



Gemmels Crossing: Tall(ish) trees for exposed sites v. 2



Table of Contents

Introduction	1
<i>Griselinia littoralis</i>	2
<i>Hoheria angustifolia</i>	3
<i>Kunzea robusta</i>	4
<i>Leptospermum scoparium</i> var. <i>scoparium</i>	5
<i>Olearia fimbriata</i>	6
<i>Olearia paniculata</i>	7
<i>Pittosporum eugenioides</i>	8
<i>Pittosporum tenuifolium</i>	9
<i>Plagianthus regius</i> subsp. <i>regius</i>	10
<i>Pseudopanax arboreus</i>	11

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

Copyright

All images used in this book remain copyright of the named photographer. Any reproduction, retransmission, republication, or other use of all or part of this book is expressly prohibited, unless prior written permission has been granted by the New Zealand Plant Conservation Network (info@nzpcn.org.nz). All other rights reserved.

Griselinia littoralis

Common Name(s):

broadleaf, kapuka, papauma

Current Threat Status (2012):

Not Threatened

Threats:

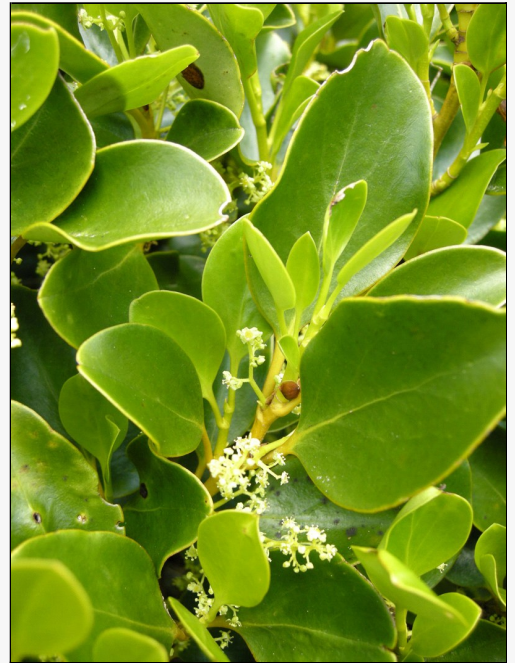
Not Threatened

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

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1957



Caption: Mt Frith, Rimutaka

Photographer: John Sawyer



Caption: Coromandel, October

Photographer: John Smith-Dodsworth

Hoheria angustifolia

Common Name(s):

Narrow-leaved Houhere

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. New Zealand: North and South Islands - mostly easterly from the Wairoa River Northland south to Southland. In the North Island scarce north of the Hawkes Bay, absent from Taranaki, Bay of Plenty and Auckland areas and from most of the Waikato. In the South Island absent from Westland and Fiordland.

Habitat:

A common mostly lowland forest species frequenting alluvial forest where it may at times be dominant. *Hoheria angustifolia* is often an important host for taapia (*Tupeia antarctica*).

Features*:

Slender heteroblastic tree up to 18 m tall. Mature branches and branchlets ± glabrous; young branches and branchlets finely and densely covered in stellate-pubescence. Juvenile and sub-adults filiramate-divaricate, branchlets slender, pliant, ± interlacing. Leaves distant, fascicled, on very slender petioles, 1.0-2.3 mm long; lamina (2.0-)4.0(-8.4) × 4.0-7.5 mm, grey-green to dark green, broad-obovate to suborbicular, cuneately narrowed to base, dentate along upper margin. Adult leaves, less widely spaced, fascicled. petioles 4.8-5.3 mm long; lamina (including teeth) 20-48 × 5-10 mm; narrow, obovate, oblanceolate, oblong, lanceolate, apex obtuse to acute; margins coarsely spinulose dentate-serrate; teeth up to 4 mm long. The different leaf-forms may all occur on the same plant, often as reversion shoots on damaged mature trees. Flowers solitary or in 2-8-flowered cymose fascicles on very slender stellate-pubescent pedicels 10-12 mm long. Calyx densely pubescent, campanulate, 3.0-4.2 mm long, (3-)5-fid; teeth broad-triangular. Petals (5-)7(-9) mm long, white, obliquely narrow-oblong, notched. Stigma capitate. Anthers reniform. Carpels and styles 5. Mericarp semicircular, winged, main body 2.5-3.5 mm long, pale brown; wing 3.0-6.0 mm long, light-orange yellow, densely covered with stellate hairs near base. Description adapted from Allan (1961) and Webb & Simpson (2011).

Flowering:

December - February

Fruiting:

February - April

Threats:

Not Threatened - though the northern North Island populations are small and few are on protected land

*Attribution:

Fact Sheet Prepared for NZPCN by: P.J. de Lange 3 April 2011. Description adapted from Allan (1961) and Webb & Simpson (2011).

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

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1380



Caption: Inner bark. Otago Peninsula

Photographer: John Barkla



Caption: *Hoheria angustifolia* Dunedin

Photographer: John Barkla

Kunzea robusta

Common Name(s):

manuka, kanuka, kopuka, rawirinui, maru, manuka rauriki

Current Threat Status (2013):

Not Threatened

Distribution:

Endemic. New Zealand: North and South Islands.

Habitat:

Coastal to lowland shrubland, regenerating forest and forest margins, also present in montane forest, ultramafic shrubland and very occasionally present in subalpine shrubland (up to 900 m a.s.l.).

Features*:

Trees 8–30 m tall. Trunk 1–6, 0.10–1.0 m d.b.h. Bark stringy, or coarsely tessellated, coriaceous, firmly attached above, detaching basally, often hanging semidetached; peeling upwards along trunk in narrow to broad, tabular strips up to 4 m long. Branches initially erect, soon arching outwards and spreading; branchlets numerous, slender; sericeous, indumentum copious, hairs either long or short antrorse-appressed; if long, then weakly flexuose 0.15–0.38 mm long; if short, not flexuose, 0.09–0.15 mm long. In eastern Coromandel Peninsula and coastal East Cape to Mahia Peninsula, branchlet indumentum in mixtures of divergent 0.03–0.08 mm long hairs, and sparse, 0.1–0.2 mm long, antrorse-appressed hairs. In the Rangitikei region, branchlet hairs of seedling and juveniles divergent, short 0.04–0.10 mm long. Leaves sessile to shortly petiolate, light green or dark green above, paler beneath; oblanceolate, broadly oblanceolate, broadly lanceolate, lanceolate to linear-lanceolate, rarely elliptic to obovate; apex subacute to acute, rarely obtuse, rostrate or shortly apiculate, base attenuate to narrowly attenuate; lamina margin initially finely covered with a thin, interrupted band of spreading to antrorse-appressed hairs not or rarely meeting at apex; hairs shedding with age. Lamina of juvenile plants from coastal areas and northern North Island 14.6–28.4 × 1.6–2.5 mm; from inland areas, 3.2–6.3 × 0.7–1.5 mm; adult lamina of plants from coastal areas and northern North Island 4.9–20.1 × 0.9–3.0 mm; from inland areas, 5.8–12.3 × 1.2–2.2. Inflorescence mostly a compact corymbiform to shortly elongate 1–30-flowered botryum up to 60 mm long; extending near end of flowering season as an 4–12-flowered, elongate botryum up to 80 mm long; Pherophylls deciduous or persistent; squamiform grading into foliose; squamiform pherophylls 0.4–1.2 × 0.3–0.6 mm, broadly to narrowly deltoid or lanceolate, apex acute, subacute to obtuse, margins finely ciliate; foliose pherophylls 6.0–17.9 × 1.1–1.8 mm, elliptic, oblanceolate, broadly lanceolate to lanceolate, apex obtuse, base attenuate; margin densely covered by antrorse-appressed hairs. Pedicels 1.2–5.2 mm long at anthesis. Flower buds pyriform to obconic, apex flat or weakly domed prior to bud burst; calyx valves not meeting. Flowers 4.3–12.0 mm diameter. Hypanthium 2.1–4.1 × 3.0–5.2 mm, broadly obconic to turbinate, sometimes cupular, rim bearing five persistent calyx lobes. Hypanthium surface when fresh faintly ribbed and sparingly dotted with pink or colourless oil glands, these drying dull yellow-brown or brown; either finely pubescent with the ribs and veins conspicuously covered in longer silky, antrorse-appressed hairs, or glabrous; hypanthium similar when dry though with the ribs more strongly defined and clearly leading up to calyx lobes. Calyx lobes 5, coriaceous, 0.52–1.1 × 0.60–1.4 mm, broadly ovate, ovate-truncate to broadly obtuse, glabrate. Receptacle green or pink at anthesis, darkening to crimson after fertilisation. Petals 5–6, 1.5–3.8 × 1.3–3.6 mm, white, rarely pink, orbicular, suborbicular to ovate, apex rounded to obtuse, oil glands colourless. Stamens 15–58 in 2 weakly defined whorls, filaments white. Anthers 0.38–0.63 × 0.18–0.32 mm, ellipsoid to ovoid-ellipsoid or deltoid. Pollen white. Anther connective gland prominent, light pink, salmon pink, yellow to orange when fresh, drying dark orange, orange-brown or dark brown, spheroidal, finely rugulose or papillate. Ovary 5–6 locular. Style 2.0–3.5 mm long at anthesis, white or pinkish-white; stigma broadly capitate, flat, greenish-white or pale pink, flushing red after anthesis. Fruits 2.2–4.6 × 3.2–5.3 mm, maturing greyish white, obconic, broadly obconic to ± turbinate, rarely cupular; hairy, (rarely glabrous). Seeds 0.9–1.1 × 0.35–0.48 mm, oblong, oblong-obovate, oblong-elliptic; testa semi-glossy, orange-brown to dark brown, surface coarsely reticulate.

Flowering:

August–June

Fruiting:

Jul–May

Threats:

Not Threatened.

*Attribution:

Fact Sheet prepared for NZPCN by P.J. de Lange 10 September 2014. Description modified from de Lange (2014).

References and further reading:

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

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=7644



Caption: Otari Wilton's Bush, Wellington.

Photographer: Jeremy Rolfe

Leptospermum scoparium var. *scoparium*

Common Name(s):

manuka, tea tree, kahikatoa

Current Threat Status (2012):

Not Threatened

Distribution:

Indigenous to New Zealand and Australia. Most Australian forms of *L. scoparium* do not match the range seen in New Zealand. However, plants from Tasmania are very similar to, if not identical with some South Island forms, differing mainly by their wider leaf base, and longer, more pungent leaf apex. Manuka was also collected once from Rarotonga by Thomas Cheeseman in the 1800s. It has not been found there since, and is assumed to have been a failed introduction. Further study using DNA sequencing is underway to resolve the status of *L. scoparium* forms both here and in Australia.

Habitat:

Abundant from coastal situations to low alpine habitats.

Features*:

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

Flowering:

Throughout the year

Fruiting:

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

Threats:

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

*Attribution:

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

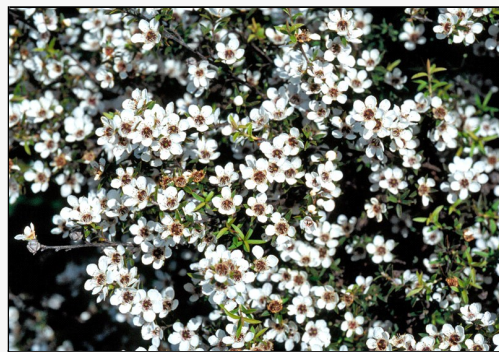
References and further reading:

Gardner, R. 2002. Notes towards an excursion Flora .Manuka *Leptospermum scoparium* myrtaceae. Auckland Botanical Society Journal, 57: 147-149

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

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2302



Photographer: © John Braggins



Caption: Flowers of *Leptospermum scoparium* var. *scoparium*

Photographer: Wayne Bennett

Olearia fimbriata

Current Threat Status (2012):

Threatened - Nationally Vulnerable

Distribution:

Endemic. South Island (Canterbury, Otago, and Southland).

Habitat:

Lowland to montane shrubland, alluvial flats, and among shattered rocky outcrops.

Features*:

Semi-deciduous shrub or small tree up to 8 m tall; multistemmed or with a single trunk up to 500 mm diameter. Branchlets 4-angled, pale grey or brown, brachyblasts up to 7 × 2 mm. Leaves of adults opposite or in fascicles on brachyblasts; lamina 10–17 × 4–6 mm, elliptic, broadly elliptic to obovate, dark green above, lower surface tomentose with loose and dull hairs, margin entire, apex obtuse to subacute. Inflorescence solitary or in fascicles of 2–5 capitula on brachyblasts, capitula 4 × 4 mm, sessile or peduncles up to 1 mm long. Involucral bracts 16–25, in 3 series, 1.0–1.5 mm long, lanceolate, apex obtuse or subacute, margins with dense white spreading hairs, surface more or less glabrous. Ray florets 5, 3.0–3.5 mm long, limb 0.5 mm long. Disc florets 8, 3.0–3.5 mm long, corolla lobes 0.5–0.8 mm long, tube 2 mm long, pubescent in a ring just below throat with stiff antrorse hairs and a few hairs on corolla lobes. Achenes 1.0–1.5 mm long, narrow obovate, clad in very short, sparse, stiff antrorse hairs; pappus hairs 2 mm long.

Flowering:

January–February

Fruiting:

January–March

Threats:

Although widespread this species is often known from scattered individuals over large parts of its range and at few sites it is actively regenerating. Very few sites are protected.

*Attribution:

Fact Sheet prepared for the NZPCN by P.J. de Lange 14 April 2006. Description by P.B Heenan (adapted from Heads (1998) and subsequently published in de Lange et al. (2010).

References and further reading:

de Lange, P.J.; Heenan, P.B.; Norton, D.A.; Rolfe, J.R.; Sawyer, J.W.D. 2010: Threatened Plants of New Zealand. Canterbury University Press, Christchurch.

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

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=137



Caption: Pomahaka River, Southland

Photographer: John Barkla



Photographer: John Barkla

Olearia paniculata

Common Name(s):

Akiraho, golden akeake

Current Threat Status (2012):

Not Threatened

Threats:

Not Threatened

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1058



Caption: Waiua

Photographer: Simon Walls



Caption: In cultivation. June 2005.

Photographer: Jeremy Rolfe

Pittosporum eugenioides

Common Name(s):

Tarata, lemonwood

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. Common in the North and South Islands.

Habitat:

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

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.

Flowering:

October - December

Fruiting:

October - January

Threats:

Not Threatened

***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

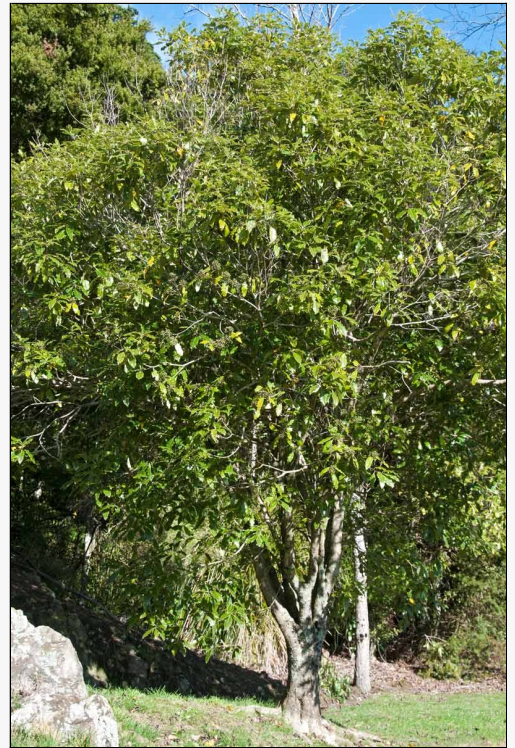
For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1135



Caption: Masterton

Photographer: John Barkla



Caption: Maidstone Park, Upper Hutt.

Photographer: Jeremy Rolfe

Pittosporum tenuifolium

Common Name(s):

Kohukohu, kohuhu, black matipo

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic and widespread throughout country.

Habitat:

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

Features*:

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

Flowering:

October - November (-December)

Fruiting:

January - March

Threats:

Not Threatened

*Attribution:

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

References and further reading:

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

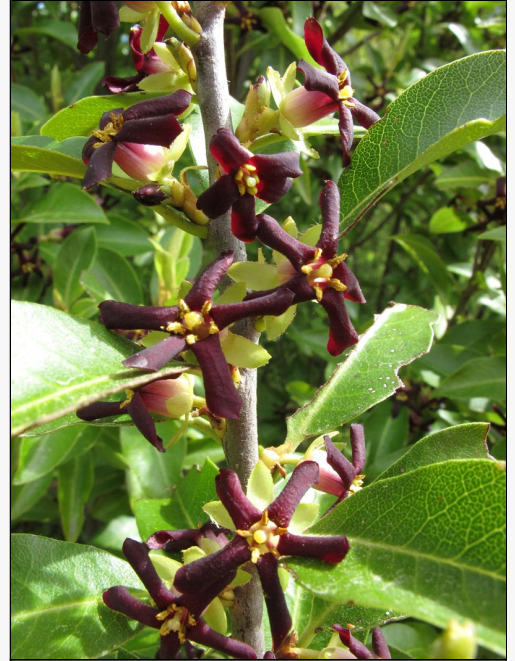
For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1139



Caption: *Pittosporum tenuifolium* in flower Dunedin

Photographer: John Barkla



Caption: Quail Island

Photographer: John Barkla

Plagianthus regius subsp. regius

Common Name(s):

Manatu, ribbonwood, lowland ribbonwood

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. New Zealand: North, South and Stewart Islands

Habitat:

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

Flowering:

September - November

Threats:

Not Threatened

References and further reading:

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

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1142



Caption: Bark, Dunedin

Photographer: John Barkla



Caption: Woodhaugh, Dunedin

Photographer: John Barkla

Pseudopanax arboreus

Common Name(s):

Fivefinger, five finger, whauwhaupaku

Current Threat Status (2012):

Not Threatened

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.

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.

Flowering:

June to August

Fruiting:

August to February

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.

*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.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1194



Caption: *Pseudopanax arboreus*
Photographer: Wayne Bennett



Caption: Flowers of *Pseudopanax arboreus*
Photographer: Wayne Bennett