

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

Approved Conservation Advice for
Diplazium cordifolium

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

Diplazium cordifolium, Family Athyriaceae / Woodsiaceae, is a fern with a short, erect rhizome that is scaly at the apex. The scales are about 1 cm long, 1.5 mm wide, and are brown with black margins. The pale green, leathery fronds are crowded and erect, and the stipe (frond stalk) is 20–50 cm long. The frond leaf is 20–31 cm long, 6.5–10 cm wide, and is usually undivided (Jones, 1998).

Conservation Status

Diplazium cordifolium 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). *Diplazium cordifolium* is also listed as endangered under the *Nature Conservation Act 1992* (Queensland).

Distribution and Habitat

Diplazium cordifolium is known from north-east Queensland. This species is found around Cairns, Herberton, and Wooroonooran, and mostly occurs on private land (Croft, 1999; Queensland EPA, 2008). This species has had a large decline in population numbers in the past, but is not considered to be in decline at present (Queensland EPA, 2008). The population size and extent of occurrence of this species are unknown. *Diplazium cordifolium* is found in rainforest, along creek banks. It is usually found below 80-100 m altitude, although one population in Palmerston valley grows at 475 m altitude. This species occurs within the Wet Tropics (Queensland) Natural Resource Management Region.

The distribution of this species is not known to overlap with any EPBC Act-listed threatened ecological community.

Threats

The main identified threats to *Diplazium cordifolium* are climate change, feral pigs (*Sus scrofa*), weed invasion, and clearing (Queensland EPA, 2008).

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 spore germination 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 *D. cordifolium*.

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.
- Identify populations of high conservation priority.
- Ensure infrastructure or development activities involving substrate or vegetation disturbance in areas where *D. cordifolium* occurs do not adversely impact on known populations.
- Minimise adverse impacts from land use at known sites, especially from agriculture.
- Investigate formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible.

Invasive Weeds

- Identify and remove weeds in the local area, which could become a threat to *D. cordifolium*, using appropriate methods.
- Manage sites to prevent introduction of invasive weeds, which could become a threat to the species, using appropriate methods.
- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on *D. cordifolium*.

Trampling, Browsing or Grazing

- Implement the Threat Abatement Plan for the control and eradication of feral pigs.

Conservation Information

- Raise awareness of *D. cordifolium* 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 spore 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 *D. cordifolium*, 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

- Threat Abatement Plan for Predation, Habitat Degradation, Competition and Disease Transmission by Feral Pigs (DEH, 2005),
- Sustaining the Wet Tropics: A Regional Plan for Natural Resource Management 2004-2008 (FNQ NRM Ltd. & Rainforest CRC, 2004), and
- Wet Tropics Conservation Strategy (WTMA, 2004).

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

This Conservation Advice was approved by the Minister / Delegate of the Minister on:
16/12/2008

Information Sources:

Croft, J 1999, *Pteridophytes of conservation significance in Australia*, Centre for Plant Biodiversity Research and Australian National Herbarium, viewed 29 August 2008, <<http://www.anbg.gov.au/fern/conservation.html>>.

Department of Environment and Heritage (DEH) 2005, *Threat abatement plan for the predation, habitat degradation, competition and disease transmission by feral pigs*, viewed 29 August 2008, <<http://www.environment.gov.au/biodiversity/threatened/publications/tap/pig/pubs/feral-pig-tap.pdf>>.

Far North Queensland Natural Resource Management Board (FNQ NRM Ltd.) & Rainforest CRC 2004, *Sustaining the Wet Tropics: A Regional Plan for Natural Resource Management 2004-2008*, FNQ NRM Ltd, Innisfail.

Jones, DL 1998, *Diplazium cordifolium*, Flora of Australia Online, Australian Biological Resources Study, Canberra, viewed 29 August 2008, <<http://www.anbg.gov.au/abrs/abif/flora/stddisplay.xsql?pnid=4817>>.

Queensland Environmental Protection Agency (Queensland EPA) 2008, *Back on Track species prioritisation framework*, Queensland EPA, viewed 29 August 2008, <http://www.epa.qld.gov.au/nature_conservation/wildlife/back_on_track_species_prioritisation_framework/>.

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.

Wet Tropics Management Authority (WTMA) 1998, *Wet Tropics Management Plan 1998*, State of Queensland.

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.