

**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. Name

Guichenotia seorsiflora

It is in the Family Sterculiaceae.

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*.

Guichenotia seorsiflora is 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. 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 *Guichenotia seorsiflora* (Wilkins and Chappill, 2003).

5. Description

Guichenotia seorsiflora is a multi-stemmed shrub that can grow to 0.6 m high. The flowers are pink and cream, the petals are 10-14 mm long and joined in their lower third. The leaves are 8-20 mm long, 1-2 mm wide with a short stalk, and covered in white star-shaped hairs. The flowering period for the species is from July to September (Western Australian Herbarium, 2005; Wilkins and Chappill, 2003).

6. National Context

Guichenotia seorsiflora is endemic to Western Australia, and is known from four subpopulations in the Cunderdin and Corrigin areas, which are approximately 135 km to 205 km east of Perth. The extent of occurrence of the species is approximately 3700 km², with

subpopulations located 50–100 km apart, and its estimated area of occupancy is less than 1 km² (CALM, 2006). The species occurs on private property, road reserves and a nature reserve.

The species is located within the Avon Wheatbelt IBRA Bioregion and the Avon Natural Resource Management region (CALM, 2006).

7. Relevant Biology/Ecology

Guichenotia seorsiflora occurs on sandy clay with lateritic gravel and on breakaways (a lateritic ridge with a steep eroded slope) (Western Australian Herbarium, 2005).

Little is known about the biology and ecology of the species. Associated species include *Allocasuarina campestris*, *Banksia sphaerocarpa* (Round-fruit Banksia), and *Gastrolobium*, *Hibbertia* and *Banksia* species (CALM, 2006).

8. Description of Threats

The main identified threats to *G. seorsiflora* are road maintenance works, inappropriate fire regimes, erosion and weed invasion by introduced Dodder Vine (*Cuscuta* species).

Three subpopulations are vulnerable to road maintenance works, such as grading, chemical spraying, vegetation slashing, construction of drainage channels, and soil compaction by vehicle movement.

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.

Soil erosion threatens one subpopulation where surface water from the road travels down an old track, and has been eroding the breakaway where the species occurs. This also removes soil and disrupts the soil seed bank which may have a detrimental impact on recruitment.

Weed invasion is a serious threat to one subpopulation as introduced Dodder Vine (*Cuscuta* species) has been observed smothering plants.

A past threat to *G. seorsiflora* is land clearing. The clearing of land for agriculture has reduced the amount of suitable habitat for the species.

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 population size of *G. seorsiflora* is approximately 110 mature plants. This figure was calculated using actual counts from population surveys undertaken in 2006 and 2008 (DEC, 2008).

The four subpopulations of this species are fragmented and exist within scattered patches of remnant vegetation, in areas which have been extensively cleared for agriculture. While the Committee judges that the clearing of land for agriculture was a past threat to the species, there are no quantitative data available to assess the past rate of decline in population numbers (CALM, 2006).

The main threats to the species include road maintenance works, inappropriate fire regimes, erosion and weed invasion by introduced Dodder Vine (*Cuscuta* species). 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 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 Committee considers *G. seorsiflora* to have a very restricted geographic distribution. Only three of the four subpopulations have data on area of occupancy; however based on extrapolations of this information, the total area of occupancy for the species is estimated to be less than 1 km². The extent of occurrence of the species is estimated to be 3700 km² with subpopulations located 50–100 km apart (CALM, 2006).

The geographic distribution of *G. seorsiflora* is highly fragmented and its remaining habitat is generally surrounded by cleared farmland. This lack of suitable habitat limits the geographic distribution of the species.

A range of current threats to the species have been identified, including road maintenance works, inappropriate fire regimes, erosion and weed invasion by introduced Dodder Vine (*Cuscuta* species). The Committee considers that these threats are likely to continue to cause the species to decline in the future.

One of the four subpopulations occurs in a nature reserve. The remaining subpopulations occur on shire road verges and private property and are not protected under any conservation covenants with landholders.

The Committee considers that *G. seorsiflora* has a very restricted geographic distribution, which is precarious for the survival of the species due to its 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 population size of *G. seorsiflora* is approximately 110 mature plants, and is currently known from four subpopulations (DEC, 2008).

The species' geographic distribution is highly fragmented and exists within scattered patches of remnant vegetation, in areas which have been extensively cleared for agriculture. The species' area of occupancy is estimated to be less than 1 km² (CALM, 2006). This lack of suitable habitat surrounding the species' known area of occupancy limits the geographic distribution of the species. A number of current threats are known to be impacting on the species, including road maintenance works, inappropriate fire regimes, erosion and weed invasion by introduced Dodder Vine (*Cuscuta* species).

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 fragmented and precarious for its survival. 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 population size of *G. seorsiflora* is approximately 110 mature plants. This figure was calculated using actual counts from population surveys undertaken in 2006 and 2008 (DEC, 2008). The Committee considers this number to be very low. Therefore, the species has been demonstrated to have met the relevant element 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 that *G. seorsiflora* has a very restricted geographic distribution, with 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 road maintenance works, inappropriate fire regimes, erosion and weed invasion by introduced Dodder Vine (*Cuscuta* species). Therefore, the species has been demonstrated to have met sufficient elements of Criterion 2 to make it **eligible** for listing as **critically endangered**.

The population size of *G. seorsiflora* is approximately 110 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 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 approved conservation advice for the species provides sufficient direction to implement priority actions and mitigate against key threats. A recovery plan is not considered to be necessary at this time.

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:

Guichenotia seorsiflora

- (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

- CALM (2006). Conservation and Land Management. Records held in Department of Environment and Conservation's (formerly the Department of Conservation and Land Management) Declared Flora Database and Rare Flora Files. Western Australian Department of Environment and Conservation, Western Australia.
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Available on the Internet at: <http://florabase.calm.wa.gov.au/>
- Wilkins CF and Chappill JA (2003). Taxonomic Revision of *Guichenotia* (Lasiopetaleae: Malvaceae s.l. or Sterculiaceae). Australian Systematic Botany. Volume 16: 355-356, Figure 15.