

# Asplenium pauperequitum

## COMMON NAME

Poor Knights spleenwort

## SYNONYMS

None

## FAMILY

Aspleniaceae

## AUTHORITY

Asplenium pauperequitum Brownsey et P.Jackson

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Ferns

## NVS CODE

ASPPAU

## CHROMOSOME NUMBER

2n = c.288

## CURRENT CONSERVATION STATUS

2017 | Threatened – Nationally Endangered | Qualifiers: EF, RR

## PREVIOUS CONSERVATION STATUSES

2012 | Threatened – Nationally Endangered | Qualifiers: EF, IE, RR

2009 | Threatened – Nationally Endangered | Qualifiers: EF

2004 | Threatened – Nationally Endangered

## DISTRIBUTION

Endemic. New Zealand: Poor Knights Islands, Mokohinau Islands (though probably extinct at this location).

Discovered 2005 on the Chatham Islands where it is now known from Motchu Hara / The Forty Fours and several sites in the north-west of Rēkohu / Wharekauri / Chatham Island.

## HABITAT

A fern inhabiting semi- to heavily-shaded rock outcrops, where it grows in small colonies, with the rootlets tightly appressed to the damp rock walls. Plants are often associated with moisture loving, nitrogen fixing blue-green algae Nostoc, and grow in places where partially liquified sea bird guano accumulates. Plants seem intolerant of drying out and dislike high light levels—but will persist for some time in these habitats if the plants are mature (in such unfavourable conditions the fronds of stressed plants turn bright-green or yellow).



Plants growing in rhyolitic rock crevices, Poor Knights Islands. Photographer: John Smith-Dodsworth, Licence: CC BY-NC.



Asplenium pauperequitum plants in schist rock crevice, Chatham (Rekohu) Island, Point Somes, January 2006. Photographer: Peter J. de Lange, Licence: CC BY-NC.

## DETAILED DESCRIPTION

Small tufted fern, forming dense colonies, usually within dark, damp overhangs. **Rhizomes** very short, erect. **Stipes** 10–120–(200) mm long, stipes and rachises dark red-brown (almost black), shiny, basal portion (especially) bearing fine hair-like scales. **Fronds** somewhat fleshy, deltoid in outline, pinnate to 2-pinnate, 30–100 × 25–80 mm, glossy dark green above (yellow green in stressed plants), pale beneath, glabrescent. **Pinnae** in 1–5 pairs, broadly ovate or broadly triangular, 3-lobed on largest fronds, margins smooth or slightly toothed. **Sori** up to 12 mm long, curving away from margins.

## LIFE CYCLE

Minute spores are wind dispersed (Thorsen et al., 2009).

## PROPAGATION TECHNIQUE

Can be grown with considerable difficulty from spores, and has proved virtually impossible to maintain in cultivation.

## THREATS

Appears to be extinct on the Mokohinau Islands. On the Poor Knights Islands monitoring suggests that it is a species prone to seasonal or some other cyclic pattern, whereby populations rapidly expand and flourish before collapsing. Added to this apparently natural phenomena, Poor Knights plants have suffered from outbreaks of black scale and aphids, insect pests which seem to have been introduced to the islands by cannabis growers. Despite the Nature Reserve status of these islands some accessible populations were also severely damaged or completely destroyed by plant collectors. The Chatham Island populations seem secure because they are mainly remote from human habitation (Cameron et al. 2006, de Lange et al. 2010).

## ETYMOLOGY

**asplenium**: From the Greek a- 'without' and splene 'spleen', a northern hemisphere species, the black spleenwort (*Asplenium adiantum-nigrum*), was once believed to be a cure for diseases of the spleen.

## EXTRA INFORMATION

Story in Trilipidea about Poor Knight's spleenwort being observed on the Chatham Islands.

## ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange 1 October 2003: Description modified from Brownsey & Jackson (1984) but see also de Lange et al. (2010).

## REFERENCES AND FURTHER READING

Brownsey PJ, Jackson PJ. 1984. *Asplenium pauperequitum* – a new fern species from the Poor Knights Islands, New Zealand. *New Zealand Journal of Botany* 22(2): 315–321. <https://doi.org/10.1080/0028825X.1984.10425260>.  
Cameron EK, de Lange PJ, Perrie LR, Brownsey PJ, Campbell HJ, Taylor GA, Given DR, Bellingham EM. 2006. A new location for the Poor Knights spleenwort (*Asplenium pauperequitum*, Aspleniaceae) on the Forty Fours, Chatham Islands. *New Zealand Journal of Botany* 44: 199–209. <https://doi.org/10.1080/0028825X.2006.9513018>.  
de Lange PJ, Heenan PB, Norton DA, Rolfe JR, Sawyer JWD. 2010. Threatened Plants of New Zealand. Canterbury University Press, Christchurch. 471 p.  
Thorsen MJ, Dickinson KJM, Seddon PJ. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 11: 285–309. <https://doi.org/10.1016/j.ppees.2009.06.001>.

## NZPCN FACT SHEET CITATION

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<https://www.nzpcn.org.nz/flora/species/asplenium-pauperequitum/> (Date website was queried)

## MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/asplenium-pauperequitum/>