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

# Approved Conservation Advice for *Diuris micrantha* (Dwarf Bee-orchid)

This Conservation Advice has been developed based on the best available information at the time this conservation advice was approved.

## Description

*Diuris micrantha*, Family Orchidaceae, also known as Dwarf Bee-orchid, has a basal tuft of narrow, linear leaves and a loose, slender inflorescence up to 60 cm high. The yellow flowers, which can number up to seven, have reddish-brown markings and are the smallest in the genus, measuring up to 1.3 cm across. Flowers appear from August to early October (Brown et al., 1998). The species is closely related to Bee Orchid (*D. laxiflora*) but has smaller, lighter-cloured flowers, a proportionately shorter, broader labellum mid-lobe and earlier flowering period (Hoffman & Brown, 1992).

## Conservation Status

Dwarf Bee-orchid 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). Dwarf bee-orchid is also listed as declared rare flora under the *Wildlife Conservation Act 1950* (Western Australia) and currently ranked as vulnerable according to IUCN criterion D1.

## Distribution and Habitat

Dwarf Bee-orchid is known from seven populations, from east of Kwinana and south towards the Frankland area, Western Australia. It is found in small populations, on dark, grey to blackish, sandy clay-loam substrates in winter wet depressions or swamps. The bases of the flowering plants are often covered with shallow water (Jones 1991; Carstairs & Coates 1994; Brown et al. 1998). This species occurs within the South West and South Coast (Western Australia) Natural Resource Management Regions.

Mature dormant tubers and seedlings propagated ex-situ exhibit high survival rates when transferred to natural habitat (Batty et al., 2006).

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

## Threats

The main identified threats to Dwarf Bee-orchid include fire (especially if burnt from May to October) and weed invasion.

The main potential threats to Dwarf Bee-orchid include clearing, grazing, feral animals and changes in hydrology.

## Research Priorities

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

- Further research into the impact of changes in hydrology.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.
- Design and implement a monitoring program.

## Regional Priority Actions

The following regional priority recovery and threat abatement actions can be done to support the recovery of Dwarf Bee-orchid.

Habitat Loss, Disturbance and Modification

- Identify populations of high conservation priority.
- Manage threats to areas of vegetation that contain populations/occurrences of Dwarf Bee-orchid.
- Ensure road widening and maintenance activities (or other infrastructure or development activities as appropriate) in areas where Dwarf Bee-orchid occurs do not adversely impact on known populations.
- Manage any changes to hydrology which may result in changes to the water table levels, increased run-off, sedimentation or pollution.
- Manage any disruptions to water flows.
- Investigate formal conservation arrangements such as the use of covenants, conservation agreements or inclusion in reserve tenure.

Invasive Weeds

- Develop a management plan to be implemented for the control of invasive weeds in the local region.

Fire

- Develop and implement a suitable fire management strategy for Dwarf Bee-orchid.
- Identify appropriate intensity and interval of fire to promote seed germination.
- 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 Dwarf Bee-orchid within the local community.

Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed and mycorrhizal fungi collection and storage noting paper by Batty et al. (2006).
- Investigate options for linking, enhancing or establishing additional populations, using techniques developed by Batty et al. (2006).
- Implement national translocation protocols (Vallee et al., 2004) if establishing additional populations is considered necessary.

## Local Priority Actions

The following local priority recovery and threat abatement actions can be done to support the recovery of Dwarf Bee-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.
- Minimise adverse impacts from land use at known sites.
- Protect populations of the listed species through the development of conservation agreements and/or covenants.

Invasive Weeds

- Identify and remove weeds in the local area, which could become a threat to Dwarf Bee-orchid, using appropriate methods.

- Manage sites to prevent introduction of invasive weeds, which could become a threat to Dwarf Bee-orchid, using appropriate methods.

Trampling, Browsing or Grazing

- Prevent grazing pressure at known sites through exclusion fencing or other barriers.
- Control feral animals to manage threats at known sites.

Fire

- Implement an appropriate fire management regime for local populations.

This list does not necessarily encompass all actions that may be of benefit to Dwarf Bee-orchid, but highlights those that are considered to be of highest priority at the time of preparing the conservation advice

## Information Sources:

Batty, AL, Brundrett MC, Dixon KW & Sivasithamparam, K, 2006, *In situ* symbiotic seed germination and propagation of terrestrial orchid seedlings for establishment at field sites, *Australian Journal of Botany*, 54, 375–381.

Brown, A, Thomson-Dans, C & Marchant, N (eds) 1998, *Western Australia's Threatened Flora*, Department of Conservation and Land Management, Western Australia.

Carstairs, S & Coates, D 1994, *Conservation Genetics and Population Ecology of Five Rare and Threatened Western Australian Orchids*, Endangered Species Unit, Australian Nature Conservation Agency.

Hoffman, N & Brown, A 1992, *Orchids of South-west Australia, Revised 2nd edition*, University of Western Australia Press, Nedlands.

Jones, DL 1991, New Taxa of Australian Orchidaceae. *Australian Orchid Research. 2*. Essendon, Australian Orchid Foundation.

Vallee, L, Hogbin, T, Monks, L, Makinson, B, Matthes, M & Rossetto, M 2004, *Guidelines for the Translocation of Threatened Plants in Australia - Second Edition*, Australian Network for Plant Conservation, Canberra.