Oruawairua Invasive Flora

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Made on the New Zealand Plant Conservation Network website: www.nzpcn.org.nz

Oruawairua is a highly valuable pest-free island in the Marlborough Sounds which is home to several threatened species of birds, invertebrates and native flora.
The island is threatened by incursions of weed and mammal pest species, which have the potential to drastically change the ecosystem, and hamper regeneration. For weed species, this risk includes visitation to the island by both the public and our own workers at DOC. We are considered high-risk as we access areas of the island not used by the public, and we often bring gear to the island which can harbour invasive seeds. Being in close proximity to the mainland, it is also at risk from wind-blown seed, often from the prevailing north-west winds on its western and northern flanks. The eastern side is well forested and therefore presents less of a risk, as invaders have trouble penetrating the dark under-storey.
The island does not currently (AUG 22) have a weed management plan, though some information is included in the island's biosecurity management plan. It is clear that for the protection of the island's ecosystem, a thorough delimitation of at-risk areas for weed species is vital. From there, a weed management plan can be drawn up to guide weed work on the island for local rangers. This should ensure better ongoing manaakitanga of the moutere.

Acacia dealbata

Acacia dealbata. Photographer: John Smith-Dodsworth

COMMON NAME
silver wattle

FAMILY
Fabaceae

AUTHORITY
Acacia dealbata Link

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
ACADEA

HABITAT
A plant of riverbed habitats and waste places. Prefers relatively high fertility and light.

FEATURES
Shrub to large tree with ribbed twigs. Leaves 2-pinnate, alternate and glaucous. Inflorescence consists of numerous many-flowered, medium yellow, globose heads arranged in axillary racemes nearly equal to the leaves. Pod glabrous, usually straight, up to 100 x 12 mm.

SIMILAR TAXA
Can easily be distinguished from all other bipinnate naturalised wattles by the large glaucous leaves.

Acacia dealbata. Photographer: John Smith-Dodsworth

FLOWERING
July, August, September

FLOWER COLOURS
Yellow

YEAR NATURALISED
1870

ORIGIN
E. Australia

ETYMOLOGY
acacia: Derived from Greek ‘akazo’ to sharpen, meaning point; spine or thorn.
dealbata: Whitened

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/acacia-dealbata/

Pinus radiata

COMMON NAME
Monterey pine

FAMILY
Pinaceae

AUTHORITY
Pinus radiata D.Don

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Trees & Shrubs - Gymnosperms

NVS CODE
PINRAD

HABITAT
Terrestrial. A plant of coastal and lowland habitats (Timmins & MacKenzie 1995). A plant of low fertility sites (Timmins & MacKenzie 1995). The plant occurs in scrub and forest margin, shrubland, short tussockland, sand dunes, cliffs and bluff communities (Timmins & MacKenzie 1995).

FEATURES
Medium to large tree (40-60 m in cultivation). Needles are slender, about 15 cm long, deep or dark green and held in bunches of 3. Male cones are clustered at ends of new shoots in spring, light-brown to pinkish. Female cones are 12 by 8 cm, brown, in clusters of up to 6 and backwards pointing.

SIMILAR TAXA
Dark green, relatively short (15 cm) stout (1.2-2 mm thick) needles in clusters of 3, rigid and spreading in different directions. New shoots usually brown. large persistent egg-shaped branch cones without spikes, held in clusters of 1-6.

FLOWER COLOURS
No flowers

YEAR NATURALISED
1904

ORIGIN
Coastal California, N. America

Pinus radiata. Photographer: John Smith-Dodsworth

Pinus radiata. Photographer: John Smith-Dodsworth

Reason For Introduction
Forestry
Life Cycle Comments
Perennial. Seeds germinate in Spring (Timmins & MacKenzie 1995).
Seed
Seed is produced annually (Timmins & MacKenzie 1995). Seed known to remain viable at 4 years (Timmins & MacKenzie 1995).
Dispersal
Seed is dispersed by wind (Timmins & MacKenzie 1995).
Tolerances
The plant is tolerant to drought and intolerant to shade and frost (Timmins & MacKenzie 1995). Physical damage and grazing result in regrowth if green foliage remains intact (Timmins & MacKenzie 1995). Responds readily after fire, if a seed source is adjacent (Timmins & MacKenzie 1995). Requires very low to medium soil fertility (Atkinson 1997).

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/pinus-radiata/

Iris foetidissima

Iris foetidissima. Photographer: John Smith-Dodsworth

Iris foetidissima. Photographer: Richard Hursthouse

COMMON NAME
stinking iris

FAMILY
Iridaceae

AUTHORITY
Iris foetidissima L.

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Herbs - Monocots

NVS CODE
IRIFOE

HABITAT
Terrestrial. A plant of coastal and lowland habitats (Timmins & MacKenzie 1995). A plant of low forest, scrub and forest margin communities, also found in waste places (Timmins & MacKenzie 1995).

FEATURES
Clump-forming perennial to 80 cm. Rhizomes red-brown, up to 15 mm diameter. Leaves leathery, dark greed, broad, sword shaped, 15-25 mm x 60-100 cm, foul smelling when crushed. Flowering stem 60-80 cm, erect. Flowers up to 10 cm diameter, dull yellow with greenish-brown markings (Occasionally brownish-purple). Seed capsule green, 3-sided, 5 cm long, splitting issuing many scarlet round seeds, 5 mm diameter.

SIMILAR TAXA
The leaves have an unpleasant odour when crushed and this is useful in separating I. foetidissima from other Iris species. It can also be recognised by the drab flowers and conspicuous scarlet seeds exposed in the persistent capsule.

FLOWERING
November, December

FLOWER COLOURS
Brown, Yellow

LIFE CYCLE
Perennial, reproduces by seed and vegetativeily through rhizomatous resprouting (Timmins & MacKenzie 1995). Seed is dispersed by birds and water(Timmins & MacKenzie 1995).

YEAR NATURALISED
1945

ORIGIN
Europe & N Afr

REASON FOR INTRODUCTION
Ornamental

TOLERANCES
The plant prefers high rainfall and is highly tolerant of shade (Timmins & MacKenzie 1995). After grazing the plant resprouts from the rhizome (Timmins & MacKenzie 1995). Requires medium soil fertility (Atkinson 1997).

ETYMOLOGY

iris: From the Greek iris ‘rainbow’, presumably in reference to the many colours of the flowers (Johnson and Smith, 1986).
foetidissima: Vile smelling

POISONOUS PLANT

The orange seed (which can be seen when the fruits open) are poisonous.

REFERENCES AND FURTHER READING

Johnson, A. T. and Smith, H. A (1986). Plant Names Simplified: Their pronunciation, derivation and meaning. Landsman Bookshop Ltd: Buckenhill, UK.

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/iris-foetidissima/

Crocosmia ×crocosmiiflora

COMMON NAME
montbretia

FAMILY
Iridaceae

AUTHORITY
Crocosmia ×crocosmiiflora (G.Nicholson) N.E.Br.

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Herbs - Monocots

HABITAT
Terrestrial. Prefers moist soils (Fromont and King, 1992). Streams, forest margins, alluvial plains, roadsides, gravel pits, wasteland, slips, light gaps, shrublands (Fromont and King, 1992).

FEATURES
Stiff, leafy, clump-forming, evergreen or summergreen perennial with underground rhizomes. Corms flattened, 35 x 15 mm, fibrous cover, light brown, in 3+ clusters at stem base. Leaves all arising from base, erect to curving above, 90 x 2 cm, firm, sword-shaped, mid-vein conspicuous. Flowerhead tall, zig-zag shaped. Flowers solitary, 6 petals, 3 cm long, orange to crimson, Jan-Feb. Seed capsule 3-sided, 5 mm long; with reddish-brown, flat-triangular, 3 mm seeds.

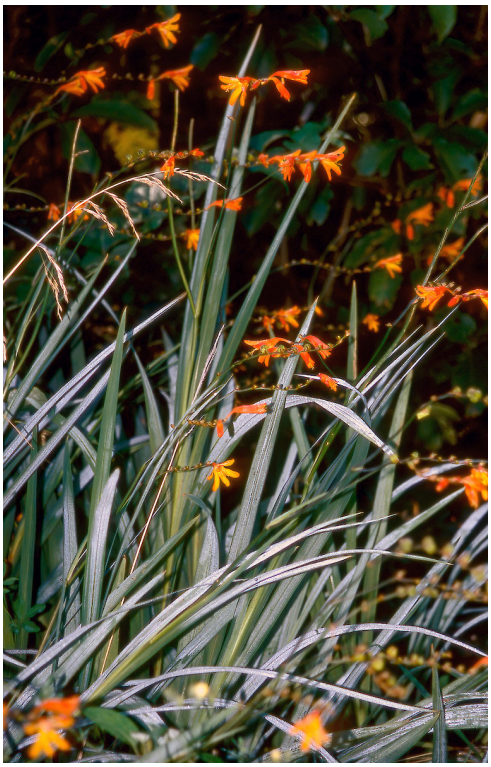
SIMILAR TAXA
Similar to several other monocot herbs with orange flowers. Tends to have a droopy habit and has flowers arranged in a single plane. Lacks the Bulbils of Watsonia bulbilifera. Chasmanthe floribunda is also similar but leaves and stems are more robust.

FLOWERING
January, February

FLOWER COLOURS
Orange, Red/Pink

YEAR NATURALISED
1935

ORIGIN
trop S America



Upper Hutt. Photographer: Jeremy Rolfe

Crocosmia x crocosmiiflora. Photographer: John Smith-Dodsworth

Reason For Introduction
Ornamental
Life Cycle Comments
Perennial; produces strap-like leaves in winter which die down in the summer months (Fromont and King, 1992).
Reproduction
Reproduces by two means: produces small cormils on the flower head and sends out creeping rhizomes to extend the colony (Fromont and King, 1992). New cormils are also produced on the original corms which are able to be transported by any soil disturbance (Fromont and King, 1992).
Seed
Produces no seed (Fromont and King, 1992).
Dispersal
Soil movement (road graders, fill), vegetation dumping, water movement.
Tolerances
Moderate to highly tolerant of shade; tolerant of frost and moderately dry conditions (Fromont and King, 1992).

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/crocosmia-crocosmiiflora/

Sambucus nigra

COMMON NAME
elder, elderflower, elderberry

FAMILY
Adoxaceae

AUTHORITY
Sambucus nigra L.

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
SAMNIG

HABITAT
Terrestrial. A plant of coastal and lowland habitats (Timmins & MacKenzie 1995). The plant occurs in scrub and forest margin and modified plant communities (Timmins & MacKenzie 1995).

FEATURES
Shrub or small tree to approx. 6m high. Stems grey, strongly lenticellate; vegetative shoots with thick white pith. Leaflets 5~7, dark purple when very young, soon green. Petiole to around 7cm long on flowering branches, mostly hairy. Petiolules hairy; lateral petiolules < 1cm long; terminal petiolule > 1cm long. Lamina of terminal leaflet 4.5~11 x 3.5~6cm, broad-elliptic to broad-ovate, glabrous, or hairy on veins beneath and on midrib above, serrate except towards base; apex acute to cuspidate. Lamina of lateral leaflets smaller and narrower. Infl. a large flat corymb, mostly 10~20cm across, glabrous or nearly so, with slender peduncles and pedicels which usu. become red or purple at fruiting, or occasionally remain green. Flowers foetid. Calyx .5mm long. Corolla white; lobes 2.5~3mm long, broad-elliptic. Stamens < corolla. Fruit 4~8.5mm diam., globose or subglobose, usu. shining black, occasionally green. Pyrenes approx. 3mm long, ovoid-oblong, rugose. (-Webb et. al., 1988)

SIMILAR TAXA
Elder is a shrub or small tree (Porteus 1993).

FLOWERING
November, December, January

FLOWER COLOURS
White

YEAR NATURALISED
1867

ORIGIN
Eur, W Asia, N Africa

ETYMOLOGY
nigra: Black

Sambucus nigra. Photographer: John Smith-Dodsworth

Sambucus nigra. Photographer: John Smith-Dodsworth

Reason For Introduction
Ornamental
Life Cycle Comments
Perennial.
Seed
Seed is produced (Timmins & MacKenzie 1995). Seeds are ‘short-lived’ in the seed bank (Atkinson 1997).
Dispersal
Seed is dispersed by birds (Timmins & MacKenzie, 1995; John Barkla, pers. comm.).
Tolerances
The plant is intolerant of shade (Timmins & MacKenzie 1995). Requires medium to high soil fertility (Atkinson 1997).
Poisonous plant:
The black berries can cause stomach upsets if eaten raw.

Foraging for elderflower
Click on the Radio New Zealand National logo to listen to This Way Up. Simon Morton interviews Johanna Knox about foraging for elderflower (duration: 12’15”)

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/sambucus-nigra/

Rosa rubiginosa

Sweet briar. Photographer: John Barkla

Sweet briar. Photographer: John Barkla

COMMON NAME
sweet brier

SYNONYMS
Rubus eglanteria

FAMILY
Rosaceae

AUTHORITY
Rosa rubiginosa L.

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
ROSRUB

HABITAT
Terrestrial. A plant of lowland habitats and sites with high fertility. A plant of tussock land, open sites, river flats, banks and terraces and stream sides. A plant of open, well-drained sites on roadsides, stabilised scree, steep open slopes and lakesides from s.l. to about 1000m a.s.l. The plant is often the dominant woody species, in habitats where it occurs and nearly always grows where other woody plants are rather sparse or absent. Areas at risk form the plant are pasture, low and disturbed forest, gullies and roadsides.

FEATURES
Deciduous, rather erect, sometimes dense shrub 1~3m high, often with suckers; stems mainly erect except in young plants, often with glandular hairs when young, otherwise glabrous; armature of few to numerous, unequal, flattened, moderately curved to strongly falcate prickles and pricklets, and sometimes acicles. Leaves with 2~3 pairs of leaflets; petiole 10~25mm long, finely tomentose and with glandular hairs and scattered pricklets; stipules completely adnate, generally clothed in very short glandular hairs, fringed with numerous small glandular hairs. Lamina of leaflets 12~40 x 8~28mm, broadly elliptic to elliptic-obovate, sometimes suborbicular, dull green and glabrous above, with numerous subsessile, pale glands beneath and with eglandular hairs on veins, sometimes hairs dense on midrib; margins generally 2-serrate, with glandular hairs; base rounded; apex acute or subacute, sometimes rounded. Flowers 1~3, single, 25~40mm diam.; pedicels usu. with many hispid glands. Sepals mainly persistent, lanceolate to ovate, long-acuminate or sometimes with an expanded apical tail, tomentose inside, densely clothed in stiff, spreading glandular hairs outside and on margins; outer sepals pinnatisect with a few linear to narrowly elliptic lobes. Petals 12~20mm long, obovate or cuneiform, pink or deep pink (esp. in bud) except for whitish base. Styles free, slightly exserted, densely hairy or villous. Fruit 12~22 x 10~18mm, broadly ovoid, ellipsoid, urceolate, ellipsoid-obovoid, subglobose or globose, occasionally narrow-ellipsoid, red or orange-red, usu. glabrous except at base, sometimes with dark red hispid glands. (-Webb et. al., 1988)

SIMILAR TAXA
A small bush with erect branches. The prickles are scattered and hooked. The prickles often have glandular hairs and bristles. The leaflets are glandular and aromatic giving off the scent of sweet briar (Hilgendorf 1926). A deciduous plant, often has suckers (Webb et. al. 1988). The 5-petalled flower is pink or deep pink and the hip is red or orange-red.

FLOWERING
November, December, January

FLOWER COLOURS
Red/Pink, White

FRUITING
February to May

LIFE CYCLE
Perennial. The plant is partially or completely self-fertilised and forms new colonies of shoots through subterranean stem suckers which arise from strong rhizomatous roots. A plant that is able to regrow from suckers. The plant has a high seed output which is dispersed by birds and domestic stock.

YEAR NATURALISED
1867

ORIGIN
Europe

REASON FOR INTRODUCTION
Ornamental

TOLERANCES
The plant is intolerant to shade and poor drainage. Fire temporarily reduces the vigour of the bush but encourages regrowth. An unpalatable shrub. Requires high soil fertility (Atkinson 1997).

ETYMOLOGY
rubiginosa: Rust-coloured

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/rosa-rubiginosa/

Clematis vitalba

COMMON NAME
old man's beard

FAMILY
Ranunculaceae

AUTHORITY
Clematis vitalba L.

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Lianes & Related Trailing Plants - Dicotyledons

NVS CODE
CLEVIT

HABITAT
Terrestrial. A plant of coastal and lowland areas. Plant grows in moderate to high fertile sites with medium to good drainage. The plant is light demanding. Plant grows in tall forest, low forest, scrub and shrubland. Occurs in reserves and forests with well-lit forest margins and wide tracks, waterways or clearings, riparian vegetation, exotic or native. The plant occurs in forest remnants.

FEATURES
Deciduous, climbing, layering, vine to 20 m tall. Stems very long, woody, with 6 prominent ribs (appear as furrows in older vines) and pale, easily rubbed-off bark. Leaves opposite, comprising 5 (rarely 3) widely spaced leaflets, falling in Autumn. Leaflets thin and papery, sparsely hairy, bluntly toothed or entire. Flowers 2-3 cm diam, creamy white, fragrant, Dec-May. Seeds grey, hairy, 2-3 mm long; with distinctive white-plumes, 3-4 cm long, in dense, fluffy clusters persisting over winter.

SIMILAR TAXA
Sometimes confused with native Clematis spp, especially C. paniculata. Note all native Clematis spp. are evergreen, have 3 leaflets (except the leafless C. afoliata), unfurrowed stems, and flower Aug-Dec. All exotic, wild species are deciduous and flower Dec-May (except the sparingly weedy, pink-flowered C. montana which flowers Oct- Dec). Other adventive species include C. flammula, which has 2-pinnate leaves, and the yellow flowered C. tangutica.

FLOWERING
December, January, February, March, April, May

FLOWER COLOURS
Cream, White

FRUITING
March-Oct

YEAR NATURALISED
1940

ORIGIN
Europe, SW Asia

Silverstream, Upper Hutt. Photographer: Jeremy Rolfe

Mangaroa Valley, Upper Hutt. Photographer: Jeremy Rolfe

REASON FOR INTRODUCTION
Ornamental

CONTROL TECHNIQUES
Technique 1 Biological control agents may be suitable to control the weed, especially if it is common but this is unlikely to eradicate the species and other techniques below will be needed. Contact your regional council for more information about whether biological control is an option for you.
Technique 2 Slash thick stems (all year round) at 1 m and ground level. This is to prevent stump resprouting and aerial roots attaching from hanging stems. Paint all cut stumps with glyphosate (250ml/L) or metsulfuron-methyl 600g/kg (5g /L) or Tordon Brushkiller (100ml/L) or triclopyr 600 EC (100ml/L) or triclopyr 120g/L (500ml/L) or Banvine (200ml/L) or Yates Woody Weedkiller (400ml/L) or picloram gel. Cut stems can be left in the air to die and you can dispose of cutaway segments at a refuse transfer station or by burning.
Technique 3 Spray in spring-autumn with glyphosate (20ml/L) or clopyralid (12.5ml/L).

TOLERANCES
Requires light for growth and sexual reproduction. Frost tolerant and resprouts rapidly after physical damage and grazing. May prefer relatively fertile soils. Is generally limited by cooler temperatures of higher altitude areas, low annual rainfall, low soil fertility and shade.

ETYMOLOGY
clematis: From the Greek klema ‘vine’, alluding to the vine-like habit of many species

LIFE CYCLE AND DISPERSAL
Perennial. Seed germinates in spring with adequate light. Seeds require pre-chilling to stimulate germination (West 1991). The plant reproduces vegetatively by means of rooting of stem fragments and attached stem. Roots arise from stem internodes rather than nodes (West 1991). Vines that touch the ground can root. Produces prolific amounts of seed. Massive seed production, initially with a high viability rate that rapidly declines, some seed is retained in the soil for up to 5 years. An estimated 17,650 viable seeds are produced for every 0.5 m sq. plant in the canopy (West 1991).
Seeds are dispersed by gravity, wind and water, humans, birds (incorporated into nests, etc) believed to spread on footwear. Style hairs assist dispersal by helping fruit detach from parent plant and enable the fruit to lodge into cracks in the soil.

REFERENCES AND FURTHER READING
West, C. 1991. Literature Review of the Biology of Clematis Vitalba (old Man’s Beard). Issue 725 of DSIR Land Resources vegetation report, Christchurch

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/clematis-vitalba/

Vinca major

Hutt River. Photographer: Jeremy Rolfe

Vinca major. Photographer: John Smith-Dodsworth

COMMON NAME
periwinkle

FAMILY
Apocynaceae

AUTHORITY
Vinca major L.

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Herbs - Dicotyledons other than Composites

NVS CODE
VINMAJ

HABITAT
A widespread escape from cultivation naturalised is all districts. Waste places, particularly in the shade of trees by riverbanks, roadsides, cemeteries and around gardens.

FEATURES
Stems glabrous, long and partly trailing or running and rooting at nodes, with terminal part often ascending, forming dense mats often covering many square metres. Petiole 7~20mm long; margins hirsute. Lamina 4~10 x 2.5~7cm, ovate, usually dark glossy green above, rarely variegated white and green; midrib hairy above; margins ciliate; base mostly rounded or subcordate, sometimes truncate or broad-cuneate; apex obtuse or acute, pedicels 2.5~4cm long, slender. Calyx .9~1.7cm long; lobes linear-subulate, ciliate, glandular towards base, Corolla tube approx. 1.5cm long; limb 3.5~5cm diam., mauvish-blue; lobes obliquely obovate; apex truncate or obtuse. Anthers slightly wider than long. Follicles 3.5~5cm long, the apical part very narrow and pointed, constricted between seeds. Seeds 7~8mm lon, oblong, strongly corrugated; margins inrolled. (Webb et. al., 1988) The plant has endless trailing and twining stems (Hilgendorf 1926), and glossy green leaves and beautiful pale blue salver-shaped flowers 2 -3 cm across (Hilgendorf 1926). A plant that forms a dense mat of long running, hairless stems with roots at the nodes (Department of Conservation 1996). The opposite leaves are oval, usually around 4 cm long, usually a dark glossy green and rarely variegated white and green (Department of Conservation 1996). The flowers are tubular and flat-lobed at the mouth to 5cm in diameter and are a mauvish blue (Department of Conservation 1996).

FLOWERING
January, February, March, April, May, June, July, August, September, October, November, December

FLOWER COLOURS
Violet/Purple

LIFE CYCLE
Perennial. Reproduces by seed and vegetatively.Dispersed from dumping of garden waste, road machinery and soil disturbances along rivers. Stems sometimes root at tips.

YEAR NATURALISED
1870

ORIGIN
E. & C. Mediterranean

REASON FOR INTRODUCTION
Ornamental

TOLERANCES
A plant that is tolerant of shade, and moderately tolerant of dry or wet conditions.

ETYMOLOGY
major: Greater

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/vinca-major/

Ehrharta erecta

Wanganui. Nov 2008. Photographer: Colin Ogle

Inflorescence. Stokes Valley, Lower Hutt. Photographer: Jeremy Rolfe

COMMON NAME
veldt grass

FAMILY
Poaceae

AUTHORITY
Ehrharta erecta Lam.

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Grasses

NVS CODE
EHRERE

HABITAT
Terrestrial. A plant of coastal and lowland habitats (Timmins & MacKenzie 1995). Plant grows in sites of low fertility (Timmins & MacKenzie 1995). A plant of sand dunes, cliffs and bluff communities (Timmins & MacKenzie 1995).

FEATURES
Slender, tufted perennial grass to 60 cm tall. Leaves pale green, soft, broad, shortly hairy, often dying back in summer drought. Sheaths short. Seedhead an open, erect, 10-40 cm long, ragged panicle of narrow spikes.

SIMILAR TAXA
Most similar to E. longiflora, but the upper lemma of E. erecta is hairless, wrinkled and has no awn.

FLOWERING
January, February, March, April, May, June, July, August, September, October, November, December

FLOWER COLOURS
Cream, White

LIFE CYCLE
Perennial. Vegetative reproduction occurs and seed is produced in large quantities all year round (Timmins & MacKenzie 1995). Seed dispersal is by wind, water and bird.

YEAR NATURALISED
1944

ORIGIN
Sth Africa

REASON FOR INTRODUCTION
Agricultural

TOLERANCES
The plant is drought and shade tolerant and very tolerant to shade (Timmins & MacKenzie 1995). Requires low soil fertility (Atkinson 1997).

ETYMOLOGY

erecta: Erect

REFERENCES AND FURTHER READING

Ogle, C.C. 1988. Veld grass *Ehrharta erecta* has come to stay. Wellington Botanical Society Bulletin, 44: 8-15

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/ehrharta-erecta/

Ficus carica

Ficus carica. Photographer: John Smith-Dodsworth

Ficus carica. Photographer: John Smith-Dodsworth

COMMON NAME
fig

FAMILY
Moraceae

AUTHORITY
Ficus carica L.

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

HABITAT
Terrestrial. waste places, scrubland.

FEATURES
Deciduous, dioecious shrub or small tree up to 10 m high. Young stems +/- glabrous to moderately hairy, becoming glabrous. Leaves sparsely to moderately hairy above, often densely hipsid below, usually deeply palmately 3-7 lobed and irregularly serrate or crenate, broadly ovate, obtuse to cordate and symmetric at base, c. 10-25 cm long; veins usually not prominently raised; petiole < blade; stipules 2 per node, glabrous, oblong, caducous. Inflorescence sparsely hairy, pyriform, green, shortly pedunculate. Syncarp green to purplish, 5-8 cm long; achenes irregularly ovoid to subglobose, c. 2mm long. (Webb et al 1988).

FLOWERING
December, January, February

YEAR NATURALISED
1870

ORIGIN
S. Europe, W. Asia

ETYMOLOGY
ficus: The Latin name for fig tree, possibly derived from the Hebrew word fag

Reason For Introduction
Ornamental
Life Cycle Comments
Perennial.
Reproduction
Spreads vegetatively, doesn't set seed.
Dispersal
F. carica is cultivated for its edible fruits, spread is largely by humans.

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/ficus-carica/

Cortaderia selloana

Plimmerton, Porirua. Photographer: Jeremy Rolfe

COMMON NAME
pampas grass

FAMILY
Poaceae

AUTHORITY
Cortaderia selloana (Schult. et Schult.f.) Asch. et Graebn.

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Grasses

NVS CODE
CORSEL

BRIEF DESCRIPTION
Robust tussock with tall erect flowering stems bearing dense heads of white to pale pink flowers.

Glabrous leaf base. Plimmerton, Porirua. Photographer: Jeremy Rolfe

HABITAT
Terrestrial. A coastal and lowland plant found between sea level and 800 metres. Plant grows in sites of all levels of fertility from low to high. The plant grows in a wide variety of soils from pumice and coastal sands to heavy clay (Ford 1993). Coloniser of open ground (West, 1996). A plant that occurs in low or disturbed forest (including plantations), wetlands, grasslands, scrub, cliffs, coastlines, islands, forest margins, riverbanks, shrubland, open areas, roadsides and sand dunes. The plant's primary habitat is disturbed ground.

FEATURES
Large-clump-forming grass to 4 m+. Leaf base smooth or sparsely hairy, no white waxy surface (cf. toetoe - Austroderia - species). Leaves with conspicuous midrib which does not continue into leaf base, no secondary veins between midrib and leaf edge. Leaves bluish-green above, dark green below, snap across readily when folded and tugged (toetoe species have multiple ribs in the leaves, making the leaves difficult to snap across). Dead leaf bases spiral like wood shavings, which makes pampas grasses more flammable than toetoe species. Flower head erect, dense, fluffy, white-pinkish, fading to dirty white, (Jan)-Mar-Jun.

SIMILAR TAXA
Can be separated from native Austroderia (toetoe) by the prominent single midrib on the leaves (Austroderia species have several prominent veins.). Can be separated from C. jubata by the glabrous leaf bases, and the fresh flowering spike is white to pink rather than violet of C. jubata, and is exerted further from the clump.

FLOWERING
March, April, May

FLOWER COLOURS
Red/Pink, White

FRUITING
April-May (Timmins & MacKenzie 1995).

YEAR NATURALISED
1925

ORIGIN
Central South America

REASON FOR INTRODUCTION
Agricultural.

LIFE CYCLE COMMENTS
Perennial. Seed germination occurs in autumn.The plant is dioecious with 50% female and 50% hermaphrodite plants. The plant is readily cultivated from divisions. Seed production is from 90 000 - 100 000 per seed head. It is unlikely that this plant forms a long term seed bank. Viability in the seed bank is unknown.
Seed is dispersed by gravity, man, vertebrates, machinery, in gravel (Timmins & MacKenzie 1995) and by wind. The seed is very light and is wind-dispersed up to 50km.

TOLERANCES
Seedlings are intolerant to drought and slightly tolerant of frost. Seedlings are slightly intolerant to intolerant of poor drainage. Adult plants are tolerant of drought and frost. Cutting results in regrowth. Grazing results in regrowth unless it is frequent, which results in death. Burning results in vegetative regrowth and provides a seedbed for invasion from surrounding areas.

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/cortaderia-selloana/

Metrosideros excelsa

A Pohutukawa flower. Photographer: DoC

Pohutukawa flower. Photographer: DoC

COMMON NAME
pōhutukawa

SYNONYMS
Metrosideros tomentosa Richard

FAMILY
Myrtaceae

AUTHORITY
Metrosideros excelsa Sol. ex Gaertn.

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
METEXC

CHROMOSOME NUMBER
2n = 22

CURRENT CONSERVATION STATUS
2018 | Threatened – Nationally Vulnerable

PREVIOUS CONSERVATION STATUSES
2012 | Not Threatened
2009 | Not Threatened
2004 | Not Threatened

BRIEF DESCRIPTION
Large sprawling mainly coastal tree with leathery oval leaves, bearing masses of red bristly flowers over Christmas. Naturally occurring north of Poverty Bay and north Taranaki, but can be now found as far south as Dunedin. Branches sprawling up to around 20 metres, often with masses of dangling reddish rootlets.

DISTRIBUTION
Endemic. New Zealand: Three Kings Islands and North Island from North Cape to about Pukearuhe, (northern Taranaki) in the west and near Mahia Peninsula (in the east). However, exact southern limit is difficult to ascertain as it has been widely planted and there is evidence that old time Maori cultivated the tree in some southerly areas. Found inland around the Rotorua Lakes and at Lake Taupo - though these occurrences could stem from Maori plantings (though the association of other normally coastal species around these lakes argues against this). Now widely planted throughout the rest of New Zealand (especially around Nelson, the Marlborough Sounds, the Kaikoura Coast and on the west coast to about Hokitika).

HABITAT
Coastal forest and on occasion inland around lake margins. Also in the far north occasionally an associate of kauri forest. In some northerly locations it forms forest type in its own right - this forest is dominated by pohutukawa, other associates often include tawapou (Pouteria costata), kohekohe (Dysoxylum spectabile), puriri (Vitex lucens), karaka (Corynocarpus laevigatus), and on rodent-free offshore islands the frequent presence of coastal maire (Nestegis apetala), and milk tree (Streblus banksii) suggests these species too may once have been important in mainland examples of pohutukawa forest.

FEATURES
Tree up to 20 m tall with canopy spread of 10-50m. Specimens typically multi-trunked from base, trunks up to 2 m diameter, branches spreading, and often arching, sometimes looping over ground, and/or bearing"brooms" of aerial adventitious roots. Branchlets numerous, twiggy and long-persistent. Bark firm, persistent and difficult to detach, often deeply furrowed, grey to grey-brown, somewhat corky. Young branchlets tomentose, being covered in fine, deciduous, greyish-white hairs. Leaves of all but water shoots leathery, 25-120 × 25-60 mm, elliptic, oblong, rarely lanceolate, apex acute or obtuse, dark olive-green, undersides thickly clad in white tomentum, adaxial surface at first distinctly tomentose but hairs shedding with leaf maturation. Flowers borne on stout, tomentose pedicels crimson, orange, pink, yellow (or very rarely white). Hypanthium obconic, calyx lobes triangular (deltoid).

SIMILAR TAXA
In New Zealand it is most frequently confused with the Kermadec pohutukawa (M. kermadecensis) which is endemic to Raoul Island (Kermadec Island Group). This island endemic differs by the smaller, rounder leaves, and much smaller inflorescences. It also has a tendency to sporadically flower throughout the year and on the New Zealand mainland at least it has a more erect, shrubby growth form, and rarely (if ever) makes a big tree.

FLOWERING
(August-) November-December (-March)

FLOWER COLOURS
Red/Pink, Yellow

FRUITING
(January-) March-April (-May)

PROPAGATION TECHNIQUE
Very easy from fresh seed. Seed must be sown fresh, even if left for a few weeks before sowing viability can drop, especially if seed is allowed to dry out. Very difficult from cuttings, though soft wood water shoots give the best results. Can be grafted onto seedlings.

THREATS
Like all New Zealand tree *Metrosideros*, pohutukawa is most at risk from possum (*Trichosurus vulpecula*) browse. These can seriously damage and even kill trees. Often where their browsing occurs within sites of unrestricted stock and vehicle access, pohutukawa forest is in danger of becoming locally extinct. It does remain common over large parts of its range, a situation being greatly improved by the efforts of people encouraged by the national coordination of Project Crimson - a non profit organisation set up to protect, enhance and/or establish pohutukawa forest, as well as promote the species use, and its conservation.
Myrtle Rust (*Austropuccinia psidii*) is an invasive fungus which threatens native myrtle species - learn more myrtlerust.org.nz

ETYMOLOGY
metrosideros: Iron heart
excelsa: Tall

WHERE TO BUY
Commonly sold by most retail nurseries.

VIDEO STORY
Project Crimson in Kawhia - TVNZ / DOC Meet the Locals Story.

ATTRIBUTION
Fact sheet prepared for NZPCN by: P.J. de Lange (4 January 2004). Description adapted from Allan (1961).

REFERENCES AND FURTHER READING

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

NZPCN FACT SHEET CITATION

Please cite as: de Lange, P.J. (Year at time of access): Metrosideros excelsa Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. https://www.nzpcn.org.nz/flora/species/metrosideros-excelsa/ (Date website was queried)

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/metrosideros-excelsa/

Pittosporum crassifolium

Pittosporum crassifolium close up of inconstant male (perfect) flowers, Auckland, Mt Albert, Jesmond Terrace. Photographer: Peter de Lange

Pittosporum crassifolium showing emergent inconstant male flowers and subtending leaf like bracts, October, Coromandel. Photographer: John Smith-Dodsworth

COMMON NAME
karo

SYNONYMS
Pittosporum crassifolium var. strictum Kirk

FAMILY
Pittosporaceae

AUTHORITY
Pittosporum crassifolium Banks et Sol. ex A.Cunn.

FLORA CATEGORY
Vascular – Native

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
PITCRF

CHROMOSOME NUMBER
2n = 24

CURRENT CONSERVATION STATUS
2012 | Not Threatened

PREVIOUS CONSERVATION STATUSES
2009 | Not Threatened
2004 | Not Threatened

BRIEF DESCRIPTION
Bushy small tree with greyish leathery oval leaves that are white underneath and clusters of small dark red flowers and large hard green fuzzy capsules inhabiting upper North Island. Leaves 5-7cm long, margins often rolled under. Fruit 2-3cm wide, splitting into three to display the black seeds in a yellow pith.

DISTRIBUTION
Endemic. New Zealand, Great Barrier and North Island. In the North indigenous from Te Paki south to about White Cliffs, and East Cape. Widely naturalised further south to Wellington. Naturalised in the South, Stewart and Chatham Islands. Also naturalised on Norfolk Island, and in Hawaii.

HABITAT
Coastal and offshore islands. Favouring steep slopes, cliff faces, boudler beaches, rock stacks and the margins of petrel burrowed land. Sometimes forms major canopy dominant on offshore islands, and on occasion can be a significant component of dune forest. Often an urban weed because its fruits/seeds are avidly taken by indigenous and exotic birds and dispersed widely.

FEATURES
Gynodioecious shrubs to small trees 1-10 m tall. Trunk stout, grey-black. often distinctly lenticillate. Branches and branchlets erect, dark grey-black or brown, immature branchlets densely invested in grey-white or white tomentum, this maturing black. Leaves alternate, usually densely crowded toward branch and branchlet apices. Petioles 4-14 x 1-3 mm, grey-white to grey-black tomentose. Leaves 30-100 x 10-30 mm, obovate to oblanceolate, apices obtuse to acute, base attenuate, margins entire, both surfaces densely white, grey-white or brown tomentose when young, soon glabrate above but remainly densely covered in dirty white or grey-white, appressed tomentum beneath, very coriaceous, margins thickened and often strongly revolute, surfaces often blistered with insect galls. Flowers in terminal 1-10-flowered fascicles; pedicels 6-50 mm, accrescent in fruit, tomentose, subtended by a whorl of leaves and numerous, 3-15 mm long, caducous, brown-tomentose, ciliate bud scales. Sepals 7-11 x 1.5-3 mm, oblong to linear-lanceolate, acute, greyish-white, dirty white or brown tomentose on outer surfaces, inner surface only toward the middle, margins ciliate. Petals 10-16 x 3-5 mm, oblanceolate to lanceolate, subacute, free to base, recurved at apices, dark red, purple, yellow, pink or white; stamens 5-9 mm long, anthers 1-3 x 0.5-1.5 mm, sagittiform to elliptic-oblong. Ovary 3-6 x 2-5 mm, white or grey-white tomentose; style 3-2.5 mm long, stigma capitate or 3-lobed truncate. Capsules woody, 10-30 x 10-30 mm, (2-)3(-4)-valved, woody, trigonous, sometimes 2-4-lobed

SIMILAR TAXA
Pittosporum fairchildii Cheeseman is somewhat similar, differing from P. crassifolium by its glabrate rather than heavily tomentose foliage and capsules, both being sparsely covered in brownish tomentum. Furthermore the capsules of P. fairchildii are green to yellow-green rather than grey-black when mature, somewhat fleshy rather than woody, sparsely covered in brown tomentum rather than densely covered in grey-white tomentum and unlike P. crassifolium they scarcely (if ever) open, tending to fall intact from the tree.

FLOWERING
August - October

FLOWER COLOURS
Red/Pink, Violet/Purple

FRUITING
September - August (Old fruits persist on trees)

PROPAGATION TECHNIQUE
Easy from fresh seed. Often appears spontaneously in gardens as the seed is distributed far and wide by exotic and indigenous birds. An attractive species popular for its fast growth, robust grey-green leaves, sweetly scented flowers and remarkable resilience in coastal areas. Although frost sensitive, once established it will tolerate moderate frosts and snow fall.

THREATS
Not Threatened. However, the fruits are eaten by rats, and on rodent infested offshore islands this species rarely regenerates.

ETYMOLOGY
pittosporum: Pitch seed
crassifolium: From the Latin crassus' thick and folius 'leaf'

WHERE TO BUY
Commonly available from most garden centres.

TAXONOMIC NOTES
Plants referred to this species from Raoul Island, in the Kermadecs are an as yet undescribed species, perhaps closest to the Norfolk Island Pittosporum bracteolatum Endl. The type of P. crassifolium appears to be the same as the later named Pittosporum ralphii Kirk. Further research is needed.

ATTRIBUTION
Fact sheet prepared for NZPCN by P.J. de Lange 30 August 2006. Description adapted from Cooper (1956).

REFERENCES AND FURTHER READING

Cooper, R.C. 1956: The Australian and New Zealand species of Pittosporum. Annals of the Missouri Botanical Garden 43: 87-188

NZPCN FACT SHEET CITATION

Please cite as: de Lange, P.J. (Year at time of access): Pittosporum crassifolium Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. https://www.nzpcn.org.nz/flora/species/pittosporum-crassifolium/ (Date website was queried)

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/pittosporum-crassifolium/

Cotoneaster coriaceus

Stokes Valley, Lower Hutt. Photographer: Jeremy Rolfe

Stokes Valley, Lower Hutt. Photographer: Jeremy Rolfe

COMMON NAME
cotoneaster

SYNONYMS
Cotoneaster lacteus W.W.Sm

FAMILY
Rosaceae

AUTHORITY
Cotoneaster coriaceus Franchet

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
COTLAC

HABITAT
Dry shrubland, forest margins, wasteland in urban places.

FEATURES
Spreading evergreen shrub up to 3 m high. Young shoots buff tomentose and erect, later becoming glabrous, dark purplish and arching. Leaves up to 80m x 45 mm, slightly shining and with deeply impressed veins above, tomentose beneath, becoming less so with age. Flowers in clusters of 20-80, with spreading white petals. Fruit 5-8 mm diameter, glossy orange of scarlet red.

SIMILAR TAXA
Generally similar to C. glaucophyllus but leaves with veins strongly impressed above. and more flowers in each cluster.

FLOWERING
November, December, January

FLOWER COLOURS
White

FRUITING
February-August.

YEAR NATURALISED
1988

ORIGIN
Yunnan (China)

ETYMOLOGY
cotoneaster: From cotoneus an old Latin name for the quince, and possibly aster, corruption of adinstar ‘resembling’, i.e. quince-like

Reproduction
Reproduces from seed.
Seed
Many seeds are produced per fruit, but viability is unknown at this stage.
Dispersal
Seed is widely distributed by birds.
Tolerances
Tolerant of wet-dry.

REFERENCES AND FURTHER READING

Dickore WB, Kasperek G. 2010: Species of Cotoneaster (Rosaceae, Maloideae) indigenous to, naturalising or commonly cultivated in Central Europe. Willdenowia 40(2): 13-45.

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/cotoneaster-coriaceus/

Tecomaria capensis

Riversdale. Photographer: Jeremy Rolfe

Riversdale. Photographer: Jeremy Rolfe

COMMON NAME
Cape honeysuckle

FAMILY
Bignoniaceae

AUTHORITY
Tecomaria capensis Spach

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
TECCAP

HABITAT
Terrestrial.

FEATURES
Vigorous hedge plant with bright orange flowers, a strong tendency to ramble if left uncut, and ability to layer itself indefinitely away from the original hedge site.

FLOWERING
January, February, March, April, May, June, July, August, September, October, November, December

FLOWER COLOURS
Orange

YEAR NATURALISED
1958

ORIGIN
South Africa

REASON FOR INTRODUCTION
Ornamental.

LIFE CYCLE COMMENTS
Perennial woody vine. Vegetative spread through layering. Seed capsules are occasionally formed and this some evidence that seed is viable. Capsules are freuqently produced but rarely carry viable seed

DISPERSAL
Wind dispersed.

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/tecomaria-capensis/

Salix cinerea

Salix cinerea. Photographer: John Barkla

Salix cinerea. Photographer: John Smith-Dodsworth

COMMON NAME
grey willow, pussy willow

FAMILY
Salicaceae

AUTHORITY
Salix cinerea L.

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Trees & Shrubs - Dicotyledons

NVS CODE
SALCIN

BRIEF DESCRIPTION
Deciduous shrub or small tree up to 7 m tall, many branched forming dense thickets with grey or green-grey bark, leaves up to 7 x 3.5 cm, pale green on upper surface, grey below, flowers of two types produced in spring before the leaves on separate plants, the males being silky hairy catkins, often yellow due to pollen production, the female catkins being longer and silvery green.

DISTRIBUTION
Widespread and locally abundant throughout both islands but rare in the Far North, South Westland and Southland

HABITAT
Swamps, fens, water body margins and disturbed places.

FEATURES
Shrub or small tree to approx. 7m high, often only 1~2m, spreading or often forming dense thickets; bark rather smooth. Shoots not brittle; grey or greenish-grey and remaining hairy, or reddish to dark purple and often becoming glabrous or glabrate, generally with pale brown markings and striations prominent below surface for around 2 years. Buds reddish, glabrate or hairy. Petiole to about 1cm long on adult shoots, but often very short and hairy. Lamina 2~7 x 1.5~3.5cm, often smaller at base of lateral shoots, generally obovate, sometimes elliptic, not bitter to taste; grey or glaucous below, generally densely clothed in soft grey hairs, sometimes rather sparsely clothed in harsher reddish-brown hairs, soon glabrous and shining above except for midrib, glandular-serrulate to subentire; angle between midrib and veins > 45¦; apex rounded to cuspidate. Stipules semi-annular, small, persisting on strong vegetative shoots. Catkins appearing before leaves, 1.5~3.5cm long, broad-cylindric to clindric-ovate, generally erect; rachis villous. Bracts 1.5~3mm long, elliptic to oblong-obovate, black in upper half, sericeous; apex obtuse to rounded. Gland .5~.8mm long, rectangular to almost square. Stamens 2; filaments pilose towards base. Female flowers with pedicels > bracts; ovary white-tomentose, stalked.

SIMILAR TAXA
Leaves are broader then most other common willows, the combination of obovate leaf shape and grey-hairy undersides should distinguish this from all other willows.

FLOWERING
September to October

FLOWER COLOURS
Green, Yellow

FRUITING
October to November

LIFE CYCLE
Perennial. shrub. Seed dispersed by wind, water and contaminated machinery.

YEAR NATURALISED
1925

ORIGIN
Europe, West Asia and North Africa

REASON FOR INTRODUCTION
Ornamental shrub

CONTROL TECHNIQUES
Can be controlled manually, mechanically or herbicidally depending on situation.

ETYMOLOGY
cinerea: Ash-grey

ATTRIBUTION
Factsheet prepared by Paul Champion and Deborah Hofstra (NIWA). Features description from Webb et. al. (1988).

REFERENCES AND FURTHER READING
Webb, C.J.; Sykes, W.R.; Garnock-Jones, P.J. (1988). Flora of New Zealand Volume 4: Naturalised pteridophytes, gymnosperms, dicotyledons. Botany Division, DSIR, Christchurch.
Popay et al (2010). An illustrated guide to common weeds of New Zealand, third edition. NZ Plant Protection Society Inc, 416pp.
Johnson PN, Brooke PA (1989). Wetland plants in New Zealand. DSIR Field Guide, DSIR Publishing, Wellington. 319pp.

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/salix-cinerea/

Euphorbia lathyrus

Miranda, Jan. Photographer: John Smith-Dodsworth

Miranda, Jan. Photographer: John Smith-Dodsworth

COMMON NAME
caper spurge

SYNONYMS
Euphorbia lathyris L.

FAMILY
Euphorbiaceae

AUTHORITY
Euphorbia lathyrus L.

FLORA CATEGORY
Vascular – Exotic

STRUCTURAL CLASS
Herbs - Dicotyledons other than Composites

NVS CODE
EUPLAT

FEATURES
A hairless, bluish-green biennial plant growing to a height of 1 - 1.5 metres.

FLOWERING
Summer months

FLOWER COLOURS
Green, Yellow

YEAR NATURALISED
1870

ORIGIN
E. and C. Mediterranean but widely naturalised in Western Europe.

ETYMOLOGY
euphorbia: After Euphorbus, a Greek physician who served King Juba of Numidia in 12BC. Juba named a cactus to honour Euphorbus and later Linnaeus named the entire genus after the physician.

POISONOUS PLANT:
All species of Euphorbia are poisonous especially this which can cause blindness in people removing it by hand from the garden and then rubbing their eyes.

MORE INFORMATION
https://www.nzpcn.org.nz/flora/species/euphorbia-lathyrus/

Glossary

abaxial	Facing away from the stem of a plant (especially denoting the lower surface of a leaf).
acerose	Narrow with a sharp stiff point.
achene	A simple, dry, one–seeded (one–celled) fruit.
acicular	Needle-shaped.
acidic	Having a low pH, opposite of basic or alkaline.
acroscopic	Pointing towards, or on the side of, the apex.
acuminate	Gradually tapered to a point. Sharply pointed.
acute	Pointed or sharp, tapering to a point with straight sides.
adnate	Fusion of unlike parts, e.g. stamens fused to petals.
adventive	A plant that grows in the wild in New Zealand but which was introduced to the country by humans.
agglutinated	Stuck together.
allelopath	An organism that releases compounds that are toxic to other species.
allelopathy	The release by an organism of compounds that are toxic to other species.
alternate	Attached singly at each node but changing from one side of a stem to the other.
alveolate	Honeycombed with ridged partitions.
amplexicaul	Clasping or surrounding the stem.
anamorph	Asexual fruiting stage, usually of an ascomycete fungus.
anastomosing	Rejoining after branching, as in some leaf veins.
annual	A plant that completes its complete life cycle within the space of a year.
annual evergreen	Plants that lose their over-wintering leaves rapidly in the first half of the growing season. Annual evergreens never present a leafless appearance, but are closer in a functional sense to a deciduous plant than they are to multi-annual evergreens.
annulus	Line of thickened cells that governs the release of spores from a sporangium.
anterior	Towards the front.
anther	The pollen-bearing portion of the stamen.
antheridium	Male reproductive organ formed on the prothallus of a fern.
anthesis	Flowering period from when the bud opens
apex	Tip; the point furthest from the point of attachment.
apices	Plural of apex. Tip, the point furthest from the point of attachment.
apiculate	Bearing a short slender and flexible point.
apiculus	A small, slender point.
apomixis	A form of reproduction whereby seed is formed without the usual mode of sexual fusion.
appressed	Pressed against another organ or surface.
aquatic	Growing, or living in, or frequenting water. Applied to plants and animals and their habitats. Opposite of terrestrial (land living).
archegonium	Female reproductive organ of a fern formed on the prothallus.
arcuate	Curved into an arch.
aril	An often fleshy appendage on the outside of a seed.
artificial thinning	Selectively removing vegetation to create gaps to facilitate natural invasion of native plants, or to plant later successional plants.
ascending	Growing obliquely upward.
asexual	Vegetative reproduction, lacking sexual involvement by sperm or egg cells.
attenuate	Narrowing gradually.
auricle	A small, ear-shaped appendage.
auriculate	Bearing a small, ear-shaped appendage.
autogamous	Self-fertilising flowers.
autotrophic	Of or relating to organisms (as green plants) that can make complex organic nutritive compounds from simple inorganic sources by photosynthesis.
awn	A stiff or bristle like projection often from the tip or back of an organ.

axil	The upper angle between the leaf and the stem.
axis	The longitudinal supporting structure around which organs are borne, e.g., a stem bearing leaves.
barbellate	Barbed, having or covered with protective barbs or quills or spines or thorns or setae.
basal	At the base.
basiscopic	Pointing towards the base.
beak	A prominent extension of an organ.
bifid	Deeply split into two lobes.
bifurcate	Divided into two.
biosecurity	Preventing, eradicating, controlling and managing risks posed by pests and diseases.
biotic	Pertaining to the living parts of the environment.
bipinnate	With each primary pinna divided to the midrib into a secondary pinna.
biserrate	Doubly serrate.
blade	The flattened part of a leaf.
blunt	Not pointed at the ends.
bog	A quagmire covered with specialised plants including sphagnum moss, grasses, sedges, rushes, sundews, umbrella ferns and other plants; has wet, spongy ground, a marsh-plant community on wet, very acid peat. Fed only by rainfall.
bottleneck	A genetic term; refers to the fact that in smaller populations there could be lower genetic variability.
brachyblasts	Short shoots.
bract	A reduced leaf or leaf-like structure at the base of a flower.
bracteate	Bearing bracts: leaves or leaf-like structure reduced at the base of a flower.
bracteolate	With small bracts.
bracteole	A small bract.
bracteoles	Bracts directly below the flower.
brevideciduous	Brief (1 month or less) loss of most leaves from the canopy just before flowering or during flushing of a new cohort of leaves.
bryophyte	Plant group including mosses, liverworts and hornworts.
bryophytes	Plant group including mosses, liverworts and hornworts.
bulbil	A bud produced vegetatively on the stem or frond that is capable of breaking of and growing into a new plant.
bullate	With rounded projections covering the surface as if blistered.
caespitose	Growing in dense tufts.
calli	Circular, warty, stalked thickenings commonly found on the lip (labellum) of the orchid (plural of callus).
callose	Hardened or thickened.
callus	Stalked thickening on the lip (labellum) of an orchid.
calyx	The group of sepals, or outer floral leaves, of a flower.
campanulate	Bell-shaped.
canaliculate	With longitudinal channels or grooves.
canopy	The uppermost cover formed by the branches and leaves of trees or the spread of bushes,shrubs and ground covers.
canopy closure	Stage where canopies of shrub and tree species meet.
canopy manipulation	Selectively removing vegetation to create gaps to facilitate natural invasion of native plants, or to plant later successional plants.
capillary	Hair-like.
capitula	Plural of capitulum: A dense head-like inflorescence of many flowers as occurs in most Asteraceae (daisies).
capitulum	A dense head-like inflorescence of many flowers as occurs in most Asteraceae (daisies).
capsule	A dry fruit formed from two or more fused carpels that splits open when ripe.
carbon sinks	Carbon locked away, or sequestered e.g. by trees.
carpel	One unit of the female part of a flower that consists of a basal seed-bearing ovary joined to a receptive stigma by a stalk-like style.

cauda	Tail-like appendage. (pl. caudae; adj. caudate).
caudex	The axis of a woody plant, esp. a palm or tree fern, comprising the stem and root.
cauline	Belonging to the stem, as in cauline leaves emerging from the stem.
cerise	Bright or deep red.
chartaceous	Having a papery texture.
chlorophyll	The green pigment of plants.
chlorotic	Lacking chlorophyll, therefore yellowish, suffering from chlorosis.
cilia	Short small hair–like structures on a cell or microorganism.
ciliate	With small hairs (cilia).
ciliolate	Diminutive of ciliate, i.e., having very small hairs.
cladode	Flattened stem with the function of a leaf.
cladodes	Usually flattened, photosynthetically active branches, these may be leaf–like (e.g., Phyllocladus) or branch–like (e.g., Carmichaelia).
clavate	Club-shaped, gradually widening towards apex.
cleft	Having indentations that extend about halfway to the center, as in certain leaves.
cleistogamous	Flowers that self-fertilise without opening.
coherent	Sticking together of like parts.
column	Stamen and stigmas fused to form a single organ.
columnar	Shaped like a column.
composite	Many small flowers tightly packed together e.g., daisy flowers.
compound	Composed of several similar parts (cf simple).
concave	Curved inward.
concolorous	Of the same colour.
conical	Cone-shaped.
connate	Fusion of like parts.
conspecific	Individuals of the same species.
cordate	Heart-shaped with the notch at the base.
coriaceous	Leather–like; thick, tough, and somewhat rigid.
corolla	The whorl of petals of a flower.
corymb	Modified raceme where stalks of lower flowers are elongated to same level as the upper flowers.
cosmopolitan	A species or other taxonomic group that is distributed widely throughout the world.
costa	The midrib.
crenate	With rounded teeth (bluntly toothed) along the margin.
crisped	Margin tightly wavy or crinkled, curled or wavy.
cristate	With a crest.
crown	The growing point of an upright rhizome or trunk. This usually produces a tuft or ring of fronds.
crura	The two small projections at the mouth of a utricle in Carex.
cucullate	Hood-shaped.
culm	The erect stem of a grass.
cuneate	Wedge-shaped.
cupular	Cup-shaped.
cuttings	Stems and/or leaves taken from plants for propagation.
cyathium	A cup-like structure that surrounds the inflorescence in Euphorbia.
cyme	Inflorescence at the terminus of a branch and where new flowering branches emerge laterally below the flower.
cytorace	Populations (or infraspecific taxa) that differ in chromosome number or chromosome morphology, e.g., Nematoceras trilobum agg. has two cytoraces, a diploid and a tetraploid (in which the chromosomes are doubled).
cytotype	Populations (or infraspecific taxa) that differ in chromosome number or chromosome morphology, e.g., Nematoceras trilobum agg. has two cytotypes, a diploid and a tetraploid (in which the chromosomes are doubled).
deciduous	Marked leaflessness in winter, and greater than 90% leaves lost by beginning of spring flush.

decrescent	Diminishing.
decumbent	With a prostrate or curved base and an erect or ascending tip.
decurrent	Attached by a broadened base.
decurved	Curved downward.
deflexed	Bent abruptly downward.
dehiscence	The time of opening at maturity to release the contents, e.g., a capsule releasing the seeds.
dehiscent	Splitting open at maturity to release contents (of a fruit).
deltoid	Shaped broadly like an equilateral triangle.
dentate	Toothed along the margin with the teeth pointing outward, not forward.
denticles	Minute teeth.
denticulate	Having a very finely toothed margin.
dichotomous	Divided into two equal branches.
digitiform	Finger-like.
dioecious	Having male and female flowers on separate plants of the same species.
diploid	With two complete sets of chromosomes in each cell.
disarticulating	Separating at a joint.
discoid	Disc-shaped.
disjunct	A species or other taxonomic group that occupies areas that are widely separated and scattered and therefore have a discontinuous distribution.
distal	Toward the apex, away from the point of attachment (cf. proximal).
distichous	In two rows on opposite sides of the axis.
divaricating	Branching at a very wide angle with stiff intertwined stems.
domatia	Small structures on the lower surface of a leaf in some woody dicotyledons, located in the axils of the primary veins and usually consisting of depressions partly enclosed by leaf tissue or hairs.
dorsal	Of the back or outer surface relative to the axis. (cf. ventral).
drupe	A stone fruit, the seed enclosed in a bony covering (endocarp) which is surrounded by a + fleshy layer (mesocarp).
early successional species	Plants which are able to colonise an open area after disturbance but which are often temporary and are replaced by taller plants in time and shaded out.
echinate	Having sharply pointed spines or bristles.
ecological district	A characteristic landscape and biological community defined in the PNA (Protected Natural Area) programme.
ecological restoration	Attempt to reinstate original (pre-disturbance) state of a habitat, plant community or ecosystem.
ecosourced	Plants sourced from seed collected from similar naturally growing plants in the area of the planting site.
ecosourcing	Using native plants grown from locally grown seeds. Eco-sourced plants help to preserve the ecological distinctiveness of an area, and ecosourced plants fare better and are adapted to survive in the local conditions.
eglandular	Without glands.
elaiosome	Fleshy, oil-rich structure attached to seed that attracts ants which act as dispersers.
ellipsoid	Elliptic in long section and circular in cross-section.
elliptic	Broadest at the middle.
emarginate	With a notch at the apex.
emarginated	Having a shallow notch at the tip, as in some petals and leaves.
emergent	In an aquatic sense - wetland herbs that are rooted in the substrate below water level, but carry leaves and stems above the water level e.g. rushes and raupo. Found on the shallow margins of lakes, ponds and waterways. In a forest sense - tree that is appearing above the surrounding canopy.
emergent marginals	An aquatic plant having most of its structure above water. Other aquatic plants are submerged or floating.
endemic	Unique or confined to a place or region, found naturally nowhere else.

endophyte	An endosymbiont (usually a bacterium or fungus) that lives within a plant for at least part of its life without causing any apparent disease.
endophytes	Endosymbionts (usually bacteria or fungi) that live within plants for at least part of their lives without causing any apparent disease.
endosperm	The nutritive tissue of a seed, consisting of carbohydrates, proteins, and lipids.
enrichment planting	Returning to a revegetation site and creating gaps, or filling existing gaps, with different plants of plants, usually later successional plants which may not have survived being planted in the first phases of the project.
ensiform	Sword shaped.
entire	Smooth. Without teeth, notches or divisions.
entomophilous	Pollinated by insects.
epicalyx	Calyx–like structure outside, but close to, the true calyx.
epigeal	Growing on or close to the ground or emerging from the ground after germination (often used for cotyledons).
epiphyte	A plant that grows upon another plant but is not parasitic and does not draw nourishment from it.
epiphytic	Growing upon another plant but not parasitic and not drawing nourishment it.
erose	Irregularly toothed, as if gnawed.
estuarine	Pertaining to the meeting of freshwater and seawater wetlands.
ethnobotany	The study of people's classification, management and use of plants.
eusporangia	Sporangia that arise from groups of epidermal cells.
evanescent	Lasting a very short time or running a short distance.
ex situ	Away from the place of natural occurrence.
ex-situ	Maintenance of plants as live specimens or propagules in cultivation as insurance against the loss of wild populations and as source for material for translocation.
excurrent	Having the axis prolonged to form an undivided main stem or trunk (as in conifers).
extravaginal	Outside an enclosing sheath.
falcate	Hooked or curved like a sickle.
fastigiate	Branches erect and close to central axis.
fen	A type of wet land that accumulates peat deposits. Fens are less acidic than bogs, deriving most of their water from groundwater rich in calcium and magnesium.
ferrugineous	Rust–like (a colour term).
fertile frond	Fronds that bear sporangia.
filamentous	Resembling a filament.
filiform	Thread like, resembling a filament.
filiramulate	Branching at a very wide angle with stiff intertwined stems.
fimbriae	Plural of fimbria: Fringe. A fimbria is composed of many fimbrillae (individual hair-like structures).
fimbriate	With fringes.
flabellate	Fan shaped.
flaccid	Limp, not rigid, flabby.
flange	A projecting rim.
flexuose	With curves or bends.
floccose	Having tufts of soft woolly hairs.
floret	A small flower, usually one of a cluster - the head of a daisy for example.
foliaceous	Leaf-like.
foliolate	Having leaflets.
founder effect	When a small number of plants (and therefore their genes) from a larger population are selected some genetic information is lost.
frond	A leaf, the complete leaf of a fern including the stipe and lamina.
fulvous	Orange–yellow.
funneliform	Funnel-shaped.
fusiform	Broadest near the middle and tapering toward both ends.
galea	Helmet- or hood-shaped.

galeate	Shaped like a helmet or hood.
gametophyte	A plant that produces sperm and egg cells and in which sexual reproduction takes place - in ferns this is known as the prothallus.
gene pool	The mixture of all genes and gene variations of a group or population.
genetic diversity	The variety of genes in a plants or populations.
genetic variation	Differences displayed by individuals within a plant which may be favoured or eliminated by selection.
geniculate	Abrubtly bent.
genus	A taxonomic rank of closely related forms that is further subdivided in to species (plural = genera). In a scientific name (e.g., Sicyos australis), the first word is the genus, the second the species.
gibbous	Swollen or enlarged on one side, as in a gibbous moon.
glabrescent	Lacking hair or a similar growth or tending to become hairless.
glabrous	Without or devoid of hairs, smooth.
gland	A structure that secretes a sticky or oily substance.
glandular	A structure that secretes a sticky or oily substance.
glaucous	Covered with a fine, waxy, removable powder that imparts a white or bluish cast to the surface.
gley	A soil prone to seasonal inundation.
globose	Globe-shaped.
glume	One of two bracts at the base of a grass spikelet.
groundwater	Groundwater is the water beneath the surface that can be collected with wells, tunnels, or drainage galleries, or that flows naturally to the earth's surface via seeps or springs. Groundwater is the water that is pumped by wells and flows out through springs.
gymnosperm	Plants in the class Gymnospermae that have seeds which are not enclosed in an ovary.
gynodioecious	A species population containing plants that produce bisexual (perfect) flowers, and plants that produce only female (pistillate) flowers.
gynoecium	The female reproductive organs of a flower; the pistil or pistils considered as a group. Means literally "womans house" i.e., the overall structure that contains the female sex organs.
hastate	Spear like. Shaped like an arrowhead, but with basal lobes pointing outward rather than downward.
haustorium	The absorbing organ of a parasite or hemiparasite.
hemi-parasite	Obtains water and nutrients from the roots of other plants but also manufactures food through photosynthesis.
hemi-parasitic	Obtaining water and nutrients from the roots of other plants then manufacturing food through photosynthesis.
herbarium	The place where collections of dried/pressed plants are kept.
hermaphrodite	Having both male and female sexual characteristics and organs.
heteroblastic	Exhibiting differences in leaf shapes or forms in juvenile and adult phases of the plant.
heteroblasty	The state of being heteroblastic (i.e., exhibiting differences in leaf shapes or forms in juvenile and adult phases of the plant).
hirsute	Hairy.
hyaline	Membranous, thin and translucent.
hybrid	An individual that is the offspring of a cross between two different varieties or species.
hybridise	Breeding with a member of a different plant or type.
hydrophyte	A plant species adapted to growing in or on water or in wet situations. Aquatic or semi-aquatic.
hymenium	The fertile, spore–bearing layer of a fruitbody.
hypanthium	A ring–like, cup–shaped, or tubular structure of a flower on which the sepals, petals, and stamens are borne.
imbricate	Overlapping.
imbricating	Overlapping.
imparipinnate	Odd–pinnate, a leaf shape; pinnate with a single leaflet at the apex.
in-situ	On site conservation relating to the maintenance of plants in the wild.
inbreeding	Genetic similarity in offspring of closely related individuals.

incoherent	Not sticking together.
incursion	Entrance of a pest into an area where it is not present.
indumentum	A covering of fine hairs (or sometimes scales).
indusia	Plural of indusium, a membrane covering a sorus of a fern.
indusium	A thin tissue that covers the sorus in many ferns. Plural: indusia.
inflorescence	The arrangement of flowers on the stem. A flower head.
infundibuliform	Funnel–like.
interkeel	The space between the keel and the leaf blade.
internode	The part of an axis between two nodes; the section of the stem between leaves.
internodes	Part of a stem between two nodes.
intramarginal	Within or near the margin.
involucral bracts	The scales surrounding the flower head or capitula.
involucre	A group of bracts surrounding a flower head.
involute	With margins rolled inward toward the upper side.
irritable	Responding to touch.
jugate	Paired.
juvenile	A plant of non-reproducing size.
keel	A prominent or obvious longitudinal ridge (as in a boat).
labellar	Pertaining to the labellum: a lip; in orchid flowers referring to the middle petal which usually differs in size, shape or ornamentation from the two lateral petals.
labellum	A lip; in orchid flowers referring to the highly modified middle petal which usually differs in size, shape or ornamentation from the two lateral petals.
lacinia	A jagged lobe.
laciniae	Jagged lobes.
laciniate	Cut into narrow, irregular lobes or segments.
lacustrine	Of or having to do with a lake, of, relating to, or formed in lakes, growing or living in lakes.
lamina	The expanded flattened portion or blade of a leaf, fern frond or petal.
lanceolate	Lance-shaped; of a leaf several times longer than wide with greatest width about one third from the base, tapering gradually to apex and more rapidly to base.
lateral	On or at the side.
lax	With parts open and spreading, not compact.
laxly	With parts open and spreading, not compact.
leaflet	One section of a compound leaf.
lemma	The lower of two bracts enclosing the flower in grasses.
lenticillate	Bark that is covered in fine lenticles (breathing pores).
ligulate	Strap–like, tongue–shaped.
ligule	The membrane between the leaf and the stem of a grass; the “petal” of a ray floret in a composite inflorescence.
linear	Long and narrow with more or less parallel sides.
littoral	Occurring at the border of land and sea (or lake). On or pertaining to the shore. The shallow sunlit waters near the shore to the depth at which rooted plants stop growing.
lobe	A recognisable, but not separated, rounded division or segment of a leaf or pinna. Used to describe ferns and leaves in Cotula and Leptinella.
lobed	Part of a leaf (or other organ), often rounded, formed by incisions to about halfway to the midrib.
lobule	A small lobe or sub-division of a lobe.
lustrous	Glossy, shiny.
lycophytes	Seedless vascular plants that belong to the phylum Lycophyta (characterised by microphylls - primitive leaves found in ancient plants).
lyrate	Pinnatifid or pinnatisect terminal lobe much larger than lower lobes.
maculate	Blotched or spotted.
mangrove	Coastal wetland dominated by Manawa or mangrove Avicennia marina var. resiifera. Northern New Zealand only, salt marsh replaces it further south.

margin	The edge or border of a leaf.
marine	Pertaining to the sea and saltwater systems.
marsh	A tract of wet land principally inhabited by partially-submerged herbaceous vegetation. Has fewer woody plants than swampier habitats.
mealy	Dry, powdery, crumbly.
median	In the middle.
membranous	Very thin, like a membrane.
mid-lobe	The middle part into which a leaf is divided.
midrib	The central or principal vein of a leaf or pinna of a fern.
mire	Synonymous with any peat-accumulating wetland. Term covers bogs and peaty swamps, fens, carr, moor, muskeg and peatland. Term excludes marsh which is non-peat forming.
molecular techniques	Where proteins and genes are used to investigate plant relationships.
monitoring	Recording of quantitative data over time to document changes in condition or state of species or ecosystems.
monoecious	Having male and female flowers on the same plant of the same species.
montane	Land between 300 and 800 metres above sea level.
mucronate	Tipped with a short, sharp, point.
mucronulate	Having a very small mucro; diminutive of mucronate.
multi-annual evergreen	Overlapping annual cohorts of leaves always present.
multifid	Cleft into many lobes or segments.
multiseptate	With many septa.
muricate	Rough with short, hard points like the shell of Murex, a genus of tropical sea snails with elaborately pointed shells.
mycorrhiza	A symbiotic relationship between a fungus and a plant.
mycorrhizal associations	Symbiotic association between fungi and plant roots which assists plant health by allowing increased ability for uptake of nutrients and promote plant growth.
napiform	A long swollen but tapering root – like a parsnip, or carrot.
native	Naturally occurring in New Zealand (i.e., not introduced accidentally or deliberately by humans).
naturalised	Referring to plants that have escaped from cultivation (including gardens or forest plantations) and can now reproduce in the wild (without human assistance).
nectary	Organ that produces nectar.
nerve	Prominent vein or rib.
nerves	Strands of conducting and usually strengthening tissue in a leaves or similar structures.
net veins	Veins that repeatedly divide and re-unite.
net venation	Feather-like or hand-like venation on a leaf.
nival	Growing at high altitudes. From Latin: nivalis, snowy etc. from nix, nivis, snow.
node	The point at which leaves, branches or roots arise on a stem.
ob-	Prefix meaning inverted, in reverse direction.
obcordate	Heart shaped with the notch at the apex.
oblanceolate	Tapering and widest towards the apex or inversely lanceolate.
oblique	Slanting; of a leaf, larger on one side of the midrib than the other, in other words asymmetrical.
oblong	Rectangular.
obovate	Roughly elliptical or reverse egg shaped and widdest near the apex (i.e., the terminal half broader than the basal half).
obtuse	Blunt or rounded at the apex, with the sides meeting at an angle greater than 90°.
operculate	With a small lid.
opposite	A pair of organs attached at nodes in pairs on either side of a stem or axis.
orbicular	Almost or approximately circular.
outbreeding depression	A reduction in vigor of offspring from distant parents. It can occur when a locally adapted population is moved and mixed with plants adapted to different conditions.

outer canopy deciduous	Marked reduction in leaf number in the outer canopy in exposed high light environments over winter.
oval	Planar, shaped like a flattened circle, symmetrical about both the long and the short axis; about twice as long as broad, tapering equally both to the tip and the base. Synonymous with elliptical.
ovary	Part of a flower containing the ovules and later the seeds.
ovate	Egg-shaped and widest at base.
ovoid	Oval; egg–shaped, with rounded base and apex.
pakihi	A term which in its strict sense refers to open clears within forest dominated by low scrub and rushes. However, more usually used to refer natural and induced wetlands and their associated shrublands. A vernacular most frequently used in the West Coast for impoverished soils and their associated peats, left after forest has been cleared.
palea	The small upper bract enclosing the flower of a grass.
palea	1. The upper of the two bracts that enclose each floret in a grass spikelet. 2. A small bract at the base of a disc floret in some plants of the composite family. 3. Scales on various parts of ferns (referred to as paleate or paleaceous). From the Latin word for ‘chaff’.
paleae	Plural of palea, from the Latin word for ‘chaff’. 1. The upper of the two bracts that enclose each floret in a grass spikelet. 2. A small bract at the base of a disc floret in some plants of the composite family. 3. Scales on various parts of ferns (referred to as paleate or paleaceous).
palmately	Radiating from a point, as fingers radiating from the palm of a hand.
palmatifid	Deeply divided into several lobes arising from more or less the same level.
palmatisect	Intermediate between palmate and palmatifid, i.e. the segments are not fully separated at the base; often more or less digitate.
palustrine	Pertaining to wet or marshy habitats. Term covers mires and marshes.
pandurate	Fiddle-shaped.
panicle	Highly branched (multiple raceme).
papilla	A short rounded projection.
papillae	A soft, fleshy projection, usually small and nipple–like.
papillate	With short rounded projections.
papillose	Warty, with short rounded projections or gland-dotted.
parallel venation	Veins are parallel along leaf.
parasite	An organism that derives all its nourishment from its host.
patent	Spreading or expanded, e.g., spreading petals.
peat	A mass of partially carbonised plant tissue formed by partial decomposition in water of various plants and especially of mosses of the genus Sphagnum, widely found in many parts of the world, varying in consistency from a turf to a slime used as a fertiliser, as stable litter, as a fuel, and for making charcoal. Partially carbonized vegetable matter saturated with water; can be used as a fuel when dried. A type of soil deriving from dead organic material situated in a wet area, where the reduced amount of [[oxygen available in the wet conditions results in the organic material not decomposing as much as it usually would do so in the presence of more oxygen. Used in growing media. Represents an important carbon sink –drainage of peat releases large amounts of carbon (CO_2) to the atmosphere.
pedicel	The stalk of a single flower in an inflorescence or fruit (either in a cluster or existing singularly).
peduncle	The stalk of a solitary flower or the main stalk of an inflorescence or flower cluster.
pedunculate	Describing fruits, which are borne on a stalk (a peduncle).
pellucid	Transparent.
peltate	Shield-like, with the stalk attached well inside the margin.
pendent	Hanging down from its support.
pendulous	Hanging or drooping.
penicillate	With a tuft of hairs at the end, like a brush.
perennial	A plant lasting for three seasons or more.
perianth	A collective term for the calyx (sepals or tepals) and corolla (petals) of the flower, especially when these are indistinguishable.
petal	Part of flower inside the sepals; usually coloured.
petiolate	Having a petiole.

petiole	Leaf stalk.
phloem	The vascular tissue in land plants that is primarily responsible for the distribution of sugars and nutrients manufactured in a shoot.
photopoint	A monitoring technique where repeat photos are taken of the same scene from the same point over a period of time in order to quantify changes.
pilose	Bearing long, soft hairs.
pinna	A segment of a divided lamina that is classified as primary, secondary or tertiary according to the degree of dissection of the lamina.
pinnae	Divisions of a pinnate leaf.
pinnate	With leaflets arranged regularly in two rows on either side of a stalk as in a feather; the lamina on a fern is divided into separate pinnae.
pinnatifid	Pinnately lobed, cleft more than halfway to the midrib. Not cleft all the way to the rachis.
pinnatisect	Pinnately divided almost to midrib but segments still confluent.
pioneer	Plant species are hardy species that should be planted first to establish a good canopy cover that restricts weed growth and promotes natural regeneration. In natural ecosystems these are the first plants to arrive and grow on a site.
pistil	The female reproductive organ of a flower, consisting of an ovary, style, and stigma.
pistillate	A flower with one or more pistils, but no stamens.
plano-convex	Flat on one side, convex on the other.
plumose	Feathery.
podzol	Infertile, acidic soil, strongly leached to form a whitish-grey subsoil underlain by a layer enriched in iron, aluminium and organic matter; usually under forest in a wet temperate climate.
pole	A subcanopy size individual with a long thin trunk and foliage tuft of a potential canopy tree.
pollinia	Compact masses of orchid pollen.
population enhancement	Increasing a population for a specific biological purpose, e.g., when a species is already present in an area but extra individuals are added to address a sex imbalance.
porrect	Extending forward.
procumbent	Lying and flat along the ground but not rooting.
propagate	To reproduce a plant by sexual (i.e., from seed) or asexual (e.g., from cuttings) means.
prostrate	A general term for lying flat along the ground. This includes procumbent (that is lying and flat along the ground but not rooting) and decumbent (with a prostrate or curved base and an erect or ascending tip).
provenance	The place of origin (of a plant that is in cultivation).
proximal	Toward the base or point of attachment (cf. distal).
pseudobulb	Thickened surface stem; usually looking like a bulb.
pseudoterminal	Falsely terminal – as in a bud which appears to occupy a terminal position but does not.
puberulent	Minutely clad in short, soft hairs.
pubescence	Covering of soft, fine hairs.
pubescent	Covered in short, soft hairs.
pungent	Ending in a stiff sharp point.
pustule	Small blister-like elevation.
quadrate	Square, rectangular.
raceme	An unbranched, elongated inflorescence with pedicellate flowers maturing from the bottom upward i.e., flowers attached to the main stem by short stalks.
rachis	The axis of an inflorescence or of a compound leaf.
ray	An outer ring of strap-like florets in the head of Asteraceae (daisy) flowers.
re-introduction	Translocating wild or cultivated individuals to sites where the taxon has been known to occur in the past, but from which it has disappeared.
recurved	Curved backward.
reflexed	Bent back on itself.
reniform	Kidney shaped.
repand	With a slightly wavy margin.
replum	The outer structure of a pod in which the valves have dehisced (persists after the opening of the fruit).

restiad	Area dominated by rush-like plants (collectively known as restiads) of the family Restionaceae. Includes Chatham Island and North Island Sporodanthus and oioi (Apodasmia similis).
retrorse	Pointing backward.
retuse	A shallow notch at the rounded or blunt apex of a leaf.
rhizoid	Any of various slender filaments that function as roots in mosses and ferns and fungi.
rhizomatous	With underground creeping stems.
rhizome	An underground stem (usually spreading horizontallly or creeping) or short and erect.
rhombic	Diamond-shaped.
rhomboid	Diomond shaped, nearly rhombic.
riparian	Relating to or living or located on the bank of a natural watercourse (as a river) or sometimes of a lake or a tidewater.
riparian margin	Refers to the edges of streams, rivers,lakes or other waterways.
riparian plants	Refers to plants found growing near the edges of streams, rivers or other waterways.
riparian zone	A strip of land next to streams, rivers, and lakes where there is a transition from terrestrial (land vegetation) to aquatic (water) vegetation. Also known as “berm”.
riverine	Pertaining to rivers, streams and such like flowing water systems.
rootstock	A short, erect, underground stem.
rosette	A radiating cluster of leaves.
rostellum	In orchids, a modified stigma that prevents self-fertilisation.
rosulate	A dense radiating cluster of leaves.
rugose	Wrinkled.
rugulose	Having small wrinkles.
runcinate	Sharply pinnatifid or cleft, the segments directed downward.
runner	A trailing stem that roots at the nodes.
rupestral	Growing on rocks.
rushes	A group of distinctive wetland plants. They have solid stems (grasses have hollow stems), true rushes Juncus sp. have rounded leaves.
sagittate	Shaped like the head of an arrow; narrow and pointed but gradually enlarged at base into two straight lobes directed downwards; may refer only to the base of a leaf with such lobes; cf. hastate.
salt marsh	A coastal wetland, with specialized salt tolerant plants (halophytes).
sapling	A juvenile tree that has reached the stage of 1 or 2 main stems but is still in the shrub layer.
saprophyte	A plant lacking chlorophyll and living on dead organic matter.
saprophytic	Lacking chlorophyll and living on dead organic matter.
sarcotesta	The fleshy, often highly coloured outer layer of the seed coat in some species, e.g., titoki (Alectryon excelsus).
scabrid	Roughened or rough with delicate and irregular projections.
scale	Any thin, flat, membranous structure.
scape	A leafless flower stem.
schizocarp	A fruit which splits when dry, from the Greek skhizein ‘split’ and karpos ‘fruit’.
schizocarps	Plural of schizocarp, a fruit which splits when dry, from the Greek skhizein ‘split’ and karpos ‘fruit’.
scutiform	Shield-shaped.
sedges	A group of grass-like or rush-like herbaceous plants belonging to the family Cyperaceae. Many species are found in wetlands some are forest floor plants. Leaves are usually angular. Hence the saying “rushes are round and sedges have edges”.
seedling	A newly germinated plant.
self sustaining	Able to sustain itself, or replace itself, independently of management i.e. regenerate naturally.
self thinning	Natural tree death in a crowded, even-aged forest or shrubland.
semi-deciduous	Partial leaflessness in winter, and greater than 50% leaves lost by the beginning of spring flush.
sepal	Outer part of flower; usually green.
serrate	Sharply toothed with teeth pointing forwards towards apex.
serrulate	Finely serrate, i.e., finely toothed with asymmetrical teeth pointing forward; like the cutting edge of a saw.

sessile	Attached by the base without a stalk or stem.
seta	The stalk of a fruiting moss capsule.
sheath	A portion of an organ that surrounds (at least partly) another organ (e.g., the tubular envelope enclosing the stem in grasses and sedges).
silicles	The flattened usually circular capsule – compared with the narrow, elongated fruit (silique) – containing the seed/seeds. A term used almost exclusively for plants within the cabbage family (Brassicaceae).
silique	A capsule, usually 2-celled, with 2 valves falling away from a frame (replum) bearing.
simple	Of one part; undivided (cf compound).
sinuate	With a wavy margin.
sinus	The space or recess between lobes; in hebes a gap between the margins of two leaves of an opposite pair that may be present in the bud before the pair of leaves separate.
sorus	A cluster of two or more sporangia on the margin or underside of the lamina of a fern, sometimes protected by an indusium.
spathulate	Spatula or spoon-shaped, a rounded blade tapering gradually to the base.
spheroidal	Almost spherical but elliptic in cross section.
spicate	Arranged in a spike.
spike	Flowers attached to main stem without stalks.
spikelet	Collection of individual grass florets borne at the end of the smallest branch of the inflorescence.
sporangia	Plural of sporangium. Structures in which spores are produced.
sporangium	Structure in which spores are produced.
spore	A single-celled reproductive unit similar in function to that of the seed in a flowering plant.
sporophyte	The spore producing plant in ferns that is usually the visible part.
stamen	The male reproductive organ of a flower where pollen is produced. Consists of an anther and its stalk.
stamens	The male, pollen bearing organ of a flower.
standing water	Where water lies above the soil surface for much of the year.
stellate	Irregularly branched or star shaped.
stigma	Female part of the flower that is receptive to pollen, usually found at or near the tip (apical end) of the style where deposited pollen enters the pistil.
stipe	The stalk of a frond.
stipitate	Borne on a stipe or stalk.
stipulate	A leaf with stipules.
stipule	A scale-like of leaf-like appendage at the base of a petiole, usually paired.
stolon	A stem which creeps along the ground, or even underground.
stoloniferous	Producing stolons.
stramineous	Chaffy, like straw or straw-colored.
stria	A fine line or groove.
striae	Fine lines or grooves.
striate	Fine longitudinal lines or minute ridges.
style	The elongated part of the flower between the ovary and the stigma.
sub-	A prefix meaning under, somewhat or almost.
subglabrous	Very slightly, but persistently, hairy.
suborbicular	Slightly rounded in outline.
substrate	The surface upon which an orchid grows.
subtended	Immediately beneath, occupying a position immediately beneath a structure, i.e., flower subtended by bract.
subulate	Slender and tapering to a point.
succession	Progressive replacement of one species or plant community type by another in an ecosystem.
successional	Referring to species, plant communities or habitats that tend to be progressively replaced by another.
succulent	Fleshy and juicy.

summer-green	Used in New Zealand to indicate herbs or sub-shrubs that die down to a root stock or rhizomatous network.
supplementary planting	Returning to a revegetation site and creating gaps, or filling existing gaps, with different plants of plants, usually later successional plants which may not have survived being planted in the first phases of the project.
surface water	Water present above the substrate or soil surface.
surveillance	Regular survey for pests inside operational and managed areas e.g. nurseries, standout areas on parks.
survey	Collection of observations on the spatial distribution or presence or absence of species using standardised procedures.
sustainable land management	The use of farming practices which are sustainable both financially and environmentally including management of nutrient runoff, waste disposal or stock effluent, reducing impacts of nutrients on waterways, preventing erosion and soil loss, and protecting native forest and wetland habitats from stock damage.
swamp	Low land that is seasonally flooded; has more woody plants than a marsh and better drainage than a bog. They are more fertile and less acidic than bogs because inflowing water brings silt, clay and organic matter. Typical swamp plants include raupo, purei and harakeke (flax). Zonation and succession often leads through manuka to kahikatea swamp forest as soil builds up and drainage improves.
symbiote	An organism that has an association with organisms of another species whereby the metabolic dependence of the two associates is mutual.
symbiotic	The relation between two different species of organisms that are interdependent; each gains benefits from the other (see also symbiosis).
sympatric	Occupying the same geographical region.
synangia	Structures made up of fused sporangia.
synonym	A botanical name that also applies to the same taxon.
systematics	The study of taxonomy, phylogenetics, and taxagenetics.
tabular	Shaped like a rectangular tablet.
taxa	Taxonomic groups. Used to refer to a group at any level e.g., genus, species or subspecies.
taxon	A taxonomic group. Used to refer to a group at any level e.g., genus, species or subspecies.
taxonomy	The process or science of classifying, naming, and describing organisms.
tepal	An individual member of the perianth.
terete	Cylindrical and tapering.
terminal	At the tip or apex.
ternatifid	Leaflets In threes,.
tetrad	A group of four.
tomentum	A hairy covering of short closely matted hairs.
translocation	The movement of living organisms from one area to another.
trifid	Divided into three.
trifoliate	Having three leaflets.
trigonous	Three–angled.
tripinnate	With each secondary pinna divided to the midrib into tertiary pinnae.
triquetrous	Triangular in cross section and acutely angled.
truncate	With the apex or base squared at the end as if cut off.
tuberculate	Bearing small swellings.
tubular	Tube-shaped.
turbinate	Top-shaped.
turgid	Distended through internal pressure.
type locality	The place or source where a holotype or type specimen was found for a species.
ultramafic	A type of dark, usually igneous, rock that is chemically dominated by magnesium and iron-rich minerals, the partially metamorphosed form of which is serpentinite.
umbel	Umbrella like; the flower stalks arise from one point at the stem.
undulate	Wavy edged.
undulose	Wavy edged.

unitubular	A tube partioned once – literally one tube (compare – multitubular – many tubes).
utricle	A thin loose cover enveloping some fruits (eg., Carex, Uncinia).
valvate	Opening by valves.
vascular plant	A plant that possesses specialised conducting tissue (xylem and phloem). This includes flowering plants, conifers and ferns but excludes mosses, algae, lichens and liverworts.
velutinous	Thickly covered with delicate hairs; velvety.
ventral	Of the front or inner (adaxial) surface relative to the axis. (cf. dorsal).
vermiform	Worm-shaped.
vernicose	Glossy, literally as if varnished, e.g., Hebe vernicosa has leafs than appear as if varnished.
verrucose	Having small rounded warts.
verticillium	A fungus disease that will cause wilting and death.
villous	Covered with long, soft, fine hairs.
water table	The level at which water stays in a soil profile. The zone of saturation at the highest average depth during the wettest season.
wetland	A site that regularly has areas of open water for part or all of the year, or has a water table within 10 cm of the surface for at least 3 months of the year. Wetland ecosystems support a range of plant and animal species adapted to a aquatic or semi-aquatic environment.
whipcord	A shrub in which the leaves are reduced to scales that are close-set and pressed against the stem.
whorl	A ring of branches or leaves arising at the same level around the stem of a plant.
whorled	Aranged in a ring around the stem.