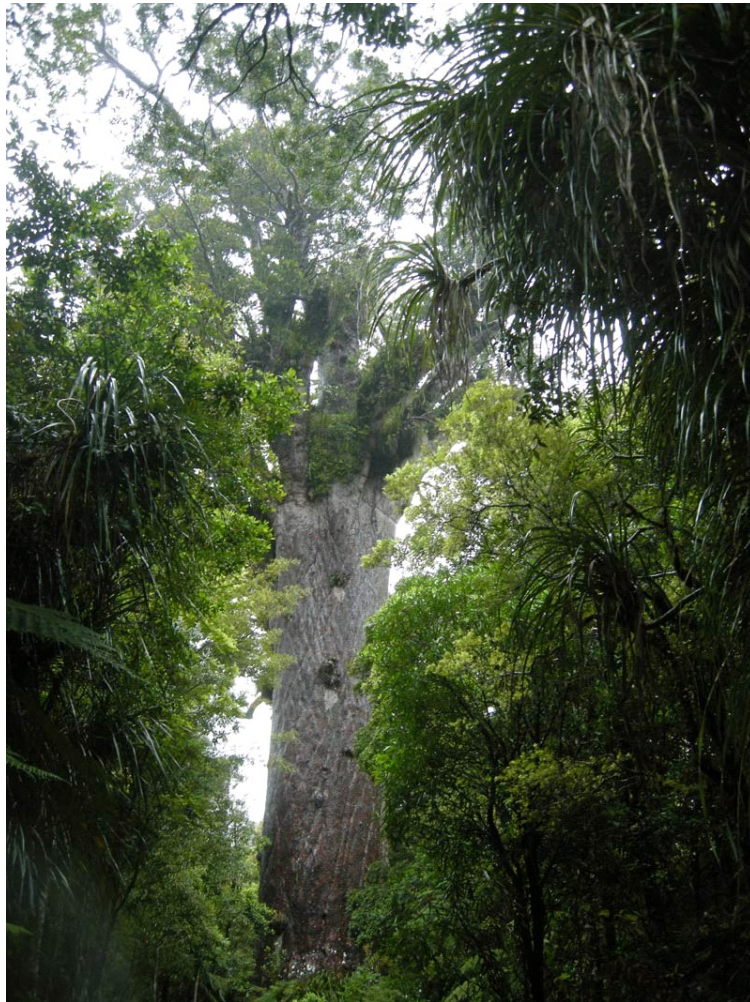




## Native Plants Growing with kauri (*Agathis australis*)



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

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## Introduction

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

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

Funding to develop the website was provided by the New Zealand Government's Terrestrial and Freshwater Biodiversity Information System Programme (TFBIS).

The species information used on the website has come from a variety of sources. The indigenous vascular plant text was written largely by Dr Peter de Lange (former Network Vice President). Peter based the descriptions on a wide range of sources including the Flora of NZ Series (Allan 1961, Moore and Edgar 1970 and Webb et al 1987) as well as numerous other taxonomic treatments. For a full bibliography of information sources see the References at the end of this book.

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

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

## The New Zealand Botanic Region

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

## About the Network

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

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

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

That work has included:

- Training people in plant conservation
- Publishing plant books, reports and posters
- Raising money for the David Given Threatened Plant Research Trust to pay for plant conservation research scholarships
- Advocacy to raise awareness of the importance of plant life in general and especially New Zealand's status as a Global Centre of Plant Diversity
- Lobbying central and regional government and business to protect indigenous plant life
- Educating people about plant life through the Network website
- Connecting people through the monthly newsletter, the Network conference and the annual general meeting

## What is a threatened plant?

The NZ Threatened Plant Committee was formed in 1991 and ever since then it has met at regular intervals to review the status of indigenous vascular plants. It is made up of a small group of botanists that between them have an extensive knowledge of the native plants of New Zealand. This group is chaired by Dr Peter de Lange of the New Zealand Department of Conservation.

This committee applies a set of criteria to each native plant to determine its conservation status. The resulting list of species classified as threatened is published in the NZ Journal of Botany (see for example de Lange et al. 2009). The main threat categories used are: Extinct, Critical, Endangered, Vulnerable, Declining. Other categories used are: Recovering, Relict, Naturally Uncommon, Coloniser, Vagrant and Data Deficient. For vascular plants the threat status used in this book is taken from the 2009 conservation assessment (see de Lange et al 2009).

More recently other committees have been established to review the status of non-vascular plants but their lists are yet to be published.

# *Agathis australis*

## Common Name(s):

kauri, kauri pine

## Threat Status (2009):

Non Threatened

## Distribution:

Endemic. Occurring from Te Pahi south to Pukenui (near Kawhia) in the West and near Te Puke in the East. Over much of its former range it has been heavily logged, such that the best stands now only occur in the Coromandel and Waitakere Ranges, on Great and little Barrier Islands, and in Northland at Waipoua, Trounson, Omahuta, Puketi, Herekino, Warawara and Radar Bush forests. Despite its northerly limit this species has been successfully grown as far south as Oban, Stewart Island, and seedlings have been observed near planted adults in Wellington, Nelson and Christchurch.

## Habitat:

The species forms its own forest type - Kauri forest - which is typified by dense canopies of kauri. Common associates in the northern half of its range may include taraire (*Beilschmiedia tarairi*), northern rata (*Metrosideros robusta*), rimu (*Dacrydium cupressinum*), towai (*Weinmannia silvicola*), and makamaka (*Ackama rosifolia*). Historically kauri forest seems to have been best developed on river terraces, coastal plains and the generally flat flood basalts of the Tangihua complex, which make the dominant geology of Waipoua, Omahuta, Puketi, Trounson. Some people believe that the hill and range occurrences, which is where most stands can now be seen, are relictual stands not truly favoured by the species, but merely examples of where it can grow, and of course locations where it was usually left because log extraction was less feasible.

## Features:

Stout, monoecious forest tree 30-60 m tall, with trunk 3-4(-7) m diam. Trunk typically devoid of branches for majority of its height. Trees at ricker development stage have a columnar growth form with trunk scarcely free of branches. As tree matures the basal branches are progressively abscised, eventually leaving bare trunk typical of mature specimens. Bark blue-grey, falling in large thick flakes with scalloped margins, undersides of discarded bark and freshly exposed underbark rust brown. Leaves (needles) alternate to subopposite, sessile, thick and leathery; juvenile leaves 50-100 mm x 5-12 mm, lanceolate, pinkish green, often black-spotted (a fungus specific to kauri causes this); adult leaves 20-35 mm, oblong, apex obtuse. Male cones 20-50 mm long, stout, cylindrical, female cones globose 50-75 mm diam., cone-scales (carpidia) deciduous, at first broad but then gradually narrowing toward base, bearing one ovule per scale. Seeds ovoid, compressed, margins winged.

## Flowering:

Female cones produced from September - December. Male cones throughout the year but most common from September to January

## Fruiting:

Mature cones occur anytime from December through to May, with rare persistent examples found on trees right up to about August

## Threats:

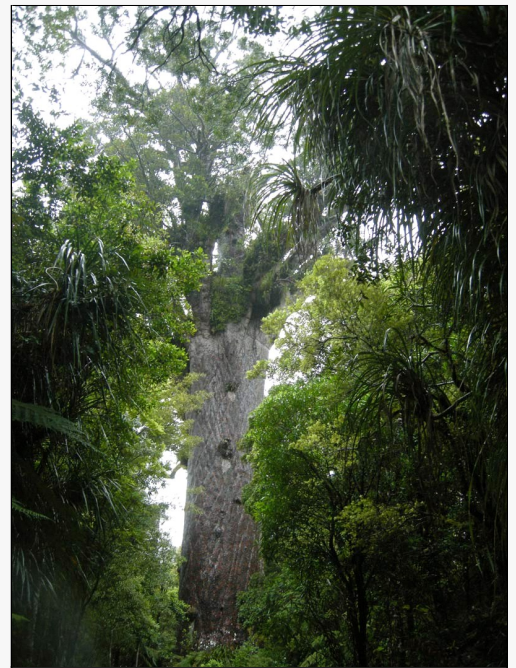
Not strictly regarded as threatened but some stands of kauri on private land remain vulnerable to illegal logging, while trees are still periodically removed (although only by permit or with approval) for cultural purposes, such as for making waka (canoes) or other Maori buildings and structures. Some small southerly populations are rather vulnerable to goat browse destroying regenerating seedlings and saplings. More recently kauri dieback (also known as *Phytophthora taxon Agathis* or PTA) has caused the death of kauri trees and has become a serious issue (see the information and links provided below and see images above of lesions and thinning caused by the disease).

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=2047](http://nzpcn.org.nz/flora_details.asp?ID=2047)



**Caption:** Waipoua Forest, Northland - Tane Mahuta  
**Photographer:** John Sawyer



**Caption:** Waipoua Forest, Northland - Tane Mahuta  
**Photographer:** John Sawyer

## *Alseuosmia macrophylla*

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

Toropapa, Karapapa

### **Threat Status (2009):**

Non Threatened

### **Distribution:**

Endemic. North Island throughout but absent from the central volcanic plateau where it is replaced by *A. turneri*. South Island, North-West Nelson only

### **Threats:**

Although not considered nationally threatened this species is often heavily browsed by ungulates and possums, and rarely sets much viable seed, except where indigenous nectar feeding birds are common - such as on rodent-free offshore islands

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

[http://nzpcn.org.nz/flora\\_details.asp?ID=1488](http://nzpcn.org.nz/flora_details.asp?ID=1488)



**Caption:** Kauaeranga Valley

**Photographer:** Peter de Lange



**Caption:** Foliage

**Photographer:** Wayne Bennett

## *Astelia trinervia*

**Common Name(s):**

Kauri grass

**Threat Status (2009):**

Non Threatened

**Distribution:**

Endemic. In the North Island common from Te Pahi to near Awakino in the West and Tauranga in the East. In the South Island known only from North West Nelson

**Threats:**

Not Threatened

**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=1539](http://nzpcn.org.nz/flora_details.asp?ID=1539)



**Caption:** *Astelia trinervia*

**Photographer:** Wayne Bennett



**Caption:** *Astelia trinervia*

**Photographer:** Wayne Bennett

# *Coprosma arborea*

## Common Name(s):

Mamangi, tree coprosma

## Threat Status (2009):

Non Threatened

## Distribution:

Endemic. New Zealand: Three Kings and North Island, where found from Te Pahi south to near Waitomo in the west and about Gisborne in the East

## Habitat:

Coastal to lower montane forest - but mostly coastal to lowland. Often forming the subcanopy in coastal kauri forest or mixed pohutukawa-hardwood forest. rarely, such as on Waiheke Island, forming a distinct forest type where it dominates the canopy.

## Features:

Tree 8-12 m tall; trunk 200-500 mm diameter; branches rather close-set, suberect to spreading; branchlets slender, pubescent. Petioles winged in upper 1/2, 8-20 mm long. Stipules short, triangular, connate near base, ciliate, with prominent denticle. Adult lamina submembranous to subcoriaceous, glabrous, somewhat glossy, 50-80 × 30-48 mm, yellow-green, dark green above, usually mottled maroon or purple, pale wine-red below, ovate to broad-elliptic to oblong, sometimes suborbicular; apex rounded or retuse, sometimes apiculate or mucronulate; cuneately or abruptly narrowed to petiole; margins thickened, indistinctly wavy, often subcrenulate; juvenile lamina 12-30 × 10-18 mm, spatulate, maroon, dark green mottled with maroon, undersides dull wine-red. Reticulations of lamina obscure above, usually distinct below. Male flower in dense glomerules, terminal on main and axillary branches; calyx-teeth linear, obtuse, ciliate; corolla funnelform, lobes ovoid, acute, more or less = tube. Female flowers in clusters of 2-4; calyx-teeth obtuse, ciliate; corolla-tube short, lobes long, acute. Drupe fleshy, 6-8 mm long, white, broad-oblong.

## Flowering:

September - December

## Fruiting:

January - December

## Threats:

Not Threatened

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=2306](http://nzpcn.org.nz/flora_details.asp?ID=2306)



**Caption:** *Coprosma arborea* (Mamangi)

**Photographer:** Wayne Bennett



**Caption:** Fruit

**Photographer:** John Smith-Dodsworth

# *Cyathea dealbata*

**Common Name(s):**

Silver fern, Ponga

**Threat Status (2009):**

Non Threatened

**Distribution:**

Endemic. From the Three Kings Islands south to Mahers Swamp in the west and Dunedin in the east of the South Island.

**Habitat:**

Common, primarily coastal and lowland habitats but extending to lower montane. Preferring dry forest and shrubland, often under pines.

**Features:**

Tree fern up to 10 m tall (very rarely without trunk). Trunk covered in long-persistent, peg-like, stipe bases. Stipes slender, silvery-white when young, maturing pale brown. Harsh to the touch, covered in pale-brown scales. Scales without marginal spines. Fronds up to 4 m long, horizontal, somewhat arching, 3-pinnate. Dead fronds falling. Longest primary pinnae 300-550 mm, pale green above, white below (very rarely pale green) below. Unders urfaces sparingly clad in curly hairs. Indusia covering sori at maturity, opening at maturity to form a deep cup with a smooth rim. Description adapted from Brownsey & Smith-Dodsworth (2000).

**Flowering:**

None (spore bearing)

**Fruiting:**

None (spore bearing)

**Threats:**

Not Threatened.

**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=1776](http://nzpcn.org.nz/flora_details.asp?ID=1776)



**Caption:** *Cyathea dealbata*

**Photographer:** Wayne Bennett



**Caption:** *Cyathea dealbata*

**Photographer:** Wayne Bennett



## *Dodonaea viscosa*

**Common Name(s):**

Akeake

**Threat Status (2009):**

Non Threatened

**Threats:**

Not Threatened

**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=2109](http://nzpcn.org.nz/flora_details.asp?ID=2109)



**Caption:** Coromandel, November  
**Photographer:** John Smith-Dodsworth



**Caption:** Coromandel, November  
**Photographer:** John Smith-Dodsworth

# *Dracophyllum lessonianum*

## Common Name(s):

Gumland Grass Tree

## Threat Status (2009):

Non Threatened

## Distribution:

Endemic. New Zealand: North Island (from Te Pahi south to Kopouatai Peat Dome in the east and the Kawhia Harbour in the west)

## Habitat:

Coastal to lowland (up to 100 m a.s.l.). Usually in gumland scrub or on peat, sometimes in the upper areas of salt marsh. Often in open sparsely vegetated sites, or in shrubland. Sometimes locally dominant. Often found growing with *Leptospermum scoparium* and *Epacris pauciflora*.

## Features:

Erect to spreading single-stemmed shrub or tree 0.5–5 m tall.

Branches: bark on old branches grey to dark brown, finely fissured or occasionally deeply fissured on very old stems, young stems reddish brown. Leaves dimorphic. Juvenile leaves spirally arranged along branches, erect to spreading; lamina sheath 8.0–17.0 × 3.7–5.0 mm, yellowish green; shoulders truncate to auricled and margin ciliate or ciliate in upper half; lamina coriaceous, 60.0–120.0 × 1.6–1.8 mm, linear to linear-subulate; surfaces glabrous; margin serrulate with 50–78 teeth per 10 mm; adult leaves spreading; lamina sheath light green, 6.0–14 × 2–4 mm, membranous, shoulders truncate to auricled and margin with the top half ciliate; lamina light to olive green, 20.0–108.0 × 0.5–1.2 mm, linear to linear-subulate, surfaces glabrous with a tuft of scabrid hairs at the base of adaxial surface; margins serrulate with 53–70 teeth per 10 mm; apex triquetrous. Inflorescence a terminal spike on lateral branchlets, shorter than the leaves, erect, lax, 20–50 mm long, linear-oblong; inflorescence bract over-topping flowers, coriaceous to rigid and hard, 6.0–17.5 × 0.6–3.3 mm, light to dark green, subulate; adaxial surface scabrid at base; abaxial surface glabrous to pubescent at the apex; margins entire. Flowers 3–9, sessile; flower bract over-topping flowers, foliose, coriaceous to rigid and hard, 8.0–12.5 × 0.5–0.7 mm, ovate-lanceolate, surfaces glabrous with a tuft of scabrid hair at base of adaxial surface, margins serrulate and white, apices acute and dark coloured. Sepals 6–8 × 1.5–2.0 mm, lanceolate to ovate-lanceolate, longer than corolla tube; surfaces glabrous with top half of adaxial surface pubescent; margins ciliate; apices acuminate and hard. Corolla white to pinkish; corolla tube 4.0–6.0 × 2.0–2.5 mm, cylindrical, widened at mouth; corolla lobes spreading horizontally, reflexed in old flowers, 2.5–3.0 × 1.0–1.5 mm, ovate triangular, shorter than corolla tube, inflexed at apex, apices acute; surfaces glabrous. Stamens inserted on corolla tube in upper third, filaments 0.3–0.5 mm long; anthers included, oblong, light yellow and 0.9–1.0 mm long. Ovary 1.3–1.5 × 1.2–1.3 mm, oblong, apex truncate; nectary scales 1.0–1.3 × 0.5–0.6 mm, rectangular, apices subacute; style included, 1.5–2.0 mm long, glabrous; stigma capitate. Fruit sessile, 4.0–4.5 × 1.7–2.0 mm, light brown, oblong, apex truncate, glabrous. Seeds 1.0–1.2 mm long, yellowish brown, ovoid, testa slightly reticulate.

## Flowering:

November–September

## Fruiting:

Throughout the year

## Threats:

Not Threatened. However, very uncommon south of about Whangarei

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=1804](http://nzpcn.org.nz/flora_details.asp?ID=1804)



**Caption:** *Dracophyllum lessonianum* flowers

**Photographer:** Peter de Lange



**Caption:** *Dracophyllum lessonianum* growth habit

**Photographer:** John Smith-Dodsworth, November, Kopouatai

# *Dracophyllum sinclairii*

## Common Name(s):

Gumland grass tree

## Threat Status (2009):

Non Threatened

## Habitat:

*Dracophyllum sinclairii* is a common species of northern coastal cliffs, shrub lands (especially gumland scrub), and secondary regrowth but it is also known from forested slopes (especially kauri forest), and also colonises, along ridgelines and mountain slopes. *Dracophyllum sinclairii* is most common north of Auckland and Thames and in this area it is especially common in gumland scrub and seral vegetation.

## Features:

Single-stemmed small tree 1.0–7.6 m tall. Bark on old branches dark grey to blackish brown, finely to deeply fissured, young stems reddish brown. Leaves dimorphic. Juvenile leaves spirally arranged along branches, spreading to recurved; lamina sheath, 9.0–30.0 × 5.0–12.7 mm, shoulders tapering to truncate and margin entire, occasionally ciliate in upper half; lamina subcoriaceous to coriaceous, 85.0–221.0 × 2.5–9.0 mm, linear-triangular, surfaces glabrous with a patch of scabrid hairs at base of adaxial surface; margins serrulate with 50–70 teeth per 10 mm. Adult leaves spreading to recurved, glaucous to light green (occasionally light brown); lamina sheath 3.5–7.3 × 3.3–6.6 mm, rounded to truncate and margin membranous with the top half ciliate; lamina 37–95 × 1–5 mm, linear-triangular, surfaces glabrous with a tuft of scabrid hairs at base on adaxial surface; slightly striated; margins serrulate with 60–80 teeth per 10 mm. Inflorescence a terminal spike; shorter than leaves, erect, drooping later, dense, 14.5–34.7 mm long, linear-oblong; inflorescence bract over-topping flowers, 7.0–8.0 × 0.7–1.0 mm, ovate to broadly ovate, adaxial surface glabrous with a patch of scabrid hairs at base; margins serrulate. Flowers 4–9, sessile. Flower bracts over-topping flowers, 6–20 × 3–4 mm, ovate, adaxial surfaces sericeous; abaxial surfaces glabrous to scabrid; margins minutely serrulate. Sepals 2.5–6.0 × 1.2–2.0 mm, ovate-lanceolate, longer than corolla tube; adaxial surfaces with the top half pubescent; margins ciliate. Corolla white; corolla tube 4.0–4.5 × 2.5–3.0 mm, narrowly-campanulate, widened at mouth; corolla lobes spreading horizontally to reflexed, 2.3–2.5 × 1.7–2.2 mm, triangular, shorter than corolla tube; apex inflexed, subacute; adaxial surface papillate. Stamens inserted on corolla tube in the upper third, filaments 0.5–1.0 mm long; anthers included, 0.8–1.0 mm long, rectangular, light yellow. Ovary 1.4–1.5 × 1.4–1.5 mm, obovate, apex round or oblong, and then 1.3–1.4 × 0.6–0.7 mm with apices mostly bidentate, sometimes irregularly toothed; style included, 1.3–1.5 mm long, glabrous; stigma five-lobed. Fruit 1.5–3.5 × 1.5–2.5 mm, obovoid, light brown; apex truncate, glabrous. Seeds 1.0–1.3 mm long, ovoid, yellowish brown, testa slightly reticulate.

## Flowering:

January – November

## Fruiting:

March - August

## Threats:

Not Threatened <BR><BR><BR><BR>

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=1818](http://nzpcn.org.nz/flora_details.asp?ID=1818)



**Caption:** Te Pahi. Sep 2011.

**Photographer:** Jeremy Rolfe



**Caption:** Kennedy Bay. July

**Photographer:** John Smith-Dodsworth

# *Freycinetia banksii*

## Common Name(s):

Kiekie

## Threat Status (2009):

Non Threatened

## Distribution:

Endemic. New Zealand: North and South Islands to about the Clarence river in the east and Fiordland in the west. More common in the wetter parts of the South Island.

## Habitat:

Coastal to montane forest, usually in wet sites although once established it can tolerate very dry conditions. Often coastal in karst country where it may form huge tangles that make access extremely difficult.

## Features:

Densely branched, somewhat brittle, woody, climber producing numerous, weakly ascending to ascending dense cane-like stems from which roots freely emerge. Stems up to 40 mm diameter, deeply marked with scars of old leaves, usually branched in upper third, often somewhat interlacing such that the stems form dense tangles. Leaves densely tufted toward stem ends, spirally arranged; lamina 1.5-2 x 0.15-0.25 m; sheathing bases pale, otherwise dark green to green, usually yellow spotted, blemished or striped, strongly pleated, long attenuate, triangular in transverse section, margins and midrib distinctly though finely scabrid to spinulose. Inflorescences of 1-8 spadices, each simple and solitary in axil of 2-4 foliaceous bracts at stem apex; bracts thick, succulent towards base, white to purplish, edible (sweet tasting). Peduncle 10-40 mm, whitish, stout, glabrous; spadix 70-80 x 15-20 mm, pale yellow, cream, off white, cylindrical to slightly flattened, the axis hidden by tightly packed flowers such that individual flowers not easily determined. Male of several stamens each with a long filament, ovate anther and producing copious, confluent pollen, ovary rudimentary. Female with 6-12 purplish staminodes at base of flattened, vertically elongated ovary, 2-4 x 1 mm x 2 mm tall, long sides grooved between staminodes; stigmas 6-12, sessile, arranged around a long groove; locule narrow, placentae forming ridged around it. Fruits to 150 x 30 mm, brownish when ripe, sweet tasting (like caramel), borne on stiff woody peduncles. Individual fruits (phalanges) 8 x 2 x 10 mm, compressed laterally, thin-walled proximally, broadest 1/3 from base and almost woody towards apex. Seed 1 mm long, narrow, on a long, slender funicle.

## Flowering:

August - November

## Fruiting:

January - May

## Threats:

Not Threatened - however, over large parts of its range it is experiencing reproductive failure due to rats which eat the flowers and fruits. Possums also eat the flowers and fruits but it has been shown that they help disperse the seeds. Freycinetia is one of the few New Zealand species with flowers said to be suited to bat pollination

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=1900](http://nzpcn.org.nz/flora_details.asp?ID=1900)



**Caption:** Freycinetia banksii (Kiekie)

**Photographer:** Wayne Bennett



**Caption:** Freycinetia banksii (Kiekie)

**Photographer:** Wayne Bennett

## *Gahnia xanthocarpa*

### Common Name(s):

Gahnia, Mapere

### Threat Status (2009):

Non Threatened

### Distribution:

Endemic. North Island (from Te Pahi south to Wellington but uncommon, or absent over some parts of this range), South Island (Nelson, Marlborough, Westland and Canterbury - where it is very uncommon).

### Habitat:

Coastal to montane (up to 800 m a.s.l. - possibly more). Occupying a diverse range of habitats and vegetation associations, *Gahnia xanthocarpa* seems to prefer permanently damp situations within alluvial forest, swamp forest and the margins of lowland swamps, bogs and waterways

### Features:

Robust perennial sedge arising from a lignaceous rootstock up to 30 mm diameter and forming densely tufted dark green tussocks up to 3.5 m tall. Culms 10 mm diameter (but up to 15 mm diameter at the base). Leaves = to or slightly < culms, not usually overtopping the panicle; lamina dark glossy green above, paler beneath, surfaces harshly scabrid, margins involute, ciliate just above the transverse line demarcating the sheath from the lamina, becoming more intensely scabrid higher up with a few longitudinal rows of teeth just inside the margin on the lamina undersides; sheaths dull, light pinkish brown, glabrous up to 40 mm wide. Panicles set well above foliage, drooping, 0.6-1.5 m long, heavily branched, primary branchlets up to 450 mm long. Spikelets 2-flowered, c.8 mm long, numerous, densely crowded, stalked, light chestnut-brown. Glumes 6-7; outer 3-4 empty, more or less equal, 7-8 mm long; inner 3 glumes smaller, 5-6 mm long, red-brown, or green-brown below and red brown towards apices. Stamens 4, bright red-brown. Style-branches 3-4. Nut 5-6 x 2-3 mm, fusiform, bright yellow maturing glossy black when fully ripe, sometimes slightly grooved, shortly stipitate, with a light orange-brown, obtuse, pubescent apex; endocarp transversely grooved within.

### Flowering:

January -  
April

### Fruiting:

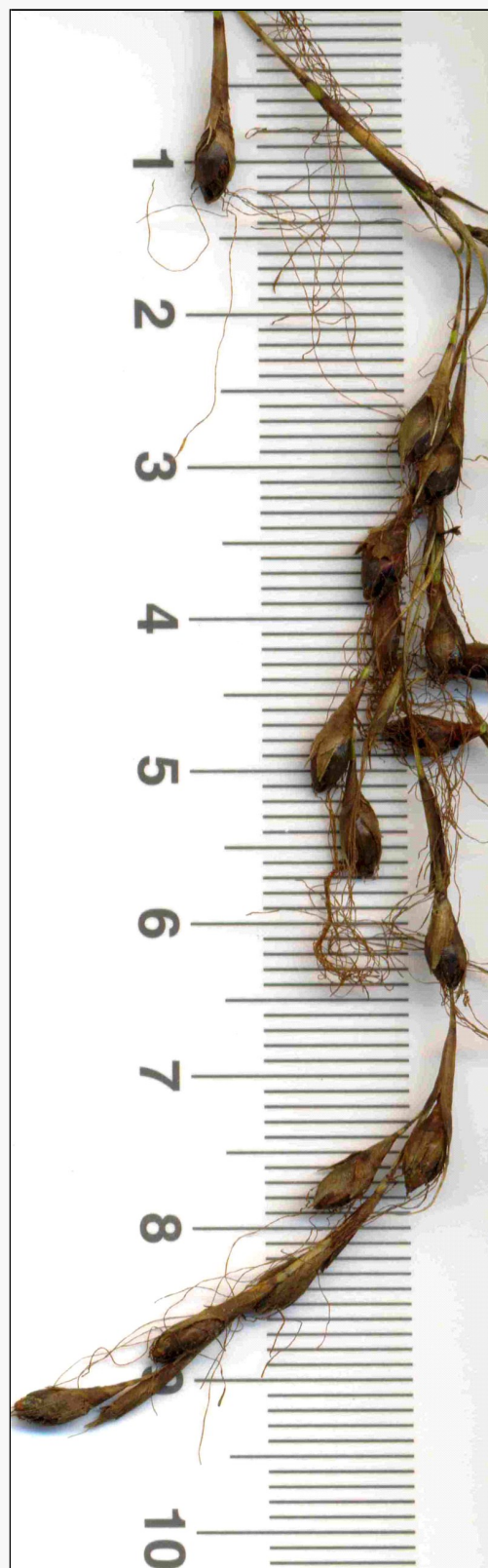
Fruits may be found throughout the  
year

### Threats:

<p>Not Threatened</p>

### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=1908](http://nzpcn.org.nz/flora_details.asp?ID=1908)



**Caption:** Seeds of *Gahnia xanthocarpa*

**Photographer:** Wayne Bennett



**Caption:** Fruit. Gordon Park Scenic Reserve, Wanganui.

**Photographer:** Colin Ogle

*Geniostoma ligustrifolium* var.  
*ligustrifolium*

**Common Name(s):**

Hangehange

**Threat Status (2009):**

Non Threatened

**Threats:**

Not Threatened

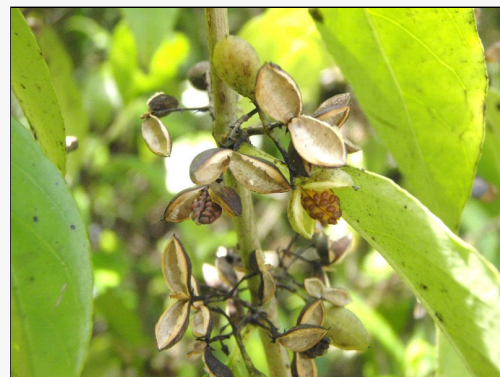
**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=1923](http://nzpcn.org.nz/flora_details.asp?ID=1923)



**Caption:** Puketi Forest, Northland

**Photographer:** Dean Baigent-Mercer



**Caption:** Puketi Forest, Northland

**Photographer:** Dean Baigent-Mercer

# *Halocarpus kirkii*

## Common Name(s):

Monoao

## Threat Status (2009):

Naturally Uncommon

## Distribution:

Endemic. New Zealand, North and Great Barrier Islands, from Te Pahi (Radar and Unuwahao Bush) south to near Limestone Downs (south of Port Waikato) in the west and about the southern Kauaeranga Valley in the East

## Habitat:

A northern species associated with kauri (*Agathis australis* (D. Don.) Lindl.) forest. In mature kauri forest it is most usually found in apparently even aged cohorts of 10 or less trees along ridge lines, in swampy hollows or at gully heads. This species appears to thrive on disturbance and it is at its most abundant on the margins of kauri and gumland vegetation sites originating from past fires, gum digging and/or kauri logging.

## Features:

Dioecious forest tree up to 25 m tall, trunk up to 1.5 m d.b.h., bark greyish brown to dark brown, flaking in irregular to subcircular flakes, wood pale brownish red. Branches spreading, upper most often starkly erect, surfaces often marked with scars of old appressed leaves, and often retaining a few persistent, long dead, somewhat woody leaves. Foliage markedly heteroblastic, that of seedlings, juveniles and reversion shoots on adult trees 15-50 x 1-4 mm, yellow green to green, linear, apex obtuse to acute, mucronate, coriaceous; midribs distinct; petiole 1-3 mm long, often slightly twisted; adult foliage scale-like closely quadrifurcously imbricating, 2-3 mm long, ovate-oblong to rhomboid, obtuse, faintly keeled, margin hyaline; appressed. Ultimate branchlets 1-2 mm diameter, subterete to terete, somewhat smooth. Male strobili up to 12 mm long, sessile, solitary and terminal; apiculus obtusely triangular. Branchlets bearing female cones terminal or subapical, cone scales 3-5, glaucous to green-grey, conspicuous, ovules solitary. Epimatium completely covering seed. Aril orange. Seeds 3-8 mm, lustrous black, ovoid-oblong, somewhat compressed, distinctly striate. Seeds taking two years to mature.

## Flowering:

October - December

## Fruiting:

December - November

## Threats:

Although it was undoubtedly logged when suitable trees were found, this species appears to have never been common, and it still has a highly fragmented, sporadic distribution in what are otherwise largely intact tracts of its preferred habitat kauri (*Agathis australis*) forest today. It is the opinion of conifer experts (though studies are needed to confirm this) that this species is naturally sparse because it requires frequent disturbance to regenerate. Thus climax type forested habitats are not suitable long term habitats for this species. True or not, it is fact that it is most commonly found flourishing (i.e., with all size classes in the appropriate numbers) in secondary regrowth forest abutting older, intact, kauri dominated remnants (e.g., Radar Bush, Hirakimata (Mt Hobson)).

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=264](http://nzpcn.org.nz/flora_details.asp?ID=264)



**Caption:** Te Pahi. Sep 2011.

**Photographer:** Jeremy Rolfe



**Caption:** Juvenile (foreground) and adult (background) foliage. Te Pahi. Sep 2011.

**Photographer:** Jeremy Rolfe

## *Kunzea ericoides* var. *ericoides*

### Common Name(s):

Manuoa, Titira, Atitira, Manuka-Rauriki, Kanuka

### Threat Status (2009):

Non Threatened

### Distribution:

Endemic. As circumscribed here *K. ericoides* var. *ericoides* is endemic to the South Island, where it is common from North West Nelson and the Marlborough Sounds south to the upper Buller River. From here it is common along the northern margin of the Buller to the upper Wairau River, from where it extends along the southern Richmond Range to Rarangi. Outliers occur in the east south of Rarangi in pockets to Kaikoura and the coastal portion of the north Canterbury foothills, and in the west around Karamea, the Lower Buller Gorge, and the upper Ahaura River. Outside this area there are a number of distinctive New Zealand variants which may warrant formal description. An allied complex of species and possibly unnamed species occurs in Australia.

### Habitat:

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

### Features:

Shrub or tree (2-)10(-20) m tall. Usually with a single trunk. Trunk slender, erect, often multi-trunked from base. Branches numerous, slender, and pendulous, branchlets slender, brittle. Bark loose, flaking readily into tabular, fibrous shards, typically with much secondary peeling; secondary peels often inrolling, like wood shavings. Branchlets glabrescent to glabrous, hairs if present (20x magnification) are erect, sparse, and short (like stubble). Leaves bright green, linear-filiform (6-)8(-12) x (0.8-)1(-1.3) mm. Inflorescences corymbiform racemes, (1-)8(-20)-flowered. Flowers (4-)6(-8) mm diam., faintly to strongly scented. Petals 5(-6), white. Stamens (9-)20(-32), antipetalous (1-)3, antisepalous variable. Ovary 5 locular, stigma broad, capitate. Capsule long persistent, grey, obconic, sepals persistent. Seeds numerous, rather fine, orange-yellow.

### Flowering:

(October)-November-January  
(-February)

### Fruiting:

(November-)December  
(-March)

### Threats:

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

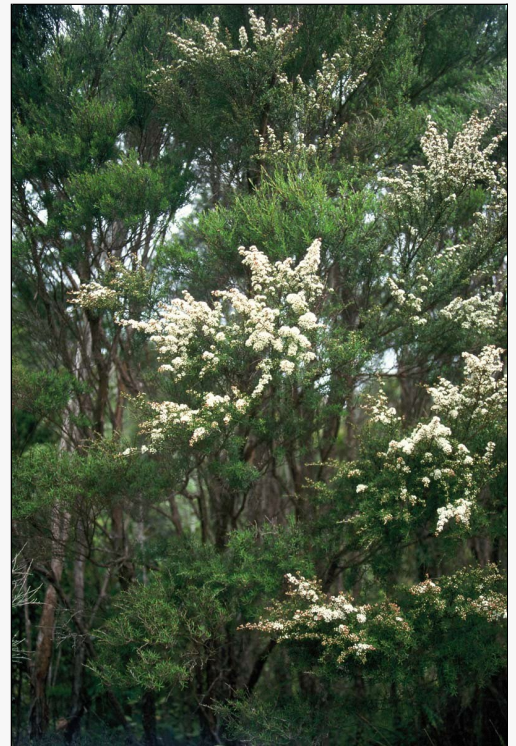
### For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=885](http://nzpcn.org.nz/flora_details.asp?ID=885)



**Caption:** *Kunzea ericoides* - tree showing weeping branches characteristic of this species

**Photographer:** Peter de Lange



**Caption:** Marahau

**Photographer:** Peter de Lange



## *Leionema nudum*

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

Mairehau

### **Threat Status (2009):**

Non Threatened

### **Distribution:**

Endemic. Confined to the North Island where it is locally distributed from Te Pahi south to Pukenui Hill, Kawhia in the west and the northern Kaima Range in the east. Rather uncommon south of Auckland and Thames

### **Threats:**

Not Threatened but it is heavily browsed by goats over some parts of its range

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

[http://nzpcn.org.nz/flora\\_details.asp?ID=902](http://nzpcn.org.nz/flora_details.asp?ID=902)



**Caption:** Flowers, Waipoua Forest, December

**Photographer:** John Smith-Dodsworth



**Caption:** Waipoua Forest, December

**Photographer:** John Smith-Dodsworth

## *Leucopogon fasciculatus*

**Common Name(s):**

Mingimingi, tall mingimingi

**Threat Status (2009):**

Non Threatened

**Threats:**

Not Threatened

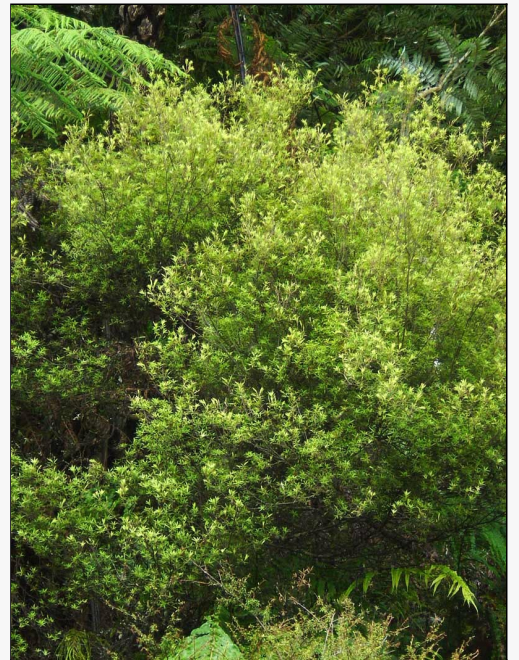
**For more information, visit:**

[http://nzpcn.org.nz/flora\\_details.asp?ID=925](http://nzpcn.org.nz/flora_details.asp?ID=925)



**Caption:** Flowers of *Leucopogon fasciculatus*

**Photographer:** Wayne Bennett



**Caption:** *Leucopogon fasciculatus* (Mingimingi)

**Photographer:** Wayne Bennett

# *Metrosideros albiflora*

## Common Name(s):

white rata, rata, aka

## Threat Status (2009):

Non Threatened

## Distribution:

Endemic. New Zealand: North Island (confined to the northern portion of the North Island where it ranges from Te Pahi south to Pukemokemoke (north of Hamilton) and the northern Kaimai Ranges)

## Habitat:

Coastal to montane in forest. *Metrosideros albiflora* is virtually confined to kauri (*Agathis australis*) forest associations

## Features:

Stout vine up to 20 m. Bark initially dark brown, maturing grey, ± tessellated, and flaking in tabular shards. Juvenile and climbing vines sparingly branched, mature (adult) vines much-branched. Branchlets terete, often curved from base, stiffly erect (sometimes pendent), initially reddish and finely pubescent, soon glabrous. Leaves not markedly dimorphic, evenly spaced (i.e. not close-set), coriaceous, glabrous, petiolate; petioles 2-6 mm long, ± terete, stout; juvenile lamina 10-20 × 10-20 mm, ovate to elliptic-ovate, adaxially green to dark green, paler abaxially, oil glands minute (not evident to naked eye), margins weakly recurved, sparsely hairy, glabrescent; adult lamina 35-90 × 20-46 mm, ovate, elliptic-ovate to elliptic-lanceolate, apex abruptly narrowed, acute or subacute, base cuneate, adaxially green to dark green, abaxially paler, oil glands as for juvenile. Inflorescences in large terminal, compound cymose botryia, each carrying 6-10 white flowers. Hypanthium 8 × 5 mm, broadly urceolate to funnellform, ± fleshy, glabrous, margins exceeding ovary (so forming broad disc); calyx lobes 1.8-2.2 mm long, ovate, obtuse, patent or reflexed at maturity. Petals 5 × 5 mm, caducous, suborbicular to orbicular, margins entire; stamens numerous, 15-30 mm long. Anthers yellow. Style 20-35 mm long, stigma capitate. Capsule 5-10 mm diameter, urceolate, 3-4-valved, woody, dark brown to brown-black when mature. Seeds 1.2-2.4 mm long, narrowly elliptic or narrowly obovate, straight (often curved near apex), light orange-yellow or orange, unfilled seeds darker.

## Flowering:

August - November

## Fruiting:

January - April

## Threats:

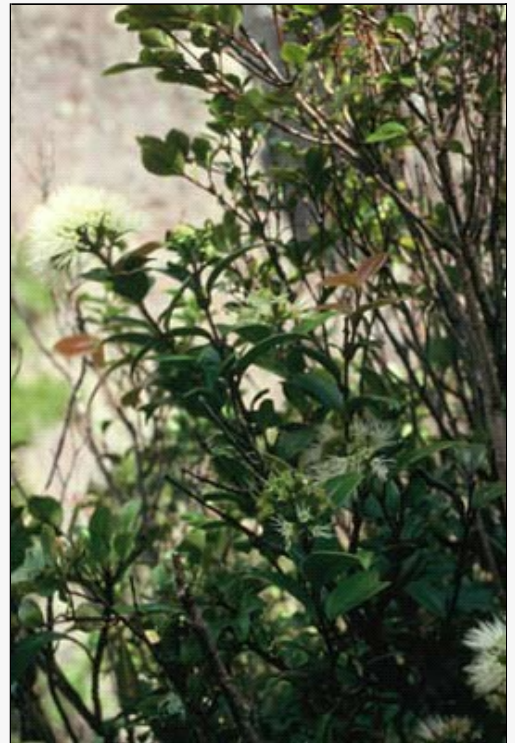
Although not threatened, *Metrosideros albiflora* is often absent from large parts of potential range. It is most common in central and western Northland and the Coromandel Peninsula. Adult vines are often browsed by possums.

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=979](http://nzpcn.org.nz/flora_details.asp?ID=979)



**Caption:** Photo of White rata  
**Photographer:** DoC



**Caption:** *Metrosideros albiflora*,  
Windy Canyon.  
**Photographer:** Gillian Crowcroft

# *Myrsine salicina*

## Common Name(s):

Toro

## Threat Status (2009):

Non Threatened

## Distribution:

Endemic. North, South Islands from Te Pahi to about Hokitika

## Habitat:

Coastal to montane in forest (rarely shrubland along riversides). On occasion *Myrsine salicina* may form a major part of forest canopy along stream sides.

## Features:

Small diffuse to moderately densely branched conical, gynodioecious tree up to 10 m tall. Branches stout, upright, glabrous. Bark firm (not flaking) dark red, maroon-red to almost black. Leaves, fleshy-coriaceous, adaxially dark green, yellow-green or pale pinkish-green, usually blemished with maroon spots, abaxially pink to wine-red or pale green, blemishing on adaxial surface apparent on abaxial surface, margins entire, flat or very slightly recurved, midrib deeply impressed adaxially, prominent ridged abaxially (side veins not evident when fresh); petioles 10-14 mm long, fleshy, stout, flattened. Lamina 70-180 × 20-30 mm, narrow-elliptic, narrow-oblong, to linear-oblong, apex obtuse, base attenuate to cuneately narrowed (gradually tapering to base). Inflorescences in ± dense 10-15(-20)-flowered fascicles.

Pistillate flowers; greenish yellow to cream with maroon spotting or wine-red with purple-black spotting; calyx 1.3-1.9 mm, tube 0.2-0.6 mm, lobes 4-5, 0.7-1.0 × 0.6-0.8 mm, oblong to ± triangular, apex acute to subacute, margins minutely ciliolate; corolla 2.8-4.2 mm, tube 0.2-0.3 mm, lobes 4-5(-6), 2.0-2.4 × 1.0 mm, elliptic, apex acute. Antherodes malformed, 0.82-1.10 × 0.5-0.6 mm, apiculus strongly recurved; pollen absent. Ovary 1 × 1 mm. Stigma 0.30-0.48 mm high, spreading, outer parts appressed to ovary ± 2.5 mm diameter.

Bisexual flowers with the same colouration; calyx 1.6-2.0 mm, tube 0.4-0.7 mm, lobes 4-5, 0.7-1.1 × 0.6-0.9 mm, oblong, apex acute, margins minutely ciliolate. Corolla 3.0-4.2 mm, tube 0.3-0.6 mm, lobes 4-5, 2.6-2.8 × 1.0-1.4 mm, elliptic, apex acute. Anthers 1.1-1.8 × 0.8-1.2 mm, apiculus upright; pollen white. Ovary 0.7-0.9 × 0.8-1.0 mm. Stigma 0.8-0.85 mm high, upright. Drupe (5-)8-9 mm long, obovoid, flesh red to orange (rarely maroon), on pedicels 8-10 mm long. Endocarp 5.0-6.7 × 3.5-4.5 mm, obovate to broadly obovate, dull, buff to buff brown, orange-brown or henna, bearing 1(-2) seeds.

## Flowering:

August - January

## Fruiting:

September - May

## Threats:

Not Threatened

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=1011](http://nzpcn.org.nz/flora_details.asp?ID=1011)



**Caption:** Ripe fruit, Whanganui Inlet, North West Nelson

**Photographer:** Simon Walls



**Caption:** Pinehaven. Jan 2005.

**Photographer:** Jeremy Rolfe

# *Nestegis lanceolata*

## Common Name(s):

White maire

## Threat Status (2009):

Non Threatened

## Distribution:

Endemic. North and South Islands. Widespread and common in the North Island except in the southern part of range (Horowhenua, southern Wairarapa and Wellington areas). Very uncommon in the South Island where it is locally present in the Marlborough Sounds, reaching its southern limit along the Tuamarina River.

## Habitat:

Widespread in coastal to montane forest. Commonly found on steep hill slopes and ridge lines but also can be locally common in riparian forest. As a rule white maire tends to avoid frost-prone habitats and sites that frequently flood. In the northern part of its range it is often found with narrow-leaved maire (*Nestegis montana*) and black maire (*Nestegis cunninghamii*). In some parts of eastern Northland it is also found in coastal forest with *Nestegis apetala*.

## Features:

Stout gynodioecious spreading tree up to 20 m tall usually forming a domed canopy; trunk up to c. 1 m diameter; often with several arising from base, these usually straight to somewhat arching, bark firm (not flaking), grey-brown to dark brown, tessellated. Branches slender, upright to spreading; branchlets glabrescent. Leaves glabrous, coriaceous, dark green above and ± glossy, paler beneath, margins plane (rarely weakly undulating), entire with weakly impressed to slightly raised midrib (side veins not evident when leaf fresh); borne on flexible but stout petioles 5-10 mm long; lamina of juveniles 100-400 × 4-10 mm, narrowly linear to linear, apex acute sometimes acuminate; adults lamina 40-80(-100) × 10-30 mm, narrow-ovate, ovate-lanceolate to narrow-elliptic, apex acute to subacuminate, base cuneately narrowed or attenuate; midrib ± raised to weakly impressed above, somewhat prominent below. Inflorescence a 5-10(-14)-flowered raceme, 10-20 mm long; rhachis and pedicels glabrous or minutely puberulent. Male flowers with 2(-4) exerted anthers > 2 mm long, ovary usually rudimentary (occasionally functional); female flowers with large 2-lobed stigma and more deeply lobed calyx, anthers if present rudimentary. Drupe 10-18 mm long, oblong-ovoid to ovoid, flesh pink, red, pinkish-red or orange; endocarp 6.0-15 × 3.5-9.5 mm, dull, pale orange-yellow, oblong, sometimes ovate or narrowly oblong-elliptic. Seed purple-brown. Description adapted from Allan (1961) and Webb & Simpson (2001).

## Flowering:

November - January

## Fruiting:

December - February

## Threats:

Not Threatened

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=1033](http://nzpcn.org.nz/flora_details.asp?ID=1033)



**Caption:** *Nestegis lanceolata* juvenile foliage

**Photographer:** Jeremy Rolfe, July 2005, Maidstone Park, Upper Hutt.



**Caption:** *Nestegis lanceolata* close up of fruits

**Photographer:** John Smith-Dodsworth, March, Te Moehau

# *Phyllocladus trichomanoides*

## Common Name(s):

Tanekaha, celery pine

## Threat Status (2009):

Non 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 Puponga 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.

## Features:

Monoecious tree up to 25 m, trunk up to 1 m diameter; phylloclades alternate, pinnately arranged on whorled rachides up to 300 mm long. Leaves of juveniles up to 20 mm long, narrow-linear, deciduous; of adults much smaller. Phylloclades 10-15 per rachis, 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; carpoidia 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. Description from: Allan (1961).

## Flowering:

September - December

## Fruiting:

January - April

## Threats:

Not Threatened

## For more information, visit:

[http://nzpcn.org.nz/flora\\_details.asp?ID=1117](http://nzpcn.org.nz/flora_details.asp?ID=1117)



**Caption:** *Phyllocladus trichomanoides* (Tanekaha)

**Photographer:** Wayne Bennett



**Caption:** Catkins of *Phyllocladus trichomanoides*

**Photographer:** Wayne Bennett