

Pedra Branca Skink, *Niveoscincus palfreymani*

Rawlinson 1974

**Status**

Commonwealth *Endangered Species Protection Act* 1992.....Vulnerable

Tasmanian *Threatened Species Protection Act* 1995.....Vulnerable

Description

The Pedra Branca skink (*Niveoscincus palfreymani*) belongs to the largest and most diverse family of reptiles in the world. However, because of its remote geographic isolation, little is known of the biology or ecology of the species.

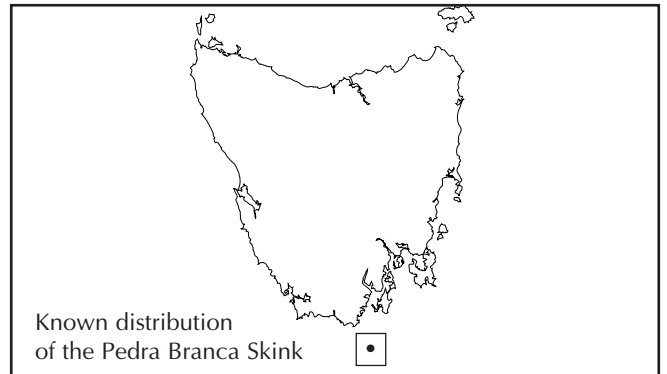
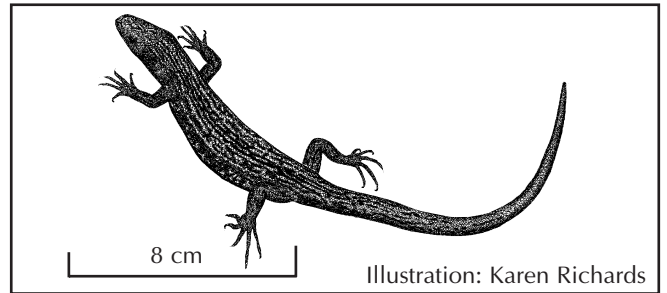
The Pedra Branca skink is typical of most skinks having long slender toes and a tail measuring about 1.2 times the snout-vent length. Body size is similar for males and females with adults measuring 60 to 100mm snout-vent length and weighing approximately 14g (Brothers & Pemberton 1997). Pregnant females can weigh up to 22g with an average snout-vent length of 98mm.

Adult body colour is charcoal grey, green or glossy black with gold to pale pink flecks and a light dorsal stripe. Juveniles are light tan, darkening on maturity.

Pedra Branca skinks are viviparous, that is, they give birth to live well developed young. This eliminates the need for a warm incubation site for eggs in the harsh environment of rock shelves exposed to hostile weather and high seas. Young are born from February to April and resemble adults in body form. Individuals mature by six to eight years and have been recorded living to up to 16 years. The greatest mortality occurs in the immature group up to five years of age (Brothers & Pemberton 1997).

The skinks' diet consists mainly of small invertebrates such as insects, spiders and isopods. The skinks also scavenge fish scraps, mainly jack mackerel (*Trachurus declivis*) from around albatross and gannet colonies. This food source is available on a seasonal basis when the seabirds are breeding and feeding young.

On cold days, Pedra Branca skinks retreat into rock crevices and only emerge when temperatures rise above 15°C (Rounsevell *et al.* 1985). The species is termed a 'shuttling heliotherm' because it constantly orientates its body position to maximise the sun's rays.

**Distribution and Habitat**

The Pedra Branca skink is restricted to the rocky islet of Pedra Branca, situated 26km off the south coast of Tasmania. This island was separated from mainland Tasmania some 15,000 years ago (Banks 1993) but there is no evidence to suggest that the species was once more widespread. Pedra Branca reaches 55m above sea level and is 2.5ha in area of which approximately 0.2ha is suitable skink habitat.

The skink is confined to four discrete colonies known as the Rockpile, Northwest Cliff, Main Colony and South Colony (Brothers & Pemberton 1997). The colonies differ in size and habitat but all inhabit a maze of crevices and tunnels formed like catacombs in the weathering rock. These crevices are critical for the species' survival as they provide the only shelter from constant prevailing winds and sea spray. The skinks are fiercely territorial and aggressively defend these burrow sites, often suffering tail loss through fighting.

Important Locations

As Pedra Branca Island is the only known location for the skink, the entire island is critical to the survival of the species.

Threats, Limiting Factors and Management Issues

The most recent and significant threat to the species has been a shift in the location of silver gull (*Larus novaehollandiae*) breeding sites onto the prime skink colonies. The increase in the breeding colony of silver gulls on Pedra Branca leading to predation on the skinks is an issue which needs to be addressed. Gull populations have increased substantially across coastal Australia due to their exploitation of tips and

other human waste areas. Declining skink populations and the increased number of tail-less skinks are clear evidence of the impact of gulls.

Potential threats to the species include rat invasion from fishing vessels, loss of primary food source through a decline in the nesting seabird colony and loss of critically limited habitat through climate change, sea level rise or prolonged bad weather.

The tiny total population and its isolation leaves the skink vulnerable to any catastrophic event. It is important that other potential colony sites be investigated for consideration of a translocation program.

The isolation of Pedra Branca Island has worked to the benefit of the skinks over time. With increased yachting and fishing activities in the area there is always the potential for rats to become established on the island. Any changes to the albatross and gannet colonies could adversely affect the skink.

Conservation Assessment

Historical Distribution

Evidence suggests that the species has always been restricted to Pedra Branca Island. It has not been found in surveys of nearby islands such as Maatsuyker, DeWitt, Mewstone or Eddystone.

Area Currently Occupied

The area of the four colonies is shown in Table 1, with a total area occupied by the species being about 0.23ha.

Population Estimate

In 1985 the population was estimated at approximately 600 individuals (Rounsevell *et al.* 1985). However, using capture-mark-recapture techniques and the Peterson Index, this estimate was refined to 564. Repeating these techniques in 1996 the population was estimated at 290 individuals (Brothers & Pemberton 1997), which represents more than a 50% decline over ten years.

Table 1

Colony	Area sq.m	Pop'n Est.
Main Colony	1500	41
South Colony	150	40
North-west Cliff	300	77
Rockpile	400	132
Total	2350	290

Reservation Status

The island of Pedra Branca is part of the South West National Park, which is within the South West World Heritage Area.

Assessment Criteria

Rounsevell *et al.* (1985) considered the skink to be endangered due to its extreme isolation, restricted habitat and dependence on the seabird colony. Cogger *et al.*

(1993) assessed the species as vulnerable, being naturally rare and restricted, with potential threats operating but with no evidence of decline and its entire habitat being well reserved.

Recent surveys by Brothers & Pemberton (1997) have reported a 50% decline in the population in 10 years. At the current rate of decline, the species faces extinction in less than 10 years and qualifies as endangered under the guidelines for listing on the Tasmanian *Threatened Species Protection Act 1995*.

Recovery Program

A national endangered species recovery plan is currently being prepared for this species.

Existing Management

Surveys have been undertaken on an irregular basis by Nigel Brothers and others over a 12 year period. Ongoing and more regular monitoring of the species has now been recognised as a priority within the South West World Heritage Area management plan and financial support has been provided.

Actions Needed

The critical status of this species warrants an immediate on-site assessment to determine whether management of gulls around crevices should be undertaken. If so, then gulls should be actively reduced. Should further action be required on Pedra Branca then the following options will be considered:

- (i) installation of artificial habitat and ongoing monitoring
- (ii) removal and husbandry of specimens until threat abatement is achieved
- (iii) translocation to and monitoring at new sites on Pedra Branca
- (iv) translocation to new sites previously identified and found suitable

If gull control and habitat management is not required immediately, the following actions should be undertaken:

- Submit the national recovery plan incorporating research and management actions for funding. This plan should include skink monitoring, recruitment and threat abatement options and identification of possible translocation sites.
- Undertake a more regular monitoring program on Pedra Branca, e.g. survey pre- and post-gull breeding season to identify the nature and intensity of threats and population status.
- Undertake an invertebrate survey of Pedra Branca, analyse material previously collected from the skink (stored faecal samples) and prepare guidelines for translocation procedure.

- An impact assessment of the change in management of the south-eastern Tasmanian refuse site is required to determine the likelihood of future relocation of gulls onto Pedra Branca.

Source Material

References

Banks, M. R. 1993. Reconnaissance geology and geomorphology of the major islands south of Tasmania. Report to the Department of Parks, Wildlife and Heritage, Tasmania.

Brothers, N.P. & Pemberton, D. 1997. Population changes and current status of the Pedra Branca skink. Internal Report to Parks and Wildlife Service, Tasmania.

Cogger, H., Cameron, E., Sadler, R. & Eggler, P. 1993. The Action Plan for Australian Reptiles. Australian Nature Conservation Agency, Canberra.

IUCN 1994. IUCN red list categories. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland.

Rounsevell, D. Brothers, N. & Holdsworth, M. 1985. The status and ecology of the Pedra Branca skink *Pseudemoia palfreymani*. pp 477-489 in *The Biology of Australasian Frogs and Reptiles*. G. Grigg, R. Shine & H. Ehmann (Eds.). Royal Zoological Society of New South Wales, Sydney.

Specialist Advice

Nigel Brothers, Wildlife Biologist, Marine Unit, Parks and Wildlife Service, Tasmania.

David Pemberton, Vertebrate Curator, Tasmanian Museum and Art Gallery, Hobart.

Review and Further Information

Statement Prepared: September 1998

Prepared By: Sally Bryant

Review Date

With more detailed population data or a change in the status of the species, or implementation of the recovery plan.

Cite As

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Further Information

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Permit It is an offence to collect, possess or disturb this species unless under permit from the Director, Parks and Wildlife Service.