Southern Coromandel Peninsla

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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.

Ficinia spiralis

Common Name(s):
pingao, golden sand sedge, pikao

Current Threat Status (2012):
At Risk - Declining

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

Habitat:
Coastal sand dune systems. It favours sloping and more or less unstable surfaces, growing mostly on the front face of active dunes but also on the rear face and rear dunes, provided that there is wind-blown sand. It can also grow on the top of sand hills. It is effective at trapping sand.

Features*:
Stout, yellow-green when fresh, golden when dry, shortly creeping plants with stiff culms and very harsh leaves. Rhizome lignaceous, 10–15 mm diameter, shortly creeping, covered by red-brown to brown, fibrous strands left from decaying leaf-sheaths. Culms numerous, 0.3–1.2 m tall, 2–4 mm diameter, erect, obtusely trigonous, very leafy at the base. Leaves numerous, ± = culms, 2–5 mm. wide, stiffly erect or weakly curved, coriaceous, linear, concavo-convex or ± channelled, margins and keel sharply denticulate, narrowed to a long, trigonous tip; sheaths submembranous, much broader than leaves, with numerous, red-brown veins. Inflorescence, paniculate 70–300 mm long, each panicle composed of c.12 confluent clusters of sessile spikelets, each cluster subtended by a rigid leaf-like bract adnate to the axis and broadening at base to an open sheath, lower bracts much exceeding inflorescence. Spikelets 4–5 mm. long, dark red-brown. Glumes coriaceous, rigid, broadly ovate, obtuse, distinctly nerved, finely mucronulate, the lower ones ± keeled. Nut 2.5–4.0 x 2.0–2.5 mm, broadly obovoid, concavo-convex, compressed, obtuse, dark brown, smooth and shining.

Caption: Kaingaroa, Chatham Island. Jun 2013.
Photographer: Jeremy Rolfe

Caption: Mangawhai Wildlife Reserve, north of Auckland
Photographer: John Sawyer

Flowering:
Spring and early summer

Fruiting:
Late summer

Threats:
Competition from marram grass (Ammophila arenaria), dune stabilisation and compaction, harvesting, trampling, vehicle traffic and browsing animals. Because this species is wind-pollinated, individuals of small, isolated populations may not receive pollen during flowering, and therefore there will be no seed production. Browsing and trampling by sheep and horses; browsing of seedlings by possums; seed destruction by rodents; fire and insensitive harvesting.

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange (6 August 2006). Description adapted from Moore & Edgar (1970).

References and further reading:
Moore, L.B.; Edgar, E. 1970: Flora of New Zealand. Wellington, Government Printer

Muasya, A.M.; de Lange, P.J. 2010: *Ficinia spiralis* (Cyperaceae) a new genus and combination for *Desmoschoenus spiralis*. *New Zealand Journal of Botany 48*: 31-39.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=164

Hebe pubescens subsp. pubescens

Caption: Coromandel, August
Photographer: John Smith-Dodsworth

Caption: Coromandel, August
Photographer: John Smith-Dodsworth

Common Name(s):
Coromandel koromiko, Hebe

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. New Zealand: North Island (Coromandel Peninsula, Papanui Point, Pakihi and Rotoroa Islands)

Habitat:
Coastal to lower montane. Associated with pohutukawa (Metrosideros excelsa) forest, on steep cliff faces, rock strewn ground, slip scars, and on offshore rock stacks. Also inland along river margins, track sides, around old gold mines and quarry workings

Features*:
Shrub to 2 m tall. Branches erect or spreading; old stems brown to red-brown; youngest branchlets green to red; internodes 1–39 mm long; stem uniformly pubescent, hairs eglandular, varying from short to very long and woolly. Leaf bud about as long as mature leaves with leaves of a pair separating when mature; leaf bud sinus usually present (but absent in some populations or plants) small, rounded, square or oblong, usually hairy. Leaves lanceolate, oblong, elliptic or linear, subcoriaceous to coriaceous, upper surface dark to yellowish green, dull to somewhat glossy; underside paler, usually covered with long eglandular hairs, very rarely glabrous; ± flat, 15.0–87.0 × 3.5–18.0 mm; apex subacute or acute; base truncate or cuneate; midrib thickened beneath, hairy, with many hairs usually > 0.2 mm long; depressed to grooved above; margin pubescent, entire. Petiole 0.5–4.0 mm long, hairy. Inflorescences with 20–190 flowers, lateral, racemose and unbranched, 20–200 mm long, longer than or about equal to subtending leaves; peduncle 3–28 mm long, eglandular pubescent; rachis 17–175 mm long, eglandular-pubescent; bracts alternate, acute or subacute, ciliate, narrowly deltoid or lanceolate; pedicels much longer than, equal to or shorter than bracts, eglandular-pubescent, erecto-patent or slightly recurved at anthesis, erecto-patent, ascending or recurved at fruiting. Calyx 1.7–4.0 mm long, 4-lobed, equally divided; lobes all similar, deltoid or lanceolate, acute, acuminate or subacute, with mixed glandular and eglandular cilia, margins sometimes tinged pink. Corolla lobes mauve at anthesis (at least faintly) and white after pollination, outer surface eglandular hairy, corolla tube always white; tube hairy inside and often hairy outside, 1.9–3.9 × 1.3–1.9 mm, narrowly funnelform to shortly cylindric and contracted at base, equaling or longer than calyx; usually hairy inside and sometimes hairy outside; lobe lanceolate or elliptic, subacute or obtuse, suberect to patent. Stamen filaments white, 4.5–6 mm long; anthers subacute to conspicuously apiculate, mauve or purple, 1.1–1.5 mm long. Nectarial disc glabrous. Ovary ovoid, 0.9–1.1 mm long, surface mostly eglandular hairy; style 3.5–10.5 mm long, white or mauve; stigma no wider than style, yellow, green, mauve or red at anthesis. Capsules obtuse or subacute, dark brown, 2.5–5.0 × 2.0–3.4 mm, septicidal split extending to base, loculicidal split extending ¼– ½ way to base.

Flowering:
August - April

Fruiting:
November - June

Threats:
Not Threatened

***Attribution:**
Description adapted from Bayley etal. (2003)

References and further reading:
Bayly et al. 2003: Geographic variation in morphology and flavonoid chemistry in Hebe pubescens and H. bollonsii (Scrophulariaceae), including a new infraspecific classification for H. pubescens. New Zealand Journal of Botany 41: 23–53

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=2003

Metrosideros carminea

Common Name(s):
Crimson rata, Carmine rata

Current Threat Status (2012):
Not Threatened

Distribution:
Endemic. New Zealand: North Island (from Te Paki south to Taranaki in the west and Mahia Peninsula in the east)

Habitat:
Coastal to montane (mainly coastal to lowland). A vine of closed forest and forest margins (often along water ways and on ridge lines, especially on rock outcrops and cliff faces).

Features*:
Vine up to 15 m (usually less). Bark dark brown to grey, ± tessellated, and flaking in tabular shards. Growth dimorphic, juvenile and climbing vines sparingly branched, mature (adult - reproductive state) heavily branched. Branchlets terete, finely pubescent. Leaves, close-set, coriaceous, petiolate; petioles 1-3 mm. long; lamina of juveniles 10-20 × 8-18 mm, suborbicular, orbicular to broadly ovate, apices obtuse to subacute; adaxially green to dark green, abaxially paler (young foliage (and branchlet growing points) usually pink-tinged), both surfaces finely to distinctly pubescent, hairs pinkish, oil glands conspicuous abaxially not punctate,; adult lamina 15-35 × 7-30 mm, elliptic-oblong, ovate-oblong to broad ovate, apices obtuse to subacute, adaxially dark green and glossy, adaxially paler, ± glossy, ± glabrous. Inflorescences in axillary and/or terminal few- to many-flowered cymose botyria crowded toward apex of branchlets (often obscuring the foliage); peduncles and pedicels finely pubescent, peduncles 20-60 mm long, pedicels 5-10 mm long. Hypanthium urceolate or globose, initially fleshy, finely pubescent, ± glabrescent; calyx lobes 1.8-2.3 mm long, oblong, subacute. Petals 5 × 4 mm, caducous, suborbicular, carmine, shortly clawed, margins ± unevenly crenulate to indistinctly toothed or undulose; stamens numerous 10-15 mm long carmine. Capsule 6-9 mm diameter, subglobose to globose, 3(-4)-valved, exserted, ± woody, dark brown to brown-black when mature.

Caption: Metrosideros carminea
Photographer: Peter de Lange

Caption: Carmine rata
Photographer: DoC

Flowering:
August - November

Fruiting:
January - April

Threats:
Not Threatened. *Metrosideros carminea* is however most often found as juveniles, in part because the adult vines (at least in dense forest) are often overlooked as they occur high up in the canopy. In some areas adult vines are heavily browsed by possums.

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange (5 January 2013). Description adapted from Allan (1961) supplemented with observations made from herbarium and fresh material.

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=980

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

Pomaderris rugosa

Caption: Kawakawa Bay
Photographer: Gillian Crowcroft

Caption: Close up - Kawakawa Bay
Photographer: G.M. Crowcroft

Common Name(s):
Pomaderris

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

Distribution:
Endemic. New Zealand: North Island (Herekino, Waiti River (Between Silverdale and Orewa), Rotoroa and Ponui Islands. Coromandel Peninsula; Mayor (Tuhua) Island, west coast of Firth of Thames; Aotea and Kawhia Harbours).

Habitat:
Coastal to lowland. Commonly found in open scrub overlying clay and other impoverished soils and rocks (especially Rhyolite). Also in low scrub within estuaries. The Herekino records are from forestry tracks and are disputed as natural by some botanists. Similarly there is some suggestion that the Silverdale records were the result of deliberate plantings.

Features*:
Erect, often widely spreading, rarely decumbent, much-branched shrub up to 3 m tall. Adult leaves 10-60 x 5-14 mm, dark green above, pale-grey, rarely rust coloured beneath, narrow-elliptic, narrow-oblong to oblong-lanceolate, obtuse, entire, margins flat in shade leaves, otherwise recurved, petiole to 5 mm; upper surface glabrous to glabrescent, sometimes with simple hairs at first, lower surface densely clothed in sessile and stalked stellate hairs, ferruginous and more conspicuous on veins; margins entire; stipules 1-2 mm long, deciduous. Juvenile leaves similar but usually larger and finely toothed. Inflorescence a rounded to sub-pyramidal, many-flowered panicle, terminal or subterminal, individual clusters compact; outer bracts pale, broadly elliptic, closely hairy; buds elongated, pale; pedicels to 3 mm. long. Flowers c.4 mm. diameter, calyx spreading, lobes 1.5 mm long, cream or pale yellow, fading to golden yellow after anthesis, deciduous; calyx-tube covered with fine close hairs, stellate except for a few simple ones. long; petals 0; style divided to c.1/2 length; petals absent. Anthers oblong. Ovary with dense stellate hairs at apex, wholly immersed in calyx tube at anthesis, ¨ø immersed at fruiting. Capsule c. 3.5 mm. long, nearly ¨ú immersed in calyx-tube, narrow, pale, losing sepals early; operculum > 1/2 coccus-length; cocci opening by opercula occupying ¨ø of their inner faces; seeds long, c.2 x 1 mm, dark brown, ant-dispersed.

Flowering:
October - December (but sporadic throughtout the year)

Fruiting:
November - May

Threats:
Naturally uncommon but rather widespread, often sparsely distributed endemic. Most common on the Coromandel Peninsula but also abundant around the firth of Thames and on the Inner Gulf islands. It is widespread and tolerant of distrubance and often found in pine forests. There are few obvious threats.

***Attribution:**
Description based on herbarium specimens and both Allan (1961) and Webb et al. (2988).

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

Webb, C.J.; Sykes, W.R.; Garnock-Jones, P.J. 1988: Flora of New Zealand. Vol. IV. Naturalised Pteridophytes, Gymnosperms, Dicotyledons. 4. Christchurch, New Zealand, Botany Division, D.S.I.R.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=644