

Pakau pennigera

COMMON NAMES

gully fern, feather fern, piupiu

BIOSTATUS

Native

CATEGORY

Vascular

STRUCTURAL CLASS

Ferns

DETAILED DESCRIPTION

Delicate, terrestrial fern. **Rhizome** slender, erect, 0.3–1.0 m tall, scaly; scales broad, brown, glabrous. **FronDs** 0.4–1.2 m long, pale yellow-green to bright green. **Stipe** 0.15–0.3–(0.45) m long, pale brown or green-brown. **Lamina** narrowly elliptic to elliptic, to 0.3–1.1–(1.5) m long; pinnae to 36 pairs; basal 4–5 pairs gradually reduced; lowest pinnae 10–30 mm long, 15–30 mm wide; largest pinnae c. 100 mm long, 30 mm wide at auriculate base, lobed more than ½-way to costae; lobes oblique, tapering, minutely dentate; costules 5–7 mm apart; veins usually 6 pairs, 1 pair anastomosing, with next acroscopic vein sometimes passing to the sinus membrane. Lamina ± glabrous, aside from pale brown ovate scales on abaxial surface of costae of emergent and young fronds, and sparse brown acicular hairs and colourless capitate hairs on adaxial surface of rachis, costae and margins. **Sori** inframedial, exindusiate; sporangia without capitate hairs near annulus.

SIMILAR TAXA

Within the New Zealand Thelypteridaceae *Pakau* is superficially similar to *Christella* (with which it sometimes grows). From *Christella* it is most reliably distinguished by abaxially glabrous fronds (hairy in *Christella*) and absence of an indusia (present in *Christella*).

DISTRIBUTION

Indigenous. New Zealand: Manawatāwhi / Three Kings Islands, North Island, South Island, Chatham Islands. Also Australia.

HABITAT

Coastal to montane, usually in dense forest in riparian habitats or in gullies, or on frequently flooded ground. A common fern under willows (*Salix* spp.). Often found along waterways in urban wasteland, Although usually found in shaded situations *Pakau* will tolerate considerable exposure provided its roots are in a permanently damp situation.

CURRENT CONSERVATION STATUS

2023 | Not Threatened | Qualifiers: TO

DETAILED TAXONOMY

FAMILY

Thelypteridaceae

AUTHORITY

Pakau pennigera (G. Forst.) S.E. Fawc. et A.R. Sm.



Sori. Stokes Valley, Lower Hutt. Photographer: Jeremy R. Rolfe, Date taken: 12/05/2013, Licence: CC BY.



Stokes Valley, Lower Hutt. Photographer: Jeremy R. Rolfe, Date taken: 02/07/2010, Licence: CC BY.

SYNONYMS

Cyclosorus pennigera (G. Forst.) Ching; Thelypteris pennigera (G. Forst.) Allan; Dryopteris pennigera var. hamiltoni (Colenso) Cheeseman; Polypodium pennigerum var. hamiltonii Colenso; Polypodium pennigerum var. giganteum Colenso; Polystichum pennigerum (G.Forst.) Gaudich. in Freyc.; Phegopteris cunninghamii Mett.; Polypodium pennigerum G.Forst.; Polypodium subsimilis Colenso; Goniopteris pennigera (G.Forst.) J.Sm.; Lastrea pennigera (G.Forst.) C.Presl; Nephrodium pennigerum (G.Forst.) C.Presl; Cyclosorus pennigerus (G.Forst.) Ching; Dryopteris pennigera (G.Forst.) C.Chr.; Goniopteris forsteri T.Moore; Aspidium cunninghamii Kunze; Aspidium novae-zeelandiae Ettingsh.; Aspidium pennigerum (G.Forst.) Sw.; Pneumatopteris pennigera (G. Forst.) Holttum

TAXONOMIC NOTES

Pakau is a monotypic genus erected by Fawcett & Smith (2021) to accommodate *Pneumatopteris pennigera*. *Pakau* differs from *Pneumatopteris* by having exindusiate sori, by the presence of costal scales, and by the absence of rudimentary proximal pinnae.

ENDEMIC TAXON

No

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

ECOLOGY

PROPAGATION TECHNIQUE

Easily grown provided it is planted in a permanently moist soil, in a shaded site, and sheltered from frost.

WETLAND PLANT INDICATOR STATUS RATING

FACU: Facultative Upland

Occasionally is a hydrophyte but usually occurs in uplands (non-wetlands).

OTHER INFORMATION

ETYMOLOGY

pakau: Pākau, or pākaurōharoha, is derived from the common name for the fern *Pakau pennigera* (hitherto known as *Pneumatopteris pennigera*) in Te Reo Māori

NVS CODE

PAKPEN

CHROMOSOME NUMBER

2n = 144

PREVIOUS CONSERVATION STATUSES

2017 | Not Threatened | Qualifiers: TO

2012 | Not Threatened

2009 | Not Threatened

2004 | Not Threatened

REFERENCING AND CITATIONS

REFERENCES AND FURTHER READING

Bostock PD. 1998. Thelypteridaceae. *Flora of Australia 48, Ferns Gymnosperms and allied groups*: 327–358.

ABRS/CSIRO Victoria, Australia.

Brownsey PJ, Smith-Dodsworth JC. 2000. *New Zealand Ferns and Allied Plants*. David Bateman, Auckland, NZ. 168 p.

Fawcett S, Smith AR. 2021. A generic classification of the Thelypteridaceae. *Sida, Bot. Misc.* 59. BRIT Press, Fort Worth Botanic Garden | Botanical Research Institute of Texas, U.S.A. 102 p.

Ford M. 2020. *Pneumatopteris pennigera* – a record-breaking gully fern? *Trilepidea* 194: 8.

ATTRIBUTION

Fact sheet prepared for NZPCN by P.J. de Lange (13 November 2012). Description adapted from Bostock (1998) and Brownsey & Smith-Dodsworth (2000).

NZPCN FACT SHEET CITATION

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

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/pakau-pennigera/>

PDF DATE

13 October 2024