

**Approved Conservation Advice for**  
***Prasophyllum atratum* (Three Hummock Leek-orchid)**

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

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**

*Prasophyllum atratum*, Family Orchidaceae, also known as Three Hummock Leek-orchid, is a small, fleshy, terrestrial orchid with a solitary erect leaf that is 12–40 cm long and 3–5 mm wide. Flowers are widely spaced to moderately dense along a flower spike 15–30 cm tall. Flowers are brownish-green to purplish-green in colour with a dark purple labellum (modified middle petal) 4.5–5.5 mm long that is broad at its base, constricted and sharply recurved near the middle and has a tapered point. The other petals and the sepals are 5–7 mm long (Jones, 2006; Jones and Rouse, 2006).

**Conservation Status**

The Three Hummock Leek-orchid is listed as **critically endangered**. This species is eligible for listing as **critically endangered** under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as, in 2009, the Minister considered the Threatened Species Scientific Committee's (TSSC) advice under section 189 of the EPBC Act and amended the list under section 184 to include the Three Hummock Leek-orchid. The TSSC determined that this species met criteria 2, 3 and 4 of the eligibility criteria based on very low population numbers and a very restricted geographic distribution which is precarious for the survival of the species (TSSC, 2009). The Three Hummock Leek-orchid is also listed as endangered (the highest risk category for extant species) under the Tasmanian *Threatened Species Protection Act 1995*.

**Distribution and Habitat**

The Three Hummock Leek-orchid is known from one population in sedgy heathland habitat on Three Hummock Island, 20 km northwest of Tasmania. The area of occupancy is estimated to be less than 1 km<sup>2</sup> (DPIWE, 2000) with an estimated population size of approximately 43 mature individuals in 2006 (DPIW, 2006a). This species occurs within the North West 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 current threats to the Three Hummock Leek-orchid are inappropriate airstrip maintenance activities and inappropriate disturbance. Potential threats to the Three Hummock Leek-orchid include loss of pollinators and associated mycorrhizal fungi and the effect of climate change on rainfall patterns impacting on habitat.

**Research Priorities**

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

- Design and implement a monitoring program with more frequent surveys or, if appropriate, support and enhance existing programs.

- More precisely assess population size, distribution, ecological requirements and the relative impacts of threatening processes.
- Develop a better understanding of life history, disturbance ecology and identification of pollinators; and the implications of these for management.
- Undertake survey work in suitable habitat and potential habitat, preferably during the October–November flowering period, to locate any additional populations/ occurrences/remnants.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment, including mycorrhizal association trials.

#### Fire

- Identify appropriate intensity and interval of fire to promote seed germination and vegetation regeneration.
- Develop and implement a suitable fire management strategy for the Three Hummock Leek-orchid.

#### **Priority Actions**

The following priority recovery and threat abatement actions can be done to support the recovery of the Three Hummock Leek-orchid.

#### 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 airstrip activities and maintenance activities involving substrate or vegetation disturbance in areas where the Three Hummock Leek-orchid occurs do not adversely impact on known populations.
- Manage any disruptions to water flows.
- Manage any other known, potential or emerging threats including inappropriate disturbance, loss of pollinators and effects of climate change.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.
- Minimise adverse impacts from land use at known sites.
- Protect populations of the listed species through the development of conservation agreements and/or covenants with airport owners.

#### Conservation Information

- Raise awareness of the Three Hummock Leek-orchid within the local community.
- Frequently engage with private landholders and land managers responsible for the land on which populations occur and encourage these key stakeholders to contribute to the implementation of conservation management actions.

#### Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed and mycorrhizal fungi 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 the Three Hummock Leek-orchid 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**

The Tasmanian Department of Primary Industries and Water (DPIW) has developed the Flora Recovery Plan: Threatened Tasmanian Orchids 2006-2010 (DPIW, 2006b). In this plan, the species (under the name of *Prasophyllum pyriforme*) is a priority population for recovery actions to be implemented. It recommends appropriate disturbance, monitoring, survey, storage of seed and fungi and increased awareness.

These prescriptions were current at the time of publishing; please refer to the DPIW website for any updated versions.

### **Information Sources:**

Department of Primary Industries, Water and Environment (DPIWE) (2000). Listing statement: Graceful leek orchid *Prasophyllum pyriforme*. Department of Primary Industries, Water and Environment, Tasmania.

Department of Primary Industries and Water (DPIW) (2006a). Threatened Species Section (TSS) Field trip data (unpublished). Department of Primary Industries and Water (DPIW), Tasmania.

Department of Primary Industries and Water (DPIW) (2006b). Flora Recovery Plan: Tasmanian Threatened Orchids 2006-2010. Department of Primary Industries, Water and Environment, Hobart.

Jones DL and Rouse DT (2006). Fourteen new species of *Prasophyllum* from eastern Australia. *Australian Orchid Research* 5: 143–156.

Jones DL (2006). A complete guide to the native orchids of Australia, including the island territories. Reed New Holland, Sydney.

Threatened Species Scientific Committee (TSSC) (2009). Listing advice for *Prasophyllum atratum* (Three Hummock Leek-orchid).

Vallee L, Hogbin T, Monks L, Makinson B, Matthes M and Rossetto M (2004). Guidelines for the translocation of threatened plants in Australia - Second Edition, Australian Network for Plant Conservation, Canberra.