

Lepidium castellanum

COMMON NAME

Kermadec Islands scurvy grass

SYNONYMS

None (first described in 2013)

FAMILY

Brassicaceae

AUTHORITY

Lepidium castellanum de Lange et Heenan

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Herbs - Dicotyledons other than Composites

CURRENT CONSERVATION STATUS

2017 | Threatened – Nationally Critical | Qualifiers: CD, DP, EF, IE, RR

PREVIOUS CONSERVATION STATUS

2012 | Threatened – Nationally Critical | Qualifiers: CD, DP, IE, RR

BRIEF DESCRIPTION

Perennial herb. Plants with numerous erect, leafy branches. Leaves dark green, narrow, with deeply toothed margins (teeth often needle-like) and smelling of cress when crushed. Inflorescences at branch tips, Flowers white with four stamens. Fruiting stalks minutely hairy. Fruits rhomboid with acute apices, splitting cleanly into two valves, seeds brown or orange-brown.

DISTRIBUTION

Endemic. Kermadec Islands (Southern Kermadec islands Group (Haszard Islet, Macauley, Curtis and Cheeseman Islands))

HABITAT

Coastal. *Lepidium castellanum* grows along cliff tops in open or sparsely vegetated, petrel-burrowed ground



Young inflorescences and upper-stem leaves of *Lepidium castellanum*, Macauley Island. Jul 2006. Photographer: John Barkla, Licence: CC BY.



(From leaf to right) basal-, mid- and upper-stem leaves of *Lepidium castellanum*. Photographer: Peter B. Heenan, Licence: CC BY-NC.

DETAILED DESCRIPTION

Tap-rooted, strongly pungent smelling, much branched, leafy perennial shrub, up to 1.8 × 2.0 m. Tap-root up to 800 mm long, ± napiform and/or scarcely branched. Rootstock 6–10 mm diameter, woody, exposed portion smooth. Stems persistent, arising from rootstock base and basal portion of main central stem, closely packed, woody, erect, weakly angled to ± terete, glabrous; mature stems 3.8–8.2 mm diameter, 0.3–1.8 m long; red-green to yellow-green, brittle, bases bearing numerous leaf abscission scars otherwise mostly leafy from mid-stem to apex at flowering; middle stems dark green to red-green, fleshy and pliant, initially ± square, prominently angled, becoming ± terete with age. Leaves coriaceous, fleshy, green to dark green, rosette-leaves absent, stem leaves withering with age; basal stem leaves 88.5–120.0 × 14.5–30.0 mm, lamina broadly lanceolate to lanceolate, margin ± deeply and ± evenly incised, teeth in 50–90 ± equal pairs, 0.5–2.9 mm long, protruding beyond leaf line, narrowly deltoid, to deltoid, leaf apex truncate, praemorse often deeply lacerate, teeth 3–5, cut 2.4–4.2 mm to lamina, narrowly deltoid, to deltoid, often bidentate, leaf base attenuate extending into a broad petiole wing; petiole distinct, 23.6–31.0 × 3.1–3.3 mm, decurrent, channelled, often with a broadly sheathing base; upper stem leaves 50.0–68.0 × 4.4–12.2 mm, decreasing in size toward inflorescences, lamina narrowly lanceolate to linear-lanceolate, margin ± deeply and ± evenly incised, teeth in 6–14 widely and evenly spaced ± pairs, 1.5–7.2 mm long, protruding beyond leaf line, narrowly deltoid, tapering, acerose, ± acicular to acicular-falcate; lamina apex acute (rarely truncate-praemorse), acuminate, acumen 5.8–11.0 mm long, margins of acumen toothed, teeth often bidentate, 8–10 mm long, acerose, often acicular, or acicular-falcate, leaf base attenuate extending into a narrow petiole wing; petiole distinct, 2.9–8.2 × 1.2–3.3 mm, decurrent, channelled, often with a broadly sheathing base. Inflorescences racemose, 50–100 mm long at fruiting; rachis 0.5–2.25 mm diam., terminal and lateral, leaf-opposed, often long-persistent, sparsely to densely covered in pale, patent, ± clavate hairs or rarely glabrous, hairs 0.1–0.14 mm long; pedicels 5.6–7.2 mm long at fruiting, erecto-patent, with sparse, pale, patent, clavate hairs on adaxial surface, hairs 0.1–0.12 mm long. Flowers 3.0–4.5 mm diameter, fragrant. Sepals 4, saccate, ± overlapping at base, lateral sepals broad, 0.5–1.5 mm diameter, orbicular, pale to dark green with a broad white, ± undulose margin, apex rounded to obtuse, abaxial surface often hairy, hairs 0.2–0.4 mm long, eglandular or with glandular tip, mostly shedding at anthesis except near base, median sepals 0.5–0.9 mm diameter, broadly elliptic, pale to dark green with a broad white, ± undulose margin, apex rounded to obtuse, abaxial surface glabrous. Petals white, 1.1–2.0 × 1.0–1.6 mm, spreading, claw 0.4–0.8 mm long; limb obovate, obovate-spathulate to orbicular, apex obtuse to rounded often slightly emarginate, margins smooth, sometimes weakly undulose. Stamens 4, filaments 1.2–2.0 mm long, white; anthers 0.3–0.5 mm long, yellow. Ovary 1.1–1.8 × 0.6–1.3 mm, ovate, broadly ovate to elliptic, green-brown, apex subacute; style 0.11–0.4 mm long, cylindrical; stigma 0.2–0.5 mm diameter. Nectaries 4, 0.2–0.3 × 0.1–0.15 mm, narrow-oblong to deltoid, pale translucent green. Silicles cartilaginous when fresh, coriaceous when dry, 2.4–3.6 × 1.8–2.5 mm, elliptic to rhomboid, apex acute and tapering, valves green maturing grey-white, glabrous, scarcely separating at apex at maturity, not winged; style 0.3–0.7 mm long, exserted. Seeds 2, 1.3–1.9 × 0.8–1.6 mm, narrowly to broadly ovoid, brown to orange-brown, not winged.

SIMILAR TAXA

Lepidium castellanum is recognised by its very robust, shrubby growth habit, sometimes up to 1.8 × 2.0 m, erect, often closely packed, usually leafy stems, narrowly lanceolate to linear-lanceolate upper stem leaves, and by the very long, needle-shaped teeth of the leaves which reach well beyond the leaf margin. In this species, the pedicels (and often the inflorescence rachises) are minutely hairy. On the Kermadec Islands this species grows with *Lepidium oleraceum*. It is not closely related to that species, DNA sequence data places it with a clade including *L. aegrum*, *L. crassum* and *L. juvenum*

FLOWERING

July - June

FRUITING

September - July

PROPAGATION TECHNIQUE

Easy from fresh seed. However, plants are prone to diseases such as white rust (*Albugo candida*).

THREATS

Lepidium castellanum is only known from four islands within the Southern Kermadec islands Group. On one of these, Macauley Island, it was known from only a few plants in 2006 and not seen again in 2011, and it has not been confirmed from Curtis Island since 1969. On Haszard Islet and Cheeseman Island between 29 and 59 mature plants have been recorded over the last decade. Although secure at these two locations, the species is obviously not common and on the basis of area of occupancy and number of adults plants readily qualifies for 'Threatened / Nationally Critical' status (see Townsend et al. 2008).

ETYMOLOGY

lepidium: Scale-shaped (pods)

castellanum: The epithet 'castellanum' is from the Latin 'associated with a fort, fortress or castle'

ATTRIBUTION

P.J. de Lange (19 August 2013). Description from de Lange et al. (2013) - see references for free download link for that paper.

REFERENCES AND FURTHER READING

de Lange, P.J.; Heenan, P.B.; Houlston, G.; Rolfe, J.R.; Mitchell, A.D. 2013: New *Lepidium* (Brassicaceae) from New Zealand. *Phytokeys* 24:1-147pp, doi: [10.3897/phytokeys.24.4375](https://doi.org/10.3897/phytokeys.24.4375).

Townsend AJ, de Lange PJ, Norton DA, Molloy J, Miskelly C, Duffy C (2008) The New Zealand Threat Classification System manual. Department of Conservation: Wellington.

<http://www.doc.govt.nz/publications/conservation/nz-threat-classification-system/nzthreat-classification-system-manual-2008/>

NZPCN FACT SHEET CITATION

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

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/lepidium-castellanum/>