



# Friends of the Blade Plants



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

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## INTRODUCTION

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

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

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

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

Where no published treatment was available Peter used herbarium specimens and his own knowledge of the flora to prepare species pages. Various other contributors have provided text and additional information to many species pages including botanists such as John Barkla, Cathy Jones, Simon Walls, Nick Singers, Mike Thorsen and many others. The threatened fungi text was written by Eric Mackenzie and Peter Buchanan (Landcare Research) and aquatic plant information was supplied by Paul Champion from NIWA. Colin Ogle has contributed to the exotic species fact sheets.

More than 200 photographers have kindly provided images to illustrate the website and for use in this book especially John Smith-Dodsworth, Jeremy Rolfe, Peter de Lange, Wayne Bennett and Gillian Crowcroft, Mike Thorse, Colin Ogle and John Sawyer.

## THE NEW ZEALAND BOTANIC REGION

The information on the Network website, from which this book was compiled, is for species that are indigenous to or naturalised within the New Zealand Botanic Region as defined by Allan (1961). The New Zealand botanic region encompasses the Kermadec, Manawatawhi/Three Kings, North, South, Stewart Island/Rakiura, Chatham, Antipodes, Bounties, Snares, Auckland Campbell island/Motu Ihupuku and Macquarie.

## ABOUT THE NETWORK

The Network has more than 800 members worldwide and is New Zealand's largest non-governmental organisation solely devoted to the protection and restoration of New Zealand's indigenous plant life.

The vision of the New Zealand Plant Conservation Network is that *'no indigenous species of plant will become extinct nor be placed at risk of extinction as a result of human action or indifference, and that the rich, diverse and unique plant life of New Zealand will be recognised, cherished and restored'*.

Since it was founded in 2003 the Network has undertaken a range of conservation initiatives in order to achieve its vision.

That work has included:

- Training people in plant conservation
- Publishing plant books, reports and posters
- Raising money for the David Given Threatened Plant Research Trust to pay for plant conservation research scholarships
- Educating people about plant life through the Network website
- Connecting people through our website, the monthly newsletter, the Network conference and the annual general meeting

## WHAT IS A THREATENED PLANT?

The NZ Threatened Plant Committee was formed in 1991 and ever since then it has met at regular intervals to review the status of indigenous vascular plants. It is made up of a team of botanists that between them have an extensive knowledge of the native plants of New Zealand.

This committee applies a set of criteria to each native plant to determine its conservation status. The resulting list of species classified as threatened is published in the NZ Journal of Botany (see for example [de Lange et al. 2018](#)). The main threat categories used are: Extinct, Nationally Critical, Nationally Endangered and Nationally Vulnerable, Declining. Other categories used are: Recovering, Relict, Naturally Uncommon, Coloniser, Vagrant and Data Deficient. For vascular plants the threat status used in this book is taken from the ['Conservation status of New Zealand indigenous vascular plants, 2017'](#) by [de Lange et al. \(2018\)](#).

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

# 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

Dicotyledonous Trees & Shrubs

## 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

## FEATURES

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

**MORE INFORMATION**

<https://www.nzpcn.org.nz/flora/species/beilschmiedia-tawa/>

# Brachyglottis repanda

## COMMON NAME

Rangiora, bushman's toilet paper, bushman's friend

## SYNONYMS

*Cineraria repanda* G.Forst., *Senecio georgii* Endl. *Senecio forsteri* Hook.f., *Brachyglottis rangiora* Buchanan, *Brachyglottis rangiora* Hort., *Brachyglottis repanda* var. *fragrans* D.G.Drury, *Brachyglottis repanda* J.R.Forst. et G.Forst. var. *repanda*

## FAMILY

Asteraceae

## AUTHORITY

*Brachyglottis repanda* J.R.Forst. et G.Forst.

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Dicotyledonous Trees & Shrubs

## NVS CODE

BRAREP

## CHROMOSOME NUMBER

2n = 60

## CURRENT CONSERVATION STATUS

2012 | Not Threatened

## PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened

2004 | Not Threatened

## BRIEF DESCRIPTION

Common large shrub or sometimes small tree with very large (5-15cm) thin mottled leaves with jagged edges and white underneath. New growth covered in tawny or white fuzz. Flowers small, white or cream, clustered into large conspicuous sprays.

## DISTRIBUTION

Endemic. North Island throughout. South Island - north west Nelson to just south of Greymouth in the west, and near Kekerengu in the east. Naturalised on Banks Peninsula, Otago Peninsula, and on Stewart Island at Oban.

## HABITAT

Common in coastal, lowland and lower montane shrubland and open forest. Often a pioneer species.



Wellington. Sep 1993. Photographer: Jeremy Rolfe



*Brachyglottis repanda*. Photographer: Jeremy Rolfe

## FEATURES

Shrub to small tree up to 6 m or more tall. Trunk one or more arising from ground, covered in somewhat corky bark. Branches stout, spreading, rather brittle, initially densely clad in fine white to buff tomentum becoming glabrescent with age. Petiole stout, grooved, 80-100 mm long. Leaves leathery, 50-250(-300) X 50-20(-30) mm, dark green to pale green above, undersides clad in fine, appressed vivid white hairs, broad- to ovate-oblong, obtuse to subacute, obliquely cordate to truncate at base, margins distantly dentately lobed to sinuate. Inflorescence a much branched panicle. Capitula 5 mm diam., numerous, without ligules (discoid). Involucral bracts 3 mm long, narrow-oblong to narrow spatulate, margins scarious except at base. Florets 10-12, yellow. Seeds (cypsela) narrowly oblong-elliptic to oblong elliptic, 1-1.8 mm long, ribs 6, rounded, broad. Pappus 2-3 mm, buff-yellow, scabrid.

## SIMILAR TAXA

This shrub is unlikely to be confused with any other indigenous plant, except its close relative the Three Kings endemic *B. arborescens*. That species differs from *B. repanda* by its thick corky bark, smaller, saddle-shaped leaves, smaller, less branched panicles, darker sulphur yellow florets, oblong seeds 2-2.3 mm with 12-13 ribs, and longer pappus ((2.5-) 3.5-4.5 mm)).

## FLOWERING

(July-) August-October (-November)

## FLOWER COLOURS

Cream, White

## FRUITING

(October-) November-December (-January)

## LIFE CYCLE

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

## PROPAGATION TECHNIQUE

Very easy from fresh seed and from semi-hardwood or hardwood cuttings. Fast growing but inclined to be short-lived. benefits from a hard prune after flowering.

## ETYMOLOGY

**brachyglottis**: Name comes from the Greek words brachus meaning "short" and glottis meaning "the vocal apparatus of the larynx"

**repanda**: Means irregularly undulating or scalloped (describing leaf margins)

## WHERE TO BUY

Commonly grown and offered by many commercial nurseries and native plant specialist growers. Several variegated forms are now available, as is a purple-leaved cultivar cv. *purpurea* said to have come from a wild plant on the banks of the Wanganui River.

## CULTURAL USE/IMPORTANCE

The large leaves with their white, finely hairy undersides have served a dual purpose for many, as they make excellent toilet paper, and also can be written upon (with a ballpoint pen), thus allowing one to send rather novel letters.

## ATTRIBUTION

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

## REFERENCES AND FURTHER READING

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

## CITATION

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

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

## MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/brachyglottis-repanda/>

# 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

Dicotyledonous Trees & Shrubs

## 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

## FEATURES

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 prominent 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 a superfluous name *Cotucida* 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. <https://www.nzpcn.org.nz/flora/species/coprosma-autumnalis/> (Date website was queried)

## MORE INFORMATION

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

# 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

Dicotyledonous Trees & Shrubs

## 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

## FEATURES

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

## MORE INFORMATION

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

# 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

Monocotyledonous Trees and Shrubs

## 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

## FEATURES

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

## 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 Organism (MLO) which is believed to cause the syndrome known as Sudden Decline. Plants stricken with this illness suddenly, and rapidly, wilt, with the leaves falling off still green. If the bark is peeled off the base of the tree near the soil line blackened or rotten spots are typically present. Once stricken with Sudden Decline there is no cure and the trees can die within days. Recently there has been some evidence to suggest the severity of Sudden Decline is lessening.

## ETYMOLOGY

**cordyline:** From the Greek *kordyle* 'club'

**australis:** Southern

## WHERE TO BUY

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

## NOTES ON THEIR STATUS

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

## FORAGING FOR CABBAGE TREE

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

## ATTRIBUTION

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

## REFERENCES AND FURTHER READING

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

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

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora.

Perspectives in Plant Ecology, Evolution and Systematics 11: 285-309

## CITATION

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

## MORE INFORMATION

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

# 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

Podocarpaceae

## AUTHORITY

*Dacrycarpus dacrydioides* (A.Rich.) de Laub.

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Gymnosperm Trees & Shrubs

## 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

## FEATURES

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, subtrigonal, lanceolate-subulate to acuminate with broader base, brown-green or glaucous. Male cones terminal, oblong, 10 mm. Pollen pale yellow. Ovule, terminal, solitary glaucous. 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 Zealand's 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.

Gardner, R. 2001. Notes towards an excursion Flora. Rimu and kahikatea (Podocarpaceae). Auckland Botanical 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/>

# Dacrydium cupressinum

## COMMON NAME

Rimu, red pine

## SYNONYMS

*Thalamia cupressina* Spreng

## FAMILY

Podocarpaceae

## AUTHORITY

*Dacrydium cupressinum* Lamb.

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Gymnosperm Trees & Shrubs

## NVS CODE

DACCUP

## 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 from North Cape south. Uncommon in large parts of the eastern South Island. Facultatively extinct on Banks Peninsula, where one natural tree is all that remains. Rimu is the type of the genus *Dacrydium*.

## HABITAT

Lowland to montane forest - occasionally ascending to subalpine scrub.

## FEATURES

Dioecious conifer 35(-60) m tall. Adult trees with trunk bare of branches for 3/4 of length. Trunk stout, 1.5-2 m diam., bark dark brown, falling off in large thick flakes. Wood dark red. Branches in juveniles numerous, slender, branchlets pendulous. Adult branches few, spreading, branchlets slender, pendulous. Leaves dark green, bronze-green, red-green or orange, imbricate, those of juveniles 4-7(-10) mm., 0.5-1 mm wide, keeled, acute, linear-subulate, subfalcate, decurrent; those of subadults ascending, incurved 4-6 mm., rhomboid; of adults similar but appressed, 2-3 mm., rigid, subacute, trigonous. Male and Female "cones" first appear on subadults. Male cones (strobili) solitary or paired, terminal 5-10 mm., oblong. Pollen yellow. Ovules solitary, terminal on up-curved branchlets. Receptacle a fleshy red or deep-orange cup 1-2 mm long. Seed oblong or elliptic-oblong, compressed in section, 3-3.8(-4) mm long, semi-glossy, dark-brown.



Fruit. Photographer: DoC



Female cones. Photographer: DoC

## SIMILAR TAXA

A very distinctive species which could not be confused with any other indigenous conifer. The very young juveniles have a superficial similarity to seedlings of silver pine (*Manoao colensoi*) but differ by their much finer, more numerous, dull rather than glossy red-green leaves.

## FLOWERING

December - March

## FLOWER COLOURS

No flowers

## FRUITING

Fruits take a year or more to mature and co-occur with young female cones, they are most frequently seen between February and May.

## LIFE CYCLE

Arillate seeds are dispersed by frugivory (Thorsen et al., 2009).

## 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 rimu-dominated forest remain in the North Island.

## ETYMOLOGY

**dacrydium:** Tear drop

**cupressinum:** Cypress

## WHERE TO BUY

Commonly cultivated and frequently sold by most commercial nurseries and outlets. A very popular garden tree.

## ETHNOBOTANY

The first indigenous beer was brewed using the young tips of rimu (as spruce beer) by Captain Cook at Dusky Sound in 1773 (Kirk 1889).

## ATTRIBUTION

Fact sheet prepared for NZPCN by P.J. de Lange 3 February 2006. Description adapted from Allan (1961), Webb & Simpson (2001), fresh material and herbarium specimens.

## REFERENCES AND FURTHER READING

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

Gardner, R. 2001. Notes towards an excursion Flora. Rimu and kahikatea (Podocarpaceae). Auckland Botanical Society Journal, 56: 74-75

Kirk, T. 1889: The Forest Flora of New Zealand. Wellington, Government Printer.

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

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

## CITATION

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

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

## MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/dacrydium-cupressinum/>

# Hedycarya arborea

## COMMON NAME

Porokaiwhiri, Pigeonwood

## SYNONYMS

*Hedycarya dentata* G.Forst.; *Hedycarya scabra* A.Cunn., *Zanthoxylum novae-zelandiae* A.Rich.

## FAMILY

Monimiaceae

## AUTHORITY

*Hedycarya arborea* J.R.Forst. et G.Forst.

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Dicotyledonous Trees & Shrubs

## NVS CODE

HEDARB

## CHROMOSOME NUMBER

$n = 57II$ ,  $2n = 116$ , c.166

## CURRENT CONSERVATION STATUS

2012 | Not Threatened

## PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened

2004 | Not Threatened

## BRIEF DESCRIPTION

Common small tree. Leaves dark green, glossy, oval, with toothed margins, in pairs on short stalks from a flattened part of the dark twigs. Flowers simple, green, around 1cm wide, arranged in small sprays. Fruit orange, oval, about 1cm long.

## DISTRIBUTION

Endemic. Three Kings, North and South Islands. In the South island uncommon in the east south of Kaikoura reaching its southern limit on that coastline on Banks Peninsula, it is more ranging in the west reaching northern Fiordland at least.

## HABITAT

A common forest tree of coastal and lowland forest, extending into montane areas in the warmer parts of the North Island



*Hedycarya arborea* (Porokaiwhiri).  
Photographer: Wayne Bennett



*Hedycarya arborea* male flower. Photographer:  
John Braggins

## FEATURES

Tree up to 12 m. tall; trunk up to 0.5m dbh, clear of branches for first few metres, ; bark dark grey to brown-grey, firm (not flaking) finely tessellated. Branches numerous, upright to spreading; branchlets finely brown-pubescent at tips. Leaves coriaceous, glabrous except for midrib and main veins and petioles, adaxially dark green, glossy or glaucescent, abaxially similar but paler and dull; petioles 10-15-20(-35)mm long; lamina 40-120(-180) × 25-30(-50-60) mm, elliptic-obovate, oblanceolate to lanceolate, cuneately narrowed to base, obtuse to subacute or acute, margins distantly serrate (with occasional subentire leaves) or toothed. Inflorescence a branched raceme; peduncles and pedicels slender, pubescent. Male with perianth c.10 mm diameter, pubescent, stamens numerous, anthers sessile. Female with perianth c.6 mm diameter; carpels up to 20. Drupe 1-seeded, ovoid, 10-15(-16) mm long, red or orange-red up to 10 per branch. Endocarp 9-14 mm long, elliptic to obovate, rarely circular, brown to grey-brown, surface ± smooth, usually with a few irregular bumps and/or longitudinal ridges. Description adapted from Allan (1961) and Webb & Simpson (2001).

## SIMILAR TAXA

None. Plants from the Three Kings (Manawa Tawhi (Great) Island) and the Poor Knights are notable for their very large broad-elliptic to broad-obovate, distantly bluntly toothed leaves (see comments by Allan 1961). However, de Lange & Cameron (1999) noted that not all Hedycarya on the Poor Knights share these characteristics and that such large-leaved plants grade into "typical" *H. arborea* on the other Hauraki Gulf Islands. The situation seems similar to that observed for large-leaved forms of tawa (*Beilschmiedia tawa*) that some authors have segregated as a distinct species, *B. tawaroa* (see Wright 1984). Like *B. tawaroa*, these larger, broader leaved island forms of *Hedycarya arborea*, exhibit no other morphological or cytological distinctions (see de Lange & Murray 2002). Nevertheless they would repay further study

## FLOWERING

December - February

## FLOWER COLOURS

Cream, White

## FRUITING

March - June

## LIFE CYCLE

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

## PROPAGATION TECHNIQUE

Easily grown from fresh seed. A quick growing tree ideal for the warmer parts of the North Island (though once established it will tolerate a reasonable amount of cold). The fruit is avidly sought after by kereru (*Hemiphaga novaezelandiae*).

## ETYMOLOGY

**hedycarya**: Sweet-nutted

**arborea**: From the Latin arbor 'tree', meaning tree-like

## ATTRIBUTION

Factsheet prepared for NZPCN by P.J. de Lange 20 February 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.
- 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.
- de Lange, P.J.; Murray, B.G. 2002: Contributions to a chromosome atlas of the New Zealand flora – 37. Miscellaneous families. *New Zealand Journal of Botany* 40: 1-24.
- Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 11: 285-309
- Webb, C.J.; Simpson, M.J.A. 2001: Seeds of New Zealand Gymnosperms and Dicotyledons. Christchurch, Manuka Press.
- 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): *Hedycarya arborea* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/hedycarya-arborea/> (Date website was queried)

## MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/hedycarya-arborea/>

# 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

Dicotyledonous Trees & Shrubs

## 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

## FEATURES

Small upright to often spreading tree up to 8 m tall (rarely more); bark of mature trunk and branches dark grey-brown 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, often 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 filirimate 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

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

## MORE INFORMATION

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

# Knightia excelsa

## COMMON NAME

Rewarewa, NZ honeysuckle

## SYNONYMS

None

## FAMILY

Proteaceae

## AUTHORITY

*Knightia excelsa* R.Br.

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

Yes

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Dicotyledonous Trees & Shrubs

## NVS CODE

KNIEXC

## CHROMOSOME NUMBER

2n = 28

## CURRENT CONSERVATION STATUS

2012 | Not Threatened

## PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened

2004 | Not Threatened

## BRIEF DESCRIPTION

Tall cylindrical tree bearing masses of dark green jagged leathery leaves and dense spikes of reddish flowers common in regenerating forest of the North Island and Marlborough Sounds. Leaves 10-15cm long by 2-4cm wide, juvenile leaves to 30cm long. New growth covered in reddish fuzz.

## DISTRIBUTION

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

## HABITAT

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



Rewarewa. Photographer: Jeremy Rolfe



*Knightia excelsa*, Manurewa. Photographer: Gillian Crowcroft

## FEATURES

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

## SIMILAR TAXA

A very distinct tree with no close relatives or "look alikes" within the indigenous, naturalised, or exotic cultivated flora of New Zealand. Easily recognised by the dark red, "bottle brush" like inflorescences, and by the leathery, broad lanceolate, dark green, serrated leaves. All emergent foliage, inflorescences and immature seed pods are covered in a distinctive velutinous, red-brown (rust-coloured) tomentum.

## FLOWERING

(September-) October-December

## FLOWER COLOURS

Brown, Red/Pink

## FRUITING

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

## LIFE CYCLE

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

## PROPAGATION TECHNIQUE

Easy from fresh seed, Cuttings are very difficult to strike. Young plants are very quick growing but cold-sensitive.

## ETYMOLOGY

**knightia**: Knight

**excelsa**: Tall

## WHERE TO BUY

Not commonly cultivated and inclined to be badly damaged by thrips in some parts of the warmer parts of the country. Offered by some commercial and specialist native plant nurseries. This species should be more widely cultivated, it is very attractive, and the flowers are popular with nectar-feeding birds.

## ATTRIBUTION

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

## REFERENCES AND FURTHER READING

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

## CITATION

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

## MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/knightia-excelsa/>

# Laurelia novae-zelandiae

## COMMON NAME

Pukatea

## FAMILY

Atherospermataceae

## AUTHORITY

Laurelia novae-zelandiae A.Cunn.

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Dicotyledonous Trees & Shrubs

## NVS CODE

LAUNOV

## CHROMOSOME NUMBER

2n = 44

## CURRENT CONSERVATION STATUS

2012 | Not Threatened

## PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened

2004 | Not Threatened

## BRIEF DESCRIPTION

Tall tree with a fluted base bearing pairs of oval glossy dark green toothed leaves inhabiting wetter sites throughout the North Island and Nelson. Twigs square, reddish. Leaves 4-8mm long, margin evenly toothed, in several pairs along stem. Flower small greenish. Fruit dry and covered in long hairs.

## FLOWER COLOURS

Green, White

## LIFE CYCLE

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

## ETYMOLOGY

**laurelia:** Laurel

**novae-zelandiae:** Of New Zealand

## REFERENCES AND FURTHER READING

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

## MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/laurelia-novae-zelandiae/>



A Pukatea branch. Photographer: Jeremy Rolfe



Pukatea. Photographer: Jeremy Rolfe

# Melicytus ramiflorus

## COMMON NAME

Mahoe, hinahina, whitey wood

## SYNONYMS

*Melicytus ramiflorus* J.R.Forst. et G.Forst. subsp. *ramiflorus*

## FAMILY

Violaceae

## AUTHORITY

*Melicytus ramiflorus* J.R.Forst. et G.Forst.

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Dicotyledonous Trees & Shrubs

## NVS CODE

MELRAM

## CHROMOSOME NUMBER

2n = 32

## CURRENT CONSERVATION STATUS

2012 | Not Threatened

## PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened

2004 | Not Threatened

## BRIEF DESCRIPTION

Common small tree with a knobby pale trunk and thin light green toothed leaves that have the vein network much more visible on the paler underside. Leaves 5-20cm long, tapering to tip. Flowers greenish, in clusters along twigs. Fruit purple.

## DISTRIBUTION

Endemic subspecies. Three other subspecies occur, one endemic to Norfolk (probably a different species), one to Fiji and one to Samoa. In addition forms from Raoul Island (Kermadec Islands Group) and the Three Kings and eastern Northland may warrant formal recognition. Research into this variation is in progress.

## HABITAT

Abundant small tree of coastal, lowland, and lower montane forests throughout the country.



Boulder Hill, Lower Hutt. Mar 2013.  
Photographer: Jeremy Rolfe



Mahoe. Photographer: Jeremy Rolfe

## FEATURES

Shrub or small tree up to 15 m tall. Trunk 1 or more, 0.6-0.8 m diam, typically much branched from near base. Wood soft, white. Bark greyish-white, underbark bright green. Branchlets numerous, twiggy, rather brittle. Petioles 20 mm or more long. Leaves, firmly fleshy, 50-150 x 30-50 mm, light or dark green, lanceolate-oblong to elliptic oblong, apex acute to acuminate (rarely obtuse), leaf margins coarsely serrated (very rarely subentire, or irregularly coarsely toothed). Inflorescence 2-10 flowered fascicles arising from branchlets or leaf axils. Flowers 3-4 mm diam., female or inconstant male (flowers types on separate plants) borne on slender pedicels 5-10 mm long. Bracts subtending flowers, calyx lobes minute, petals greenish-yellow, yellow (rarely cream), lanceolate, apex obtuse. Anthers sessile, stigma 4-6-lobed. Fruit a violet, dark blue or purple berry, 4-5 mm diam., obovoid to globose. Seeds 3-6 per berry.

## SIMILAR TAXA

Most frequently confused with *M. macrophyllus* which differs by the leathery, somewhat fleshy dark green, often mottled purple, obovate-oblong leaves with rather coarse serrations. Flowers are also larger (6.5-8 mm diam.) and the broader petals are usually white. *M. macrophyllus* is a species of kauri forests, and is not known with certainty south of Auckland City. The Waikari Creek (near Dunedin) record cited in the New Zealand Flora is the result of specimen mislabelling.

## FLOWERING

November - February

## FLOWER COLOURS

Green, Yellow

## FRUITING

November - March

## PROPAGATION TECHNIQUE

Easy from fresh seed. Can be grown from semi-hardwood cuttings but generally slow without a mist unit.

## ETYMOLOGY

**melicytus:** From the Greek meli (honey) and kytos (hollow container), referring to the staminal nectaries of the flowers. Literally "honey-cave"

**ramiflorus:** Branch-flowering

## WHERE TO BUY

Commonly cultivated and often available from commercial nurseries. In many urban areas abutting indigenous forest mahoe self naturalises into gardens. The fruits are bird dispersed, so plants can also appear many kilometres from forest remnants.

## TAXONOMIC NOTES

Past treatments have recognised four subspecies in *M. ramiflorus*, subsp. *oblongifolius* of Norfolk Island, subsp. *fastigiata* of Fiji and subsp. *samoensis* of Samoa. Recent treatments, particularly that of Art Whistler have advocated that all of these subspecies should be regarded as distinct species. NZPCN has followed this recent opinion.

## ATTRIBUTION

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

## CITATION

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

## MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/melicytus-ramiflorus/>

# Pectinopitys ferruginea

## COMMON NAME

Miro, brown pine

## SYNONYMS

*Podocarpus ferruginea* D.Don, *Stachypitys ferruginea* (D.Don) Bobrov et Melikyan nom. illegit., *Stachycarpus ferruginea* (D.Don) Tieghem, *Prumnopitys ferruginea* (D.Don) Laubenf.

## FAMILY

Podocarpaceae

## AUTHORITY

*Pectinopitys ferruginea* (G.Benn. ex D.Don in Lamb.) C.N.Page

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Gymnosperm Trees & Shrubs

## NVS CODE

PRUFER

## CHROMOSOME NUMBER

2n = 36

## CURRENT CONSERVATION STATUS

2012 | Not Threatened

## PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened

2004 | Not Threatened

## DISTRIBUTION

Endemic. North, South and Stewart Islands.

## HABITAT

Common tree of lowland to montane forest.

## FEATURES

Stout tree up to 25 m tall. Trunk 1-1.5 m diam., in adults clear of branches for 2/3 of length. Bark thick, grey. Falling in thick, sinuous flakes. Leaves feathery, dark green, green to bronze-green, distichous, erect, narrow-linear, acute, falcate to subfalcate, acute to subacute, mid vein distinct, margins recurved, juveniles up to 30 mm long, those of adults 15-25 x 2-3 mm. Male cones (strobili) solitary, axillary, 5-15 mm long. Ovules solitary (rarely paired), on short branchlets 10 or less mm. long. Fruit a broadly oblong to sub-spherical red, pink-red fleshy drupe up to 20 mm long - fleshy, oily, smelling and tasting strongly of terpenes. Stone elliptic to broadly elliptic 11-17 mm long, dark brown to black-brown.



A miro tree. Photographer: Jeremy Rolfe



Miro. Photographer: Jeremy Rolfe

## SIMILAR TAXA

The bright green to bronze-green, feathery foliage, and pink-red, to red plum-like drupes are quite unlike any other New Zealand conifer. However young miro plants might be confused with yew (*Taxus baccatus*), but can be distinguished by their lack of petioles.

## FLOWERING

June - August - October

## FLOWER COLOURS

No flowers

## FRUITING

Fruits take 12-18 months to mature. Ripe fruits are mainly found from November - April

## PROPAGATION TECHNIQUE

Easily grown from fresh seed. Seed may take up to 2 years to germinate. 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 miro-dominated forest remain in the country.

## ETYMOLOGY

**ferruginea**: Rust coloured

## CULTURAL USE/IMPORTANCE

The large, oily, red fruits are an important part of the diet of the New Zealand Wood Pigeon/Kereru/Kukupa (*Hemiphaga novaezelandiae*).

## TAXONOMIC NOTES

*Stachypitys* proposed by Bobrov & Melikyan (2000) is regarded as illegitimate because it is a paronym of *Stachyopitys* a fossil conifer genus. More recently Page (2019) created the genus *Pectinopitys* to accommodate New Zealand miro, allied species in Eastern Australia (one), New Caledonia (one), and three South American species. It has long been recognised that miro was an 'ill fit' in *Prumnopitys*, which was why Bobrov & Melikyan (2000) made an attempt to move it out of that genus, so this more recent segregation should come as no surprise.

## ATTRIBUTION

Prepared by P.J. de Lange for NZPCN, 3 February 2006. Description based on Allan (1961)

## REFERENCES AND FURTHER READING

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

Bobrov, A.V.F.Ch.; Melikyan, A.P. 2000: Morphology of female reproductive structures and an attempt of the construction of phylogenetic system of orders Podocarpaceae, Cephalotaxales and Taxales. *Botanicheskii Zhurnal (Moscow & Leningrad)* 85(7):50–68.

Page, C.N. 2019: New and maintained genera in the taxonomic alliance of *Prumnopitys* s.l (Podocarpaceae), and circumscription of a new genus: *Pectinopitys*. *New Zealand Journal of Botany* 57(1): 137-153.

## CITATION

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

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

## MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/pectinopitys-ferruginea/>

# Phormium tenax

## COMMON NAME

Flax, harakeke, korari (maori name for inflorescence).

## SYNONYMS

None

## FAMILY

Xanthorrhoeaceae

## AUTHORITY

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

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Monocotyledonous Herbs

## NVS CODE

PHOTEN

## CHROMOSOME NUMBER

2n = 32

## CURRENT CONSERVATION STATUS

2012 | Not Threatened

## PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened

2004 | Not Threatened

## DISTRIBUTION

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

## HABITAT

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



Flax. Photographer: John Sawyer



Phormium tenax seed heads (Korari).  
Photographer: Jeremy Rolfe

## FEATURES

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

## SIMILAR TAXA

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

## FLOWERING

(September-) October-November (-January)

## FLOWER COLOURS

Red/Pink, Yellow

## FRUITING

(November-) December (-March)

## PROPAGATION TECHNIQUE

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

## THREATS

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

## ETYMOLOGY

**phormium**: Basket or basketwork

**tenax**: Tough

## WHERE TO BUY

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

## CULTURAL USE/IMPORTANCE

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

## FLAX DIEBACK

‘Yellow-leaf’ is one of the most serious diseases of harakeke (similar to the ‘sudden decline’ in cabbage trees). The disease is characterised by abnormal yellowing of the leaves. Scheele (1997) described how “growth of young leaves may be stunted and eventually the whole plant may collapse. Underground, the roots die off, the rhizome tissues collapse and rot spreads towards the crown of the plant”.

The cause has been identified as being a phytoplasma (a bacterium), transmitted by the native flax plant hopper. The hopper injects the bacterium into the leaf, while sucking the sap. Yellow-leaf is found in North and South Island, but is more prevalent in North Island (Boyce et al, 1951). For more information read “[Integrating New Zealand Flax into Land Management Systems](#)” by Elizabeth McGruddy (2006).

## ATTRIBUTION

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

## REFERENCES AND FURTHER READING

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

## CITATION

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

## MORE INFORMATION

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

# Phyllocladus trichomanoides

## COMMON NAME

Tanekaha, celery pine

## SYNONYMS

*Phyllocladus trichomanoides* D.Don var. *trichomanoides*, *Phyllocladus rhomboidalis* A.Rich.

## FAMILY

Phyllocladaceae

## AUTHORITY

*Phyllocladus trichomanoides* D.Don

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Gymnosperm Trees & Shrubs

## NVS CODE

PHYTRI

## CHROMOSOME NUMBER

2n = 18

## CURRENT CONSERVATION STATUS

2012 | Not Threatened

## PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened

2004 | Not Threatened

## DISTRIBUTION

Endemic. New Zealand: North and South Islands. In the North Island widespread from Te Pahi to about the northern Manawatu - after which it is scarce. In the South Island confined to the Marlborough Sounds, northern Richmond Range and North-West Nelson from Puhanga south to about Kahurangi Light and across to Abel Tasman National Park.

## HABITAT

Found from sea level to c.1000 m a.s.l. Tanekaha is a common tree in northern New Zealand where it often found growing in association with kauri (*Agathis australis*) on ridge lines. Tanekaha is also common in secondary regrowth forest overlying poorly draining and/or infertile soils. It can be very common in reverting fire-induced gumland scrub. In the Central North Island tanekaha-dominated forest is locally common overlying ignimbrite rock and this forest type is very much a feature of the northern Taupo - King Country - Atiamuri area where extensive tanekaha-dominated forests are present overlying such high aspect ratio ignimbrites as the Whakamaru Ignimbrite. Further south Tanekaha is rarely such a major component of the forest canopy.



Catkins of *Phyllocladus trichomanoides*.  
Photographer: Wayne Bennett



*Phyllocladus trichomanoides*. Photographer:  
John Smith-Dodsworth

## FEATURES

Monoecious tree up to 25 m, trunk up to 1 m diameter; phylloclades alternate, pinnately arranged on whorled rhachides up to 300 mm long. Leaves of juveniles up to 20 mm long, narrow-linear, deciduous; of adults much smaller. Phylloclades 10-15 per rhachis, irregularly and broadly rhomboid, flabellately lobed, cuneate at base; lobes obtuse to truncate, margins minutely crenulate; leaf-denticles small, subulate, 1.5-3.0 mm long, up to 1.5 mm wide. Male strobili terminal in clusters of 5-10, pedicels 3-10 mm long; staminal portion c.10 mm long, apiculus small, triquetrous; carpodia rather thick, marginal on reduced final phylloclades up to 30 mm long, in clusters of 6-8; seeds nutlike, exserted beyond white, fleshy, irregularly crenulate cupule, c.3 mm long.

## SIMILAR TAXA

Tanekaha is distinguished from mountain toatoa (*Phyllocladus alpinus*) by the phylloclades which are pinnately arranged on rhachis and from toatoa (*P. toatoa*) by the seeds which arranged singly on the margins of phylloclades

## FLOWERING

September - December

## FLOWER COLOURS

No flowers

## FRUITING

January - April

## PROPAGATION TECHNIQUE

Easily grown from fresh seed. Seedlings transplant well and this species is sometimes common in cultivation. It is often grown as a specimen tree in parks and does well in urban areas on street side verges. Once established tanekaha is able to tolerate full light and considerable drought but young plants do better planted in a less exposed site or at least provided with plenty of water during their early stages of establishment.

## ETYMOLOGY

**phyllocladus:** Leaf branch, referring to the leaf-like stems

**trichomanoides:** Fern-like

## TAXONOMIC NOTES

A distinct as yet undescribed species allied to *Phyllocladus trichomanoides* is known from the 120ha exposure of ultramafic rock at North Cape, Te Pahi. This unnamed species differs from *P. trichomanoides* by its shorter stature and spreading growth habit, longer phyllodes, larger fruits and longer fruiting season. It still awaits formal description. In the past this form had been referred to the hybrid *P. toatoa* x *P. trichomanoides*. However *Phyllocladus toatoa* is not known from Te Pahi and the North Cape tree comes true from seed.

## ATTRIBUTION

Fact sheet prepared for NZPCN by P.J. de Lange 1 August 2004. Description adapted from Allan (1961).

## REFERENCES AND FURTHER READING

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

## CITATION

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

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

## MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/phyllocladus-trichomanoides/>

# Pittosporum eugenioides

## COMMON NAME

Tarata, lemonwood

## SYNONYMS

*Pittosporum elegans* Raoul, *P. microcarpum* Putt.

## FAMILY

Pittosporaceae

## AUTHORITY

*Pittosporum eugenioides* A.Cunn.

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Dicotyledonous Trees & Shrubs

## NVS CODE

PITEUG

## CHROMOSOME NUMBER

2n = 24

## CURRENT CONSERVATION STATUS

2012 | Not Threatened

## PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened

2004 | Not Threatened

## BRIEF DESCRIPTION

Tree bearing light green wavy-edge oval leaves and with a contrasting pale green central vein, dense sprays of yellow flowers and small dry fruits. Leaf buds covered in dark-edged scales. Fruit pointed, 5-6mm long which splits into two to show a papery layer covering black sticky seeds.

## DISTRIBUTION

Endemic. Common in the North and South Islands.

## HABITAT

Common tree of regenerating and mature forest in coastal to montane situations.



Female flowers. Oct 2006. Photographer: Peter de Lange



Female flowers. Oct 2006. Photographer: Peter de Lange

## FEATURES

Gynodioecious tree up to 12 m tall but usually much less. Trunk 0.6-1 m diam, stout, clad in persistent pale-grey bark, branches numerous, erect then spreading. Leaf buds sticky, resinous. Leaves borne on slender petioles 10-20 mm long, alternate, 50-100(-150) x 25-40 mm, yellow-green, green, more or less blotched and mottled with paler green or yellow-green (sometimes white), somewhat leathery, glossy, smelling strongly when crushed of ivy or resin, elliptic to elliptic-oblong, apex acute to subacute; leaf margin undulate (very rarely not so), midrib pale green. Inflorescences terminal, numerous, subcorymbose compound umbels. Flowers pale yellow to yellow, very fragrant. Peduncles 10-20 mm, pedicels 5 mm, both sparsely hairy. Sepals 2 mm, ovate to narrow-ovate, pale caducous. Petals 5, 5-7 mm long, narrow-oblong. Capsules 2-valved (rarely 3), 5-6 mm, ovoid to elliptic, caducous, seeds immersed in dark yellow viscid pulp, whole structure covered in long persistent papery endocarp.

## SIMILAR TAXA

Well marked from all other indigenous and exotic *Pittosporum* spp. in New Zealand, by the yellow-green, mottled lanceolate leaves with undulating margins, and pale-yellow to yellow flowers arranged in subcorymbose compound umbels.

## FLOWERING

October - December

## FLOWER COLOURS

Yellow

## FRUITING

October - January

## PROPAGATION TECHNIQUE

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

## ETYMOLOGY

**pittosporum**: Pitch seed

**eugenioides**: Like *Eugenia*, a species of myrtle

## WHERE TO BUY

Commonly cultivated and available from most garden centres, and then often as a variegated form rather than the pure plant. Occasionally seen for sale in European and English garden centres.

## 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

Gardner, R. 1999. Notes towards an excursion Flora. *Pittosporum eugenioides* as a wild plant. *Auckland Botanical Society Journal*, 54, 1

## CITATION

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

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

## MORE INFORMATION

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

# Prumnopitys taxifolia

## COMMON NAME

Matai, black pine

## SYNONYMS

*Dacrydium taxifolium* Banks et Solander ex D.Don in Lamb., *Dacrydium mai* A.Cunn., *D. mayi* Houtte. ex Gord., *Podocarpus matai* Lamb. Ex Hook.f., *Prumnopitys spicata* Kent in Veitch, *Stachycarpus spicatus* (Mirbel) Masters, *Podocarpus taxifolia*

## FAMILY

Podocarpaceae

## AUTHORITY

*Prumnopitys taxifolia* (D.Don) de Laub.

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Gymnosperm Trees & Shrubs

## NVS CODE

PRUTAX

## CHROMOSOME NUMBER

2n = 38

## CURRENT CONSERVATION STATUS

2012 | Not Threatened

## PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened

2004 | Not Threatened

## DISTRIBUTION

Endemic. North, South and Stewart Islands. Uncommon on Stewart Island.

## HABITAT

Lowland forest. Often in drier climates, where it can dominate alluvial soils which are waterlogged/flooded in winter and dry in summer. Seems to prefer base-rich substrates and soils.

## FEATURES

Dioecious conifer 25(-30) m tall. Trunk 1-2 m diam. Bark dark brown (almost black), falling in thick circular flakes, leaving a distinctive hammer-like scar patterning on trunk. Wood dark brown to rich yellow-brown, very hard. Juveniles filiramulate, with distinctive, dark brown, slender, flexuous, divaricating branchlets. Leaves brown, pale yellow, or dirty white, 5-10 x 1-2 mm, linear-lanceolate, apex acute; adults dark green, somewhat glaucous above, glaucous below, 10-15 x 1-2 mm, subdistichous, linear, straight to subfalcate, obtuse, often apiculate. Male cones (strobili) in spikes, 30-50 mm long, with 10-30 cones per spike. Ovules on short axillary branches, 3-10 per 40 mm long spike. Fruit a fleshy, oily, aromatic, terpene-tasting, purple-black drupe with a glaucous bloom. Stone more or less circular (5.5-)6-8.5 mm diam., surface dull to semi-glossy, pale orange-yellow to light orange-yellow.



Kowhai Bush, Wairarapa. Photographer: Jeremy Rolfe



Matai at Rotopounamu. Photographer: Nick Singers

### **SIMILAR TAXA**

Easily recognised by the distinctive filiramulate divaricating juvenile to subadult growth form, charcoal grey hammered bark, dark green to glaucous adult foliage, spicate male cones, and by the ovoid, plum-coloured drupes.

### **FLOWERING**

(October-) November - February

### **FLOWER COLOURS**

No flowers

### **FRUITING**

Fruits take 12-18 months to mature. Ripe fruits may be found throughout the year.

### **PROPAGATION TECHNIQUE**

Easily grown from fresh seed. Seed may take up to 2 years to germinate 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 matai-dominated forest remain in the country.

### **ETYMOLOGY**

**prumnopitys:** From the Greek prymnos 'hindmost' or 'stern' and pitys 'pine', referring to the location of the resin duct

### **WHERE TO BUY**

Commonly cultivated and frequently sold by most commercial nurseries and outlets - usually from plants raised from seed, however some nurseries stock cutting grown plants raised from adult foliage, thus bypassing the filiramulate, divaricating juvenile growth-form. A very popular garden tree.

### **CULTURAL USE**

Gum from the trunk is the basis for "Matai Beer", a deep, rich brew still made in some parts of the country. The dark, hard, durable timber is much sought after for floors and furniture.

### **ATTRIBUTION**

Prepared by P.J. de Lange for NZPCN, 3 February 2006. Description based on Allan (1961)

### **REFERENCES AND FURTHER READING**

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

### **CITATION**

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

### **MORE INFORMATION**

<https://www.nzpcn.org.nz/flora/species/prumnopitys-taxifolia/>

# Pseudopanax arboreus

## COMMON NAME

Fivefinger, five finger, whauwhaupaku

## SYNONYMS

*Panax arboreus* Murray, *Panax arboreus* Murray var. *arboreus*, *Neopanax arboreus* (Murray) Philipson var. *arboreus*, *Pseudopanax arboreus* (Murray) Philipson

## FAMILY

Araliaceae

## AUTHORITY

*Pseudopanax arboreus* (L.f.) Allan

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

Yes

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Dicotyledonous Trees & Shrubs

## NVS CODE

PSEARB

## CHROMOSOME NUMBER

2n = 48

## CURRENT CONSERVATION STATUS

2012 | Not Threatened

## PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened

2004 | Not Threatened

## BRIEF DESCRIPTION

Small bushy tree with glossy green fleshy toothed leaves arranged in fans of 5 (occ. up to 7) leaflets. Fruit purple, in obvious clusters

## DISTRIBUTION

Endemic. Widespread (though rare in Central Otago). North and South Islands

## HABITAT

Coastal to montane (10-750 m a.s.l.). Moist broadleaf forest. Frequently epiphytic. A frequent component of secondary forest. Streamsides and forest margins.



Banks Peninsula. Photographer: Melissa Hutchison



Fivefinger. Photographer: Jeremy Rolfe

## FEATURES

Us. Dioecious. Small multi-branched tree to 8 m tall, branches and branchlets brittle. Leaves alternate, leaflets 5-7 (us. 5), palmate. Petioles c. 15-20 cm long, sheathing branchlet at base. Petiolules c. 3-5 cm long, pale green. Leaflets obovate-oblong to oblong-cuneate, thinly coriaceous, coarsely serrate-dentate, acute or acuminate to obtuse; midveins and main lateral veins obvious above and below; terminal lamina 10-20 x 4-7 cm. Inflorescence and panicle, terminal, compound; flowers usually unisexual; 8-20 primary rays (branchlets), up to 10 cm long; 15-20 secondary rays; umbellules with 10-15 flowers in each. Calyx truncate or obscurely 5-toothed; flowers c. 5 mm diam., sweet-scented; petals 5, white to pink flushed, ovate to triangular, acute; stamens 5, obvious, filaments c. = petals; ovary 2-loculed, each containing 1(-2) ovules; style branches 2, spreading. Fruit fleshy, 5-8 mm diam., style branches retained on an apical disc, very dark purple, laterally compressed. Seeds 2(-3) per fruit, wrinkled, 3-6 mm long.

## SIMILAR TAXA

Similar to other *Pseudopanax* species, but has a greater number of leaflets borne on distinct petiolules. Vegetatively similar to *Schefflera digitata* (pate) which has thinner, finely serrate and larger leaflets with usually 7 leaflets per leaf.

## FLOWERING

June to August

## FLOWER COLOURS

Red/Pink, White

## FRUITING

August to February

## PROPAGATION TECHNIQUE

Easy from fresh, cleaned, seed

## THREATS

Not Threatened. In places the petiolules of *Pseudopanax arboreus* (and other fleshy-leaved *Pseudopanax* species) are a conspicuous element of possum (*Trichosurus vulpecula*) diet and the forest floor can become littered with discarded leaflets.

## ETYMOLOGY

**pseudopanax:** False cure

**arboreus:** From the Latin arbor 'tree', meaning tree-like

## TAXONOMIC NOTES

This species was transferred back to *Neopanax* Allan by: Frodin, D.G.; Govaerts, R. 2003: World Checklist and Bibliography of Araliaceae, The Cromwell Press, European Union.

## 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-arboreus/>

# Pseudopanax crassifolius

## COMMON NAME

Horoeaka, 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

Dicotyledonous Trees & Shrubs

## 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

## FEATURES

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/>

# Schefflera digitata

## COMMON NAME

Patete, pate, seven-finger

## FAMILY

Araliaceae

## AUTHORITY

*Schefflera digitata* J.R.Forst. et G.Forst.

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Dicotyledonous Trees & Shrubs

## NVS CODE

SCHDIG

## CHROMOSOME NUMBER

2n = 24

## CURRENT CONSERVATION STATUS

2012 | Not Threatened

## PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened

2004 | Not Threatened

## BRIEF DESCRIPTION

Small bushy tree with (usually) 7 thin finely-toothed leaflets in a fan on a long stalk. Flowers in a diffuse cream spray

## DISTRIBUTION

Endemic. Widespread. North, South and Stewart Islands.

## HABITAT

Lowland to montane forest (sealevel to 1000 m a.s.l.).

## FEATURES

Dioecious(?) small tree to 8 m. Trunk irregularly branched; bark greenish, finely ridged and with scattered prominent lenticels. Petioles terete, to 25 cm long, sheathing branchlet, reddish. Petiolules to 2 cm, reddish. Leaves alternate, palmate, with (3)-10 leaflets (us. 7), upper surface evenly green in adult, underside pale, shiny, purplish in juvenile. Terminal leaflet to 20 cm long; lateral leaflets decreasing in size; obovate-cuneate, tip acuminate to obtuse; margins sharply serrate in adult, irregularly lobed to pinnatifid in juvenile. Inflorescence a panicle, axillary (occ. cauline), branches many, spreading, to 35 cm; bracts and bractlets small. Umbels many, up to 10 flowers in each; peduncles subsessile to 10 mm long, pedicels shorter. Flowers greenish cream, c. 7 mm diam. Petals 5(-6), acute. Stamens 5, filaments c. = petals. Style branches 5 (or more), connate below forming an irregular disc. Fruit subglobose, c. 3.5 mm diam., fleshy, dark purple when ripe, containing (5-)7-10(-11) seeds. Seed 2-2.5 mm.



Leaf of *Schefflera digitata*. Photographer: Wayne Bennett



Pate. Photographer: Jeremy Rolfe

### SIMILAR TAXA

Vegetatively often confused with *Pseudopanax* species, particularly five-finger (*Pseudopanax arboreus*). The leaflets of *Pseudopanax* species are thicker, smaller, and with larger teeth on the margin.

### FLOWERING

February-March

### FLOWER COLOURS

Cream, Green

### FRUITING

February-March

### ETYMOLOGY

**schefflera**: Named in honour of Jacob Christian Scheffler, an 18th-century German botanist who wrote about *Asarum* (wild ginger).

**digitata**: Divided into fingers

### ATTRIBUTION

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

### CITATION

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

### MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/schefflera-digitata/>