

Isoetes drummondii subsp. *drummondii*



Image by Richard Schahinger

FAMILY: ISOETACEAE

BOTANICAL NAME: *Isoetes drummondii*
A. Braun subsp. *drummondii*, Monatsber.
Königl. Preuss. Akad. Wiss. Berlin 1868: 542
(1869)

COMMON NAME: Plain quillwort

COMMONWEALTH STATUS (EPBC Act):
Not Listed

TASMANIAN STATUS (TSP Act): rare

Description

Isoetes drummondii is a freshwater aquatic or semi-aquatic species in the quillwort family. It has a small 2- or 3-lobed corm-like stem and numerous dark roots. Leaves are tufted at the top of the stem, erect or spreading, 3 to 20 cm long, narrowly cylindrical and tapering; bases abruptly wider, flattened, overlapping and spoon-shaped with lateral margins having paler, papery wings. There are two types of spore-containing structures (sporangia), both of which are round to oval, shiny and brown, and sac-like, lying in the hollowed leaf bases; the outer leaves have sporangia that contain megaspores (10–300), while the inner leaves have sporangia that contain microspores (1000s) (Duncan & Isaac 1986, Garrett & Kantvilas 1992). **Confusing species:** *Isoetes drummondii* can be distinguished from other species of *Isoetes* in Tasmania by the following combination of features: sporangia lacking a membranous covering (velum); leaves clean, soft and flexible, markedly flattened, rosette-forming; deciduous (Garrett & Kantvilas 1992). Most herbarium specimens have been collected from October to March.

Distribution and Habitat

On mainland Australia *Isoetes drummondii* occurs in Queensland, New South Wales, Victoria, South Australia and Western Australia (Chinnock 1998). Within Tasmania the species is known from the Central Plateau, Northern Midlands, Eastern Tiers and the far northeast near Mt William (Threatened Species Section 2011). There is an historic record from near Georgetown on the north coast, and an unconfirmed 2003 record from Flinders Island (Threatened Species Section 2011). Garrett (1996) has also noted the presence of a taxon along the Douglas and Apsley Rivers that appears to be intermediate in character between *Isoetes drummondii* and the rare *Isoetes elatior* — its status remains to be determined.

Isoetes drummondii grows in mud or temporary shallow water, including in damp depressions, ephemeral creeklines and the margins of wetlands. Associated plants may include reeds, grasses and other *Isoetes* species.

Key Sites and Populations

Powranna–Epping Forest–Conara, Wihareja Lagoon, Lake Leake area, Mt William.

Known Reserves

Mt William National Park, Powranna Nature Reserve, Tom Gibson Nature Reserve (and possibly Tooms Lake Conservation Area).

Ecology and Management

The leaves of *Isoetes drummondii* die down after a short growing season and re-shoot annually. Threats include land clearance and drainage of habitat, hydrological changes as a result of hydro-electric activities, logging or land clearance, stock damage and weed invasion.

Populations in dams or waterways subject to hydro-electric activities might be expected to be impacted through any changes to flow regimes and water levels, though the overall effect on the species is unclear. Similarly, activities in upstream areas, such as land clearance and logging, may also be expected to have an impact through changes in water and sedimentation levels. Garrett (1996) noted that there is ‘... evidence to suggest that disturbance or development (e.g. drainage of wet areas or redirecting drainage channels) has been both deleterious and advantageous to different populations of the species in Tasmania’.

Conservation Status Assessment

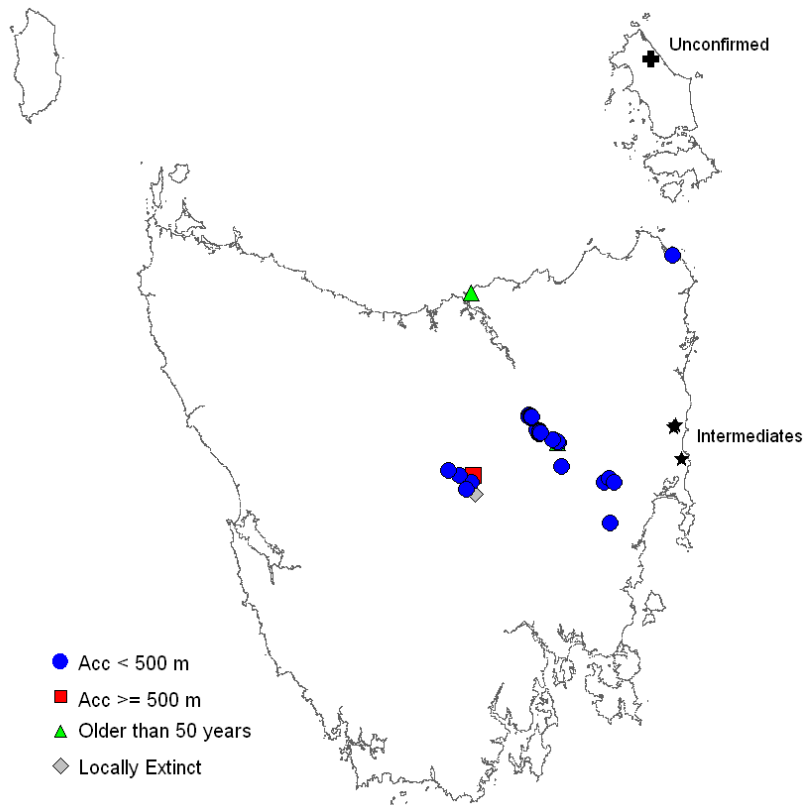
Several additional sites have been recorded in Tasmania since the species’ listing as rare on the TSP Act in 1995, mostly in the Northern Midlands and mostly within either formal reserves or land covered by conservation covenants. A re-assessment of the species’ conservation status may be warranted, though in the first instance surveys are required of sites recorded on the Central Plateau and Eastern Tiers to determine their current status (last seen in 1991 and 1993, respectively).

Further Information

- Chinnock, R.J. (1998). Isoetaceae, *Flora of Australia* 48: 55–65.
- Duncan, B.D. & Isaac, G. (1986). *Ferns and Allied Plants of Victoria, Tasmania and South Australia*, Melbourne University Press, Melbourne.
- Garrett, M. (1996). *The ferns of Tasmania, Their Ecology and Distribution*, Tasmanian Forest Research Council, Hobart.
- Garrett, M. & Kantvilas, G. (1992). Morphology, ecology and distribution of *Isoetes* L. in Tasmania. *Papers and Proceedings of the Royal Society of Tasmania* 126: 115–122.
- Threatened Species Section (2011). *Flora Recovery Plan: Threatened Tasmanian Ferns*. Department of Primary Industries, Parks, Water and Environment, Hobart.

Tasmanian Distribution

(As per Threatened Species Section records, January 2013)



1:25 000 Map Sheets

Arthurs Lake, Cleveland, Cressy, Jacobs, Leake, Low Head, Miena, Musselroe, Nile, Snow, Tooms, Wihareja, Wingaroo (?). (Intermediates: Bicheno, Piccaninny, St John)

Date last modified: 7/01/2013

View

<http://www.dpipwe.tas.gov.au/threatenedspecieslists>

Contact details

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Permit

It is an offence to collect, disturb, damage or destroy this species unless under permit.