

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

**1. Scientific name (common name)**

*Acacia unguicula* (a shrub)

**2. Description**

*Acacia unguicula* is a shrub growing to 2 metres tall (or tree to 3m), with deep golden yellow wattle flowers and reddish brown pods (Cowan & Maslin 1990; Maslin 2001; WA Herbarium 2005).

**3. National Context**

*Acacia unguicula* is endemic to Western Australia and is currently known from three populations in the vicinity of Mt Singleton, approximately 280 km south-east of Geraldton (CALM 2005; Maslin 2001; WA Herbarium 2005).

It is 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 the Committee in relation to the EPBC Act criteria.**

The Committee judges the species is **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.**

*Acacia unguicula* is currently known from three populations containing a total of 43 mature individuals. All populations are located on a single pastoral lease. Numerous surveys for this species were conducted between 1992 and 2001, but no other populations were found (CALM 2005).

In 2001, the three populations contained seven, 41 and 43 individuals respectively, and by 2004, the populations contained only five, 27 and 11 individuals. The number of plants in one population fluctuated from 43 in 2001 to 63 in 2002, with 11 plants remaining in 2004 (CALM 2005). Evidence suggests that the increase in numbers in 2002 may have occurred due to some disturbance factor resulting in a number of seedlings being produced, however it is likely that these seedlings were subsequently grazed.

Despite this fluctuation, the total overall decline in numbers went from 91 to 43 over four years. The plants in all three populations are in poor condition, with many heavily grazed by feral goats. Only a small number of plants in each population reach flowering stage reducing the chance of recruitment. In addition, wildfire may potentially impact on the already grazed populations (CALM 2005).

With a population size reduction of more than 50% over four years, it is estimated that the rate of decline in population size would be more than 80% over ten years, and, along with the ongoing impact of grazing, the species is likely to undergo a very severe reduction in numbers.

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

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

*Acacia unguicula* is currently known from three populations with an extent of occurrence of approximately 1 km<sup>2</sup> and an area of occupancy of approximately 0.02 km<sup>2</sup> (CALM 2005).

All three populations occur in one location within a very small area on a single pastoral lease.

All populations are threatened with grazing by feral goats. Most plants are heavily grazed, with only a few plants in each population reaching flowering stage, thereby reducing the chance of recruitment. Wildfire may also have a potential impact on all three populations.

As discussed under criterion 1, there has been a very severe reduction in population numbers and the very restricted geographic distribution is precarious for the survival of the species.

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 mature individuals for this species is 43 plants. As discussed under criterion 1 there has been a severe reduction in numbers of mature individuals, with each population recently recorded as containing five, 27 and 11 plants respectively. The species is under threat from grazing by feral goats, with the potential threat of wildfire.

With most plants being heavily grazed, and only a few plants in each population reaching flowering stage, reducing the chance of recruitment, the number of individuals is likely to continue to decline.

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

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

The total population size of this species is extremely low, with 43 mature individuals remaining. With the ongoing threat of grazing by feral goats, the numbers are likely to decline further.

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

## **Criterion 5 - Probability of extinction in the wild**

The total population numbers of this species declined over four years from 91 plants in 2001 to 43 plants in 2004. The plants in all three populations are in poor condition, with many heavily grazed by feral goats, and only a few plants in each population reaching flowering stage. No mature seed pods have been collected in recent years, indicating poor potential for recruitment. In addition, wildfire may potentially impact on the already grazed populations (CALM 2005).

The evidence shows that the population size has declined by more than 50% over four years. At this rate of decline, and without conservation action, the probability of extinction in the wild is at least 50% within 10 years.

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

## **5. CONCLUSION**

*Acacia unguicula* is currently known from three populations, with a total of 43 mature individuals, occurring on a single pastoral lease in the vicinity of Mt Singleton, approximately 280 km south east of Geraldton in Western Australia. Numerous surveys for this species have been undertaken between 1991 and 2001 but additional populations have not been located (CALM 2005).

All three populations are under threat from grazing by feral goats, and are potentially threatened by wildfire.

The species is eligible for listing as **critically endangered** under criteria 1, 2, 3, 4 and 5.

## **6. Recommendation**

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:

*Acacia unguicula* (a shrub)

### **Publications used to assess the nomination**

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

Cowan, R.S. & B.R.Maslin (1990) *Nuytsia* 7(2): 218-219.

IUCN (2001) *IUCN Red List Categories: Version 3.1*. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK.

Maslin, B.R. (2001) *Wattle. Acacias of Australia*. Interactive Identification CD. ABRS and Department of Conservation and Land Management, Collingwood.

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

Western Australian Herbarium (WA Herbarium) (2005). *FloraBase – The Western Australian Flora*. Department of Conservation and Land Management. <http://florabase.calm.wa.gov.au/>