

Action Statement

Flora and Fauna Guarantee Act 1988

No. 107

Heath Skink *Egernia multiscutata*

Description and distribution

The Heath Skink *Egernia multiscutata* belongs to the reptile family Scincidae, the skinks. Skinks are the largest family of Australian lizards and include species with an enormous variety of body form, size and habits. Most have smooth to keeled, overlapping scales, an obvious ear aperture and a short, broad fleshy tongue. Most skinks possess four obvious limbs, however the limbs are reduced in some genera, and the forelimbs are absent in several genera and species. The genus *Egernia* differs from other skinks in possessing parietal scales that do not contact each other, being separated behind the interparietal scale, and in the fourth toe being markedly longer than the third. Seven species of *Egernia* occur in Victoria.

The Heath Skink is a medium-sized lizard, with a maximum snout-vent length of about 94mm, and a total length of about 265mm. Although multiple colour forms of the Heath Skink are known from other states (Hudson *et al.* 1981), the three known colonies in Victoria display similar colouration. Coventry and Robertson (1980) describe the dorsal ground colour as light brown to fawn, with a dark paravertebral stripe on each side of the body. These stripes enclose a series of lighter spots extending from the nape to the base of the tail. The flanks are a lighter brown to grey, usually with light flecks. The under-surface is immaculate cream to light grey which may be tinged with salmon in adults. Adult males may show varying degrees of orange flushing on the underside.

The Heath Skink is a member of the *Egernia whitii* species group, which includes two other species (Desert Skink *E. inornata* and White's Skink *E. whitii*) that occur in Victoria. The Heath Skink may



Heath Skink *Egernia multiscutata*
[from a transparency by Peter Robertson]



Distribution in Victoria
[source: Atlas of Victorian Wildlife, NRE 1999]

be distinguished from the Desert Skink by its obvious paravertebral lines, which are lacking in the Desert Skink; and from White's Skink, which has an interparietal scale that is much narrower than its frontal scale, and has a single keel on the scales beneath each digit. In contrast, the interparietal scale of the Heath Skink is almost as wide as the frontal scale, and the scales beneath the digits have two sharp keels.

The Victorian colonies of the Heath Skink occur on large sand-dunes in desert heathland dominated by Desert Banksia *Banksia ornata*, Heath Tea-tree *Leptospermum myrsinoides* and Scrub Cypress-pine *Callitris verrucosa*. Within this habitat the Heath Skink occupies the largest dunes, and small discrete colonies live in extensive burrow systems on the northerly slopes close to the top of the dunes (Coventry and Robertson 1980). These lizards are communal, and several may share a burrow system. It is not known whether Heath Skinks utilise the swales between sand-dunes for burrows, or as part of their home range (J. Coventry *pers. comm.*).

Little is known regarding the diet of the Heath Skink, but it is likely to be similar to that of related species whose diet consists of a variety of invertebrates and the occasional small lizard, supplemented with varying amounts of vegetable material. The species gives birth to between one and three live young in mid to late summer. The young probably take several years to reach sexual maturity. The longevity of this species is not known.

The Heath Skink is apparently confined to several sand-dunes in a small area on the western boundary of the Wyperfeld National Park, north of Nhill in north-western Victoria. This area represents the eastern limit of this species' range in Australia. The size of the population in this area is unknown.

Current conservation status in Victoria

NRE (2000) Critically Endangered (Vic.)

The Heath Skink is listed as a threatened taxon in Schedule 2 of the **Flora and Fauna Guarantee Act 1988**. Within Victoria the Heath Skink is only known from three large sand-dunes in desert heathland in the Big Desert between Pella and Yanac. During 1980 three colonies were discovered in the vicinity of Chinaman Well and Moonlight Tank (Coventry and Robertson 1980). Despite a brief search in the vicinity of these dunes during the survey mentioned above, no further colonies of the Heath Skink were found (J. Coventry *pers. comm.*). The area in which the colonies were detected is now included in the Wyperfeld National Park. No records or specimens have been collected since that time, although a

recent check of the area confirmed the continued presence of the species in the area (J. Coventry *pers. comm.*). The size of the population is unknown. Aerial photographs show that there are numerous large dunes with similar vegetation throughout the Big Desert, some of which may support colonies of the Heath Skink (Coventry and Robertson 1980).

The status of the known colonies of the Heath Skink must be considered precarious, due to its specialised habitat, reliance on suitable substrate for burrowing, extremely restricted distribution, and probably low numbers. Damage caused by 4WD and recreational vehicles to sand-dunes occupied by the species is a major threat.

Being apparently confined to one locality, and the low numbers, make the Heath Skink vulnerable to catastrophes such as fire and disease. Colonies may also be vulnerable to any increase in predation. In its final recommendation the Scientific Advisory Committee (SAC 1994) has determined that the Heath Skink is:

- significantly prone to future threats which are likely to result in extinction, and
- very rare in terms of abundance or distribution.

Major conservation objectives

The major conservation objectives for the Heath Skink are to:

- determine the distribution and abundance of the species,
- ameliorate immediate threats, and
- protect the habitat of known colonies, and any colonies discovered subsequently.

Management issues

Further research on the Heath Skink is an urgent priority. Because so little is known of its specific habitat requirements and population size it is important that studies are undertaken so that management aimed at its conservation can be initiated.

There is an urgent need to clarify the distribution and abundance of the Heath Skink in north-western Victoria. This will be overseen by the Flora and Fauna Division and the North-west Region, NRE within the review period of this Action Statement.

The most obvious short-term threat to the Heath Skink is the impact of 4WD and recreational vehicles on the large sand-dunes this lizard occupies. Vehicular damage to sand-dunes was apparent during the survey which first located the Heath Skink in Victoria (J. Coventry *pers. comm.*).

Because of the extremely localised distribution of the species, predation by exotic animals such as foxes and cats may have a considerable impact on

populations of the Heath Skink. Fire, particularly changed fire regimes, may also have a deleterious impact on the Heath Skink.

Wider conservation issues

The implementation of this Action Statement will assist in achieving the Resource Conservation Management Directions as outlined in the Wyperfeld National Park Management Plan (NRE 1996). This plan lists as one of its strategies the management of Flora and Fauna Guarantee listed fauna according to approved action statements. The area in the immediate vicinity of the known colonies of Heath Skink has been recognised as “a combination of ecosystems worthy of preservation” (Beaglehole 1979). The large dunes and desert heathland which characterise the habitat of the species may be readily damaged by the use of recreational vehicles. The implementation of this Action Statement would benefit the management of these ecosystems and the adjacent areas of the Wyperfeld National Park.

A suite of threatened terrestrial vertebrates occur in the vicinity of sites where the Heath Skink was recorded (*Atlas of Victorian Wildlife*, NRE 1999). Habitat protection as outlined in this Action Statement is likely to assist in the conservation of many of these species, such as the Malleefowl *Leipoa ocellata*, Mallee Ningau *Ningau yvonneae*, Bardick *Echipsis curta* and the Lined Earless Dragon *Tympanocryptis lineata lineata*. Similarly, the control of exotic predators will be beneficial to all threatened (and non-threatened) fauna in the area.

Previous Management Action

Based on a recommendation by John Coventry after the Heath Skink was first discovered, a vehicular track was diverted around one of the large sand-dunes occupied by the species in the Big Desert, and some obstructions to vehicles have been put in place on the same dune. A recent visit to the site showed that these measures had allowed the species to recolonise areas which had been damaged by vehicles, and probably increase in abundance on this dune (J. Coventry *pers. comm.*).

Intended Management Action

The Department of Natural Resources and Environment Parks, Flora and Fauna Division, NRE North West Region and Parks Victoria are responsible for all actions.

Research

1. Undertake and encourage investigations into the following areas:

- determine the species' distribution within Wyperfeld National Park and nearby areas of desert heathland with large sand-dunes
- estimate the size of the three known colonies and determine their demography.
- investigate the ecological requirements of this species, particularly reproductive biology, substrate requirements, vegetation community and land system.
- sample terrestrial invertebrates and the fruits and leaves of local plants for comparison with the dietary items of the Heath Skink to determine the distribution of possible dietary species.
- document the fire history at each site to determine the habitat succession preferences of this species.
- investigate the ecological relationships between the Heath Skink, its dietary items and fire, preferably in conjunction with a broader investigation of fire ecology.
- determine the impact of predation by foxes and cats on the Heath Skink. This may be achieved through the analysis of predator scats and / or analysis of the stomach contents of exotic predators.

Survey

2. Locate areas of possible habitat for the species in Wyperfeld National Park and the Big Desert, based on current knowledge of habitat utilisation, by referring to existing survey information, aerial photographs and vegetation maps and surveying these areas for the presence of the Heath Skink.

Site Management and Habitat Protection

3. Ensure that the habitat of the Heath Skink in the area around Chinaman Well and Moonlight Tank receives adequate protection by explicit zoning and documentation in the Wyperfeld National Park Management Plan.
4. Restrict fire around the Chinaman Well and Moonlight Tank areas of the Wyperfeld National Park. No fuel reduction or habitat management burns should occur until the effects of these activities on the Heath Skink are known.
5. Exclude track works or other soil disturbance from around sites where the Heath Skink occurs.
6. Prevent vehicle access to sand-dunes around sites where the Heath Skink occurs. If this proves difficult to enforce, construct post and wire fences around sand-dunes known to contain Heath Skinks. Sand-dunes will need to

be monitored to detect any vehicle incursions. If fences are constructed, they will require monitoring to detect vandalism and / or maintenance requirements.

References

- Beaglehole, A. C. (1979) *The Distribution and Conservation of Native Vascular Plants in the Victorian Mallee*. Western Victorian Field Naturalists Clubs Association: Portland.
- Coventry, A. J. & Robertson, P. (1980) New Records of Scincid Lizards from Victoria. *Victorian Naturalist* **97**: 190-193
- Hudson, P., Mirtschin, P. & Garrett, C. (1981) Notes on Flinders Island (S.A.): Its Reptiles and Birds. *South Australian Naturalist* **56**: 21-29
- NRE (1996) *Mallee Parks Management Plan*. Department of Natural Resources and Environment, Mildura.
- NRE (1999) *Atlas of Victorian Wildlife* (electronic fauna database). Department of Natural Resources and Environment: Melbourne.
- NRE (2000) *Threatened Vertebrate Fauna in Victoria - 2000. A systematic list of fauna considered extinct, at risk of extinction or in major decline in Victoria*. Department of Natural Resources and Environment, Melbourne.
- SAC (1994) Final Recommendation on a Nomination for Listing: Heath Skink *Egernia multiscutata* (Nomination No. 335). Flora and Fauna Guarantee. Department of Conservation and Natural Resources, Melbourne.