

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

1. Scientific name (common name)

Gyrostemon reticulatus (Net-veined Gyrostemon)

2. Description

The Net-veined Gyrostemon is an erect shrub that grows to approximately 1 metre tall. It has crowded, linear leaves that are 11-35mm long. The Net-veined Gyrostemon is dioecious, with male and female flowers occurring on separate plants.

3. National Context

The Net-veined Gyrostemon is endemic to Western Australia. It is currently known from only two populations that occur near Tardun, south-east of Mullewa, which is approximately 350km north of Perth and 100km east of Geraldton in the northern Wheatbelt.

The species is currently listed as rare under the Western Australian *Wildlife Conservation Act 1950* and is managed as 'critically endangered' (according to IUCN criteria) by the Western Australian Government.

4. How judged by TSSC in relation to the EPBC Act criteria.

TSSC judges the species to be **eligible** for listing as **critically endangered** under the EPBC Act. The justification 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 Net-veined Gyrostemon was thought to be extinct, until it was rediscovered near Tardun in 1990.

The species is now known to occur in two populations near Mullewa in the northern Western Australian wheatbelt. The populations, when surveyed in 2003, consisted of approximately 163 plants. There is evidence to indicate that the species both matures quickly and increases in numbers quickly following fire and soil disturbance. Prior to a fire at one of the populations during July 2000, there were only 3-7 plants in the population. However, 13 months after the fire, a survey in 2001 indicated that there were approximately 500 plants, the majority of which were in flower or early fruit. Two years later, in 2003, the population had been reduced, through natural attrition following the mass germination, to 160 mature plants. Therefore, the species appears to be responsive to disturbance, particularly from fire, and undergoes large natural fluctuations in population size over time (CALM, 2005).

Further work would be required to accurately determine the trend in population numbers. There is not enough information at this stage to confidently determine an immediate past decline in the number of mature individuals, or possible future decline.

There are no quantitative data available to assess the species against this criterion.

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

The geographic distribution of the Net-veined Gyrostemon is very restricted, occurring in only two locations near Tardun in the Western Australian wheatbelt. Surveys have been undertaken in similar habitat adjacent to the two populations, but no other sites containing the Net-veined Gyrostemon have been found. Based on the two known locations of the species, the extent of occurrence of the Net-veined Gyrostemon is estimated to be less than 2km² (CALM, 2005).

The two populations of the Net-veined Gyrostemon are highly fragmented. Much of the Western Australian wheatbelt has been cleared for agriculture and the remaining two populations occur in remnant vegetation on private property with cleared paddocks between them. One population has been fenced to protect it from grazing, however, the second population, which consists of only three plants, is very close to property infrastructure, and may be at threat from human activities. The geographic distribution is precarious for the survival of this species and is very restricted.

Therefore, the species is **eligible** for listing as **critically endangered** under this criterion.

Criterion 3 – The estimated total number of mature individuals is limited to a particular degree and: (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 number of individuals is very low, with 163 plants occurring at only two locations. Current threats to the Net-veined Gyrostemon include activities related to property management and maintenance such as firebreak maintenance and inadvertent physical destruction due to proximity to property infrastructure. Lack of an appropriate level of disturbance to stimulate germination, such as fire or soil disturbance, is also a potential threat to the species. However, further work is required into the ecology of the species to determine what may constitute an appropriate disturbance regime.

Therefore, although the total number of individuals is very low, further work is required to determine if the populations are actually declining, or are demonstrating natural fluctuations in population size over time.

There are no quantitative data available to assess the species against this criterion.

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

The total number of individuals of this species is very low – only 163 plants.

Therefore, the species is **eligible** for listing as **endangered** under this criterion.

Criterion 5 - Probability of extinction in the wild

There are no quantitative data available to assess the species against this criterion.

5. CONCLUSION

The Net-veined Gyrostemon was thought to be extinct until it was rediscovered in 1990. It is endemic to Western Australia and known from only two locations, with 163 plants occurring near Tardun, south-east of Mullewa which is approximately 350km north of Perth and 100km east of Geraldton in the northern Wheatbelt. With a total extent of occurrence of less than 2km², its distribution is very restricted.

The species is **eligible** for listing as **critically endangered** under criterion 2, and **eligible** for listing as **endangered** under criterion 4.

6. Recommendation

TSSC recommends that the list referred to in section 178 of the EPBC Act be amended by **transferring** from the **extinct** category to the **critically endangered** category:

Gyrostemon reticulatus (Net-veined Gyrostemon)

Publications used to assess the nomination

CALM (2005) Records held in CALM's Declared Flora Database and rare flora files. WA Department of Conservation and Land Management.