

Ctenotus olympicus Saltbush Striped Skink

Taxonomy

Ctenotus olympicus Hutchinson & Donnellan, 1999

The taxon is known to hybridise with congeners *C. regius* and *C. orientalis*

Current conservation status

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

Proposed conservation status

Critically Endangered in Victoria

Criterion B1ab(i,ii,iii,iv,v)

Species Information

Description and Life History

From Robertson and Coventry (2019): The Saltbush Striped Skink may be identified by the brown dorsal surface becoming darker anteriorly, with a dark, pale-edged, mid-vertebral stripe. The dorso-lateral area may have the semblance of a pale stripe along the body, but it is usually interrupted by darker speckling. There are at least two longitudinal series of pale spots in the dark upper lateral region, which extends onto the sides of the tail. Often there is a pale continuous mid-lateral line, above a greyish lower lateral area grading into the white ventral surface. It reaches a snout-vent length of up to 75 mm.

An active diurnal, terrestrial and heliothermic species, the Saltbush Striped Skink constructs shallow burrow systems under stones or bushes, and may utilize cracks in the ground for shelter and egg-laying. Victorian individuals have been recorded with clutches of three to four eggs in spring, probably hatching in summer. Its diet consists largely of small invertebrates.

Generation Length

The generation length of the Saltbush Striped Skink is inferred to be 4 to 7 years. This has been inferred from information on similarly-sized congeners by Read (1998).

Distribution

The taxon is restricted in Victoria to the area south of the Murray River and north of the Sturt Highway.

Habitat

The taxon occurs in chenopod shrublands of the Black Box Woodland ecosystem, on the highest alluvial terraces away from the Murray River.

Threats

There has been dramatic ecological disruption caused by invasion of the exotic Wards weed (*Carrichtera annua*) into the Saltbush Striped Skink's habitat. Widespread grazing by domestic stock has also impacted the habitat by changing the structure of the shrublands. The taxon is vulnerable to predation by cats and foxes, and may be

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impacted by increasing temperatures and aridity due to climate change. There is a risk of genetic introgression from more widespread *Ctenotus* species (*C. regius* and *C. orientalis*) that have broader habitat tolerances that are known to hybridise with *C. olympicus* in areas of overlap; threatening processes that modify habitat may increase the exposure of *C. olympicus* to these congeneric species.

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%
<p>A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.</p> <p>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.</p> <p>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]</p> <p>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.</p> <p style="text-align: center;"><i>based on any of the following:</i></p> <p>(a) direct observation [except A3]</p> <p>(b) an index of abundance appropriate to the taxon</p> <p>(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat</p> <p>(d) actual or potential levels of exploitation</p> <p>(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites</p>			

Evidence:

Eligible under Criterion A2 as Vulnerable

The population reduction over the past 12 to 21 years is suspected to be 20 to 40%, based on (c) and (e) above.

Habitat changes resulting from cessation of stock grazing may have favoured other congeners, but disadvantaged this taxon.

Eligible under Criterion A3 as Vulnerable

The population reduction over the next 12 to 21 years is suspected to be 20 to 40 %, based on (c) and (e) above.

Ongoing vegetation changes and probable competition and hybridisation will drive future decline.

Eligible under Criterion A4 as Vulnerable

The population reduction over the any 12 to 21 year period, including both past and future, is suspected to be 20 to 40%, based on (c) and (e) above.

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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 km ²	< 5,000 km ²	< 20,000 km ²
B2. Area of occupancy (AOO)	< 10 km ²	< 500 km ²	< 2,000 km ²
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 B1 as Critically Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 75 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas. This is based solely on confirmed specimens and does not include hybrid records.

Considering the limited dispersal ability of the taxon, the barriers to dispersal, or lack of habitat separating them, the subpopulations can be considered to be severely fragmented

The taxon is considered to occur in one location as all key identified threats apply across its range and can rapidly affect all individuals of the taxon present.

It has a continuing decline in (i), (ii), (iii), (iv) and (v) above.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 12 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, it is severely fragmented, has one location and has a continuing decline in (i), (ii), (iii), (iv) and (v) above.

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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

It is suspected that there are 20 to 500 mature individuals, but this qualifier is too weak to meet this criterion.

Criterion D. Very small or restricted populations		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 km ² or number of locations ≤ 5

Evidence:

Eligible under Criterion D2 as Vulnerable

The taxon has a restricted distribution (i.e. AoO is 12) and has one location, such that this restriction makes the taxon capable of becoming critically endangered or even extinct within a time frame of one or two generations in response to the identified threats.

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

References

DSE (2013). *Advisory List of Threatened Vertebrate Fauna in Victoria - 2013*. Department of Sustainability and Environment, Melbourne. Retrieved from:



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https://www.environment.vic.gov.au/__data/assets/pdf_file/0014/50450/Advisory-List-of-Threatened-Vertebrate-Fauna_FINAL-2013.pdf

Read, J. L. (1998). The ecology of sympatric scincid lizards (*Ctenotus*) in arid South Australia. *Australian Journal of Zoology*, 46(6), 617-629.

Robertson, P. and Coventry A.J. (2019) *Reptiles of Victoria: A Guide to Identification and Ecology*. CSIRO Publishing.