

**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)**

*Egernia obiri* (Arnhem Land Egernia)

**2. Description**

The Arnhem Land Egernia is a large thickset ground-dwelling skink, which resembles a blue-tongue lizard in shape, and is grey to light brown above with a brown longitudinal streak. The sides are dark with irregular patches that merge into faint bands between the armpit and groin and it has short and thick legs.

Until recently the species was more widely known as *Egernia arnhemensis* (Sadlier 1990).

**3. National Context**

The Arnhem Land Egernia is endemic to the Northern Territory and is restricted to the western Arnhem Land plateau and outliers (eg. Jabiluka). Within this range, it has been recorded at ten locations, including Nawurlandja (Little Nourlangie Rock), Jabiluka, near Oenpelli, near El Sherana and Koolpin Gorge. Approximately one-quarter of the known range and distribution of the species is in Kakadu National Park.

The species is listed as Data Deficient under the Northern Territory *Territory Parks and Wildlife Conservation Act 2000* but is currently under consideration for listing as Endangered.

**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.**

The total population size of the Arnhem Land Egernia is unknown. A recent trapping study of 10 known sites caught only one individual, observed one and found desiccated remains of one individual in a shallow cave (Armstrong and Dudley 2004). Due to a lack of historical survey information, there is no quantitative data available to indicate past trends in the population size of the Arnhem Land Egernia. 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.**

The Arnhem Land Egernia is known from only ten locations within the western Arnhem Land plateau including Little Nourlangie Rock, Jabiluka, Koolpin Gorge, near Oenpelli and near El Sherana. As with other endemics of the western Arnhem Land massif, the species extent of occurrence is about 34,000km<sup>2</sup>. Based on knowledge of these locations, the total area of occupancy is estimated to be less than 50km<sup>2</sup>.

There is little information available on the species' distribution or historical data to indicate past declines in the species' extent of occurrence. The available data suggests that the Arnhem

Land Egernia is patchily distributed, with the population comprising a set of semi-isolated sub-populations. All sub-populations are localised and extensive migration between them is considered unlikely.

Available evidence implies that the species has undergone a decline in the number of mature individuals. Mammal surveys undertaken in the late 1970s captured up to three Arnhem Land Egnias each month during a three-year trapping period (Armstrong & Dudley 2004). In more recent surveys, using identical procedures to the earlier study, no Arnhem Land Egnias were caught (Watson & Woinarski 2003). In the past 24 years there have been fewer than 10 records of the species.

While the available data on past, current and future threats impacting on the species is limited, there are threatening processes operating within the Arnhem Land plateau which are likely to have adversely affected the species in the past and continue to do so. These threatening processes include changes in food resources caused by altered fire regimes and predation on the species by feral cats. The impact of altered fire regimes in particular requires further investigation.

Based on a small area of occupancy (50km<sup>2</sup>) and ongoing threats, the geographic distribution of the Arnhem Land Egnia is considered 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 population size of the Arnhem Land Egnia is not known and there is little information on trends in abundance. As the species has not been sufficiently surveyed, it is not possible to determine whether the total number of mature individuals is limited to a particular degree.

Available evidence implies that the species has undergone a decline in the number of mature individuals. Mammal surveys undertaken in the late 1970s captured up to three Arnhem Land Egnias each month during a three-year trapping period (Armstrong & Dudley 2004). In more recent surveys, using identical procedures to the earlier study, no Arnhem Land Egnias were caught (Watson & Woinarski 2003). In the past 24 years there have been fewer than 10 records of the species.

Given the very low frequency of captures, it is probable that the species' population numbers are limited to a particular degree.

As outlined in criterion 1, there are threatening processes operating within the Arnhem Land plateau that are impacting on the quality of Arnhem Land Egnia habitat.

These threats, combined with the species' restricted area of occupancy, make its geographic distribution precarious for its survival. However, as there is no population estimate available for the species, it 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 is no quantitative data available concerning total population size of the Arnhem Land Egnia. 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 to assess the species against this criterion.

## 5. CONCLUSION

Currently there is limited data available to indicate total population size, trends in abundance and distribution of the Arnhem Land Egernia.

Available evidence implies that the species has undergone a decline in the number of mature individuals. Mammal surveys undertaken in the late 1970s captured up to three Arnhem Land Egernias each month during a three-year trapping period (Armstrong & Dudley 2004). In more recent surveys, using identical procedures to the earlier study, no Arnhem Land Egernias were caught (Watson & Woinarski 2003). In the past 24 years there have been fewer than 10 records of the species.

The species is known from 10 locations with the total area of occupancy estimated to be less than 50km<sup>2</sup>. There are threatening processes operating within the Arnhem Land plateau that are impacting on the quality of Arhem Land Egernia habitat.

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:

***Egernia obiri* (Arnhem Land Egernia)**

Associate Professor Robert J.S. Beeton

Chair

Threatened Species Scientific Committee

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

Amstrong, M. and Dudley A. (2004) The Arnhem Land Egernia *Egernia obiri* in Kakadu National Park. Report to Parks Australia (North).

Begg, R.J., Martin, K.C. and Price, N.F. (1981). The small mammals of Little Nourlangie Rock, N.T. V. The effects of fire. *Australian Wildlife Research* **8**, 515-527.

Greer, A.E. (1989) *The biology and evolution of Australian lizards*. Surrey Beatty & Sons, Sydney.

Sadler, R.A. (1990). A new species of scincid lizard from western Arnhem Land, Northern Territory. *The Beagle* **7**, 29-33.

Watson, M., and Woinarski, J. (2003). Vertebrate monitoring and resampling in Kakadu National Park, 2002. Report to Parks Australia North. Parks and Wildlife Commission of the Northern Territory: Darwin.