

BCA Native Plants - Part 2



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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-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 <u>de Lange et al. 2018</u>). 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 <u>'Conservation status of New Zealand indigenous</u> <u>vascular plants, 2017' by de Lange et al. (2018).</u>

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).

Pseudopanax crassifolius

COMMON NAME

Horoeka, lancewood

SYNONYMS

Aralia crassifolia Sol. ex A.Cunn., Panax crassifolium (Sol.) Decne et Planchon, Panax longissimum Hook.f., Panax coriaceum Regel, Hedera crassifolia Gray

FAMILY

Araliaceae

AUTHORITY Pseudopanax crassifolius (Sol. ex A.Cunn.) C.Koch

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE PSECRA

CHROMOSOME NUMBER 2n = 48

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES 2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION Small tree with distinctive draped thick long narrow toothed juvenile leaves

DISTRIBUTION Endemic. North, South and Stewart Islands. Widespread and common

HABITAT Lowland to montane forest. Sealevel to c. 750 m a.s.l.



Makarora Valley. March. Photographer: John Sawyer



Rimutaka Rail Trail. Dec 2006. Photographer: Jeremy Rolfe

Bushy topped tree to 15 m tall, branchlets fleshy, trunk us. unbranched in lower part, to 50 cm diam., distinctly ridged when young, bark dark becoming paler with age, wood tough. Leaves alternate; leaflets 1-3 in seedling, palmate, sessile or subsessile on very short petiolule, submembranous coarsely toothed, absent from juvenile and adult. Juvenile leaves dark green, narrow-linear, deflexed, to 1 m long, coriaceous, midrib pale cream-yellow, raised, margins distantly sharply toothed, distal margin of tooth perpendicular to midvein, not swollen. Adult leaves shorter, 10-20 x 2-3 cm, dark green, very occ. trifoliate (probably due to hybridisation with oither species), narrow elliptic-cuneate to lanceolate or linear-obovate, acute or obtuse, margins entire to sunuate or coarsely serrate, subsessile or on petioles to 10 mm long, petiole base expanded around stem. Inflorescence a terminal umbel, irregularly compound; primary rays (branchlets) 5-10, c. 6 cm long; umbellules sometimes racemosely arranged. Ovary 5-loculed, each containing 1 ovule; style branches 5, connate, tips sometimes free. Fruit fleshy, subglobose, 4-5 mm diam., style branches retained on an apical disc, dark purple when ripe. Seeds 4-5 per fruit, easily separated, broadly ovate, grooved, 2.2-3.5(-5.5) mm long.

SIMILAR TAXA

Usually only confused with the rarer Pseudopanax ferox which has rounded discoloured teeth on the juvenile leaves, and darker brown adult leaves. Pseudopanax ferox also has a larger fruit.

FLOWERING January-April

FLOWER COLOURS Green, Yellow

FRUITING January-April

ETYMOLOGY pseudopanax: False cure crassifolius: From the Latin crassus' thick and folius 'leaf'

ATTRIBUTION Description adapted from Allan (1961) and Webb and Simpson (2001).

REFERENCES AND FURTHER READING

Allan, H.H. 1961. Flora of NZ, Vol. I. Government Printer, Wellington Webb, C.J. & Simpson, M.J.A. 2001. Seeds of NZ gymnosperms and dicotyledons. Manuka Press, Christchurch.

MORE INFORMATION https://www.nzpcn.org.nz/flora/species/pseudopanax-crassifolius/

Metrosideros excelsa

COMMON NAME

Pohutukawa

SYNONYMS Metrosideros tomentosa Richard

FAMILY Myrtaceae

AUTHORITY Metrosideros excelsa Sol. ex Gaertn.

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE METEXC

CHROMOSOME NUMBER 2n = 22

CURRENT CONSERVATION STATUS 2018 | Threatened – Nationally Vulnerable

PREVIOUS CONSERVATION STATUSES

2012 | Not Threatened 2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

Large sprawling mainly coastal tree with leathery oval leaves, bearing masses of red bristly flowers over Christmas. Naturally occurring north of Poverty Bay and north Taranaki, but can be now found as far south as Dunedin. Branches sprawling up to around 20 metres, often with masses of dangling reddish rootlets.

DISTRIBUTION

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



Flowers of Metrosideros excelsa. Photographer: Wayne Bennett



A Pohutukawa flower. Photographer: DoC

HABITAT

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

FEATURES

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

SIMILAR TAXA

In New Zealand it is most frequently confused with the Kermadec pohutukawa (M. kermadecensis) which is endemic to Raoul Island (Kermadec Island Group). This island endemic differs by the smaller, rounder leaves, and much smaller inflorescences. It also has a tendency to sporadically flower throughout the year and on the New Zealand mainland at least it has a more erect, shrubby growth form, and rarely (if ever) makes a big tree.

FLOWERING

(August-) November-December (-March)

FLOWER COLOURS

Red/Pink, Yellow

FRUITING

(January-) March-April (-May)

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. Very difficult from cuttings, though soft wood water shoots give the best results. Can be grafted onto seedlings.

THREATS

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

Myrtle Rust (*Austropuccinia psidii*) is an invasive fungus which threatens native myrtle species - learn more <u>myrtlerust.org.nz</u>

ETYMOLOGY metrosideros: Iron heart excelsa: Tall

WHERE TO BUY Commonly sold by most retail nurseries.

VIDEO STORY

Project Crimson in Kawhia - TVNZ / DOC Meet the Locals Story.

ATTRIBUTION

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

REFERENCES AND FURTHER READING

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

CITATION

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

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/metrosideros-excelsa/

Cordyline australis

COMMON NAME Cabbage tree, ti, ti kouka, 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.



Cordyline australis. Photographer: Wayne Bennett



Cabbage tree. Photographer: DoC

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 $(0.2-)0.3-1(-1.5) \times (0.2)-0.3(-0.6)$ 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, $(0.6-)1(-1.8) \times 0.3-0.6(-0.8)$ 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

<u>Beever, R. et al. 1996. Sudden decline of cabbabe tree. NZ Journal of Ecology, 20(1): 53-68</u> <u>Duguid, F. 1976. *Cordyline australis* at Lake Kopureherehe. Wellington Botanical Society Bulletin, 39: 46-47</u> 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. <u>https://www.nzpcn.org.nz/flora/species/cordyline-australis/</u> (Date website was queried)

MORE INFORMATION

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

Leptospermum scoparium var. scoparium

COMMON NAME Manuka, kahikatoa

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.



Tararua Forest Park. Dec 2007. Photographer: Jeremy Rolfe



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

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 <u>myrtlerust.org.nz</u> 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/

Myoporum laetum

COMMON NAME Ngaio

SYNONYMS

Myoporum laetum G.Forst. var. laetum, Myoporum laetum var. decumbens G.Simpson

FAMILY Scrophulariaceae

AUTHORITY Myoporum laetum G.Forst.

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY

No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE MYOLAE

CHROMOSOME NUMBER 2n = 108

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

Spreading tree bearing glossy yellow-green to dark green heavily spotted oval leaves usually occurring not far from coast. New growth very glossy, dark and sticky. Flowers white with purple spots, at base of leaves. Fruit pink, on a stalk.

DISTRIBUTION

Endemic. Three Kings, North and South Islands. Also on the Chatham Islands where scarce and probably naturalised.

HABITAT

Coastal to lowland forest, sometimes well inland (in Hawkes Bay, Rangataiki and Wairarapa). Often uncommon over large parts of its range.



Ngaio. Photographer: Wayne Bennett



Myoporum laetum, Mahia Peninsula, East Coast Road. Photographer: Gillian Crowcroft

Decumbent shrub, shrub, or small tree up to 10 m tall and in decumbent forms 2-4 m across. Trunk to 0.3 m diam. Bark light grey to brown, thick and corky, firm, persistent, rough and furrowed. Branches stout, spreading. Leaf buds dark brown, purple-black to almost black, very sticky. Petioles flattened up to 300 mm long. Leaves somewhat fleshy, yellow-green to green, conspicuously white to yellow gland-spotted, (40-)100-120 x (10-)30-40 mm, lanceolate, oblong-lanceolate, oblong to obovate, acute to acuminate, margins crenulate-serrulate in upper half to third, margins sinuate to plain. Flowers in 2-6-flowered axillary cymes. Peduncles up to 15 mm long. Calyx-teeth 2 mm, narrow-lanceolate, acuminate. Corolla campanulate, white, purple-spotted, 5-lobed, lobes hairy on upper surface. Stamens 4. Fruit a narrow-ovoid drupe, 6-9 mm long, white or pale to dark reddish-purple.

SIMILAR TAXA

Ngaio could be confused with Tasmanian boobialla (M. insulare) but is distinct by its serrated gland-spotted leaves. We include var. decumbens G. Simpson within M. laetum, regarding it as merely one extreme of a continuous range of variation present in the species. Aside from leaf shape and size there are no other distinguishing characters. Another species, M. kermadecense, endemic to the Kermadec Islands, is rarely cultivated in New Zealand, for distinctions see under that species.

FLOWERING October - January

FLOWER COLOURS Violet/Purple, White

FRUITING December - June

PROPAGATION TECHNIQUE

Easily grown from fresh seed and semi-hardwood cuttings

THREATS

Not threatened. However, in some parts of the country such as urban Auckland, Wellington and along portions of the Kaikoura coast hybrid swams involving Tasmanian boobialla (Myoporum insulare sens. lat.) are common. The widespread planting of Tasmanian boobialla, or hybrids poses a risk to ngaio in places where it is not common.

ETYMOLOGY

myoporum: Shut pore **laetum**: Pleasant

WHERE TO BUY

Commonly cultivated and sold by many garden centres. However, some nursery stock offered as ngaio is either Tasmanian boobialla or hybrids involvying that entity (see features).

POISONOUS PLANT

The leaves contain ngaione which has antibacterial properties but is also toxic to livestock, causing liver damage (Brooker et al., 1998). Click on this link for more information about <u>Poisonous native plants</u>.

ATTRIBUTION

Fact Sheet prepared for the NZPCN by: P.J. de Lange (22 April 2011). Description based on Allan (1961)

REFERENCES AND FURTHER READING

Allan, H.H. 1961: Flora of New Zealand. Vol. I. Wellington, Government Printer. Brooker, S. G., Cambie, R. C. and R. C. Cooper (1998). New Zealand Medicinal Plants. Reed: Auckland.

CITATION

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

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/myoporum-laetum/

Beilschmiedia tawa

COMMON NAME

Tawa

SYNONYMS

Laurus tawa A.Cunn., Nesodaphne tawa (A.Cunn.) Hook.f., Laurus victoriana Colenso, Beilschmiedia tawaroa A.E.Wright

FAMILY

Lauraceae

AUTHORITY Beilschmiedia tawa (A.Cunn.) Benth. et Hook.f. ex Kirk

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE BEITAW

CHROMOSOME NUMBER 2n=24

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

Common canopy tree with a tall dark single trunk. Leaves thin, narrow, gradually tapering to base and the pointed tip, yellowish when young, when mature drooping, glossy, pale underneath. Flowers in yellowish sprays. Fruit very large, dark purple, glossy, containing a large large elliptical seed.

DISTRIBUTION

Endemic. Common throughout the North Island. In the South Island common from Cape Farewell east through the Marlborough Sounds. Extending south of there only in the east where it almost reaches Kaikoura (the southern limit is just north of the main town).

HABITAT

Major canopy dominant in the lowland and lower montane forests of the North Island and northern South island. May form pure stands but usually occurs in close association with podocarps such as rimu (Dacrydium cupressinum).



Fruit of Beilschmiedia tawa. Photographer: Wayne Bennett



Coromandel, November. Photographer: John Smith-Dodsworth

Evergreen tree up to 35 m tall. Trunk straight, 1.2-2 m diam., with buttressed base. Bark smooth, dark brown. Branches erect to spreading, slender to moderately robust. Young branchlets, leaves and inflorescences finely pubescent, hairs simple, pale golden. Foliage opposite to sub-opposite, simple, somewhat leathery when mature. Petioles (6-)8(-12) mm. Leaves (30-)40-80(-95) x (8-)11-16(-40) mm, narrowly to broadly lanceolate sometimes elliptic, yellow-green to green, glabrous when mature, undersides glaucous. margins entire, and undulate, apex acute to acuminate. Inflorescences, an erect, axillary panicle up to 100 mm long. Flowers sexually perfect, 2-4 mm diam, pale green, perianth cleft into 6 segments, ovate-oblong, stamens 12. Fruit a pendulous, ellipsoid to ovoid drupe (20-)30(-38) x (9-)12(-18) mm, 1-seeded, pericarp fleshy, dark purple-black when ripe, glaucous or shiny.

SIMILAR TAXA

A very distinct species. The green to greenish-yellow, narrow, entire, willow-like leaves with their glaucous undersides, and large plum-like, dark purple, pendulous drupes serve to immediately distinguish this from all other indigenous trees and shrubs. Some northern and northern offshore island populations differ (in some cases markedly) by their much broader, sometimes slightly bullate dark-green leaves.

FLOWERING

(October-) January (-May)

FLOWER COLOURS

Green

FRUITING (December-) January (-March)

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

PROPAGATION TECHNIQUE

Easy from fresh seed. Better germination is achieved if the flesh surrounding the seed is cleaned off.

ETYMOLOGY tawa: Tawa is Te Reo for this tree

TAXONOMIC NOTES

Beilschmiedea tawaroa A.E. Wright described by Wright (1984), is not upheld here because it is not ecologically distinct, there is gradation between these large-leaved variants and normal tawa (*B. tawa*), and because aside from leaf width there are no other consistent distinguishing characters (de Lange & Cameron 1999). Plants with *B. tawaroa* characters - as defined by Wright (1984) have now been found as far south as Mt Taranaki and Mahia Peninsula.

ATTRIBUTION

Fact sheet prepared for NZPCN by P.J. de Lange 12 February 2004. Description adapted from Allan (1961) and Wright (1984).

REFERENCES AND FURTHER READING

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

de Lange, P.J.; Cameron, E.K. 1999: The vascular flora of Aorangi Island, Poor Knights Islands, northern New Zealand. New Zealand Journal of Botany 37: 433-468

Moorfield, J. C. 2005: Te aka : Māori-English, English-Māori dictionary and index. Pearson Longman: Auckland Landcare Research. Ngā Tipu Whakaoranga - Māori Plant Use Database.

http://maoriplantuse.landcareresearch.co.nz

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. Wright, A. E. 1984: *Beilschmiedia* Nees (Lauraceae) in New Zealand. *New Zealand Journal of Botany 22*: 109-125.

CITATION

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

Coprosma autumnalis

COMMON NAME

Kanono, manono, large-leaved coprosma, raurekau

FAMILY Rubiaceae

AUTHORITY Coprosma autumnalis Colenso

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE COPAUT

CHROMOSOME NUMBER 2n = 44

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

Large shrub with pairs of thin wavy, mottled leaves. Leaves to 20cm long, oval, pointed, with small pits at junction of veins. Sharp dark point on stem between pairs of leaves. Fruit prange to red, on obvious stalks in open clusters.

DISTRIBUTION

Endemic. North to South Islands. In the South Island extending to Lake lanthe in the west and the Marlborough Sounds in the east.

HABITAT

Common in the understorey of forest, and in sheltered shady sites from the coast to montane and cloud forest. In areas of high rainfall can be a major component of shrublands, and within regenerating forest. Often common along the margins of logging tracks and roads.



Stokes Valley, Lower Hutt. Mar 2004. Photographer: Jeremy Rolfe



Kanono. Stokes Valley. March 2004. Photographer: Jeremy Rolfe

Shrub or small tree up to c. 6 m tall; plants much branched from base or with single trunk; branches and branchlets glabrous, smooth, under bark green. Interpetiolar stipules conspicuous, broadly deltoid, then tapering, apex with 2 porminent darkly pigmented denticles, glabrous. Leaves on smooth glabrous petioles 20-30 mm long; Lamina (100-)150-300 × (50-)70-100 mm, broadly elliptic to obovate, apex subacute or apiculate, base gradually narrowed to petiole; membranous to sub-coriaceous, adaxially dull glossy green or green mottled with maroon or purple, abaxially paler, margins flat or weakly undulose waved, rarely finely crenulate; venation prominent, reticulations conspicuous on both leaf surfaces, fine and close-set. Flowers in clusters on trichotomously branched peduncles up to 80 m. long. Male flowers with 4-5-toothed cupular calyx; corolla narrow-funnelform, lobes usually 5, acute, < tube; stamens us. 5. Female flowers usually with small stipulate bracts at axils of branches; calyx-teeth 5, small, acute; corolla tubular, lobes 5, narrow-triangular, acute, ± the same length as tube. Drupe reddish orange, oblong, 7-9 mm. long

SIMILAR TAXA

Easily distinguished by the very large, broad, yellow-green leaves which are variously mottled with dark green or purple, and have prominent leaf "drip-tips", and by the very large, entirely glandular leaf stipules - seen otherwise only in the very different looking *Coprosma waima*. It also differs from all of the other similar large-leaved species by its usually autumnal flowering pattern.

FLOWERING

(March-) April (-June) but may also occasionally flower in September.

FLOWER COLOURS

Green, White

FRUITING (September-) October-January (-April)

PROPAGATION TECHNIQUE

Very easy from fresh seed. Also easy from semi-hardwood cuttings. Prefers a shaded site in damp soil but will tolerate most garden situations.

ETYMOLOGY

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

autumnalis: Autumn flowering

Taxonomic Notes

For at least the last 30 years this *Coprosma* was known in New Zealand by the name *Coprosma grandifolia*. Recently Large et al. (2020) have shown that *Coprosma grandifolia* is an super uous name *Colucida* J.R.Forst. et G.Forst. because it includes the type of *Ronabea australis* A. Rich. (*Coprosma australis* (A.Rich.) B.L.Rob.), necessitating the reinstatement of *Coprosma autumnalis* Colenso for the plant known to iwi as kanono.

ATTRIBUTION

Fact sheet prepared by P.J. de Lange (30 August 2005). Description adapted from Allan (1961).

REFERENCES AND FURTHER READING

Allan, H.H. 1961: Flora of New Zealand. Vol. I. Government Printer, Wellington. Large, M.F.; Mabberly, D.J.; Wood, E. 2020: *Coprosma autumnalis* (kanono; Rubiaceae) in New Zealand: nomenclature, iconography and phenology, *Kew Bulletin 75*: 37-43. DOI 10.1007/S12225-020-9876-4

CITATION

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

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

Dacrycarpus dacrydioides

COMMON NAME

Kahikatea, white pine

SYNONYMS

Dacrydium excelsum D.Don in Lamb., Dacrydium ferrugineum Houttee ex Gord., Dacrydium thuioides Banks et Solander ex Carr., Nageia excelsa Kuntze, Podocarpus dacrydioides Richard, Podocarpus thujoides R.Br. In Bennett, Podocarpus excelsus (D.Don) Druce; Podocarpus excelsus (D. Don.) Druce

FAMILY Podocarpace

Podocarpaceae

AUTHORITY

Dacrycarpus dacrydioides (A.Rich.) de Laub.

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Gymnosperms

NVS CODE DACDAC

CHROMOSOME NUMBER 2n = 20

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES 2009 | Not Threatened 2004 | Not Threatened

DISTRIBUTION Endemic. North, South and Stewart Islands

HABITAT

Lowland forest, formerly dominant on frequently flooded, and/or poorly drained alluvial soils. Occasionally extends into lower montane forest. Once the dominant tree of a distinct swamp forest type all but extinct in the North Island - the best examples remain on the West Coast of the South Island.



kahikatea - Carter Scenic Reserve, Wairarapa. Photographer: John Sawyer



Kahikatea. Photographer: DoC

Stout, dioecious, cohort-forming conifer, 50 (-65) m. tall. Trunk 1(-2) m diam., often fluted and buttressed. Bark grey to dark-grey, falling in thick, sinuous flakes. Wood white, odourless. Trunks bare for 3/4 of length, subadults with a distinctive columnar growth habit, branches arising from 1/3 to 1/2 of trunk length. Branchlets slender, drooping. Leaves of juveniles subdistichous, subpatent, narrow-linear, subfalcate, acuminate, decurrent, 3-7 x 0.5-1mm red, wine-red, dark-green to green.; of subadults less than or equal to 4 mm., dark green or red; those of adults 1-2 mm., imbricating, appressed, keel, subtrigonous, lanceolate-subulate to acuminate with broader base, brown-green or glaucous. Male cones terminal, oblong, 10 mm. Pollen pale yellow. Ovule, terminal, solitary glaucescent. Receptacle fleshy, oblong, compressed, warty, 2.5-6.5 mm., yellow to orange-red. Seed broadly obovate to circular (4-)4.5-6 mm diam., purple-black, thickly covered in glaucous bloom.

SIMILAR TAXA

A distinctive tree of usually swampy alluvial terraces. The columnar growth form of subadults, buttressed and fluted trunk bases, scale-like leaves, and terminal fruits bearing the distinctive circular seeds serve to immediately distinguish this species from all other indigenous conifers.

FLOWERING October - January

FLOWER COLOURS No flowers

FRUITING February - April

PROPAGATION TECHNIQUE

Easily grown from fresh seed. Can be grown from hard-wood cuttings but rather slow to strike.

THREATS

Not Threatened, although as a forest-type it has been greatly reduced through widespread logging. Very few intact examples of kahikatea-dominated forest remain in the North Island.

ETYMOLOGY

dacrycarpus: Tear shaped fruit dacrydioides: Like a dacrydium

WHERE TO BUY

Commonly cultivated and frequently sold by most commercial nurseries and outlets. A very popular garden tree. A form with distinctly glaucous foliage is occasionally on offer.

CULTURAL USE/IMPORTANCE

Kahikatea is New Zealands tallest indigenous tree. The white odourless timber was used extensively to make butter boxes, for much of the late 1800s and early 1900s. It was this practice which all but eliminated kahikatea-dominated swamp forest from the North Island and northern South Island.

ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange 12 January 2004: Description adapted from Allan (1961).

REFERENCES AND FURTHER READING

Allan, H.H. 1961: Flora of New Zealand. Vol. I. Wellington, Government Printer. <u>Gardner, R. 2001. Notes towards an excursion Flora. Rimu and kahikatea (Podocarpaceae). Auckland Botanical</u> Society Journal, 56: 74-75

CITATION

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

https://www.nzpcn.org.nz/flora/species/dacrycarpus-dacrydioides/ (Date website was queried)

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/dacrycarpus-dacrydioides/

Pittosporum crassifolium

COMMON NAME

Karo

SYNONYMS Pittosporum crassifolium var. strictum Kirk

FAMILY Pittosporaceae

AUTHORITY Pittosporum crassifolium Banks et Sol. ex A.Cunn.

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE PITCRF

CHROMOSOME NUMBER 2n = 24

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

Bushy small tree with greyish leathery oval leaves that are white underneath and clusters of small dark red flowers and large hard green fuzzy capsules inhabiting upper North Island. Leaves 5-7cm long, margins often rolled under. Fruit 2-3cm wide, splitting into three to display the black seeds in a yellow pith.

DISTRIBUTION

Endemic. New Zealand, Great Barrier and North Island. In the North indigenous from Te Paki south to about White Cliffs, and East Cape. Widely naturalised further south to Wellington. Naturalised in the South, Stewart and Chatham Islands. Also naturalised on Norfolk Island, and in Hawaii.

HABITAT

Coastal and offshore islands. Favouring steep slopes, cliff faces, boudler beaches, rock stacks and the margins of petrel burrowed land. Sometimes forms major canopy dominant on offshore islands, and on occasion can be a significant component of dune forest. Often an urban weed because its fruits/seeds are avidly taken by indigenous and exotic birds and dispersed widely.



Pittosporum crassifolium showing emergent inconstant male flowers and subtending leaf like bracts, October, Coromandel. Photographer: John Smith-Dodsworth



Pittosporum crassifolium with mature fruit. Photographer: Peter de Lange

Gynodioecious shrubs to small trees 1-10 m tall. Trunk stout, grey-black. often distinctly lenticillate. Branches and branchlets erect, dark grey-black or brown, immature branchlets densely invested in grey-white or white tomentum, this maturing black. Leaves alternate, usually densely crowded toward branch and branchlet apices. Petioles 4-14 x 1-3 mm, grey-white to grey-black tomentose. Leaves 30-100 x 10-30 mm, obovate to oblanceolate, apices obtuse to acute, base attenuate, margins entire, both surfaces densely white, grey-white or brown tomentose when young, soon glabrate above but remainly densely covered in dirty white or grey-white, appressed tomentum beneath, very coriaceous, margins thickened and often strongly revolute, surfaces often blistered with insect galls. Flowers in terminal 1-10-flowered fascicles; pedicels 6-50 mm, accrescent in fruit, tomentose, subtended by a whorl of leaves and numerous, 3-15 mm long, caducous, brown-tomentose, ciliate bud scales. Sepals 7-11 x 1.5-3 mm, oblong to linear-lanceolate, acute, greyish-white, dirty white or brown tomentose on outer surfaces, inner surface only toward the middle, margins ciliate. Petals 10-16 x 3-5 mm, oblanceolate to lanceolate, subacute, free to base, recurved at apices, dark red, purple, yellow, pink or white; stamens 5-9 mm long, anthers 1-3 x 0.5-1.5 mm, sagittiform to elliptic-oblong. Ovary 3-6 x 2-5 mm, white or grey-white tomentose; style 3-2.5 mm long, stigma capitate or 3-lobed truncate. Capsules woody, 10-30 x 10-30 mm, (2-)3(-4)-valved, woody, trigonous, sometimes 2-4-lobed

SIMILAR TAXA

Pittosporum fairchildii Cheeseman is somewhat similar, differing from P. crassifolium by its glabrate rather than heavily tomentose foliage and capsules, both being sparsely covered in brownish tomentum. Furthermore the capsules of P. fairchildii are green to yellow-green rather than grey-black when mature, somewhat fleshy rather than woody, sparsely covered in brown tomentum rather than densely covered in grey-white tomentum and unlike P. crassifolium they scarcely (if ever) open, tending to fall intact from the tree.

FLOWERING

August - October

FLOWER COLOURS

Red/Pink, Violet/Purple

FRUITING

September - August (Old fruits persist on trees)

PROPAGATION TECHNIQUE

Easy from fresh seed. Often appears spontaneously in gardens as the seed is distributed far and wide by exotic and indigenous birds. An attractive species popular for its fast growth, robust grey-green leaves, sweetly scented flowers and remarkable resilience in coastal areas. Although frost sensitive, once established it will tolerate moderate frosts and snow fall.

THREATS

Not Threatened. However, the fruits are eaten by rats, and on rodent infested offshore islands this species rarely regenerates.

ETYMOLOGY

pittosporum: Pitch seed crassifolium: From the Latin crassus' thick and folius 'leaf'

WHERE TO BUY Commonly available from most garden centres.

TAXONOMIC NOTES

Plants referred to this species from Raoul Island, in the Kermadecs are an as yet undescribed species, perhaps closest to the Norfolk Island Pittosporum bracteolatum Endl. The type of P. crassifolium appears to be the same as the later named Pittosporum ralphii Kirk. Further research is needed.

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

CITATION

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

https://www.nzpcn.org.nz/flora/species/pittosporum-crassifolium/ (Date website was queried)

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/pittosporum-crassifolium/

Coprosma robusta

COMMON NAME Karamu, glossy karamu

SYNONYMS ?Coprosma coffaeoides Colenso

FAMILY Rubiaceae

AUTHORITY Coprosma robusta Raoul

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE COPROB

CHROMOSOME NUMBER 2n = 44

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

Large bushy shrub with pairs of glossy leaves which have a small dark-tipped flap on the stem between the leaf bases. Leaves 7-12cm long, with a prominent ridge up the middle underneath and a furrow up the middle above. Fruit red, in tight clusters along twigs.

DISTRIBUTION

Endemic. North and South Islands. Naturalised on the Chatham Islands within a small area between Waitangi and Owenga.

HABITAT

Common throughout coastal, lowland and lower montane habitats within shrublands and open sites within forest.



Abaxial surface of leaf showing minor veins increasing towards margins. Auckland. May 2013. Photographer: Jeremy Rolfe



Boulder Hill, Lower Hutt. Photographer: Jeremy Rolfe

Shrub or small tree up to 6 m tall. Branches numerous, stout, erect to somewhat spreading. Petioles stout, 10-20 mm long. Stipules fused towards base, obtuse, glabrous with one of two prominent, black, glandular denticles. Leaves 70-120 x 30-40-50 mm, leathery, dark green above, paler green beneath, glabrous, elliptic, elliptic-oblong to broad-ovate, acute or obtuse, apex mucronate. Venation reticulated, conspicuous. Male flowers in axillary many-flowered glomerules, corolla conspicuous, lobes triangular, acute, stamens 4-5, prominent. Females in compound clusters on peduncles 10-15 mm. Calyx and corolla much reduced, stigmas prominent. Drupe dark orange (rarely yellow), 8-8 x 4-5 mm, oblong to narrow-ovoid.

SIMILAR TAXA

Easily distinguished from all the other lowland, large-leaved Coprosma spp., by the seemingly entire leaves, which are finely toothed along the margins - this can be felt by dragging a finger tips along the leaf edge. Perhaps closest to Coprosma macrocarpa subsp. minor, with which it freely hybridizes, and from which the more simple leaf venation (not so reticulate), finely toothed leaf margins are useful distinctions.

FLOWERING

(July-) August-September (-November)

FLOWER COLOURS Green, White

FRUITING (March-) April-May (-July)

PROPAGATION TECHNIQUE

Very easy from fresh seed. Also easy from semi-hardwood cuttings. Fast growing and inclined to become weedy.

ETYMOLOGY

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

robusta: Sturdy

WHERE TO BUY

Not commonly cultivated but often naturalising from urban indigenous vegetation remnants. Fruit bird dispersed. Heavily fruiting females (which are often apomictic) can be very spectacular.

ATTRIBUTION

Fact sheet prepared by Peter J. de Lange (30 August 2004). Description adapted from Allan (1961).

CITATION

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

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

Coprosma repens

COMMON NAME Taupata, looking glass plant, mirror plant

SYNONYMS

C. retusa Hook.f.; C. baueriana Hook.f.; C. baueri auct. non Endl.; C. stockii Williams, Choice, Stove et Greenh.

FAMILY Rubiaceae

Rublaceae

AUTHORITY Coprosma repens A.Rich.

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE COPREP

CHROMOSOME NUMBER 2n = 44

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

Common low-growing shrub or small tree bearing pairs of green very shiny dark green leaves inhabiting the edge of coastal forests and seaside rocks. Leaves 6-8cm long, leathery, with small pits at junction of veins. Fruit orange.

DISTRIBUTION

Endemic. Three Kings, North and South Islands as far south as Greymouth in the west and Rarangi in the east but now extensively naturalised throughout the South Island, Stewart and Chatham Islands. Also naturalised on Norfolk Island and in Hawaii, in Australia, California and South Africa.

HABITAT

Coastal (rarely inland: Kaitaia – Awanui River, Huntly Basin and in the Manawatu – especially the upper Rangitikei River). A common species of rock stacks, islets, islands coastal cliffs, talus slopes and boulder field. Also a common component of petrel scrub on northern offshore islands, and in coastal forest where it often forms the main understorey and rarely is co-dominant in the canopy. Frequently associated with other coastal Coprosma, especially C. crassifolia, C. macrocarpa subsp. macrocarpa and subsp. minor, C. rhamnoides, C. neglecta, and members of the C. acerosa complex. Hybrids between C. repens and C. acerosa are common and are known as C. xkirkii, less frequently hybrids between it and C. crassifolia are found (C. xbuchananii) and with both C. rhamnoides and C. neglecta.



A picture of Coprosma repens at Taupata. Photographer: John Barkla



Taupata. Eastbourne. June 2001. Photographer: Jeremy Rolfe

Dioecious (rarely monoecious) shrub or small tree up to 8 m tall, prostrate and widely spreading in exposed sites, shrubb to arborescent in more sheltered situations; branches firm and more or less pliant when young becoming more brittle with age, bark dark to light brown, underbark green; branchlets initially pubescent with short patent hairs, becoming glabrous with age. Leaves on fleshy glabrous, slender to stout petioles 8-16 mm long. Stipule shortly sheathing, margin finely pubescent, otherwise outer surface pubescent, inner more or less glabrous, broaddeltoid, subacute to subtruncate; denticles up to 4 either side of a single large, dark black apical denticle, conspicuous, central one prominent. Lamina thick, subfleshy, coriaceous, 5-90 × 4-60 mm, dark glossy green above, paler and dull below; broad-oblong, elliptic-oblong, broadly ovate-oblong to suborbicular, rounded to truncate, usually apiculate (slightly emarginate to retuse on Three Kings and northern Hauraki Gulf Islands), apiculus caducous, cuneately narrowed to base; margins plane to slightly recurved (very occasionally inrolled). Vein reticulations evident above and especially below. Flowers in compound clusters on branched peduncles. Male flowers 3-20 per cluster; calyx-teeth minute; corolla funnelform, lobes 4-5, acute, about = tube. Female flowers usually 3 per cluster; calyx-teeth short, obtuse; corolla subfunnelform, c.5 mm long, lobes acute or obtuse, < tube; stigmas stout (Perfect flowers occasional (though with pollen often aborted or malformed) through out range but especially common on the northern offshore islands). Drupe orange-red, red (rarely yellow), obovoid often slightly compressed, 8-12 × 8-10 mm

SIMILAR TAXA

A distinctive species easily recognised by the very glossy, dark green, broadly oblong to suborbicular (round) leaves. It is only likely to be confused with C. baueri (a Norfolk Island endemic extremely rarely cultivated in New Zealand) and C. petiolata (a Kermadec endemic rarely cultivated in New Zealand). For distinctions between it and C. petiolata see C. petiolata.

FLOWERING

June - February

FLOWER COLOURS

Green, White

FRUITING

July - June

PROPAGATION TECHNIQUE

Easily grown from fresh seed, semi-hardwood cuttings and layered pieces. Moderately frost-tender. An attractive species which is inclined to self-sow and times become weedy in cultivation. In some places of New Zealand where it is not natural it has become established from garden plantings and it now poses a threat to other indigenous Coprosma populations as well as local coastal vegetation associations.

ETYMOLOGY

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

repens: From Latin repere meaning to creep, means creeping

STATUS OVERSEAS

A serious weed in many countries, e.g., Australia, Norfolk Island, South Africa, U.S.A. (California), Hawaii. Hybrids between this species and the Norfolk Island endemic C. baueri are now frequent on that island, and could possibly be responsible for its ultimate extinction from that island group.

ATTRIBUTION

Description based on Allan (1961) though supplemented with additional measurements and observations taken from herbarium specimens and wild plants.

REFERENCES AND FURTHER READING

Allan, H.H. 1961: Flora of New Zealand. Vol. I, Government Printer, Wellington. <u>Dawson, J.W. 1961. Coprosma. The Spike (or Victoria University College Review). Victoria University of Wellington</u> <u>Student's Association.</u> <u>Corden H.D. 1959. Sev ratio in Coprosma reports (rubiaceae). Wellington Retanical Society Pulletin, 21: 11</u>

Gordon, H.D. 1959. Sex ratio in Coprosma repens (rubiaceae). Wellington Botanical Society Bulletin, 31: 11

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

Pittosporum tenuifolium

COMMON NAME Kohukohu, kohuhu, black matipo

SYNONYMS

Trichilia monophylla Richard, Pittosporum fasciculatum Hook.f., Pittosporum tenuifolium subsp. fasciculatum (Hook.f.) Kirk, Pittosporum tenuifolium var. fasciculatum (Hook.f.) Kirk, Pittosporum colensoi var. fasciculatum (Hook.f.) Cheeseman, Pittosporum tenuifolium Sol. ex Gaertn. subsp. tenuifolium

FAMILY

Pittosporaceae

AUTHORITY Pittosporum tenuifolium Sol. ex Gaertn.

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE PITTEN

CHROMOSOME NUMBER 2n = 24

CURRENT CONSERVATION STATUS 2012 Not Threatened

PREVIOUS CONSERVATION STATUSES 2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

Small tree with very dark twigs bearing pale green shiny wavy thin leaves and very dark flowers and 12mm wide capsules that split into two or three to show the black sticky seeds. Leaves usually 2-4cm long.

DISTRIBUTION

Endemic and widespread throughout country.

HABITAT

A small tree of coastal to montane shrubland and forested habitats. Preferring successional habitats.



Bartons Bush, Trentham. Sep 2005. Photographer: Jeremy Rolfe



Bartons Bush, Trentham. Sep 2005. Photographer: Jeremy Rolfe

Shrub or small gynodioecious tree up to 10 m tall (usually much less). Trunk 0.3-0.4(-0.6) m diam., stout, clad in dark grey-black or brown persistent bark. Branches numerous, erect then spreading. Branchlets and young leaves pubescent, hairs pale yellow or cream. Petioles short, somewhat fleshy. Leaves alternate, (10-)30(-70) x (5-)10(-20) mm, leathery, pale-green to dark green above, lighter below, oblong, oblong-ovate or elliptic-obovate, apex obtuse to acute, rarely acuminate, margins entire, often undulose. Flowers solitary or in axillary cymes, rather fragrant, especially at night. Pedicels stout, pale green, fleshy, bracts entire, lanceolate, caducous. Sepals narrowly ovate-oblong, subacute to obtuse, silky hairy. Petals 12 mm long, lanceolate, dark red, black (rarely yellow or white). Capsules 2-valved (rarely 3), subglobose, valves woody, black when mature, long persistent. Seeds immersed in sticky, red or yellow viscid pulp.

FLOWERING

October - November (-December)

FLOWER COLOURS

Black, Red/Pink

FRUITING January - March

PROPAGATION TECHNIQUE

Easy from fresh seed. Can be grown from semi-hardwood cuttings.

ETYMOLOGY

pittosporum: Pitch seed tenuifolium: Thin leaf

WHERE TO BUY

Very common in cultivation. Kohuhu and cultivars are commonly sold by commercial nurseries and are also grown throughout the world.

ATTRIBUTION Fact sheet prepared for NZPCN by P.J. de Lange 10 January 2004. Description adapted from Allan (1961).

REFERENCES AND FURTHER READING

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

CITATION

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

MORE INFORMATION https://www.nzpcn.org.nz/flora/species/pittosporum-tenuifolium/

Myrsine australis

COMMON NAME Red mapou, red matipo, mapau, red maple

SYNONYMS

Suttonia australis Richard, Myrsine urvillei A.DC., Rapanea australis (Richard) W.R.B.Oliv.

FAMILY Primulaceae

AUTHORITY Myrsine australis (A.Rich.) Allan

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

INO

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE MYRAUS

CHROMOSOME NUMBER 2n = 46

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

Common tall bushy shrub with bright red twigs bearing wavy yellow-green leaves. Leaves 3-6cm long, with an undulating edge. Flowers small, in clusters. Fruit almost black.

DISTRIBUTION

Endemic. Three Kings, North, South and Stewart Islands.

HABITAT

Common tree of regenerating and mature forest in coastal to montane situations. Often common on northern offshore islands.



Fruit. Photographer: Wayne Bennett



Mapou. Photographer: Wayne Bennett

Shrub or small tree up 6 m tall. Trunk stout, 0.2-0.6 m diam. Bark dark black or purple-black, red on younger branches. Branchlets numerous erect to spreading, very leafy. Petioles stout, fleshy, 5 mm long, often red or green mottled red. Leaves 30-60 x 15-25 mm, dark green to yellow-green variously mottled or blotched with red, or purple spots, leathery, glabrous except for finely pubescent mid vein, obovate-oblong to broad-elliptic, apex obtuse, margins entire, strongly undulate, rarely flat. Inflorescence a fascicle, usually numerous and crowded, produced along branchlets and in leaf axils. Fixed female and inconstant male flowers on different plants, 1.5-2.5 mm diam., white, cream or pale green. Pedicels short, stout, dark red or purple-black. Calyx-lobes 4, sometimes heavily reduced, long persistent. Petals 4, lanceolate, obtuse, free, revolute. Fruit a 1-seeded drupe, 2-3 mm diam., purple-black to black when mature.

SIMILAR TAXA

Distinguished from all other New Zealand Myrsine by the small, purple/wine-red blotched or spotted, strongly undulating obovate-oblong to broad-elliptic leaves.

FLOWERING August - January

FLOWER COLOURS Cream, White

FRUITING September - May

PROPAGATION TECHNIQUE

Easy from fresh seed. Can be grown from semi-hardwood cuttings but tricky. Best results are obtained using a mist unit.

ETYMOLOGY

myrsine: Myrrh australis: Southern

WHERE TO BUY

Occasionally cultivated. Easily grown in a wide range of habitats, making an ideal hedge or small specimen tree. Sometimes available from mainline commercial nurseries, and commonly sold by specialist native plant nurseries.

KEYSTONE IMPORTANCE

One of three known hosts for Adams mistletoe (Trilepidea adamsii).

ATTRIBUTION Fact Sheet Prepared for NZPCN by: P.J. de Lange 28 October 2009. Description based on Allan (1961)

REFERENCES AND FURTHER READING

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

CITATION

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

MORE INFORMATION

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

Muehlenbeckia australis

COMMON NAME Pohuehue, large-leaved muehlenbeckia

SYNONYMS

Coccoloba australis G.Forst., Polygonum australe (G.Forst.) A.Rich. nom. illegit., Muehlenbeckia adpressa (Labill.) Meisn., Polygonum forsteri Endl.,

FAMILY Polygonaceae

AUTHORITY Muehlenbeckia australis (G.Forst.) Meisn.

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON No

ENDEMIC GENUS

No

ENDEMIC FAMILY No

STRUCTURAL CLASS Lianes & Related Trailing Plants - Dicotyledons

NVS CODE MUEAUS

CHROMOSOME NUMBER 2n = 20

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened 2004 | Not Threatened

FLOWER COLOURS Green, White

ETYMOLOGY muehlenbeckia: Named after a botanist named Muehlenbeck **australis**: Southern

MORE INFORMATION https://www.nzpcn.org.nz/flora/species/muehlenbeckia-australis/



Bartons Bush, Trentham. June 2005. Photographer: Jeremy Rolfe



Hutt Valley. Jul 2005. Photographer: Jeremy Rolfe

Kunzea ericoides

COMMON NAME

Kanuka

SYNONYMS Leptospermum ericoides A.Rich.

FAMILY Myrtaceae

AUTHORITY Kunzea ericoides (A.Rich) Joy Thomps.

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE KUNEVE

CHROMOSOME NUMBER 2n = 22

CURRENT CONSERVATION STATUS 2018 | Threatened – Nationally Vulnerable

PREVIOUS CONSERVATION STATUSES

2012 | Not Threatened 2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

Common tree of the northern South Island only. Bark flaky. Branches often pendent at ends, bearing masses of needle-like bright green leaves and clusters of small white flowers. Branchlets appearing hairless (sparsely covered in very small erect hairs (20x magnification)). Leaves to 25 mm long, soft to grasp. Flowers borne in 'corymbiform' clusters, white with a red centre. Fruit a small dry capsule 1.9-3.4 × 1.8–3.9 mm.

DISTRIBUTION

Endemic. New Zealand: Northern South Island only - north of the Buller and Wairau Rivers. Most common in North West Nelson.

HABITAT

Coastal to lowland shrubland, regenerating forest and forest margins, also present in montane forest, ultramafic shrubland and very occasionally present in subalpine shrubland.



Kunzea ericoides - tree showing weeping branches characteristic of this species. Photographer: Peter de Lange



Pupu Walkway & Springs 5 Jan 2006. Photographer: Mike Wilcox

Trees up to 18 m. Trunk 1–4, 0.10–0.85 m d.b.h. Early bark brown to grey-brown, ± elongate, usually firmly attached, margins elongate sinuous, ± entire with scarcely any flaking; old bark similar. Branches slender, initially ascending soon spreading, apices often pendulous. Branchlets numerous, slender, glabrescent; indumentum sparse, deciduous, hairs divergent 0.02–0.05 mm long; leaves of branchlets densely crowded along stems. Leaves sessile, ± glabrous, except for the margins; lamina 4.0-25.0 × 0.5-1.8 mm, green to yellow-green, linear, linear-lanceolate, to narrowly lanceolate, straight or with upper ¹/₄ weakly recurved, apex acute, sometimes cuspidate, base attenuate; lamina margins initially finely sericeous, glabrate or glabrous; hairs forming a fine, discontinuous band failing just short of lamina apex. Inflorescence a compact corymbiform to shortly elongate 3–15-flowered botryum up 60 mm long. Pherophylls foliose \pm persistent, 1 per flower; lamina 3.0–7.8 \times 0.9–1.4 mm, elliptic, lanceolate to narrowly lanceolate, apex acute, base attenuate; Pedicels 1.6–3.8 mm long at anthesis, usually glabrous. Flower buds pyriform to narrowly obconic, apex of mature buds weakly domed to flat, calyx lobes distant. Flowers 4.1-8.3 mm diam. Hypanthium 1.4-3.2 × 1.9-4.1 mm; sharply obconic, apex terminating in 5 persistent suberect to spreading calyx lobes; hypanthium glabrous (very rarely with basal ¹/₄ finely, sparsely covered in minute hairs). Calyx lobes 5, suberect to spreading, $0.4-1.0 \times 0.4-1.0$ mm, orbicular, obtuse to broadly deltoid, red-green, pink or crimson, margins glabrous or finely ciliate. Receptacle green or pink at anthesis, darkening to crimson or dark magenta after fertilisation. Petals 5, 1.4–2.6 × 1.5–2.0 mm, white, orbicular, suborbicular to narrowly ovate, spreading, apex rounded, entire or very finely denticulate, oil glands usually not evident when fresh, ± colourless. Stamens 10-34 in 1-2 weakly defined whorls, filaments white. Anthers dorsifixed, 0.35-0.48 × 0.16-0.24 mm, broadly ellipsoid. Pollen white. Anther connective gland prominent, pink or pinkish-orange when fresh, drying red to orange, ± spheroidal ± coarsely papillate. Ovary 4-5 locular, each with 16-24 ovules in two rows on each placental lobe. Style 1.5-2.2 mm long at anthesis; stigma capitate, about 11/4 × the style diam., flat, cream or white, flushing pink after anthesis, surface very finely granular-papillate. Fruits rarely persistent, 1.9-3.4 × 1.8-3.9 mm, glabrous, dark green to reddish-green, maturing brown to grey-brown to grey-black, cupular, barrel-shaped, shortly cylindrical to hemispherical, calyx valves erect with the apices incurved, split concealed by dried, erect, free portion of hypanthium. Seeds 1.00–1.05 × 0.32–0.50 mm, semi-glossy, orange-brown to dark brown, obovoid, oblong, oblongellipsoid, or cylindrical and ± curved, surface coarsely reticulate.

SIMILAR TAXA

Easily distinguished from all other members of the Kunzea ericoides complex by the glabrescent to glabrous branchlets. The bright green, finely, linear-lanceolate leaves and small flowers with very low stamen numbers also help to identify this variety.

FLOWERING October-February

FLOWER COLOURS White

FRUITING November-March

LIFE CYCLE

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

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. Very difficult from cuttings, though soft wood water shoots give the best results.

THREATS

Not threatened, though some stands are at risk from clearance for farmland or through felling for firewood.

ETYMOLOGY

kunzea: Named after Gustav Kunze (4 October 1793, Leipzig -30 April 1851), 19th century German botanist from Leipzig who was a German professor of zoology, an entomologist with an interest mainly in ferns and orchids **ericoides**: Like a heath

WHERE TO BUY

Uncommon in cultivation. It does not seem to be commericially available. Most plants sold as *K. ericoides* are another, very common, allied species *Kunzea robusta*.

ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange 25 August 2014. Description modified from de Lange (2014).

REFERENCES AND FURTHER READING

de Lange, P.J. 2014: <u>A revision of the New Zealand *Kunzea ericoides* (Myrtaceae) complex. *Phytokeys* 40: 185p doi: 10.3897/phytokeys.40.7973.</u>

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): Kunzea ericoides Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <u>https://www.nzpcn.org.nz/flora/species/kunzea-ericoides/</u> (Date website was queried)

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/kunzea-ericoides/

Podocarpus totara var. totara

COMMON NAME

Totara

SYNONYMS Podocarpus totara G.Benn. ex D.Don

FAMILY Podocarpaceae

AUTHORITY Podocarpus totara G.Benn. ex D.Don var. totara

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Gymnosperms

NVS CODE PODTOT

CHROMOSOME NUMBER 2n = 34

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened 2004 | Not Threatened

DISTRIBUTION

Endemic. Common throughout most of the North and South Islands. Present but extremely scarce on Stewart Island (Freshwater River).

HABITAT

Widespread and at times abundant tree of lowland, montane and lower subalpine forest. May also form a vegetation type in which it is the dominant species.

FEATURES

Robust dioecious conifer up to 30 m tall. Trunk stout, 2-3 m diam., clad in thick, corky, furrowed and somewhat stringy reddish-grey bark. Trunk without branches at base, branches stout, erect to spreading. Leaf bud narrower than or the same diam., as branchlet, surrounded by caducous, papery, narrowly lanceolate bracts. Leaves brownish-green, erect, leathery; juvenile 20 x 1-2 mm, adults 15-30 x 3-4 mm., linear-lanceolate, acute, apex pungent, mid-vein distinct to obscure. Male cones (strobili) axillary 10-15 mm, solitary or in 4s. Female branchlets axillary, ovules solitary or paired, receptacle of 2-4 scales, acute and free at tips, maturing as a red, swollen, succulent, sweet tasting "fruit" this surmounted by a 1(-2) broadly elliptic, ovoid-oblong 3-6 mm, semi-glossy, buff, grey nut brown, henna or dark brown (green to glaucous-green) when fresh, seed.



Podocarpus totara var. totara. Photographer: John Smith-Dodsworth



Totara foliage. Photographer: DoC

SIMILAR TAXA

Most frequently confused with Podocarpus laetus with which it may co-occur and with which it frequently hybridises. From that species P. totara var. totara can be distinguished by its thicker bark, less pungent leaf tips, and most readily by the leaf bud which is the same diameter as the branchlet, and by the narrower, lanceolate bracts surrounding the emergent leaves. See also Gardner (1990) in references below.

FLOWERING

(August-) October (-December)

FLOWER COLOURS

No flowers

FRUITING

Fruits take a year or so to ripen, and may be found throughout the year, usually peaking at about the same time that cones are produced. They are most frequently seen between April and May

PROPAGATION TECHNIQUE

Easily grown from fresh seed and hard-wood cuttings.

THREATS

Not Threatened, though as a vegetation type it is all but extinct throughout most of its former range.

ETYMOLOGY

podocarpus: Foot or stalk fruit **totara**: After the Maori name, totara

CULTURAL USE/IMPORTANCE

The distinctive red, somewhat oily wood was the timber of preference for use by Maori for constructing canoes (waka), and carvings. The stringy bark was harvested to make bags in which to hold preserved birds.

ATTRIBUTION

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

REFERENCES AND FURTHER READING

<u>Gardner, R. 1990. Totara and Halls totara. Auckland Botanical Society Journal, 45:27-28.</u> Moorfield, J. C. (2005). Te aka : Maori-English, English-Maori dictionary and index. Pearson Longman: Auckland, N.Z.

Landcare Research. Nga Tipu Whakaoranga - Maori Plant Use Database. http://maoriplantuse.landcareresearch.co.nz/WebForms/default.aspx

CITATION

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

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/podocarpus-totara-var-totara/

Fuchsia excorticata

COMMON NAME Kotukutuku, tree Fuchsia

FAMILY Onagraceae

AUTHORITY Fuchsia excorticata (J.R.Forst. et G.Forst.) L.f.

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE FUCEXC

CHROMOSOME NUMBER 2n = 22

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

Spreading small tree with thin flaky orange bark and bearing thin pointed leaves that are white underneath. Leaves up to 10mm long by 1.5-3cm wide, margin with small teeth, deciduous in southern areas. Flower colourful, in clusters from trunk or branches. Fruit dark purple, blunt at tip and base.

FLOWER COLOURS

Green, Violet/Purple

LIFE CYCLE

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

ETYMOLOGY

fuchsia: After Leonhart Fuchs (17 Jan 1501 - 10 May 1566), a German physician and regarded as one of the three founding fathers of botany. **excorticata**: Loose-barked

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



Franz Josef. Dec1981. Photographer: Jeremy Rolfe



Christchurch. Oct 1981. Photographer: Jeremy Rolfe

Leptecophylla juniperina subsp. juniperina

COMMON NAME Prickly Mingimingi, Mingimingi

SYNONYMS

Epacris juniperina J.R.Forst. et G.Forst., Cyathodes acerosa (Gaertn.) Roem. et Schult., Ardisia acerosa Gaertn., Cyathodes acerosa (Gaertn.) Roem. et Schult. var. acerosa, Cyathodes acerosa var. parvifolia Hook.f., Cyathodes articulata Colenso, Cyathodes juniperina (J.R.Forst. et G.Forst.) Druce, Styphelia juniperina (G.Forst.) Pers., Styphelia acerosa F.Muell., Leucopogon forsteri A.Rich. (nom. illegit.)

FAMILY

Ericaceae

AUTHORITY

Leptecophylla juniperina (J.R.Forst. et G.Forst.) C.M.Weiller subsp. juniperina

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE LEPJSJ

CHROMOSOME NUMBER 2n = 20

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

Bushy prickly shrub bearing hard narrow sharp leaves that are white underneath and pink, red, red-black or white fruit. Leaves variable in shape and in two forms: 6-15mm long mainly in the west of both islands, and 7-10mm long mainly in the east of both islands (both around 1mm wide).

DISTRIBUTION

Indigenous. New Zealand (North, South and Stewart Islands), also Australia (Tasmania only)

HABITAT

Coastal to montane, in scrub and forest.



Coal Island. Photographer: John Barkla



Small leaved variant, Days Bay, Eastbourne. Aug 2002. Photographer: Jeremy Rolfe

Dioecious, compact or tall shrubs 0.4-2.0 m tall. Bark firm, fibrous, weakly tessellated and furrowed, dark grey brown or dark brown. Stems grey, brown or grey brown; branchlets usually brown but occasionally yellow-brown or red-brown, rounded, scabrous or puberulent. Leaves spreading or occasionally reflexed, dark green, bronze-green or green, narrowly ovate, 4.0-18.0 × 1.0-2.1 mm, apex acute, tip pungent, 0.4-1.6 mm long, margin flat, glabrous or ciliolate toward apex; upper surface glabrous or puberulent at base, lower surface with intervenal papillae and 5 veins; petiole erect 0.6-1.7 mm long, appressed to stem, glabrous or puberulent on the upper surface. Flowers sickly sweet fragrant, solitary, terminal and axillary on erect or recurved pedicels 2-5 mm long in males, 1.3-3.0 mm in females; bracts ovate, 0.5-0.9 × 0.6-1.4 mm, obtuse, glabrous, margin usually ciliolate at the apex; bracteoles and sepals ovate or elliptic, obtuse, glabrous; bracteoles 8-24 per flower, imbricate, 1.2-2.4 × 1.1-2.0 mm; sepals 1.7-3.1 × 1.1-2.3 mm. Corolla tube white or cream, campanulate, exceeding the calyx, 1.5-2.8 mm long in males, 1.6-2.8 mm long in females, usually glabrous; lobes white or cream, shorter than tube 1.1-2.3 mm long, apex acute, glabrous or with short, sparse hairs. Anthers of male flowers 1.1-2.0 mm long, half-exserted; filaments 0.2-0.5 mm long, slightly exserted and visible between the lobes. Ovary ± spherical, 0.5-1.0 × 0.6-1.3 mm, glabrous, 4-6-celled; style straight, glabrous, attenuate from the ovary, 1.0-1.8 mm long in males, 0.9-1.5 mm long in females; stigma 0.1-0.2 mm tall; nectary 0.3-0.7 mm tall, of distinct scales or weakly adherent scales separating with pressure, margin toothed or rounded and occasionally with hairs. Drupe fleshy, white, pink, pinkish white, red or red-black, slightly flattened, spherical, 4-7 × 5-9 mm. Endocarp transversely elliptic, terete, 2.0-3.5 × 3.0-5.0 mm, longitudinally ridged, 5-6 of these distinctly more prominent; apex rounded to a broad flat or concave end; base rounded but narrower than apex, with a small hollow. Surface brown to dark brown, fading with age to light brown or fawn. Internally 4-6-celled, usually with 2-3 of these filled

SIMILAR TAXA

Superficially similar to Leptecophylla robusta (Hook.f.) C.M.Weiller from which it differs by its absence from the Chatham Islands; small stature; spreading leaves with long pungent apices, and which are veined 5 times. Both small-leaved and long-leaved forms are present in New Zealand, and are at places sympatric - they would repay further study. Note that Leptecophylla juniperina subsp. oxycedrus (Labill.) C.M.Weiller is not present in New Zealand.

FLOWERING Throughout the year

FLOWER COLOURS Cream, White

FRUITING Throughout the year

PROPAGATION TECHNIQUE

Difficult has been successfully grown as transplants from the wild, and by cuttings. At all stages plants are prone to collapse and resent any disturbance of the roots.

ETYMOLOGY

juniperina: Named after the genus Juniper, which is an old Latin name for juniper

WHERE TO BUY

Not Commercially Available

ATTRIBUTION

Fact sheet by P.J. de Lange (17 march 2005): Description modified from Weiller (1999). Endocarp description from Webb and Simpson (2001)

REFERENCES AND FURTHER READING

Weiller, C.M. 1999: *Leptecophylla*, a new genus for species formerly included in Cyathodes (Epacridaceae). *Muelleria 12*: 195-214.
Webb, C.J.; Simpson, M.J.A. 2001: Seeds of New Zealand – Gymnosperms & Dicotyledons. Manuka Press, Christchurch.

CITATION

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

https://www.nzpcn.org.nz/flora/species/leptecophylla-juniperina-subsp-juniperina/ (Date website was queried)

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/leptecophylla-juniperina-subsp-juniperina/

Hoheria populnea

COMMON NAME Lacebark, houhere, ribbonwood

SYNONYMS

Hoheria sinclairii Hook.f., H. populnea subsp. vulgaris Kirk var. vulgaris, H. populnea subsp. vulgaris var. sinclairii (Hook.f.) Kirk, H. populnea var. crataegifolia Hook.f. (pro parte)

FAMILY

Malvaceae

AUTHORITY Hoheria populnea A.Cunn.

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS Yes

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE HOHPOP

CHROMOSOME NUMBER 2n = 42

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

Soft-wooded tree with a grey trunk bearing leathery toothed leaves and large white flowers that develop into a winged dry fruit inhabiting the northern North Island. Leaves 7-14cm long by 4-6cm wide, widest at base. Juvenile plants with zigzagging branches bearing leaves only 1-3cm long with deep gaps between teeth.

DISTRIBUTION

Endemic. North Island only from North Cape (Pararaki Stream) south to the northern Waikato and Coromandel. However widely planted and often found naturalising throughout the southern North Island, South, Stewart and Chatham Islands.

HABITAT

Coastal to montane usually in Kauri (Agathis australis) forest but also in successional forest associated with kauri. Also common in pohutukawa (Metrosideros excelsa) dominated coastal forest.



Hoheria populnea. Photographer: Peter de Lange



Hoheria populnea. Photographer: Peter de Lange

Small upright to often spreading tree up to 8 m tall (rarely more); bark of mature trunk and branches dark greybrown that of younger growth dark red-brown or maroon, branches and branchlets ascending, in some forms pendulous, pliant, slender, often deeply grooved, ± glabrescent, indumentum comprised of short stellate hairs, on mature parts sparse, on young parts and inflorescence sparse to dense. Juvenile foliage identical or nearly so to adult. Leaves subcoriaceous to coriaceous glossy, adaxially dark-green to yellow-green, sometimes with veins more darkly pigmented, abaxially often maroon or purple with darker coloured veins, sometimes green or glaucescent; petioles slender, pliant up to 10 mm long; lamina (5-)10(-30) mm long, broad-ovate to deltoid to suborbicular in outline, margins serrate, usually deeply so, coarsely lobed. Adult leaves similar, on petioles up to 20 mm long; lamina (50-)7(-180) mm × (30-)40(-60) mm, broad-ovate to ovate-lanceolate to elliptic, apex acuminate or acute, obtuse or rounded, base rounded to truncate (rarely subcordate); margins deeply, coarsely, sometimes doubly, serrate-dentate, teeth usually well spaced. Flowers 25-30 mm diameter, both solitary and in (2-)5-10-flowered cymose clusters on same plant; pedicels 8-10(-12) mm long; calyx campanulate, 5-6 mm long, teeth broadly to narrowly triangular; petals 10-12 mm long, white, obliquely oblong, oftenn notched.; stigmas capitate. Mature carpels 5(-6), compressed. Mericarp winged, main body 4.5-6.5 mm long, brown; wing 3.0-8.5 mm long, slightly curved outwards, orange yellow, finely and sparsely covered with stellate hairs. Description adapted from Allan (1961) and Webb & Simpson (2001).

SIMILAR TAXA

Hoheria equitum endemic to the Poor Knights and Hen & Chicken Islands is similar. It differs by having distinctly coriaceous, uniformly light green, finely serrated to sub-entire leaves, and smaller flowers which tend to be obscured by the foliage. Hoheria sexstylosa is also often confused with H. populnea, from which it differs by its distinctive filiramulate juvenile growth habit, pendulous branches, and narrower, more finely serrated leaves. The flowers are also somewhat smaller but tend to have 6 rather than 5 carpels.

FLOWERING

January - March

FLOWER COLOURS White

FRUITING April - June

LIFE CYCLE

Winged mericarps are dispersed by wind (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Easy from fresh seed, and often seedlings can be found in the vicinity of garden plants. Specimens tend to be short-lived and they often suffer from Hoheria Die back - a syndrome which kills portions of the tree and has no cure. An excellent fast-growing tree suitable as a wind break and as temporary shelter (because it is so short-lived. Numerous horticultural selections and cultivars are known

ETYMOLOGY

hoheria: Latin version of the Maori name houhere which refers to H. populnea and H. glabrata. **populnea**: Poplar-like

WHERE TO BUY

Commonly sold at most garden centres. A form with purple stamens is known as cv. Osbournei, and comes originally from Great Barrier Island.

NOTES ON HYBRIDISATION

Hybridizes in the northern Waikato and Auckland areas where it naturally meets with H. sexstylosa. Hoheria populnea is widely planted, often inappropriately as part of restoration plantings, and freely naturalizes from these. In cultivation this species hybridizes readily with H. angustifolia, H. equitum, H. ovata and H. sexstylosa. Hoheria populnea is very variable species with well marked, and geographically defined races. This variation needs critical study. Indeed the genus as a whole is in serious need to a modern systematic revision.

ATTRIBUTION

Fact Sheet Prepared for NZPCN by P.J. de Lange 9 April 2011. Description adapted from Allan (1961) and Webb & Simpson (2001).

REFERENCES AND FURTHER READING

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

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

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

CITATION

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MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/hoheria-populnea/

Sophora chathamica

COMMON NAME

Kowhai, coastal kowhai

SYNONYMS

Sophora microphylla var. chathamica (Cockayne) Yakolev, Sophora microphylla subsp. microphylla var. chathamica (Cockayne) Yakolev

FAMILY

Fabaceae

AUTHORITY Sophora chathamica Cockayne

FLORA CATEGORY Vascular – Native

ENDEMIC TAXON Yes

ENDEMIC GENUS No

ENDEMIC FAMILY No

STRUCTURAL CLASS Trees & Shrubs - Dicotyledons

NVS CODE SOPCHA

CHROMOSOME NUMBER 2n = 18

CURRENT CONSERVATION STATUS 2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened 2004 | Not Threatened

BRIEF DESCRIPTION

A kowhai tree bearing leaves to 150mm long that have leaflets 6-16mm long by 4-8mm wide that slightly overlap and get smaller towards the tip and with bunches of drooping yellow flowers and dry ridged and knobbly seed pods 50-180mm long containing hard yellow seeds. Juvenile and adults similar.

DISTRIBUTION

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

HABITAT

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



Sophora chathamica flowers, October, Coromandel. Photographer: John Smith-Dodsworth



Sophora chathamica foliage. Photographer: John Smith-Dodsworth

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

SIMILAR TAXA

Distinguished from all other Kowhai species by the absence of a divaricating/filiramulate juvenile stage; with leaflets 6-16 x 4-8 mm; and by the distal leaflets usually smaller than proximal, crowded and overlapping (especially toward distal end), with leaflets broadly elliptic, broadly obovate, broadly ovate, obovate to more or less orbicular, with all parts moderately hairy.

FLOWERING

August-November

FLOWER COLOURS Yellow

FRUITING October-September

PROPAGATION TECHNIQUE

Easy from seed, provided the hard seed shell is nicked first with a knife or rubbed with sandpaper to expose the endosperm. Soaking seed treated this way overnight often helps speed up germination. Can be grown with difficulty from cuttings.

THREATS

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

ETYMOLOGY

sophora: After the Arabic name for a similar tree **chathamica**: From the Chatham Islands

WHERE TO BUY

Commonly available at most commercial nurseries. A popular native tree for larger gardens. Very commonly sold in garden centres, where it is often sold as either *S. microphylla* or *S. tetraptera*. Some plants with a superficial resemblance to *S. chathamica* and offered by nurseries usually as *S. microphylla* or *S. tetraptera* have, upon closer inspection, turned out to be the closely related Chilean pelu (*S. cassioides*).

POISONOUS PLANT

All parts of the plant but especially the ripe yellow seed are poisonous. Because the seed are hard they will take a lot of chewing to cause harm, and also will need to be consumed in large quantities to effectively poison a human. If the seed are crushed before eating it is more likely that they will cause harm. The major toxin is Cytisine and symptoms of poisoning include nausea, vomiting, increased heart rate, twitching of muscles or loss of coordination. Onset of these symptoms may occur within one hour. In extreme cases symptoms include paralysis and respiratory failure. Click on this link for more information about <u>Poisonous native plants</u>.

ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange (31 July 2004). Description adapted from Heenan et al. (2001).

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

Heenan, P.B.; de Lange, P. J.; Wilton, A. D. 2001: *Sophora* (Fabaceae) in New Zealand: taxonomy, distribution, and biogeography. *New Zealand Journal of Botany 39*: 17-53

CITATION

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MORE INFORMATION https://www.nzpcn.org.nz/flora/species/sophora-chathamica/