

**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)

Egernia pulchra longicauda (Jurien Bay Skink)

2. Reason for Conservation Assessment by the Committee

This advice follows assessment of information gathered through the Commonwealth's Species Information Partnership with Western Australia, which is aimed at systematically reviewing species that are inconsistently listed under the EPBC Act and the Western Australian *Wildlife Conservation Act 1950*.

The Jurien Bay Skink is listed as Schedule 1 Fauna (fauna that is rare or likely to become extinct) under the Western Australian *Wildlife Conservation Act 1950*, and is managed as vulnerable (according to IUCN criteria) by the Western Australian Government. The Committee provides the following assessment of the appropriateness of the subspecies' inclusion in the **vulnerable** category in the EPBC Act list of threatened species.

This is the Committee's first consideration of the subspecies under the EPBC Act.

3. Summary of Conclusion

The Committee judges that the subspecies 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 subspecies is eligible to be listed is **vulnerable**.

4. Taxonomy

The subspecies is conventionally accepted as *Egernia pulchra longicauda* (Jurien Bay Skink) (Ford, 1963). *Egernia pulchra pulchra* is the other subspecies, and occurs on the lower west coast and south-western corner of Western Australia, separated from the Jurien Bay subspecies by about 300 km (Ford, 1963; Hamilton, 2003).

5. Description

The Jurien Bay Skink is a slender, flat-headed, medium-sized skink with a long tail. It is brown with a black stripe running down the side of its body.

6. National Context

The Jurien Bay Skink is endemic to Western Australia, and occurs on a group of four small, low-lying islands (Escape, Favourite, Whitlock, and Boullanger Islands) in Jurien Bay, 200 km north of Perth. As each of the four islands are separated by ocean, the subspecies is considered fragmented into four geographically isolated populations.

There is a lack of data on the distribution of this subspecies on the four islands. Therefore, the area of occupancy is estimated to be the combined area of the four islands, which is approximately 0.45 km².

The islands are designated 'A' class Nature Reserves in Western Australia (DEC, 2008). The islands are located within the Northern Agricultural NRM region.

7. Relevant Biology/Ecology

The Jurien Bay Skink inhabits rock isolates and low shrubland on four islands in Jurien Bay, Western Australia. It is found in pre-existing cavities such as crevices amongst limestone rocks and sometimes in seabird burrows (Cogger et al., 1993). On Escape Island, it has been seen in dense ground litter beneath low scrub vegetation, as well as under sheets of cardboard (Ford, 1965). Generation length is unknown.

8. Description of Threats

Competition with introduced animals is currently known to be threatening this subspecies. It has been confirmed that the house mouse (*Mus musculus*) on Boullanger Island is limiting the population size of the Jurien Bay Skink by eating vast quantities of insects and depleting the food resources of the island (Dickman, 1999).

Escape, Favourite, Whitlock, and Boullanger Islands are only a couple of kilometres offshore from the mainland. This proximity to the coast exposes the subspecies to a number of potential threatening processes associated with frequent human visitation, such as the disturbance of habitat (from trampling and erosion), accidental fire, and the unintentional introduction of animals or invasive plants to the islands. These threats are likely to be ongoing, as visitor pressure is predicted to increase as a result of Jurien Bay's growth as a regional centre (CALM, 2004).

All four islands are designated 'A' class Nature Reserves in Western Australia (DEC, 2008). However, there is no active management for this subspecies in the reserves.

Given that it only occupies small, low-lying islands, the Jurien Bay Skink could be threatened by rising sea levels as a result of climate change.

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 subspecies 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 total size of the Jurien Bay Skink population is not conclusively known, as all recorded sightings have been associated with opportunistic collections from a group of four small islands (Escape, Favourite, Whitlock, and Boullanger Islands) in Jurien Bay, WA. The Western Australian Museum has recorded 26 specimens, and Table 1 (below) provides the museum records for specimens that were collected in 1961, 1962, 1978, 1985, 2001 and 2003 (DEC, 2008).

Table 1: Western Australian Museum records for the Jurien Bay Skink

Island	Year	Number of Specimens
Favourite Island	1961	7
	1978	1
	2001	1
	2003	1
Boullanger Island	1961	7
	1985	1
Whitlock Island	1961	1
	2003	4
Escape Island	1962	2
	2003	1

As all recorded sightings have been associated with opportunistic collections, there are insufficient quantitative data available to determine past trends in numbers of the Jurien Bay Skink population.

While a range of current and potential threats to the Jurien Bay Skink have been identified, including habitat disturbance, accidental fire, and competition from introduced animals (discussed under Section 8 above), the impact of these threats has not been quantified. The Committee considers that these threats may cause the subspecies to decline in future, but there are insufficient data to judge whether this decline would be at a particular rate.

There are insufficient quantitative data available to judge whether the subspecies has undergone, is suspected to have undergone or is likely to undergo a reduction in numbers. Therefore, as the subspecies 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

Escape, Favourite, Whitlock, and Boullanger Islands are designated ‘A’ class Nature Reserves in Western Australia, however there is currently no active management for this subspecies in the reserves.

Due to a lack of data on the distribution of this subspecies on the islands, the area of occupancy is estimated to be the combined area of the four islands, which is approximately 0.45 km². Given that this represents the natural range of the subspecies and this area is not known to have declined due to threats, the Committee considers that this represents a limited (rather than a very restricted) distribution for the species.

Being separated on four islands, the subspecies’ geographic distribution is considered to be fragmented.

The fragmented geographic distribution of the Jurien Bay Skink, and its location on near-shore islands makes the subspecies more vulnerable to a number of threats including habitat disturbance, accidental fire, and competition from introduced animals. These threats are likely to be ongoing, as visitor pressure is predicted to increase as a result of Jurien Bay’s growth as a regional centre (CALM, 2004).

The Jurien Bay Skink may also be threatened by future sea level rise as a result of climate change. Therefore the Committee considers that the subspecies may be subject to future declines in distribution and numbers.

The Committee considers that the Jurien Bay Skink has a limited geographic distribution which is precarious for the survival of the subspecies. Therefore, the subspecies 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 total size of the Jurien Bay Skink population is not conclusively known, as all recorded sightings have been associated with opportunistic collections (DEC, 2008). Therefore, there are insufficient quantitative data available to determine whether the number of mature individuals is very low, low, limited, or not limited.

The Committee considers that the subspecies may decline in future due to current and potential threats and its geographic distribution is precarious for its survival.

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 subspecies 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

All recorded sightings of the Jurien Bay Skink have been associated with opportunistic collections. Therefore, an estimate of the total number of mature individuals is not available (DEC, 2008).

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 subspecies 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 subspecies in the wild over a relevant timeframe. Therefore, as the subspecies 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 Western Australia, which is aimed at systematically reviewing species that are inconsistently listed under the EPBC Act and the Western Australian *Wildlife Conservation Act 1950*.

The Committee judges that the Jurien Bay Skink has a limited geographic distribution with an area of occupancy of approximately 0.45 km². This geographic distribution is precarious for the survival of the subspecies, due to a number of current and potential threats associated with frequent human visitation, including habitat disturbance and accidental fire, competition and predation from introduced animals and future sea level rise. Therefore, the subspecies 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 subspecies is eligible to be listed is **vulnerable**.

Recovery Plan

The Committee considers that there should not be a recovery plan for this subspecies. The conservation advice for the subspecies provides sufficient direction to implement priority actions and mitigate against 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:

Egernia pulchra longicauda (Jurien Bay Skink)

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

Associate Professor Robert J.S. Beeton *AM FEIANZ*

Chair

Threatened Species Scientific Committee

13. References cited in the advice

- Cogger HG, Cameron EE, Sadler RA and Egger P. (1993). The Action Plan for Australian Reptiles. Australian Nature Conservation Agency, Canberra.
- Department of Conservation and Land Management (CALM) (2004). Turquoise Coast Island Nature Reserves: Management Plan (Management Plan No 50). Department of Conservation and Land Management, Perth.
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- Hamilton Z (2003). Marooned Lizards: Variation in isolated and fragmented populations of *Egernia stokesii*. Unpublished B.Sc. (Hons) thesis, University of Western Australia.