

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

**Approved Conservation Advice for
Boronia hemichiton (Mt Arthur Boronia)**

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

Boronia hemichiton, Family Rutaceae, also known as Mt Arthur Boronia, is an erect, woody shrub that grows to 150 cm tall. Branchlets are slightly glandular with small, blunt projections, glands often shiny, and stiff, bristle-like hairs are concentrated between faint leaf decurrencies. The leaves are composed of 3–7 parts, entire in outline, 9–12 mm long, 12–16 mm wide and slightly covered in glandular bristles. The terminal leaflets are 2.5–8 mm long and up to 1 mm wide. The side leaflets are 2–9 mm long. The lower halves of the leaflets are covered by stiff, bristle-like hairs, which is one of the characters that distinguish this species from *B. hippopala*. Flowers are located in the leaf axils and cluster in groups of 1 to 3. The sepals are small, triangular and green. The petals are pink or white and 4.5–5.5 mm long. Flowering occurs between October and January. Fruit are 2.5–3 mm long, 1.5–2 mm wide and hairless (Duretto, 2003; DPIWE, 2005; TSSC, 2005).

Conservation Status

Boronia hemichiton 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, in 2005, 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 *Boronia hemichiton*. The TSSC determined that this species met criterion 4 of their eligibility criteria (TSSC, 2005). *Boronia hemichiton* is also listed as vulnerable under the *Threatened Species Protection Act 1995* (Tasmania).

Distribution and Habitat

Mt Arthur Boronia is known from two populations occurring in the upper catchment of the Piper River on the western flanks of Mt Arthur in northern Tasmania, at altitudes of 450–660 m above sea level. The total number of mature individuals is estimated to be 1000 to 2000 and the two populations are separated by 3 km (TSSC, 2005). Mt Arthur Boronia occurs in state forest in areas classified as 'production' (TSSC, 2005). This species grows in wet heath or scrub and on a substrate of alluvial soil over Jurassic dolerite. Associated species include *Eucalyptus gunnii*, *E. ovata*, *E. delegatensis*, *Leptospermum lanigerum*, *Melaleuca squamea*, *Callistemon viridiflorus* (currently known as *Melaleuca viridiflora*), *Westringia rubiaefolia* and *Gahnia grandis* (TSSC, 2005). This species occurs within the North (Tasmania) Natural Resource Management Region.

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

Threats

The main potential threats to Mt Arthur Boronia include the impact of dieback caused by *Phytophthora cinnamomi*; an inappropriate fire regime; and activities that affect its habitat directly, such as roadwork, or indirectly alter the hydrology, for example increased run-off and sediment loads from upstream (TSSC, 2005).

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, fire ecology and the relative impacts of threatening processes.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.
- Identify appropriate intensity and interval of fire to promote seed germination (Chuter & Duncan, 2006).
- Conduct research on the susceptibility of Mt Arthur Boronia to dieback caused by *Phytophthora cinnamomi*.

Regional and Local Priority Actions

The following regional and local priority recovery and threat abatement actions can be done to support the recovery of Mt Arthur Boronia.

Habitat Loss, Disturbance and Modification

- Manage any changes to hydrology that may result in changes to the water table levels, increased run-off, sedimentation or pollution (TSSC, 2005).
- Manage any disruptions to water flows.
- 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.
- Ensure road widening and maintenance activities (or forestry, other infrastructure or development activities) involving substrate or vegetation disturbance in areas where Mt Arthur Boronia occurs do not adversely impact on known populations.
- Investigate formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible.

Fire

- Investigate, develop and implement a suitable fire management strategy for Mt Arthur Boronia (TSSC, 2005).
- 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.

Diseases, Fungi and Parasites

- Monitor for evidence of outbreaks of dieback caused by *Phytophthora cinnamomi*.
- Implement suitable hygiene protocols from the Threat Abatement Plan for Dieback caused by the Root-rot Fungus *Phytophthora cinnamomi* (EA, 2001) to protect known sites from outbreaks of dieback caused by *Phytophthora cinnamomi* (TSSC, 2005).

This list does not necessarily encompass all actions that may be of benefit to Mt Arthur Boronia, 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 Dieback caused by the Root-rot Fungus *Phytophthora cinnamomi* (EA, 2001).

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

This prescription was current at the time of publishing; please refer to the relevant agency's website for any updated versions.

Information Sources:

Chuter, A & Duncan, F 2006, 'Some giant steps for threatened Boronias', *Forest Practices News*, vol. 7, no. 2, pp. 18–20.

Department of Primary Industries, Water and Environment (DPIWE) 2005, Threatened Flora of Tasmania – *Boronia hemichiton* Notesheet, viewed 23 June 2008, <[http://www.dpiw.tas.gov.au/inter.nsf/attachments/ljem-74d7th/\\$file/boronia%20hemichiton.pdf](http://www.dpiw.tas.gov.au/inter.nsf/attachments/ljem-74d7th/$file/boronia%20hemichiton.pdf)>.

Duretto, MF 2003, 'Notes on *Boronia* (Rutaceae) in eastern and northern Australia', *Muellaria*, vol. 17, pp. 19–135.

Environment Australia (EA), 2001, *Threat Abatement Plan for Dieback caused by the Root-rot Fungus Phytophthora cinnamomi*, viewed 30 May 2008, <<http://www.environment.gov.au/biodiversity/threatened/publications/tap/phytophthora/index.html>>.

Threatened Species Scientific Committee (TSSC) 2005, Threatened species & ecological communities – Mt Arthur *Boronia* (*Boronia hemichiton*) listing advice, Department of the Environment, Water, Heritage and the Arts (DEWHA), viewed 29 May 2008, <<http://www.environment.gov.au/biodiversity/threatened/species/boronia-hemichiton.html>>.