

**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)

Acacia praemorsa (Senna Wattle, Cassia Wattle)

2. Reason for Conservation Assessment by the Committee

This advice follows assessment of information gathered through the Commonwealth's Species Information Partnership with the South Australian Department for Environment and Heritage which is aimed at systematically reviewing species that are inconsistently listed under the EPBC Act and South Australian legislation.

The Senna Wattle is listed as endangered under Schedule 8 of the South Australian *National Parks and Wildlife Act 1972*. The Committee provides the following assessment of the appropriateness of the species' inclusion in the **vulnerable** category 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 Criterion 2 to make it **eligible** for listing as **vulnerable**

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

4. Taxonomy

The species is conventionally accepted as *Acacia praemorsa* (Senna Wattle) (Lang et al., 1990).

5. Description

The Senna Wattle is an erect, suckering, hairless shrub, 1 to 3 m high with smooth, green, angled branchlets and long, linear, soft phyllodes (leaf-like structures) (Lang et al., 1990). The phyllodes are linear, 2 – 9 cm long and 1.5 – 2.5 mm wide (Whibley and Symon, 1992). The bright-yellow, globular flower heads occur in groups of one or two (Lang et al., 1990). The legumes (fruit) are linear, dark green, flat or twisted and up to 13 cm long (Whibley and Symon, 1992).

6. National Context

The Senna Wattle is endemic to South Australia. It is confined to the Eyre Peninsula where it occurs in localised populations in the ranges north-east of Cleve (Lang et al., 1990).

The Senna Wattle is listed as endangered under the South Australian *National Parks and Wildlife Act 1972*.

7. Relevant Biology/Ecology

The Senna Wattle occurs in mallee woodlands, open scrubs and open heath scrubs (State Herbarium of South Australia database, 2005). The species has been found on the lower slopes of small gullies in low, rocky ranges (Lang et al., 1990), on exposed north-facing slopes in thick, low scrub (State Herbarium of South Australia, 2005) and in shady, sheltered sites in open mallee woodlands at the base of steep gullies (Lang et al., 1990).

Mallee woodlands where the Senna Wattle have been recorded comprise *Eucalyptus dumosa* (White Mallee) and *E. socialis* (Red Mallee) mallee heaths with *Melaleuca uncinata* (Broom Honey-myrtle), White Mallee, *E. conglobata* (Cong Mallee), *E. odorata* (Peppermint Box), *E. leptophylla* (Narrow-leaved Red Mallee) open scrub over *Acacia calamifolia* (Wallowa); Peppermint Box open scrub over *Dodonaea hexandra* and *Halgania cyanea* (Rough Halgania); and Peppermint Box low woodland to open scrub with Broom Honey-myrtle, *Gonocarpus elatus*, *G. mezeianus*, *Austrostipa* spp. (Speargrass) and *Austrodanthonia* spp. (Wallaby-grass). The species has also been recorded from *Allocasuarina verticillata* (Drooping Sheoak) and Broom Honey-myrtle broombush heath and low scrub with *Pultenaea teretifolia*, *Astroloma conostephioides* (Flame Heath), *Spyridium spathulatum* (Spoon-leaf Spyridium), and Broom Honey-myrtle (State Herbarium of South Australia, 2005).

The Senna Wattle is currently known from seven fragmented populations within its range. However, there is little known about the species' biology and ecology.

8. Description of Threats

Key threats to the Senna Wattle are grazing and trampling by domestic stock, habitat loss and fragmentation through vegetation clearance and inappropriate fire regimes, including unplanned catastrophic fires.

The current key threat to the Senna Wattle is grazing and trampling by domestic stock. This threat is only likely to impact the two populations that are known to occur on agricultural land. Of the remaining populations, one occurs in a conservation reserve and four are protected from grazing under Heritage Agreements on private property. A Heritage Agreement is a contract between a landholder and the State Government of South Australia to protect a specified area of native vegetation and wildlife habitat in perpetuity. The Heritage Agreement is registered on the title of the land and is therefore transferred with the ownership of the land. The agreements are administered through the South Australian *Native Vegetation Act 1991*.

A significant historical threat to the Senna Wattle is likely to have been vegetation clearance in the pastoral landscape in which it occurs, leading to habitat loss and fragmentation. Vegetation clearance is known to have occurred within the species' range, particularly in the Hundred of Mann, Hundred of Mangalo and Mount Desperate environmental associations, where 38.3%, 14.2% and 38.8% of the native vegetation remains respectively (State Herbarium of SA, 2005; DEH, 2002). However, current controls on broad scale vegetation clearance under the South Australian *Native Vegetation Act 1991* reduce the future impact of this threat.

Inappropriate fire regimes are a potential threat to the Senna Wattle. The species' response to fire is unknown; however, inappropriate intervals between fires may affect recruitment in all populations. Additionally, the seven populations of Senna Wattle are known from only one location. One catastrophic fire within this location may potentially eliminate 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 **vulnerable** 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 Senna Wattle was first collected in 1986 and surveyed only several times since. The most recent survey was in 1992 (DEH, 2005). It is possible that there was an historical decline in numbers, prior to its discovery in 1986, as a result of vegetation clearance. Vegetation clearance is known to have occurred within the species' distribution; however, it is difficult to confirm a decline in the population size of the Senna Wattle as the species now appears to be restricted to rocky ranges that have remained vegetated. As the majority of populations have been protected since 1986, it seems unlikely that the population has declined since this time. However, data collections have not been made over a sufficient time period to assess whether the species has declined or is in decline.

There are insufficient 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

In 2005, the extent of occurrence of Senna Wattle was estimated to be 31 km² (State Herbarium of South Australia, 2005; DEH, 2005). This estimate suggests that the geographic distribution is very restricted; however, the population is considered stable and the ongoing threats from grazing and trampling are being controlled in five of the seven known populations. Therefore, the Committee considers that the species' geographic distribution is limited.

While ongoing threats are not currently impacting strongly on the Senna Wattle, the limited location of this species renders it susceptible to catastrophic events such as intense fire. With the species' response to fire unknown, it is possible that one intense fire could potentially destroy the entire known population simultaneously. Therefore, the geographic distribution is considered precarious for the survival of the species.

The Committee considers that Senna Wattle has a **limited** geographic distribution, which is precarious for the survival of the species. Therefore, the species has been demonstrated to have met the relevant elements of Criterion 2 to make it **eligible** for listing as **vulnerable**.

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 Senna Wattle is known from seven populations. There are population data available for four populations, with numbers in each population ranging between 500 and 1000 mature individuals (DEH, 2005; Lang et al., 1990). There are no data on the number of individuals in the other three recorded populations.

Suitable habitat for the Senna Wattle occurs outside the seven recorded population sites. However, since 1992 no targeted surveys have been conducted in these areas to determine whether any additional populations exist.

There are insufficient data available to estimate whether the total number of mature individuals is very low, low, limited, or not limited. Therefore, as the species has not been demonstrated to have met this required element of Criterion 3, it is **not eligible** for listing in any category under this criterion.

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

Population data for four of the seven populations of the Senna Wattle are available, and the estimated size of each of these populations is between 500 to 1000 mature individuals. There are no data available on the number of individuals in the other three recorded populations.

As a result, there are insufficient data available to estimate whether or not the total number of mature individuals is extremely low, very low, or low. Therefore, as the species has not been demonstrated to have met this required element of Criterion 4, it is **not eligible** for listing in any category under this criterion.

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 the South Australian Department for Environment and Heritage which is aimed at systematically reviewing species that are inconsistently listed under the EPBC Act and the South Australian legislation.

The Senna Wattle occurs on the Eyre Peninsula in South Australia and is currently known from seven populations at one location. The geographic distribution of the Senna Wattle is limited and is considered precarious for the survival of the species, based on its limited location and the potential for a catastrophic fire event to eliminate the species. Grazing and trampling by livestock may continue to threaten two populations; however, the majority of Senna Wattle populations are protected from grazing on properties by Heritage Agreements. The response to fire for the Senna Wattle is unknown; however, inappropriate fire regimes may affect recruitment and longevity in all populations.

Therefore, the species has been demonstrated to have met sufficient elements of Criterion 2 to make it **eligible** for listing as **vulnerable**.

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

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 key threats.

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 **vulnerable** category:

***Acacia praemorsa* (Senna Wattle)**

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

Associate Professor Robert J.S. Beeton
AM FEIANZ
Chair
Threatened Species Scientific Committee

13. References cited in the advice

DEH (Department for Environment and Heritage) (2002). Remnant vegetation data within Environmental associations for South Australia. South Australia.

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