cultivated specimens with a wild collection of *H. annulata* (Petrie) Cockayne et Allan.

HABITAT

Apparently confined to bog pine (*Halocarpus bidwillii*) dominated vegetation growing on river terraces, along tarn margins and on small islands within tarns. Seems to require seasonally high water tables, or at least habitats with moderately high levels of available moisture.



Enys Scientific Reserve, in netted enclosure, December 1994. Photographer: G. M. Crowcroft



Enys Scientific Reserve, Castle Hills.

FEATURES

Bushy whipcord hebe up 1 x 1m but usually less. Branches erect or ascending, internodes (0.7-)0.9-1.6 mm, branchlets including leaves 1.5-2(-3) mm wide, leaf bases hairy, fused together, nodal joint distinct or obscure, usually exposed. Leaves persistent on old branchlets. Leaves fused, appressed (when fresh) spreading when drying. Leaf not thickened near apex, apex obtuse, apiculate or subapiculate, margin ciliate, lower surface yellowish-green, veins not evident. Inflorescences terminal, unbranched, with (2-)8(-10) flowers. Flowers sessile, calyx 1.5-2 mm, 3-lobed, lobes ovate or oblong, obtuse or emarginate. Corolla tube hairy inside, 1-1.7 x 1.3-1.6 mm, equal to or shorter than calyx, lobes ovate or elliptic to broadly oblong, obtuse, suberect to patent, longer than corolla tube, white or mauve, if mauve fading to white with age. Stamen filaments 2-3 mm, anthers yellow or tinged pink 1.4-1.6 mm. Ovary globose, 0.8-1 mm. Capsules obtuse 2.3 x 1.6 mm.

SIMILAR TAXA

Closely allied to *Veronica annulata* and *V. salicornioides*, and has been confused with *V. ochracea*. It occurs in the wild with none of these species. It is most likely to be confused with *Veronica annulata* from which it differs by the more slender branchlets, slightly mucronate (leaves with a fine, sharp leaf extension), and by the foliage being less tightly overlapping and not so appressed to the stem. Other key differences between *Veronica armstrongii* and *V. annulata* are that *V. annulata* is diploid ($2n = 42$) and *V. armstrongii* tetraploid ($2n = 84$) and both species are ecologically separated (see also *V. annulata*).

FLOWERING

October - January

FLOWER COLOURS

Violet/Purple, White

FRUITING

December to November

PROPAGATION TECHNIQUE

Easily grown from fresh seed and semi hardwood cuttings. Dislikes humidity. It has been observed that cultivated plants, particularly those grown in the North Island rarely flower. It would seem that a cold winter and very hot, dry summer is the stimulus needed to ensure good flowering.

THREATS

Seriously threatened through loss of habitat. This species seems to require permanently damp or boggy ground, and usually grows amongst bog pine (*Halocarpus bidwillii*) adjacent tarns or on swampy alluvial flats. Of the two populations known, one has declined despite intensive management probably because the habitat has dried out, and is now persisting only due to regular

ETYMOLOGY

veronica: Named after Saint Veronica, who gave Jesus her veil to wipe his brow as he carried the cross through Jerusalem, perhaps because the common name of this plant is 'speedwell'. The name Veronica is often believed to derive from the Latin *vera* 'truth' and *iconica* 'image', but it is actually derived from the Macedonian name Berenice which means 'bearer of victory'.

armstrongii: Named either after Joseph Francis Armstrong (1820-1902) or his son John Beattie Armstrong (1850-1926).

WHERE TO BUY

Occasionally sold in garden centres. This species was quite commonly cultivated in the 1970s but since then it has been virtually replaced by *Veronica (Hebe) ochracea*, which is often sold as *Hebe armstrongii* or *H. armstrongii* 'James Stirling'. Some garden centres have now correctly relabelled their stock of that cultivar as *H. ochracea* 'James Stirling'. In the North Island *Veronica armstrongii* will not flower unless it has experienced a very cold winter.

NOTES ON ETYMOLOGY

Named after Joseph Francis Armstrong, who collected the type specimen.

ATTRIBUTION

Fact sheet prepared for NZPCN by P.J. de Lange 1 October 2006. Description based on Bayly & Kellow (2006).

REFERENCES AND FURTHER READING

Bayly, M.J.; Kellow, A.V. *Hebes, identification, classification and biology*. Wellington, Te Papa Press

CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Veronica armstrongii* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/veronica-armstrongii/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/veronica-armstrongii/>

Cardamine magnifica

COMMON NAME

Castle Hill bittercress

SYNONYMS

None - first described in 2019

FAMILY

Brassicaceae

AUTHORITY

Cardamine magnifica Heenan

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Herbs - Dicotyledons other than Composites

CURRENT CONSERVATION STATUS

2019 | Threatened – Nationally Critical | Qualifiers: DP

BRIEF DESCRIPTION

Allied to *Cardamine glara* from which it differs by its more robust growth habit, strongly rhizomatous stems, larger and thicker leaves, conspicuous and larger flowers, larger sepals and petals, longer anthers, filaments and styles, and longer seeds with a winged margin.

DISTRIBUTION

Endemic. South Island, Canterbury, Castle Hill Basin (including Castle Hill, Gorge Hill, and Prebble Hill).

HABITAT

A plant inhabiting fine-grained limestone scree, stony colluvium, and also growing on the margins of associated sparsely vegetated, stable to semi-stable limestone rock outcrops and bluffs.



Castle hill basin, Canterbury. Photographer: Peter de Lange



Castle hill basin, Canterbury. Photographer: Peter de Lange

FEATURES

Perennial herb, single rosette or with short lateral branches, stem and branches 1.0–1.5 mm diameter, strongly rhizomatous. Leaves up to 80 mm long, pinnatisect; lamina 10.2–55.0 × 12.0–28.0 mm, grey-green, light green, greenish-yellow, sometimes purplish beneath, coriaceous, usually glabrous, occasionally with sparsely hairy margins and petiole. Terminal pinna 4.0–16.0 × 4.0–17.0 mm, usually simple, sometimes with 1–2 very shallow lobes, orbicular, orbicular-rhomboid, to broadly elliptic-rhomboid, margin often irregular, apex obtuse with a conspicuous hydathode, base obtuse, truncate or weakly cordate and sometimes oblique. Lateral pinnae 2–4, 2.0–11.0 × 2.0–10.0 mm, orbicular, orbicular-rhomboid, to broadly elliptic-rhomboid, petiolule 0.5–8.0 mm long. Petiole up to 65 mm long; hairs septate and 0.3–0.4 mm long. Cauline leaves similar to rosette leaves but smaller and with fewer lateral pinnae. Inflorescence racemose, 7–15-flowered; peduncle up to 140 mm long, 0.8–1.4 mm diam. at base, upright, glabrous. Pedicels 12.0–37.0 mm long, 0.4–0.5 mm diam., glabrous. Sepals 2.6–4.5 × 1.5–2.2 mm, elliptic-oblong to broadly elliptic, ± saccate, green or red-brown, usually glabrous or occasionally sparsely hairy in distal half, margin translucent or white, membranous, apex obtuse, base truncate. Petals 7.6–11.3 × 3.8–5.0 mm, white, limb obovate to broadly elliptic; apex obtuse; base cuneate, tapering to a 1.0–1.4 mm long claw. Stamens 6; median filaments 4, 3.6–4.0 mm long; lateral filaments 2, 3.2–3.4 mm long; anthers 0.8–0.9 mm long, cream to pale yellow, when dehiscent held at a similar height to or slightly below the stigma. Ovary 3.5–4.2 mm long, 0.5–0.6 mm diam., ± terete, green, glabrous; ovules 18–22; style 2.0–4.0 mm long, ± terete; stigma 0.7–0.8 mm diam. Siliques 33.0–40.0 × 1.5–1.8 mm, glabrous, style 1.8–3.0 mm long; valves green to red-brown at maturity; straw-coloured when dehiscent, replum 0.3–0.4 mm wide. Seeds 1.4–1.9 mm long, 0.7–1.1 mm wide, 0.3–0.5 mm thick, broad-oblong, oblong to oblong-elliptic, yellowbrown to henna; wing present.

SIMILAR TAXA

At Castle Hill Basin, *Cardamine magnifica* occurs with *C. coronata*, *C. glara* and *C. intonsa*. In comparison to *C. glara*, *C. magnifica* has a more robust growth habit, strongly rhizomatous stems, thicker, more robust and larger leaves, conspicuous and larger flowers, larger sepals and petals, longer anthers, filaments and styles, and longer seeds with a winged margin. *Cardamine coronata* is readily distinguished by its leaflet axillary hydathodes and the hairy silique, *C. intonsa* has hairy leaves and siliques, and both species have smaller sepals, petals, anthers, filaments, and seeds.

FLOWERING

October - December

FLOWER COLOURS

White, Yellow

FRUITING

December - March

PROPAGATION TECHNIQUE

Not known from cultivation.

THREATS

Heenan & Molloy (2019) recommend that *Cardamine magnifica* be assessed as 'Threatened, Nationally Critical' (Criterion "A" of very small population (natural or unnatural), however they also note that following criteria for 'Nationally Critical' also apply: A(1) < 250 mature individuals and A(3) total area of occupancy ≤ 1 hectare see Townsend et al. (2008). Heenan & Molloy (2019) also advise that the species be qualified 'DP' (data poor) due to the lack of population size and trend data (see Townsend et al. 2008).

ETYMOLOGY

cardamine: From the Greek name kárdamon, referring to an Indian spice

magnifica: Meaning 'splendid'

ATTRIBUTION

Fact sheet prepared by P.J. de Lange (5 September 2019). Description from Heenan & Molloy (2019).

REFERENCES AND FURTHER READING

Heenan, P.B. and Molloy, B.P.J. 2019: Five new and Nationally Threatened taxa of *Brachyscome*, *Cardamine*, *Convolvulus*, *Geranium* and *Ranunculus* obligate to vulnerable limestone habitats, eastern South Island, New Zealand. *Phytotaxa* 415(1): 32-48.

Townsend, A.J., de Lange, P.J., Norton, D.A., Molloy, J., Miskelly, C. and Duffy, C. 2008: *The New Zealand Threat Classification System Manual*. Department of Conservation, Wellington, 35 pp.

CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Cardamine magnifica* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/cardamine-magnifica/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/cardamine-magnifica/>

Lepidium solandri

COMMON NAME

Maniototo peppergrass

SYNONYMS

L. sisymbrioides subsp. *solandri* (Kirk) Thell., *L. sisymbrioides* subsp. *solandri* var. *typicum* Thell., *Lepidium matau* Petrie, *Lepidium sisymbrioides* subsp. *matau* var. *lobulatum* Thell., *Lepidium sisymbrioides* subsp. *matau* (Petrie) Thell.

FAMILY

Brassicaceae

AUTHORITY

Lepidium solandri Kirk

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Herbs - Dicotyledons other than Composites

NVS CODE

LEPSOL

CURRENT CONSERVATION STATUS

2018 | Threatened – Nationally Critical

PREVIOUS CONSERVATION STATUSES

2012 | Threatened – Nationally Endangered | Qualifiers: DP, Sp

2009 | Threatened – Nationally Endangered | Qualifiers: DP

2004 | Threatened – Nationally Critical

DISTRIBUTION

Endemic to S. Island, E. of the main divide from N. Canterbury to C. Otago (Galloway district, Manuherikia Valley)

HABITAT

Short and tall tussock grassland, bare hillsides, salt pans, grey scrub and other poorly vegetated ground. On open clay or salt pans, limestone talus, gravel veneers overlying schist, mudstone, or eroded silts and clays.



Lepidium solandri. Photographer: John Barkla



Close up, *Lepidium solandri*, Springvale, Central Otago. Photographer: John Barkla

FEATURES

Perennial dioecious herb, with up to 24 compact, leafy rosettes. Rootstock deep rooted, up to 28 mm diam. near crown; stems spreading to erect, up to 60 mm long, 10.0 mm wide. Basal and lower stem leaves persistent, pinnatifid, pinnate, to bipinnatifid, narrow-oblong to oblong, up to 100 mm long, green, green-brown, or brown, central part of lamina 0.7–6.2 mm wide; pinnae in 14–32 pairs, linear, obovate or broadly oblong, with up to 5 secondary pinnae, terminal pinnae 3.0–16.0 x 1.0–4.9 mm, lateral pinnae 2.6–11.3 x 0.8–3.9 mm. Middle stem leaves similar, often becoming shallowly pinnatifid, serrate, or entire. Cauline leaves 2.5–19.8 x 1.2–9.8 mm, with up to 3 serrations or small lobes, or entire. Inflorescences terminal, 1.5–16.0 cm long, 0.8–3.7 mm diam. at base, usually spreading to ascending, with up to 12 lateral branches, glabrous to sparsely hairy; pedicels 2.5– 6.5 mm long, 0.2–0.35 mm wide, slightly recurved, adaxial surface glabrous to moderately hairy, abaxial surface glabrous to rarely sparsely hairy. Flowers up to 4 mm wide. Sepals 0.7–1.3 x 0.7–1.6 mm, green to maroon, sparsely to moderately hairy, rarely glabrous, margins scarious, apex obtuse. Petals usually absent, rarely present and then clawed, white, limb obovate, apex emarginate; males: 1.3–1.5 mm long; females: 0.8–1.1 mm long. Female flowers: ovary 1.0–2.4 x 1.1–1.8 mm, usually orbicular to rhomboid, sometimes ovate, sparsely to moderately hairy, rarely glabrous; style up to 0.1–0.4 mm long; stigma 0.3–0.4 mm wide; 3–7 staminodes, 0.8–1.4 mm long, rarely with malformed anthers to 0.3 mm long. Male flowers: 4–6 stamens, 1.5–2.8 mm long, white; anthers 0.3–0.6 mm long, white or maroon; ovary rudimentary, 0.2–1.1 x 0.3–1.3 mm. Nectaries 0.25–0.5 mm long, green, green-red, to red, oblong. Siliques 3.1–5.0 x 2.3–3.8 mm, usually orbicular to rhomboid, sometimes ovate, suture usually maroon, apex emarginate to retuse, style base often persistent. Seed usually obovate, rarely obovateoblong, straighter along one margin, compressed but with broad rounded margins, 1.7–2.5 mm long, not winged; both surfaces with a distinct groove from hilum at base towards apex, and the seed folded around it; apex broad and rounded; base cuneate or slightly rounded. Testa dull, orange or orange-brown to dark henna, with a fine reticulum of very thickwalled cells.

SIMILAR TAXA

Distinguished from *L. sisymbrioides* by shorter, wider cauline leaves, shorter terminal and primary pinnae with less frequent secondary lobing; more hairy sepals and ovaries; broader ovaries; longer stamen filaments; and ecology.

FLOWERING

September - January

FLOWER COLOURS

Green, White

FRUITING

September - February

LIFE CYCLE

Mucilaginous seeds are dispersed by attachment and possibly wind and water (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Easily grown from fresh seed.

THREATS

Less than 1000 plants are known in the wild. Few sites protected. All sites threatened by weed competition, animal browsing, and for most sites changes in land-use management.

ETYMOLOGY

lepidium: Scale-shaped (pods)

solandri: Named after Daniel Carlsson Solander (19 February 1733 - 13 May 1782) who was a Swedish naturalist and an apostle of Carl Linnaeus.

WHERE TO BUY

Not commercially available.

ATTRIBUTION

Description from: Heenan et al 2007.

REFERENCES AND FURTHER READING

Allen, R.B. 200. Inland *Lepidium* recovery plan 200-2019. Threatened Species Recovery Plan 32. Department of Conservation

Heenan, P.B.; Mitchell, A.D.; McLenachan, P.A.; Lockhart, P.J.; de Lange, P.J. 2007: Natural variation and conservation of *Lepidium sisymbrioides* Hook.f. and *L. solandri* Kirk (Brassicaceae) in South Island, New Zealand, based on morphological and DNA sequence data. *New Zealand Journal of Botany* 45: 237-264.

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

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/lepidium-solandri/>

Myosotis traversii var. cinerascens

SYNONYMS

Myosotis cinerascens Petrie

FAMILY

Boraginaceae

AUTHORITY

Myosotis traversii var. *cinerascens* (Petrie) L.B.Moore

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Herbs - Dicotyledons other than Composites

CURRENT CONSERVATION STATUS

2012 | Extinct

PREVIOUS CONSERVATION STATUSES

2009 | Extinct

2004 | Extinct

DISTRIBUTION

Endemic. South Island, Canterbury, Castle Hill Basin only.

HABITAT

A limestone endemic restricted to the Castle Hill Basin. Herbarium details provide few clues as to its habitat but it is generally assumed from the few notes available that it was found growing on exposed limestone cliff faces, crevices and possibly in associated talus

FEATURES

Tufted, greyish green, hairy, rosette forming herb. Rosette leaves numerous, spatulate, 20-70 x 40-90 mm, petiole broad, ill-defined, hairs numerous, on upper surface smoothly appressed, overlapping of varying lengths, hairs on undersides short, not retrorse. Lateral branches ascending to erect, up to 150 mm long, internodes < leaves. Upper stem leaves 12-20 mm, oblong, narrowing to subacute tip; hairs of upper surface appressed, short, those of undersides similar but shorter, interspersed with longer hooked hairs. Inflorescence a compact, many-flowered cyme, carried 10-20(-30) mm above leaves when fruiting, occasionally with a leafy bract above the lowest division. Flowers probably white may have been pale lemon.

SIMILAR TAXA

The most recent treatment of New Zealand *Myosotis*, that offered by Moore (in Allan 1961, *Flora of New Zealand*, Vol. 1, p. 817-818) places this plant within *M. traversii* Hook.f., as one of two distinct varieties. From the type variety it, and var. *cantabrica* L.B.Moore are distinguished by the presence of many hooked hairs on the undersurface of the upper stem leaves. From var. *cantabrica* it is distinguished by the short, smoothly appressed leaf hairs and elongated fruiting inflorescence.

FLOWERING

Unknown

FLOWER COLOURS

White, Yellow

FRUITING

February

PROPAGATION TECHNIQUE

Unknown. As a relatively low altitude plant of limestone outcrops it may have been reasonably easy to cultivate from rooted pieces and fresh seed.

THREATS

Unknown. This plant is known from only a handful of collections made during the last 1800s and early 1900s. It has not been confirmed from the wild since that time. Possibly, as is usual in New Zealand members of this genus, it occupied a very localised, specific habitat, from which it was eliminated by a combination of over collection and habitat modification through weed invasion.

ETYMOLOGY

myosotis: Mouse-eared

traversii: Named after William Thomas Locke Travers (1819-1903) who was an Irish lawyer, magistrate, politician, explorer, naturalist, photographer. He lived in New Zealand from 1849 and was a fellow of the Linnean Society.

cinerascens: Becoming ash-coloured

Where To Buy

Extinct.

Cultural Use/Importance

The plant has not been specifically searched for at its only known habitat. However, the Castle Hill area is popular with botanists and there have been several unsuccessful ad hoc surveys. One problem is that *M. traversii* var. *cantabrica* L.B.Moore occurs in the the same general area, and it is not always easy to separate from var. *cinerascens*. Opinion is currently divided as to whether var. *cinerascens* is a valid species or variety. Some botanists believe the few herbarium specimens are evidence that this plant is actually an uncommon hybrid between *M. traversii* var. *cantabrica* and another one of the three or four other *Myosotis* species which occur in the general area. On advice from Dr B.P.J. Molloy (pers. comm.), NZPCN retains *M. traversii* var. *cinerascens*, although not at the species rank this botanist advocates. New Zealand *Myosotis* are badly in need of a full taxonomic treatment using modern techniques.

ATTRIBUTION

Fact Sheet prepared by NZPCN by P.J. de Lange 1 February 2008. Description 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.

CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Myosotis traversii* var. *cinerascens* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network.

<https://www.nzpcn.org.nz/flora/species/myosotis-traversii-var-cinerascens/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/myosotis-traversii-var-cinerascens/>

Veronica cupressoides

COMMON NAME

cypress hebe

SYNONYMS

Hebe cupressoides (Hook.f.) Andersen, *Hebe cupressoides* (Hook.f.) Cockayne et Allan nom. illeg., *Leonohebe cupressoides* (Hook.f.) Heads

FAMILY

Plantaginaceae

AUTHORITY

Veronica cupressoides Hook.f.

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

Yes

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Trees & Shrubs - Dicotyledons

NVS CODE

LEOCUP

CHROMOSOME NUMBER

2n = 42

CURRENT CONSERVATION STATUS

2012 | Threatened – Nationally Endangered | Qualifiers: RF

PREVIOUS CONSERVATION STATUSES

2009 | Threatened – Nationally Endangered | Qualifiers: RF

2004 | Threatened – Nationally Vulnerable

BRIEF DESCRIPTION

Rare bushy shrub bearing masses of thin green slightly knobbly leafless twigs that have clusters of pinkish flowers at tips. Leaves scale like, 1-2mm long, triangular, spaced along and clasping the stem. Flowers with long projecting filaments. Fruit a dry rounded capsule.

DISTRIBUTION

Endemic. Eastern South Island, occurring historically recorded from 35 sites extending from Marlborough south to Otago.

HABITAT

Veronica cupressoides is a plant of grey scrub communities and occurs across a range of sites from those that have been recently influenced by disturbance (especially river flooding and slips) to more stable sites such as rock outcrops and bouldery moraine.



Photographer: Neil Simpson



Flowering branch of *Leonohebe cupressioides*.
Photographer: David Norton

FEATURES

Aromatic bushy shrub up to 3 × 2 m. Branches erect, whip-like; branches green, grey-green, glaucous; internodes 1.5–6.5 mm; branchlets, including leaves 1.0–3.7 mm wide; leaf bases connate, hairy or glabrous; nodal joint distinct, exposed; leaves not readily abscising, persistent. Leaves connate, appressed; lamina 0.8–2.0 × 0.4–2.0 mm; deltoid, apex acute to obtuse; margin ciliolate or glandular-ciliolate, lower surface glaucous or glaucescent or yellowish-green, glabrous or covered in minute glandular hairs. Juvenile leaves pinnatifid, glabrous or puberulent. Inflorescences 2–22-flowered, terminal, unbranched, 3–40 mm long, rachis 2–33 mm long, glabrous or hairy. Bracts opposite and decussate, shortly connate or free, ovate or deltoid, obtuse or subacute, externally hairy, hairs glandular. Flowers hermaphrodite, mostly sessile. Calyx 1.3–2.0 mm long, 2–4-lobed; lobes acuminate or emarginate, glandular ciliolate, especially externally. Corolla tube 0.9–1.4 × 0.8–1.1 mm, internally hairy; lobes longer than corolla tube, inner surface papillate, cream, white, pale blue, pink or mauve at anthesis, white, cream, pink or mauve with age, obtuse, suberect to recurved, corolla throat pink, mauve or white. Stamen filaments 2.1–3.0 mm long, coloured cream, pink or mauve when young, fading white; anthers 0.9–1.2 mm, reddish-pink to purplish-mauve. Ovary 0.8–1.1 mm long, ovoid or globose, apex didymous. Capsules 1.9–2.4 × 0.9–1.4 mm, angustiseptate, grooved along septum, emarginate, septicidal split extending 1/3-way to base, loculicidal split extending up to 1/3-way to base. Seeds 0.7–1.1 × 0.4–0.6 mm, weakly flattened, ovoid to ellipsoid-oblong or obovoid, pale brown.

SIMILAR TAXA

Veronica cupressoides is superficially similar to *V. propinqua* from which it differs by its finer branches, blue-green branchlets and wide spaces between scale leaves. Furthermore the foliage of *V. cupressoides* is very aromatic smelling strongly of turpentine. In contrast *Veronica propinqua* has white flowers, non aromatic foliage, green branchlets, with a shorter gap between the pairs of scale leaves.

FLOWERING

November - February

FLOWER COLOURS

Blue, Violet/Purple

FRUITING

March - May

LIFE CYCLE

Seeds are wind dispersed (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Easy from semi-hardwood and hardwood cuttings and fresh seed. In cultivation flowering plants often produce numerous spontaneous seedlings. Rarely flowers in lowland, warmer or more humid climates.

THREATS

Habitat loss has been a key factor in the historical decline of *Leonohebe cupressoides*. The dominant threats now are recruitment failure caused by invasive herbaceous plants that rapidly occupy the disturbed sites this species requires to germinate in. Grazing animals, including domestic stock and wild species such as rabbits and hares can seriously damage or kill plants. Small populations are vulnerable to local extinction through disturbance such as river flooding, and fire – particularly as this species is extremely flammable wet or dry.

ETYMOLOGY

veronica: Named after Saint Veronica, who gave Jesus her veil to wipe his brow as he carried the cross through Jerusalem, perhaps because the common name of this plant is 'speedwell'. The name Veronica is often believed to derive from the Latin *vera* 'truth' and *iconica* 'image', but it is actually derived from the Macedonian name Berenice which means 'bearer of victory'.

WHERE TO BUY

Occasionally available from plant nurseries.

ATTRIBUTION

Fact Sheet Prepared by P.J. de Lange (1 November 2009). Description based on Bayly & Kellow (2006) but see also de Lange et (2010)

REFERENCES AND FURTHER READING

- Bayly M.; Kellow A. 2006: An Illustrated Guide to New Zealand Hebes. Te Papa Press: Wellington
- 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.
- Norton, D.A. 2000. Hebe cupressoides recovery plan, 2000-2010. Threatened Species Recovery Plan 33. Department of Conservation
- 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

CITATION

Please cite as: de Lange, P.J. (Year at time of access): Veronica cupressoides Fact Sheet (content continuously updated). New Zealand Plant Conservation Network.
<https://www.nzpcn.org.nz/flora/species/veronica-cupressoides/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/veronica-cupressoides/>

Myosotis colensoi

COMMON NAME

Castle Hill forget-me not, NZ forget-me-not

SYNONYMS

Exarrhena colensoi Kirk, *M. decora* Kirk

FAMILY

Boraginaceae

AUTHORITY

Myosotis colensoi (Kirk) Macbride

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Herbs - Dicotyledons other than Composites

NVS CODE

MYOCOL

CHROMOSOME NUMBER

2n = 46

CURRENT CONSERVATION STATUS

2012 | Threatened – Nationally Critical | Qualifiers: RR

PREVIOUS CONSERVATION STATUSES

2009 | Threatened – Nationally Critical | Qualifiers: RR

2004 | Threatened – Nationally Endangered

DISTRIBUTION

Eastern South Island: South Marlborough to Canterbury.

HABITAT

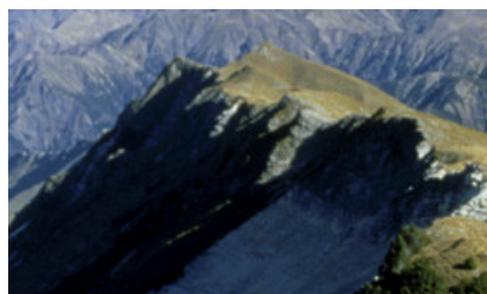
Limestone talus and thin soils over limestone rock. Most common in open areas of relatively fine limestone debris.

FEATURES

Perennial herb forming small cushions or loose mats on open limestone rock, regolith and associated rendzina soils. Leaves in dense, many-leaved rosettes. Petiole short and broad. Rosette-leaves 20-40 x 5-10 mm, grey-green to silvery-grey above, pale green beneath, lanceolate, apex subacute, base cuneate to attenuate; upper surface covered with tightly appressed, more or less overlapping, intermingled short and long straight hairs, lower surface, sparsely hairy to glabrescent or glabrous; hairs when present, appressed, more or less of equal length. Lateral branches decumbent, 40-80 mm long, leafy, internodes < leaves. Stem leaves and bracts oblong, 10 x 2-3(-5) mm, upper most sessile; hairs as for rosette leaves. Inflorescence cymose, with cymes usually simple, few- to many-flowered. Internodes 2-3 mm. pedicels 2-3 mm. Calyx 5 mm when flowering elongating to 7 mm in fruit; lobes 2-3 mm, broad, subacute, surface covered with appressed, short and long straight hairs of almost equal proportions, intermingled. Flowers white. Corolla 8-12 mm diameter, tube 5 mm long, cylindric, corolla-lobes, 3 x 2.5-3 mm, recurved; filaments short, anthers 2 mm long, tips just protruding above scales. Style up to 10 mm long, stigma capitate. Nutlets 1.4-1.7 x 0.8-1.2 mm, ovate to ovate-elliptic, black, surface glossy.



Flowers. Photographer: Cathy Jones



Habitat. Photographer: Cathy Jones

SIMILAR TAXA

From the other *Myosotis* species present in New Zealand, *M. colensoi* can be recognised by its ecological preference for open limestone rock and associated soils, its densely leafy, cushions or mat-forming habit, grey-green to silvery-grey leaves, and rather large, short-stalked, white flowers. It has a superficial similarity of *M. cheesemanii* because both species have a low cushion to mat-forming habit, and rather leafy, appressed lateral branches. However in *M. colensoi* the lateral branches extend well beyond the rosette leaves, while those of *M. cheesemanii* are very short and so hidden within the rosette-leaves of this densely packed cushion-forming plant. The leaves of *M. cheesemanii* are 12 x 5 mm, elliptic, greener with the upper surface clad in closely appressed, overlapping hairs of equal length.

FLOWERING

October - January

FLOWER COLOURS

White

FRUITING

December - February

PROPAGATION TECHNIQUE

An ideal and attractive rock-garden or pot plant. Easily grown from rooted pieces and fresh seed. Best kept in a small pot or planted in a sunny, free draining soil enriched with lime. Will not tolerate humidity, excessive soil moisture or competition from weeds. This is one of the few New Zealand forget-me-nots that is commonly cultivated. In good conditions it often throws seedlings.

THREATS

Threatened throughout its range by weeds such as the hawkweeds (*Pilosella* spp.), and grasses such as browntop (*Agrostis capillaris*) and cocksfoot (*Dactylis glomerata*). Although generally not browsed by animals, plants are often dug out by rabbits, or killed through trampling. recreational rock climbers pose a minor threat to some of the populations at Castlehill. The greater part of the Castlehill population is on private land where it may be vulnerable to changing landuse practises and potential quarrying for limestone.

ETYMOLOGY

myosotis: Mouse-eared

colensoi: Named after William Colenso (7 November 1811 - 10 February 1899) who was a Cornish Christian missionary to New Zealand, and also a printer, botanist, explorer and politician.

WHERE TO BUY

Occasionally available from specialist native plant nurseries and some main, more general garden centres.

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.

CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Myosotis colensoi* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/myosotis-colensoi/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/myosotis-colensoi/>

Pachycladon cheesemanii

COMMON NAME

dryland cress

SYNONYMS

Sisymbrium novae-zelandiae Hook.f., *Ischnocarpus novae-zelandiae* (Hook.f.) O.E.Schulz

FAMILY

Brassicaceae

AUTHORITY

Pachycladon cheesemanii Heenan et A. Mitch.

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Herbs - Dicotyledons other than Composites

NVS CODE

PACCHE

CHROMOSOME NUMBER

2n = 20

CURRENT CONSERVATION STATUS

2018 | Threatened – Nationally Endangered

PREVIOUS CONSERVATION STATUSES

2012 | Threatened – Nationally Vulnerable | Qualifiers: Sp

2009 | Threatened – Nationally Vulnerable | Qualifiers: Sp

2004 | Gradual Decline

DISTRIBUTION

Endemic to the South Island where it occurs east of the main divide from Marlborough south to the northern portion of Southland

HABITAT

Lowland to subalpine tussock grassland, grey scrub, boulderfalls, talus, stable scree, rock overhangs and cliff faces. Now virtually confined to inaccessible habitats such as cliff faces, rock overhangs and amongst dense grey scrub.



Pachycladon cheesemanii, Hector Mountains.
Photographer: John Barkla



Pachycladon cheesemanii, Old Woman Range.
Photographer: John Barkla

FEATURES

Robust, green, perennial herb, up to 500 mm tall. Basal leaves 15–80 mm long, simple, initially sparsely covered with branched hairs, becoming glabrescent with age; early basal leaves elliptic, entire or with a few blunt serrations, later leaves pinnatifid to pinnatisect, lobed 2–4 times in opposite to subopposite pairs; lamina, 10–60 × 8–30 mm; petioles 5–20 mm long. Stem leaves 1–4, lower ones similar to basal leaves, upper up to 10 × 3 mm, linear, minutely serrated. Inflorescences 150–500 mm long, up to 2.75 mm diameter at base, racemose; peduncle, pedicels, and siliques without glaucous bloom. Pedicels 10–15 mm long, glabrous. Sepals 3.3–3.5 × 1.4–1.5 mm, green with pale margins, oblong to elliptic, apex subacute. Petals 5.0–6.7 × 1.5–2.2 mm, white, obovate to obovate–spatulate, apex obtuse. Filaments 4–6, 3.3–4.2 mm long; anthers yellow. Ovary dorsiventrally compressed, green, glabrous; style indistinct, virtually absent; ovules 90–165. Siliques up to 60 mm long, green, without glaucous bloom, compressed, usually curved, glabrous. Seeds 0.8–1.1 mm long, pale brown, short–oblong.

SIMILAR TAXA

Most likely to be confused with the very similar *P. exile* (Heenan) Heenan et A.Mitch, which is a much smaller plant that *P. cheesemanii* with a circular ovary. *P. exile* is now only known from a single site in the Waitaki Valley (see fact sheet for that species for further information).

FLOWERING

September - February

FLOWER COLOURS

White

FRUITING

October - March

PROPAGATION TECHNIQUE

Difficult and should not be removed from the wild

THREATS

Formerly widespread along the eastern side of the South Island from the Wairau River, Marlborough to northern Southland. Although it is still found within this range but populations usually small and widely scattered. The exact cause of its decline is not clear though it is palatable and browsing animals and introduced pests of brassiaceous crops may be partially responsible for its loss from some areas. Another probable factor in its decline has been the spread of naturalised plants into the open tussock grassland, stabilised scree, talus and boulderfield habitats it once favoured. Many of the extant populations now occur in dark rock overhangs, where competition from the normally higher-light demanding weed species is less.

ETYMOLOGY

cheesemanii: Named after Thomas Frederick Cheeseman (1846 - 15 October 1923) who was a New Zealand botanist and naturalist who, in 1906, produced *The Manual of the New Zealand Flora*.

WHERE TO BUY

Not commercially available

ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange 1 July 2007. Description by P.B. Heenan and 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.

CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Pachycladon cheesemanii* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network.

<https://www.nzpcn.org.nz/flora/species/pachycladon-cheesemanii/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/pachycladon-cheesemanii/>

Chenopodium detestans

COMMON NAME

New Zealand fish-guts plant

SYNONYMS

None

FAMILY

Amaranthaceae

AUTHORITY

Chenopodium detestans Kirk

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Indeterminate

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Herbs - Dicotyledons other than Composites

NVS CODE

CHEDET

CURRENT CONSERVATION STATUS

2012 | Threatened – Nationally Critical | Qualifiers: DP, EF, TO

PREVIOUS CONSERVATION STATUSES

2009 | Threatened – Nationally Critical | Qualifiers: TO, EF, DP

2004 | Data Deficient

DISTRIBUTION

Indigenous to New Zealand, South Island only . Historically the species ranged from Canterbury to Otago. Recent (post 1980) collections have only been made from Lake Lyndon (first discovered by T. Kirk in 1877) and the upper Waitaki Valley. In those days this area was extensively farmed for sheep and cattle, and while this was the case *C. detestans* was common on the shores of Lake Lyndon, in sites frequented by these animals. The species has been found in New South Wales, Australia where it may have naturalised.

HABITAT

Open or sparsely-vegetated ground such as clay and salt plans, dried out river and lake beds.



Close up of plant. Photographer: Shannel Courtney



Photographer: Cathy Jones

FEATURES

Annual to short-lived perennial prostrate, grey-green to reddish-grey, fleshy herb forming patches up to 800 mm diameter, and arising from a stout central, deeply descending tap root. All parts strongly fetid, smelling of rotten fish. Branches 2-8, grey-green, with stems and emergent leaves often suffused with red, rather stiff, margins often distorted by fungus pustules. Emergent foliage grey-farinose, maturing grey-green or reddish-grey, rather fleshy; leaves rhombic, or rhomboid-ovate, usually entire except for the basal stem leaves which often possess 1 pair of teeth, apex acute. Flowers grey-green in dense axillary to terminal spike-like clusters, stigma white. Perianth segments 4-5, 0.5-1.0 mm long, divided almost to base, obtuse, scarcely accrescent, incompletely investing fruits. Stamens 1-2 sulphur yellow, not fused at base. Seed, circular, 1-1.2 mm diameter, dark purple-brown to black brown, minutely punctate, margins rounded (obtuse), aligned horizontally in perianth.

SIMILAR TAXA

The introduced *Chenopodium vulvaria* (fish-guts plant) is a very similar, equally smelly plant, which can only be reliably distinguished from *C. detestans* by its 5 rather than 1-2 stamens, and sharp (acute) rather than rounded seed margins.

FLOWERING

September – March

FLOWER COLOURS

Green, Grey

FRUITING

December - May

LIFE CYCLE

Seeds are dispersed by wind and water (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

As far as is known no one has successfully grown this species. There have been a few attempts to transplant wild plants and strike cuttings but these failed because the plants/cuttings were given too much water. Seed should germinate easily.

THREATS

As far as is known *C. detestans* has declined mainly because of a loss of suitable open, sparsely-vegetated habitats. This seems to have been the result of the spread of introduced pasture grasses and weeds, and changes in land use, especially stocking levels. The only recent collections have come from well-stocked sheep farms in the upper Waitaki Valley, where it grows on clay and salt pans. Possibly because of its foul smell the species does not seem to be palatable to livestock, so livestock may help reduce competition from other taller, more palatable plants.

ETYMOLOGY

chenopodium: From the Greek chen 'goose' and pous 'foot', referring to the shape of the leaves

WHERE TO BUY

Not Commercially Available.

ATTRIBUTION

Description based on live plants and herbarium specimens

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

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/chenopodium-detestans/>

Coprosma intertexta

SYNONYMS

None

FAMILY

Rubiaceae

AUTHORITY

Coprosma intertexta G.Simpson

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Trees & Shrubs - Dicotyledons

NVS CODE

COPINT

CHROMOSOME NUMBER

$2n = 44$

CURRENT CONSERVATION STATUS

2012 | At Risk – Declining | Qualifiers: DP, Sp

PREVIOUS CONSERVATION STATUSES

2009 | At Risk – Relict | Qualifiers: De, DP, RF, Sp

2004 | Sparse

BRIEF DESCRIPTION

Bushy reddish wide-angled tangled shrub with very small needle-like leaves. Leaves 10mm long, often curved sideways, sometimes with tiny hairs on upper surface (lens needed), margin red. Very small hair-fringed triangular flap on stem between base of leaf pairs. Fruit small, white or pale blue.

DISTRIBUTION

Endemic. South Island, eastern from the Saxton River (Marlborough) south to Otago

HABITAT

A species of the eastern South Island dry intermontane basins where it usually grows in grey scrub overlying old moraines, coarse alluvium, boulder piles and or rock outcrops.

FEATURES

Dioecious, erect, somewhat fastigiate, extensively to sparingly branched, suckering shrub forming thickets up to 2 x 2 m. branches and branchlets fastigiate, filiraculate divaricate; branchlets at first finely puberulent becoming glabrous with age; bark initially pale-grey maturing dark brown. Leaves on short brachyblasts or in opposite pairs or near sessile fascicles. Interpetiolar stipules shortly-sheathing, broadly oblong triangular, obtuse with an attenuated apex surmounted by a single, deciduous apical denticle, denticles otherwise 3-6 all deciduous, outer surfaces finely ciliolate, undersides sparingly so, stipular collar-margins chartaceous when dry. Petioles slender 0.5-2 mm long. Leaves 7- 15 x 1-2 mm, dark grey-green to red-brown or purple-green, narrow-oblong to narrowly obovate-oblong, often slightly falcate, subacute, apiculate, margins initially puberulent, reddish; midrib and sometimes secondary veins evident.



Coprosma intertexta at Danseys Pass.
Photographer: John Smith-Dodsworth



Upper Manuherikia Valley. Photographer: John Barkla

SIMILAR TAXA

Most similar to *Coprosma elatirioides* de Lange et A. Markey from which it differs by its upright, non-lianoid shrub habit, much thinner leaves with acute leaf apices, and white translucent fruits (often with dark blue streaks or flecks). The stipules of *C. intertexta* differ from *C. elatirioides* by the sparse or complete absence of hairs on the upper surface, their shortly sheathing nature (< 1/4 the height of the whole stipule), by the stipule exceeding the sheath, and by its attenuated apex surmounted by a single terminal deciduous denticle. Either side of the apical denticle on the stipule sheath are 3-6 rather than 1-4 deciduous denticles. Finally the thin stipular collar-margins of *C. intertexta* are distinctly chartaceous rather than coriaceous when dry. *Coprosma elatirioides* is a species of open mesotrophic to oligotrophic wetlands and *C. intertexta* which is wholly allopatric from it, is a species of the drier, eastern intermontane basins where it mainly grows in grey scrub communities.

FLOWERING

October - February

FLOWER COLOURS

Green, Yellow

FRUITING

July - December

LIFE CYCLE

Fleshy drupes are dispersed by frugivory (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Easy from fresh seed, semi-hardwood cuttings and rooted pieces (this species suckers)

THREATS

A local endemic with a naturally sparse distribution, perhaps most common in the inland basins of Canterbury and Otago

ETYMOLOGY

coprosma: From the Greek kopros 'dung' and osme 'smell', referring to the foul smell of the species, literally 'dung smell'

intertexta: Intertwined

ATTRIBUTION

Fact sheet prepared by P.J. de Lange for NZPCN (1 June 2013)

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

CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Coprosma intertexta* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/coprosma-intertexta/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/coprosma-intertexta/>