

**Advice to the Minister for the Environment, Heritage and the Arts
from the Threatened Species Scientific Committee (the Committee)
on Amendment to the list of Threatened Species
under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)**

1. Scientific name (common name)

Eremophila rostrata (Beaked Eremophila)

2. Reason for Conservation Assessment by the Committee

This advice follows assessment of information gathered through the Commonwealth's Species Information Partnership with Western Australia, which is aimed at systematically reviewing species that are inconsistently listed under the EPBC Act and the Western Australian *Wildlife Conservation Act 1950*.

Under the Western Australian *Wildlife Conservation Act 1950*, the Beaked Eremophila was split (in 2007) into two subspecies; *Eremophila rostrata* subsp. *rostrata* and *Eremophila rostrata* subsp. *trifida*. Both subspecies are listed as Declared Rare Flora, and both are managed as critically endangered (according to IUCN criteria) by the Western Australian Government.

The Committee provides the following assessment of the appropriateness of the species' inclusion in the EPBC Act list of threatened species.

This is the Committee's first consideration of the species under the EPBC Act.

3. Summary of Conclusion

The Committee judges that the species has been demonstrated to have met sufficient elements of Criteria 2 and 3 to make it **eligible** for listing as **critically endangered**.

The Committee judges that the species has been demonstrated to have met sufficient elements of Criterion 4 to make it **eligible** for listing as **endangered**.

The highest category for which the species is eligible to be listed is **critically endangered**.

4. Taxonomy

The species is conventionally accepted as *Eremophila rostrata* (Chinnock, 2007). The species is composed of two subspecies; *Eremophila rostrata* subsp. *rostrata* and *Eremophila rostrata* subsp. *trifida*.

5. Description

The Beaked Eremophila is an erect, rounded shrub that can grow to 3 m in height. The species has glossy dark green leaves approximately 1 mm in diameter and pendulous scarlet (light pink inside) flowers (Stack and English, 2003).

The flowering period for the species is June to October (Western Australian Herbarium, 2005). Two subpopulations that occur northeast of Geraldton, Western Australia, flower from June to July, and two subpopulations that occur southeast of Geraldton, flower from September to October.

The species is related to *E. laanii* (Pink Emu Bush) and *E. longifolia* (Weeping Emu Bush). It superficially resembles *E. oppositifolia* (Twin Leaf Emu Bush) which occurs in the habitat of one of the subpopulations near Cue, but *E. oppositifolia* has cream to pale pink (rarely bright pink) flowers (Stack and English, 2003).

6. National Context

The Beaked Eremophila is endemic to Western Australia, and is known from four subpopulations that occur in two geographically separate areas, 280 km apart.

Two subpopulations occur north of Cue (approximately 360 km northeast of Geraldton) within the Rangelands Natural Resource Management region, and two small subpopulations occur southeast of Perenjori (approximately 200 km southeast of Geraldton) within the Northern Agricultural Natural Resource Management region (DEC, 2008).

In 2007, the Beaked Eremophila was recognised as two subspecies.

7. Relevant Biology/Ecology

The Beaked Eremophila is found in two geographically separate areas with quite different habitats. North of Cue, the species grows on stony, buff coloured saline clays at the base of quartzite hills in an open shrubland (to 2.5 m) of *Acacia* and *Eremophila* species over open low shrubs of *Ptilotus polakii*. Southeast of Perenjori, the species grows in red brown clay loam in open mallee woodland (to 6 m) of mallee Eucalyptus species, *Acacia coolgardiensis* (Spinifex Wattle), *Melaleuca uncinata* (Broom Bush) and *Ptilotus exaltus* (Purple Mulla Mulla) (Stack and English, 2003).

The Beaked Eremophila appears to be a relatively long-lived shrub, with some individuals known to be at least ten years old. The species' response to fire is unknown but it is thought that, like a number of *Eremophila* species, the Beaked Eremophila may require occasional fire or soil disturbance to induce germination (Stack and English, 2003).

8. Description of Threats

The main identified threats to the Beaked Eremophila are inappropriate road maintenance works and inappropriate fire regimes.

One of the subpopulations southeast of Perenjori occurs on a Shire road reserve, and is particularly vulnerable to inappropriate road maintenance works, such as grading, chemical spraying, vegetation slashing, construction of drainage channels, and soil compaction by vehicle movement that can result in the accidental damage of plants (Stack and English, 2003). Several of these actions also encourage weed invasion.

While the effects of fire on the species are unknown, fire that is too frequent is likely to kill plants before they reach maturity, as well as degrade the surrounding habitat. Conversely, a certain fire frequency is likely to be required to stimulate recruitment (Stack and English, 2003).

Potential threats to the habitat of the Beaked Eremophila include weed invasion and salinity. Another potential threat to the Beaked Eremophila is mining. The two subpopulations north of Cue are in close proximity to mine site workings, including access tracks, bulldozer workings, and mine pits and heaps. Although the mine is not currently active, many areas are re-worked and it is possible that this site will be re-dug in the future.

One of the subpopulations southeast of Perenjori has been impacted by stock grazing in the past however this population has now been fenced.

9. Public Consultation

The information used in this assessment was made available for public exhibition and comment for 30 business days. No comments were received.

10. How judged by the Committee in relation to the criteria of the EPBC Act and Regulations

The Committee judges that the species is **eligible** for listing as **critically endangered** under the EPBC Act. The assessment against the criteria is as follows:

Criterion 1: It has undergone, is suspected to have undergone or is likely to undergo in the immediate future a very severe, severe or substantial reduction in numbers

The total population size of the Beaked Eremophila is approximately 90 mature plants. This figure was calculated using actual counts from population surveys undertaken in 2007 (DEC, 2008).

The four subpopulations of this species are fragmented and exist in areas which have been extensively cleared for agriculture (Perenjori) or subject to mining (Cue). However, there are no quantitative data available to assess the past rate of decline in population numbers.

The main threats to the species include inappropriate road maintenance works and inappropriate fire regimes. Salinity, weed invasion of habitat, and mining, are considered potential threats. However, the impact of these threats has not been quantified. The Committee considers that these threats are likely to cause the species to decline in the future, but there are insufficient data to judge whether this decline would be at a particular rate.

There are insufficient quantitative data available to judge whether the species has undergone, is suspected to have undergone or is likely to undergo a very severe, severe or substantial reduction in numbers. Therefore, as the species has not been demonstrated to have met any of the elements of Criterion 1, it is **not eligible** for listing in any category under this criterion.

Criterion 2: Its geographic distribution is precarious for the survival of the species and is very restricted, restricted or limited

The Beaked Eremophila is endemic to Western Australia, and is known from four subpopulations that occur in two geographically separate areas, 280 km apart. Two subpopulations occur north of Cue (approximately 360 km northeast of Geraldton), and two small subpopulations occur southeast of Perenjori (approximately 200 km southeast of Geraldton).

The Committee considers the Beaked Eremophila to have a very restricted geographic distribution, as the extent of occurrence of the species is estimated to be 550 km² and its area of occupancy is estimated to be less than 1 km² (DEC, 2008).

The species' distribution is considered to be severely fragmented, as the known subpopulations are in two geographically separate locations, 280 km apart and occur in areas which have been extensively cleared for agriculture (Perenjori) or subject to mining (Cue).

The main current threats to the species include inappropriate road maintenance works and inappropriate fire regimes. Salinity, weed invasion, and mining are considered potential threats. These threats are likely to cause the species to decline in the future.

The Committee considers that the Beaked Eremophila has a very restricted geographic distribution, which is precarious for the survival of the species due to severe fragmentation and current threats. Therefore, the species has been demonstrated to have met the relevant elements of Criterion 2 to make it **eligible** for listing as **critically endangered**.

Criterion 3: The estimated total number of mature individuals is limited to a particular degree; and either
(a) evidence suggests that the number will continue to decline at a particular rate; or
(b) the number is likely to continue to decline and its geographic distribution is precarious for its survival

The total population size of the Beaked Eremophila is approximately 90 mature plants, and is currently known from two subpopulations north of Cue, and two subpopulations southeast of Perenjori, in Western Australia.

The species' distribution is severely fragmented and exists in areas which have been extensively cleared for agriculture (Perenjori) or subject to mining (Cue). The area of occupancy is estimated to be less than 1 km² (DEC, 2008).

A range of current threats to the species have been identified, including inappropriate road maintenance works and inappropriate fire regimes. Salinity, weed invasion, and mining are considered potential threats.

The Committee considers that the estimated total number of mature individuals of the species is very low. The number is likely to decline due to current threats, and the species' geographic distribution is precarious for the survival of the species. Therefore, the species has been demonstrated to have met the relevant elements of Criterion 3 to make it **eligible** for listing as **critically endangered**.

Criterion 4: The estimated total number of mature individuals is extremely low, very low or low

The total population size of the Beaked Eremophila is approximately 90 mature plants. This figure was calculated using actual counts from population surveys undertaken in 2007 (DEC, 2008). The Committee considers this number to be very low. Therefore, the species has been demonstrated to have met sufficient elements of Criterion 4 to make it **eligible** for listing as **endangered**.

Criterion 5: Probability of extinction in the wild that is at least:
a) 50% in the immediate future; or
b) 20% in the near future; or
c) 10% in the medium-term future.

There are no data available to estimate a probability of extinction of the species in the wild over a relevant timeframe. Therefore, as the species has not been demonstrated to have met the required elements of Criterion 5, it is **not eligible** for listing in any category under this criterion.

11. CONCLUSION

Conservation Status

This advice follows assessment of information gathered through the Commonwealth's Species Information Partnership with Western Australia, which is aimed at systematically reviewing species that are inconsistently listed under the EPBC Act and the Western Australian *Wildlife Conservation Act 1950*.

The Committee judges the Beaked Eremophila to have a very restricted geographic distribution, with an extent of occurrence of approximately 550 km² and an area of occupancy of less than 1 km². This geographic distribution is precarious for the survival of the species, due to its severe fragmentation and a number of current threats directly impacting the species, including inappropriate road maintenance works and inappropriate fire regimes. Salinity, weed invasion of habitat, and mining are considered potential threats. Therefore, the species has been demonstrated to have met sufficient elements of Criterion 2 to make it **eligible** for listing as **critically endangered**.

The total population size of the Beaked Eremophila is approximately 90 mature plants, which the Committee judges to be very low. The number is likely to decline due to a number of threats, and the species' geographic distribution is severely fragmented and precarious for its survival. The Committee judges that the species has been demonstrated to have met the relevant elements of Criterion 3 to make it **eligible** for listing as **critically endangered**.

The Committee judges that the estimated total number of mature individuals is very low. Therefore, the species has been demonstrated to have met sufficient elements of Criterion 4 to make it **eligible** for listing as **endangered**.

The highest category for which the species is eligible to be listed is **critically endangered**.

Recovery Plan

The Committee considers that there should not be a recovery plan for this species. The conservation advice for the species provides sufficient direction to implement priority actions and mitigate against threats at this time.

The Committee notes that in 2003, the Western Australian Department of Environment and Conservation finalised an Interim Recovery Plan for the Beaked Eremophila (2003 – 2008) (Stack and English, 2003).

12. Recommendations

- (i) The Committee recommends that the list referred to in section 178 of the EPBC Act be amended by **including** in the list in the **critically endangered** category:

***Eremophila rostrata* (Beaked Eremophila)**

- (ii) The Committee recommends that there should not be a recovery plan for this species.

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Chair

Threatened Species Scientific Committee

13. References cited in the advice

Chinnock RJ (2007). *Eremophila* and allied genera – A Monograph of the Myoporaceae. Rosenberg Publishing. Kenthurst, Australia.

DEC (2008). Department of Environment and Conservation. Records held in DEC's Declared Flora Database and Rare flora files. Western Australian Department of Environment and Conservation.

Stack G and English V (2003). Beaked Eremophila (*Eremophila rostrata* ms) Interim Recovery Plan No. 151 2003-2008. Western Australian Department of Conservation and Land Management. Perth.

Western Australian Herbarium (2005). FloraBase – The Western Australian Flora. Department of Environment and Conservation.
Available on the Internet at: <http://florabase.calm.wa.gov.au/>