

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

Approved Conservation Advice for
Marsdenia paludicola

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

Marsdenia paludicola, Family Asclepiadaceae, is a woody vine with fibrous roots. The cylindrical stems are densely covered in velvety hairs when young, becoming ridged and corky when old, and exude white latex when cut. Leaves are on stalks, 11–55 mm long; the blade grows to 19 cm long, 8 cm wide, and is heart-shaped at the base. The lower surface is pale cream-green to purple with sparse to dense velvety hairs, with prominent venation and 10 or 11 lateral veins on each side of the midrib. The upper surface is dark glossy green and hairless with faintly visible venation. Inflorescences are up to 15 mm long and on stalks 8–15 mm long. Flowers are 9–14 mm long, 10–15 mm wide and on stalks 6–9 mm long. The corolla is bell-shaped and cream. The basal part is a tube about 5 mm long, 4–4.5 mm wide, separating above the tube into lance-shaped lobes about 6 mm long and 2 mm wide, hairless on the inner surface apart from scattered hairs at the junction of the lobes with the tube. The fruit are spindle-shaped to egg-shaped, 20 cm long and 5 cm wide. Flowering occurs in December, fruiting three to six months later (Forster, 1995, 1996).

Conservation Status

Marsdenia paludicola is listed as **vulnerable**. This species is eligible for listing as vulnerable 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 vulnerable under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth). The species is also listed as vulnerable under the *Nature Conservation Act 1992* (Queensland).

Distribution and Habitat

Marsdenia paludicola is known from Mount Tozer and Glennie Tableland, Cape York Peninsula, Queensland. This species grows in notophyll vineforest swamps on strongly acidic soils in narrow gorges surrounded by sandstone cliffs (Forster, 1995). Locations include Wasp Gully, Maloneys Springs, Camp Scrub, Mount Tozer and Hann Creek on the Glennie Tableland (BRI collection records, n.d.). The species is uncommon at Glennie Tableland (BRI collection records, n.d.; Forster, 1995). The Mount Tozer population is reserved in Iron Range National Park. The Glennie Tableland populations occur on unallocated State land (formerly Bromley Holding) (BRI collection records, n.d.). This species occurs within the Cape York (Queensland) Natural Resource Management Region.

The distribution of this species overlaps with “The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin” EPBC Act-listed threatened ecological community.

Threats

The main identified threats to *M. paludicola* include inappropriate fire regimes and potential for localised visitor or settlement pressure (Landsberg & Clarkson, 2004). The Glennie Tableland swamp site was damaged by a major wildfire in 1993 (Gray cited in Forster, 1995).

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In 1991, habitat was found to have been disturbed by geological survey activity (Forster, 1995).

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, fire ecology, 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.

Regional and Local Priority Actions

The following regional and local priority recovery and threat abatement actions can be done to support the recovery of *M. paludicola*.

Habitat Loss, Disturbance and Modification

- 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.
- Ensure road widening and maintenance activities (or other infrastructure or development activities) involving substrate or vegetation disturbance in areas where *M. paludicola* occurs do not adversely impact on known populations.
- Control access routes to suitably constrain public access to known sites.
- Minimise adverse impacts from land use at known sites.
- Investigate further formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible.

Fire

- Develop and implement a suitable fire management strategy for *M. paludicola*.
- Provide maps of known occurrences to local and state Rural Fire Services and seek inclusion of mitigative measures in bush fire risk management plans, risk register and/or operation maps.

Conservation Information

- Raise awareness of *M. paludicola* within the local community.
- Maintain liaisons with private landholders and land managers of land on which populations occur.

Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed collection and storage.
- Investigate options for linking, enhancing or establishing additional populations.
- 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 *M. paludicola*, but highlights those that are considered to be of highest priority at the time of preparing the conservation advice.

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Existing Plans/Management Prescriptions that are Relevant to the Species

- Cape York Back on Track Biodiversity Action Plan (EPA, 2008), and
- Management Program for Protected Plants in Queensland 2006–2010 (EPA, 2006).

These prescriptions were current at the time of publishing; please refer to the relevant agency's website for any updated versions.

Information Sources:

BRI Collection Records (no date), Queensland Herbarium specimens.

Environmental Protection Agency (EPA) 2006, *Management Program for Protected Plants in Queensland 2006 – 2010*, Queensland Government, viewed 19 May 2008, <<http://www.environment.gov.au/biodiversity/trade-use/sources/management-plans/flora-qld/pubs/qld-protected-plants.pdf>>.

Environmental Protection Agency (EPA) 2008, *Cape York Back on Track Biodiversity Action Plan*, Environmental Protection Agency, Brisbane, viewed 17 March 2008, <http://www.epa.qld.gov.au/nature_conservation/wildlife/back_on_track_species_prioritisation_framework/>.

Forster, PI 1995, 'Circumscription of *Marsdenia* (Asclepiadaceae: Marsdeniinae), with a revision of the genus in Australia and Papuaia', *Australian Systematic Botany*, vol. 8, no. 5, pp. 703-933.

Forster, PI 1996, 'Asclepiadaceae', in: Orchard, AE & Wilson, A (Ed.), *Flora of Australia*, vol. 28, CSIRO, Melbourne.

Landsberg, J & Clarkson, J 2004, *Threatened Plants of the Cape York Peninsula: A report to the Australian Government Department of the Environment and Heritage*, Queensland Parks & Wildlife Service.

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.