



NZPCN Conference 2015 Field Trip Shag Point



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Matakaea/Shag Point is 9km north of Palmerston on SH1. It has a rich history, from early Ngai Tahu settlement to historic coalmining. The area has diverse marine life. It has interesting flora, is great for wildlife viewing, and is geologically fascinating.

Matakaea is jointly managed by DOC and Te Runanga o Ngai Tahu. Matakaea has Topuni status. The mana (authority) and rangatiratanga (chieftainship) of Ngai Tahu over the area is recognised publicly by this status. Ngai Tahu takes an active role in managing the natural and cultural values of the area.

Natural history

Flat rock platforms provide an easy haul-out site for New Zealand fur seals, and cliff-top viewing areas allow you to observe seal behaviour without disturbing their rest.

An unusual feature of this site is snow tussock and other alpine species, such as the large alpine daisy (*Celmisia hookeri*), growing at low altitude and so close to the coast. The rare cress *Lepidium tenuicaule* can sometimes be found growing in the car park gravel. Rank grass throughout the reserve is slowly being reinvaded by coastal shrubs, particularly *Coprosma* species. The coastal cliffs are fringed with hardy *Hebe elliptica*. A variety of low –growing coastal herbs are present on the most exposed coastal banks and cliff margins.

The rocky shore is lined with rimurapa (bull kelp). Just offshore are dense forests of giant bladder kelp, which are among the best examples of *Macrocystis* in New Zealand.

Maori history

This area was used by the early moa hunters. Nearby, Shag/Waihemo River Mouth yielded important archaeological evidence of Ngai Tahu lifestyles dating back to the 12th century. Moa skeletons and many artefacts found here are displayed at the Otago Museum. The Matakaea area has been occupied for many centuries and is the site of numerous urupa (burial grounds) and wahi tapu (sacred sites).

Matakaea is the name of the pa (fortified village) that overlooked Waihemo/Shag River Mouth. The name is linked with Arai Te Uru canoe, which capsized off Moeraki. The crew managed to swim, leaving the cargo to wash ashore. The crew members fled inland, and were transformed into mountains.

The Arai Te Uru canoe is said to have carried kumara from Hawaiiiki, along with the karakia (incantations) and tikanga (customs) connected with planting it successfully.

Geology

Large round boulders (of Arai Te Uru legend) can be found embedded in the soft sandstone of the rock shelf along the shoreline. The smooth wave-worn mudstones of this headland also contain well-preserved fossils. A seven-metre marine reptile, a plesiosaur, was found here and is now part of the University of Otago fossil collection.

Coalmining

Whalers discovered the first bituminous coal in New Zealand here in the 1830s. By 1862 the exposed coal seams were found to be commercially viable and were successfully mined until 1972, when flooding eventually closed shafts that extended under the coast. Evidence of coal mining is still obvious throughout the reserve.

A small natural boat harbour was once a traditional tauraka waka (canoe landing place). Early miners shipped coal from here in sailing and steam colliers. Today the harbour is used by recreational anglers and divers to launch their boats.

Picnicking

Visitors are requested to eat and drink only in designated areas, away from burial grounds and other sacred sites.

Austroderia richardii

Common Name(s):

Toetoe

Current Threat Status (2012):

Not 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.

Flowering:

September - November

Fruiting:

October - March

Threats:

Abundant and not threatened. Often naturalising in suitable habitats.

*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange 1 October 2006. Description adapted from Edgar & Connor (2000).

References and further reading:

Edgar, E.; Connor, H.E. 2000: Flora of New Zealand. Vol. V. Grasses. Manaaki Whenua Whenua Press, Christchurch.

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=1758



Caption: Waituna Lagoon, Southland

Photographer: Jesse Bythell



Caption: Kakanui Mountains, Otago

Photographer: John Barkla

Celmisia hookeri

Common Name(s):

Hooker's mountain daisy

Current Threat Status (2012):

At Risk - Naturally Uncommon

Distribution:

Endemic. South Island Northern and eastern Otago from Moeraki and Shag Points inland through the Wainakarua River, Trotters Gorge, Otepopu River to the Horse Range and Macraes Flat; also by the Maitauru River and between Mid Dome and Slaters Ranges. There are historical but unverified records from the Waitaki Valley.

Habitat:

Coastal to montane (0 - 450 m a.s.l.). A rupestral favouring open to partially shaded rocky headlands, bluffs, cliff faces, steep gullies and boulder field. Sometimes found under grey scrub but only in relatively open situations.

Features*:

Stout, woody based herb with short branchlets arising from a weakly multicapital, partially buried rootstock. Leaves in dense rosettes at branchlet apices; the whole plant forming a mat of rosettes. Leaf-sheaths greenish-purple, persistent, densely imbricate and compacted to form a pseudostem. Petioles 1/4-1/2 lamina length, pale or deep purple, often with a thin covering of pale lustrous pale hairs which are floccose towards base. Lamina 120-400 x 40-90 mm, oblanceolate to elliptic, upper surface yellow to pale green with greenish-purple midrib; upper surface initially hairy, becoming glabrate to glabrous with age (except for margins), veins impressed; lower surface densely covered in lustrous indumentum of pale buff or creamy hairs, veins distinct; apex acute, margins entire, not recurved, with a broad rim of whitish to buff hairs; base obliquely cuneate; lamina coriaceous, initially erect, tending to suberect or decumbent with age. Scape up to 500 mm long, purplish, covered in pale indumentum, bracteate, bracts numerous, erect, linear, foliaceous. Capitula solitary, up to 100 mm diameter. Involucral bracts in several rows, linear-subulate, erect, densely brown-tomentulose. Ray florets up to 80, ligulate, limbs linear-lanceolate, white. Disc florets up to 250, funneliform, yellow; tube covered with eglandular biseriate hairs. Achene 5 mm long, fusiform-cylindric, ribbed, glabrous. Pappus unequal, 9 mm long, of between 35-40 bristles.

Flowering:

September - December

Fruiting:

October - April

Threats:

A widespread, at times locally common but usually sparsely distributed species. Its cliff, bluff and gorge habitats could be relictual and it is possible that past fires and animal browse has confined this species to these habitats. However, there appear to be few existing threats, populations appear stable, and as there is no direct proof of past decline this species best fits the concept of a sparse defined by the New Zealand Threat Classification System.

*Attribution:

Fact Sheet prepared by P.J. de Lange (1 February 2009). Description adapted from Allan (1961) and Given (1984).

References and further reading:

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

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=239



Caption: *Celmisia hookeri*
Photographer: John Barkla



Caption: Macraes, Otago
Photographer: John Barkla

Coprosma crassifolia

Current Threat Status (2012):

Not Threatened

Threats:

Not Threatened

References and further reading:

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

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1708



Caption: Windshorn plant.

Aramoana

Photographer: John Barkla



Caption: Bark. Hayward Point,
Dunedin

Photographer: John Barkla

Disphyma australe subsp. australe

Common Name(s):

horokaka, native ice plant, New Zealand ice plant

Current Threat Status (2012):

Not Threatened

Distribution:

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

Habitat:

Coastal (rarely inland). Mostly on cliff faces, rock stacks, and boulder/cobble beaches, more rarely in saltmarsh and estuaries. Often in petrel scrub on offshore islands, and extending into coastal forest around petrel burrows. Occasionally on limestone or sandstone cliffs in lowland forest (Western Waikato).

Features*:

Trailing, succulent herb. Stem terete, glabrous. Short shoots prostrate, rooting freely at nodes. Leaves 3-angled, linear-lanceolate to oblong, acute, often mucronate, tapering to connate base, 6-40 × 4-9 mm; margins entire, smooth, very rarely with a few papillae towards the distal end of the keel. Flowers 20-40 mm diameter. Sepal keel entire, smooth. Petals uniformly white to deep pink, in 3-5 rows, 10-30 mm long. Stamens 4-6 mm long; inner filaments hairy at base. Stigmas (5)-6-8-(10). Capsule valves 5-10, with parallel or ± divergent expanding keels; placental tubercle rounded or o. Seeds brown, obovoid, rugose, c. 1 mm long.

Flowering:

Present throughout the year

Fruiting:

Present throughout the year

Threats:

Not Threatened

*Attribution:

Description modified from: 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. Forms natural intergeneric hybrids with both *Carpobrotus chilensis* and *C. edulis*.

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=1796



Caption: Dunedin
Photographer: John Barkla



Caption: Awhitu Peninsula (west coast), Auckland region
Photographer: John Sawyer

Ficinia nodosa

Common Name(s):

wiwi, knobby club rush, ethel sedge

Current Threat Status (2012):

Not Threatened

Distribution:

Indigenous. Kermadec, Three Kings, North, South, Stewart and Chatham Islands. Widespread in the southern Hemisphere

Habitat:

Mostly coastal but occasional extending into montane area (up to 700 m a.s.l.). In a wide range of habitats but favouring open situations - commonly on sand, especially on sand dunes, sandy beaches and at the back of estuaries. Sometimes colonising sandstone, limestone of volcanic rock outcrops in lowland forest. Rarely in tussock grassland.

Features*:

Rhizome short, 5-10 mm diameter, ascending to subhorizontal, woody, covered with red-brown bracts 5-10 mm long. Culms numerous, somewhat woody, 0.15-2.0 m, 1-2 mm diameter, yellow-green to bronze-green, densely packed on rhizome, rush-like, rigid and erect (sometimes in lush specimens with upper third curving over), terete or slightly compressed, finely striated when dry. Leaves reduced to 3-6 basal sheaths, the uppermost 50-130 mm long, brown or red-brown, the oblique orifice slightly dilated. Inflorescence an apparently lateral, solitary, hemispherical head, 7-15 mm wide, comprised of numerous, densely crowded, sessile spikelets; subtending bract continuous with the culm, rigid, erect, pungent, > inflorescence. Spikelets 3-4 mm long, ovoid, light brown. Glumes broadly ovate, obtuse, margins entire, more or less apiculate. reddish towards the tips, lateral nerves conspicuous. Hypogynous bristles 0. Stamens 3. Style-branches 3. Nut 1 mm long, < 1 mm wide, plano-convex to trigonous, apiculate, dark brown to almost black, shining.

Flowering:

September - December

Fruiting:

November - May

Threats:

Not Threatened

*Attribution:

Description adapted from Moore and Edgar (1970)

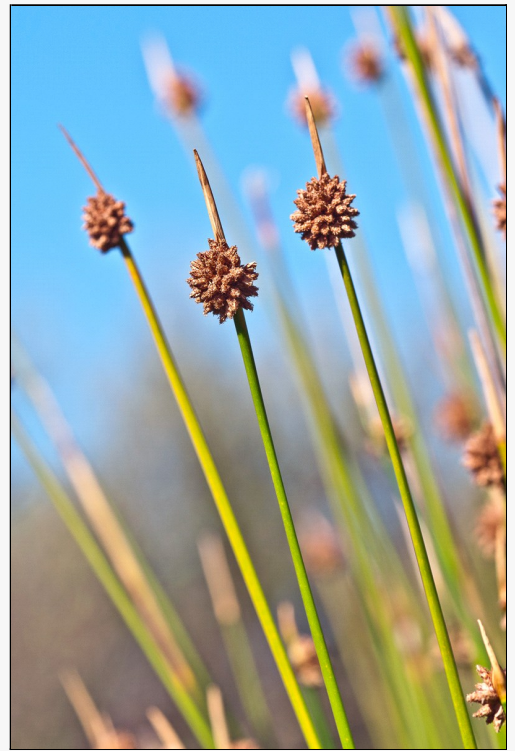
References and further reading:

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=2133



Caption: Pauatahanui Inlet. Feb 2012.

Photographer: Jeremy Rolfe



Caption: Pauatahanui Inlet. Feb 2012.

Photographer: Jeremy Rolfe

Hebe elliptica

Common Name(s):

kokomuka, shore hebe, shore koromiko

Current Threat Status (2012):

Not Threatened

Distribution:

Indigenous. North, South, Stewart, Snares, Auckland and Campbell Islands. In the North Island scarce, known only from the west coast in scattered locations on the south Taranaki coast, on Kapiti Island, and Titahi Bay. Naturalised on Chatham (Rekohu) Island. Indigenous also to the Falkland Islands. Also naturalised on Maatsuyker Island, Tasmania

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=2149



Caption: Curio Bay, Catlins

Photographer: John Barkla



Caption: Enderby Island

Photographer: Jane Gosden

Lepidium tenuicaule

Common Name(s):

Shore cress

Current Threat Status (2012):

At Risk - Declining

Distribution:

Endemic to the North and South Islands. In the North Island probably extinct, having been recorded only from Kapiti Island. In the South Island known from Oamaru south to the islands of the Foveaux Strait.

Habitat:

Coastal turf where it seems to prefer damp peaty ground free from taller shrub and grass species. Very tolerant of shade and trampling such that some large populations are known from seaside car parks, footpaths, walking tracks and around lighthouse buildings. At one time this species was even a localised urban weed at Oamaru.

Features:

Rosette forming, perennial herb, arising from stout, deeply descending taproot. All parts pungent, smelling strongly of cress. Stems prostrate to ascending, glabrous (20-)80-150(-300) mm long. Leaves glabrous or glabrescent. Basal leaves persistent, pinnate, 20-100 x 0.5-0.15 mm, dark green, basally mottled with red or purple. Pinnae in (5-)7-15 pairs, acutely toothed. Stem leaves toothed at apex or entire, 5-20 x 2-5 mm, green, narrow-spathulate, linear-oblongate, long petiolate. Racemes 50-100 mm long at fruiting, somewhat flexuous, rachis and pedicels glabrous or sparsely hairy, pedicels distant, spreading, 2-4 mm long at fruiting. Sepals sparsely hairy, 0.5-1 x 0.3-0.5 mm. Petals 0 or if present white, < sepals. Stamens 4. silicles suborbicular, 1.5-2 x 1.5-1.8 mm, style 0.1 mm, free from narrow wing, = to or > than shallow notch, valves glabrous. Seed ovoid, brown c. 1 mm long.

Flowering:

October - January

Fruiting:

November - February

Threats:

Probably more secure than was once believed, although it does seem to have gone extinct from the North Island, Oamaru and at nearby Cape Whanbrow. Very large populations occur from about Shag Point south along the Foveaux Strait. However, some of these have been lost due to changes in habitat caused by the removal of car parks and roads that cross coastal turfs to access coastal locations. With one or two exceptions the species remains vulnerable to any change in local disturbance regimes, particularly those which encourage the growth of taller shrubs and grasses.

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=175



Caption: Quoin Point, Otago

Photographer: Peter de Lange



Caption: Shag Point

Photographer: Gillian Crowcroft

Leptinella dioica

Common Name(s):

Shore cotula

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. North, South and Stewart Islands. Not known from Northland or Fiordland.

Habitat:

Coastal and inland up to 1000 m a.s.l.. In the northern part of its range usually on the margins of saltmarshes but further south extending well inland in seepages and permanently open, damp turfs.

Features*:

Dioecious or monoecious, creeping, somewhat fleshy perennial herb of usually wet coastal habitats. Rhizomes at or near soil surface, green, dark green to purple-green, pliant, sparsely to densely pilose hairy, pale, wiry and glabrous if buried; branches uncommon, usually single at flowering nodes; leaves in two rows, single at the apex, 3-30 mm apart. Short shoots alternate, with up to 5 clustered leaves, occasionally converting to rhizomes with more distant leaves. Roots slender and weak, up to 0.8 mm diam. Leaves variable in size, shape and divisions, entire, simple, to incised-pinnatifid or pinnatifid, 7-130 x 3-20 mm; blade 5-70(-90) mm, lanceolate, narrowly to broadly oblong, elliptic, oblanceolate or suborbicular, fleshy, light green, green, wine-red or glaucous, usually without dark pigment but sometimes leaf divisions heavily brown or pink-pigmented, more or less glabrous, glandular punctate, midrib not raised on ventral surface, rarely entire, otherwise the lobes, pinnae or teeth, in 4-12(-30) pairs, distant, close-set or overlapping, oblong to orbicular; proximal lobes, pinnae or teeth cut to rhachis, sinuses of distal lobes usually not reaching rhachis, sometimes cut only 1.5 to rhachis at widest part of leaf; teeth often absent but sometimes up to 6 per lobe or pinna, on the distal and outer margins, small triangular, obtuse or rounded, often apiculate. Peduncles sparsely to densely villous on rhizomes, about equal to leaves in length, 10-60(-80) mm, ebracteate or bearing 1 simple bract. Pistillate heads 2-10 mm, up to 12 mm diameter in fruit; surface convex; involucre urceolate; involucral bracts 10-30, subequally 3- or more seriate, broadly elliptic, green, glabrous or sparsely villous, with a wide, usually brown-tipped, scarious margin; inner bracts elongating after anthesis to enclose subglobose fruiting head; florets 10-80 (or more), 2-5 mm long, curved, yellow-green; corolla slightly longer than wide, dentition unequal. Staminate capitula 3-8 mm diameter, involucre hemispherical, bracts 5-10, subequally uni- or biseriate, not growing after anthesis, florets more numerous. Bisexual heads mostly staminate. Cypsela up to 1.9 x 1 mm, initially pale and chartaceous, maturing brown and smooth, slightly compressed, unwrinkled.

Flowering:

August - January

Fruiting:

October - June

Threats:

Not Threatened

*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange 31 August 2006. Description from Lloyd (1972) - as *Cotula dioica*.

References and further reading:

Lloyd, D.G. 1972: A revision of the New Zealand, Subantarctic, and South American species of *Cotula*, section *Leptinella*. *New Zealand Journal of Botany* 10: 277-372.

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=910



Caption: Pounaweia

Photographer: John Barkla



Caption: Kennedy Bay, May

Photographer: John Smith-Dodsworth

Leptospermum scoparium var. *scoparium*

Common Name(s):

manuka, tea tree, kahikatoa

Current Threat Status (2012):

Not Threatened

Distribution:

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

Habitat:

Abundant from coastal situations to low alpine habitats.

Features*:

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

Flowering:

Throughout the year

Fruiting:

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

Threats:

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

*Attribution:

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

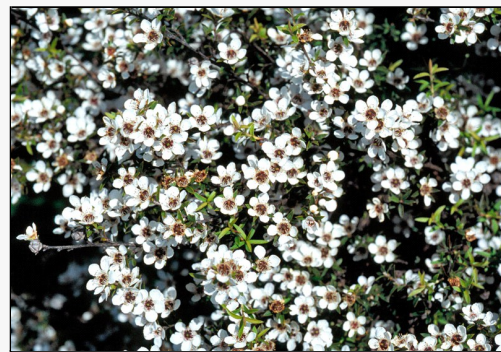
References and further reading:

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

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

For more information, visit:

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



Photographer: © John Braggins



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

Photographer: Wayne Bennett

Muehlenbeckia complexa var. *complexa*

Common Name(s):

Small-leaved pohuehue, scrub pohuehue, wire vine

Current Threat Status (2012):

Not Threatened

Threats:

Not Threatened

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=991



Caption: *Scandia geniculata* flowers and foliage through *Muehlenbeckia*. Birdlings Flat, Canterbury.

Photographer: Jesse Bythell



Caption: Habitat, Birdlings Flat, Canterbury

Photographer: Jesse Bythell

Phormium tenax

Common Name(s):

flax, harakeke, korari (maori name for inflorescence).

Current Threat Status (2012):

Not 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.

References and further reading:

Boyce, et al. 1951. Preliminary note on yellowleaf disease. NZJ of Science and Technology, 32(3): 76-77

Scheele, S. 1997. Insect pests and diseases of harakeke, Manaaki Whenua Press

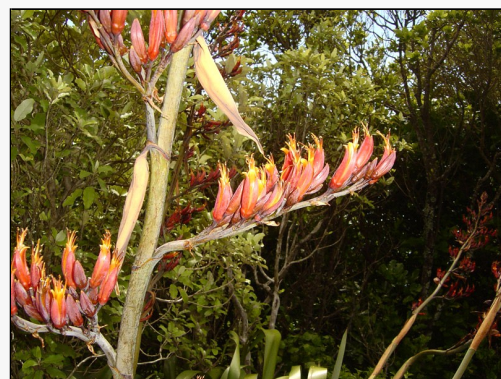
For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2219



Caption: *Phormium tenax*

Photographer: Wayne Bennett



Caption: Flowers of *Phormium tenax*

Photographer: Wayne Bennett

Sarcocornia quinqueflora subsp.
quinqueflora

Common Name(s):

glasswort

Current Threat Status (2012):

Not Threatened

Threats:

Not Threatened

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2247



Caption: Cape Kidnappers

Photographer: John Sawyer



Caption: Meola Reef, Westmere,
Auckland

Photographer: John Sawyer