

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

Approved Conservation Advice for
***Pterostylis bryophila* (Hindmarsh Valley Greenhood)**

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

Pterostylis bryophila, Family Orchidaceae, also known as Hindmarsh Valley Greenhood, is an orchid growing in colonies. Three to five leaves are arranged in a flat or crinkled rosette. It produces a single, moderately large, 18–20 mm by 8–10 mm, shiny bright green-and-white hooded flower. The flower stem is very slender and smooth with 4 or 5 leaves, and grows 120–180 mm high, has three sepals, two regular petals and a third, greatly modified, petal known as a labellum or lip. The upper sepal is fused to the petals, creating a sharply pointed hood extending over the top of the flower. The two lateral sepals are fused at the front of the flower, enclosing the labellum and the fused front sepals end in long, erect, thread-like points 16–21 mm long (Quarmby, 2006).

Conservation Status

Hindmarsh Valley Greenhood 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 2006, 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 Hindmarsh Valley Greenhood. The TSSC determined that this species met criteria 2 of their eligibility criteria (TSSC, 2006a). The species is also listed as endangered under the *National Parks and Wildlife Act 1972* (South Australia).

Distribution and Habitat

Hindmarsh Valley Greenhood is endemic to South Australia and inhabits two locations in the Fleurieu Peninsula region. It is found in Mount Billy Conservation Park and the adjacent Hindmarsh Reservoir Reserve, and at Talisker Conservation Park, over 40 km away. The species appears to have become extinct in a third location at Hindmarsh Falls Recreation Reserve. The total population size of the species is estimated at 3850 individuals. This species occurs within the Adelaide and Mount Lofty Ranges (South Australia) Natural Resource Management Regions.

Hindmarsh Valley Greenhood occurs in grassy woodlands dominated by South Australian Blue Gum (*Eucalyptus leucoxylon*) and Pink Gum (*Eucalyptus fasciculosa*). It is found in moist, shady, mossy areas with fertile loamy soils, usually with a southerly aspect (Quarmby, 2006; TSSC, 2006b).

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

Threats

The main identified threats to Hindmarsh Valley Greenhood are habitat clearance; grazing by macropods and rabbits (*Oryctolagus cuniculus*); increased competition with other species following fire; and weed invasion, particularly by Bridal Creeper (*Asparagus asparagoides*), *Pittosporum undulatum*, *Watsonia meriana* subsp. *bulbillifera*, and *Phalaris aquatica*.

This Conservation Advice was approved by the Minister / Delegate of the Minister on: 1/10/2008

The main potential threats to Hindmarsh Valley Greenhood include trampling by visitors to the parks.

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, including Hindmarsh Falls Recreation Reserve, 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.

Regional Priority Actions

The following regional priority recovery and threat abatement actions can be done to support the recovery of Hindmarsh Valley Greenhood.

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.
- Manage any other known, potential or emerging threats.
- Investigate further formal conservation arrangements, management agreements or 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 Hindmarsh Valley Greenhood.
- Identify appropriate intensity and interval of fire to promote seed germination and/or vegetation regeneration.
- 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 Hindmarsh Valley Greenhood within the local community.

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.

Local Priority Actions

The following local priority recovery and threat abatement actions can be done to support the recovery of Hindmarsh Valley Greenhood.

Habitat Loss, Disturbance and Modification

- Control access routes to suitably constrain public access to known sites on public land.
- Suitably control and manage access on private land.

This Conservation Advice was approved by the Minister / Delegate of the Minister on:
1/10/2008

- Minimise adverse impacts from land use at known sites.
- Manage any changes to hydrology that may result in changes to water table levels and/or increased run-off.

Invasive Weeds

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

Trampling, Browsing or Grazing

- Prevent grazing pressure by macropods at known sites on leased crown land through exclusion fencing or other barriers.
- Implement the Threat Abatement Plan to control feral rabbits in the local area (EA, 1999).

This list does not necessarily encompass all actions that may be of benefit to Hindmarsh Valley Greenhood, 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 Competition and Land Degradation by Feral Rabbits (EA, 1999),
- Bridal Creeper (*Asparagus asparagoides*) weed management guide (Weeds CRC, 2003),
- Adelaide and Mount Lofty Ranges Regional Recovery Pilot (DEH, 2007), and
- Recovery Plan for Twelve Threatened Orchids in the Lofty Block Region of South Australia 2007–2012 (Quarmby, 2006).

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

Information Sources:

Cooperative Research Centre for Weed Management Systems (Weeds CRC) 2003, *Bridal Creeper (Asparagus asparagoides) weed management guide*, Department of the Environment and Heritage, viewed 14 April 2008, <<http://www.weeds.gov.au/publications/guidelines/wons/pubs/a-asparagoides.pdf>>.

Department of Environment and Heritage (DEH) 2007, *Adelaide and Mount Lofty Ranges Regional Recovery Pilot*, viewed 14 April 2008, <http://www.environment.sa.gov.au/biodiversity/pdfs/amlrrrp_newsletter1.pdf>.

Environment Australia (EA) 1999, *Threat Abatement Plan for Competition and Land Degradation by Feral Rabbits*, Biodiversity Group, Environment Australia, viewed 14 April 2008, <<http://www.environment.gov.au/biodiversity/threatened/publications/tap/rabbits/index.html>>.

Quarmby, JP 2006, *Recovery Plan for Twelve Threatened Orchids in the Lofty Block Region of South Australia 2007–2012*, Department for Environment and Heritage, South Australia, viewed 14 April 2008, <http://spatialinformationday.org.au/biodiversity/pdfs/threat_orchid_recovery_plan.pdf>.

Threatened Species Scientific Committee (TSSC) 2006a, *Commonwealth Listing Advice on Pterostylis bryophila*, Department of Environment, Water, Heritage and the Arts, viewed 14 April 2008 <<http://www.environment.gov.au/biodiversity/threatened/species/pubs/pterostylis-bryophila-advice.pdf>>.

Threatened Species Scientific Committee (TSSC) 2006b, *Conservation Advice for Pterostylis bryophila*, Department of Environment, Water, Heritage and the Arts.

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.