

**Approved Conservation Advice for**  
***Leucopogon spectabilis* (Ironstone Beard-heath)**

(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**

*Leucopogon spectabilis*, Family Epacridaceae, also known as Ironstone Beard-heath, is an erect, narrow, and sparingly branched shrub that can grow to 1 m high (Hislop and Chapman, 2007). Young branchlets are light brown, hairless, with grey longitudinal bands developing on older wood. The bark at maturity is uniformly grey and rather fissured. The leaves are spirally arranged, directed upward, narrowly elliptic and 15–25 mm long and 3–5 mm across. Inflorescences are erect with 14–32 flowers. The flowers are white, and the flowering period is from August to October with the exact timing and duration dependent on seasonal rainfall (Western Australian Herbarium, 2006; Hislop and Chapman, 2007).

**Conservation Status**

Ironstone Beard-heath 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 it has a very restricted geographic distribution which is precarious for its survival given the nature of ongoing threats (TSSC, 2009).

Ironstone Beard-heath is also listed as declared rare flora under the *Western Australian Wildlife Conservation Act 1950*, and is managed as critically endangered (according to IUCN criteria) by the Western Australian Government.

**Distribution and Habitat**

Ironstone Beard-heath is endemic to Western Australia. It is known from four populations in the Helena and Aurora Range, approximately 180 km west-north-west of Kalgoorlie (DEC, 2009). The extent of occurrence of the species is approximately 3 km<sup>2</sup>. The species' area of occupancy is unknown (DEC, 2009).

The population size of the species is approximately 900 mature plants. This figure was calculated using actual and estimated counts from population surveys undertaken between 2002 and 2006 (DEC, 2009).

Ironstone Beard-heath grows in skeletal red-brown loam soil and occurs among cracks in banded ironstone outcrops on ridge crests (Western Australian Herbarium, 2006). It grows among open shrubland communities dominated by *Banksia arborea* (Yilgarn Dryandra), *Calycopeplus paucifolius* and *Melaleuca leiocarpa*, often alongside the nationally threatened species, *Tetratheca aphylla* (Bungalbin Tetratheca) (Hislop and Chapman, 2007).

The species occurs within the Coolgardie IBRA Bioregion and the Avon Natural Resource Management region. The distribution of this species is not known to overlap with any EPBC Act-listed threatened ecological community.

**Threats**

Mining and exploration activity is the key threat to Ironstone Beard-heath with exploration activities occurring in close proximity to the species (DEC, 2009). Mining operations have the potential to disturb and destroy habitat, spread weeds and pollute ground water and soil (DEC,

2009). Inappropriate fire regimes are also a threat to the species. A potential threat could be posed by the arrival of goats in the area, currently thought to be absent (Hislop and Chapman, 2007).

### **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, geographic distribution, ecological requirements, and the relevant impacts of threatening processes, including:
  - factors that influence the level of flowering, pollination, seed production and fruit development for the species
  - longevity of plants and time taken to reach maturity
  - the reproductive strategies, phenology and seasonal growth of the species
  - the species' response to disturbance (e.g. fire and slashing)
  - other relevant mortality and morphological data for the species.
- Undertake survey work in suitable habitat and potential habitat during the August to October flowering period to locate any additional populations/occurrences/remnants.
- Undertake seed germination trials to determine the requirements for successful establishment.

### **Priority Actions**

The following priority recovery and threat abatement actions can be done to support the recovery of Ironstone Beard-heath.

#### **Habitat Loss, Disturbance and Modification**

- Monitor known populations to identify key threats.
- Minimise adverse impacts from land use at known sites.
- Ensure there is no inappropriate disturbance in areas where Ironstone Beard-heath occurs, excluding necessary actions to manage the conservation of the species.
- Control access routes to suitably constrain public access to known sites on public land.
- Manage any changes to hydrology that may result in changes to water table levels, ground water quality, increased run-off and pollution.
- Investigate inclusion in reserve tenure if possible.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.

#### **Invasive Weeds**

- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on Ironstone Beard-heath.
- Manage sites to prevent introduction of invasive weeds, which could become a threat to Ironstone Beard-heath, using appropriate methods.

#### **Fire**

- Develop and implement a suitable fire management strategy for the habitat of Ironstone Beard-heath.
- Identify appropriate intensity and interval of fire to promote seed germination.
- Where appropriate, 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 Ironstone Beard-heath within the local community through site visits, signage, and posters/information brochures to be distributed to local naturalist groups, relevant authorities and volunteer organisations.
- Frequently engage with 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 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 Ironstone Beard-heath, but highlights those that are considered to be of highest priority at the time of preparing the Conservation Advice.

### **Information Sources:**

DEC (Department of Environment and Conservation) (2009). Records held in DEC's declared flora database and rare flora files. Western Australian Department of Environment and Conservation, Western Australia.

Hislop M and Chapman AR (2007). Three new and geographically restricted species of *Leucopogon* (Ericaceae: Styphelioideae: Styphelieae) from south-west Western Australia. *Nuytsia* 17: 165–184.

TSSC (Threatened Species Scientific Committee) (2009). Listing advice for *Leucopogon spectabilis*.

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.

Western Australian Herbarium (2006). FloraBase – the Western Australian flora. Department of Environment and Conservation. Available on the Internet at:

<http://florabase.calm.wa.gov.au/>