Auckland's threatened plants Vol. II

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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.

Celmisia adamsii var. adamsii

Caption: Castle Rock
Photographer: John Smith-Dodsworth

Caption: At Castle Rock. November
Photographer: John Smith-Dodsworth

Common Name(s):
Adams Daisy

Current Threat Status (2012):
Naturally Uncommon

Distribution:
Endemic. North Island: From Castle Rock (above Coromandel) south to the Kauaeranga Valley. Also Mt Pirongia (Hihikiwi and nearby high points)

Habitat:
Montane along river gorges, on steep-sided, shaded, sparsely vegetated slopes, rock outcrops, cliff faces and rock tors.

Features*:
Tufted herb with simple or sparingly branched stock, pseudo-stem up to ± 60 mm long. Lamina subcoriaceous, acute, often with fine apiculus, 90-400 × 10-30 mm, narrowly to broadly oblong-lanceolate to almost linear-oblong (diverse forms may occur on same plant); upper surface ± glabrous, dark green to yellow-green, with ± distinct thin pellicle, midrib broad, grooved, main veins prominent; lower clad in soft white appressed or subappressed tomentum, midrib prominent; margins distantly finely denticulate, narrowing to petiole up to c. 30 mm long; sheath ± 50 × 15 mm, dark green, sometimes tinged purple, veins evident, surface tomentum ± as in lamina, margins floccose. Scape 150-400 mm long, rather slender, often flexuous, ± flattened, ± clad in floccose tomentum. Bracts usually few, up to 10 mm long, lamina almost filiform. Capitula 30-50 mm diameter; involucral bracts, green to pale green, linear-subulate to narrow-lanceolate, c.12 mm long, margins ciliolate, midrib evident. Ray-florets numerous, up to 30 mm. long, tube slender; limb gradually widened to 4-toothed apex, veins distinct. Disk-florets 6.0-6.5 mm long, narrow-funnelform, teeth narrow-triangular. Achenes glabrous, strongly ribbed, narrowly compressed-cylindric to very narrowly obovoid, ± 4 mm. long. Pappus-hairs sordid-white, up to 5 mm long, slender, finely barbellate.

Flowering:
September - April

Fruiting:
October - July

Threats:
A naturally uncommon, narrow range endemic that is locally common in parts of its Coromandel Peninsula range. Some populations have been damaged by tracking and illegal plant collection but most are secure. On Mt Pirongia it is very uncommon and seems to be dying out as denser vegetation colonises the formerly open rock outcrops it grew on. This vegetation shift is due to intensive goat and deer control on that mountain which has helped restore the natural cloud forest vegetation but ironically at the expense of some unusual occurrences of small, montane often herbaceous plants like this Celmisia.

***Attribution:**
Description adapted from Allan (1961) and de Lange (1994)

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

de Lange, P.J. 1994. *Celmisia*on Mt Pirongia Western Waikato some notes on its identity and taxonomy. Auckland Botanical Society Journal, 49: 74-76.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=412

Celmisia mackaui

Common Name(s):
Banks Peninsula Daisy, Akaroa Daisy

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

Distribution:
Endemic. South Island, Banks Peninsula only

Habitat:
Coastal to montane: Usually found in damp, rocky places, especially along precipitous south-facing bluffs and waterfalls. Occasional extending into tussock grassland, and on sheltered rocky outcrops. Occasional found in seepages amongst Phormium.

Features*:
Woody-based herb with short branchlets arising from a multicipital stock, usually just below the soil surface; living leaves in rosettes at the tips of branchlets; the whole plant forming a loose mat of numerous rosettes. Leaf sheaths densely imbricate, and compacted into a pseudostem. Leaf lamina 100-700 × 15-75 mm, somewhat flaccid, erect but tending to spread, lanceolate to narrow-elliptic; upper surface concolorous, bright to dark green, veins obvious; lower surface glabrous, glaucous green; tip acute; margins entire, often slightly recurved; base cuneate; petiole short, to 1/3 length of lamina, usually deep purple, glabrous or with scattered whitish hairs. Scape purple, up to 650 mm long; bracts numerous, erect, subulate, somewhat leafy; monocephalous. Capitula up to 50 mm diameter. Involucral bracts in several series, subulate, erect, glabrous. Ray florets 60-70, ligulate, the limb more or less linear, creamy white often tinged violet when capitulum first open. Disc florets c.200, funneliform, yellow; tube with eglandular biseriate hairs. Achene fusiform-cylindric, strongly ribbed, c.5 mm long, glabrous. Pappus unequal, c.7 mm long, of 55-60 bristles.

Flowering:
October - February

Fruiting:
December - May

Caption: Celmisia mackaui
Photographer: John Barkla

Caption: Celmisia mackaui
Photographer: John Barkla

Threats:
A Naturally Uncommon narrow range endemic, that is locally widespread in the small part of Banks Peninsula from which it is known. Some populations are in decline as a natural conseqeunce of vegetation succession to taller forest, this species having temporarily expanded its range into habitats created by past logging, fires and attempts at farming.

***Attribution:**
Description based on Given (1984)

References and further reading:
Given, D.R. 1984: A taxonomic revision of Celmisia subgenus Pelliculatae section Petiolatae (Compositae—Astereae). New Zealand Journal of Botany 22: 139-158.

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

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=422

Celmisia major var. major

Caption: Celmisia major var. major
Photographer: Bec Stanley

Caption: Whatipu (December)
Photographer: John Smith-Dodsworth

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

Distribution:
Endemic. North Island: West Auckland (Muriwai to Cornwallis (formerly Laingholm), Great Barrier Island (near Fitzroy – apparently extinct), Kaikoura Island, Aiguilles Island.

Habitat:
Strictly coastal, on rock headlands, cliff faces, and islets, where it usually grows in low turf on peaty or silty soils with Disphyma, Tetragonia and Samolus. Occasionally found in coastal shrublands.

Features*:
Tufted herb. Leaves (100-150-200(-400) x (5-)10(-20) mm, narrow-linear to lanceolate, tapering from sheath to an acute apex, sulcate, and plicate in cross-section, leathery, upper surface dark green, pellicle thin, often fracturing into irregular shards, leaving leaves with a somewhat silvery green, mottled appearance. Lower leaf surface densely clad in silvery white appressed hairs, midrib distinct and glabrescent. Leaf sheath pale, membranous, 60 mm long, nerves distinct, red or dark red, margins clad in floccose hairs. Inflorescence scape stout, long persistent, 200 mm or more in length, pellicled to floccose (cottony). Capitula 20-40 mm diam., phyllaries 20 mm, linear-subulate, acuminate, ciliate, glabrous on upper surface. Ray-florets white, numerous, 20 mm long. Disk florets yellow, 9 mm, funnelform, teeth narrow-triangular. Achenes narrow-cylindric, grooved, glabrescent 6-7 mm, pappus hairs 8 mm, white, slender, somewhat barbellate.

Flowering:
(August-) October-November (-February)

Fruiting:
(October-) December (-May)

Threats:
Habitat loss through the encroachment of taller and faster growing weeds, and coastal erosion. Several accessible populations have been damaged by trampling through human traffic to access popular viewing sites on headlands and near shore islets. Some sites have vanished altogether through, it would seem, overcollecting. Apparently always scarce on Great Barrier Island, this daisy now only persists in that island group in a single site on a very remote northerly location.

***Attribution:**
Fact Sheet prepared by P.J. de Lange (1 February 2009). Description adapted 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=154

Centipeda aotearoana

Common Name(s):
New Zealand sneezewort

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

Distribution:
Endemic. New Zealand, Three kings, North and South Islands.

Habitat:
Open damp ground, lake, tarn and river margins, ephemeral wetlands, and drains.

Caption: L. Waiporohita, Oct.
Photographer: John Smith-Dodsworth

Caption: L. Waiporohita, Oct.
Photographer: John Smith-Dodsworth

Features*:
Annual to short-lived perennial prostrate herb forming circular patches 10-30 cm diameter. Stems trailing, prostrate, sparsely to moderately covered in cottony-hairs. Leaves yellow-green, obovate to spathulate in outline, 4-8(-12) mm long, 1.5-4 mm wide, margins with 1-3 acute to blunt teeth, rarely entire. Inflorescence a single leaf-opposed, unstalked hemispherical, capitula (daisy-like structure), domed, 3-4(-7) mm diameter, female (outer) florets c.60-120 in 3-5 rows, bisexual flowers 8-16. Fruiting heads persistent. Cypselas (seeds) brown, club-shaped or narrowly cylindrical, 1.2-1.7 mm long, 4-angled with prominent ribs at each of the angles, smooth or finely scabrid in lower portion, glandular hairs sparse or absent, non-glandular hairs spreading or subappressed, confined to ribs.

Flowering:
Herbarium specimens and field notes indicate it may flower from mid summer through to autumn but plants may continue flowering into winter.

Fruiting:
Herbarium specimens suggest that fruit is produced in late summer to autumn.

Threats:
Centipeda aotearoana was described by Australian Botanist Neville Walsh in 2001. At the time of its description the comment was made that this species does not appear to be rare. Current indications are that C. aotearoana is probably a naturally sparse, opportunistic species

***Attribution:**
Fact sheet prepared for NZPCN by P. J. de Lange 5 May 2005. Description adapted from Walsh (2001).

References and further reading:

Deverson, T, Kennedy G. 2005. The New Zealand Oxford Dictionary. Oxford University Press: Victoria.

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

Walsh, N.G. 2001: A revision of *Centipeda* (Asteraceae). *Muelleria 15*: 33-64.

Webb, C.J.; Sykes, W.R.; Garnock-Jones, P.J. (eds). Flora of New Zealand. Vol. IV. Christchurch, Botany Division, D.S.I.R. 1365 p.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=738

Chenopodium allanii

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

Distribution:
Endemic. North and South Islands from the Wairarapa south. North Cape records of this species are referrable to E. trigonos subsp. trigonos

Threats:
Not Threatened. However uncommon in the North Island.

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=1828


Caption: Taiaroa Head
Photographer: John Barkla


Caption: Taiaroa Head
Photographer: John Barkla

Chionochloa bromoides

Caption: Central Valley mouth, Fanal Island
Photographer: Peter de Lange

Caption: Maunganui Bluff (November)
Photographer: John Smith-Dodsworth

Common Name(s):
Coastal Tussock, Seabird Tussock

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

Distribution:
Endemic. North Island where virtually confined to northern offshore islands and easterly headlands from the Bay of Islands south to the Poor Knights, Chickens and Mokohinau Islands. One westerly outlier occurs at Maunganui Bluff.

Habitat:
Coastal on cliff faces, bluffs, rock stacks, and in petrel scrub. Well established plants often have their bases heavily burrowed by sea birds such as diving petrels.

Features*:
Gynodioecious, stout, pendent often sprawling, bright green tussock with persistent leaves and sheaths. Leaf-sheath to 150 mm, shining yellow, keeled, persistent and entire, becoming fibrous, margin abundantly long hairy below, apical tuft of hairs to 4 mm; adaxially with many minute interrib hairs. Ligule to 1.5 mm. Leaf-blade to 500 × 10 mm, flat or shallowly U-shaped, smooth, persistent, adaxially glabrous except for long hairs on margin below and some short or long hairs, sometimes dense, at base. Culm to 700 mm, internodes glabrous. Inflorescence to 200 mm, very congested; rachis and main branches glabrous but with some long hairs at axils; pedicels short and densely hairy. Spikelets of up to 6 florets. Glumes acute or slightly awned, < adjacent lemma lobes, many prickle-teeth abaxially and a few adaxially; lower to 12 mm, 1-3-nerved, upper to 16 mm, 5-nerved. Lemma to 9 mm; hairs dense at margin and in all internerves though sometimes absent from all or some, less than or equal to sinus, prickle-teeth abundant abaxially and adaxially on lobes and margins; lateral lobes to 5 mm including awn to 3 mm or acute, rarely dividing from awn at sinus; central awn to 22 mm from indistinct straight column. Palea to 10 mm, prickle-teeth abaxially and on flanks. Callus to 1.5 mm, hairs to 5 mm. Rachilla to 0.5 mm. Lodicules to 1.75 mm. Anthers to 5.5 mm in male-fertile flowers, up to 3 mm in male-sterile flowers. Male-fertile flowers with stigma-styles to 3.5 mm, ovary to 1.5 mm, and male-sterile flowers to 5 mm, ovary 1.5 mm. Seeds to 3.5 mm.

Flowering:
September - December

Fruiting:
November - March

Threats:
Not Threatened. Listed because it is a naturally uncommon, regional endemic.

***Attribution:**
Description modified from Edgar and Connor (2000)

References and further reading:
Edgar, E.; Connor, H.E. 2000: Flora of New Zealand. Vol. V. Grasses. Christchurch, Manaaki Whenua Press. 650 pp.

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=439

Christella dentata

Common Name(s):
Christella

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

Distribution:
Indigenous. Kermadec Islands (Raoul Island), New Zealand (North Island). A pan tropical species ranging from Crete throughout the warmer parts of the world to New Zealand. In New Zealand known only from Kaitaia north, although somewhat similar plants have been found twice near Kawhia and Piopio (now extinct at either location), and there are forms of unknown origin present in horticulture which have naturalised in Auckland, Hamilton and Wanganui. Christella dentata is a widespread and variable old world species, showing a wide range of local variation. Many of these variants have been given formal names but acceptance of these is not universal. New Zealand plants appear to be the same form as that commonly found in eastern Australia and Norfolk Island.

Habitat:
A short-lived fern of recently disturbed ground. In New Zealand proper the typical form of C. dentata is found naturally only in the far north in the warm, frost-free situations such as coastal wetlands, along river banks and in alluvial forest remnants. The same form is abundant on the Kermadec Islands (on Raoul Island only)

Features*:
Somewhat soft and delicate fern, producing numerous tufts of pinnate fronds from a stout, somewhat woody, creeping rhizome. Rhizome, usually semi-exposed, covered in the frond base remnants. Fronds not long-persistent, broadly ovate to oblong in outline, up to 2 m long (usually much less), pale green to yellow-green, soft, wilting easily when broken, all parts clad in soft velvety hairs. Primary pinnae, with the exception of the basal prominently hastate pair, alternating along rhacis, oblong to lanceolate, 300-1000 x 130-400 mm, with longest pinnae located within the central portion of the frond, subsequent pairs decreasing in size toward either end of frond. Secondary pinnae prominently lobed, lobes, oblong, apex bluntly truncate. Sori are arranged in up to 7 pairs on the pinnae lobes. Sorus covered by a heart- to kidney-shaped indusia.

Flowering:
Spores may be found throughout the year

Fruiting:
Spores may be found throughout the year

Threats:
In New Zealand proper currently known from just one natural site, this is protected as a QE II covenant. At this site it is threatened by natural succession and the rank growth of weeds following fencing of the forest remnant in which it grows (de Lange et al. 2010). Current management at the QEII site involves handweeding plants, and population enhancement. *Christella dentata* is however abundant on Raoul Island (see also Distribution and Taxonomic Notes).

Caption: Foley's Bush, Awanui
Photographer: Gillian Crowcroft

Caption: Foley's Bush, Awanui
Photographer: Gillian Crowcroft

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange (12 October 2003). Description modified from 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. Christchurch, Canterbury University Press. 471pp.

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=12

Coprosma acerosa

Common Name(s):
sand Coprosma

Current Threat Status (2012):
At Risk - Declining

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

Threats:
Not Threatened but rapidly becoming scarce in large parts of its range. Seems to resent dune reclaimation and competition from marram grass (Ammophila arenaria).

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=1699

Caption: Coprosma acerosa
Photographer: Wayne Bennett

Caption: Closeup of Coprosma acerosa
Photographer: Wayne Bennett

Coprosma dodonaeifolia

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

Distribution:
Endemic. Great and Little Barrier Islands, Coromandel Peninsula south to at least Mt Te Aroha

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=1713

Caption: Table Mt, Thames, August
Photographer: John Smith-Dodsworth

Caption: At Table Mt, Thames, August
Photographer: John Smith-Dodsworth

Coprosma macrocarpa subsp. macrocarpa

Common Name(s):
large-seeded Coprosma

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

Distribution:
Endemic. Confined to the Three Kings Islands. A single specimen found on Aorangi Island (Poor Knights) may be a recent introduction from the adjacent mainland, as this plant is now commonly cultivated in northern New Zealand. Naturalised in Auckland and around Wellington cities

Threats:
A local endemic, common on but confined to the Three Kings Islands. A single record from the Poor Knights Islands is probably a chance naturalisation from the nearby mainland where it is now commonly cultivated

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=1720

Caption: Coprosma macrocarpa subsp. macrocarpa fruits
Photographer: John Smith-Dodsworth, Ex Cult. November

Caption: A plant of Coprosma macrocarpa subsp. macrocarpa fruits
Photographer: John Smith-Dodsworth, Ex Cult. November

Coprosma pedicellata

Caption: Male flower and buds. In cultivation. Aug 2011.
Photographer: Jeremy Rolfe

Caption: Male flowers and buds. In cultivation. Aug 2011.
Photographer: Jeremy Rolfe

Current Threat Status (2012):
At Risk - Declining

Distribution:
Endemic. Largely confined to the eastern portion of the North and South Islands. In the North Island from Pehiri, near Gisborne to the Wairarapa, in the South Island from North Canterbury south to the Catlins and western portion of Southland.

Habitat:
Kahikatea (Dacrycarpus dacrydioides) dominated lowland alluvial forest. Often restricted to the margins of small oxbow lakes and ponds, or former stream/river channels. Very tolerant of waterlogging and plants may be found growing within water.

Features:
Shrub or small tree up to 9m tall. Trunk erect to twisted, often leaning or twisted, bark brown or grey-brown, inner bark orange. Branches numerous, spreading, somewhat divaricating, and rather leafy. Adult leaves in opposite pairs, densely clustered on short shoots, lamina dull yellow-green and cream flecked, 10(-12) x 3-5(-7) mm, obovate to narrowly obovate, apex obtuse to retuse, domatia 0-2(-3). Interpetiolar stipules triangular, pubescent with a dark central denticle. Plants dioecious, flowers axillary, solitary or paired, pedicellate, pendulous, funnel-shaped, pedicels and calyces long persistent. Male flowers larger and more numerous than females. Corolla tube 2.5-3 mm, oblong, green suffused with purple, corolla lobes 3-5, cut to half tube length. Stamens prominent, 2-3(-4). Females flowers similar to males but with reduced corolla tubes, ovary ovoid, stigmas 2-3, 5 mm long. Fruit a globose dark purple to black drupe. Pyrenes (1-)2(-3), 3-4 x 2-3 mm.

Flowering:
(August-)September-October (-November)

Fruiting:
(February-)March-September(-October). Fruit takes 12-14 months to ripen and so it is not uncommon to find ripe fruit and green fruit alongside flowers on the same plant.

Threats:
Although not as threatened as was initially believed, this species is still extremely vulnerable to habitat loss from forest clearance, drainage, and other more subtale changes in local hydrology. Seedlings are very vulnerable to browsing from livestock. These animals can on occasion destroy subadults and adult specimens through bark stripping. Some populations comprise numerous adults, with no or little recruitment as a consequence of weeds which suppress seed germination.

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=158

Cordyline obtecta

Caption: Great Island, Tasman Valley
Photographer: Peter de Lange

Caption: Great Island, Tasman Valley
Photographer: Peter de Lange

Common Name(s):
Three Kings cabbage tree

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

Distribution:
Indigenous. New Zealand: Three Kings Islands (North East Island, Manawa Tawhi (Great Island), South West Island and West Island), North Island (North Cape and Murimotu Island), Poor Knights Islands (Aorangi and Tawhiti Rahi). Also present on Norfolk Island, which is the type Locality for Cordyline obtecta.

Features*:
Stout, widely branched tree to 6 m tall; trunk solitary or multi-trunked from base. Trunks up 0.45 m dbh; bark copious, firm, corky, grey-brown. Leaves concolorous, yellow-green, green to glaucous-green, often curved in upper half to one third; lamina 0.60–0.65-1.0 × 0.055–0.07(-0.10) mm, broadly, lanceolate to ± oblanceolate, widest above middle; narrowed above base into short, hardly channelled petiole of half lamina-width or less; lamina similar on both surfaces, widest above middle; midrib obscure adaxially, more prominent abaxially, widened towards base, paler than rest of lamina; nerves fine, subequal, ± parallel but meeting midrib at appreciable angle. Inflorescence a broad densely flowered panicle 0.8-1.0(-1.2) m long, branched to second or third order, branches well spaced, lower bracts foliaceous, green entire or bilobed; ultimate racemes c. 100–200(-300) mm long, c.20 mm diameter (including flowers); axes visible between flowers. Peduncle very stout 10-30 mm diameter. Flowers white, strongly and very sweetly scented; perianth c.5–6 mm long, tube c.2 mm long; tepals patent. Stamens about the same length as tepals; filaments long-connate or not, if connate then the free portion as broad as the anther and not much longer. Stigma shortly trifid. Fruit c.4 mm diameter, globose, white. Seeds c.3.5 mm diameter, glossy, deeply notched on one side. Description adapted from Moore & Edgar (1970).

Flowering:
September - December

Fruiting:
March - June

Threats:
Not Threatened in New Zealand though it is very localised and so possibly at some risk on Norfolk Island. In New Zealand Cordyline obtecta is very common on the main islands of the Three Kings which are protected as Nature Reserves. It is less common south of there but still rather widespread especially on remote Murimotu and the Poor Knights Islands (another Nature Reserve).

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange 14 February 2011. Description adapted from Moore & Edgar (1970).

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

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

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=456

Corunastylis nuda

Common Name(s):
red leek orchid

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

Distribution:
Indigenous. North, South and Chatham Islands, from about Great Barrier Island and Albany south. Also present in Australia.

Habitat:
A species of mainly lowland to montane areas (1 - 900 m a.s.l.) favouring open shrublands including pakihi sites, skeletal soils over lying rock, peat bogs, and infertile clay bank scrub and road banks. It also grows in short grassland including pastures overlying sand, clay or gley podzols that are now dominated by introduced grasses.

Features:
An erect, reed/rush-like reddish green orchid up to 500 mm tall of open or sparsely vegetated shrubland. Base of plant clad in persistent, brown, somewhat fibrous sheaths of old scale-leaves; these enclosing current tuber and remnant tubers of past seasons growth. Stem 1-3 mm diameter, dark green to red-green to reddish mottled, erect, rushlike, leafless almost up to inflorescence. Leaf very much < that inflorescence length; lamina inconspicuous, narrowly involute, shortly-sheathing. Inflorescence a raceme of 5-25 closely spaced flowers. Perianth dark red or reddish-green, narrow, horizontal, with a distinct knee projecting upwards. Dorsal sepal 2.5-3 mm, deeply concave, broadly ovate with a small apiculus; laterals definitely longer, very shortly fused (connate) at base, deeply concave, elliptic, tipped with a small spathulate, easily detached gland-like structure. Petals shorter, membranous, hair-tipped. Labellum just shorter than or equal to petals, dark red (rarely reddish-green), articulate by a narrow curved claw to long column-foot; limb broadly oblong, almost auriculate at base; callii 2, longitudinal, more or less parallel, finely and closely papillose; margins distinctly though finely ciliate, cilia usually red or red-green. Lateral processes of column as tall as anther; apices bfid with the anterior lobe more acute and very finely ciliolate. Anthers on a very short filament (almost sessile), overtopping rostellum, apiculate. Stigma about the same height as the column base.

Flowering:
December - August

Fruiting:
January - November

Caption: Corunastylis nuda
Photographer: John Smith-Dodsworth

Caption: Corunastylis nuda
Photographer: Nick Singers

Threats:
Apparently a naturally uncommon, biologically sparse species. However, as with G. pumila much of the habitat this species favours has been destroyed over the last 100 or so years and it is quite likely that this orchid has undergone a massive range reduction. Nevertheless probably because it has always been more wide ranging than G. pumila, it remains less threatened by continued development of lowland New Zealand. Despite this it is probably another species whose exact conservation status may require adjustment to take into account past habitat losses and continuing habitat modification. This is especially because much of its habitat remains unprotected and that which is, without periodic disturbance is likely to revert to taller vegetation unsuitable for this and other orchid species.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=246

Corunastylis pumila

Caption: Corunastylis pumila
Photographer: Kevin Matthews

Caption: Near Patetonga
Photographer: Eric Scanlen

Common Name(s):
yellow gumland leek orchid

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

Distribution:
Endemic. New Zealand: North Island (from Te Paki south to about Kawhia, East Cape and the Bay of Plenty), Chatham Island.

Habitat:
A species which requires open, sparsely vegetated, usually relatively unfertile habitats. Most recent gatherings come from gumland scrub, particularly in sites which have been burned frequently. It is also abundant in those sites kept open through substrate infertility, the frequency of natural disturbances caused by for exampel geothermal activity, or along habitats which are artifically maintained such as track and roadsides. It is very common on Great Barrier Island (its probable stronghold) where it flourishes on the skeletal soils and bare rhyolitic rock left after extensive kauri (Agathis australis (D.Don) Lindl.) logging and repeated burning.

Features*:
Yellow green, reed-like orchid of open clay pans, gumland scrub and dry cliff and roadside clay banks, up to 450 mm tall. Base of plant clad in persistent, brown, somewhat fibrous sheaths of old scale-leaves; these enclosing current tuber and remnant tubers of past seasons growth. Stem 1-2 mm diameter, yellow-green, erect, very rush/reed-like, leafless almost to inflorescence. leaf solitary, much < raceme, at first braodly involute, tapering, about equal to inflorescence in length, only rarely overtopping it. Inflorescence a raceme of 3-30 closely-spaced flowers. Perianth pale, greenish to greenish-yellow, opening into a short wide bell bent on the ovary so as to face downwards. Dorsal sepal 3 mm long, concave, broadly ovate, acuminate; laterals slightly longer, very shortly connate at base, more or less gibbous, spreading widely above, broad-elliptic, shortly mucronate. Petals shorter, membranous, with longer hair-tip. Labellum about equally long, articulate by a curved claw to the long column-foot; limb broadly oblong, upper surface grooved and more or less covered by 2 longitudinal papillose calli; margin not ciliate. Lateral processes of column about as long as anthers; apices broad and irregularly lacinate, the anterior margin minutely papillose. Anther subsessile, overtopping rostellum, apiculate. Stigma set above column base, of equal or slightly longer length.

Flowering:
February - October

Fruiting:
March - December

Threats:
Corunastylis pumila has a current distribution that is typical of sparse taxa. However, this is unlikely to be completely natural. Much of this species current distribution is undoubtedly human induced and it cannot be denied that this species has undergone a massive range reduction over the last 100 or so years, as the open clay pans and gumland scrub it flourishes in have been reduced to tiny, effectively non-functional units now given over to natural succession to taller vegetation. On consideration of available evidence this species is still declining but perhaps less than it was in the recent past. Nevertheless, C. pumila probably does not warrant Sparse status and it may require a higher listing to more accurately reflect its now greatly reduced range.

***Attribution:**
Description adapted from Moore and Edgar (1970)

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

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=247

Corybas cryptanthus

Caption: Omoana on 3/12/97
Photographer: Eric Scanlen

Caption: The rare alba form, Omoana 3/9/05
Photographer: Eric Scanlen

Common Name(s):
Hidden Spider Orchid, Icky

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

Distribution:
Endemic. Three Kings, North and South Islands

Habitat:
Coastal to montane. In dense shrublands and tall forest. Confined to deep, partially decomposed leaf litter where it is easily overlooked except when fruiting. Current records suggest a preference for growing under kanuka (Kunzea ericoides (A.Rich.) Joy Thomps.) and Nothofagus Blume stands. It often grows with Corybas cheeseman (Hook.f. ex Kirk) Kuntze.

Features*:
Saprophytic, rhizomatous, subterranean, orchid lacking chlorophyll and flowering usually buried within leaf litter, only rarely with flowers exposed. Fruiting stem greatly elongated, exposed and held well above the ground. Rhizomes, stems, and flowers hyaline white, usually flecked with red, purple or brown, rarely without any colour. Tubers scarcely evident, minute, globose, partially obscured by leaf-scales. Rhizomes horizontal, extensive, succulent, without roots, frequently and laxly branched, buried within leaf mould and litter, up to 1 mm diameter and 100-120 mm long. Leaves reduced to minute deltoid scales spaced at about 10 mm intervals along rhizome, the one at the base of the flower stem usually broadly ovate and larger. Flowers solitary. Floral bract > to >> ovary. Perianth usually hyaline white to pale pink, more or less streaked with red or purple, sometimes completely white. Dorsal sepal 10-14 mm long, narrow-lanceolate, acuminate; lateral sepals longer than dorsal sepal and labellum, filiform, often protruding from leaf litter. Petals similar to lateral sepals but distinctly shorter. Labellum up to 15 mm long, auriculate at base, the margins meeting behind the column and touching for about half the labellum length, central portion much thickened and papillose, the distal portion greatly expanded, more or less deflexed, usually not abruptly but sometimes so, with the free margin upturned, coarsely and abundantly laciniate, laciniae sometimes branched, margins finely ciliate. Fruiting capsule ovoid, hyaline, flecked with red or purple; terminal on a greatly expanded, erect stem up to 280 mm tall; capsule initially down-turned, at maturity either horizontal or erect.

Flowering:
June - October

Fruiting:
October - April

Threats:
Not Threatened but probably warrants listing as sparse

***Attribution:**
Fact Sheet by P.J. de Lange (1 January 2005). Description adapted from Moore and Edgar (1970)

References and further reading:

Garnock-Jones PJ. 2014: Evidence-based review of the taxonomic status of New Zealand's endemic seed plant genera. New Zealand Journal of Botany 52: 163-212.

Jones, D.L.; Clements, M.A.; Sharma, I.K.; Mackenzie, A.M.; Molloy, B.P.J. 2002: Nomenclatural notes arising from studies into the Tribe Diurideae (Orchidaceae). The Orchadian 13: 437-468.

Irwin, J.B. 1954. *Corybas saprophyticus. Wellington Botanical Society Bulletin 27*:22-23

Lyon, S. P. 2014: Molecular systematics, biogeography, and mycorrhizal associations in the Acianthinae (Orchidaceae), with a focus on the genus *Corybas*. PhD Thesis, University of Wisconsin-Madison. USA.

Moore, L.B.; Edgar, E. 1970: Flora of New Zealand. Vol. II. Government Printer, Wellington.

Whitaker, T. 1957. *Corybas cryptanthus* (saprophyticus). *Wellington Botanical Society Bulletin 29*: 3

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1391

Corybas rotundifolius

Common Name(s):
Helmet Orchid

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

Distribution:
Endemic. New Zealand: North Island from Te Paki to near the Manawatu Gorge (However, all recent records come from Te Paki south to the Warkworth area with one outlier at Opuatia, near Rangiriri) and recently (2007) discovered on Chatham and (2008) Great Barrier Island

Habitat:
A species frequenting open though often heavily shaded sites overlying seasonally waterlogged soils. It is often found in deep drifts of leaf litter, particularly under kanuka (Kunzea ericoides (A.Rich.) Joy. Thomps. or in association with regenerating kauri (Agathis australis (D.Don) Lindl.) forest. In parts of Northland it is frequently found in gumland scrub, though usually in shaded sites, often in or along the sides of drains.

Caption: Corybas rotundifolius
Photographer: Kevin Matthews

Features*:
Diminutive orchid forming small colonies of 2-6 plants within deep drifts of leaf litter on poorly drained ground usually under regenerating forest or within gum land scrub. Plants at flowering 15-35 mm tall. Stem erect. Leaf usually solitary (sometimes paired), 10-25 mm long, blue-green, green to dull green, sessile, broadly ovate, rarely pandurate. Floral bract 1, < ovary. Flower usually solitary (sometimes 2), conspicuous, aligned over leaf, and raised well above it. Perianth 8-10(-18) mm long, horizontal, drooping. Dorsal sepal cream to pale-white, spathulate from narrow arching claw, obtuse, hooded, distinctly shorter than labellum (rarely the same length), apex entire. Lateral sepals and petals linear 4-5(-8) mm long, white to yellow-white, more or less incurving and appressed to labellum. Labellum tubular, margins overlapping, entire, apex usually extending well beyond dorsal sepal; labellum faintly striped 2-6 times for entire length, maroon, otherwise basally blotched dark maroon-red, with the colour extending as a paler broad band toward the apex where it again darkens such that apex is usually dark maroon-red. Internal portion of labellum covered in prominent, retrorse, hair-like calli, forming a distinct band from the labellum mouth, along mid-line and nerves, reaching almost to the column.

Caption: Corybas rotundifolius
Photographer: Ian St George

Flowering:
(June-) July (- September)

Fruiting:
October - November

Threats:
Uncommon and rather sporadic in its occurrences. However it is a small, winter flowering species, so it is easily overlooked. Some accessible populations have suffered from plant collectors.

***Attribution:**
Fact Sheet prepared for NZPCN by P.J. de Lange 14 April 2007. Description adapted from Moore and Edgar (1970)

References and further reading:

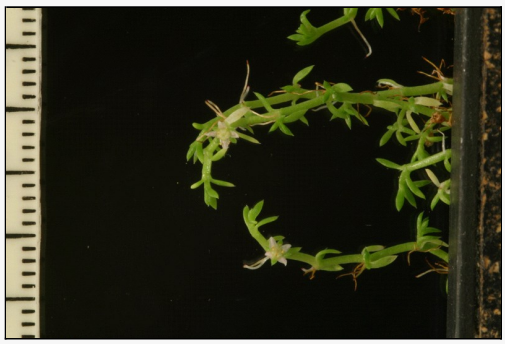
Jones, D.L.; Clements, M.A.; Sharma, I.K.; Mackenzie, A.M.; Molloy, B.P.J. 2002: Nomenclatural notes arising from studies into the Tribe *Diurideae* (Orchidaceae). *The Orchadian* 13: 437-468.

Lyon, S. P. 2014: Molecular systematics, biogeography, and mycorrhizal associations in the Acianthinae (Orchidaceae), with a focus on the genus *Corybas*. PhD Thesis, University of Wisconsin-Madison. USA.

Moore, L.B.; Edgar, E. 1970: Flora of New Zealand. Vol. II. Government Printer, Wellington.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=221

Crassula ruamahanga



Caption: Crassula ruamahanga
Photographer: Peter de Lange

Caption: Crassula ruamahanga, , Clevedon Bridge, Wairoa River, near Clevedon
Photographer: Peter de Lange

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

Distribution:
Endemic. Uncommon, known from historic and extant records from Wairoa River near Dargaville south to Stewart Island and including Chatham Island. In the North Island most common in the Wairarapa, and in the South Island on the Southland plains

Habitat:
Sea level to lowland (rarely lower montane) (0-500 m a.s.l.). An opportunistic species which can be expected to occur in any suitably damp, open habitat. It has been collected from near estuarine conditions through to leaking pipes in urban centres, gravel foot paths, and bowling green turf. Its favoured habitat seems to be river sides and muddy hollows and pools within lowland alluvial forest.

Features*:
Perennial herb form small to large diffuse to dense bright green mats. Stems green or pink, prostrate, rooting at nodes, with ascending tips, much-branched. Leaves fused at base, 1.3-8 x 0.4-1.5 mm, 0.2-0.6 mm thick, lanceolate, linear-lanceolate or elliptic lanceolate, flattened or slightly concave above, convex beneath, apex usually sharply acute, shortly acuminate or apiculate, sometimes obtuse. Flowers solitary in leaf axils, scarcely fragrant, stellate, 4-merous, 1.8-2.5 mm diam.; pedicels 0.5-1 mm, scarcelty elongating at fruiting, Calyx lobes 0.8-1 x 0.4-0.6 mm, triangular or triangular-ovate, white or pink-flushed, acute, sharply acute, occasionally obtuse, slightly or much > calyx. Scales 0.5 mm long, cuneate. Follicles smooth. Seed 0.5 mm long.

Flowering:
Flowers may be present throughout the year

Fruiting:
Flowers may be present throughout the year

Threats:
Competition from other plants. Habitat destruction through heavy stock use, by cattle in particular.

***Attribution:**
Fact Sheet by P.J. de Lange 4 May 2005. Description from de Lange et al. (2009).

References and further reading:
de Lange, P.J.; Heenan, P.B.; Keeling, D.J.; Murray, B.G.; Smissen, R.; Sykes, W.R. 2008: Biosystematics and Conservation: A Case Study with Two Enigmatic and Uncommon Species of *Crassula* from New Zealand. *Annals of Botany 101*: 881-899

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=250

Cyathea kermadecensis

Caption: Raoul island, crater rim
Photographer: Bec Stanley

Common Name(s):
Kermadec tree fern

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

Distribution:
Endemic. Kermadec Island group, Raoul Island only

Habitat:
Confined to the higher parts of Raoul Island where it is a locally conspicuous component of ravine, gully, gorge and cliff forest in the wetter part of the island.

Features*:
Gracile tree fern up to 20 m tall. Trunk slender, often curved, covered with diamond-shaped stipe scars. Stipes slender, copiously invested in woolly hairs and pale brown to brown scales lacking marginal spines. Fronds arching from crown, up to 4 x 2 m, 3-pinnate; dead fronds falling. Primary pinnae up to 400 mm long, dark green to yellow-green above, subcoriaceous to membranous, undersides paler, bearing numerous scales; scale apices terminated by single or stellate spines. Indusia cucullate.

Flowering:
Not applicable - spore producing

Fruiting:
Not applicable - spore producing

Threats:
Not Threatened. Listed because it is a narrow range naturally confined to Raoul Island. In the past it had been regarded as highly threatened but in recent years numerous plants of all different age classes have been found.

***Attribution:**
Fact sheet prepared for NZPCN by P.J. de Lange July 2009. 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=460

Cyclosorus interruptus

Common Name(s):
None known

Current Threat Status (2012):
At Risk - Declining

Distribution:
Indigenous: North Island, from Te Paki to Kawhia Harbour, the Bay of Plenty (including Mayor Island), the Rotorua Lakes to Taupo and near East Cape. Also known from Australia and throughout the tropical and warm-temperate Pacific where it is not threatened.

Habitat:
A species of geothermal habitats, and frost-free, coastal and lowland wetlands, especially those dominated by raupo (Typha orientalis) and swamp millet grass (Isachne globosa).

Features:
A creeping fern with harsh, hairless, olive-green fronds to 800 mm long. Frond stalks are slender, up to 600 mm long by 5 mm wide, almost black at the base but becoming brownish. Frond leaflets (pinnae) occur in 9–15 pairs, the basal pair are larger and sickle-shaped with each successive pair becoming shorter. The spores are found in closely packed sori distributed nearer the midrib than the leaflet edge.

Flowering:
Spore bearing fronds may be found throughout the year

Fruiting:
Spore bearing fronds may be found throughout the year

Threats:
Drainage, land development and fern collectors.

Caption: Cyclosorus interruptus at Tokerau Beach
Photographer: Bill Campbell

Caption: Cyclosorus interruptus habitat at Tokerau Beach
Photographer: Bill Campbell

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=162

Cyperus insularis

Current Threat Status (2012):
At Risk - Declining

Distribution:
Endemic. Known only from the Kermadec, Three Kings Islands, and northern North Island and associated offshore islands south to Port Waikato and Moutohoura (Whale) Island (Bay of Plenty)

Habitat:
Northern offshore islands, and rocky headlands, usually in association with sea bird nesting grounds, though on the Kermadec Islands, where it is the only species present it is also present along sandy beaches and in swamps.

Features*:
Robust sedge up to 2 m tall with leaves crowded at base of culms. Culms stout, triquetrous, glabrous, striated, green, rarely brown in distal part, at base, upright at flowering, collapsing at seed fall. Leaves 1.4 -3.2 mm x 1-2 m, grey green, strongly keeled, leaf margin and keel sharply scabrid, sheath light pink to light purple-pink. Inflorescence a terminal umbel of 6-12 unequal rays, each subtended by a leaf-like involucral bract, these 0.3-3.2 mm x 0.1-1.15 m, grey-green, base green, often flushed light pink to purple-pink, or rarely pale brown. Spikelets 9-12 mm long, glumes 3-5.8 x 2-2.8 mm, ovate-oblong or ovate, green some times pale green or translucent, distal end and margin red-brown, drying yellow-brown to light brown, keeled, mcuronate or obtuse, crowded into a dense spike 40-60 mm long. Stamens with persistent filaments. Nut 1.6-1.7 mm, red-brown to orange-brown, oblong to broadly oblong.


Caption: Macauley Island
Photographer: John Barkla


Caption: Macauley Island
Photographer: John Barkla

Flowering:
July - December

Fruiting:
July - April

Threats:
Declines are happening on Raoul and Macauley Islands, and there is some evidence of this also in the North Island part of its range. The nature of the decline is not clear, though in some places, such as Macauley Island it appears to be part of natural succession while on Raoul the decline at Denham Bay may be due to the spread of buffalo grass (Stenotaphrum secundatum). Within the mainland portion of its North Island range, the species appears restricted to sites frequented by sea birds, especially their nesting grounds, and it seems that as these habitats have been lost, so too has the Cyperus.

***Attribution:**
Fact Sheet prepared for NZPCN by P.J. de Lange (31 July 2004). Description adapted from Heenan & de Lange (2005).

References and further reading:
Heenan, P.B.; de Lange, P.J. 2005: *Cyperus insularis* (Cyperaceae), a new species of sedge from northern New Zealand. *New Zealand Journal of Botany 43*: 351-359.

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=1429