Auckland's threatened plants Vol. V

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

Introduction

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

This website was established in 2003 as a repository for information about New Zealand's threatened vascular plants. Since then it has grown into a national database of information about all plants in the New Zealand botanic region including both native and naturalised vascular plants, 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 encompases the Kermadec, Manawatawhi/Three Kings, North, South, Stewart Island/Rakiura, Chatham, Antipodes, Bounties, Snares, Auckland Campbell island/Motu Ihupuku and Macquarie.

About the Network

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

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

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

That work has included:

- Training people in plant conservation
- Publishing plant books, reports and posters
- Raising money for the David Given Threatened Plant Research Trust to pay for plant conservation research scholarships
- 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.

Melicytus flexuosus

Common Name(s):
None known

Current Threat Status (2012):
At Risk - Declining

Distribution:
Endemic to New Zealand. It is restricted to the Waione Frost Flats and Pureora-Taihape region in the North Island but widespread throughout the South Island. The northern limit for this species occurs in the Waikato at Pureora.

Habitat:
Fertile alluvial terraces and flood plains in sites prone to heavy frosts and summer drought; often on forest margins and amongst scrub in frosty hollows.

Features*:
A shrub to 5 metres tall, with interlaced, almost leafless, whip-like, grey-green branchlets. The surface of the branchlets is pitted with lots of tiny white spots (lenticels). The 10–20 mm long linear leaves, if present, are dark green to brown-green, entire or slightly toothed. Seedlings have narrow, brown leaves with a few coarse teeth or lobes along their leaf edges. The strongly perfumed flowers are pale yellow and approximately 2–3 mm diameter. The fruit is a berry, 3.5–5.0 mm diameter.

Flowering:
Flowering occurs from August to November.

Fruiting:
Fruiting from February to May.

Threats:
Habitat loss through development, particularly forestry and rural development, weed encroachment.

***Attribution:**
Fact Sheet prepared for NZPCN by P.J. de Lange 1 August 2003. Description based on Molloy & Druce (1994).

References and further reading:
Molloy, B. P. J.; Druce, A. P. 1994: A new species name in *Melicytus* (Violaceae) from New Zealand. *New Zealand Journal of Botany 32(2)*: 113-118.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=179

Caption: Melicytus flexuosus, Catlins
Photographer: John Barkla

Caption: Melicytus flexuosus, Catlins
Photographer: John Barkla

Mentha cunninghamii

Common Name(s):
New Zealand mint, hihoi

Current Threat Status (2012):
At Risk - Declining

Distribution:
Endemic. New Zealand: North, South, Chatham and Stewart Islands

Habitat:
Coastal to alpine. Sparse component of grassland and other open places such as cliffs, river banks, lake sides, grey scrub, occasionally in swampy ground.

Features:
Gynodioecious, rhizomatous to ± stoloniferous, perennial forming loose patches up to 300 mm across; stems sparse to numerous, very slender, purple to purple-red, puberulent (especially on angles), initially ± creeping, subscandent or ascending at tips, usually much branched. Leaves bright green to yellow-green, sessile or with short hairy petioles 2-4 mm long. Lamina 2-15 × 2-15 mm, broad-ovate to suborbicular, smooth, entire or shallowly crenate, gland-dotted, mostly glabrous except for nerves on lower surface; base broad-cuneate or truncate; apex rounded. Flowers axillary, fragrant, solitary or in clusters of 1-3; pedicels prominent, puberulent. Calyx 3-4 mm long, narrow-campanulate to campanulate, villous, gland-dotted; teeth narrow-triangular, ciliate, much < tube, acute. Corolla c.6 mm long, white, glabrous; tube not exserted; lobes spreading, subequal; uppermost lobe ± 2-fid. Stamens scarcely exserted. Nutlets 1.0-1.3 mm long, ± broad-ellipsoid, slightly angled, smooth.

Flowering:
October – April

Fruiting:
October – June

Threats:
Habitat degradation by livestock, irrigation, drainage; weed competition

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=974

Caption: Siberia Valley
Photographer: John Barkla

Caption: cult. ex Awhitu Peninsula, 11 Dec 2004
Photographer: Mike Wilcox

Meryta sinclairii

Common Name(s):
Pukanui, Puka

Current Threat Status (2012):
At Risk - Naturally Uncommon

Distribution:
Endemic. Three Kings Islands. It is probably planted on the Chickens near Whangarei

Habitat:
Coastal forest, grassland and scrub. With the exception of the taller kanuka (Kunzea aff. ericoides (f)) dominated forest of Great island, Meryta is the dominant tree species on the Three Kings Islands.

Features*:
Tree up to c.8 m tall, with trunk up to c.50 diameter; branches brittle. Leaves crowded at apices of branchlets, simple, on petioles up to c.350 mm long; lamina about oblong, semicordate at base, coriaceous, glossy, up to c.500 ~ 200 mm; margins very shallowly broadly lobulate, slightly undulate. Panicles terminal, erect, up to 50 mm long, about oblong in outline, branches jointed in bracted clusters; calyx obsolete, petals 4-5, greenish; stamens 4, bracted, crowded; calyx obsolete, staminodes present, style-branches 4-5. Fruit 10 mm or more long, succulent, black, 4-5-loculed; seeds solitary in each locule.

Caption: Great Island, October 1991
Photographer: Peter de Lange

Flowering:
August - April

Fruiting:
Throughout the Year

Caption: Cultivated, November
Photographer: John Smith-Dodsworth

Threats:
A Naturally Uncommon, range-restricted endemic. It is abundant in the wild on all the main islands and a few of the larger islets of the Three Kings group. However, this situation could easily change if soil borne fungal pathogens current absent from the islands are introduced - this is a constant threat because marijuana growers are increasingly using remote offshore islands to grow their crops, and their crops carry these diseases. Further, should rodents invade the islands then the Meryta along with many other plants and animals unique to the islands will be under certain risk. The future of these islands is ensured only by regular visits checking for rodents and weeds, undertaken by the New Zealand Department of Conservation.

***Attribution:**
Description from Allan (1961)

References and further reading:
Allan, H.H. 1961: Flora of New Zealand. Vol. I. Government Printer, Wellington.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=585

Metrosideros kermadecensis

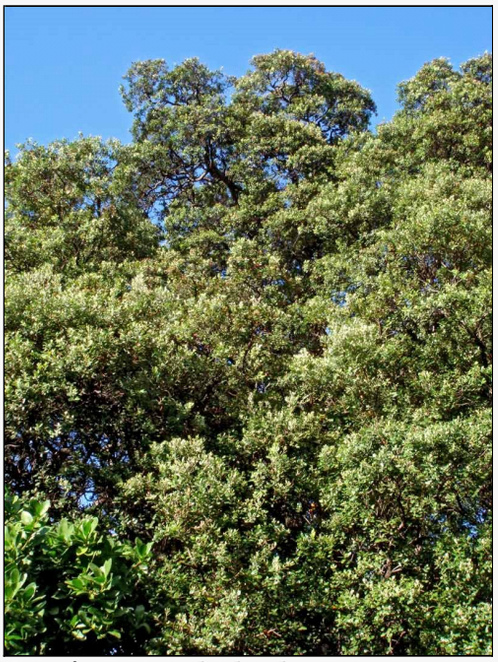
Common Name(s):
Kermadec pohutukawa

Current Threat Status (2012):
At Risk - Naturally Uncommon

Distribution:
Endemic. Kermadec Islands: Raoul, North and South Meyer Islands, Herald Isltes (Napier, Nugent and Dayrell)

Habitat:
The dominant canopy tree on Raoul Island where it is found from the coastline to the highest peaks. Forms the main tree of both dry and wet forest types. It was supposedly also present on Macauley Island although there are no herbarium specimens known to substantiate this claim.

Features*:
Multitrunked (rarely single) tree up to 20 m tall usually with a broadly spreading, domed canopy; trunk up to 3 m diameter, if more than one usually much smaller; trunk surface often covered in adventitious roots. Bark mostly firm, tessellated to platy, grey, grey-brown or whitish, often covered in sparse to dense growths of lichens, liverworts and mosses. Branches erect to spreading, sometimes scrambling across forest floor in which case often rooting freely where touching the ground. Branchlets terete, numerous toward branch ends. Young branchlets, leaf undersides, inflorescence-axes, hypanthia, and sepals densely clad in tomentum, tomentum initially white, maturing dirty grey. Petioles 5-7 mm long, terete to subterete, very coriaceous; lamina 20-50 × 10-30 mm, dull dark green above with appressed, greyish indumentum along the midrib, sometimes extending along the upper surface of the base of the leaf, orbicular, suborbicular, broadly ovate- to elliptic-oblong, apex obtuse to retuse, base obtuse to cuneately-narrowed, coriaceous, margins weakly to strongly recurved. Inflorescence complex, comprising 2 or more terminal compound corymbiform cymes each bearing numerous flowers; pedicels rigidly stout, 8-12 mm long. Hypanthium obconic to turbinate, sepals coriaceous to subcoriaceous, deltoid to triangular, gland-tipped; petals caducous, fleshy, scarlet, crimson to pink, 2.2-3.2 × 2.0-3.0, orbicular, suborbicular to oblong, glabrescent. Stamens numerous, filaments crimson, 10-23 mm long; anthers versatile, yellow, 1.0 × 0.2-0.4 mm. Nectarial disc initially green at anthesis, maturing red or red-green. Ovary 3-locular, adnate to hypanthium; capsules long-persistent, woody, 3-valved, 6.0-7.2 mm long, receptacle distinctly exserted, outer surface and inner sepals and hypanthial rim covered in appressed white to greyish-white tomentum. Seeds numerous, 2.5-4.5 mm long, yellow to pale orange, very narrowly elliptic to linear, 2-4-angled, body often twisted, laterally compressed, apex curved or hooked.



Caption: Raoul Island.
Photographer: Peter de Lange

Caption: Raoul Island. Spent capsules.
Photographer: Peter de Lange

Flowering:
Throughout the year

Fruiting:
Throughout the year

Threats:
Not Threatened. It is listed as Range Restricted because it is an island endemic which globally occupies such a small area. This is the dominant tree on Raoul Island and it is also prominent on the nearby Meyer Islands and Napier, Dayrell and Nugent in the Herald Islets.

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange (8 June 2009). Description adapted from Allan (1961) supplemented with data obtained from herbarium specimens, fresh material and observations made on Raoul Island.

References and further reading:
Allan, H.H. 1961: Flora of New Zealand. Vol. I, Government Printer, Wellington

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=586

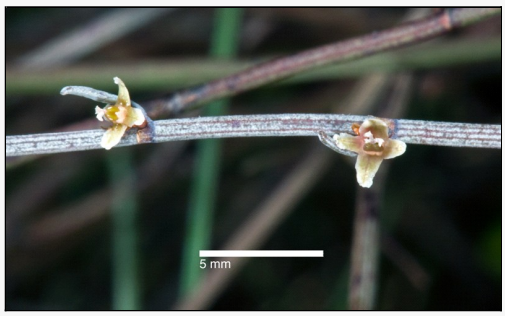
Muehlenbeckia ephedroides

Common Name(s):
Leafless pohuehue, leafless muehlenbeckia, Twigs

Current Threat Status (2012):
At Risk - Declining

Distribution:
Endemic. North and South Islands. In the North Island mainly eastern from Lake Taupo (Acacia Bay) and the northern Hawkes Bay south to Wellington and Cape Palliser. In the South Island eastern from Marlborough to Southland.

Habitat:
Coastal to subalpine (0-1200 m a.s.l.). A species of river flats, beaches, sand spits, alluvial fans, outwash gravels and river terraces, also found in grey scrub. Favouring open, dry, free draining but fertile sites, usually on gravel and sandy soils, in habitats naturally free from other taller plants. Sometimes found on gravel roads.



Caption: Female flowers. In cult. ex Pencarrow.
Photographer: Jeremy Rolfe

Caption: Fruit. In cult. ex Pencarrow.
Photographer: Jeremy Rolfe

Features:
Gynodioecious, sprawling to prostrate, grey-green, grey to grey-black shrub forming dense, untidy mats up to 1.5 m or more diameter. Stems much branched, final branches c.1 mm diameter, flexuous, striate, puberulent, grey to grey-black or grey-green. Leaves 5-25 mm long, dark to grey-green, narrow-linear, glabrous to glabrate, margins revolute, ascending, distant, spaced along constricted nodes, often sparse, deciduous,sometimes absent; ochreae 1-2 mm long, chartaceous, truncate. Inflorescence a few-flowered fascicle or raceme; pedicels 1-1.5 mm, pale, bracteate, slender. Flowers with pistillate on separate plants, and staminate and perfect on the same plant; if mainly male then raceme often lax, if female then fascicle dense, mixed male and perfect racemes more or less intermediate. tepals 3-3.5 mm long, united about halfway, lobes narrow-triangular, white, greenish or pale yellow-green; stigmas frimbriate. Fruit 3 x 1.5 mm, trigonous, ovoid, lustrous black, tepals becoming swollen, white and succulent, or rarely chartaceous and dry.

Flowering:
November - June

Fruiting:
November - June

Threats:
Most abundant within the north eastern South Island. It is highly threatened in the North Island and appears to be extinct around Lake Taupo. Small populations persist in the Hawkes Bay, southern Wairarapa and south Wellington coastline. In the South Island it appears to have suffered little obvious decline but it is rarely common. In some areas its past presence can be determined by hybrid swarms that exist between it and other New Zealand Muehlenbeckia species.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=287

Myosotis pygmaea

Common Name(s):
pygmy forget-me-not

Current Threat Status (2012):
At Risk - Declining

Distribution:
North Island south from the Coromandel Peninsula (a small islet near Coromandel Harbour), including Hawke's Bay, Castlepoint, South Taranaki Coast and near Cape Palliser. South Island, south from Nelson, mainly east of main divide.

Habitat:
Open coastal habitats to upland grassland, herbfield, open rocky, sandy places and stream sides. Sea level to 1200m altitude.

Flowering:
(August-) September to December (however sporadic flowering may occur throughout the year)

Fruiting:
September to January (however fruits may be found throughout the year)

Threats:
The main threat throughout this species range is loss of habitat, caused by land development, weed invasion and coastal erosion.

Caption: Long Point, Catlins
Photographer: John Barkla

Caption: Stable back dune habitat, Fortrose Spit, Southland
Photographer: Jesse Bythell

***Attribution:**
Fact Sheet prepared for NZPCN by P.J. de Lange (30 August 2003). For more information see Allan (1961) and de Lange et al. (2010)

References and further reading:

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

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.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=136

Myosotis spatulata

Caption: Myosotis spathulata
Photographer: John Smith-Dodsworth

Caption: Flowering Myosotis spathulata
Photographer: John Smith-Dodsworth

Common Name(s):
None known

Current Threat Status (2012):
At Risk - Naturally Uncommon

Distribution:
Endemic. North, South and Chatham Islands.

Habitat:
Coastal to subalpine (0-1300 m a.s.l.). Usually on or near rock outcrops, under rock overhangs, on ledges or amongst rubble in forest or shrubland. Sometimes found on clay banks or open ground under dense forest, along track margins, or in alluvial shrubland. Very rarely found as an urban weed in shaded pavement or in shaded sites amongst mosses within excessively mowed lawns.

Features*:
Mostly decumbent, widely spreading, perennial herb with adventitious roots on lateral branches; these often present to apices unless laterals are ascending. Petioles slender, 10-15 x 1-2 mm wide, purple-black to green, finely to conspicuously hispid to silky hairy. Rosette leaves 15-40 x 5-20 mm, dark green to yellow-green, sometimes with purple-red margins, orbicular, broadly ovate to broadly elliptic, apex retuse, mucronate, mucro 0.1-0.3 mm long; hairs on upper lamina surface short to long, straight, more or less appressed, not crowded, on lower surface similar but erect. Lateral branches 50-600 mm long, usually decumbent, sometimes scending at apices, often heavily branched, sometimes bearing subsidiary rosettes subtending flowers; frequently rooting at leaf junctions; internodes equal to or greater than leaves; cauline leaves shortly petiolate, 5-20 x 5-20 mm, orbicular to broadly elliptic, hairs as for rosette-leaves. Flowers solitary in leaf axils, sometimes up to 15 in sequence along lateral branchlets, pedicels 0.5-6 mm long in fruit. Calyx 1-3 mm, lobed almost to base, lobes narrow, acute, spreading widely in fruit; hairs spreading, scattered over lobes and base, of varying sizes, the largest more or less hooked. Corolla white 1-4 mm diameter, tube cylindric, lobes spreading to patent, never flat; filaments fixed at level of scales, anthers position 1/2 up lobes, anthers < 1 mm long, yellow; style up to 3 mm long; stigma clavate. Nutlet 1-1.5 x 0.6-1 mm, black to grey-black, ovate, apex obtuse, base rounded.

Flowering:
September - March

Fruiting:
September - May

Threats:
Widespread but never common at any particular location (sometimes it is known from just one rock ledge or overhang for an entire district). Despite its natural scarcity it seems quite able to cope with weed invasions, partly because it can tolerate extreme heavy shade and a range of soil/substrate moisture regimes from drought prone to saturated.

***Attribution:**
Fact Sheet prepared for NZPCN by P.J. de Lange 1 February 2008. Description based on Allan (1961).

References and further reading:
Allan, H.H. 1961: Flora of New Zealand. Vol. I. Goverment Printer, Wellington.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=289

Myriophyllum robustum

Common Name(s):
Stout water milfoil

Current Threat Status (2012):
At Risk - Declining

Distribution:
Endemic to the North and South Islands. In the North Island known now only from Northland to Taranaki and the northern Rangitikei. In the South Island only known from North West Nelson, the West Coast and Fiordland

Habitat:
Shallow peaty lakes, slow flowing streams, dune ponds, and in muddy or seasonally flooded ground in alluvial forest.

Features*:
Perennial aquatic herb which if in pools of water is firmly rooted to the bottom. Stems spongy, inflated up to 1.5 m long, emergent portion 300 mm tall, erect to prostrate. Submerged leaves in whorls of (4-)5-7, (15-)20-35 x (4-)6-10 mm finely divided, pectinate with 26-32 pinnae, brown, these diminishing in size toward water surface. Emergent leaves glaucous, tinged red, narrowly ovate to oblong, apex acute, otherwise similar to submerged leaves. Flowers perfect. Sepals 4, ovate to deltoid 0.6-0.8 x 0.5-0.6 mm, petals 4, weakly hooded, 2.5-4 x 1-1.5 mm. Fruits globular to slightly turbinate, 1.5-2 x 2-2.5 mm.

Flowering:
September - March

Fruiting:
October - April

Threats:
Threatened by wetland drainage, eutrophication, and the spread of naturalised wetland weeds.

***Attribution:**
Fact Sheet Prepared by P.J. de Lange (1 April 2007). Description based on fresh plants and herbarium material - see also Orchard (1979)

Caption: Myriophyllum robustum
Photographer: Peter de Lange

Caption: Myriophyllum robustum
Photographer: Peter de Lange

References and further reading:
Orchard, A.E. 1979: *Myriophyllum* (Haloragaceae) in Australasia. 1. New Zealand: a revision of the genus and a synopsis of the family. *Brunonia 2*: 247-287.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=183

Myrsine aquilonia

Common Name(s):
Poor Knights Matipo

Current Threat Status (2012):
At Risk - Relict

Distribution:
Endemic. New Zealand, North Island: Known from the Poor Knights Islands, Rauhomaumau Island, Rangaunu Harbour, and Te Arai (Heenan & de Lange 2004)..

Habitat:
Coastal scrub, kanuka forest and mangrove swamps.

Features*:
Dioecious, suckering shrub or small tree up to 12 m tall. Trunks with ring-like constrictions. Branchlets erect, somewhat spreading, not divaricating, usually crowded and leafy. Adult leaves 12-28 x 10-17 mm, without prominent blotch at lamina base, obovate, leathery, entire with leaf apex deeply retuse to obcordate. Flowers axillary, solitary or in fascicles of up to 6. Female flowers with 4 sepals and 4 petals, petals free, 1.6-1.7 x 1-1.1 mm, broadly elliptic, green flushed maroon. Style 0.2-0.3 mm, stigma 0.6-0.8 x 0.6-0.8 mm, stamens rudimentary. Male flowers similar. petals 2.5-2.8 x 1.2-1.3 mm, obovate, stamens prominent with anthers 1.2-1.5 x 0.6-0.8 mm, gynoecium rudimentary. Fruit a circular purple or violet drupe 3.8-4.7 x 3.5-4.7 mm.

Flowering:
August

Fruiting:
December-January

Threats:
Abundant on the Poor Knights Island group where it is often the co-dominant species in the main vegetation types. Outside these islands it is very scarce. Previously regarded (as Myrsine aff. divaricata (AK 228797; Poor Knights)) as Sparse in de Lange et al. (2004).

Caption: Ex. Tawhiti Rahi
Photographer: Gillian Crowcroft

Caption: Tawhiti Rahi
Photographer: Peter de Lange

***Attribution:**
Fact Sheet Prepared by P.J. de Lange (1 November 2009). Description based on Heenan & de Lange (2004).

References and further reading:

de Lange, P.J.; Norton, D.A.; Heenan, P.B.; Courtney, S.P.; Molloy, B.P.J.; Ogle, C.C.; Rance, B.D.; Johnson, P.N.; Hitchmough, R. 2004: Threatened and uncommon plants of New Zealand. *New Zealand Journal of Botany 42*: 45-76.

Heenan, P.B.; de Lange, P.J. 2004: *Myrsine aquilonia* and *M. umbricola* (Myrsinaceae), two new species from New Zealand. *New Zealand Journal of Botany 42*: 753-769

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1006

Nestegis apetala

Common Name(s):
Coastal maire, Bastard Ironwood (Norfolk Island)

Current Threat Status (2012):
At Risk - Naturally Uncommon

Distribution:
Indigenous. Norfolk Island and New Zealand (North Island including northern offshore islands from the Three Kings Islands south to Hauturu (Clark Island), near Whangamata. Nestegis apetala is especially common on the Poor Knights and Motukino (Fanal Island) - on the latter of which it forms a distinct, pure forest type.

Habitat:
Strictly coastal. Inhabiting coastal forest often along the exposed margins, also on rocky slopes, cliff faces, talus slopes and exposed ridgelines, as well as forming a minor subcanopy in closed forest. Nestegis apetala is often an important component of northern offshore island forests where it co-habits with pohutukawa (Metrosideros excelsa), tawapou (Planchonella costata), coastal mahoe (Melicytus novaezelandiae), Streblus spp. (especially S. banksii), houpara (Pseudopanax lessonii) and whau (Entelea arborescens).

Features*:
Stout spreading dioecious (?gynodioecious) tree up to 10 m. tall; trunk up to 1 m diameter, sometimes several arising from base, these often twisted; bark firm (not flaking), often deeply furrowed, grey to grey-brown, tessellated. Branches spreading, often tortuous. Branchlets glabrous. Leaves glabrous, coriaceous, dark glossy green above, paler and dull below, margins undulate, somewhat waxy, midrib prominent on both surfaces, yellow; petioles stout, rigid 8-15 mm long; lamina of juveniles 50-120 × 40-90 mm, broad-oblong to ovate, apex acute to acuminate, base cuneatelty narrowed; of adults 50-80 × 40-70 mm, elliptic-oblong to ovate-elliptic, apex acute to acuminate, base cuneately narrowed. Inflorescence a slender 10-18-flowered raceme 30-45 mm long, rhachis and pedicels, stout glabrous. Flowers 2.5-2.9 mm. diameter, greenish to greenish-yellow; males, females (and very rarely apparently perfect flowers) on very slender pedicles; calyx unequally deeply cleft, ovate, subacuminate; males with 2 large exserted anthers, ovary rudimentary or functional; female flower with 2 rudimentary anthers, ovary with large 2-lobed stigma. Drupe 10-18 mm long, oblong-ovoid, flesh dark pink, red or purple-black to maroon (flesh somewhat oily); endocarp 9.0-15 ×5.5-8.5 mm, dull, pale orange-yellow, elliptic to narrowly elliptic (and slightly compressed. Seed, 1(-2) per endocarp, elliptic, purple-brown.

Flowering:
October-January

Fruiting:
January-April

Threats:
Not Threatened

Caption: Nestegis apetala - close up of foliage showing upper leaf surface. Note wavy leaf margin
Photographer: Peter de Lange

Caption: Nestegis apetala - close up of foliage showing underside of leaves.
Photographer: Peter de Lange

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange 9 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.

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

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1031

Notogrammitis rawlingsii

Caption: Photo by John Smith-Dodsworth
Photographer: John Smith-Dodsworth

Caption: Brick Bay. Nov 2008.
Photographer: Jeremy Rolfe

Common Name(s):
Rawlings strap-fern

Current Threat Status (2012):
At Risk - Naturally Uncommon

Distribution:
Endemic. New Zealand: North, Little and Great Barrier Islands, from Herekino and Puketi Forests south to the Coromandel Peninsula (Waikawau Bay), upper Kauaeranga Valley and Mt Pirongia. Locally common around Warkworth and in some kauri remnants in North Shore, Auckland.

Habitat:
This species is characteristically associated with kauri (Agathis australis) forest, or forest remnants, where it invariably grows amongst mosses, on rotting logs, exposed roots or as a low epiphyte.

Features*:
Terrestrial, rupestral (or rarely a low epiphyte) fern. Rhizome short-creeping; paleae pale brown, lanceolate, acute to broadly acute, 4.0-4.5 × 1.0 mm. Stipe indistinct, winged nearly to base; stipe hairs whitish, sparse to common, to 1.5 mm long. Lamina linear-oblanceolate, acute, (103-)104-137(-143) × (4-)4.5-5.5(-6) mm; hairs around and within the sori dark red-brown, stout, sometimes hooked, common to abundant, to 0.5 mm long; lamina hairs elsewhere rare, on margins and midrib, reddish brown, to 0.4 mm; texture thinly coriaceous; veins invisible, endings not darkened; midrib raised on lower surface, concolorous with lamina. Sori oblong, oblique, in upper half of frond, 12—22 pairs, 3-5 × 1 mm; soral vein ending within sorus or extending a little beyond it, shorter than basiscopic vein, neither usually reaching margin. Sporangia (160-) 163.6-203.0(-210) microns long; indurated cells of annulus (10-)10.8-13.6(-14). Spores (23-)23.3-25.9(-27) microns diameter.

Flowering:
Not applicable - spore producing

Fruiting:
Not applicable - spore producing

Threats:
Although this species is now recognised as being more widespread than when it was first described in the 1970s, it is still rather local, and surprisingly absent from some areas of seemingly suitable habitat (e.g., the Waitakere Ranges). As a rule populations tend to be very localised and small so this species is especially prone to over collection by zealous fern hunters and botanists. The species is now very close to extinction at its type locality at Waipoua, and there is some evidence that this has arisen because of illegal fern collection, though gradual drying out of the forest may also be responsible (B.S. Parris pers. comm.).

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange (January 2005). Description from Parris & Given (1976).

References and further reading:

Parris, B.S. 1998: Grammitidaceae. *Flora of Australia 48*: 450-468.

Parris, B.S.; Given, D.R. 1976: A taxonomic revision of *Grammitis* Sw. (Grammitidaceae: Filicales) in New Zealand. *New Zealand Journal of Botany 14*: 85-111.

Perrie, L.R.; Parris, B.S. 2012: Chloroplast DNA sequences indicate the grammitid ferns (Polypodiaceae) in New Zealand belong to a single clade, *Notogrammitis* gen. nov. *New Zealand Journal of Botany 50*: 457-472.

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=262

Olearia allomii

Common Name(s):
Great Barrier Tree Daisy

Current Threat Status (2012):
At Risk - Naturally Uncommon

Distribution:
Endemic. Known only from Great Barrier Island.

Habitat:
Virtually confined to open shrubland, cliff, and rock outcrops and associated boulderfield. Only abundant on rhyolitic, dacitic rocks and their associated skeletal soils. In some locations it has extended off these onto andesitic soils and rocks but those populations seem to result from past forest disturbance and are not thriving

Flowering:
(September-) October (-December)

Fruiting:
(October-) December (-April)

Threats:
Not threatened but a very uncommon endemic, confined largely to the rhyolitic and dacitic rocks of the central portion of Great Barrier Island

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=605

Caption: Mt Young, Great Barrier Island, November 2000
Photographer: Peter de Lange

Caption: Windy Canyon, Great Barrier Island, October 2000
Photographer: G. M. Crowcroft

Olearia angulata

Common Name(s):
None known

Current Threat Status (2012):
At Risk - Naturally Uncommon

Distribution:
Endemic. Known with certainty from Te Paki, and in scattered sites along the western North Island coastline to near Mokau. At times it can be locally common - such as along the southern Kawhia Harbour. But it is more usually uncommon, often represented at any one site by only a handful of trees. Outside Te Paki there seem to be no genuine eastern North Island occurrences.

Habitat:
A coastal tree of rocky headlands, cliff faces, ultramafic shrublands and dune forests. Usually found in the most exposed situations.

Features*:
Shrub or small tree up to 5 m tall. Branchlets 4-angled, grooved, clad in tightly appressed to loose somewhat resinous white hairs. Leaves 4-7 cm, hairless, resinous yellow-green to dark green above, clad in firmly appressed, white to silvery-white hairs beneath, very leathery, oblong (rarely ovate-oblong), margins very strongly undulate. Inflorescences on stout stalks 3-5 cm long, capitula (flower heads) numerous, compact, each 4-5 mm long, with 2-5 florets (flowers) only. Cypsela (seed) surmounted by yellowish, very coarse, pappus (whorl of hairs making up the "parachute" above the seed).

Flowering:
January to May

Fruiting:
March to July

Threats:
Olearia angulata is probably not threatened. However, it is not well known, easily confused with the more widespread O. albida, and so there are few recent accurate herbarium and site records.

***Attribution:**
Fact Sheet prepared for NZPCN by P.J. de Lange 1 August 2003. Description modified from Allan (1961)

References and further reading:
Allan, H.H. 1961: Flora of New Zealand. Vol. I. Government Printer, Wellington.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=769

Caption: North Cape
Photographer: Gillian Crowcroft

Caption: North Cape
Photographer: G.M. Crowcroft

Olearia cheesemanii

Caption: Karangahake Gorge, October 1984
Photographer: Peter de Lange

Caption: Olearia cheesemanii shrub in flower
Photographer: Peter de Lange, October 1984, Karangahake Gorge

Common Name(s):
Streamside tree daisy, Cheesemans Tree Daisy

Current Threat Status (2012):
At Risk - Naturally Uncommon

Distribution:
Endemic to the North and South Islands. In the North Island known from the Ohinemuri River south to the Tararua Ranges. In the South Island confined to North West Nelson and the vicinity of Westport near Ngakawau.

Habitat:
Rocky river gorges in or near the flood zone.

Features*:
Shrub or small tree 0.1-1(-4) m tall. Sparingly to heavily branched depending on growing situation, bark grey, flaking in long strips. Branchlets grooved, densely covered in buff tomentum. Petioles stout, winged, finely tomentose, up to 20 mm long. Leaves (40-)50-90 x 20-30 mm, variable in shape with all types potentially present on the one individual, usually linear to narrow-lanceolate, or oblong-lanceolate, coriaceous, margins sinuate or irregularly but distinctly toothed, apex subacuminate dark green to grey-green above, undersides clad in fine, appressed, silky-hairy, white to pale buff hairs, these darkening markedly along veins and midrib. Inflorescence a lax, much-branched corymb up to 150 mm diam. Capitula 8-9 mm, phyllaries linear-lanceolate, 3-4 mm, ciliolate, ray florets 6-10(-20), narrow, white. Seed a linear finely grooved achene 2-3 mm, pappus-hairs fine, sordid-white, unequal, up to 5 mm long.

Flowering:
August - January

Fruiting:
November - June

Threats:
Threatened by weeds such as mistflower and buddleia that invade and smother the gorge side habitat of O. cheesemanii. Surveys of northern sites indicated a population structure skewed toward senescent adults, with few juveniles and seedlings persisting due to competition from these and other smaller weed species. River conversion for hydroelectric schemes may also be a threat. Dams disrupt natural flood cycles that help create new habitat and dislodge weeds. Accurate figures on decline are not available, and the exact species distribution is unknown. It would seem this species has its strong holds in northern South Island. Further survey is likely to reveal new populations, especially in the Kaimai Ranges, Mamaku Plateau, Raukumara, Te Urewera, Ruahine and Tararua Ranges.

***Attribution:**
Fact Sheet prepared for the NZPCN by P.J. de Lange 14 April 2006. Description adapted from Allan (1961) - supplemented with observations made from fresh specimens.

References and further reading:
Allan, H.H. 1961: Flora of New Zealand. Vol. I. Government Printer, Wellington.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=184

Oplismenus hirtellus subsp. hirtellus

Current Threat Status (2012):
At Risk - Naturally Uncommon

Distribution:
Indigenous. Kermadec Islands - locally common on Raoul Island. Also recorded from The Meyer Islands. Widespread grass in the Pacific Basin.

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=2209

Caption: Coromandel, January
Photographer: John Smith-Dodsworth

Oxalis thompsoniae

Caption: Capsule showing retrorse pubescence and long patent hairs. Wanganui.
Photographer: Colin Ogle

Common Name(s):
Thompson's Oxalis

Current Threat Status (2012):
At Risk - Naturally Uncommon

Distribution:
Indigenous: Kermadec (Raoul, Macauley), North, South and Chatham (Rekohu only) Islands. Also Australia and New Guinea

Habitat:
Coastal to montane, in grassland, coastal shrub, grey scrub, open sites in forest, on cliff faces and associated rubble slopes. Occasionally in lawns and waste ground in urban situations

Features*:
Herb with prostrate or decumbent stems to 450 mm, glabrescent to moderately antrorse-hairy, sometimes with patent septate hairs present; tap root poorly developed; bulbils absent. Leaves cauline, 3-foliolate; leaflets subsessile, cuneate-obovate, 3-16 x 5-20 mm, bilobed, glaucous, glabrous to pubescent above, often densely hairy below, margins ciliate, sinus to 1/3 leaflet length, lobes oblong to slightly obovate, apices rounded, 3-10 mm apart; petioles 40-900 mm long, with simple antrorse hairs; stipules conspicuous, 1-3 mm long, apex rounded, ciliate. Inflorescences axillary 1-6-flowered; peduncles mostly shorter than leaves, sparsely antrorse-hairy; pedicels delfexed in fruit. Sepals oblong, 2-4 mm long, often ciliate; petals 4-12 mm long, yellow. Capsule cylindric, 5-16 mm long, erect, densely covered in retrorse-hairs interspersed with sparse, longer, patent septate hairs; seeds very compressed, smooth or shallowly ribbed.

Flowering:
September - June

Fruiting:
July - June

Threats:
Not Threatened

***Attribution:**
Fact sheet srepared for NZPCN by P.J. de Lange 10 August 2009. Description from herbarium specimens and live plants.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=2392

Pachystegia rufa

Current Threat Status (2012):
At Risk - Naturally Uncommon

Distribution:
Endemic. South Island, Marlborough, Haldon Hills only

Threats:
A narrow range, local endemic, quite common within its range. Some populations have been damaged by goat and possum browse

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=616

Caption: Head of Blind River, Haldon Hills (November)
Photographer: John Smith-Dodsworth

Caption: Close up, in cultivation, Auckland. Nov 2006.
Photographer: Peter de Lange

Paspalum orbiculare

Common Name(s):
Scrobic, Native Paspalum

Current Threat Status (2012):
At Risk - Declining

Distribution:
Indigenous. Known only from the Kermadec Islands and North Island of New Zealand. In the North Island it occurs from Northland to Raglan Harbour in the west and Whale Island in the Bay of Plenty. Common in the wider Pacific and Australia

Habitat:
Coastal to lowland, in seasonal wetlands (often with Baumea juncea), on lake margins, in gumland scrub, along track sides and near or around active geothermal vents

Features*:
Perennial grass. Leaves stiffly erect. Leaf sheath subcoriaceous, striate, strongly keeled, brown to purple-brown or red, glabrescent. Ligule 1-2 mm, truncate, entire. Leaf-blade 100-200(-300) x 3.5-5 mm, flat, rigid, midrib distinct, upper surface glabrous, undersides pilose hairy near ligule. Culm (200-)350-700 mm, erect, compressed, internodes glabrous, striate. Panicle erect, 60-120 mm, with 3-8 erect to slightly spreading racemes. Racemes (20-)30-40 mm, 1.2-1.7 mm wide, with short white hairs at base, bearing 2 rows of single to paired, subsessile spikelets. Spikelets 2-2.5 mm, imbricate, ovoid-elliptic to ovoid-orbicular, glabrous, obtuse, light brown. Lower glume 0, upper = spikelet, 3(-5)-nerved, glabrous. Lower floret 3-5-nerved, glabrous. Upper floret elliptic-orbicular, glossy, brown. Flowers with anthers 1 mm, if bearing pollen then yellow, usually brown due to malformed pollen, stigmas purple, seed > 1mm.

Flowering:
May flower throughout the year but most plants can be found in flower from August - April

Fruiting:
Seed may be present at anytime of the year but it is most commonly found from September - July

Threats:
Formerly widespread from Te Paki south to the Bay of Plenty. This species is now scarce south of Auckland City, and has it strongholds on Great Barrier Island and in the far North. It seems to be threatened by other taller, faster growing grass and shrub species, though exact data on the nature or mechanism of its decline is not available. Some populations have been lost accidentally through failure to recognise its indigenous status, or by revegetation projects using taller native species which eventually shading out this grass.

Caption: Green Bay, Auckland. Apr 2007.
Photographer: Peter de Lange

Caption: Green Bay, Auckland. Apr 2007.
Photographer: Peter de Lange

***Attribution:**
Fact Sheet Prepared by P.J. de Lange (1 November 2009). Description based on Edgar & Connor (2000). See also comments by de Lange & Murray (2002).

References and further reading:

Cameron, E.K. 1998. *Paspalum orbiculare* an adventive addition to the Waitakeres. *Auckland Botanical Society Journal* 53: 40-42.

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*: 1-23

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=189

Pellaea falcata

Caption: Otuataua Stonefields, Manukau. Apr 2012.
Photographer: Peter de Lange

Caption: Matapaua, Coromandel
Photographer: John Smith-Dodsworth

Common Name(s):
Sickle fern, Australian cliff brake

Current Threat Status (2012):
At Risk - Declining

Distribution:
Indigenous. Common in eastern Australia. In New Zealand primarily a species of northern offshore islands but also known from a few locations in Northland, Auckland and Coromandel.

Habitat:
Coastal in short scrub, on cliff faces and in open forest. Often on small islands, also inland on scoria and basalt rocks around Auckland City.

Features*:
Shortly rhizomatous, tufted fern. Stipes 70-250 mm, stipes and rachises erect, dark brown, densely clad in spreading scales. Frond linear, pinnate, 200-500 x 30-70 mm. Pinnae, shortly stalked, oblong-falcate to distinctly falcate, 15-40 x 7-15 mm, evenly spaced, margins smooth, glossy green above, paler below. Sori in two marginal bands reaching toward but not meeting at pinna apices.

Flowering:
Spore bearing fronds may be found throughout the year

Fruiting:
Spore bearing fronds may be found throughout the year

Threats:
Its status has been confused due to the occurrence of intermediate forms between it and P. rotundifolia. Some appear to be stable, apomictic races requiring further study. Excluding these forms means the typical species is very uncommon primarily confined to northern offshore islands, on several of which it is now threatened by weeds. It has also been collected from mainland stations as far south as Kawhia and Thames. Many mainland sites are threatened by weeds and coastal development. In some places it is or has recently been threatened by over-collection. Herbarium evidence shows this species was once common on the volcanic cones of Auckland City, but due to targetted collection, the species has all but vanished from this area within the last forty years.

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange (21 April 2006). Description adapted from Brownsey & Smith-Dodsworth (2000).

References and further reading:
Brownsey, P.J.; Smith-Dodsworth, J.C. 2000: New Zealand Ferns and Allied Plants. Auckland, David Bateman

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=190

Peraxilla tetrapetala

Common Name(s):
Red mistletoe, pikirangi, pirita, roeroe, pirinoa

Current Threat Status (2012):
At Risk - Declining

Distribution:
North and South Island, but less common in the North Island.

Habitat:
Coastal to montane. A hemiparasite whose main hosts are mountain beech (N. solandri var. cliffortioides), black beech (Nothofagus solandri var. solandri), red beech (N. fusca), and silver beech (N. menziesii). However, it has been recorded as a parasite on a further 17 species (2 exotic) including puriri (Vitex luceans) and pohutukawa (Metrosideros excelsa).

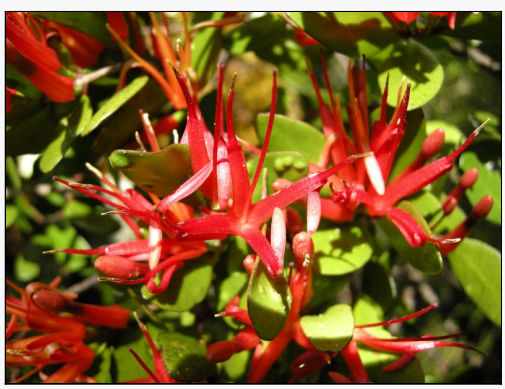
Features:
A shrub that can grow up to 2 m across. It usually parasitises close to the trunk of its host. It has characteristic small raised blisters or lesions on small, usually rhombic leaves. The flowers are solitary or 2-4 together and are bright red (up to 40 mm long). The ripe fruit is fleshy and green. Veins on the leaves are hardly evident and only the midrib is conspicuous. Leaf tips are never notched. Host trees are typically beech or Quintinia.

Flowering:
October to January

Fruiting:
April to June

Threats:
A wide variety of threats are now acknowledged as working in unison to cause the national decline of this and allied leafy mistletoes species. The most obvious threat seems to be brush tailed possums (Trichosurus vulpecula), which heavily browse mistletoes, to such an extent that they are held as the primary cause for the loss of the beech mistletoes from large parts of the countries beech forest.

Caption: Fruit. Ahuriri Valley, Otago
Photographer: John Barkla



Caption: Whakapapa, Tongariro National Park
Photographer: John Sawyer

References and further reading:

Simpson, M.J.A. 1976. *Elytranthe* in the vicinity of Nelson Lakes National Park. Wellington Botanical Society Bulletin, 39: 39-40

Urlich, S., Hopkins, C.J., Thompson, T. 2007. The survival of Peraxilla mistletoes in the Tararua Range. Wellington Botanical Society Bulletin, 50: 37-47

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=192