

Pteris carsei

COMMON NAME

coastal brake, netted brake

SYNONYMS

Pteris comans G.Forst. (misapplied name)

FAMILY

Pteridaceae

AUTHORITY

Pteris carsei Braggins et Brownsey

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Ferns

NVS CODE

PTECAR

CHROMOSOME NUMBER

2n = 58, 60

CURRENT CONSERVATION STATUS

2017 | Not Threatened | Qualifiers: SO

PREVIOUS CONSERVATION STATUSES

2012 | Not Threatened

2009 | Not Threatened

2004 | Not Threatened

DISTRIBUTION

Endemic. New Zealand: Kermadec Islands (Raoul Island, the Meyers Islands and Macauley Island), Manawatāwhi / Three Kings Islands, North Island (from North Cape to Bay of Plenty in the east and Awhitu Peninsula in the west with an outlying population near Mokau).

HABITAT

Coastal in forest especially on the sides of gullies, on banks and in valley heads. A very common offshore island fern.

DETAILED DESCRIPTION

Terrestrial ferns. **Rhizomes** short, erect, scaly. **Stipes** 0.25–0.6 m long, pale brown, glabrous or scaly at very base. **Laminae** 0.2–1.8 × 0.15–0.9 m, dark green to yellow-green, 2–3-pinnate at base, ovate, coriaceous, veins reticulate. **Pinnae** not overlapping; most lower secondary pinnae adnate. **Ultimate segments** 10–55 × 5–10 mm, oblong, apices tapering or bluntly pointed, margins toothed. **Sori** continuous along pinna margins on a marginal vein, protected by a membranous inrolled pinna margins.



Pteris carsei Motuoruhi, Coromandel.
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Pteris carsei Motuoruhi, Coromandel.
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SIMILAR TAXA

Pteris carsei is easily distinguished from all other New Zealand *Pteris* except *P. epaleata* by the coriaceous (leathery) fronds, reticulate venation, overlapping pinnae and large ultimate segments. *Pteris saxatilis* differs by the very widely spaced primary and secondary pinnae; laminae 0.15–0.5 × 0.12–0.25 m, and the ultimate segments up to 15 × 5 mm. *Pteris saxatilis* hybridises freely with *P. carsei*. *Pteris maclienta* is distinguished from both species by the less widely spaced primary and secondary pinnae; laminae 0.25–0.9 × 0.15–0.5 mm, and the ultimate segments up to 15 × 5 mm. It is unclear whether *Pteris maclienta* forms hybrids with *P. carsei* or *P. saxatilis*. *Pteris epaleata* differs from *P. carsei* by characters of the indumentum and frond division. The indumentum on the abaxial side of the rachis, costae and costules in *Pteris epaleata* comprises uniseriate hairs or sometimes occasional linear scales that are 2–3–(4) cells broad at the base. In *Pteris carsei*, the rachis and costae have uniseriate hairs and some triangular scales that are several cells wide at the base. *Pteris epaleata* can be further distinguished from *P. carsei* and from *P. macilenta* and *P. saxatilis* by its dull adaxial frond surface. *Pteris carsei* also usually has broader ultimate segments (4–28 mm wide) than *P. epaleata* (1.0–5.5 mm wide) and *P. carsei* in New Zealand is usually confined to coastal areas (on Raoul Island it extends to 500 m.a.s.l.), whereas *P. epaleata* can extend further inland, including into mountainous areas.

PROPAGATION TECHNIQUE

Results vary with some people finding *Pteris carsei* easy to grow and others well nigh impossible. *Pteris carsei* resents cold conditions and seems to do best in a semi-shaded, light, sandy, but moist soil.

ETYMOLOGY

pteris: A fern known to the ancient Greeks; from the Greek pteris

TAXONOMIC NOTE

Pteris carsei has long been known in New Zealand as *P. comans* a species which actually occurs in Vanuatu, the Solomon Islands, and Fiji (and possibly New Caledonia). The usage of the name for the New Zealand plant stemmed from an error made by the Georg Forster who stated he collected the type from New Zealand when it actually came from Tanna Island (Brownsey et al. 2020). A form of *Pteris* found along the North-west Nelson and northern Westland coastline, often on calcareous rocks, and sometimes extending well inland in karst country has also been placed within a broad concept of *P. comans* or *P. maclienta* by various fern experts. This form is apparently closest to the Australian form of *P. comans* (J.E. Braggins pers. comm.) and has been listed in past Threatened and Uncommon New Zealand Vascular Plant listings as *Pteris* aff. *macilenta* (AK 210045; Punakaiki) (see de Lange et al. 2009). It was removed from that list in 2009 because it is now known to be more widespread than had been believed. Nevertheless it warrants further study.

ATTRIBUTION

Fact sheet [repared for NZPCN by P.J. de Lange (17 January 2012). Description adapted from Brownsey & Smith-Dodsworth (2000).

REFERENCES AND FURTHER READING

- Allan HH. 1961. Flora of New Zealand, Volume I. Indigenous Tracheophyta: Psilopsida, Lycopsida, Filicopsida, Gymnospermae, Dicotyledones. Government Printer, Wellington, NZ. 1085 p.
- Brownsey PJ, Smith-Dodsworth JC. 2000. New Zealand Ferns and Allied Plants. David Bateman, Auckland, NZ. 168 p.
- Brownsey PJ, Braggins J, Perrie L. 2020. *Pteris carsei* (Pteridaceae), a new endemic fern from New Zealand previously treated as *P. comans* G.Forst., *New Zealand Journal of Botany* 58(3): 214–222. <https://doi.org/10.1080/0028825X.2019.1701503>.
- de Lange PJ, Norton DA, Courtney SP, Heenan PB, Barkla JW, Cameron EK, Hitchmough RA, Townsend AJ. 2009. Threatened and uncommon plants of New Zealand (2008 revision). *New Zealand Journal of Botany* 47(1): 61–96. <https://doi.org/10.1080/00288250909509794>.

NZPCN FACT SHEET CITATION

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MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/pteris-carsei/>