

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

Approved Conservation Advice for
***Eucalyptus beardiana* (Beard's Mallee)**

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

Eucalyptus beardiana, Family Myrtaceae, also known as Beard's Mallee, is a mallee growing to 5 m tall, with smooth, pinkish-grey to cream bark. The narrow, light greyish-green leaves are up to 12.5 cm long and 1.5 cm wide. The inflorescences are axillary and have up to 11 flowers. The peduncle is 3 cm long, terete and recurved. The buds are up to 2.1 cm long and 6 mm wide, and cup-shaped with a beaked cap. The flowers are creamy white, with the lower half of the stamens united. The fruit are pedicellate, hemispherical and flaring at the top. The valves are protruding and number 4–5. The species is distinguished by its broader leaves, larger buds and larger fruit with the sunken (though still broad and prominent) disc. Flowering occurs from August to September (Brooker & Blaxell, 1978; Brown et al., 1998).

Conservation Status

Beard's Mallee is listed as **endangered**. This species is eligible for listing as endangered 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 endangered under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth). The species is also listed as declared rare flora under the *Wildlife Conservation Act 1950* (Western Australia).

Distribution and Habitat

Beard's Mallee is endemic to Western Australia and is known from 23 populations over the Northampton, Shark Bay and Mullewa areas. Of these populations, 10 are on pastoral stations, one on a Main Roads road reserve, one in a nature reserve, one on private property and ten in a national park. The total number of mature plants is estimated to be 1300 and the extent of occurrence is approximately 7700 km². Only 14 of the 23 populations have had area of occupancy recorded, which totalled approximately 0.87 km². Insufficient data are available to determine any trends, as not all populations have area of occupancy recorded. This species is considered to be fragmented as the known populations are scattered with considerable distances between them (DEC, 2008).

Beard's Mallee occurs on red or yellow sand ridges in tree heath or tall open shrubland with various eucalypts, including Yuna Mallee (*Eucalyptus jucunda*), Malallie (*E. eudesmioides*) and Northern Sandplain Mallee (*E. gittinsii*); Sceptre Banksia (*Banksia sceptrum*); Ashby's Banksia (*B. ashbyi*); Broom Bush (*Melaleuca uncinata*); and species of *Acacia*, *Grevillea* and *Persoonia* (Brown et al., 1998; Patrick, 2001; DEC, 2008). This species occurs within the Northern Agricultural and Rangelands (Western Australia) Natural Resource Management Regions.

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

Threats

The main identified threats to Beard's Mallee are firebreak and track maintenance, grazing and weeds. Maintenance activities, including grading, chemical spraying, and the mowing of

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roadside vegetation, are a threat to 10 of the 23 populations. Stock have degraded the habitat at one population, resulting in weed invasion (DEC, 2008).

The main potential threats to Beard's Mallee include grazing and inappropriate fire regimes. Although only one population has records of where grazing has damaged the habitat, the potential threat exists for 12 populations located on pastoral leases, private property and a Main Roads road reserve, which may be accessed by stock and feral goats (*Capra hircus*). This species germinates from seed following fire; the time taken for this species to reach maturity is unknown and too frequent fire would deplete the soil seed bank and lead to localised extinction (DEC, 2008).

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 to locate any additional populations/occurrences/remnants.
- Determine the response to fire, including the time needed for young plants to set viable seed.
- Undertake seed germination trials to determine the requirements for successful establishment.

Regional and Local Priority Actions

The following regional and local priority recovery and threat abatement actions can be done to support the recovery of Beard's Mallee.

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.
- Ensure road and firebreak widening and maintenance activities (or other infrastructure or development activities) involving substrate or vegetation disturbance in areas where Beard's Mallee occurs do not adversely impact on known populations.
- Control access routes to suitably constrain public access to known sites on public land.
- Suitably control and manage access on private land.
- Minimise adverse impacts from land use at known sites.
- Investigate formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible.

Trampling, Browsing or Grazing

- Implement the Threat Abatement Plan for the control and eradication of feral goats in the region.
- Manage known sites to ensure appropriate grazing regimes occur.
- Where appropriate, manage total grazing pressure at important sites through exclusion fencing or other barriers.

Invasive Weeds

- Identify and remove weeds in the local area, which could become a threat to Beard's Mallee, using appropriate methods.

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

Fire

- Develop and implement a suitable fire management strategy for Beard's Mallee.
- Identify appropriate intensity and interval of fire to promote vegetation regeneration and/or recruitment from 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 Beard's Mallee within the local community.
- Maintain liaisons with private landholders and land managers of land on which populations occur.

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 Beard's Mallee, 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 Goats (EA, 1999), and
- Declared Rare and Poorly Known Flora in the Geraldton District (Patrick, 2001).

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

Information Sources:

Brooker, M, & Blaxell, D 1978, 'Five new species of Eucalyptus from Western Australia', *Nuytsia*, vol. 2, pp. 220-231.

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Environment Australia (EA) 1999, *Threat Abatement Plan for Competition and Land Degradation by Feral Goats*, Biodiversity Group, viewed 30 May 2008, <<http://www.environment.gov.au/biodiversity/threatened/publications/tap/goats/index.html>>.

Patrick, S 2001, *Declared Rare and Poorly Known Flora in the Geraldton District*, Western Australia Wildlife Management Program No. 26, Department of Conservation and Land Management, Western Australia.

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.