Upper Clutha riparian - lower and mid bank species

Table of contents

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

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-vascualr 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 encompases 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 Zeland mosses (Rolfe et al., 2016) as well as horworts and liverworts (de Lange et al., 2015).

Carex secta

Coromandel, January. Photographer: John Smith-Dodsworth

Utricles. Photographer: Jeremy Rolfe

COMMON NAME
purei, pukio

SYNONYMS
Carex virgata var. secta (Boott) Hook.f., C. paniculata var. secta (Boott) Cheeseman, C. appressa var. secta (Boott) Kük.

FAMILY
Cyperaceae

AUTHORITY
Carex secta Boott

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Sedges

NVS CODE
CARSEC

CHROMOSOME NUMBER
2n = c.70

CURRENT CONSERVATION STATUS
2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES
2009 | Not Threatened
2004 | Not Threatened

DISTRIBUTION
Endemic. Found throughout the North, South and Stewart Islands. Also on the main Chatham Island, though scarce.

HABITAT
Widespread in suitable wetlands from coastal to montane wetlands.

FEATURES
Tussock forming sedge up to 1.5 x 0.8 m, mature specimens with trunk-like bases comprised of matted rhizomes, roots and old culm-bases. Culms 0.25-1(-1.5) m, drooping, trigonous, scabrid, basal sheaths brown to light-brown. Leaves 1.5-7 mm wide, light green to yellow-green (rarely dark green - then in heavy shade), equal to or longer than culms, drooping, channelled, margins and keel scabrid. Inflorescence a loosely branched, somewhat slender, drooping panicle 0.45-1 m long. Spikes pale brown, mostly clustered towards the ends of the slender branchlets. Utricles chestnut brown to dark brown, margins weakly winged, scabrid, light brown to brown, apex with a minute to distinct beak.

SIMILAR TAXA
C. appressa, C. sectoides, C. tenuiculmis and C. virgata. From C. appressa and C. virgata, it can be distinguished by its branched, drooping, paniculate inflorescence. From C. sectoides, by its smaller stature, and slender, longer, drooping inflorescence branchlets. C. sectoides is sympatric with C. secta at only one site on main Chatham Island. From C. tenuiculmis, it differs by its light green to yellow-green, rather than wine-red foliage, and larger panicles with more numerous branchlets.

FLOWERING
(September-) October-November (-December)

FRUITING
October - March

LIFE CYCLE
Nuts surrounded by inflated utricles are dispersed by granivory and wind (Thorsen et al., 2009).

PROPAGATION TECHNIQUE
Easily grown from fresh seed and by the division of established plants. Although a wetland species C. secta will grow well in most soils and moisture regimes. Does best in full sun.

ETYMOLOGY
carex: Latin name for a species of sedge, now applied to the whole group.
secta: Much divided (panicle)

WHERE TO BUY
Commonly cultivated. Sold by most garden centres.

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

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

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/carex-secta/

Carex virgata

Coromandel, January. Photographer: John Smith-Dodsworth

Coromandel, January. Photographer: John Smith-Dodsworth

COMMON NAME
swamp sedge, pukio, toitoi, toetoe

SYNONYMS
Carex paniculata var. virgata (Boott) Cheeseman; Carex appressa var. virgata (Boott) Kük.

FAMILY
Cyperaceae

AUTHORITY
Carex virgata Sol. ex Boott

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Sedges

NVS CODE
CARVIR

CURRENT CONSERVATION STATUS
2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES
2009 | Not Threatened
2004 | Not Threatened

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

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

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

SIMILAR TAXA
Carex virgata most closely resembles C. appressa R.Br., especially as the inflorescence of both species is a stiff contracted panicle, further, both species have similar distinctly nerved utricles. However, C. virgata has more slender culms, narrower leaves and paler brown, less dense-flowered panicles. Plants of C. virgata could also be confused with C. secta Boott as they can occasionally become elevated on trunks formed by matted rhizomes and semi-decayed culms. However, in such rare examples of C. virgata, plants never attain the height reached by C. secta. Further, the inflorescences of C. virgata are never drooping, and obviously branched, with the basal branchlets often distant.

FLOWERING
October - December

FRUITING
December - May

LIFE CYCLE
Nuts surrounded by inflated utricles are dispersed by granivory and wind (Thorsen et al., 2009).

PROPAGATION TECHNIQUE
Easily grown from fresh seed and by the division of established plants. A fast growing sedge often popular in wetland restoration and riparian plantings.

ETYMOLOGY
carex: Latin name for a species of sedge, now applied to the whole group.
virgata: Twiggy

NOTES ON TAXONOMY
On the Chatham Islands C. virgata either hybridises with or appears to intergrade with C. appressa.

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

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

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/carex-virgata/

Phormium tenax

Otari Wilton's Bush, Wellington. Photographer: Jeremy Rolfe

Phormium tenax. Photographer: John Sawyer

COMMON NAME
flax, harakeke, kōrari (Māori name for inflorescence).

SYNONYMS
None

FAMILY
Xanthorrhoeaceae

AUTHORITY
Phormium tenax J.R.Forst. et G.Forst.

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Herbs - Monocots

NVS CODE
PHOTEN

CHROMOSOME NUMBER
2n = 32

CURRENT CONSERVATION STATUS
2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES
2009 | Not Threatened
2004 | Not Threatened

DISTRIBUTION
Indigenous to New Zealand and Norfolk Island. A broad circumscription has been adopted here - many botanists feel that plants from the Chatham Islands could be distinguished at species rank from the mainland New Zealand species, other distinctive variants occur on the Three Kings and outer Hauraki Gulf Islands, and along the Kaikoura coast. Norfolk Island plants though uniform differ in subtle ways from the New Zealand forms of P. tenax. Further study into this variation is underway.

HABITAT
Common from lowland and coastal areas to montane forest, usually but not exclusively, in wetlands and in open ground along riversides.

FEATURES
Stout liliaceous herb, 1-5(-6) m tall. Leaves numerous, arising from fan-like bases. Individual leaves rather stiff at first, but becoming decurved, somewhat pendulous or "floppy" in upper half to a third, 1-3 x 50-120 mm, usually blue-grey (glaucous) or dark green, lamina margin, entire, somewhat thickened and pigmented black, dark red, pink, yellow or cream. Inflorescence 5(-6) m tall, somewhat woody and fleshy when fresh, long persistent, drying charcoal grey or black, with the fibrous interior becoming progressively more exposed. Peduncle 20-30 mm diam., erect, dark grey-green or red-green, glabrous. Flowers 25-50 mm long, tubular, predominantly dull red but may also be pink or yellow; tips of inner tepals slightly recurved. Ovary erect. Capsules 50-100 mm long, dark green, red-green or black, trigonous in cross-section, erect, abruptly contract at tip, not twisted, initially fleshy becoming woody with age, long persistent. Seeds 9-10 x 4-5 mm, black, elliptic, flat and plate-like, margins frilled or twisted.

SIMILAR TAXA
Could only be confused with the so called mountain flax (Phormium cookianum) from which it is easily distinguished by the erect rather than pendulous seed pods

FLOWERING
(September-) October-November (-January)

FLOWER COLOURS
Red/Pink, Yellow

FRUITING
(November-) December (-March)

PROPAGATION TECHNIQUE
Very easy from fresh seed. Most commonly grown by the division of rooted fans from established plants.

THREATS
Not threatened although see the discussion below about flax dieback. This die back phenomenon is characterised by abnormal yellowing of the leaves and may result in collapse of flax plants or whole populations.

ETYMOLOGY
phormium: Basket or basketwork
tenax: Tough

WHERE TO BUY
Very commonly cultivated throughout New Zealand and in many parts of the world. However, most cultivated material available is a mixture of hybrid, variegated and/or colour mutations. The actual wild forms of the species are now rarely available in mainline garden centres and nurseries.

CULTURAL USE/IMPORTANCE
Harakeke is an important plant used in weaving. For more information go to the Weaving Plant Database run by Landcare Research. A report funded by the Sustainable Farming Fund identified numerous uses for flax to increase its abundance in the landscape including buffering or establishing corridors. For more information read "Integrating New Zealand Flax into Land Management Systems" by Elizabeth McGruddy (2006).

FLAX DIEBACK
'Yellow-leaf' is one of the most serious diseases of harakeke (similar to the 'sudden decline' in cabbage trees). The disease is characterised by abnormal yellowing of the leaves. Scheele (1997) described how "growth of young leaves may be stunted and eventually the whole plant may collapse. Underground, the roots die off, the rhizome tissues collapse and rot spreads towards the crown of the plant".
The cause has been identified as being a phytoplasma (a bacterium), transmitted by the native flax plant hopper. The hopper injects the bacterium into the leaf, while sucking the sap. Yellow-leaf is found in North and South Island, but is more prevalent in North Island (Boyce et al, 1951). For more information read "Integrating New Zealand Flax into Land Management Systems" by Elizabeth McGruddy (2006).

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

REFERENCES AND FURTHER READING

Boyce, et al. 1951. Preliminary note on yellowleaf disease. NZJ of Science and Technology, 32(3): 76-77
Scheele, S. 1997. Insect pests and diseases of harakeke, Manaaki Whenua Press

CITATION

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

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/phormium-tenax/

Austroderia richardii

Cortaderia richardii. Photographer: John Smith-Dodsworth

Southland Plains. Photographer: Gillian Crowcroft

COMMON NAME
toetoe

SYNONYMS
Arundo richardii Endl.; Arundo kakao Steud.; Arundo australis A.Rich.; Gynerium zeelandicum Steud.; Cortaderia richardii (Endl.) Zotov

FAMILY
Poaceae

AUTHORITY
Austroderia richardii (Endl.) N.P.Barker et H.P.Linder

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
Yes

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Grasses

NVS CODE
AUSRIC

CHROMOSOME NUMBER
2n = 90

CURRENT CONSERVATION STATUS
2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES
2009 | Not Threatened
2004 | Not Threatened

DISTRIBUTION
Endemic. Confined to the South Island. Possibly in the North Island, east of Cape Palliser. Naturalised in Tasmania.

HABITAT
Abundant, from the coast to subalpine areas. Common along stream banks, river beds, around lake margins, and in other wet places. Also found in sand dunes, especially along the Foveaux Strait.

FEATURES
Tall, gracile, slender tussock-forming grass up to 3 m tall when flowering. Leaf sheath glabrous, green, covered in white wax. Ligule 3.5 mm. Collar brown, basally glabrous, upper surface with short, stiff hairs surmounting ribs. Leaf blade 2-3 x 0.25 m, green, dark-green, often somewhat glaucous, upper side with thick weft of hairs at base, otherwise sparsely hairy up midrib with abundant, minute prickle teeth throughout. Undersurface with leaf with 5 mm long hairs near leaf margins, otherwise harshly scabrid. Culm up to 3 m, inflorescence portion up to 1 m tall, pennant-shaped, drooping, narrowly plumose. Spikelets numerous, 25 mm with 3 florets per spikelet. Glumes equal, > or equal to florets, 1- or 3-nerved. Lemma 10 mm, scabrid. Palea 6 mm, keels ciliate. Callus hairs 2 mm. Rachilla 1 mm, glabrous. Flowers either perfect (anthers 4.5 mm) or female (3 mm). Ovary 1 mm (perfect), stigma -styles 2.5 mm; female flowers with ovary 1.3 mm, stigma-style 4 mm. Seed 3-4 mm.

SIMILAR TAXA
Closest to Austroderia toetoe form which it is best distinguished by the green rather than ivory leaf-sheaths, and by the green rather than ivory culm internodes. Also recognisable by the very slender, gracile leaves, culms and inflorescences. The inflorescences in this species are rather beautiful and resemble fine, narrow, pennants. Around the Foveaux Strait area and at Mason Bay, Stewart Island, some populations of A. richardii are distinctly rhizomatous.

FLOWERING
September - November

FRUITING
October - March

LIFE CYCLE
Florets are wind dispersed (Thorsen et al., 2009).

PROPAGATION TECHNIQUE
Easily grown from fresh seed (as a revegetation exercise ripe seed heads can be pinned to soil surface, and if kept damp, soon germinate) and division of established plants.

THREATS
Abundant and not threatened. Often naturalising in suitable habitats.

ETYMOLOGY
richardii: Named after Achille Richard (1794-1852) - a French botanist who described several New Zealand plant species

WHERE TO BUY
Commonly cultivated in the South Island, and offered by many specialist native plant nurseries. Not commonly cultivated in the North Island.

ATTRIBUTION
Fact sheet prepared for NZPCN by P.J. de Lange 1 October 2006. Description adapted from Edgar & Connor (2000).

REFERENCES AND FURTHER READING
Edgar, E.; Connor, H.E. 2000: Flora of New Zealand. Vol. V. Grasses. Manaaki Whenua Whenua Press, Christchurch.
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): Austroderia richardii Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. https://www.nzpcn.org.nz/flora/species/austroderia-richardii/ (Date website was queried)

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/austroderia-richardii/

Carex buchananii

Carex buchananii. Photographer: John Barkla

COMMON NAME
Buchanan’s sedge, cutty grass

SYNONYMS
Carex tenax Bergg., Carex lucida Boott var. buchanani (Bergg.) Kük.

FAMILY
Cyperaceae

AUTHORITY
Carex buchananii Bergg.

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Sedges

NVS CODE
CARBUC

CHROMOSOME NUMBER
2n = 60

CURRENT CONSERVATION STATUS
2018 | At Risk – Declining

PREVIOUS CONSERVATION STATUSES
2012 | Not Threatened
2009 | Not Threatened
2004 | Not Threatened

DISTRIBUTION
Endemic. New Zealand: North and South Islands. In the North Island uncommon. Known there only from scattered sites south of the Manawatu. In the South Island more widespread and at times locally common, though often sporadically distributed, and apparently absent from Westland and Fiordland. Scarce in Southland. Naturalised in Auckland City. Recorded as naturalised in the United Kingdom.

HABITAT
Coastal to montane (up to 1000 m a.s.l.). On beaches, lagoon, lake and stream margins, or in damp ground within open forest or short tussock grassland.

FEATURES

Densely tufted, strict, reddish brown, rarely yellow-green, sedge arising from an ascending rhizome c.3 mm diameter. Culms 70.0-900.0 × 0.5–1.5 mm. erect, rarely elongating to 1.2 m and becoming prostrate, semiterete, smooth and shining, basal sheaths dark red-purple, almost black. Leaves = or slightly > culms, c.1.0–1.5 mm wide, plano-convex, often semiterete, erect, wiry, linear, gradually narrowed and flattened towards the acute, occasionally cirrhose apices, smooth and shining, reddish or green on the back, upper surface matt, pale cream, margins scaberulous towards the base, more strongly serrulate towards the tip, sheath not much broader than lamina and of similar texture, with finely membranous margins. Spikes 5-6, silvery, distant, or the upper spikes approximate, sessile or the lowest slightly pedunculate; uppermost 1(-2) spikes male, cylindrical; lower spikes female, 5–30 × 3–4 mm., oblong, occasionally with a few male flowers at the base; bracts subtending lower spikes lf-like, much > inflorescence. Glumes (excluding awn) < or = utricles, ovate, acute, white and membranous, with a stronger midrib and long scabrid awn. Utricles 2.5-3.0 mm long, slightly > 1 mm wide, plano-convex, elliptic-ovoid, pale cream at the base with dark brown to purple-black splotches above or occasionally entirely pale green, faintly nerved, margins scabrid above, abruptly narrowed to a pale slender, recurved, deeply bifid beak, 0.5-1.0 mm long, margins ciliate-serrate, orifice scabrid, stipe minute. Stigmas 2. Nut c.1.5 mm, long, plano-convex to almost biconvex, obovoid, tapering towards the base, brown.

SIMILAR TAXA

A very distinct and singular species easily recognised by the mostly reddish brown culms and leaves, rather tall, stiffly erect tufted habit, plano-convex often semiterete leaves, membranous, colourless glumes and usually dark-coloured utricles. The scabrid-beaked utricles resemble those of Carex albula Allan and C. comans Bergg., much smaller species from which C. buchananii differs by its taller, stiffly erect culms and leaves, and two rather than three stigmas.

FLOWERING

October - December

FRUITING

November - June

LIFE CYCLE

Nuts surrounded by inflated utricles are dispersed by granivory and wind (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Easily grown from fresh seed and by the division of whole plants. Will tolerate most conditions, but does best in full sun in a permanently damp soil. In ideal conditions this species often naturalises, and it can at times become invasive. Next to C. comans this is one of the most commonly cultivated indigenous sedges.

ETYMOLOGY

carex: Latin name for a species of sedge, now applied to the whole group.
buchananii: Named after John Buchanan (13 October 1819-1898) who was a New Zealand botanist and scientific artist and fellow of the Linnean Society.

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

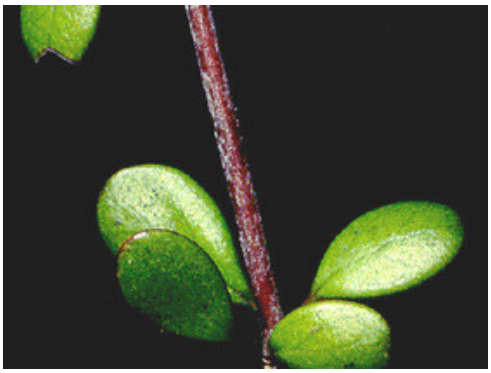
CITATION

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

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/carex-buchananii/

Coprosma crassifolia



Te Moehau. February. Photographer: John Smith-Dodsworth

Wyuna Bay, Coromandel. April. Photographer: John Smith-Dodsworth

FAMILY
Rubiaceae

AUTHORITY
Coprosma crassifolia Colenso

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
COPCRA

CHROMOSOME NUMBER
2n = 132

CURRENT CONSERVATION STATUS
2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES
2009 | Not Threatened
2004 | Not Threatened

BRIEF DESCRIPTION
Shrub with wide-angled reddish branches and pairs of small thick round or oval glossy leaves that are white underneath. Twigs covered in small hairs towards tip. Leaves 6-10mm long, with very small hairs around the margin. Fruit yellowish or white.

DISTRIBUTION
North and South Islands. Often east of main ranges in both islands except in Northland where found anywhere with suitable habitat.

HABITAT
Coastal rocky and sandy lowland to lower montane shrubland and forest, up to 600 m.

FEATURES
Much-branched shrub, up to 1-2 (-4) m tall. Branches rigid, divaricate, bark dark reddish brown; branchlets rather slender, more or less interlacing, often sculptured, pubescent when young. Leaves few together in fascicles on short branchlets, or paired; petioles narrowly winged, 1-2 mm long, pubescent. Stipules triangular, acute, pubescent, ciliolate (sometimes with denticle at tip). Lamina thick, coriaceous, dark green above, whitish to subglaucous below, suborbicular to oval to broad-oblong, rounded to subtruncate, abruptly narrowed to base, 6-10 (-15) x (3-) 5 (-10) mm; margins ciliolate when young, recurved. Venation more or less obscure on both surfaces, or midrib evident below. Flowers unisexual. Male flower solitary or 2-4 together on short branchlets; calyx not present; corolla funnelform, lobes ovate, acute, equal to or greater than tube. Female flower solitary, terminal on short branchlets; calyx-teeth minute; corolla-tube short, lobes long, narrow, acute. Drupe pale yellow or white, globose, 5-6 mm diameter.

SIMILAR TAXA
Distinguished from all other Coprosma species by the pale to white undersides of the thick, dark green leaves. *Coprosma obconica* has pale undersides to leaves, but has distinctive fruit, broader than long and tapering to the point of attachment like an inverted cone; yellowish white with purple grey streaks. The leaves also usually have a final little denticle on the rounded tips, lacking in *C. crassifolia*.

FLOWERING
September-October

FLOWER COLOURS
Green

FRUITING
November-June

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

ETYMOLOGY
coprosma: From the Greek kopros 'dung' and osme 'smell', referring to the foul smell of the species, literally 'dung smell'
crassifolia: From the Latin crassus' thick and folius 'leaf'

TAXONOMIC NOTES
Plants found in under canopy situation have larger, thinner leaves and a more open branching habit.
In Allan (1961), Oliver accepts hybridism between *C. crassifolia* x *C. tenuicaulis* (from specimens now in Auckland collected by Cranwell and Moore on Maungapohatu; *C. crassifolia* x *C. rigida*; *C. crassifolia* x *C. robusta* (C. buchananii Kirk).

ATTRIBUTION
Description adapted by M. Ward from Allan (1961) and Wilson & Galloway (1993).

REFERENCES AND FURTHER READING
Allan, H. H. 1961. Flora of New Zealand. Vol. 1. Wellington: Government Printer. pg. 577, 587.
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.
Wilson, H. D., & Galloway, T. 1993. Small-leaved shrubs of New Zealand. Manuka Press. pg. 104-105.

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/coprosma-crassifolia/

Coprosma propinqua var. propinqua

Eastbourne. Photographer: Jeremy Rolfe

Pauatahanui Inlet. Photographer: Jeremy Rolfe

COMMON NAME
mingimingi

FAMILY
Rubiaceae

AUTHORITY
Coprosma propinqua A.Cunn. var. propinqua

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
COPPVP

CHROMOSOME NUMBER
2n = 44

CURRENT CONSERVATION STATUS
2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES
2009 | Not Threatened
2004 | Not Threatened

BRIEF DESCRIPTION
Very common bushy shrub (or low-growing mound in some coastal areas) with wide-angled branches bearing clusters of pairs of variably shaped dark green glossy narrow leaves. Young leaves with dark stalk. Adult leaves often curved sideways, 10-4mm long by 2-3mm wide, paler underneath and with 1-3 pits. Fruit pale blue.

FLOWER COLOURS
Green

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

ETYMOLOGY
coprosma: From the Greek kopros ‘dung’ and osme ‘smell’, referring to the foul smell of the species, literally ‘dung smell’
propinqua: From the Latin propinquus ‘near, neighbouring’, meaning closely related to another species

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/coprosma-propinqua-var-propinqua/

Discaria toumatou

Danseys pass, November. Photographer: John Smith-Dodsworth

In cultivation ex Castle Hill. Photographer: Jeremy Rolfe

COMMON NAME
matagouri, tūmatakuru

SYNONYMS
None

FAMILY
Rhamnaceae

AUTHORITY
Discaria toumatou Raoul

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
DISTOU

CHROMOSOME NUMBER
2n = 22

CURRENT CONSERVATION STATUS
2018 | At Risk – Declining

PREVIOUS CONSERVATION STATUSES
2012 | Not Threatened
2009 | Not Threatened
2004 | Not Threatened

BRIEF DESCRIPTION
Spiky grey shrub with many zig-zagging long flexible twigs bearing long (up to 5cm long) green spines interspersed with small oval dark green leaves. Bark rough, broken into squares. Leaves 10-20mm long. Flowers small, white, inconspicuous. Fruit a dry, 3 sided capsule.

DISTRIBUTION
Endemic. North and South Islands. In the North Island known from near Waiuku south to the southern Wairarapa and Wellington coastline. Very uncommon in the North Island. In the South Island mainly east of the main divide, appearing to avoid areas of high rainfall

FLOWER COLOURS
White

LIFE CYCLE
Seeds are dispersed by ballistic projection and water (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Easy from seed. Can be grown from cuttings but these can be slow to strike. Rather variable, and some North Island sand dune forms are entirely prostrate, forming trailing shrubs. An excellent hedge plant, with the added bonus that this species fixes atmospheric nitrogen, making it available for other plants.

THREATS

Not Threatened for most of its range. However, very uncommon and under threat throughout the North Island, where it is now known from very few sites and viable populations.

ETYMOLOGY

discaria: Disc bearing
toumatou: Derived from the Maori name tumamatakuru.

WHERE TO BUY

Occasionally available from specialist native plant nurseries.

REFERENCES AND FURTHER READING

Chrystall, L. 1976. Further record of matagouri in the North Island. Wellington Botanical Society Bulletin, 39: 47
Duguid, F. 1976. Matagouri at Herbertville. Wellington Botanical Society Bulletin, 39: 45
Elder, N.L. 1966. Matagouri in the North Island. Wellington Botanical Society Bulletin, 33: 5
Elder, N.L. 1967. Matagouri in the North Island - Part 2. Wellington Botanical Society Bulletin, 34: 19-20
Moorfield, J. C. (2005). Te aka : Maori-English, English-Maori dictionary and index. Pearson Longman: Auckland, N.Z.
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/discaria-toumatou/

Veronica salicifolia

Hebe salicifolia. Photographer: John Smith-Dodsworth

Hebe salicifolia. Photographer: John Barkla

COMMON NAME
koromiko

SYNONYMS
Veronica fonkii Phil., Veronica salicifolia var. communis Cockayne, Hebe salicifolia var. communis (Cockayne) Cockayne et Allan, Hebe salicifolia (G.Forst.) Pennell

FAMILY
Plantaginaceae

AUTHORITY
Veronica salicifolia G.Forst.

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
No

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
HEBSAL

CHROMOSOME NUMBER
2n = 40

CURRENT CONSERVATION STATUS
2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES
2009 | Not Threatened
2004 | Not Threatened

BRIEF DESCRIPTION
Bushy shrub bearing pairs of narrow pointed leaves inhabiting the South and Stewart Islands. Leaves variable, to 132mm long, gradually tapering to narrow tip, margin often uneven and with fine hairs (lens needed). Leaf bud with very small gap between leaves at base. Flowers in spikes to 23cm long.

DISTRIBUTION
Throughout South Island (except for Marlborough Sounds) and Stewart Island, and on Auckland Island and in Chile; naturalised in western Europe (Webb 1972).

HABITAT
Occurs from sea-level to close to the treeline, mostly in open sites, and in forest.

FEATURES

Openly branched bushy shrub to 2.5 m tall. Branches erect, old stems brown or grey; branchlets green or orange, glabrous (often) or puberulent, hairs bifarious to uniform; internodes (1-) 6-18 (-34) mm; leaf decurrencies evident or obscure. Leaf bud distinct; sinus square to oblong. Leaves erecto-patent; lamina narrowly lanceolate or oblanceolate, coriaceous or subcoriaceous, shallowly m-shaped in transverse section, (34-) 60-106 (-132) x (6-) 11-18 (-28) mm; apex acuminate; brochidodromous secondary veins evident in fresh leaves; margin cartilaginous, pubescent or ciliate, distantly denticulate or entire; upper surface green, dull, with few or many stomata, hairy along midrib; lower surface light green, glabrous or hairy along midrib or sometimes covered with minute glandular hairs; petiole (1-) 2-4 (-5) mm, hairy along margins and above and below. Inflorescences with 100-250 flowers, lateral, unbranched, (5-) 7-18 (-23) cm; peduncle (0.7-) 1.3-4.5 (-6) cm; rachis (3.5-) 5.5-17.5 cm. Bracts alternate, lanceolate or linear, acute or subacute. Flowers hermaphrodite (or possibly some male-sterile). Pedicels (0.7-) 1.3-3 (-4.7) mm, sometimes recurved in fruit. Calyx 1.5-3 mm lobes ovate or lanceolate, acute or subacute. Corolla tube hairy inside and often outside, 2.5-3.2 x 1.6-1.8 mm, contracted at base, longer than calyx; lobes white or tinged mauve at anthesis, lanceolate, acute to subacute, suberect or erect, longer than corolla tube, sometimes with a few hairs toward base on inner surface and/or ciliate (e.g. WELT 16280). Stamen filaments 5-8.5 mm; anthers mauve, 1.5-1.9 mm. Ovary 0.9-1.1 mm; ovules 14-19 per locule, in 1-2 layers; style 4-6 mm. sometimes sparsely hairy. Capsules subacute or obtuse, 2.5-3.5 x 2.5-3 mm, loculicidal split extending ¼-¾-way to base (most approximately 1/3). Seeds flattened, broad ellipsoid to discoid, straw-yellow. (0.6-) 0.7-1.1 x 0.6-0.9 mm, micropylar rim 0.1-0.2 mm.

SIMILAR TAXA

The most common *Veronica* of lowland and montane areas of South Island distinguished from most others by the size of its leaves. Similar South Island species are *V. stricta*, from which it differs in the presence of a leaf bud sinus, and *V. phormiiphila* (see notes under that species). It hybridises with *V. elliptica, V. calcicola* (Bayly *et al.* 2001). probably *V. albicans* and *V. strictissima* (see notes under those species), and potentially other species with which it co-occurs.

FLOWERING

(October-) December-June (-July)

FLOWER COLOURS

Violet/Purple, White

FRUITING

(November-) January- June (-July)

LIFE CYCLE

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

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’.
salicifolia: From the Latin Salix ‘willow’ and -folia ‘leaf’, meaning ‘willow-leaved’

TAXONOMIC NOTES

It is not known whether *V. salicifolia* occurs naturally on Auckland Island or was introduced there. Two confirmed specimens (WELT 11157, WELT 83266!) are from a single plant growing close to a ruined house site near Lindley Point (Johnson & Campbell 1975). A more recent specimen from the same general area, CHR 437295, “nr. Deas Head” W.R. Sykes ZS/87, 13 Feb. 1987, resembles *V. salicifolia*, but is not identified with certainty (in the size of the flowers and inflorescences, and in leaf margin pubescence, it resembles some *V. salicifolia* x *V. elliptica* hybrids).

ATTRIBUTION

Description adapted by M. Ward from Bayly & Kellow (2006).

REFERENCES AND FURTHER READING

Bayly, M.J., Kellow, A.V. 2006. An illustrated guide to New Zealand Hebes. Wellington, N.Z.: Te Papa press pg. 268.
Johnson, P. N. and Campbell, D. J. 1975. Vascular plants of the Auckland Islands. New Zealand Journal of Botany 13: 665-720.
Webb, D. A. 1972. Hebe. In: Tutin, T. G., Heywood, V. H., Burgess, N. A., Moore, D. M., Valentine, D. H., Walters, S. M. and Webb, D. A., eds, Flora Europaea. Vol. 3, Diapensiaceae to Myoporaceae. London: Cambridge University Press. pp. 251-2.
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: Ward, M.D. (Year at time of access): Veronica salicifolia Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. https://www.nzpcn.org.nz/flora/species/veronica-salicifolia/ (Date website was queried)

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/veronica-salicifolia/

Cordyline australis

Cabbage tree. Photographer: DoC

Cabbage tree. Photographer: DoC

COMMON NAME
cabbage tree, tī, tī kōuka, palm lily

SYNONYMS
Dracaena australis Forst.f., Dracaenopsis australis (Forst.f.) Planchon

FAMILY
Asparagaceae

AUTHORITY
Cordyline australis (Forst.f.) Endl.

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Trees & Shrubs - Monocotyledons

NVS CODE
CORAUS

CHROMOSOME NUMBER
2n = 38

CURRENT CONSERVATION STATUS
2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES
2009 | Not Threatened
2004 | Not Threatened

BRIEF DESCRIPTION
Common palm-like tree with an erect trunk branching into tufts of tough long narrow pointed leaves and with bushy sprays of small white flowers. Bark rough. Leaves 30-100cm long, only slightly tapered at base, dead leaves often forming a skirt around branches. Fruit small, white.

DISTRIBUTION
Endemic. Common in the North, South and Stewart Islands. Probably naturalised on the Chatham Islands.

HABITAT
Widespread and common from coastal to montane forest. Most commonly encountered on alluvial terraces within riparian forest.

FEATURES
Tree up to 20 m tall, trunk stout, 1.5-2 m diam, many-branched above (prior to flowering, trunk slender and solitary, branching happens after the first flowering). Bark corky, persistent, fissured, pale to dark grey. Leaves numerous (0.2-)0.3-1(-1.5) x (0.2)-0.3(-0.6) m, dark to light green, narrowly lanceolate to lanceolate, erect to erecto-patent, scarcely inclined to droop, midrib indistinct. Petiole indistinct, short. Inflorescence a panicle. Peduncle stout, fleshy 40 mm or more in diam., panicle of numerous flowers, (0.6-)1(-1.8) x).3-0.6(-0.8) m, branching to third or fourth order, these well spaced, basal bracts green and leaf-like, ultimate racemes 100-200 mm long, 20 mm diam., bearing well-spaced to somewhat crowded, almost sessile to sessile flowers and axes. Flowers sweetly perfumed, perianth 5-6 mm diam., white, tepals free almost to base, reflexed. Stamens about same length as tepals. Stigma short, trifid.

SIMILAR TAXA
Could be confused with the northern, primarily offshore island C. kaspar and its close relative, the Norfolk Island C. obtecta (probably both these should be merged). From these it can be distinguished by the larger heavily branched tree form, narrower leaves with a rather smaller, ill-defined, flat petiole, and smaller seeds. C. australis is rather variable, and some northerly offshore islands forms of it are either hybrids with, or might be better placed with C. kaspar.

FLOWERING
(September-) October-December (-January)

FLOWER COLOURS
White

FRUITING
(December-) January-March

LIFE CYCLE
Fleshy berries are dispersed by frugivory (Thorsen et al., 2009).

PROPAGATION TECHNIQUE
One of the most widely cultivated New Zealand natives, very popular in Europe, Britain and the U.S.A. Easily grown from fresh seed (seedlings often spontaneously appear in gardens from bird-dispersed seed), emergent shoot, stem and even trunk cuttings. Very hardy and will tolerate most soils and moisture regimes but dislikes long periods of drought. Excellent in pots and tubs. Numerous cultivars exist that will suit any situation.

THREATS
Populations have been decimated from some parts of the country due to a mysterious illness linked to a Myoplast Like Organisim (MLO) which is believed to cause the syndrome known as Sudden Decline. Plants stricken with this illness suddenly, and rapidly, wilt, with the leaves failing off still green. If the bark is peeled off the base of the tree near the soil line blackened or rotten spots are typically present. Once stricken with Sudden Decline there is no cure and the trees can die within days. Recently there has been some evidence to suggest the severity of Sudden Decline is lessening.

ETYMOLOGY
cordyline: From the Greek kordyle ‘club’
australis: Southern

WHERE TO BUY
Common in cultivation, and widely sold both within New Zealand and around the world.

NOTES ON THEIR STATUS
Cabbage trees, because they are very resilient are often the last indigenous plant to persist within cleared land. However, even these specimens will over time die, and unless such remnants are fenced as the young seedlings are greedily eaten by livestock. Cabbage trees remain a common and thriving species within much of the more highly modified ecosystems of coastal and lowland New Zealand. Recently there has been some evidence to suggest the severity of Sudden Decline is lessening.

FORAGING FOR CABBAGE TREE
Click on the Radio New Zealand National logo to listen to This Way Up. Simon Morton interviews Johanna Knox about foraging for Cordyline australis - the cabbage tree or Ti Kouka (duration: 13’35”).

ATTRIBUTION

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

REFERENCES AND FURTHER READING

Beever, R. et al. 1996. Sudden decline of cabbabe tree. NZ Journal of Ecology, 20(1): 53-68

Duguid, F. 1976. *Cordyline australis* at Lake Kopureherehe. Wellington Botanical Society Bulletin, 39: 46-47

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): Cordyline australis Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. https://www.nzpcn.org.nz/flora/species/cordyline-australis/ (Date website was queried)

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/cordyline-australis/

Leptospermum scoparium var. scoparium

Southern Tararua Range. Photographer: Jeremy Rolfe

Taken in Coromandel, February. Photographer: John Smith-Dodsworth

COMMON NAME
mānuka, kahikātoa

SYNONYMS
None - a myriad of varieties have been proposed none of which has been strictly synonymised within L. scoparium. Allan (1961) discusses some of these, and accepted one (var. incanum). A modern taxonomic assessment of Leptospermum scoparium is urgently needed.

FAMILY
Myrtaceae

AUTHORITY
Leptospermum scoparium J.R.Forst. et G.Forst. var. scoparium

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
No

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

CHROMOSOME NUMBER
2n = 22

CURRENT CONSERVATION STATUS
2018 | At Risk – Declining

PREVIOUS CONSERVATION STATUSES
2012 | Not Threatened
2009 | Not Threatened
2004 | Not Threatened

BRIEF DESCRIPTION
Common small prickly shrub or small tree with flaky bark and more or less hairy new growth and bearing masses of oval pointed leaves and white or pinkish red-centred flowers. Leaves hard, 5-20mm long by 1-8mm wide, prickly to grasp. Flowers to 25mm wide. Fruit a dry 5-7mm wide capsule.

DISTRIBUTION
Indigenous to New Zealand and Australia. Most Australian forms of L. scoparium do not match the range seen in New Zealand. However, plants from Tasmania are very similar to, if not identical with some South Island forms, differing in having a lignotuber, wider leaf bases, and longer, more pungent leaf apices. Leptospermum scoparium was also collected once from Rarotonga by Thomas Cheeseman in the 1800s. It has not been found there since. It's biostatus on that island is unclear.

HABITAT
Abundant from coastal situations to low alpine habitats.

FEATURES
Decumbent shrub, subshrub, shrub, or small tree up to 5 m in height and in decumbent forms 2-4 m across. Bark light grey to charcoal grey, peeling in long papery flakes, these curling with age. Wood red. Branches numerous erect, spreading or decumbent, arising from base, sometimes sprouting adventitious roots and/or layering on contact with soil. Young branches, young leaves and flower buds densely to sparingly clad in long silky, white hairs. Leaves leathery, pale to dark green, glabrescent to glabrous, linear-filiform, narrowly lanceolate, lanceolate, oblanceolate, to elliptic or obovate (5-)10-15(-20) x 1-2-5(-8) mm, invariably apex drawn out into a long stiff, pungent point, midrib usaully distinct sometimes obscure, leaf margin finely crenate, veins simple, scarcely branched. Flowers solitary in leaf axils, (8-)10-20(-25) mm diam. Receptacle dark red, crimson or pink. Petals white, sometimes flushed pink or dark red. Stamens numerous.

SIMILAR TAXA
With the exception of L. scoparium var. incanum a broad circumscription of the the New Zealand forms of manuka (L. scoparium) has been adopted. In this sense, manuka could only be confused with kanuka (Kunzea spp.) and Great Barrier Island kanuka (Kunzea sinclairii), fromwhich it can be easily distinguished by the hard, persistent, circular, nut-like fruits, with non persistent sepals, sharp-tipped minutely denticulate leaves, and flowers which appear to be solitary.

FLOWERING
Throughout the year

FLOWER COLOURS
Red/Pink, White

FRUITING
The capsules are long persistent so invariably mature plants possess at least some capsules.

PROPAGATION TECHNIQUE
Very easy from fresh seed. Seed must be sown fresh, even if left for a few weeks before sowing viability can drop, especially if seed is allowed to dry out. Difficult from cuttings.

THREATS
Although widespread and common, some stands are at risk from clearance for farmland or through felling for firewood. The recent (2017) arrival of myrtle rust (*Austropuccinia psidii*) may pose a more serious threat to *Leptospermum* (see below). See myrtlerust.org.nz for more information about this invasive fungus.

ETYMOLOGY
leptospermum: Slender seed
scoparium: Like a broom

WHERE TO BUY
Commonly cultivated. However many garden forms are horticultural selections based on crosses between *L. scoparium* var. *incanum* and white or red-flowered *L. scoparium* var. *scoparium*. Some seem to represent natural variations, others may stem for deliberate crosses with Australian forms of *L. scoparium* and allied species. Recently a number of Australian *Leptospermum* have been introduced into New Zealand, and these have been deliberately crossed with manuka.

MYRTLE RUST THREAT
Myrtle rust (*Austropuccinia psidii*) was first detected in New Zealand in 2017. As there is as yet no known effective treatment for that rust. Overseas indications are that this rust is having a serious impact on Myrtaceae worldwide, including causing such severe declines in some that extinction of some species and genera seems inevitable. As such the New Zealand Threat Listing Panel elected to list all indigenous Myrtaceae using the 'Precautionary Principle' as 'Threatened' (de Lange et al. 2018). Hopefully this assessment will be proved wrong. As of 2018 there have been very few occurrences of myrtle rust on *Leptospermum*. However, the rust is still in its early establishment phase. Australian experience suggests it may take 10 or more years to truly establish which New Zealand Myrtaceae will be most affected.

ATTRIBUTION
Fact Sheet prepared for NZPCN by P.J. de Lange 1 February 2004. Description by P.J. de Lange.

REFERENCES AND FURTHER READING

de Lange, P.J.; Rolfe, J.R.; Barkla, J.W.; Courtney, S.P.; Champion, P.D.; Perrie, L.R.; Beadel, S.M.; Ford, K.A.; Breitwieser, I.; Schönberger, I.; Hindmarsh-Walls, R.; Heenan, P.B.; Ladley, K. 2018: Conservation status of New Zealand indigenous vascular plants. 2017. *New Zealand Threat Classification Series 22*: 1–82.
Gardner, R. 2002. Notes towards an excursion Flora .Manuka *Leptospermum scoparium* myrtaceae. Auckland Botanical Society Journal, 57: 147-149

CITATION

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

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/leptospermum-scoparium-var-scoparium/

Lophozonia menziesii

Silver beech. Photographer: DoC

Dunedin. Photographer: John Barkla

COMMON NAME
silver beech

SYNONYMS
Fagus menziesii Hook. f., Nothofagus menziesii (Hook.f.) Oerst.

FAMILY
Nothofagaceae

AUTHORITY
Lophozonia menziesii (Hook.f.) Heenan et Smissen

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
NOTMEN

CHROMOSOME NUMBER
2n = 26

CURRENT CONSERVATION STATUS
2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES
2009 | Not Threatened
2004 | Not Threatened

BRIEF DESCRIPTION
Very common forest canopy tree with silvery bark and bearing rough-edged small leathery leaves arranged along the twig. Leaves almost as wide as long, 6-15mm long, with uneven blunt teeth on margin and with small hairy pits at the junction of the veins. Flowers and fruits inconspicuous, but colour tree.

DISTRIBUTION
North and South Islands - from latitude 37° southwards, except Mount Egmont.

HABITAT
Lowland to montane forest or as shrub in subalpine scrub

FEATURES

Tree up to 30 metres tall; trunk up to 2 metres diameter, often buttressed; branchlet-pubescence fulvous. Leaves thick, coriaceous, rigid; 6-15 × 5-15 mm., on petioles 2-3 mm. long; lamina glabrous except on veins below, broad- to deltoid-ovate to suborbicular, doubly crenate, cuneate at base; venation rather obscure; fringed domatia 1-2 in basal vein-axils. Staminate inflorescences 1-4 per branchlet; peduncles 2-3 mm. long, sparsely pubescent, with 1 terminal flower. Perianth 5-6 mm. diameter, of 2 unequal lobes, each again 2-3-partite. Stamens 30-36; anthers 2-3 mm. long, red above, greenish below, or straw coloured. Pistillate inflorescences 1-4 per branchlet, 3-(2)-flowered, on short densely pubescent peduncles. Lateral flowers trimerous, terminal dimerous or aborted; stigmas ligulate. Cupule 6-7 mm. long, 4-segmented, with 4-5 rows of gland-tipped processes, subtended by 2 foliaceous bracts. Nuts puberulous, 5 mm. long; lateral triquetrous, 3-winged; terminal flat, 2-winged; wings produced above, gland-tipped.

FLOWERING

November - January

FLOWER COLOURS

Green, Red/Pink

FRUITING

January - March

ATTRIBUTION

Description adapted by M. Ward from Allan (1961).

REFERENCES AND FURTHER READING

Allan, H. H. 1961: *Flora of New Zealand. Vol. 1.* Wellington: Government Printer. pg. 398.
Anonymous. 1957. Construction of key for the genus Nothofagus. Auckland Botanical Society Journal, 14: 2-3.
Heenan, P.B.; Smissen, R.D. 2013: Revised circumscription of *Nothofagus* and recognition of the segregate genera *Fucospora*, *Lophozonia*, and *Trisyngyne* (Nothofagaceae). *Phytotaxa 146*: 1-31.
http://dx.doi.org/10.11646/phytotaxa.146.1.1

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/lophozonia-menziesii/

Melicytus lanceolatus

Pinehaven, Upper Hutt. Photographer: Jeremy Rolfe

Pinehaven, Upper Hutt. Photographer: Jeremy Rolfe

COMMON NAME
māhoe-wao, narrow-leaved māhoe

SYNONYMS
Melicytus lanceolatus Hook.f. var. lanceolatus, Melicytus lanceolatus var. latior G.Simpson et J.S.Thomson

FAMILY
Violaceae

AUTHORITY
Melicytus lanceolatus Hook.f.

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
MELLAN

CHROMOSOME NUMBER
2n = 32

CURRENT CONSERVATION STATUS
2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES
2009 | Not Threatened
2004 | Not Threatened

BRIEF DESCRIPTION
Small bushy tree bearing many down-curving narrow tough leaves inhabiting higher rainfall areas. Leaves 5-16cm long by 0.5-2cm wide, on a short stem. Flowers are small with yellow or dark purple petals and scattered in groups along the twig. Fruit purple.

FLOWER COLOURS
Violet/Purple

ETYMOLOGY
melicytus: From the Greek meli (honey) and kytos (hollow container), referring to the staminal nectaries of the flowers. Literally “honey-cave”
lanceolatus: Shaped like a small lance head

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/melicytus-lanceolatus/

Olearia hectorii

Olearia hectori. Photographer: Shannel Courtney

Olearia hectorii plant bearing Flowers. Photographer: John Barkla

COMMON NAME
deciduous tree daisy, Hector's tree daisy

SYNONYMS
None

FAMILY
Asteraceae

AUTHORITY
Olearia hectorii Hook.f.

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
OLEHEC

CHROMOSOME NUMBER
2n = 108

CURRENT CONSERVATION STATUS
2012 | Threatened – Nationally Endangered | Qualifiers: CD, De, RF

PREVIOUS CONSERVATION STATUSES
2009 | Threatened – Nationally Endangered | Qualifiers: CD, De, RF
2004 | Threatened – Nationally Vulnerable

BRIEF DESCRIPTION
Rare small-leaved shrub with wide-angled grooved reddish stems bearing clusters of thin grey-green leaves inhabiting river valleys of the eastern South Island. Leaves 20-50mm long by 5-20mm wide. Flowers small, yellowish, on drooping 15mm long stalks, in small groups at base of leaves. Seeds fuzzy.

DISTRIBUTION
Endemic. Eastern South Island.

HABITAT
Lowland to subalpine often at the base of steep hills on colluvium, or on alluvium in situations affected by flooding, debris avalanching, water-logging, drought and/or frost.

FEATURES
Deciduous shrub or small tree up to 10 m tall. Trunk up to 1 m diam., bark thick, somewhat corky, grey, persistent, deeply marked with longitudinal furrows. Branches one to many, often spreading. Branchlets slender, grooved, glabrescent; bark red, red-brown to bronze-red. Adult leaves 2-4 on short shoots or widely spaced along fast growing branchlets; petioles 5 mm, slender; leaf lamina 20-50 x 5-20 mm, grey-green to green above, silvery-grey beneath, narrow-oblong, oblong-ovate to broadly-ovate, undersides clad in silvery tomentum, upper surface glabrescent; lamina margins flat and entire. Capitula in fascicles of 2-6, 5 x 5 mm; pedicels slender, silky hairy, 15 mm long. Florets 20-25, pale yellow, ray-florets 10-15, narrow, rather short, disc florets 10-15. Phyllaries in 2 series, weakly imbricate, oblong, obtuse, exposed surface pilose hairy. Achenes 1-2 mm, narrow-obovate. Pappus-hairs 3-5 mm long.

SIMILAR TAXA
Olearia odorata Petrie and O. fragrantissima Petrie are superficially similar to O. hectorii. From those species O. hectorii can be distinguished by the leaves which are opposite and by its straight branchlets. O. fragrantissima has alternate leaves and zigzag twig stems, while O. odorata has narrower, smaller leaves lacking leaf stalks, and is usually a shrub, rarely a small tree. The North Island O. gardneri Heads, though similar differs by the broadly deltoid, truncate, rather than oblanceolate juvenile leaves, by the smaller, distinctly less hairy adult leaves, white rather than yellow flowers, and narrowly lanceolate, toothed, finely hairy phyllaries (bracts surrounding the flowers). The phyllary hairs are long and wavy.

FLOWERING
October - December

FLOWER COLOURS
Yellow

FRUITING
December - February

PROPAGATION TECHNIQUE
Can be grown from fresh seed and semi-hardwood cuttings. The strike rate of these can be variable, and best results are obtained from cuttings taken after leaf fall in autumn, and kept in a cold frame over winter

THREATS
This species is seriously threatened by recruitment failure. The seed of this species requires open sites to germinate in, and in most places such sites are scarce due to the presence of introduced grasses and herbs. Very few O. hectorii populations occur on protected land, and many are now dominated by old senescent trees. This species is also susceptible to browsing animals, and because of the dynamic habitats it occupies floods and slips once so critical for this species regeneration is now a serious threat. Isolated plants produce little viable seed.

ETYMOLOGY
olearia: Named after Johann Gottfried Olearius, a 17th-century German scholar, writer of hymns and author of Specimen Florae Hallensis
hectorii: Named after Sir James Hector, 19th century New Zealand geologist and botanist who was originally from Scotland

NOTES
Published as hectori but hectorii is correct under the ICBN (International Code of Botanical Nomenclature).

WATCH THE VIDEO
Olearia hectori - watch the TVNZ - Meet the Locals (DOC)

ATTRIBUTION
Fact Sheet prepared for the NZPCN by P.J. de Lange 14 April 2006. Description by P.B Heenan (adapted from Heads (1998) 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.

Heads, M. 1998. Biodiversity in the New Zealand divaricating tree daisies: *Olearia* sect. nov. (Compositae). Botanical Journal of the Linnean Society 127(3): 239-285.

Hooker, J.D. 1864. *Handbook of the New Zealand Flora: a systematic description of the native plants of New Zealand and the Chatham, Kermadec's, Lord Auckland's, Campbell's and Macquarie's Islands.*Part I ed. London, Reeve. 392 p.

CITATION

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MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/olearia-hectorii/

Plagianthus regius subsp. regius

Remutaka Rail Trail. Photographer: Jeremy Rolfe

Foliage of Plagianthus regius. Photographer: John Smith-Dodsworth

COMMON NAME
mānatu, ribbonwood, lowland ribbonwood

SYNONYMS
Philippodendrum regium Poiteau, Plagianthus betulinus A.Cunn., Plagianthus betulinus A.Cunn. var. betulinus, Plagianthus urticinus A.Cunn.

FAMILY
Malvaceae

AUTHORITY
Plagianthus regius (Poit.) Hochr. subsp. regius

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
Yes

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
PLARSR

CHROMOSOME NUMBER
2n = 42

CURRENT CONSERVATION STATUS
2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES
2009 | Not Threatened
2004 | Not Threatened

BRIEF DESCRIPTION
Tall tree with soft jagged pointed leaves and long sprays of tiny yellowish flowers and small green fruit that fall as a unit. Wood soft. Leaves 3-7.5cm long, much wider at base. Juveniles with tangled twigs bearing shorter rounded leaves with blunt bases.

DISTRIBUTION
Endemic. New Zealand: North, South and Stewart Islands

HABITAT
Coastal to lower montane. Often a prominent tree in lowland alluvial forest.

SIMILAR TAXA
Plagainthus regius subsp. chathamicus is very similar. It is endemic to the Chatham Islands and differs only from subsp. regius by the complete lack of the filiramulate, divaricating juvenile growth habit typical of subsp. regius. Both subspecies are now present in New Zealand proper, and subsp. chathamicus is now often sold from garden centres as P. regius. So look for the divaricating growth habit if you want to ensure you have the appropriate plant for your area.

FLOWERING
September - November

FLOWER COLOURS
Green

PROPAGATION TECHNIQUE
Easily grown from fresh seed. However, seed is often difficult to obtain because it is usually damaged by insects. A very fast growing tree which is an excellent specimen tree for a large garden or park. Does well in most situations but prefers a fertile, moist but free draining soil.

ETYMOLOGY
plagianthus: Oblique or lop-sided flower (petals uneven at the base)
regius: Royal

REFERENCES AND FURTHER READING
Wilcox, M.D. 2002. Lowland ribbonwood *Plagianthus regius* at Clevedon. Auckland Botanical Society Journal, 57: 144-146

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/plagianthus-regius-subsp-regius/