

Approved Conservation Advice
(s266B of the *Environment Protection and Biodiversity Conservation Act 1999*)

Approved Conservation Advice for
Aponogeton bullosus

This Conservation Advice has been developed based on the best available information at the time this Conservation Advice was approved; this includes existing plans, records or management prescriptions for this species.

Description

Aponogeton bullosus, Family Aponogetonaceae, also known as North Queensland Lace, is a rooted, submerged, perennial aquatic. Tubers are up to 2 cm long. Leaves are submerged, 7–50 cm long, 0.5–2.5 cm wide, and strongly bullate (appearing blistered or puckered). The yellow flower head mostly remains submerged, and is up to 5 cm long on a stalk up to 30 cm long. The spathe (leaf-like structure that protects the inflorescence) grows to 2.5 cm long. *Aponogeton bullosus* is easily distinguished by its extremely bullate leaves (Hellquist & Jacobs, 1998).

Conservation Status

Aponogeton bullosus is listed as **endangered**. This species is eligible for listing as endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as, prior to the commencement of the EPBC Act, it was listed as endangered under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth). *Aponogeton bullosus* is also listed as endangered under the *Nature Conservation Act 1992* (Queensland).

Distribution and Habitat

Aponogeton bullosus is known to occur between Tully and Cairns and west to the Ravenshoe area (Queensland Herbarium, 2008). This species is a fully aquatic plant growing in cool rapidly flowing freshwater rivers and streams (Hellquist & Jacobs, 1998), in both sunny and shady positions (van Bruggen, 1969). *Aponogeton bullosus* occurs in the Wooroonooran and Tully Falls National Parks (Queensland Herbarium, 2008). The population size of the species is not known. Some populations occur in areas of remnant vegetation (Environmental Protection Agency, 2008) as defined under the *Vegetation Management Act 1999* (Queensland) and are therefore currently protected from broad-scale clearing.

This species occurs within the Wet Tropics (Queensland) Natural Resource Management Region.

The distribution of this species overlaps with the Mabi Forest (Complex Notophyll Vine Forest 5b) EPBC Act-listed threatened ecological community.

Threats

The main identified threats to *Aponogeton bullosus* include illegal collecting for the aquarium trade. It is a highly saleable plant which is used for the ornamental value of its bullate leaves (Muhlberg, 1982).

The main potential threats to *A. bullosus* include encroachment of exotic plants from riparian zones, such as Elephants Ears (*Alocasia* sp.); and clearing of surrounding vegetation for farming, particularly dairying activities, resulting in changes to water flow and degradation of water quality (Bostock, 2008, pers. comm.).

Research Priorities

Research priorities that would inform future regional and local priority actions include:

- Design and implement a monitoring program or, if appropriate, support and enhance existing programs.
- More precisely assess population size, distribution, ecological requirements, and the relative impacts of threatening processes.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment. Propagation in the genus is principally by seed (Muhlberg, 1982).
- Investigate the potential and efficacy of DNA-based or other identification approaches of individual plants and/or populations to provide a means for detecting and prosecuting illegal collection from the wild.

Regional and Local Priority Actions

The following priority recovery and threat abatement actions can be done to support the recovery of *Aponogeton bullosus*.

Habitat Loss, Disturbance and Modification

- If viable, design and implement a management plan for the illegal collection of this species.
- Monitor known populations to identify key threats.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.
- Identify populations of high conservation priority.
- Ensure road widening and maintenance activities, or other infrastructure or development activities, involving substrate or vegetation disturbance in catchments where *A. bullosus* occurs do not adversely impact on known populations.
- Control access routes to suitably constrain public access to known sites on public land.
- Suitably control and manage access on private land.
- Minimise adverse impacts from land use at known sites.
- Manage any disruptions to water flows.
- Manage any changes to hydrology that may result in changes to the water table levels, increased run-off, sedimentation, or pollution.
- Investigate further formal conservation arrangements for immediate habitat and associated catchments such as the use of covenants, conservation agreements or inclusion in reserve tenure.

Invasive Weeds

- Develop and implement a management plan for the control of aquatic and semi-aquatic weeds in the local region.
- Identify and remove weeds in the local area, especially Elephant's Ear, which could become a threat to *A. bullosus*, using appropriate methods.
- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on *A. bullosus*.
- Manage sites to prevent introduction of aquatic and riparian weeds, which could become a threat to *A. bullosus*, using appropriate methods.

Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed collection and storage.
- Investigate options for linking, enhancing or establishing additional populations.

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- Implement national translocation protocols (Vallee et al., 2004) if establishing additional populations is considered necessary and feasible.

This list does not necessarily encompass all actions that may be of benefit to *A. bullosus*, but highlights those that are considered to be of highest priority at the time of preparing the conservation advice.

Existing Plans/Management Prescriptions that are Relevant to the Species

- Wet Tropics Conservation Strategy: the conservation, rehabilitation and transmission to future generations of the Wet Tropics World Heritage Area (WTMA, 2004).

This prescription was current at the time of publishing; please refer to the relevant agency's website for any updated versions.

Information Sources:

Bostock, PD (Queensland Herbarium, Environmental Protection Agency). Personal communication. 26 May 2008.

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Hellquist, CB & Jacobs, SWL 1998, 'Aponogetonaceae of Australia, with descriptions of six new taxa', *Telopea*, vol. 8, no. 1, pp.7–19.

Muhlberg, H 1982, *The Complete Guide to Water Plants*, EP Publishing Ltd, New York.

Queensland Herbarium 2008, specimen label information, viewed 28 April 2008.

Vallee, L, Hogbin, T, Monks, L, Makinson, B, Matthes, M & Rossetto, M 2004, *Guidelines for the Translocation of Threatened Plants in Australia* (2nd ed.), Australian Network for Plant Conservation, Canberra.

Van Bruggen, HWE 1969, 'Revision of the genus *Aponogeton* (Aponogetonaceae): III; The species of Australia', *Blumea*, vol. 17, no. 1, pp. 121–137.

Wet Tropics Management Authority (WTMA) 2004, *Wet Tropics Conservation Strategy: the conservation, rehabilitation and transmission to future generations of the Wet Tropics World Heritage Area*, WTMA, Cairns, Queensland, viewed 2 June 2008, <http://www.wettropics.gov.au/mwha/mwha_pdf/Strategies/wtmaConservationStrategy.pdf>.