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 chapmanii subsp. *australis* (a shrub)

2. Description

Acacia chapmanii subsp. *australis* is a low compact shrub growing to 50 cm high, with bright golden yellow wattle flowers (CALM 2004; Cowan & Maslin 1999; Maslin 2001; Patrick & Brown 2001).

3. National Context

Acacia chapmanii subsp. *australis* is endemic to Western Australia and is currently known from four populations near Bolgart, approximately 120 km north-east of Perth (CALM 2005).

It is listed as rare in Western Australia under the *Wildlife Conservation Act 1950* and is managed as 'endangered' (according to IUCN criteria) by the Western Australian Government.

The other subspecies, *Acacia chapmanii* subsp. *chapmanii*, occurs near Three Springs south to near Marchagee (Cowan & Maslin 1999) and is not endangered at this stage.

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

The Committee judges the species to be **eligible** for listing as **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 chapmanii subsp. *australis* is currently known from four populations near Bolgart, approximately 120 km north-east of Perth. The populations occur over a long narrow area approximately 17 km by 1 km. The total number of mature individuals from these four populations is approximately 800 (CALM 2005).

Since 1992, a substantial number of surveys have been undertaken in areas of suitable habitat. However, there are few low-heath areas remaining where this species occurs, and the potential for locating further viable populations is limited (CALM 2005).

One population, containing approximately 200 mature plants, occurs in a nature reserve. The other three populations, containing seven (four mature and three seedlings), 15 and 613 plants respectively, occur on road, rail and gravel reserves. There has been a decline in the condition and size of three populations, particularly the population occurring within the nature reserve (CALM 2005).

In the last two to three years a large number of dead plants have been recorded at the site of the population occurring in the nature reserve. There were approximately 400 plants seen at this site in 1992, but only 179 live plants seen in 2003. Investigations into possible causes of the decline, such as salinity, water-logging and fungal disease, have failed to isolate a cause for these deaths. As this population has not been affected by fire for at least 25 years, the plants are likely to be at least 24 years old, therefore, the population could be in decline due to old age (CALM 2005).

Two populations have very low numbers (15 and four plants respectively) and along with the fourth population (613 plants), are threatened by road and rail maintenance, and weed invasion. All populations are potentially threatened by lack of recruitment and old age.

Given that there has been a substantial reduction in population numbers of this species over ten years, and the population located in the nature reserve is in continuing decline due to unknown causes, it is likely that the species will undergo further reduction in numbers in the near future.

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

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

Acacia chapmanii subsp. *australis* is currently known from four populations occurring over a long narrow area approximately 17 km by 1 km (CALM 2005). The extent of occurrence is approximately 17 km^2 (CALM and WA Herbarium databases 2004) and the total area of occupancy is 0.075 km^2 CALM 2005).

The four populations occur in areas of remnant vegetation. Much of the surrounding area has been cleared for agriculture. The species' distribution is fragmented and there are few low-heath areas remaining where this species occurs. One population occurs within a 445 ha conservation reserve but the remaining three populations are found within road/rail and gravel reserves (CALM 2005).

There is a lack of historical survey information to indicate a past decline in the area of occupancy for all populations. Also there are insufficient data to indicate a past or future decline in the extent of occurrence. However, the overall population has declined from 1000 to 800 over ten years, with a substantial reduction in the population located in the nature reserve. Two populations are very small (7 and 15 plants) and are located on shire road verges with tenuous security. The loss of these plants would represent a decline in the species (CALM 2005).

As discussed under Criterion 1 the species is under threat, and there has been an observed decline in the condition and size of three populations, including the population within a nature reserve. In conclusion the evidence suggests that the geographic distribution is restricted and is precarious for the survival of the species.

Therefore, the species is **eligible** for listing as **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 of *Acacia chapmanii* subsp. *australis* is approximately 800. Evidence indicates there has been a decline in the condition and size of three populations, and the species is currently under threat from road and rail maintenance, weed invasion, and potentially threatened by lack of recruitment and old age.

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

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

The total number of mature individuals is approximately 800, with an area of occupancy of 0.075 km^2. Evidence suggests that the species is an ephemeral seeder, regenerating after fire. Low numbers of mature seedpods have been observed, therefore the soil held seed bank may be low, limiting post fire recruitment (CALM 2005). There are a range of threats currently impacting on the species.

Given that the total number of mature individuals is low, the population has a very restricted area of occupancy, and all populations could be impacted by a range of threats, the species is **eligible** for listing as **vulnerable** under this criterion.

Criterion 5 - Probability of extinction in the wild

There are insufficient data to assess the species against this criterion.

5. CONCLUSION

Acacia chapmanii subsp. *australis* is currently known from four populations, with a total of approximately 800 mature individuals, near Bolgart in Western Australia. A substantial number of surveys have been undertaken since the mid-1990s, in areas of suitable habitat, however, there are few low-heath areas remaining where this species occurs, and the potential for locating further viable populations is limited (CALM 2005).

Three populations are currently threatened by road/rail maintenance, and weed invasion, with all populations under potential threat from lack of recruitment and old age, particularly the population located in the nature reserve.

The species is eligible for listing as **vulnerable** under criterion 4, and **endangered** under criteria 2 and 3.

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 **endangered** category:

***Acacia chapmanii* subsp. *australis* (a shrub)**

Publications used to assess the nomination

CALM (2004) Draft Policy Statement No 9. Conserving Threatened Species and Ecological Communities (Revised) WA Department of Conservation and Land Management.

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

Cowan, R.S. & B.R.Maslin (1999) Acacia miscellany 18. *The taxonomy of miscellaneous species with sharply pungent phyllodes in Acacia section Plurinerves (Leguminosae: Mimosoideae).* Nuytsia 12(3): 457.

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.J. & A.P.Brown (2001) *Declared Rare and Poorly Known Flora in the Moora District*. Wildlife Management Progarm No 28. Department of Conservation and Land Management, Western Australia.

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