Threatened Species Assessment

Morethia adelaidensis
Samphire Skink

Taxonomy

Morethia adelaidensis Peters, 1874

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 2002).

Categorised as Endangered in the 2013 Advisory list of threatened vertebrate fauna in Victoria (DSE 2013).

Proposed conservation status

Endangered in Victoria

Criterion B2ab(i,ii,iii,iv,v)

Description and Life History

The head and back of the Samphire Skink are bronze-grey, the back often with darker flecks that are sometimes arranged in two para vertebral stripes. The side of the face and upper lateral region are dark brown, broken by numerous pale cream or white flecks that extend onto the pale grey lower sides. Sometimes there is an irregular white line on the face behind the eye, continuing onto the neck. The ventral surfaces are white, with males in spring and early summer displaying orange sides to the chin and throat, extending onto the lower sides of the neck and occasionally along the body. The eye has a coloured iris and is covered by an immovable spectacle. In Victoria, it has been recorded reaching a snout vent length of 51 mm (Robertson and Coventry 2019).

From Robertson and Coventry (2019): The Samphire Skink is an active diurnal heliotherm. It forages on the ground, basking and sheltering within low bushes and ground debris. The taxon feeds on a variety of small invertebrates, with spiders, ants, bugs and cockroaches recorded in its diet. Mating occurs in spring, the females laying two to six parchment-shelled eggs in late spring, with communal laying recorded in this species. The young hatch in mid-summer.

Generation Length

The generation length of t*he* Samphire Skink is inferred to be 1 to 3 years. This is based on available information for time to sexual maturity and longevity, for congeners and ecologically similar small skinks.

Distribution

The taxon occurs in temperate south-central Australia, extending north through the north-eastern parts of South Australia and adjacent New South Wales and Queensland, and northern margins of Victoria. The taxon also occurs on a number of off-shore SA islands, including Revesby Island.

Habitat

The taxon is a specialized inhabitant of saline or gypseous areas, sometimes on the margins of freshwater lakes, in samphire and chenopod shrublands in the Black Box Woodland ecosystem, and in salinas within the Mallee ecosystem (Robertson and Coventry 2019).

Threats

Threats to this lizard include natural system modification, due to alienation and fire; introduced predators; and the likely eventual impacts of climate change and severe weather.

IUCN Criteria

Criterion A. Population size reduction.
Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4

	Critically Endangered	Endangered	Vulnerable
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3, A4	≥ 80%	≥ 50%	≥ 30%

A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.

A2 Population reduction observed, estimated, inferred or suspected in the past where the causes of the reduction may not have ceased OR may not be understood OR may not be reversible.

A3 Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [(*a) cannot be used for A3*]

A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.

based on any of the following:

(a) direct observation [*except A3*]

(b) an index of abundance appropriate to the taxon

(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat

(d) actual or potential levels of exploitation

(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites

Evidence:

Ineligible under Criterion A

There is insufficient evidence to determine whether there has been or will be a reduction in population sufficient to meet any threshold for Criterion A.

Criterion B. Geographic range in the form of either B1 (extent of occurrence) and/or B2 (area of occupancy	Critically Endangered Very restricted	Endangered Restricted	Vulnerable Limited
B1. Extent of occurrence (EOO)	< 100 km²	< 5,000 km²	< 20,000 km²
B2. Area of occupancy (AOO)	< 10 km²	< 500 km²	< 2,000 km²
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented OR Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals			
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals			

Evidence:

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 112 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA).

Considering the limited dispersal ability of the taxon, the barriers to dispersal, or lack of habitat separating them, the individuals can be considered to be severely fragmented. The lizard is restricted to a few highly disjunct populations, some several hundred kms apart.

Subpopulations and locations are more or less synonymous, and thus have been defined to embrace known records from a general locality. There are so few records that it is not possible to be more specific. Each subpopulation may be variably affected by bushfire or stochastic events, therefore it is suspected to have five locations.

It has a continuing decline in (i), (ii), (iii), (iv) and (v) above, due to the identified threats.

Criterion C. Small Population size and decline				
		Critically Endangered	Endangered	Vulnerable
Number of mature individuals		< 250	< 2,500	< 10,000
AND at least one of C1 or C2				
C1	An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation (whichever is longer)	20% in 5 years or 2 generations (whichever is longer)	10% in 10 years or 3 generations (whichever is longer)
C2	An observed, estimated, projected or inferred continuing decline AND least 1 of the following 3 conditions:			
(a)	(i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
	(ii) % of mature individuals in one subpopulation =	90 – 100%	95 – 100%	100%
(b) Extreme fluctuations in the number of mature individuals				

Evidence:

Ineligible under Criterion C as Data Deficient

There is insufficient evidence to determine the number of mature individuals. There are few records in the VBA and few localities for which there are records, so estimating the number of individuals is fraught.

Criterion D. Very small or restricted population			
	Critically Endangered	Endangered	Vulnerable
Number of mature individuals (observed or estimated)	< 50	< 250	< 1,000
D2 Only applies to the VU category Restricted area of occupancy or number of locations with a plausible future threat that could drive the species to critically endangered or Extinct in a very short time.	-	-	D2. Typically: AoO < 20 km2 or number of locations ≤ 5

Evidence:

Ineligible under Criterion D

There is insufficient evidence to determine the number of mature individuals.

Criterion E (Quantitative Analysis) was not addressed as the taxon does not have a detailed Population Viability Analysis.

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