

Flora & Fauna Guarantee Action Statement

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This Action Statement was first published in 1992 and remains current. This version has been prepared for web publication. It retains the original text of the action statement, although contact information, the distribution map and the illustration may have been updated.

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Mallee Worm-lizard *Aprasia aurita*



Mallee worm-lizard (*Aprasia aurita*)
(Illustration by John Las Gourgues)



Distribution in Victoria (DSE 2002)

Description and Distribution

The Mallee Worm-Lizard (*Aprasia aurita*) belongs to the reptile family Pygopodidae, the legless lizards or snake-lizards.

Pygopodids are long, slender and snake-like, with no eyelids, a fleshy tongue, smooth to keeled, overlapping scales, generally a visible ear opening, a fragile tail, no forelimbs, and vestigial hindlimbs reduced to a scaly flap. The genus *Aprasia* differs from other pygopodids because it has a short blunt tail, a tiny hindlimb flap, and no visible external ear opening. Four species of *Aprasia* occur in Victoria.

The Mallee Worm-Lizard is a small, very slender species, with a snout-vent length of about 110 mm, and a total length of about 180 mm. It is brown on the upper surface fading to grey on the sides. The under surface is off-white. The centre of each dorsal and lateral scale has a dark mark, the marks forming a series of faint to prominent longitudinal lines. There is a dark streak extending from the eye to the tip of the snout. The Mallee Worm-Lizard is distinguishable from all other species of

Aprasia by having an external ear opening, although this is small and partially covered by a notched scale.

There is almost no biological information available on this species, and little on the genus as a whole. Wilson & Knowles (1988) describe some species of *Aprasia* as crepuscular or nocturnal, and subterranean, favouring moist substrates under rocks and debris, around embedded rotting stumps and in ant nests. Their diet is believed to include small arthropods, including the eggs, larvae and pupae of ants. The diet of the sympatric (co-occurring) Pink-nosed Worm Lizard *Aprasia inaurita* includes the eggs and pupae of small ants, *Aphaenogaster* spp. (Coventry, pers. comm.). The slender, elongate body of *Aprasia* is believed to facilitate access into galleries of ant nests. The Mallee Worm-Lizard is believed to be diurnal, but is a burrowing species that rarely comes to the surface. The species is found in mallee heaths and hummock grasslands on a sandy substrate, and has been recorded in sand beneath mallee roots and decomposing leaf litter.

It has not yet been found in ant nests or *Triodia* hummocks, although it is likely to be associated with small ants, and perhaps uses their tunnels.

The Mallee Worm-Lizard is apparently confined to a small area in northwestern Victoria, between Woomelang and Ouyen, centring on the Wathe State Wildlife Reserve (SWR). The Wathe SWR, which is approximately 6000 ha, is near the town of Lascelles on the Sunraysia Highway in northwestern Victoria.

Conservation Status

Current Status

DCE (1990) Endangered

The Mallee Worm-Lizard has been listed as a threatened taxon on Schedule 2 of the Flora and Fauna Guarantee Act 1988.

Reasons for Conservation Status

The Mallee Worm-Lizard was described from a small series of specimens collected early this century in the Ouyen and Woomelang area of northwestern Victoria. Most of the land in these areas has now been cleared for agriculture, leaving only a few small remnants of habitat.

Until biological surveys of the Mallee began in 1985, no specimens of the Mallee Worm-Lizard had been collected since the original collections were made, and it was feared that the species might have become extinct. During 1985, a small population was discovered in the Wathe SWR. Despite a widespread general survey of other suitable areas throughout the mallee, the occurrence in Wathe constitutes the entire known world population of this species. The species is known from only four localities in an area of about 400 ha in the reserve, and may be declining (Robertson et al. 1989). Only 15 individuals have been observed since 1985.

Until recently, the vegetation of the Wathe reserve had not been burnt for at least 40 years and is, therefore, considered extremely vulnerable to wildfire. A wildfire during late 1991 burnt approximately 800 ha of the reserve, adjacent to, but not including, the area where the Mallee Worm-Lizard occurs. The fire history of the vegetation may be a key factor in explaining why the Mallee Worm-Lizard has such a restricted distribution, despite extensive areas of similar mallee occurring in the adjacent, but much more frequently burnt, Big Desert. Dietary specification may also play an important role in determining its distribution.

The Mallee Worm-Lizard must be considered to be in a precarious position, due to its apparently specialised habitat, extremely restricted distribution, probably low and perhaps declining numbers, and the almost total lack of knowledge of the biology and ecology of the species.

There has been an apparent decline in distribution, and therefore presumably in numbers, with the species no longer being found at the sites of the original collections. Being confined to the one locality and in apparently low numbers would suggest that the species is vulnerable to catastrophes such as fire and disease.

In its final recommendations, the Scientific Advisory Committee (1991) determined that the Mallee Worm-Lizard is:

- in a demonstrable state of decline which is likely to result in extinction;
- very rare in terms of abundance and distribution.

Major Conservation Objective

The major conservation objective for the Mallee Worm-Lizard is to initiate management action to ensure maintenance of a viable population of at least 200 individuals.

Management Issues

Ecological Issues Specific to the Taxon

Further research on the Mallee Worm-Lizard is an urgent priority. Because so little is known of the biology of this species, it is important that studies of its habitat requirements, diet and population dynamics are undertaken so that management aimed at its conservation can begin. There are a number of general issues which may have an impact on the conservation of this species, but at the moment these are largely speculative.

There is a simultaneous need to clarify the distribution and abundance of this species in northwestern Victoria. This will be undertaken by Flora & Fauna Division and Mildura Region within the review period of this Action Statement.

Clearing mallee vegetation, especially at and around the sites of the original collections (Ouyen and Woomelang), has probably reduced the range and abundance of this species. Fire, particularly changed fire regimes, may also have an impact on the Mallee Worm-Lizard.

Wider Conservation Issues

Wathe SWR was originally created to conserve the Malleefowl (*Leipoa ocellata*), which is present in reasonable numbers in the reserve. Another significant species in Wathe is the Striated Grasswren (*Amytornis striatus*). Both species are listed as vulnerable by the Victorian Government (DCE 1990). The implementation of this Action Statement would benefit the management of these species as well as of the Mallee Worm-Lizard, and also of Wathe SWR and adjacent areas of the Big Desert.

Social and Economic Issues

There is likely to be little social or economic impact given the apparent restriction of this species to the Wathe SWR, an area of Crown Land already managed by DCE for its nature conservation values.

Pressures to clear remnant blocks of mallee vegetation on adjoining freehold land are not great and should be discouraged with assistance provided through the Land Protection Incentive Scheme and Tree Victoria. As a last resort, clearing remaining native vegetation should be opposed through the Native Vegetation Clearance Controls should landholders not be persuaded voluntarily to protect remnant vegetation. The economic and agricultural value of such land is low.

Management Action

Previous Management Action

There have been no previous management actions apart from field surveys by DCE staff carried out during the Mallee surveys for the Land Conservation Council.

Intended Management Action

Research

- Accurately determine distribution within Wathe SWR and nearby areas of mallee vegetation.
- Estimate the size of the Wathe population and determine its demography.
- Investigate the ecological requirements of this species, particularly soil type, composition and structure of ground vegetation and litter, vegetation community and land system.
- Determine the reproductive biology of the species.
- Sample terrestrial invertebrates for comparison with the dietary items of the Mallee Worm-Lizard to determine the distribution of possible prey species.
- Document various habitat parameters, particularly fire history, at each site to determine the habitat preferences of this species.
- Investigate the ecological relationships between the Mallee Worm-Lizards ants and fire, preferably in conjunction with a broader investigation of fire ecology.

Survey

- Locate areas of possible habitat for the species in the Victorian mallee, based on current knowledge of habitat utilisation, by referring to existing survey information and vegetation maps and surveying these areas for the presence of the Mallee Worm-Lizard. A second population should be located or reestablished.

Site Management

- Restrict fire at Wathe SWR and have the area protected in DCE fire management plans. No fuel reduction or habitat management burns should occur until the effects of these activities on the Mallee Worm-Lizard are known.
- Ban track works or other soil disturbance from around the sites where the Mallee Worm-Lizard occurs.
- Develop and manage a habitat corridor linking Wathe SWR to the Big Desert. This will include cancelling any grazing leases still operating, and fencing and revegetating the corridor.

Management Plan

- Prepare a Recovery Plan for this species to ensure its survival.

Other Desirable Management Actions

The taxonomic relationships of the four Victorian Aprasia species are of interest, especially that between the Mallee Worm-Lizard and the taxon recently discovered in central

Victoria. Additional morphological information collected as an adjunct to the main project could provide an insight into the relationships of the Victorian Aprasia species.

Freehold land in the vicinity of Wathe should be targeted for programs such as Land for Wildlife and Tree Victoria, especially where grants are available to assist landholders in protecting and developing habitat.

Legislative Powers Operating

Legislation

Wildlife Act 1975 ³/₄ covers State Nature Reserves, and controls research, management and possession of protected wildlife.

Flora and Fauna Guarantee Act 1988 ³/₄ provides legal powers for the protection of the State's flora and fauna.

Planning and Environment Act 1987 ³/₄ enables appropriate planning controls over private land to occur.

Crown Land (Reserves) Act 1978, Forests Act 1958 and Lands Act 1958 ³/₄ provide varying levels of protection for Wathe SWR (soil, vegetation, access etc.).

Licence/Permit Conditions

A permit for live trapping will only be issued by DCE if the proposed work falls within the framework of the Action Statement for this species.

Consultation and Community Participation

'There is limited scope for community participation in the recovery program for the Mallee Worm-Lizard, given its specialised habitat requirements and its apparent restriction to a nature reserve. Its small size and subterranean existence require specialised survey techniques to detect its presence. Adjoining landowners can be encouraged to preserve and manage areas of mallee vegetation still on their properties, and to report any sightings of this and other legless lizards.

Implementation, Evaluation and Review

The Regional Manager, Mildura Region of the Department of Conservation and Environment will be responsible for coordinating the implementation of the Action Statement and annual monitoring of the effectiveness of actions. The Action Statement will be reviewed in 1996.

Contacts

Management

Mildura Region, DCE

Biology

Wildlife Branch, DCE

Compilers

Gary Backhouse and Peter Robertson

Further information

Further information can be obtained from Department of Sustainability and Environment Customer Service Centre on 136 186.

Flora and Fauna Guarantee Action Statements are available from the Department of Sustainability and Environment website:
<http://www.dse.vic.gov.au>

References

- DSE (2002) Atlas of Victorian Wildlife (Electronic Fauna Database). Parks, Flora & Fauna, Department of Sustainability & Environment, East Melbourne.