Plants of the upper Rakaia

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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.

Austroderia richardii

Common Name(s):
Toetoe

Threat Status (2009):
Non Threatened

Distribution:
Endemic. Confined to the South Island. Possibly in the North Island, east of Cape Palliser. Naturalised in Tasmania.

Habitat:
Abundant, from the coast to subalpine areas. Common along stream banks, river beds, around lake margins, and in other wet places. Also found in sand dunes, especially along the Foveaux Strait.

Features:
Tall, gracile, slender tussock-forming grass up to 3 m tall when flowering. Leaf sheath glabrous, green, covered in white wax. Ligule 3.5 mm. Collar brown, basally glabrous, upper surface with short, stiff hairs surmounting ribs. Leaf blade 2-3 x 0.25 m, green, dark-green, often somewhat glaucous, upper side with thick weft of hairs at base, otherwise sparsely hairy up midrib with abundant, minute prickle teeth throughout. Undersurface with leaf with 5 mm long hairs near leaf margins, otherwise harshly scabrid. Culm up to 3 m, inflorescence portion up to 1 m tall, pennant-shaped, drooping, narrowly plumose. Spikelets numerous, 25 mm with 3 florets per spikelet. Glumes equal, > or equal to florets, 1- or 3-nerved. Lemma 10 mm, scabrid. Palea 6 mm, keels ciliate. Callus hairs 2 mm. Rachilla 1 mm, glabrous. Flowers either perfect (anthers 4.5 mm) or female (3 mm). Ovary 1 mm (perfect), stigma -styles 2.5 mm; female flowers with ovary 1.3 mm, stigma-style 4 mm. Seed 3-4 mm.

Caption: Waituna Lagoon, Southland
Photographer: Jesse Bythell

Caption: Kakanui Mountains, Otago
Photographer: John Barkla

Flowering:
September - November

Fruiting:
October - March

Threats:
Abundant and not threatened. Often naturalising in suitable habitats.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1758

Carex coriacea

Common Name(s):
Cutty grass, Rautahi

Threat Status (2009):
Non Threatened

Distribution:
Endemic. New Zealand: North, South and Stewart Islands from Pureora and the Kaingaroa Plain south. In the South Island widespread though more common on the eastern side.

Habitat:
Coastal to alpine (up to 1600 m a s.l.). Usually in damp seepages in grassland or on swampy river flats, sometimes a persistent weed in pasture.

Features:
Rhizomatous; summer-green perennial, in coarse yellow-green, glossy, distant tufts, 0.2-1.2 m high, borne on a hard, woody rhizome 5-12 mm diameter. Culms 1.5-3.0 mm diameter, trigonous, scabrid below inflorescence; basal sheaths membranous, grey-brown, yellow-brown or dull red-brown, margins shredding into fibres wrapped round the culm. Leaves much > culms, 4-9 mm wide, double-folded, stiff, coriaceous, hard, glossy, margins closely scabrid. Spikes 8-15, pendulous on filiform peduncles usually much > spike; 2-6 uppermost spikes male, 2-3 mm diameter, glumes hardly awned; remaining spikes female, occasionally male at the top, geminate or ternate, rarely quinate, lower spikes the longest, 20-100 × c.5 mm. Glumes (excluding awn) < utricles, narrow-ovate or obovate, with a short hispid awn, coriaceous, red-brown, margins narrow-hyaline; midrib broad, 3-nerved, light brown. Utricle 1.9-3.3 × 1.2-2.0 mm, unequally biconvex, orbicular or broadly ovoid, yellow-green or light grey-brown, green towards the tip, faintly nerved but with prominent lateral ridges, margins smooth, gradually narrowed to a short beak c.0.3 mm long, orifice entire; stipe c.0.5 mm long. Stigmas 2. Nut slightly < 1.5 mm long, c.¾ length of utricle, biconvex, orbicular or oblong-ovoid, dark brown to black.

Flowering:
October - December

Fruiting:
December - May

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1590

Caption: Silica springs track, Ruapehu
Photographer: John Smith-Dodsworth

Caption: Silica springs track, Ruapehu
Photographer: John Smith-Dodsworth

Carex sinclairii

Caption: L. Tennyson, January
Photographer: John Smith-Dodsworth

Common Name(s):
Sinclair's Sedge

Threat Status (2009):
Non Threatened

Distribution:
Endemic. New Zealand. North and South Islands from the Waikato River delta and Hauraki Plains south.

Habitat:
Coastal to alpine. In freshwater wetlands, under willow in gully systems, along river and stream banks, lake margins, and in damp seepages, pond and tarn margins and clearings within forest. Preferring fertile to mid-fertile wetlands.

Features:
Rhizomatous; tufts ± distant, rather stiff, bright green to bright yellow-green (often with a slight glaucous sheen) . Rhizome 2–4 mm diameter, occasionally long-creeping. Culms 40-500 × 0.5-1.5 mm, trigonous, margins faintly scabrid, especially towards inflorescence; basal sheaths grey-brown or reddish brown. Leaves numerous = or > culms, 2-4 mm wide, double-folded, ± erect, rather rigid, margins closely scabrid. Spikes 4-7, all, or at least the lowest, distinctly pedunculate; terminal 1(-2) spikes male, dark brown or occasionally very light brown, the rest female, 15-35 × 3-5 mm, usually dark brown, occasionally branched at base. Glumes ± = utricles, ovate-lanceolate, subacute, truncate, almost emarginate, coriaceous, dark red-brown, almost black, midrib narrow, light yellow-green, extending to the tip or produced beyond to a scarcely scabrid awn usually < 1 mm, but up to 2.5 mm long. Utricle 2.5-3.5 × c.1.5 mm, plano-convex, ovoid to ovoid-ellipsoid, rather compressed, light yellow-brown to dark brown, with usually 2-5 distinct nerves on each face, occasionally more in larger plants, margins glabrous; tapering gradually above to a beak slightly < 0.5 mm long, orifice entire or minutely bidentate; stipe < 0.5 mm long. Stigmas 2. Nut 1.5-2.0 mm. long, plano-convex, oblong, light brown

Flowering:
October - November

Fruiting:
November - May

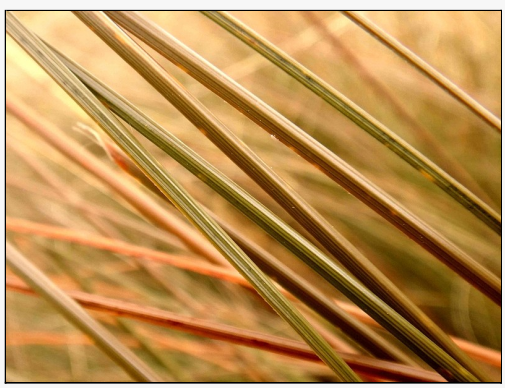
Threats:

Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1594

Chionochloa rubra subsp. cuprea

Caption: Kaiwera, Southland
Photographer: Jesse Bythell



Caption: Kaiwera, Southland
Photographer: Jesse Bythell

Common Name(s):
Red tussock

Threat Status (2009):
Non Threatened

Distribution:
Endemic. New Zealand: South Island (North Canterbury and south and west to Fiordland) and Stewart Island.

Habitat:
Coastal to alpine. Inhabiting bogs and tussock grassland where it may be the dominant tussock

Features:
Tall, slender, red tussock with crowded, erect, stiff, rush-like leaves. Leaf-sheath to 300 mm, dark brown, keeled, incurving, remaining entire, inter-ribs with minute hairs sometimes glabrous, margin separating and coiling, apical tuft of hairs to 3 mm. Ligule to 1 mm. Leaf-blade to 1 m long and 1.2 mm diameter, persisting on sheath, acicular rush-like, splitting longitudinally, keel hollow, underside glabrous but infrequently with long hairs near base, prickle-teeth towards apex, upper surface with dense wefts of long hairs at base, extending up leaf-blade often with short hairs as well, papillae or prickle-teeth; margin with long hairs below, prickle-teeth above. Culm to 1.5 m, internodes glabrous, sheath glabrous. Inflorescence to 45 cm, open on pulvinate branches, glabrous except for long hairs at branch axils and short stiff hairs below spikelets, rarely becoming scabrid above. Spikelets of up to 9 florets. Glumes glabrous, acute, infrequently awned, adjacent lemma lobes, lower to 12 mm, 1-3-5-nerved, upper to 14 mm, 3-5-7-nerved. Lemma to 6 mm; hairs dense on margin less so in internerves, usually absent or sparse elsewhere, < sinus; lateral lobes to 7 mm including awn to 3.5 mm, infrequently long triangular-acute; central awn to 13 mm from twisting column to 3 mm. Palea to 8 mm. Callus to 1.5 mm, hairs to 4 mm. Rachilla to 0.75 mm. Lodicules to 1 mm. Anthers to 5 mm. Ovary to 1 mm; stigma-styles to 4 mm. Seeds to 3.5 mm

Flowering:
October - December

Fruiting:
November - April

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1674

Coprosma intertexta

Common Name(s):
None known

Threat Status (2009):
Relict

Distribution:
Endemic. South Island, eastern from the Saxton River (Marlborough) south to Otago

Habitat:
A species of the eastern South Island dry intermontane basins where it usually grows in grey scrub overlying old moraines, coarse alluvium, boulder piles and or rock outcrops.

Features:
Dioecious, erect, somewhat fastigiate, extensively to sparingly branched, suckering shrub forming thickets up to 2 x 2 m. branches and branchlets fastigiate, filiramulate divaricate; branchlets at first finely puberulent becoming glabrous with age; bark initially pale-grey maturing dark brown. Leaves on short brachyblasts or in opposite pairs or near sessile fascicles. Interpetiolar stipules shortly-sheathing, broadly oblong triangular, obtuse with an attentuated apex surmounted by a single, deciduous apical denticle, denticles otherwise 3-6 all deciduous, outer surfaces finely ciliolate, undersides sparingly so, stipular collar-margins chartaceous when dry. Petioles slender 0.5-2 mm long. Leaves 7- 15 x 1-2 mm, darg grey-green to red-brown or purple-green, narrow-oblong to narrowly obovate-oblong, often slightly falcate, subacute, apiculate, margins initially puberulent, reddish; midrib and sometimes secondary veins evident.

Caption: Macraes, East Otago
Photographer: John Barkla

Caption: Upper Manuherikia Valley
Photographer: John Barkla

Flowering:
October - February

Fruiting:
July - December

Threats:

A local endemic with a naturally sparse distribution, perhaps most common in the inland basins of Canterbury and Otago

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=245

Coprosma rigida

Threat Status (2009):
Non Threatened

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1732

Caption: Aorangi Forest Park.
Photographer: Jeremy Rolfe

Caption: Coprosma rigida
Photographer: Wayne Bennett

Cordyline australis

Common Name(s):
Cabbage tree, ti, ti kouka, palm lily

Threat Status (2009):
Non Threatened

Distribution:
Endemic. Common in the North, South and Stewart Islands. Probably naturalised on the Chatham Islands.

Habitat:
Widespread and common from coastal to montane forest. Most commonly encountered on alluvial terraces within riparian forest.

Features:
Tree up to 20 m tall, trunk stout, 1.5-2 m diam, many-branched above (prior to flowering, trunk slender and solitary, branching happens after the first flowering). Bark corky, persistent, fissured, pale to dark grey. Leaves numerous (0.2-)0.3-1(-1.5) x (0.2)-0.3(-0.6) m, dark to light green, narrowly lanceolate to lanceolate, erect to erecto-patent, scarcely inclined to droop, midrib indistinct. Petiole indistinct, short. Inflorescence a panicle. Peduncle stout, fleshy 40 mm or more in diam., panicle of numerous flowers, (0.6-)1(-1.8) x).3-0.6(-0.8) m, branching to third or fourth order, these well spaced, basal bracts green and leaf-like, ultimate racemes 100-200 mm long, 20 mm diam., bearing well-spaced to somewhat crowded, almost sessile to sessile flowers and axes. Flowers sweetly perfumed, perianth 5-6 mm diam., white, tepals free almost to base, reflexed. Stamens about same length as tepals. Stigma short, trifid.

Flowering:
(September-) October-December (-January)

Fruiting:
(December-) January-March

Threats:
Populations have been decimated from some parts of the country due to a mysterious illness linked to a Myoplast Like Organisim (MLO) which is believed to cause the syndrome known as Sudden Decline. Plants stricken with this illness suddenly, and rapidly, wilt, with the leaves failing off still green. If the bark is peeled off the base of the tree near the soil line blackened or rotten spots are typically present. Once stricken with Sudden Decline there is no cure and the trees can die within days. Recently there has been some evidence to suggest the severity of Sudden Decline is lessening.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1744

Caption: Awhitu Regional Park, Auckland region
Photographer: John Sawyer

Caption: Cordyline australis
Photographer: Wayne Bennett

Discaria toumatou

Common Name(s):
Matagouri, Wild Irishman

Threat Status (2009):
Non Threatened

Distribution:
Endemic. North and South Islands. In the North Island known from near Waiuku south to the southern Wairarapa and Wellington coastline. Very uncommon in the North Island. In the South Island mainly east of the main divide, appearing to avoid areas of high rainfall

Threats:

Not Threatened for most of its range. However, very uncommon and under threat throughout the North Island, where it is now known from very few sites and viable populations.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=1795

Caption: Matukituki, Mt Aspiring
Photographer: John Sawyer

Caption: Matukituki, Mt Aspiring
Photographer: John Sawyer

Eleocharis acuta

Common Name(s):
Sharp spike sedge

Threat Status (2009):
Non Threatened

Distribution:
Indigenous. In New Zealand found on the Kermadec, North, South, Stewart and Chatham Islands. Also in Australia and on Norfolk Island.

Habitat:
Coastal to montane. Common in open to partially shaded permanently damp ground. Usually in swamps, and on stream, river, pond, and lake margins. Sometimes present in seepages within pasture.

Features:
Terrestrial or semi-aquatic sedge forming yellow-green to green somewhat distinct, crowded tufts. Rhizomes, lignaceous, widely creeping, 1-2 mm diameter. Culms more or less crowded in distant tufts, 15.0-900.0 x 0.5-2.5 mm, more or less erect, terete, distinctly striated; lower sheath dark red to maroon with an oblique orifice, upper sheath paler, closely appressed to culm, orifice usually truncate or rarely slightly oblique, with dark thickened edge and distinct mucro at back. Spikelet 5-25 x 2-5 mm, cylindrical, acute at apex. Glumes numerous, basal 2 sterile, shorter, broader and paler than rest, upper glumes ovate-lanceolate with hyaline apices. Hypogynous bristles 6-8, some =, some > nut. stamens 3. Style 3-fid. Nut 1.5 x 1.0 mm, obovoid, biconvex or plano-convex, pale brown, smooth or faintly reticulate; the small persistent style-base triangular, compressed, white or very pale brown.

Flowering:
September - January

Fruiting:
October - May

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=2120

Caption: Eleocharis acuta
Photographer: Wayne Bennett

Caption: Eleocharis acuta at Opuatia
Photographer: Wayne Bennett

Juncus edgariae

Common Name(s):
Wiwi, Edgars rush

Threat Status (2009):
Non Threatened

Distribution:
Endemic. Kermadec, North, South, Stewart and Chatham Islands. Naturalised in Britain

Habitat:
Easily the most common indigenous species. Coastal to alpine (1600 m a.s.l.) but mainly coastal to montane. Usually in open shrubland, fringing wetlands, and in seasonally damp sites. Often found invading pasture and in urban areas.

Features:
Bright to dark green, orange-green to red-green (drying glossy yellow-green) rather variable perennial forming compact to diffuse tussocks 0.6-2.5 m tall. Rhizome at or just below ground, 5 mm diameter, horizontal, difficult to pull from the soil. Flowering culms 1-3 mm diameter, erect, rather wiry (very hard when dry), smooth, shining; striations 22-60; internal culm pith interrupted irregularly or occasionally continuous; leaves absent; basal bracts dark red-brown below, straw-coloured above, tightly sheathing the stem or the upper-most loosely sheathing. Inflorescence apparently lateral, variable, either many or few-flowered, open with few to many branches bearing flowers in small clusters at the tips of branchlets, or condensed to a compact, central cluster with a few pedunculate side clusters, or a single spherical compact head wider than 10 mm. Flowers 1.5-2.0 mm long; tepals 6, brownish green, later becoming brown, acute to acuminate or mucronate; outer tepals 1.7-2.6 mm long, with fine hyaline margins, inner tepals slightly shorter with broad hyaline margins. Stamens 3, shorter than tepals; anthers 0.4-0.6 mm long < or equal in legnth to filaments. Capsule 1.5-2.3 mm long, equal to or < tepals, ellipsoid, obovoid, dark golden brown, with a dark brown, obtuse, almost retuse, apiculate tip. Seeds 0.4-0.6 mm long.

Flowering:
October - December

Fruiting:
November - April

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=869

Caption: Juncus edgariae
Photographer: John Smith-Dodsworth

Caption: Close up of Juncus edgariae
Photographer: John Smith-Dodsworth

Phormium tenax

Caption: Phormium tenax
Photographer: Wayne Bennett

Caption: Flowers of Phormium tenax
Photographer: Wayne Bennett

Common Name(s):
Flax, Harakeke, Korari (maori name for inflorescence).

Threat Status (2009):
Non Threatened

Distribution:
Indigenous to New Zealand and Norfolk Island. A broad circumscription has been adopted here - many botanists feel that plants from the Chatham Islands could be distinguished at species rank from the mainland New Zealand species, other distinctive variants occur on the Three Kings and outer Hauraki Gulf Islands, and along the Kaikoura coast. Norfolk Island plants though uniform differ in subtle ways from the New Zealand forms of P. tenax. Further study into this variation is underway.

Habitat:
Common from lowland and coastal areas to montane forest, usually but not exclusively, in wetlands and in open ground along riversides.

Features:
Stout liliaceous herb, 1-5(-6) m tall. Leaves numerous, arising from fan-like bases. Individual leaves rather stiff at first, but becoming decurved, somewhat pendulous or "floppy" in upper half to a third, 1-3 x 50-120 mm, usually blue-grey (glaucous) or dark green, lamina margin, entire, somewhat thickened and pigmented black, dark red, pink, yellow or cream. Inflorescence 5(-6) m tall, somewhat woody and fleshy when fresh, long persistent, drying charcoal grey or black, with the fibrous interior becoming progressively more exposed. Peduncle 20-30 mm diam., erect, dark grey-green or red-green, glabrous. Flowers 25-50 mm long, tubular, predominantly dull red but may also be pink or yellow; tips of inner tepals slightly recurved. Ovary erect. Capsules 50-100 mm long, dark green, red-green or black, trigonous in cross-section, erect, abruptly contract at tip, not twisted, initially fleshy becoming woody with age, long persistent. Seeds 9-10 x 4-5 mm, black, elliptic, flat and plate-like, margins frilled or twisted.

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

Fruiting:
(November-) December (-March)

Threats:

Not threatened although see the discussion below about flax dieback. This die back phenomenon is characterised by abnormal yellowing of the leaves and may result in collapse of flax plants or whole populations.

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=2219

Schoenus pauciflorus

Common Name(s):
Bog rush, sedge tussock

Threat Status (2009):
Non Threatened

Distribution:
Endemic. North, South, Stewart, Chatham and Auckland Islands. Uncommon north of Rotorua.

Habitat:
Coastal to alpine (up to 1800 m a.s.l.). However, mostly montane to alpine in northern two-thirds of its range. Common in damp seepages along cliff faces, in swamps, in seepages within forest, within mires and around lake tarn and stream sides. Sometimes colonises poorly drained pasture.

Features:
Rush-like sedge up to 1 m tall. Rather variable with respect to colour and stature, ranging from stout dark red plants to flaccid bright green specimens. Rhizome short, hard and lignaceous, up to 4 mm diameter. Culms 0.1-1.0 m tall, 0.5-1.8 mm diameter, densely tufted, caespitose, longitudinally striate, grey-green, wine red to bright green. Leaves reduced to numerous, dark red-purple (rarely green) basal sheaths, the uppermost 40-140 mm long, the mucro much elongated with toothed margins. Panicle 15-30 mm long, more or less elongated, bearing 1-9 spikelets at the tips of erect, slightly scabrid branchlets, the whole subtended by a stiff bract overtopping the panicle. Spikelets 5 mm long, 2-4-flowered, lanceolate. Glumes 4-6, lanceolate, 2-3 lowermost smaller, empty, membranous and colourless or occasionally brown, upper glumes darker brown with pale centres, margins hyaline, without cilia. Hypogynous bristles 6, filiform, almost equal in length to style, scabrid, persistent. Stamens 3. Style-branches 3, style often persistent. Nut 2.0-2.5 mm long, slightly less than 1 mm wide, elliptic-oblong, greenish brown to red-brown, lighter brown at the angles, glossy, smooth.

Flowering:
September - April

Fruiting:
November - June

Threats:
Not Threatened

For more information, visit:
http://nzpcn.org.nz/flora_details.asp?ID=802

Caption: Mount Torlesse
Photographer: Melissa Hutchison

Caption: Hooker valley, January
Photographer: John Smith-Dodsworth