

A statement for the purposes of approved conservation advice
(s266B of the *Environment Protection and Biodiversity Conservation Act 1999*)

Approved Conservation Advice for
Euphrasia bowdeniae

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

Description

Euphrasia bowdeniae, Family Scrophulariaceae, is a short-lived perennial herb, usually less than 20 cm high, with mauve, purple or violet flowers with deeper markings in the throat (Barker, 1982; Harden, 1992; Barker, 2007). Stems are reddish and may be upright, but are often hanging from rock ledges (Fairley, 2004). Leaves are elliptic to obovate and usually have a single pair of teeth on the margin (Barker, 2007). Flowering occurs from spring to summer (Harden, 1992).

Conservation Status

Euphrasia bowdeniae 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). This species is also listed as vulnerable under Schedule 2 of the *Threatened Species Conservation Act 1995* (NSW).

Distribution and Habitat

Euphrasia bowdeniae is endemic to the upper Blue Mountains in NSW (Barker, 2007), at altitudes of 600–750 m (NSW NPWS, 2000). Previous recordings were at Blackheath, the Jamison Valley and Wentworth Falls (Barker, 1982). Targeted surveys undertaken in 1999 recorded the species in only one (near Wentworth Falls) of the four previously known locations in the Blue Mountains (NSW NPWS, 2000).

The species occurs in the Hawkesbury–Nepean (NSW) Natural Resource Management Region (DECC, 2005a).

Euphrasia bowdeniae lives in sheltered cracks on cliff faces and ledges where seepage supports associated heath species, including *Sprengelia monticola*, *Dracophyllum secundum*, *Epacris crassifolia*, *E. obtusifolia*, *Xanthosia pilosa*, *Bauera microphylla*, *Alania endlicheri*, *Drosera binata*, *Schoenus melanostachys* and *Gleichenia microphylla* (NSW NPWS, 2000).

The distribution of this species overlaps with the “Temperate Highland Peat Swamps on Sandstone” EPBC Act-listed threatened ecological community.

Threats

The main identified threats to the species are recreational pressures and wildfires during times of drought (NSW NPWS, 2000; DECC, 2005a).

The species’ response to fire is not known, but it is suspected to be fire sensitive (NSW NPWS, 2000). Fire frequency for the species should be no more than once every seven years (NSW RFS, 2004). Hazard reduction techniques should only include slashing once every 10 years and no tree removal or trittering (NSW RFS, 2004).

The main potential threats to the species include hydrology changes, and given the species’ small population size, it is suspected to have low genetic variability (NSW NPWS, 2000) and may thus be more susceptible to extinctions resulting from environmental change (NSW NPWS, 2000).

Research Priorities

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

- The ecology of the species and its potential for propagation by seed and/or cuttings (DECC, 2005b), and
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences.

Regional Priority Actions

The following regional priority recovery and threat abatement actions can be done to support the recovery of *Euphrasia bowdeniae*.

Habitat Loss, Disturbance and Modification

- Identify populations of high conservation priority.
- Manage threats to areas of vegetation that contain populations/occurrences of *Euphrasia bowdeniae*.
- Ensure recreational walking track use, construction and maintenance activities do not adversely impact on known populations of *Euphrasia bowdeniae*.
- Manage any changes to hydrology that may result in changes to the water table levels, increased run-off, sedimentation or pollution.
- Investigate formal conservation arrangements for populations outside the national park, such as the use of covenants, conservation agreements or inclusion in reserve tenure.

Fire

- Develop and implement a suitable fire management strategy for *Euphrasia bowdeniae*.
- 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. bowdeniae* within the local community.
- Review conservation status if targeted surveys for the species fail to locate significant new populations (DECC, 2005b).

Enable Recovery of Additional Sites and/or Populations

- Investigate options for linking, enhancing or establishing additional populations.
- Implement appropriate national translocation protocols (Vallee et al. 2004) if establishing additional populations is considered necessary and feasible.
- Undertake seed collection and storage.

Local Priority Actions

The following local priority recovery and threat abatement actions can be done to support the recovery of *Euphrasia bowdeniae*.

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.
- Control access routes to suitably constrain public access to known sites on public land.
- Minimise adverse impacts from land use at known sites.

Invasive Weeds

- Identify and remove weeds in the local area, which could become a threat to the *E. bowdeniae*, using appropriate methods.

- Manage sites to prevent introduction of invasive weeds, which could become a threat to the *E. bowdeniae*, using appropriate methods.

Fire

- Implement an appropriate fire management regime for local populations.

This list does not necessarily encompass all actions that may be of benefit to *E. bowdeniae*, 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

- Blue Mountains Fire Management Strategy (NSW NPWS, 2004), and
- Blue Mountains National Park Plan of Management (NSW NPWS, 2001).

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