

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

**Approved Conservation Advice for**  
***Eleocharis retroflexa***

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**

*Eleocharis retroflexa*, Family Cyperaceae, is a tufted, annual sedge growing to 10 cm tall. Stems are 4-angled, almost submerged with leaves that are reduced to a sheath. Spikelets are 2–3.5 mm long, 1–2 mm wide, with 2–5 flowers. The glumes (small bracts in the spikelets) are in 2 rows with two thirds overlapping, red-brown with green midrib and margins, membranous and keeled. Nuts are white, 0.6–0.7 mm long, 0.5 mm wide, angles ribbed and epidermal cells deeply pitted. Flowering and fruiting occur in May (Kern, 1974; Cowie et al., 2000; Woinarski et al., 2007).

**Conservation Status**

*Eleocharis retroflexa* 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). *Eleocharis retroflexa* is also listed as vulnerable under the *Nature Conservation (Wildlife) Regulation 2006* (Queensland) and data deficient under the *Territory Parks and Wildlife Conservation Act 2000* (Northern Territory).

**Distribution and Habitat**

*Eleocharis retroflexa* is known from Queensland and the Northern Territory. In Queensland it is known from the Eubenangee Swamp, north of Garradunga and Blackfellows Creek near Cairns. In the Northern Territory it is known from two swamps on the Wingate Mountains plateau and sandstone plateau in Nitmiluk National Park. This species is conserved within Eubenangee Swamp National Park and Nitmiluk National Park (Briggs & Leigh, 1996; Woinarski et al., 2007). There is no population and extent of occurrence data available for this species in Australia (Woinarski et al., 2007). *Eleocharis retroflexa* has a pantropical distribution and also occurs in tropical America and Asia (Kern, 1974). It grows in shallow water on the margins of seasonal swamps (BRI collection records, n.d.) and occurs within the Wet Tropics (Queensland) and Northern Territory Natural Resource Management Regions.

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

**Threats**

The main potential threats to *Eleocharis retroflexa* include inappropriate fire regimes and grazing and trampling by high densities of feral animals (Woinarski et al., 2007).

**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.

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- 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 *E. retroflexa*.

#### **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.
- 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.
- 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.

#### **Trampling, Browsing or Grazing**

- Manage known sites to ensure appropriate grazing regimes occur.
- Manage total grazing pressure at important sites through exclusion fencing or other barriers.

#### **Fire**

- Develop and implement a suitable fire management strategy for *E. retroflexa*.
- Identify appropriate intensity and interval of fire for this species.
- 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 *E. retroflexa* 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 *E. retroflexa*, 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 (WTMA, 2004),
- Management Program for Protected Plants in Queensland 2006–2010 (EPA, 2006), and
- Sustaining the Wet Tropics: A Regional Plan for Natural Resource Management 2004–2008 (FNQ NRM Ltd. & Rainforest CRC, 2004).

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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.

Briggs, JD & Leigh JH 1996, *Rare or Threatened Australian plants*, Centre for Plant Biodiversity Research, CSIRO Division of Plant Industry, Canberra, ACT.

Cowie, ID, Short, PS & Osterkamp Madsen, M 2000, *Floodplain Flora: A flora of the coastal floodplains of the Northern Territory, Australia*, Flora of Australia Supplementary Series 10, ABRS, Canberra.

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>>.

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.

Kern, JH 1974, 'Cyperaceae', *Flora Malesiana*, ser. 1, vol. 7, pp. 435-753.

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

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.

Woinarski, J, Pavey, C, Kerrigan, R, Cowie, I, & Ward, S (eds), 2007. *Lost from our landscape: threatened species of the Northern Territory*. Northern Territory Government, Darwin.