Isoetes alpina

COMMON NAMES
Alpine quillwort

BIOSTATUS
Native – Endemic taxon

CURRENT CONSERVATION STATUS
2023 | Not Threatened
Jump to previous conservation statuses

CATEGORY
Vascular

STRUCTURAL CLASS
Lycophytes (clubmosses, selaginella, quillworts)

FLOWER COLOURS
No flowers

DETAILED DESCRIPTION
Aquatic, heterosporous, robust tufted herb arising from an erect corm. Roots long and stout, dichotomously branched. Leaves mostly sporophyllous, rather brittle, spirally (rarely flabellately) arranged, erect in tufts of up to 70, dark green, usually evenly septate, septae forming air chambers; lamina 50-250-500 (-750) mm long, linear to linear-filiform, tapered to an finely acute (rarely subacute to obtuse) apex, base swollen, up to 10 mm wide. Leaf appendages ligulate, ligule broadly triangular 1.0-1.4 mm long, located above the sporangium on the adaxial side. Sporangia adaxially located in pockets in leaf bases, large (up to 5 mm long) and conspicuous, oblong, heterosporous, Megaspores grey-white, mostly smooth, rarely minutely and obscurely tubercled; microspores minute, numerous.

SIMILAR TAXA
New Zealand Isoetes are in serious need of a thorough revision. As currently circumscribed the two species I. alpina and I. kirkii significantly overlap in most features except (mostly) the megaspore surface which in I. kirkii is finely though conspicuously tubercled, while it is usually smooth in I. alpina. The megaspores of I. kirkii are also usually white, whilst those of I. alpine are typically grey to greyish white.

DISTRIBUTION
Endemic. New Zealand: North and South Islands from the headwaters of the Waikato River and Lake Taupo south (near Whakamaru) south. Most common in the montane lakes, tarns and slow-flowing streams of the South Island.

HABITAT
Montane to alpine, aquatic (rarely subterrestrial) at the bottom of lakes, rivers and streams (rarely growing near shoreline where it may be partially exposed during low water levels). Often forming extensive colonies in fine sediments or coarse sand.

GENUS
Isoetes

FAMILY
Isoetaceae

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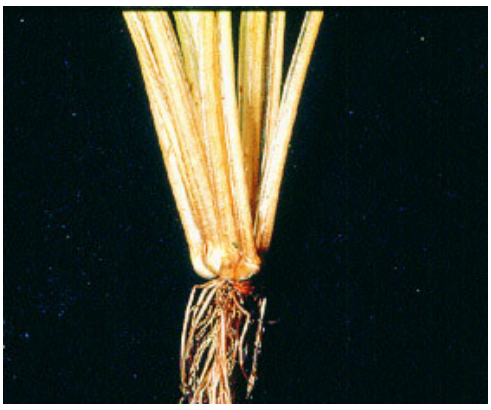

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AUTHORITY
Isoetes alpina Kirk

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

FLOWERING
N.A. Spore producing

FRUITING
N.A. Spore producing

LIFE CYCLE AND DISPERSAL
Spongy megaspores are dispersed by water

PROPAGATION TECHNIQUE
Easily grown in a fish tank ot fish pond planted in a coarse mix of sand and peat. Algal blooms area problem. Plants are very slow growing

WETLAND PLANT INDICATOR STATUS RATING
OBL: Obligate Wetland
Almost always is a hydrophyte, rarely in uplands (non-wetlands).

ETYMOLOGY
isoetes: From the Greek isos 'equal' and etas 'year', referring to the evergreen, unchanging character of the plant (Johnson and Smith, 1986).
alpina: From the Latin alpes 'the Alps', refers to plants growing in mountainous areas

CHROMOSOME NUMBER
2n = 22

PREVIOUS CONSERVATION STATUSES
2017 | Not Threatened
2012 | Not Threatened
2009 | Not Threatened
2004 | Not Threatened
Jump to current conservation status

REGIONAL CONSERVATION STATUSES
Otago: 2025 | Regionally Not Threatened Help
The regional threat classification system leverages off the national assessments in the NZTCS, providing information relevant for the regional context. Otago conservation status information is sourced from the "Conservation Status of Indigenous Vascular Plants in Otago, 2025" Jarvie S et al. (2025) report.

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.
Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. Perspectives in Plant Ecology, Evolution and Systematics 11: 285-309

ATTRIBUTION
Fact sheet including description prepared for NZPCN by P.J. de Lange (7 May 2011)

NZPCN FACT SHEET CITATION

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MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/isoetes-alpina/

PDF DATE

08 June 2026