Threatened plants of Northland Conservancy

Department of Conservation
Te Papa Atawhai

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Introduction

Figure 1. Northland Conservancy with key geographic names mentioned in the text.

Within New Zealand, Northland (Fig. 1) is one of three regional 'hotspots' for local endemism and species diversity. Of international significance are the Poor Knights and Three Kings Islands, and the magnesium-rich, ultramafic geological features of the North Cape region; these contain many locally endemic, threatened plants. Also

of international significance are the kauri forests (*Agathis australis*) around Waipoua, which provide one of the best examples of this forest type. Nationally important sites in the conservancy include the Waima Range, where several locally endemic, threatened plants occur; Pouto Peninsula, on the northwestern side of the Kaipara Harbour, where one of the best remaining dune systems in the North Island occurs; and the numerous offshore islands to the east of the Northland Peninsula, which contain many unique ecosystems within them.

The Northland Peninsula itself is primarily subtropical, coastal or lowland in character and supports an ecologically diverse range of coastal and marine environments. Large tracts of intact forest, shrubland, gumland scrub, wetland and dunes occur. However, pressure from intensive rural, urban and coastal settlement in conjunction with the many animal and plant pests that have invaded the landscape, have modified and fragmented much of the natural character of the Conservancy. This has impacted on its natural areas. The level of degradation of particular habitats is reflected in the number of threatened plants that occur within those ecosystems. Many of our most highly threatened species occur in the most highly threatened ecosystems. About one-third of the threatened plants that occur in the Conservancy are found in wetlands, about one-third are found in coastal environments, and the final third mostly in forest or at forest margins. Many species are endemic to the Northland region whereas others may reach their natural distribution limits here.

Currently, 179 plant species are listed as threatened that occur or have occurred in the Northland Conservancy (Table 1, Appendix 1: data from Hitchmough 2002). Of these, one species is assumed to be nationally extinct: Adams mistletoe—*Trilepidea adamsii*, was last seen in the 1954 near Cambridge in the Waikato region. Other plants such as kakabeak—*Clianthus puniceus* and swamp helmet orchid—*Anzybas carsei* are considered extirpated (i.e., "locally extinct") in Northland but still occur locally in other parts of the country. Still present but at risk of extinction are species such as the Nationally Critical Holloway's crystalwort—*Atriplex hollowayi* which are now confined to Northland (having disappeared from elsewhere in the country). Recently reintroduced to Northland at Poutu is *Sebaea ovata*.

TABLE 1. NUMBER OF THREATENED PLANT TAXA IN NORTHLAND, BY THREAT CATEGORY.

THREAT CATEGORY	PLANT TAXA
Extinct	1
Acutely Threatened	
Nationally Critical	24
Nationally Endangered	17
Nationally Vulnerable	3
Chronically Threatened	
Serious Decline	13
Gradual Decline	25
At Risk	
Range Restricted	52
Sparse	31
Data Deficient	13
TOTAL	179

Advocacy

This booklet is designed as a field guide to 50 highly threatened plants that occur in Northland. Its purpose is to raise public awareness about these plants and in doing so, highlight the importance of protecting the communities that these plants occupy. It also provides a resource to assist with the identification of these plants. These species are so threatened or in such serious decline in New Zealand that it is uncertain whether they will continue to persist in the wild. New information about the distribution of threatened plants may be sent to the Northland Conservancy Office of the Department of Conservation (149–151 Bank Street, Whangarei). This guide does not cover the many threatened plants which are endemic to either offshore islands or single sites, such as North Cape Scientific Reserve.

None of the plants identified in this book should be collected from the wild.

Threat classification

To the best of our abilities, all indigenous New Zealand biota have been assessed using the system of Molloy et al. (2002), and lists of assessed taxa were provided by Hitchmough (2002) and de Lange et al. (in press). The number of vascular plant taxa relevant to

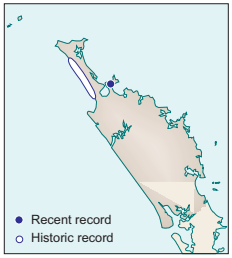
Northland Conservancy in each threat category are provided in Table 1. (A full list is provided in Appendix 1, and its qualifiers are explained in Appendix 2.)
Appendix 3 matches the common names used in the text to scientific names; Appendix 4 contains a glossary of technical terms used in the text.

Species profiles

Information about each plant species is presented along with photographs and illustrations to aid identification. Distributions have been mapped to show where current populations exist, where they have been known historically and when thought to be extirpated, i.e. extinct at a site. To declare a population extirpated is always risky: plants are easily overlooked and one can never be certain. The definition of an extirpated/extinct population for the purposes of this guide is when it has not been seen for more than 50 years. In some instances, plants have been seen more recently than the 50-year mark, but recent searches have found the habitat has been destroyed and/or the population has undoubtedly gone. Records are indicated as historic where the species has not been seen for at least 10 years.

Amphibromus fluitans

water brome



Status
Nationally Endangered

Description
A perennial, semi-aquatic grass that forms loose grey-green, tufted mats not usually more than 150 mm tall (can reach 400 mm). Leaf blades are slightly rough to the touch, can be either flat, or slightly in-rolled and generally narrower than the leaf sheath. The blue-grey barley-like flowers are borne on short, slightly rough stems with dark nodes, and are often partially enclosed within the leaf sheath. The inconspicuous inflorescences of this species are produced year round.

Similar species
The identification of water brome without flowers is extremely difficult. Sterile specimens of creeping bent (*Agrostis stolonifera*) are most likely to be misidentified as water brome (*A. fluitans*) as this species often grows in the same habitat. Creeping bent has fleshy leaves and the leaf blade tends to be wider than the sheath. Kneed foxtail (*Alopecurus geniculatus*) is also similar in the vegetative state however it is larger and coarser than *A. fluitans*. Sweetgrasses (*Glyceria* species) have long thin (often blue-green coloured) leaves with cross-veinlets and they tend to float on water.

Habitat
Moderately fertile, seasonally dry wetlands (Ogle 1987) and along the edges of shallow lakes and lagoons. Occasionally plants may be found in montane wetland habitats.

Distribution
Australia, New Zealand, both North and South Islands from Ninety Mile Beach and Karikari Peninsula (P.J. de Lange pers. comm.) to Maher's Swamp and Lake Tekapo.

Threats
Habitat loss through wetland drainage, stock grazing and competition from weeds.

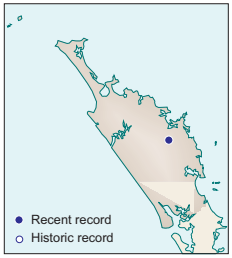
Comment

This species exists in habitats dependent on alternating flood/drought cycles so it can be absent from a known site for many years before reappearing. It is thought that plants are unable to survive rapid inundation and water levels over 1 metre. Once water levels drop sufficiently, new plants appear, probably from a large, long-lived seed-bank.

Left: *Amphibromus fluitans* flower. Photo: C.C. Ogle.
Right: *Amphibromus fluitans* habit, Waihora. Photo: A. Brandon.

Anogramma leptophylla

Jersey fern



Status
Gradual Decline

Description
An annual, tufted fern to 60 mm tall. Frond stalks are hairless and dark brown to red-brown. The frond leaf is a delicate pale green and either sterile or fertile. Sterile fronds are smaller and appear first. Fertile fronds each have one black sorus near the tip of each leaflet. This is the only native annual fern in New Zealand, appearing in winter and dying off by early November.

Anogramma leptophylla.
Photo: A.J. Townsend.

Similar species
None

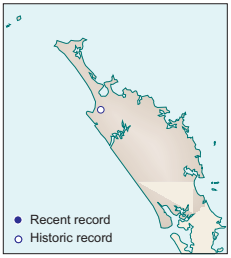
Habitat
East or south facing rocks or clay banks above streams, often occurring with the liverwort *Targionia hypophylla*.

Distribution
Throughout New Zealand, from Waiomio to Dunedin. Only one small population known in Northland. Also in Central and South America, Africa, Europe, India and Australia.

Threats
Vegetation clearing and competition from weeds.

Anzybas carsei

helmet orchid



Status
Nationally Critical

Description
An inconspicuous orchid to 30 mm tall when flowering. It has a small heart-shaped leaf about the size of a finger nail. The tubular, 8–10 mm long maroon-purple flowers are usually solitary. The hood of the flower has a deep cleft and the lower lip (labellum) is raised to show butted, rather than overlapped, edges. Flowering occurs in mid-to-late spring. The leaf is present from February to December.

Similar species
Anzybas (*Corybas*) *rotundifolius*, though similar, never grows in bogs. It is a mid-winter flowering species which possesses a larger flower whose tubular lips overlap and whose hood has no cleft. The orchid more likely to be confused with *Anzybas* (*Corybas*) *carsei* is *Singularlybas* (*Corybas*) *oblongus,* as it also grows in bogs. However the flowers are quite different: the labellum is fringed and the petals of *S. oblongus* form long, thin 'spider'-like projections. It has a thin, textured, oblong leaf with reddish veins on the underside.

Habitat
At present known only from one site where it grows in open *Schoenus/Empodisma* sedge/wirerush vegetation, though it was formerly more common in several, now drained, *Sporadanthus*-dominated bogs.

Distribution
Currently known only from the Waikato Basin but previously known from Lake Tangonge in Aupouri Ecological District.

Threats
Wetland drainage and plant collectors have contributed to the decline of this species in the past. The single remaining population is now primarily at risk through natural succession.

Comment

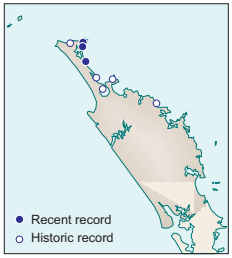
Locations of this orchid should be kept confidential as there is a risk that it may be taken by orchid collectors.

This species was until recently known as *Corybas carsei*.

Anzybas carsei.
Photo: E.A. Scanlen.

Atriplex hollowayi

Holloway's crystalwort

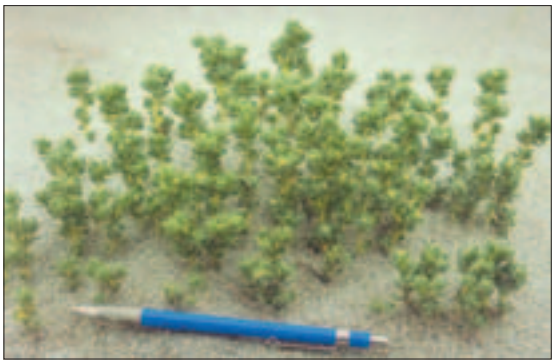


Status

Nationally Critical

Description

A much-branched, very soft, prostrate annual herb, which forms a low mound (to 2 m across) as sand builds up around it. Branches are yellowish brown, fleshy 0.3–1.5 m long. Leaves are small, thick and fleshy; deep green and covered in tiny glistening 'warts' which become silvery-white when dry. These give the plant the look of having been frosted with sugar. Seeds germinate in spring and plants grow rapidly and flower by mid-summer.



Atriplex hollowayi plant (top) and habitat. Photos: L.Forester.

Similar species

Atriplex billardierei is similar but restricted in New Zealand to the Chatham Islands.

Habitat

Open, sandy beaches. Seeds are dispersed on ocean currents and germinate just above the high tide mark.

Distribution

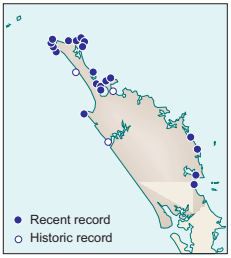
Previously widespread throughout the North Island from Northland to Wellington, now known only from the Far North of Northland.

Threats

Over-collection from botanists, browse (the plant is possibly palatable to horses, hares and rabbits), competition (from weeds) and disturbance (e.g., physical damage from animals and vehicles, and housing development) are the most significant threats.

Austrofestuca littoralis

sand tussock



Status
Gradual Decline

Description
A stout, tufted erect grass forming pale yellow-green tussocks, 0.75 – 1 m tall. The leaves are fine, rolled and needle-like. Seed heads are buried within foliage, are flattened, yellowish-white and have a zigzag appearance. Flowers appear in early summer and seeds are produced in late summer.

Similar species
Marram grass has larger, blue-green leaves and is much a more robust plant. Its seed heads are larger and overtop the foliage.

Habitat
Coastal dunes and sandy and rocky places near the shoreline, occasionally on damp sand near coastal stream margins.

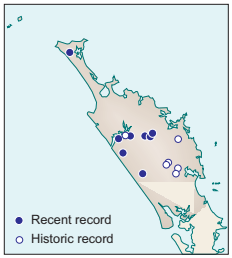
Distribution
Locally distributed on North, South, Stewart and Chatham Islands. Most records in Northland are from the far north. Also found in temperate Australia.

Below: *Austrofestuca littoralis*. Photo: S.P. Courtney.

Threats
Marram, a far more aggressive species, has out-competed sand tussock. Habitat loss through coastal development, dune disturbance by vehicles, competition from marram grass and browse by sheep. Cattle, goats and horses are the main threats.

Austrofestuca littoralis herbarium specimen. Photo: L.J. Forester.

Baumea complanata



Status

Range Restricted

Description

A tufted, leafy sedge to 0.9 m tall. Leaves are arranged in two fan-like rows, and are flat, upright, 500–900 × 3–15 mm. Flowering stems are rounded or somewhat flattened and flowers are small, inconspicuous and borne on an erect red-brown panicle. Ripe nuts are triangular in cross-section and reddish brown, 4 × 2 mm. Flowering or fruiting spikes are present year-round.

Similar species

Machaerina sinclairii has wider leaves than *Baumea complanata*, a broader panicle and usually grows on wet mudstone cliffs rather than in swamps.

Habitat

Swamps and swampy lake edges, sometimes amongst seasonally wet stands of manuka and can grow in shallow, running water.

Distribution

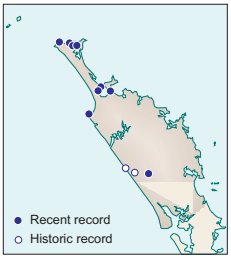
Once known from the northern North Island, but now confined to Te Paki, Taheke, Ngawha, Waipoua and Dargaville in Northland.

Threats

Overshading and competition from other plants; drainage of swamps.

Baumea complanata. Photo: L.J. Forester.

Calochilus aff. *herbaceus* (CHR 65825; Kaimaumau)



Status

Nationally Critical

Description

A strap-leaved, bearded orchid to 0.3 m tall. Flowers are green to yellow with red markings and two dark 'eyes' on the hood; the labellum has a distinctive red beard with a short, naked tip and two hairless, raised ridges. Some flowers lack pigment, and are green and white. Flowers appear in spring to summer.

Similar species

Looks similar to *Thelymitra* spp. when in leaf or bud. Other *Calochilus* spp. are similar but lack the dark eyes on the hood and the two hairless ridges on the labellum.

Habitat

Scrub, swamps and along roadsides.

Distribution

In New Zealand *C.* aff. *herbaceus* is confined to Northland, where the major stronghold appears to be Kaimaumau; also reported from Te Paki, Lake Ohia, Maitahi and Aranga Swamp north of Kaihu. This species also occurs in Australia, where it is widespread.

Threats

Major threats include land clearing, wetland drainage, over-collection by orchid collectors and browsing by rabbits, hares and possums.

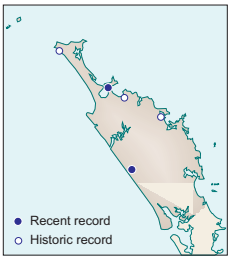
Comment

This orchid is strongly mycorrhizal and impossible to cultivate. Locations should be kept confidential as there is a risk that it may be taken by orchid collectors.

Calochilus aff. *herbaceus*. Photo: I. St George.

Centipeda minima subsp. *minima*

sneezeweed



Status

Nationally Critical

Description

A prostrate, strictly annual, bright green, creeping herb, with many slender, finely hairy basal stems usually 50–100 mm long. Leaves are 3–15 mm long, mostly without hairs, and either entire or with a few large teeth on their edges. Flower heads lack stalks and are 2–4 mm diameter. Seeds are up to 1.4 mm long.

Similar species

The other three native species of *Centipeda,* which are much larger plants. Distinction between these species and *C. minima* subsp. *minima* is not easy. As a rule *C. minima* subsp. *minima* is a strict annual, much smaller in all parts, with bright green leaves that are roughly kite-shaped in outline, and only sparingly (though deeply) toothed toward the leaf apex.

Habitat

Wet, or dried out margins of lakes, ponds and streams; swamps and waste places. It cannot tolerate any competition, so grows in the most open sites it can find. The largest recently discovered populations in New Zealand are around rubbish dumps and poorly drained airstrips.

Distribution

Scarce. Past distributions have been confused by the failure to recognise that there were three other species present in New Zealand. Recent records have come from the North and South Islands, with most records from the Waikato north. In Northland, it is known from Kaiiwi Lakes and Karikari Penninsula.

Threats

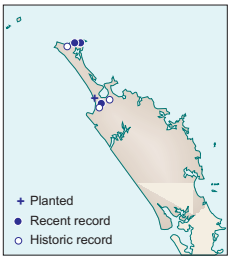
The major threats come from aggressive wetland weeds, such as mercer grass, which rapidly smother the open ground that this species

favours. *Centipeda minima* supsp. *minima* is weedy and opportunistic and so can potentially be found anywhere there is suitable muddy, open ground.

Centipeda minima.
Photo: P.J. de Lange.

Christella dentata sensu stricto

soft fern



Status
Nationally Critical

Description
A creeping fern to 1.6 m tall, with velvet-textured fronds. The frond leaf is pale green, soft, oblong to lance-shaped, from 300–1000 × 130–400 mm. Frond stalks are brown, 200–600 mm long becoming green and usually covered in slender hairs between the frond leaves. Primary pinnae (frond leaflets) are arranged in pairs, up to 150 mm long by 20 mm wide; usually with the lower most two to four pairs slightly smaller. Secondary pinnae (lobes on the leaflets) are oblong, and usually less than 10 mm long. Up to seven pairs of sori are produced on each secondary pinna, about halfway between the margin and the midrib. Each sorus is covered by heart- to kidney-shaped indusium.

Similar species
Cyclosorus interruptus is similar but has harsh, hairless, wiry, olive green fronds and less deeply divided leaflets. *Christella* aff. *dentata* (b) (AK 126902; "thermal") has an upright or very shortly creeping stem (rhizome), doesn't grow as tall (290–1050 mm), or have as long frond leaves (200–700 × 80–250 mm) and grows in swamps of the Far North and along the edges of geothermally active streams and pools (P. Brownsey, pers. comm. 2003). *Deparia petersenii* can also look similar but has a shorter frond.

Habitat
Swampy areas, in light shade.

Distribution
In New Zealand, known only from Northland: occurring at Awanui, Spirits Bay and Tom Bowling Bay. Also in tropical and semi-tropical regions of the Old World and Pacific.

Threats

Grazing, possibly insect damage. Competition from weeds.

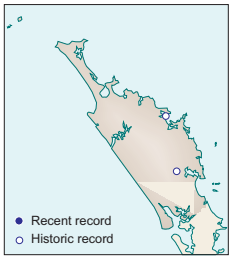
Comment

This has been known as *Christella* aff. *dentata* (a) (CHR 472870; Kaitaia).

Christella dentata. Photo: J.C. Smith-Dodsworth.

Clianthus puniceus

kakabeak; kowhai ngutukaka



Status

Nationally Critical

Description

A sprawling, softly woody shrub up to 2 m tall. Leaves are alternately arranged, dull, grey-green coloured and are made up of many small, round or oblong leaflets. Flowers are salmon-red scarlet or white, 50–80 mm long, borne in clusters of up to ten. Seed pods are black, up to 80 mm long and contain many greenish-black seeds. Flowering occurs from July to December and pods develop in January.

Clianthus puniceus.
Photo: J.R. Rolfe.

Similar species

Kowhai (*Sophora* spp.) have smaller leaves and leaflets and yellow flowers. *Clianthus maximus* has dark salmon-red, orange-red or occasionally deep pink flowers which are larger, and larger leaves and leaflets which are a bright, glossy green.

Habitat

Bluffs and coastal cliffs; river and lake margins and successional shrublands.

Distribution

Endemic to the northern North Island. Currently known only from the Kaipara Harbour, and is presumed extinct in Northland. Historical records for Northland are from the late 19th century at the Bay of Islands (Kirk 1870) and Maungatapere (Carse).

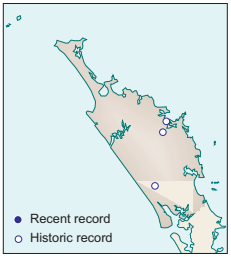
Threats

Everything browses this plant! Cattle, deer, goats, and possums have wiped out populations. Rats browse seeds and snails browse seedlings; insects cause defoliation (leaf miner) and dieback (lemon tree borer), and eriophyid mites cause galls known as witches' broom.

Comment

Plants are easily propagated from seed and cuttings, but are relatively short lived. Kowhai ngutukaka was formerly cultivated by Maori.

Crassula hunua



Status

Nationally Critical

Description

A tiny, creeping, succulent herb that forms interlacing mats. Leaves are arranged in opposite pairs, bright yellow-green, elliptic or oval shaped, fleshy and up to 2 mm long.

Similar species

The leaves of *Callitriche* spp. and bedstraw (*Galium* spp.) are not fleshy and bedstraw leaves occur in whorls rather than opposite pairs. Other *Crassula* spp. look similar, but differ in having leaves that are either larger and more fleshy, or smaller or more pointed.

Habitat

Wet, muddy, open ground and amongst moss, beside rivers, streams, drains and waterfalls.

Distribution

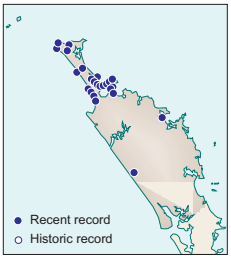
Historically, this plant occurred from Northland to Te Anau and on the Chatham Islands. In Northland, *C. hunua* was known from the Wairoa River, the Bay of Islands and Kawakawa River however searches have failed to relocate any populations.

Threats

Weed competition and habitat modification.

Crassula hunua.
Photo: A.J. Townsend.

Cyclosorus interruptus



Status

Gradual Decline

Description

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 is 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. The sorus cover (indusium) is heart or kidney-shaped.

Similar species

Could only be confused with *Pneumatopteris pennigera* with which it sometimes grows. However, *P. pennigera* has longer, narrower pale green, soft hairy fronds of even length and shape that wilt easily. *Pneumatopteris pennigera* usually occupies different habitats, being found on stream-banks in kahikatea remnants, and on shaded limestone overhangs and cave entrances.

Habitat

Usually occurring amongst swampy, coastal sedges and scrub but also found inland on geothermally active sites. Often seen as upright fronds amongst other wetland vegetation.

Distribution

Indigenous to the northern North Island, from near Kaitaia to Taupo and Mayor Island. Also known from throughout the tropical and warm-temperate Pacific, where it is not threatened.

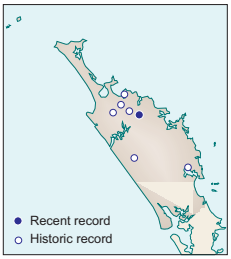
Threats

Drainage, land development and fern collectors.

Cyclosorus interruptus. Photo: J.C. Smith-Dodsworth.

Dactylanthus taylorii

wood rose; dactylanthus; pua o te reinga



Status
Serious Decline

Description
A root parasite forming a warty dark brown clump up to 300 mm in diameter at or just below the soil surface. Plants are either male or female and produce flowers from January to April. Flowering shoots are fleshy, un-branched, up to 200 mm long and covered with overlapping pinkish brown scale-like leaves to 15 mm long. When these shoots emerge, the uppermost scales part to expose many tiny flowers. Male flowers produce white pollen while female flowers are red-brown. The inflorescences of either sex produce nectar which can be detected by its characteristic fragrance. Fruits are about 2 mm long. Fruiting occurs from February to May.

Similar species
None. Root galls, rhizobium nodules and other growths on exposed roots and basal tree trunks have been collected as wood rose. Dactylanthus can be distinguished from these by the presence of small circular scars where previous flowering buds were attached. Frequently, the remains of the scale like leaves can also be seen.

Habitat
Second growth forest, usually parasitic on a number of native broadleaved species including towai, lancewood, five finger, pate, mapou, *Pittosporum* and *Coprosma* species

Distribution
Endemic to the North Island. In Northland, currently known only from Puketi Forest where it is parasitic on the roots of towai. Cheeseman (1914) recorded it from “Wooded Plateau between Hokianga and the Northern Wairoa, Percy Dedlington”, and “nr. Source of Hoteo River, Kaipara, R. Glanvilles”. Unconfirmed reports of plants at Berghan Point, Coopers Beach, Paranui, Omahuta, Mangamuka and Parahaki, also exist; and dactylanthus pollen was found in short-tailed bat droppings at Omahuta.

Threats

Forest clearance, collectors, pigs, possums and rats feed on (and damage) the flowers and plants.

Comment

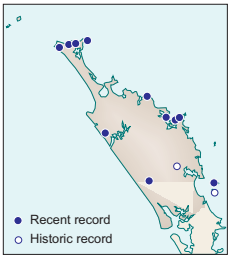
Dactylanthus is difficult to find as plants are often underground and only the unbrowsed flowers are visible. Locations should be kept confidential because there is a risk that collectors might take it.

Dactylanthus taylorii male flowers. Photo: A.Holzapfel.

Dactylanthus taylorii young tuber. Photo: A.Holzapfel.

Daucus glochidiatus

native carrot



Status
Serious Decline

Description
An annual or biennial, carrot-like herb to 0.3 m tall. Stems and branches are hairless and leaves are either hairless or clad with stiff hairs. Rosette leaves are divided 2–3 times into linear lobes, and stem leaves are similar but smaller. Up to eight flowers arise in unevenly proportioned, umbrella-shaped flower heads. Flowers are white and sometimes tinged with red and about 1 mm diameter. Fruit have small, sharp spines about 1 mm long. Seeds are dark, oblong and about 3–5 mm long. Flowering occurs from October to December and fruiting from November to January.

Similar species
Carrot (*Daucus carota*—introduced) has regular umbrella-shaped flower heads and is larger in all parts.

Habitat
Lowland places on dry cliffs, rock talus, dry clay banks or forest margins.

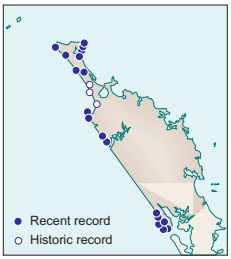
Distribution
From the Three Kings to Southland and on the Chatham Islands. Also in Tasmania.

Threats
Competition from introduced herbs and grasses.

Daucus glochidiatus. Photo: C. Jones.

Eleocharis neozelandica

sand spike-sedge



Status
Gradual Decline

Description
A leafless, orange-brown or green sedge, to 80 mm tall. Stems are creeping, dark brown, about 1 mm diameter and usually buried. The flower stem is not upright but curls over towards the ground and is enclosed at the base by two filmy leaf sheaths, the lowermost of which is purplish brown. Each flower head is oval and borne singly at the tip of the stem without any surrounding sheaths. Flowering occurs from November to December and fruiting from January to February.

Similar species
Resembles some of the smaller *Isolepis* sedges but the distinctive terminal inflorescence lacking sheaths (bracts) and the orange coloured stems in the wild distinguish it as *Eleocharis neozelandica*. Other species of *Eleocharis* are larger and upright.

Habitat
Sandy margins of dune lakes, tidal creeks and damp sandy areas. Forms distinctive dark patches, often on sandflats and at stream exits on open beaches.

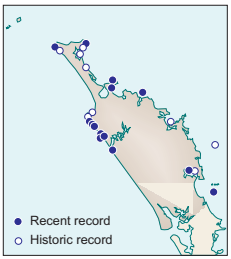
Eleocbasis neozelandica. (Wild plants appear more orange/brown.)
Photo:L Forester.

Distribution
Endemic to the North and South Islands on the west coast from Northland to Wellington and Farewell Spit. In Northland, it is found north of Hokianga Harbour and Pouto Peninsula which is the stronghold.

Threats
Compaction from vehicle damage, stock trampling, and competition from weeds especially where fertiliser run-off has caused eutrophication. Artificial raising and lowering of lake levels.

Euphorbia glauca

sand spurge



Status

Serious Decline

Description

A succulent, creeping herb with upright, red stems to 1 m tall. All parts of this plant exude a milky sap when damaged. The soft 10–120 × 15–25 mm long leaves are pale bluish green, cigar-shaped or elliptic in outline. These are often obscured by the conspicuous magenta coloured inflorescence, which is made up of many minute, red, cup-like flowers with purple, crescent-shaped glands around their rim. The pendulous fruits of this species are 3-lobed capsules, which change from green to pale brown when ripe. Flowering occurs from October to February; fruiting from December to April.

Above: Euphorbia glauca flower. Photo: S. Courtney. Top: *Euphorbia glauca*. Photo: Phil Knightbridge.

Similar species

The milky sap distinguishes it from many other coastal herbs. The large cigar-shaped leaves and red cups around the flower-like inflorescences ('cyathia') distinguish this species from other *Euphorbia* species.

Habitat

Open sand dunes, where it may form large sandy mounds; also occurs on coastal gravel banks and rocky bluffs.

Distribution

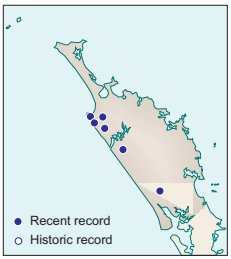
Endemic to New Zealand, occurring throughout North, South, Stewart and Chatham Islands. Numerous colonies are known, especially on offshore islands and the West Coast, but most cover only small areas.

Threats

Disturbance by human and vehicle traffic on beaches, habitat degradation from browsing and overtopping by scrub weeds such as tree lupin.

Hebe perbella

Bartlet's hebe



Status

Nationally Vulnerable

Description

A compact shrub to 1.8 m tall. Leaves are lance-shaped, usually between 40 and 90 mm long by 14–18 mm wide, olive-green to dark green, fleshy. Flowers are violet-red to lilac and crowded together in spikes up to 150 mm long. Flowering occurs in two distinct flushes: from March to June and August to December and fruiting from April to February. (Abridged from de Lange 1998.)

Similar species

Hebe brevifolia is a North Cape endemic. It is low growing and has crimson or magenta flowers which are not crowed on the spike. Leaves are elliptic-lance-shaped and generally smaller.

Habitat

Base-rich, volcanic cliffs, open, rocky outcrops, and slip scars amongst kauri forest and gumland scrub; often amongst scrub and other vegetation on seepages or alongside streams, and waterfalls (de Lange 1998).

Distribution

A range restricted New Zealand endemic, confined to western Northland from Ahipara and Herekino to Ruawai.

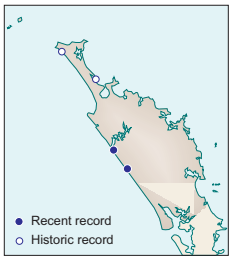
Threats

Habitat loss through weed encroachment (pampas grasses and mist flower) is the main threat. Possum and goat browse may also be a problem (de Lange 1998).

Top left: *Hebe perbella*. Photo: G.M. Crowcroft.
Left: *Hebe perbella* habit. Photo: P.J. de Lange.

Hebe speciosa

titirangi/napuka



Status

Nationally Endangered

Description

A low, spreading shrub to 2 m tall. Leaves are in opposite pairs, with each successive pair at right angles to the previous one. Leaf blades are large, glossy, dark green, leathery and fleshy, broadly elliptic to oblong, 35 × 25–55 mm. The edges and midrib of young leaves are tinged red and finely hairy. Flowers are magenta in colour, up to 7 mm long and are carried in dense spikes up to 110 mm long by 30 mm diameter. Flowering occurs from January to October. Capsules can be found throughout the year.

Similar species

Hebe brevifolia is a North Cape endemic and could be confused as it has a similar flower colour; its leaves are lance-shaped, light green and lack the purplish edges and mid-rib.

Hebe speciosa.
Photo: G.M. Crowcroft.

Habitat

Sea cliffs and steep slopes, either in open sites or amongst low scrub. A very popular garden plant.

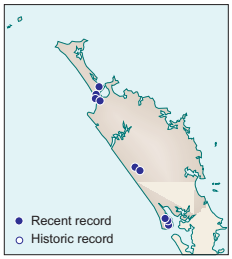
Distribution

Endemic to the northwestern North Island and Marlborough Sounds. In Northland, it is known from Maunganui Bluff, South Hokianga Head and Scott's Point and historically from the Far North and Mt Camel.

Threats

Habitat loss through erosion of the cliffs; browsing from domestic stock and possums; and competition from weeds are the main threats. Insect damage also occurs. Hybridisation with nursery-sourced plants, hybrids and cultivars is a potential problem near residential areas.

Hydatella inconspicua



Status

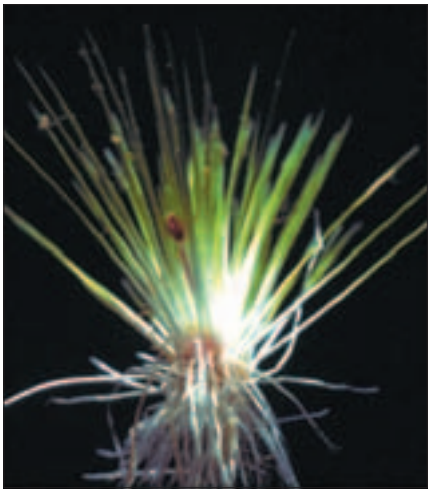
Serious decline

Description

A tiny, slender, grass-like, tufted herb to 20–40 mm tall. Leaves are sharply pointed and needle- or thread-like. The lower half of each leaf is colourless and does not broaden at its base; the upper half is bright green, (often turning purplish-red) and has a red mid-vein at maturity. Flowers and fruit are minute. Flowering occurs from October to January; fruiting from December to February.

Similar species

Centrolepis and *Gaimardia* look similar but their leaves broaden at the base into a membranous sheath. *Centrolepis strigosa* also has hairy leaves and flower stems that are taller than the leaves.



Hydatella inconspicua.
Photo: J.S. Clayton.

Habitat

Shallow water, commonly in sand, but also in silt and organic matter. Fans of small *Hydatella* spikes are sometimes seen uprooted on lake edges, especially after storms.

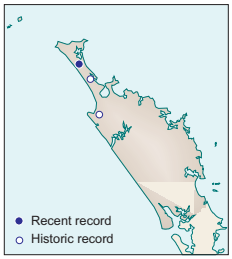
Distribution

Endemic to New Zealand, known from only 13 small lakes along the west coast of Northland (near Kaitaia, Kaiiwi and the north head of Kaipara Harbour) and several lakes in the South Island.

Threats

Trampling by stock. Water level fluctuations. Competition from exotic weeds, e.g. *Egeria densa*, especially where nutrient run-off is a problem.

Isolepis fluitans



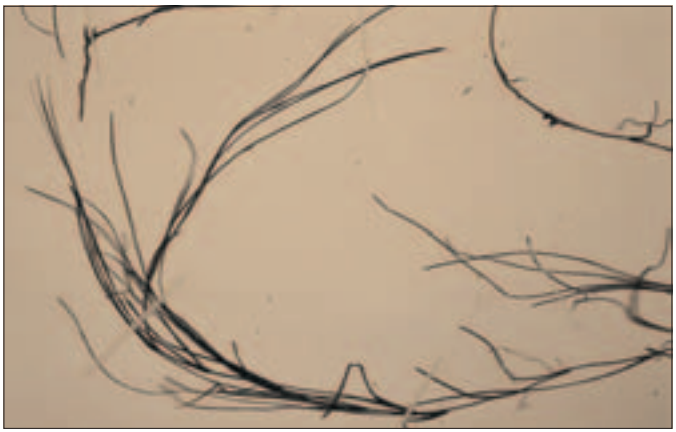
Status
Gradual Decline

Description
A loosely branched sedge with bright green leaves and flowering stems to 400 mm long. Leaves are round in cross section, alternately arranged and have a leaf sheath that angles away from the stem. Leaves have a 'kink' where the leaf blade and leaf sheath join but no protective membrane (ligule). The leaf is floppy, up to 100 mm long by 0.5 mm wide. Flowers occur in solitary spikelets with a short sheathing scale (bract).

Similar species
Potamogeton pectinatus is similar but has an upstanding membrane where the leaf sheath and the leaf blade join.

Habitat
Submerged in shallow water around the margins of lakes and streams, but occasionally terrestrial. Flower heads are emergent.

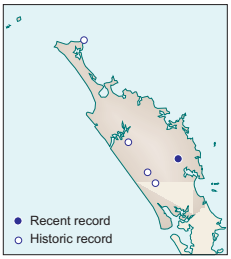
Distribution
Throughout New Zealand, from Northland to Fiordland, also in Europe, Asia, Africa, Malaysia and Australia. In Northland, known historically from Kaitaia and Houhora, and recently from one dune lake near Te Kao, Far North.



Threats
Compaction and pugging by domestic stock, competition from weeds, especially where nutrient run-off is a problem and wetland drainage are the main threats.

Isolepis fluitans.
Photo: A.J. Townsend.

Juncus holoschoenus



Status

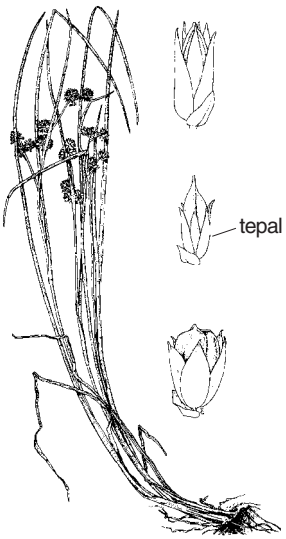
Nationally Endangered

Description

A loosely tufted, creeping, leafy rush to 0.45 m tall. Leaves are bright green, 2–4 mm wide, round in cross-section or slightly flattened. Leaf tips are pointed. Transverse divisions (septa) extend across the whole width of the leaf blade but are only partial in the leaf sheath. Leaf sheaths are long and have two blunt lobes. Flowers are borne at the tips of distinct branchlets, and are 4–5 mm in diameter. Petals are all of an equal length and have sharply pointed tips; petal colour is green or greenish brown but occasionally red. Each flower has six stamens. The capsule is 3.5 to 4.5 mm long and usually shorter than the tepals.

Similar species

Can be confused with *J. multiflorus* or *J. microcephalus,* so a fertile specimen should be taken. *Juncus prismatocarpus* has three stamens and flat leaves with divisions that run along the leaf as well as transversely. *Juncus fockei* has capsules that are mostly longer than the tepals; and tepals that only slightly taper towards the tip.



Juncus holoschoenus line drawing by T. Galloway

Habitat

Damp ground, eutrophic swamps, drains and roadside ditches from sea level to 1000 m.

Distribution

Occurring locally throughout the North Island and Canterbury, where it has not been found recently. Not recorded from Northland recently. Most records are not *J. holoschoenus* sensu stricto, so this plant has yet to be confirmed in Northland. Also common in Australia.

Threats

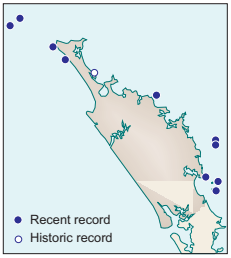
Habitat loss through drainage, spraying and competition from other wetland plants.

Comment

This species is probably more widespread than collections suggest as it is easily overlooked. If you think you have found it, collect a good speciment with flowering or fruiting material (if available) so that an expert can identify and voucher it.

Lepidium oleraceum sensu stricto

Cook's scurvy grass



Status
Nationally Endangered

Description
A spreading but upright, hairless herb to 0.5 m tall. Foliage and stems have a strong cress-like flavour and if crushed, smell like cabbage. Leaves are fleshy, green, oblong to elliptic with rounded tips, up to 100 × 30 mm. Margins are evenly toothed towards the tip, and taper to a broad, flat base. Flowers are 2–3 mm diameter, white and arranged in clusters. Fruit are flattened, broadly egg-shaped silicles with a sharply pointed apex, and each contain two brown seeds. Flowers appear year-round, but mainly in September to March. Fruiting occurs from December to April. Seed production is rapid so flowers and immature and ripe seed are all typically found on the same plant.

Similar species
Ngaio seedlings can appear similar but have small whitish gland-dots on the leaves and lack the cabbage-like smell.

Habitat
Fertile soils on coastal slopes, often associated with bird burrows, rocky shorelines and gravel beaches. In Northalnd the habit is form low mounds.

Distribution
Once common on the coast and islands throughout New Zealand, but now largely restricted to off-shore islands including Three Kings, Motuopao, Matapia, Cavallis, Poor Knights and Hen & Chickens in Northland.

Threats
This plant is browsed by virtually everything, including domestic stock, rats, snails, aphids, leaf miner, diamond backed moth and cabbage white butterfly. Fungal disease (white rust fungus) is also a problem and the plant has been and continues to be over-collected by people.

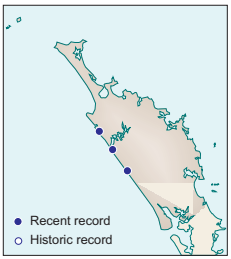
Comment

The species grows well from seed but strict quarantine measures for pests and diseases are required to prevent their establishment when visiting offshore islands.

Lepidium oleraceum.
Photo: L.J. Forester.

Leptinella rotundata

Northland button daisy



Status
Gradual Decline

Description
A small hairy, sparingly branched, creeping herb with thick yellowish green leaves. Leaves are up to 15 mm long, with a long stalk and a rounded, sparsely hairy leaf with toothed margins. Flower stems are up to 60 mm long, and have a single yellow-green, button-like flower head. Flowering occurs in summer on separate male and female plants. The seed is smooth and brown, 1.9 × 1.1 mm in diameter.

Similar species
None

Habitat
Coastal cliffs and seepages amongst low vegetation, sometimes associated with *Fuchsia procumbens*.

Distribution
Endemic to Waitakere Range (west of Auckland) and three sites on the west coast of the Northland Peninsula: Maunganui Bluff; South Hokianga Heads and Mitimiti.

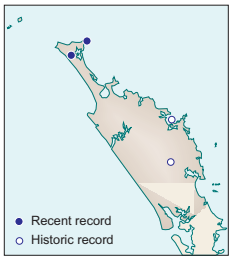
Threats
Erosion, stock damage and competition from weeds are the major threats. Skewed sexual ratios have been postulated for some populations, e.g, Hokianga. Collection from horticultural enthusiasts has also threatened some populations.

Comment
The plant is easily propagated from small pieces.

Leptinella rotundata. Photo: S.P. Courtney.

Linguella puberula

dwarf greenhood



Status
Nationally Critical

Description
A slender, silvery-green, rosette-forming, greenhood orchid to 150 mm tall (but usually much less). Plants often exhibit a 'washed-out' colouration. The rosette leaves are trowel-shaped with winged petioles and contrast strongly with the stem leaves, which are small and closely sheathing. The stem is faintly hairy. Flowers are usually solitary, have long club-shaped 'antenna' (lateral sepals), a short 'beak' (dorsal sepal) and oblong 'tongue' (labellum) and stigma.

Habitat
Clay banks beneath light scrub (especially manuka) and gumland.

Similar species
Diplodium (*Pterostylis*) *trullifolium* and *Diplodium* (*P.*) *alobulum* are similar but have much smaller, trowel or heart-shaped basal leaves without winged petioles and larger stem leaves. The rosette leaves of *D. trullifolium* are further distinguished by embossed vein patterning.

Distribution
Endemic to New Zealand, known from Northland (Te Paki, and Silverdale in the Kaipara), Coromandel, Wellington, Nelson and near Westport. Old record from Maungatapere.

Threats
Habitat loss and degradation through weed encroachment, natural regeneration of forest species, and pig rooting are the main threats. Also, over-collection by botanists and enthusiasts has occurred in the past.

Comment
This plant is predominantly self fertilising but does not appear to set seed often. It rarely persists at any one locality for more than a few years. Indications are that this species has a fire ecology, requiring periodic burns to retain the open gumland scrub habitat it requires.

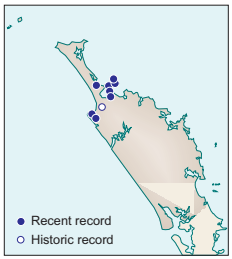
This orchid has been known in New Zealand as *Pterostylis puberula*, and *P. nana*. There are still doubts about whether *Linguella puberula* is really endemic to New Zealand, certainly its restriction to gumland scrub habitats (an artificial habitat created by frequent burning on impoverished soils) is an unusual habitat requirement for an endemic orchid.

Locations of this orchid should be kept confidential as there is a risk that it may be taken by orchid collectors.

Linguella puberula.
Photo: J.C.Smith-Dodsworth.

Lycopodiella serpentina

bog clubmoss



Status
Nationally Vulnerable

Description
A diminutive clubmoss with sparingly branched, tightly appressed stems. Leaves are spirally arranged around the stem, dull green and orange tinged and with a needle-like, pointed tip. Solitary cones are borne on stems up to 40 mm long.

Similar species
Lycopodiella lateralis which is common in dense gumlands and bogs, differs by having non-stalked (or shortly-stalked) cones borne on the sides of the erect stems. Young *Lycopodiella cernua* plants could be confused with bog clubmoss but it has aerial stems that loop across ground with many downward facing branches, giving it a candelabra-like appearance.

Habitat
Wet, open sites and rough pasture; peat bogs, on poor soils, amongst ferns and other peatland plants on small hummocks.

Distribution
Indigenous. Possibly extinct in Australia (E. Cameron pers. comm.) and also New Caledonia (P. Morat, pers. comm.). In New Zealand, known from the northern North Island from Northland to the Waikato. In Northland, it occurs at Ahipara, Kaimaumau, Karikari and in Waikato, on the Hauraki Plains with historical records from Lake Tangonge (near Kaitaia).

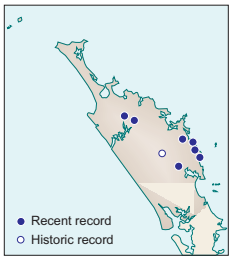
Lycopodiella serpintinum.
Photo: J.C. Smith-Dodsworth.

Threats
Wetland drainage, land development, stock trampling and fertiliser application are all threats to this fern ally. The species is also a frequent target of fern collectors.

Comment
Plants often look sick when in fact they are not.

Marattia salicina

king fern



Status
Serious Decline

Description
A large, robust fern with fronds to 5 m tall arising from a stout, starchy base that was eaten by the Maori. The cane-like leaf stalks are green, 1–3 m long, and have a large basal, ear-like lobe that protects the uncoiling frond. The dark glossy green (or yellow-green in stressed sites) fronds are up to 4 m long by 2 m wide. Frond leaflets (secondary pinnae) are oblong and taper towards the tip. Midribs of the secondary pinnae are swollen at the junction with the main stem. Special boat-shaped sori called synangia bear spores in rows along the edges of the frond leaflet.

Marattia salicina.
Photo: A.J. Townsend.

Similar species
None

Habitat
Wet, shady gullies in dense bush.

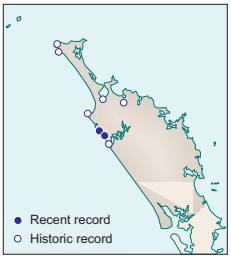
Distribution
Indigenous to Australasia and the South Pacific (possibly elsewhere). In New Zealand it is found throughout the northwestern half of the North Island from inland Wanganui northwards. In Northland, it is known from Pukenui, Mimiwhangata, Whananaki, Matapouri, Russell Forest, Mangamuka and Omahuta Forests. Historical records exist for Motatau from around the turn of the 19th Century.

Threats
Domestic stock browse the upper parts of the plant and pigs eat the starchy rhizome. Drought may be a potential threat as it wilts dramatically in dry weather. Over-collection by fern growers.

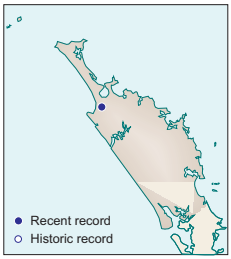
Comment
King fern is valued as a pot and garden plant so locations should be kept confidential.

Mazus novaezeelandiae subsp. *impolitus*

dwarf musk



Northland distribution of *Mazus novaezeelandiae* subsp. *impolitus* f. *impolitus*.



Northland distribution of *Mazus novaezeelandiae* subsp. *impolitus* f. *hirtus*.

Two infraspecific taxa are recognised:

1. *M. n.* subsp. *impolitus* f. *impolitus*
2. *M. n.* subsp. *impolitus* f. *hirtus*

Status

Mazus n. subsp. *impolitus* f. *hirtus* is Nationally Critical and *M. n.* subsp. *impolitus* f. *impolitus* is Serious Decline.

Description

A perennial, creeping herb with spoon-shaped leaves, 20–75 mm long in close-set rosettes. Flowers are white with yellow throat and flowering occurs in November. Fruit are capsules, which are enclosed in the remains of the flower; fruiting occurs from February to April.

Each form is distinguished by:

- *M. n.* subsp. *impolitus* f. *impolitus*: dull green leaves that are hairless or only sparsely hairy;
- *M. n.* subsp. *impolitus* f. *hirtus*: dull, matt textured leaves with hairy margins and a brown marginal band.

Similar species

Closely allied to *Mazus pumilio* which has blue or lilac flowers and a finely toothed leaf margin. *Mazus novaezeelandiae* subsp. *novaezeelandiae* is similar in all respects but has shiny green leaves.

Habitat

M. n. subsp. *impolitus* f. *impolitus* grows mainly in coastal sites particularly damp hollows and sand flats; also inland in river gravels in Otago;

M. n. subsp. *impolitus* f. *hirtus* is known from kahikatea forest.

Distribution

Endemic to New Zealand.

M. n. subsp. *impolitus* f. *impolitus* is found from near Cape Maria van Diemen (historically) to Dunedin. In Northland, it is also known from north of the Hokianga Harbour.

M. n. subsp. *impolitus* f. *hirtus* is restricted to the northern North Island but is now only known from near Kaitaia in Northland.

Threats

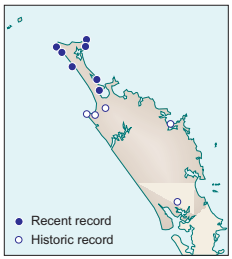
Very susceptible to disturbance, habitat clearance and modification including stock trampling.

Mazus novaezeelandiae subsp. *impolitus*. Photo: A.J. Towsnend.

Mazus novaezeelandiae subsp. *impolitus* f. *hirtus*. Photo: P.J. de Lange.

Ophioglossum petiolatum

stalked adder's tongue



Status
Nationally Endangered

Description
A distinctive plant forming small colonies. The shortly stalked, fleshy heart-shaped fronds are 15–100 mm long by 6–34 mm wide, yellow-green, distinctly broader at the base and only gradually tapering toward the apex. The single wire-like fertile spike is up to 200 mm long, and is terminated by 15–45 pairs of spore-bearing capsules.

Similar species
Ophioglossum coriaceum which is generally smaller and has a narrower, oval-shaped and stalk-less sterile frond. The fertile spike is much shorter and carries fewer pairs (7–15) of spore-bearing capsules.

Habitat
Margins of swamps and streams.

Distribution
Indigenous, widespread in tropical and subtropical countries and islands of the Pacific Region extending towards India. Historically in New Zealand this species was known from North Cape to Westland and the Chatham Islands, but is now very scarce. Recent records in Northland are from Kaipara, Kaimaumau, Te Paki and Aupouri Peninsula.

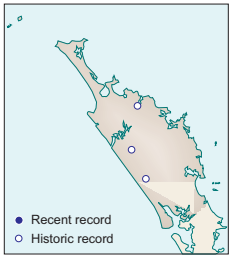
Threats
Habitat modification (wetland drainage and weed invasion), shading, natural succession, fern collectors.

Comment
Locations of this fern should be kept confidential as there is a risk that it may be collected by enthusiasts.

Ophioglossum petiolatum. Photo: P.J. de Lange.

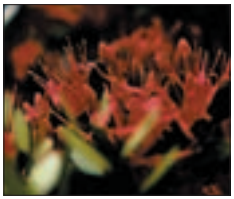
Peraxilla tetrapetala

pirirangi



Status
Gradual Decline

Description
A semi-parasitic, bushy shrub to 1 m across, which is joined to its host by several attachments (haustoria). Leaves are on short stalks, oppositely arranged 10–50 mm long, and thick and fleshy, with a rhombic shape and usually with some blisters on the surface. Flowers have four petals and are red or yellow at the base and shading gradually to crimson at the tips. Flowering occurs in December; fruiting in April.



Similar species
Peraxilla colensoi has scarlet flowers and larger leaves without blisters. *Trilepidea adamsii* has large yellow, bell-shaped flowers tinged with red and green, and diamond-shaped leaves without blisters. *Ileostylus micranthus* has tiny yellow-green flowers with a 'bent' style; *Tupeia antarctica* also has tiny yellow-green flowers and white fruit.

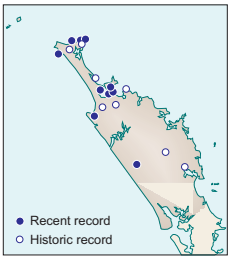
Habitat
Forest. Hosts in Northland include towai, pohutukawa and *Quintinia*.

Distribution
Endemic to New Zealand, occurring throughout the North and South Islands. Only one plant has been seen recently in Northland in the Wekaweka Valley near Waipoua (on towai) but this has since died. There are also historical records from near Dargaville.

Threats
Possum browse; loss of native bird species involved in pollination; land clearance.

Peraxilla tetrapetala. Photos: C. Jones.

Phylloglossum drummondii



Status

Nationally Endangered

Description

This is the smallest New Zealand fern ally. It is only above ground in winter and early spring (being at its best in July and August) and dies down to an underground tuber for the remainder of the year. Sterile leaves are produced in rosettes up to 40 mm across; they are needle-like with pointed tips and slightly fleshy. The fertile stem is up to 40 mm long, and bears fertile leaves in a yellowish, solitary terminal cone 4 × 8 mm. Dormant plants often can be felt as small spiky rosettes amongst moss on the ground.

Similar species

None

Habitat

Favours open clay soils or short scrub and grows in colonies, often of several hundred plants. Seems to prefer recently burnt areas under short cover with little competition from other plants.

Distribution

From North Cape to the Waikato but now confined to gumland areas in the Far North, Karikari and near Dargaville. Also in Australia.

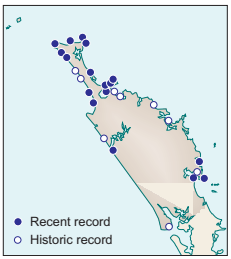
Phylloglosum drumondii.
Photo: J.C. Smith-Dodsworth.

Threats

This plants habitat is becoming very restricted due to land development. Shading from shrubs as sites change into scrub and forest is a problem which requires management (slashing) in some areas.

Pimelea arenaria sensu stricto

sand daphne



Status
Gradual Decline

Description
A low spreading, silky-haired shrub in the daphne family, that grows to 400 mm tall. Often, branches are buried in sand so one plant can form a mound and cover quite a large area. Branches are usually erect and up to 400 mm high. The branchlets and undersides of leaves are densely covered in hairs that lie flat, giving it a silvery appearance. Leaves are elliptic to oblong but sometimes rounded, 5–7 mm long by 3–5 mm wide.

Similar species
Pimelea prostrata is similar but the leaves are hairy on both sides and it has a sprawling habit. *Pimelea tomentosa* is also similar but has an upright habit, and leaves that are linear to lanceolate.

Pimelea arenaria.
Photo: C.C. Ogle.

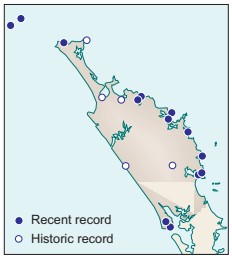
Habitat
Coastal sand dunes.

Distribution
This plant is endemic to the North Island and has two distinct forms, of which one is further restricted to Northland.

Threats
The major threats are habitat loss (through development for housing and plantings to stabilise moving sand) and vehicles on beaches disturbing sand dunes.

Comment
The tough, fibrous bark was formerly used by Maori as cord.

Pimelea tomentosa



Status

Serious Decline

Description

An erect, grey-green, leafy shrub ≤ 1 m. Branches are slender, and straight, with prominent leaf scars. Bark is orange-brown. Young branchlets have whitish hairs. The grey-green, soft lance-shaped leaves are up to 25 mm long, with pale silky hairs on their undersides. The blacky fleshy fruits are very conspicuous, terminating the branch ends wherever flowers have been present. Flowering and fruiting specimens may be seen throughout the year.

Similar species

Pimelea prostrata is a common plant of coastal cliffs and shrubland vegetation. It has several variable forms but the leaves are smaller (3–6 × 1–3 mm) than *P. tomentosa*, its habit prostrate to sprawling and it has smaller, less conspicuous white fleshy fruits. Sand daphne (*Pimelea arenaria*) has a similar habit but only occurs in dunes and dune hollows, has shorter, more rounded leaves than *P. tomentosa* and smaller red fruits.

Pimelea tomentosa. Photo: A.J. Townsend.

Habitat

Open grassy cliff tops, in scrub and other seral habitats.

Distribution

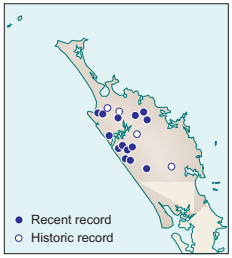
Endemic to New Zealand, occurring throughout the North Island and northern South Island. In Northland, it is locally common on both east and west coast, especially around Cape Brett and southwards on the east coast.

Threats

Habitat loss through development, land clearance, succession and competition with weeds.

Pittosporum kirkii

Kirk's kohuhu



Status

Serious Decline

Description

A small, openly-branched shrub to 4 m tall with stout, purplish branches. Leaves are crowded towards the tips of the branch on 1 cm long stalks. The leaf blade is thick and fleshy, and broadens towards a rounded tip; leaves are 50–100 mm long by 20–30 mm wide. Flowers are either solitary or in clusters of up to four at the tips of branches, bright yellow and appear in November. Fruit are oval, woody capsules up to 40 mm long that split in half to reveal black seeds sitting in a sticky yellow pulp, and appear in January.

Pittosporum kirkii.
Photo: E. Cameron.

Similar species

Pittosporum cornifolium is also usually epiphytic, but the leaves are usually shorter, broader and much thinner and the inside of the capsules are shiny and bright orange. *Brachyglottis kirkii* is also usually epiphytic and can look similar. It occurs in the same habitat but it has easily crushed, lobed or shallowly toothed leaves and white daisy flowers.

Habitat

Lowland to montane forest, usually epiphytic but occasionally terrestrial.

Distribution

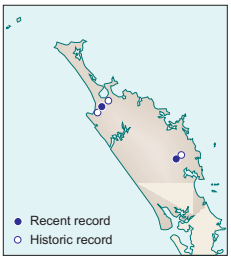
Endemic to the northern half of the North Island, from Mangonui to Raetihi (interpreted from Allan 1961). In Northland, appears to be restricted to larger mature forest blocks.

Threats

Forest clearance and wild animal browse.

Pittosporum obcordatum

heart-leaved kohuhu



Status

Nationally Endangered

Description

A shrub or small tree to 5 m tall with interlacing, slightly drooping branchlets. Leaves are alternate and vary on juvenile and adult plants. Juvenile leaf shape is usually long and narrow with a lobed leaf tip, up to 15 × 5 mm, with smooth or lobed leaf edges. Colour is dark grey-green with brownish mottles or blotches. Adult leaves are oval or heart-shaped, up to 20 × 15 mm (usually less), grey-green in colour without blotches. Flowers occur in clusters of four to eight, have yellow petals often edged with red and appear in October–November. Seed is contained in small egg-shaped capsules that appear in January and split in half. Males and females occur on separate plants.

Similar species

There are many small-leaved shrubs that look similar. Weeping mapou has small dark dots (glands) on its leaves and weeping branchlets. Pokaka has distinctive projections at the ends of the veins along the leaf edge (visible with a hand lens). Rohutu has opposite leaves, many gland dots and square or ribbed stems. *Coprosma* spp. have opposite leaves and fleshy berries. *Melicytus micranthus* has leaves with slightly toothed margins and whitish blotches at their bases. *Pseudopanax anomalus* leaves are similar in shape to adult *P. obcordatum* leaves but with dark blotches at their bases and an antler-like branching pattern.

Habitat

Lowland, divaricating shrubland and podocarp forest, often preferring swampy soils, which are waterlogged and frosted in winter.

Distribution

Endemic to the North and South Islands, scattered from Kaitaia to Manapouri. Known from two localities in Northland: Kaitaia and Hikurangi Swamp.

Threats

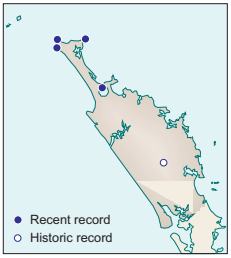
Land clearance, drainage, grazing and weed invasion have severely modified habitats. Habitat stabilisation through flood control programmes have also disrupted seedling establishment.

Comment

At least 1000 *P. obcordatum* plants occur at Hikurangi Swamp, so this would be New Zealand's second largest population.

Pittosporum obcordatum.
Photos: (left) A.J. Townsend;
(right) L.J. Forester.

Plumatochilos tasmanicum



Plumatochilos tasmanicum.
Photo: A.J. Townsend.

Status
Serious Decline

Description
A distinctive greenhood orchid with a leafy rosette and a usually single flower. Rosettes have eight to 14 leaves, each up to 25 × 7 mm. The flowering plant is usually about 100 mm tall (but can be up to 250 mm), with a thin stem (1.5 mm diameter) and has a few leaves sheathing it. The tubular helmet shaped green flower is upright. Protruding from the flower is a very distinctive yellow, feathery, pendulous lip (labellum) terminated by small brown or red ball-like callus, below which, sits a pair of forked sepals that are bent abruptly downwards. The enclosing petals are translucent pale green with darker green veins. Flowering occurs from October to December.

Similar species
None

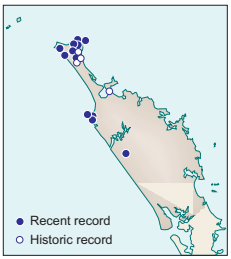
Habitat
Scrub or forest margins, in damp mossy areas or drier more exposed sites. Often under gorse or manuka on clay hillsides.

Distribution
Known from Northland (Te Paki and Kaimaumau), Coromandel, Wellington and Nelson. Also in Victoria and Tasmania where it is widespread.

Threats
Lack of fires, competition from weeds (gorse) and over-collection by orchid enthusiasts are the main contributors to this orchid's decline. This species requires frequent disturbance, usually from fires to maintain an open habitat.

Comment
This orchid has previously been known as *Pterostylis tasmanica*. Locations of this orchid should be kept confidential as there is a risk that it may be taken by orchid collectors.

Pomaderris phylicifolia



Status

Nationally Endangered

Description

A many-branched shrub to 1.5 m tall. Young stems and buds are usually covered in dense white hairs. Leaves are oblong, 10–25 mm long, and folded or rolled over on the edges with simple hairs on the upper surface and star-like hairs on the under-surface. Flowers are 4–5 mm diameter, grouped in clusters, cream to pale yellow and lack petals. Fruit is a 4 mm long capsule. Flowering occurs from October to November and fruiting from November to January.

Similar species

Pomaderris aff. *phylicifolia,* which has a different chromosome number (2*n*=36) to *P. phylicifolia* (2*n*=48), has leaves that are usually less than 10 mm long and recurved almost to the midrib.

Habitat

Mainly coastal, nutrient poor, open sites amongst manuka and sedges, clay banks and roadsides. This plant is a naturally short-lived, early coloniser of slips and disturbed areas.

Distribution

Known from Northland (in the Far North at Ahipara, Te Kao, Spirits Bay Road and Surville Cliffs Road) to the Hauraki Gulf. Also in Victoria.

Threats

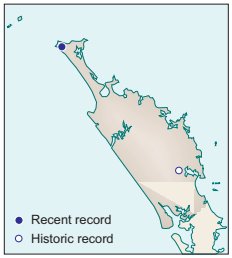
Use of herbicides along roadsides and goat browsing are the main causes of decline. Habitat loss through succession, causing shading as a canopy develops.

Comment

This species was called *Pomaderris polifolia* in Collins & de Lange (1998) that name being a later synonym of *P. phylicifolia*. Another common New Zealand *Pomaderris*, *P.* aff. *phylicifolia,* has also been called *P. phylicifolia*, *P. phylicifolia* var. *ericifolia* and *P. ericifolia*. However, none of these names apply to the New Zealand plant, which, for the time being is apparently unnamed.

Pomaderris phylicifolia. Photo: G.M. Crowcroft.

Prasophyllum aff. *patens* (AK 236408; New Zealand)



Status

Nationally Vulnerable

Description

An attractive, often floating orchid of peatbogs and their associated slow flowing streams, possessing strongly scented flowers (that smell like freesia). It has a single, rolled, leek-like leaf and a single, prominent spike to 900 mm tall, carrying from 3–20 flowers. Flower colour varies from pale yellow with a black or white labellum to greenish-red with a white labellum. The labellum is conspicuous and has a wavy margin. Flowering occurs from December to February.

Similar species

Prasophyllum colensoi generally does not grow as tall, has green or reddish flowers and is a grassland inhabitant.

Habitat

Slow-flowing or still water in acidic peat bogs, often amongst sedges (*Baumea* spp. and *Schoenus* spp.). Plants often grow on 'vegetation islands' with their roots barely touching the peat substrate.

Distribution

Endemic to the northern half of the North Island and Chatham Island.

Threats

Over-collection by orchid enthusiasts, stock browse and pugging, pig rooting and wetland drainage are the main threats.

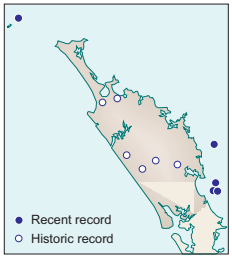
Comment

Locations of this orchid should be kept confidential as there is a risk that it may be taken by orchid collectors.

Prasophyllum aff. *patens*. Photos: E.A. Scanlen.

Rorippa divaricata

New Zealand mustard cress



Status

Nationally Endangered

Description

A hairless perennial cress with a rosette, taproot and upright stems to 1.5 m tall. Rosette leaves are 100–160 × 30–70 mm, with large, rounded lobes at their tips and edges that are shallowly or deeply toothed. Stem leaves are smaller, long and narrow or slightly broader and clasp the stem. Flowers are small with white petals and occur in clusters. Fruit are long capsules that split in half. Flowers appear from October to February and fruits from October to May. Plants may be either green or tinged red.

Similar species

Young fire-weeds can look similar but do not have the distinctive cress-like smell.

Habitat

A coloniser of freshly exposed or disturbed sites such as burnt forest, lake margins and petrel burrows.

Distribution

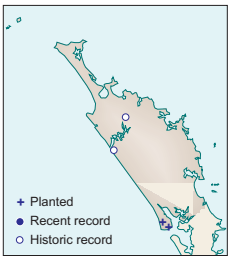
Endemic to the North Island and northern South Island. Occurs on some northern off-shore islands, e.g., Three Kings, Poor Knights and Hen & Chickens. Disappeared from mainland sites in Northland.

Threats

Susceptible to habitat loss from both natural regeneration and weed invasion (e.g. Mexican devil on Hen & Chickens). Diseases and predation by browsing animals may have accelerated its decline on the mainland, but it was probably never particularly common.

Rorippa divaricata.
Photos: (left) L.J. Forester; (above left) C.C. Ogle.

Sebaea ovata



Status

Nationally Critical

Description

A small annual herb in the gentian family that grows to 250 mm tall, which has completed its lifecycle by mid-summer. Stems are simple or sparingly branched and have a few leaves which are arranged in opposite pairs. Leaves are thick, pale green, up to 15 mm long, trowel-shaped and not stalked. Flowers are pale yellow up to 4 mm long, barely open and occur in a cluster at the tip of the stem. Seeds are in an egg-shaped capsule, to 5 mm long.

Similar species

The two introduced gentians: centaury and yellow wort look similar. Both grow in the same habitat but centaury is larger, has a basal rosette of almost parallel-veined leaves and has pink flowers, while yellow wort has blue-green leaves, is sometimes more robust and has larger, yellow flowers that open fully.

Habitat

Coastal and lowland boggy, swampy ground; dune hollows.

Distribution

Historically throughout the North Island and northern half of the South Island but now restricted to two locations in Wanganui Conservancy. The recent translocation to Pouto Peninsula in Northland was successful, resulting in a wild population. This species is probably extinct in previously recorded locations (Mangamuka and South Hokianga Head). Also in Tasmania.

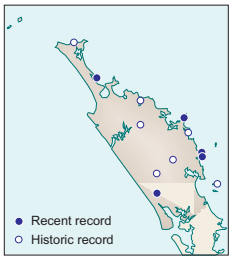
Threats

Habitat destruction and weed competition (particularly pasture grasses and clovers) are the main threats to this low growing species. Nitrification from fertilisers and cattle and compaction (cattle) and disturbance are also attributed. Browse from a plume moth caterpillar, has also been recorded.

Sebaea ovata. Photos: (top) C.C.Ogle; (middle) A.J.Townsend; (bottom) L.J. Forester.

Senecio scaberulus

fireweed



Status
Nationally Endangered

Description
An upright, grey-green coloured rosette forming herb. Rosette and lower stem leaves are narrowly elliptic, deeply toothed and covered with soft, jointed hairs, which are longer on the lower surface of the leaves. The leaves have a distinctive velvety texture. Upper stem leaves are smaller, usually lance-shaped, and also deeply toothed or shallowly lobed. Flowers are yellow daisies that lack petals. Flowering occurs from October to February. Seeds are cigar-shaped achenes which are usually evenly covered with short hairs. This is the most reliable way to identify the species but requires the use of a high-powered hand lens or microscope.

Similar species
Senecio hispidulus is similar but usually larger, and its leaves are covered with short white hairs that have a rasp-like texture when brushed. It also has a more crowded inflorescence and slightly smaller achenes with hairs in distinct rows. If you suspect you have found *S. scaberulus* collect a small flowering or fruiting piece and have it checked by a botanist.

Habitat
Shaded sites amongst short grasses under coastal pohutukawa forest or short scrub, on rock outcrops, cliffs or banks near the sea, often occurring with *Senecio hispidulus.* Also found at inland sites, e.g., on bare lava and amongst forest on bluffs and in canopy gaps.

Distribution
Endemic to North, South and Chatham Islands. The three historic South Island records all come from the vicinity of ports, and are probably accidental introductions from the North Island, possibly Auckland region, where it was once very common on the lava fields abutting the historic port of that city. Now very local in Northland and south Auckland.

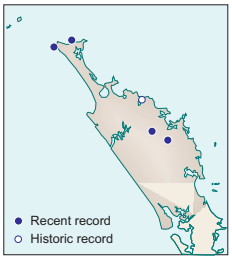
Threats

Habitat loss through coastal development (subdivisions), hybridisation with *S. bispidulus* and competition with introduced coastal weeds are the main threats.

Senecio scaberulus.
Photo: G.M. Crowcroft.

Sicyos australis sensu lato

mawhai



At least two distinct species appear to exist in this taxon: *S. australis* sensu stricto and *S.* aff. *australis* (AK 252822; New Zealand).

Status

Sicyos australis sensu stricto – Nationally Critical;
S. aff. *australis* – Serious Decline.

Description

A sprawling, cucumber-like vine with small (8–12 mm diameter) prickly fruit. Stems are up to 4 m or more long, with long, branched, spirally coiled tendrils. Leaves have toothed edges and five prominently pointed lobes. The hairs on the stems and leaf stalks are bristle-like and stick out from the stem or stalk. Plants bear either male or female flowers. Flowers are small, white or greenish, up to 10 mm diameter and on short stalks; males in spikes of more than 10 flowers and females in clusters of up to 14. Fruits are 8–12 mm long, oval and compressed in shape, covered with sharply barbed, spiny bristles which it is best to avoid contact with. Flowering occurs in January-February.
Sicyos aff. *australis* is distinguished by having leaves with 5–7 rounded lobes, finer marginal teeth; hairs on the stems and leaf stalks are curved downwards (sometimes abruptly) and shaggy in appearance; stems are slightly thicker; flowers that are slightly larger and can number up to 20. Fruiting occurs in January and there are differences in the chromosome number (Delmiglio & Pearson 2002).

Similar species

None

Habitat

Coastal scrub.

Distribution

Sicyos australis sensu stricto occurs on mainland New Zealand from Northland to the Bay of Plenty.
Sicyos aff. *australis* occurs on islands from the Three Kings to Mayor Island.

Plants present on Raoul Island may represent a third taxon. Close relatives occur in eastern Australia and formerly Lord Howe and Norfolk Islands.

Threats

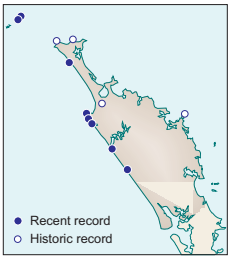
Introduced pests and loss of habitat through coastal development are the most likely cause of decline. Plants are susceptible to cucumber mosaic virus and other diseases that affect members of the pumpkin family. Because male and female flowers occur on separate plants, small population sizes can create reproductive problems (e.g., failure to attract pollinators, inbreeding depression, lack of male or female plants in the population).

Notes

Avoid contact with the prickly fruits.

Sicyos aff. *australis*. Photos: (right) P. Cashmore; (below left, right) C. Delmigio.

Sonchus kirkii



Status

Gradual Decline

Description

An upright simple or branching puha-like herb usually to 0.6 m tall. Leaves are thick, dull, hairless and a waxy, bluish green colour. Lower stem and rosette leaves, are deeply toothed or lobed along their edges while upper stem leaves are narrowly lance-shaped to narrowly oblong. Flowers can be from just a few to many and are dandelion-like, yellow daisies to 20 mm diameter. Flowering occurs from August to April and fruiting from September to June.

Similar species

None, though young plants and seedlings can look like introduced sow thistle (*Sonchus oleraceus* and *S. asper*) or like lettuce.

Habitat

Wet, coastal cliffs and talus, rarely on sand or in saltmarshes.

Distribution

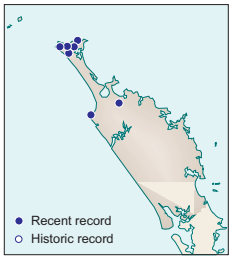
Endemic to New Zealand, occurring on the coast throughout the North, South, Stewart and Chatham Islands.

Threats

Habitat loss through coastal development and competition with introduced coastal weeds are the main threats.

Sonch kirkii.
Photos: (left) L.J. Forester; (centre) G.M. Crowcroft; (right) L.J. Forester.

Thelymitra sanscilia



Status

Nationally Critical

Description

A relatively large sun orchid to about 0.4 m tall. It has a single, strap-like leaf which is V-shaped in cross section. Flowers have six white to mauve, sharply pointed petals and a central column which has few or no hair tufts and sickle-shaped arms. The tip of the column is hooded and sometimes deeply notched. Flowering occurs in October. (Abridged from St George et al. 1996.)

Similar species

Most other *Thelymitra* species either have two tufts of hairs at the tip of the column, or spotted or striped petals. *Thelymitra carnea* is also hairless but has bright pink to yellow flowers and no hood. (St George et al. 1996; Jones et al. 1999.)

Habitat

Open areas amongst kanuka scrub.

Thelymitra sanscilia. Photo: I. St George.

Distribution

Endemic to Northland, occurring in hill country east of Te Paki (Scanlen, pers. comm. 2003), at Ahipara and near Mangonui.

Threats

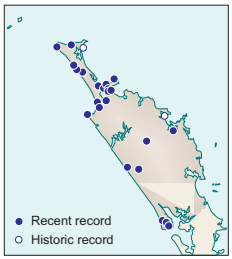
Habitat loss through weed invasion (*Hakea sericea*) and natural succession (Scanlen, pers. comm. 2003) and over-collection from orchid enthusiasts.

Comment

Locations of this orchid should be kept confidential as there is a risk that it may be taken by orchid collectors.

Thelypteris confluens

swamp fern



Status
Gradual Decline

Description
A fern with long, creeping, scaly stems. Fronds are 100–500 mm long, stiffly erect, with slightly smaller fertile fronds. Frond stems are yellow-brown and bear a few scales; the frond leaf is narrowly elliptic, 150–350 × 50–130 mm, pale green, scaly and hairy. Frond leaflets are in 15–20 pairs, each about 70–120 mm, deeply divided with the basal leaflet about as long as the middle ones. Fertile leaflets are slightly shorter. Sori are round, in one row either side of midrib, away from margins; the sori flaps are kidney-shaped and bear hairs with glands at their tips.

Similar species
None

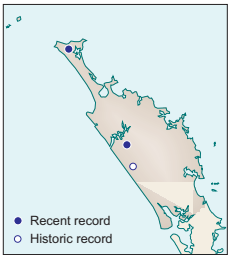
Habitat
Open swampy areas amongst sedges, reeds and grass and damp or light shrubland.

Distribution
Endemic to the northern North Island from North Cape to the Waitakere Ranges and the Bay of Plenty. In Northland major populations occur at Pouto.

Threats
Becoming increasingly rare as wetlands are drained.

Thelypteris confluens. Photo: P. Anderson.

Thismia rodwayi



Status
Sparse

Description
A small, parasitic, red or pinkish-white plant that mostly consists of a branching, underground stem without any green parts. Flowers are lantern-like, orange to red, approximately 15 mm long and appear amongst leaf litter from December. Fruit are fleshy and contain dark brown seeds.

Similar species
None

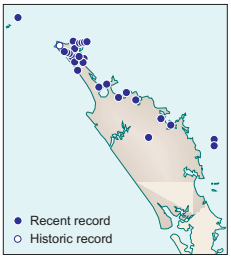
Habitat
Forest; *T. rodwayi* has been found in tawa, kauri, kahikatea and matai forest, and is associated with a saprophytic fungus (Campbell 1968).

Distribution
Endemic to the northern North Island, from Mt. Ruapehu northwards. Also in Tasmania and Victoria.

Threats
Unknown. More observations are needed to gain a better understanding of this tiny elusive plant.

Thismia rodwayi.
Photo: J. Bedford.

Todea barbara



Status

Nationally Endangered

Description

A fern with a trunk to 1 m tall. Frond stalks 150–600 mm long, yellow-brown with ear-like lobes at base. Fond leaves are egg shaped or elliptic, 250–650 × 120–350 mm, tough, leathery, yellow-green and scented like hay when old. Frond leaflets are narrowly oblong 20–60 × 4–10 mm, pointed at the tips and toothed along the edges. The leathery fronds with sori completely covering the undersides of the lower pinna and yellow-green colour are very characteristic.

Similar species

None

Habitat

Coastal and lowland open, sunny situations amongst scrub, gumlands, gullies, swamps or pohutukawa forest.

Todea barbara. Photo: L.J. Forester.

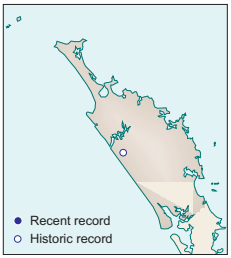
Distribution

Occurs in the northern North Island. Locally common on the east coast of Northland from Te Paki to Waitangi; also on the Three Kings and Poor Knights Islands. Also in Tasmania, Australia and South Africa.

Threats

Competition from weeds and loss of habitat through conversion to forestry or subdivision.

Trilepidea adamsii



Status

Extinct

Description

A shrubby, hemi-parasitic mistletoe up to 1 m in diameter. Parasitic on mamangi (*Coprosma arborea*), wharangi (*Melicope ternata*) and mapou (*Myrsine australis*). Leaves opposite, thick and fleshy, dark green, broadly elliptic or diamond-shaped, with paler green or reddish undersides. The leaf blade is 30–80 × 10–40 mm with a stout, winged stalk up 5 mm long. Flowers are 30–40 mm long, borne in clusters of 2–4 in the leaf axils and appear from September to November. Flowers are tubular near their base, swollen in the middle with four recurved lobes at their tip; colour is greenish-yellow with red stripes soon fading to a uniform pinkish-red. Fruits are red and fleshy, 8–9 mm long.

Similar species

Ileostylus micranthus looks similar but has tiny, yellow-green flowers, a 'bent' style and yellow fruit. *Tupeia antarctica* also has tiny, green-yellow flowers, but its fruit are white or pink. *Peraxilla tetrapetala* has small diamond-shaped leaves with 'blisters', red flowers and yellow fruit. *Peraxilla colensoi* has scarlet flowers, yellow fruit and only occurs on beech trees.

Habitat

Semi-parasitic on mamangi, mapou and wharangi probably on lowland forest margins and open, seral shrubland.

Distribution

Presumed extinct. Endemic to the northern North Island from the Kaipara–Waipoua area to the Waikato and Coromandel Peninsula. In Northland, plants were known from the upper Hoteo River on the Kaipara, the Waipoua River and from near Wellsford. *Trilepidea adamsii* was last recorded in 1954 from Cambridge.

Threats

Habitat loss, over-collecting and possible possum browse have all been proposed as contributing to the extinction of this species.

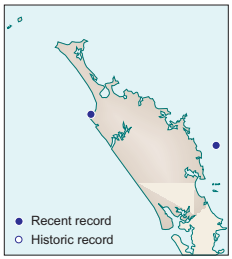
Comments

Although classified as Extinct, we have included *Trilepidea* in this guide in the hope that, in the unlikely event that plants are still in existence, they may be rediscovered.

Trilepidea adamsii. Painting by F. Osborne, courtesy Auckland War Memorial Museum.

Tupeia antarctica

pirita



Status
Gradual Decline

Description
A semi-parasitic shrubby mistletoe to 1 m diameter. Leaves are oppositely arranged, variable in shape, 10–70 × 10–40 mm, slightly fleshy and bright green. Stems are always rounded in cross section near the tips, have pale bark, and downy or hairy branchlets. Flowers are tiny, greenish-yellow and appear from October to December. Fruit are fleshy and white or pink ellipsoid drupes, 5–7 mm diameter, which appear in March.

Tupeia antarctica.
Photos: (top) C. Ecroyd; (bottom) C.Jones.

Similar species
Peraxilla colensoi, *P. tetrapetala* and *Trilepidea adamsii* all have colourful flowers. *Ileostylus micranthus* has tiny, yellow-green flowers, a 'bent' style, yellow fruit and young stems that are squarish in cross-section and multiple attachments to its host. All these species are hairless.

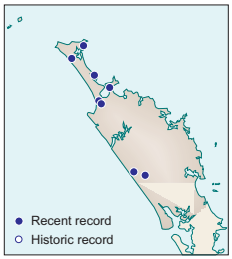
Habitat
Forest or scrub, where it is parasitic on a wide range of hosts including tarata, karo, *Coprosma* spp., putaputaweta, fivefinger, white maire and native broom.

Distribution
Endemic to the North and South Islands. In Northland, recently recorded from Poor Knights Islands and Ahipara.

Threats
Possum browse is the primary threat to this species (Sweetapple et al. 2002), Insect browse, habitat destruction, loss of pollinating and seed-dispersing native birds and fungal disease also threaten this species.

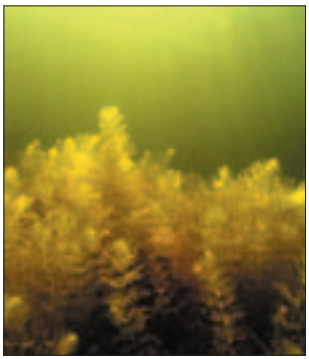
Utricularia australis

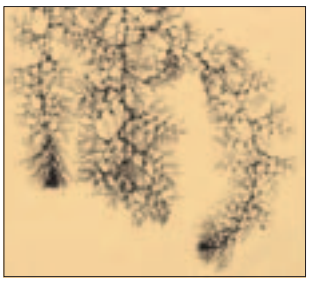
yellow bladderwort



Status
Gradual Decline

Description
A small, hairless, aquatic herb with finely divided, feathery leaves and bladders that trap small invertebrates. It is an unattached plant that is free-floating below the water surface. Stems are up to 400 mm long. Leaves are numerous, hair-like, 20–40 mm long. Bladders are attached to the leaf bases, numerous, 1–3 mm in diameter. Yellow or orange-yellow flowers with an orange 'eye' are borne in clusters of 3–8 on long stems. Flowers appear from January to March. The seed capsule is round.





Utricularia australis. Photos: (top) J. Clayton; (bottom) A.J. Townsend..

Similar species
Utricularia lateriflora is found in northern bogs and gumlands, often on peaty surfaces. It is a terrestrial species with green, strap-like leaves, microscopic bladders and pale lilac-lavender flowers. *Utricularia gibba* is an introduced species that has smaller, less divided floating stems and forms massive floating mats. It is usually always flowering whereas *U. australis* hardly ever flowers.

Habitat
Peat lakes, peaty pools and slow moving streams which drain peat bogs.

Distribution
Scattered from Northland to Westland. In Northland it is known from Te Paki, Kaitaia, Houhora and Maitahi (near Dargaville).

Threats
Modification and drainage of habitats, competition from the introduced bladderwort *U. gibba* which is spreading into Northland from Auckland, eutrophication from fertiliser runoff.

Comment
This species has been known as *U. protrusa*.

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Appendix 1

THREATENED VASCULAR PLANTS IN NORTHLAND CONSERVANCY

(From Hitchmough 2002; Qualifiers shown in superscript are explained in Appendix 2.)

Extinct

Trilepidea adamsii (Cheeseman)

Acutely Threatened

Nationally Critical

Alectryon excelsus subsp. *grandis* [RC HI OL]
Anzybas carsei [CD HI RF EF OL]
Atriplex hollowayi [CD HI EF]
Calochilus aff. *herbaceus* (CHR 65825; Kaimaumau) [SO EF]
Centipeda minima subsp. *minima* [SO EF]
Christella dentata sensu stricto [CD SO RF OL]
Clianthus puniceus [CD HI OL]
Coprosma spathulata subsp. *hikuruana* [CD HI RF OL]
Crassula hunua [HI]
Davallia tasmanii subsp. cristata [CD RF OL]
Hebe aff. *bishopiana* (AK 202263; Hikurangi Swamp) [CD HI OL]
Isoetes aff. *kirkii* (CHR 247118A; Lake Omapere) [OL]
Linguella puberula [HI]
Mazus novaezeelandiae subsp. *impolitus* f. *hirtus* Heenan [CD HI]
Metrosideros bartlettii
Pennantia baylisiana [CD RF OL]
Pterostylis micromega [CD HI EF]
Sebaea ovata (reintroduced)
Sicyos australis sensu stricto [CD TO]
Tecomanthe speciosa [CD RF OL]
Thelymitra (a) (WELT 79140; Ahipara) [CD DP HI EF]
Thelymitra sanscilia [DP EF]
Trichomanes (AK 252983; Kerikeri) [DP OL]
Uncinia perplexa [CD HI OL]

Nationally Endangered

Ackama nubicola [CD, HI, RF, OL]
Amphibromus fluitans [EF]
Asplenium pauperequitum [CD, HI, EF]

Carmichaelia williamsii
Coprosma waima [CD]
Hebe speciosa [CD, RF]
Hibiscus aff. *trionum* (AK 218967; North Island)
Juncus holoschoenus var. *holoschoenus* [DP, SO]
Lepidium oleraceum sensu stricto [CD, HI, EF]
Olearia crebra [CD]
Ophioglossum petiolatum [CD, SO, HI]
Phylloglossum drummondii [SO, HI, EF]
Pittosporum ellipticum subsp. *serpentinum* [CD, HI, RF]
Pomaderris phylicifolia [SO]
Rorippa divaricata [CD, EF]
Senecio scaberulus [HI, EF]
Todea barbara

Nationally Vulnerable

Hebe perbella
Hibiscus diversifolius [SO]
Lycopodiella serpentina [TO]

Chronically Threatened

Serious decline

Brachyglottis kirkii var. *kirkii*
Carex litorosa [DP, HI]
Dactylanthus taylorii [CD, RF]
Daucus glochidiatus [DP, SO]
Euphorbia glauca [EF]
Hydatella inconspicua [EF]
Kunzea ericoides var. *linearis*
Marattia salicina [CD, SO]
Mazus novaezeelandiae subsp. *impolitus* f. *impolitus* [CD, HI]
Pimelea tomentosa sensu stricto [EF]
Pittosporum kirkii [CD]
Plumatochilos tasmanica [SO, EF]
Sicyos aff. *australis* [HI]

Gradual Decline

Anogramma leptophylla [TO, EF]
Austrofestuca littoralis [CD, SO, HI]
Christella aff. *dentata* (b) (AK 126902; "thermal") [HI]
Colensoa physaloides
Cyclosorus interruptus [SO]

Desmoschoenus spiralis [CD, EF]
Doodia squarrosa
Drosera pygmaea [SO]
Eleocharis neozelandica [EF]
Gratiola nana [SO]
Kunzea aff. *ericoides* (b) (AK ; "sand")
Leptinella rotundata
Mida salicifolia [RF]
Myriophyllum robustum
Pellaea falcata [SO]
Peraxilla tetrapetala [CD, HI]
Pimelea arenaria sensu stricto [RF]
Raukaua edgerleyi [RF]
Teucridium parvifolium [CD]
Thelypteris confluens [CD, SO]
Tupeia antarctica [CD, HI]
Utricularia delicatula
Utricularia australis [HI]

At Risk

Sparse

Adelopetalum tuberculatum
Anemanthele lessoniana [DP]
Anzybas rotundifolius
Blechnum norfolkianum [TO]
Botrychium australe [DP, SO]
Calochilus paludosus [SO, EF]
Calystegia marginata [SO, EF]
Centrolepis strigosa [SO, EF]
Corunastylis pumilum [SO, EF]
Dianella aff. *nigra* (b) (CHR ; Kopouatai)
Doodia mollis
Fuchsia procumbens
Grammitis rawlingsii
Halocarpus kirkii [RF]
Hebe aff. *diosmifolia* (AK ; "summer flowering")
Korthalsella salicornioides [EF]
Lagenifera lanata
Leptinella tenella [DP]
Microlaena carsei

Mimulus repens [DP, SO]
Peperomia aff. *urvilleana* (AK 206056; "purple vein") [DP]
Peperomia tetraphylla [SO]
Pittosporum ellipticum
Pittosporum pimeleoides subsp. *pimeleoides*
Pseudopanax ferox [CD, RF]
Senecio marotiri
Sticherus flabellatus [SO]
Thelymitra tholiformis
Thismia rodwayi [DP]
Tmesipteris sigmatifolia
Trichomanes strictum

Range Restricted

Baumea complanata [HI]
Brachyglottis arborescens [OL]
Brachyglottis myrianthos
Carex elingamita [RC, OL]
Carex ophiolithica [OL]
Cassinia amoena [OL]
Celmisia adamsii var. *rugulosa* [OL]
Chionochloa bromoides
Coprosma aff. *neglecta* (AK ; Whangaroa)
Coprosma obconica subsp. *distantia* [CD, OL]
Coprosma neglecta
Cordyline kaspar
Cyathea kermadecensis [RC, OL]
Dianella aff. *nigra* (a) (CHR ; Hauturu)
Elingamita johnsonii [OL]
Geniostoma ligustrifolium var. *crassum* [OL]
Geniostoma ligustrifolium var. *maius*
Haloragis erecta subsp. *cartilaginea* [OL]
Hebe adamsii [OL]
Hebe aff. *ligustrifolia* (AK 207101; Surville Cliffs)
Hebe brevifolia [OL]
Hebe insularis
Helichrysum aff. *aggregatum* (AK 54473; Surville Cliffs) [CD, OL]
Hoheria equitum
Ipomoea pes-caprae ssp. *brasiliensis* [SO]
Kirkianella novae-zelandiae f. *glauca* [ST, HI]
Leucopogon aff. *parviflorus* (AK 130914; Surville Cliffs) [OL]

Macropiper excelsum ssp. *peltatum* f. *peltatum*
Macropiper excelsum subsp. *peltatum* f. *delangei* [OL]
Macropiper melchior [OL]
Melicytus ramiflorus ssp. (a) (AK 207155, Three Kings)
Meryta sinclairii
Myosotis matthewsii [DP, EF]
Myrsine aff. *divaricata* (AK 228797 ; Poor Knights)
Myrsine oliveri [RC, OL]
Parsonsia praeruptis [CD, OL]
Petalochilus alatus [DP, TO]
Phyllocladus aff. *trichomanoides* (AK 138493; Surville Cliffs) [OL]
Pimelea (b) (AK ; Mt Manaia) [ST]
Pimelea aff. *tomentosa* (b) (CHR ; Surville cliffs) [OL]
Pimelea aff. *tomentosa* (c) (CHR ; Three Kings) [OL]
Pittosporum fairchildii [OL]
Pittosporum pimeleoides subsp. *maius* [CD, OL]
Pomaderris paniculosa subsp. *novae-zelandiae*
Pseudopanax aff. *lessonii* (CHR ; Surville cliffs) [CD]
Pseudopanax gilliesii
Stellaria aff. *parviflora* (AK ; Poor Knights)
Streblus smithii
Thelymitra (b) (CHR ; "darkie") [EF]
Thelymitra (c) (CHR ; "rough leaf") [EF]
Xeronema callistemon f. *bracteosa* [OL]
Xeronema callistemon f. *callistemon*

Data Deficient

Centipeda aotearoana
Cortaderia aff. *fulvida* (CHR 477325; Puketi)
Epilobium hirtigerum [DP, SO, HI]
Hebe acutiflora (Benth.) Cockayne (AK 107720)
Hebe aff. *brevifolia* (AK 235669; Surville Cliffs) [OL]
Libertia aff. *ixioides* (a) (CHR 469712; "large capsule")
Libertia aff. *ixioides* (b) (CHR ; Omaha)
Nematoceras aff. *rivularis* (CHR 518025; Kaimai)
Nematoceras aff. *rivularis* (CHR 518313; "whiskers")
Nematoceras rivularis
Olearia angulata
Pimelea (f) (AK 189577; Maunganui Bluff) [OL]
Spiranthes aff. *novae-zelandiae* (CHR 518297; Motutangi) [HI, EF]

Appendix 2

QUALIFIERS

These provide additional information about the nature of the threat, conservation management and global status of the listed taxon. The list of the qualifiers and their meanings is from Molloy et al. 2002.

QUALIFIER	STANDS FOR	DEFINITION
EW	Extinct in the wild	Exists only in cultivation or in captivity
CD	Conservation dependent	Likely to move to a higher threat category if current management ceases
DP	Data poor	Confidence in the listing is low due to the poor data available for assessment
RC	Recovering	Total population showing a sustained recovery
ST	Stable	Total population stable
SO	Secure overseas	Secure in other parts of its natural range outside New Zealand
TO	Threatened overseas	Threatened in those parts of its range outside New Zealand
HI	Human induced	Present distribution is a result of direct or indirect human activity
RF	Recruitment failure	Current population may appear stable but the age structure is such that catastrophic declines are likely in the future
EF	Extreme fluctuations	Extreme unnatural population fluctuations, or natural fluctuations overlaying human-induced declines, that increase the threat or extinction
OL	One location	

Appendix 3

COMMON NAMES USED IN THE TEXT AND CORRESPONDING SCIENTIFIC NAMES

beech	*Nothofagus* spp.
centaury	*Centaurium erythraea*
fireweeds	*Senecio* spp.
fivefinger	*Pseudopanax arboreus*
introduced broom	*Cytisus scoparius*
karo	*Pittosporum crassifolium*
lancewood	*Pseudopanax crassifolius*
mamangi	*Coprosma arborea*
mapou	*Myrsine australis*
marram grass	*Ammophila arenaria*
Mexican devil	*Ageratina adenophora*
mistflower	*Ageratina riparia*
native broom	*Carmichaelia* spp.
ngaio	*Myoporum laetum*
pampas grasses	*Cortaderia jubata*; *Cortaderia selloana*
pate	*Schefflera digitata*
pohutukawa	*Metrosideros excelsa*
putaputaweta	*Carpodetus serratus*
rohutu	*Lophomyrtus obcordata*
tarata	*Pittosporum eugenioides*
towai	*Weinmannia silvicola*
tree lupin	*Lupinus arboreus*
weeping mapou	*Myrsine divaricata*
wharangi	*Melicope ternata*
white maire	*Nestegis cunninghamii*
yellow wort	*Blackstonia perfoliata*

Appendix 4

GLOSSARY OF TERMS

aff.	With affinities (related) to
capsule	Dry fruit that opens when mature
divaricate	Spreading at a very wide angle; used especially of shrubs with stiff, interlaced stems
endemic	Native only to a particular country or region and not found elsewhere
frond	Leaf, used especially of ferns
semi-parasitic	Plant attached to and deriving part of its nourishment from another living plant
herb	Plant which is not woody
indigenous	Native to a particular area, not introduced
inflorescence	General term for a collection of flowering parts, or for the arrangement of the flowers
labellum	Lip; in an orchid flower a well differentiated petal, that usually lies in front of the flower
leaf axil	Upper angle between the stem and the leaf stalk
leaf blade	Expanded part of the leaf
leaf sheath	Tubular structure that surrounds the base of the stem
node	Place on a stem marked by the attachment of a leaf (or leaves)
parasite	Plant attached to and deriving nourishment from another plant
perennial	With a life-span of more than 2 years
petiole	Stalk of a leaf
pinna	Segment of a divided leaf blade
rhizome	Underground stem
sori	Cluster of capsules containing spores on the margin or undersides of the leaves, usually having a characteristic shape
spore	Single-celled reproductive unit (equivalent of a seed in flowering plants)
stamen	Pollen-bearing organ
sterile	Not producing seed, spores, or pollen capable of germination

stigma	Part of the flower that is receptive to pollen
style	Elongated part of the flower that bears the stigma
subsp.	Subspecies