

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)

Sinumelon bednalli (a land snail)

2. Description

Sinumelon bednalli is a large camaenid land snail, with a shell diameter of 20-26 mm. The shell is greenish-yellow with a weak reddish spiral colour band, usually made up of 4-5 whorls. Camaenid snails become mature in their second wet season and may live for 10-15 years.

Sinumelon bednalli is found among leaf litter associated with small patches of fig trees in the Macdonnell Ranges, west of Alice Springs in the Northern Territory.

3. National Context

Sinumelon bednalli has been found at only seven sites in the Macdonnell Ranges of central Australia.

The species is listed as critically endangered under the Northern Territory's *Territory Parks and Wildlife Conservation Act 2000*.

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

TSSC 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.

Sinumelon bednalli is suspected to have undergone a reduction in numbers at one of the seven sites at which it is known to occur, however there are no quantitative data on the decline at this site and no further data on the abundance of the species at the remaining six sites.

Therefore, the species is **not eligible** for listing under this criterion.

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

Sinumelon bednalli has been found at seven widely scattered sites within the Macdonnell Ranges. The species has been described as intrinsically rare and difficult to survey and it may occur at other suitable locations within the Macdonnell Ranges. The extent of occurrence for the species has been estimated at 2100km² and its area of occupancy is estimated to be 15km².

Very restricted ranges are a feature of several camaenid snail species, although they can be locally very abundant, and it is considered that sampling has been sufficient to establish that *Sinumelon bednalli* has a very restricted range. A number of searches for land snails, particularly camaenids, were made in this area between 1974 and 1977 (Solem 1993). Further

surveys of small patches of figs in central Australia beyond the Macdonnell Ranges are considered unlikely to reveal new locations for this species.

One of the known populations of *Sinumelon bednalli* near Alice Springs has almost disappeared due to pressure from urban expansion and fires in the exotic Buffel Grass (*Cenchrus ciliaris*). Buffel Grass is a hardy and prolific weed that is very common in central Australia and is continuing to spread along roadsides and watercourses. It contains a high fuel load and is known to contribute to the intensity and frequency of fires. As Buffel Grass continues to radiate outwards from the Alice Springs area where it was first introduced, the change in fire regime is likely to impact on the other known populations of *Sinumelon bednalli*.

Sinumelon bednalli has an estimated extent of occurrence of 2100km², an estimated area of occupancy of 15km² and is known from only seven locations. Its distribution within this range appears highly fragmented and one population is known to have experienced a sharp decline in recent years. It is considered that threats operating in its range may be causing a decline in numbers and habitat quality. Therefore, its geographical distribution is restricted and 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.

There are no quantitative data available against this criterion.

Therefore, the species is **not eligible** for listing under this criterion.

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

There are no quantitative data available against this criterion.

Therefore, the species is **not eligible** for listing under this criterion.

Criterion 5 - Probability of extinction in the wild

There are no quantitative data available against this criterion.

Therefore, the species is **not eligible** for listing under this criterion.

5. CONCLUSION

Sinumelon bednalli has a restricted range, with an estimated extent of occurrence of 2100km² and an estimated area of occupancy of 15km². One of its seven populations has experienced a sharp decline in recent years due to urban expansion, changes in fire regime and invasion from exotic Buffel Grass. The other known populations are also likely to be threatened by the spread of Buffel Grass, leading to possible future declines across the range.

The species is **eligible** for listing as **endangered** under Criterion 2.

6. Recommendation

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

Sinumelon bednalli (a land snail)

Associate Professor Robert J.S. Beeton

Chair

Threatened Species Scientific Committee

Publications used to assess the nomination

Solem, A. 1993. Camaenid land snails from Western and central Australia (Mollusca: Pulmonata: Camaenidae) VI Taxa from the Red Centre. *Records of the Western Australian Museum Supplement No. 43*, 983-1459.