

Australian Capital Territory

Nature Conservation (Striped Legless Lizard) Conservation Advice 2020

Notifiable instrument NI2020–569

made under the

Nature Conservation Act 2014, s 90C (Conservation advice)

1 Name of instrument

This instrument is the *Nature Conservation (Striped Legless Lizard) Conservation Advice 2020*.

2 Commencement

This instrument commences on the day after its notification day.

3 Conservation advice for Striped Legless Lizard

Schedule 1 sets out the conservation advice for Striped Legless Lizard (*Delma impar*).

Arthur Georges
Chair, Scientific Committee
4 September 2020

Schedule 1

(see s 3)



ACT
Government

Environment, Planning and
Sustainable Development



ACT Scientific
Committee

CONSERVATION ADVICE

STRIPED LEGLESS LIZARD – *Delma impar*

CONSERVATION STATUS

The Striped Legless Lizard *Delma impar* (Fischer, 1882) is recognised as threatened in the following jurisdictions:

International	Endangered , International Union for Conservation of Nature (IUCN) Red List
National	Vulnerable , <i>Environment Protection and Biodiversity Conservation Act 1999</i>
ACT	Vulnerable , <i>Nature Conservation Act 2014</i>
NSW	Vulnerable , <i>Biodiversity Conservation Act 2016</i>
VIC	Threatened , <i>The Flora and Fauna Guarantee Act 1988</i>
	Endangered , <i>Advisory List of Threatened Vertebrate Fauna in Victoria 2013</i>
SA	Endangered , <i>National Parks and Wildlife Act 1972</i>

ELIGIBILITY

The factors that make the Striped Legless Lizard eligible for listing as Vulnerable in the ACT Threatened Native Species List are included in the Listing Background section below.

DESCRIPTION AND ECOLOGY

The Striped Legless Lizard is a species of the Pygopodidae family, which is a group of lizards that lack forelimbs and have small vestigial flaps for hind limbs (Cogger 2014). Superficially, the Striped Legless Lizard resembles a snake. It can be distinguished by its visible ear openings, un-forked fleshy broad tongue, the presence of remnant hind limbs and tail (ACT Government 2017a). The evolutionary disappearance of limbs allows the Striped Legless Lizard to move with ease and agility through its grassland habitats.

The species is typically pale grey-brown in colour with distinctive dark brown striped markings running the length of the body beginning at the neck and becoming diagonal at the tail (Cogger 2014). These stripes may be faint or absent from some individuals. The ventral surface of the species is typically whitish in colour.



Striped Legless Lizard (John Wombey – Canberra Nature Map)

The head is generally darker than the body with the face often featuring yellow colouring, whilst a ring of small pale scales circles the eyes (Coulson 1990; Cogger 2014). Typically, the species grows to a maximum length of 30 cm.

There remain knowledge gaps in the behaviour and ecology of the Striped Legless Lizard, which has a cryptic and shy nature. The species often emits high pitched 'squeaking' vocalisation as a means of communication, particularly when threatened or being handled (ACT Government 2017a). There is consensus that the species is primarily diurnal, (Coulson 1990; Turner 2007) with observations made of it burrowing in soil in late afternoons and re-emerging in the morning as temperatures increase, as well as, basking in the sun and remaining active during the day (Martin 1972; Osmond 1994; Turner 2007). It is adept at climbing low vegetation. Whilst there is little known of its behaviour and movements, there have been several studies focusing on diet (Coulson 1990; Wainer 1992; Nunan 1995; Kutt et al. 1998) highlighting that it will eat an expansive array of invertebrates with an evident preference for spiders, crickets, caterpillars and cockroaches.

The species is oviparous (egg laying) and will lay two eggs per clutch in December-January that will hatch in January-February (Coulson 1995; Smith and Robertson 1999). Some populations share a communal nest (Robertson and Smith 2010). Estimates of life expectancy based on data from other lizard species suggest the Striped Legless Lizard may live to 10–20 years, with males reaching sexual maturity at 2–3 years and females at 3–4 years (ARAZPA 1996).

DISTRIBUTION AND HABITAT

Prior to European settlement the Striped Legless Lizard was widely spread across south eastern Australia where native grasslands were found. Historical and current research of the species comes from Victoria, New South Wales, South Australia and the Australian Capital Territory. Victoria, where most records come from the central and western plains, has the largest known distribution of the species.

In the ACT, the species is known in four disconnected areas including: Gunghalin; Majura Valley near the airport; Jerrabomberra Valley; and land adjacent to Yarramundi Reach on Lake Burley Griffin. These areas represent several different land tenures, including nature reserve, land owned and managed by the Commonwealth Government and Defence and leasehold land. These populations are isolated from one another by urbanisation, other anthropocentric developments and geographic barriers. This isolation may result in genetic variability and distinct sub-populations. The species is protected in three nature reserves in Gungahlin and in two nature reserves in Jerrabomberra Valley, however, is likely to be locally extinct at Yarramundi Reach (ACT Government 2015). In 2012, a survey found that in each of the Gungahlin reserves, the populations were of at least several thousand lizards which means they are among the largest of any known habitat (Eco Logical Australia 2013; ACT Government 2015).

The Striped Legless Lizard is a grassland specialist, favouring areas of high levels of structural complexity (Howland et al. 2016). In the ACT, the species commonly uses grass tussocks and burrows for shelter (Coulson 1995), but also seeks refuge under rocks, debris and thick ground cover in other regions (Smith and Robertson 1999). The grasslands in which this species is found are typically treeless and have a cover predominantly consisting of native grasses such as Kangaroo Grass *Themeda triandra* (Coulson 1990; Osborne et al. 1993; Hadden 1995). The species has been found in grasslands with dispersed *Eucalyptus* trees, secondary grasslands (derived from clearing) and in habitat where exotic vegetation is prominent, though it is largely restricted to and more commonly associated with Natural Temperate Grassland, which may be due to the lower levels of disturbance in these remnant habitats (Coulson 1990; ACT Government 2015; Howland et al. 2016).

The Striped Legless Lizard is known in four threatened ecological communities listed (and protected) under the EPBC Act:

- Natural Temperate Grassland of the Victorian Volcanic Plains (VIC)
- Natural Temperate Grassland of the South Eastern Highlands (NSW, ACT, VIC)
- Grassy Eucalypt Woodland of the Victorian Volcanic Plain (VIC)
- White Box-Yellow Box-Blakey's Red Gum Grassy Woodland and Derived Native Grassland (NSW, ACT, VIC, QLD, but the Striped Legless Lizard not known from the latter state).

THREATS

Since European settlement, approximately 99.5% of Australia's Natural Temperate Grassland has been lost or drastically disturbed (Kirkpatrick et al. 1995). Consequentially, many of these remnant grasslands are considered critically endangered. The specialised habitat requirements of the Striped Legless Lizard make the species particularly vulnerable to changes in the condition of its habitat and disturbance events that lead to further degradation, fragmentation and destruction of ecosystems and habitat.

Major perceived threats to the continued survival of Striped Legless Lizards are:

- loss and fragmentation of habitat through clearing of native grasslands for anthropocentric development including urbanisation and agriculture
- modification and degradation of native grassland habitats through incompatible and inadequate land management practices, such as weed invasion, and climate change
- other potential effects of urbanisation, including increased incidence of predation and frequency of fires. The Striped Legless Lizard may persist for some time in modified (largely exotic) grasslands, but it can be eliminated from an area by intense grazing, pasture improvement, ploughing, drought or other heavy disturbance.

MAJOR CONSERVATION OBJECTIVE

The priority management objective in the ACT is to ensure the long-term viability of wild populations of the Striped Legless Lizard as it is a significant indigenous species of the ACT region and its protection is important to both regional and national conservation agendas (ACT Government 2017a). It is also important to preserve sufficient genetic diversity to promote population resilience.

CONSERVATION PRIORITIES

Priorities for conservation of the Striped Legless Lizard in the ACT, as detailed in the Action Plan include (ACT Government 2017a):

- conserve large and medium-sized populations in the ACT and support any genetic integrity/distinctiveness
- manage the species and its habitats to maintain and foster genetic diversity
- enhance the long-term viability of populations by managing adjacent grassland to increase habitat area and connect populations.

OTHER RELEVANT ADVICE, PLANS OR PRESCRIPTIONS

- Commonwealth Conservation Advice – Striped Legless Lizard (TSSC 2016)
- ACT Action Plan – Striped Legless Lizard (ACT Government 2017a)
- ACT Native Grassland Conservation Strategy and Action Plans (ACT Government 2017b)
- ACT Native Woodland Conservation Strategy and Action Plans (ACT Government 2019)

- Striped Legless Lizard Habitat Improvement Plan (ACT Government 2015)
- Action Plan for Australian Lizards and Snakes (Chapple et al. 2019)

LISTING BACKGROUND

The Striped Legless Lizard was listed in the ACT as a Vulnerable species on 15 April 1996 in accordance with section 21 of the *Nature Conservation Act 1980*. At that time, the Flora and Fauna Committee (now the Scientific Committee) concluded that the assessment satisfied the following criterion:

- 2.1 Species is known or suspected to occur in the ACT region and is already recognised as vulnerable in an authoritative international or national listing.
- 2.2 Species is observed, estimated, inferred or suspected to be at risk of premature extinction in the ACT region in the medium-term future, as demonstrated by the following:
 - 2.2.1 Current serious decline in distribution, from evidence based on:
 - 2.2.1.3 a serious decline in quality and quantity of habitat
 - 2.2.1.4 high actual or potential levels of exploitation or persecution
 - 2.2.1.5 serious threats from herbivores, predators, parasites, pathogens or competitors.
 - 2.2.2 Imminent risk of serious decline in population or distribution from evidence based on 2.2.1.3 to 2.2.1.4 (above).
 - 2.2.4 Seriously fragmented distribution for a species currently occurring over a moderately small range or having a moderately small area of occupancy within its range.

The Striped Legless Lizard is eligible for listing as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) as it was listed as Vulnerable under Schedule 1 of the preceding *Endangered Species Protection Act 1992* (Cwlth). The species was reassessed in 2017 by the IUCN and has its listing updated to Endangered, in accordance with criteria B2ab(iii) (Clemann et al. 2017). The main factor contributing to the species' vulnerability is the "major loss and degradation of its natural temperate grassland habitat since European settlement which has likely caused an associated decline in population size" (Threaten Species Scientific Committee 2016).

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FURTHER INFORMATION

Further information on the related Action Plan or other threatened species and ecological communities can be obtained from: Environment, Planning and Sustainable Development Directorate (EPSDD).
Phone: (02) 132281, EPSDD Website: <http://www.environment.act.gov.au/cpr>