

Advice to the Minister for the Environment, Heritage and the Arts 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)

Schoenia filifolia subsp. *subulifolia* (an everlasting daisy)

2. Description

Schoenia filifolia subsp. *subulifolia* is an annual herb to 0.5 m high with long, thin leaves and yellow everlasting daisy flowers (Wilson 1992). The flowering period is from September to October.

Schoenia filifolia subsp. *subulifolia* grows in pale yellow-grey-brown clay in swampy flats and tops of breakaways (Patrick 2001; WA Herbarium, 2006). Associated species include *Hakea preissii*, *Eucalyptus loxophleba* and *Acacia acuminata* (WA CALM 2006).

3. National Context

Schoenia filifolia subsp. *subulifolia* is endemic to Western Australia. Three subpopulations are currently known, all from the Mingenew area southeast of Geraldton (WA CALM 2006).

Schoenia filifolia subsp. *subulifolia* is listed as Declared Rare Flora under the Western Australian *Wildlife Conservation Act 1950*.

The other two subspecies of *Schoenia filifolia* are *Schoenia filifolia* subsp. *arenicola*, which is listed as Priority One Flora in Western Australia, and *Schoenia filifolia* subsp. *filifolia*, which is considered not threatened. Both of these subspecies also are endemic to Western Australia.

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

The Committee judges the taxon 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

As all species of *Schoenia* are annual herbs (WA Herbarium 2006), the numbers of mature individuals in total and within each subpopulation are also subject to seasonal variation that influences the number of germinants and the number that reach maturity each year. The current population size of *Schoenia filifolia* subsp. *subulifolia* is estimated to be about 1220 mature individuals. Estimates of past population size are not available. A decline in the number of mature plants, however, can be inferred from old herbarium records and observations. These indicate that the subspecies was formerly widespread in the Mingenew area in the early 1900s and that it also formerly occurred at Walkaway and Champion Bay, closer to Geraldton, during the 1960s (Patrick 2001; WA CALM 2006). The numbers of individual plants lost from these localities is not known.

Present and future threats to *Schoenia filifolia* subsp. *subulifolia* include agricultural encroachment, weed invasion, salinity and grazing (WA CALM 2006). Although there is a risk that these threats could cause a future reduction in plant numbers, it is not possible to reliably estimate how many mature plants could be affected by threats in the immediate future.

There is insufficient evidence to determine the degree to which *Schoenia filifolia* subsp. *subulifolia* has undergone a past reduction in numbers or to quantify the likely future decline of the subspecies. Therefore, there are insufficient 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 Committee considers that the geographic distribution of *Schoenia filifolia* subsp. *subulifolia* is restricted. Current estimates for the extent of occurrence and area of occupancy are estimated to be 35 km² and less than 0.002 km² respectively (WA CALM 2006). Herbarium records show that the taxon also formerly occurred at Walkaway and Champion Bay, near Geraldton, during the 1960s (Patrick 2001; WA CALM 2006). These records show that a decline in the extent of occurrence has occurred within the past fifty years though no estimate is available to quantify the geographic decline.

The current known distribution of *Schoenia filifolia* subsp. *subulifolia* is limited to three subpopulations in the vicinity of Mingenew. All three subpopulations occur on private land. They are currently threatened by agricultural encroachment and weed invasion with salinity and climate change being likely future threats (WA CALM 2006). The occurrence of *Schoenia filifolia* subsp. *subulifolia* on swampy flats may represent fragmented relicts of its former extent that are now limited to vegetation remnants on land unsuitable for cropping (WA CALM 2006). Most of the region surrounding the known subpopulations has been extensively cleared for agriculture. While all known subpopulations occur on private land, the present landholders involved are aware of the Declared Rare Flora status of *Schoenia filifolia* subsp. *subulifolia* and their associated legal responsibilities under State legislation (WA CALM 2006) which may mitigate some threats.

The long-term survival of the remaining subpopulations is subject to the same threats that were responsible for past reductions in distribution. The main threat is agricultural encroachment. Although this threat may not involve any clearing, farm activities such as maintaining fence lines/firebreaks, chemical drift and land degradation by stock may still impact on the taxon's habitat. It is likely that the remaining subpopulations will continue to decline due to threats associated with agriculture (WA CALM, 2006).

The present geographic range of *Schoenia filifolia* subsp. *subulifolia* is restricted and there is evidence that it has undergone a past decline in its extent of occurrence. The available information indicates that the geographic distribution of *Schoenia filifolia* subsp. *subulifolia* is precarious for its survival because it is restricted, fragmented and is subject to ongoing threats. Therefore, *Schoenia filifolia* subsp. *subulifolia* 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 *Schoenia filifolia* subsp. *subulifolia* was estimated to be at least 1220 in 2004 (WA CALM 2006). Due to a lack of historical survey information, there are no quantitative data available to indicate past trends in the population size of the taxon. A future decline in plant numbers is likely given the nature of the threats, but there is no quantitative information from which to estimate what rate and degree of decline is likely. Therefore, there are insufficient 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 population of *Schoenia filifolia* subsp. *subulifolia* is not low. Therefore, the taxon is **not eligible** for listing under this criterion.

Criterion 5 – Probability of extinction in the wild

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

5. CONCLUSION

Schoenia filifolia subsp. *subulifolia* is an annual everlasting daisy that occurs in the Mingenew region, southeast of Geraldton, WA. The Committee considers that the species has a restricted distribution, with the only three known subpopulations subject to continuing threats from agricultural encroachment and weed invasion. The total number of mature individuals was estimated to be at least 1220 in 2004. The geographic distribution is precarious for the taxon's survival. The species is therefore **eligible** for listing as **endangered** under criterion 2.

Recovery Plan

The Committee considers that there should be a recovery plan for this species. *Schoenia filifolia* subsp. *subulifolia* is only known from three subpopulations and is subject to a number of land use threats, which can be better managed with a recovery plan in place.

6. Recommendation

- (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 **endangered** category:

Schoenia filifolia subsp. *subulifolia* (an everlasting daisy)

- (ii) The Committee recommends that there be a recovery plan for this species.

Associate Professor Robert J.S. Beeton

Chair

Threatened Species Scientific Committee

References cited in the advice

Patrick, S. (2000). *Declared Rare and Poorly Known Flora in the Geraldton District*. Western Australian Wildlife Management Program No. 26. WA CALM.

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Wilson, P.G. (1992). The *Lawrencella* complex (Asteraceae: Gnaphalieae: Angianthinae) of Australia. *Nuytsia* 8(3), 361-377.