



**AMPHIBIAN**

*Pseudophryne bibronii*

**Brown Toadlet**

AUS	SA	AMLR	Endemism	Residency
-	R	V	-	Resident



Photo: © Tom Hands & Luke Price



Photo: © Tom Hands

**Conservation Significance**

The AMLR distribution is part of a limited extant distribution in adjacent regions within SA. Within the AMLR the species' relative area of occupancy is classified as 'Extremely Restricted'. Relative to all AMLR extant species, the species' taxonomic uniqueness is classified as 'High'.<sup>2</sup>

Nationally, it is identified as an insufficiently known species that may be of concern. There are reports of local declines and population extinctions, but the overall status of the species remains uncertain.<sup>8</sup>

**Description**

Small species of frog, approximately 30mm in length. Brown to black on its back with darker flecks and occasionally there are red spots.<sup>4</sup> Often a light brown

or orange triangular patch is located on the head between the eyes (L. Price *pers. comm.* 2009). A light-brown or orange stripe is usually present on the back along a small bony protrusion (coccygeal) between the hindlimbs (L. Price *pers. comm.* 2009). On the base of each arm there is an orange or yellow patch and often a yellow patch around the cloaca.<sup>4</sup> The belly is smooth or slightly granular and marbled black and white.<sup>4</sup> The marbled belly pattern can vary dramatically between individuals and ranges from a distinct black and white to a dull-grey and white, sometimes with a faded or blurred appearance (L. Price *pers. comm.* 2009). The skin on the back is smooth with low warts. The toes are not webbed.<sup>4</sup> Tadpoles are small and vary in colour from dark brown to light grey. Some tadpoles have patches of silver-gold on a black background. Its call is a short, grating 'ark' repeated at regular intervals.<sup>4</sup>

The black and white marbled belly pattern distinguishes the Brown Toadlet from all other frog species in the AMLR. However, individuals possessing a faded or blurred dull-grey and white belly pattern might be confused with some individuals of the Common Froglet (*Crinia signifera*) whose belly can be similar in appearance. Confusion can generally be avoided by observation of the other distinguishing features listed above. (L. Price *pers. comm.* 2009)

The call of the Brown Toadlet may be confused with the male aggression call and intermittent call of the Common Froglet (K. Long *pers. comm.* 2009).

**Distribution and Population**

Widely distributed through south eastern QLD, eastern NSW, VIC, south-eastern SA and TAS, however the population is known to be decreasing (Cogger 2000).<sup>4,7</sup>

In SA, it occurs in the SE, KI, MLR and FR regions. In an SMLR survey in 2003, they were recorded in nine quadrats with a total of ten individuals.<sup>1</sup>

Surveys of reserves in the AMLR in 2009 recorded significant subpopulations containing greater than 10 calling males in Belair NP, Scott Creek CP, Horsnell Gully CP, Morialta CP and Para Wirra CP. Attempts to re-locate significant populations on the southern Fleurieu were unsuccessful and additional survey work is needed to determine the status of subpopulations in this region. (K. Long and L. Price *pers. comm.* 2009)

**Further information:**

Biodiversity Conservation Unit, Adelaide Region  
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Removal of swamps on the Adelaide Plains has probably resulted in widespread decline. Nevertheless, the species is still reasonably common in parts of the Adelaide Hills.<sup>7</sup>

Post-1983 AMLR filtered records generally along the spine of the MLR, from Kaiserstuhl CP in the north to near Mount Magnificent and Deep Creek CP in the south, with a concentration of records in the Para Wirra/Mount Crawford area.<sup>2</sup>

Pre-1983 filtered records indicate a similar distribution but with more records in the Inman Valley/Myponga area, many in the central Adelaide Hills region and two in the Adelaide parklands, suggesting a decline in the extent of occurrence.<sup>2</sup>

It is uncertain if populations of the Brown Toadlet are stable or continuing to decrease in size and range. Long-term monitoring of subpopulations is needed to determine trends and changes in the population size over time and identify the causes of decline (K. Long and L. Price *pers. comm.* 2009).

#### Habitat

Found in damp areas with cover provided by logs and stones.<sup>3</sup> Lives in forests, heathlands and grasslands.<sup>4</sup> Generally found singularly or in low numbers under rocks and logs and in grassy areas beside creeks.<sup>3</sup> It appears to be closely associated with the edges of small ephemeral creeks and depressions where leaf-litter and grassy-debris has accumulated (L. Price *pers. comm.* 2009). Occasionally utilises small, temporary dams and vegetated roadside drainage lines and ditches, which are characterised by a build up of deep leaf-litter and grassy-debris (L. Price *pers. comm.* 2009).

In AMLR, it is found in damp situations but not necessarily in the presence of permanent water.<sup>1</sup>

Within the AMLR the preferred broad vegetation groups are Heathy Woodland and Wetland.<sup>2</sup>

#### Biology and Ecology

Males call from February through to August, especially after heavy rain.<sup>4</sup> They choose damp nest sites beside swamps, creeks and ditches.<sup>4</sup> Large eggs are laid above the water level, usually on moist humic soil under leaf-litter, rocks and logs and within partially composted leaf litter (L. Price *pers. comm.* 2009). The average deposited is 51-200 eggs/female/year.<sup>4</sup> Hatching takes place when the nest site is inundated by rising water following adequate rain. Tadpoles complete their development in pools of water formed near the nest

site (L. Price *pers. comm.* 2009). The minimum age at which females are thought to first reproduce is less than 2 years.<sup>4</sup>

#### Aboriginal Significance

Post-1983 records indicate the AMLR distribution occurs in Ngarrindjeri, Kurna and Peramangk Nations.<sup>2</sup>

#### Threats

Likely threatening processes include inappropriate management of catchments, including degradation of water quality and habitat modification (e.g. vegetation clearing, invasive weeds).<sup>4</sup>

A range of human activities can impinge upon frog populations, including:

- insecticide use in agricultural and horticultural areas<sup>8</sup>
- drainage of wetlands, resulting in the loss of breeding sites<sup>8</sup>
- conversion of temporary ponds to dams for stock use resulting in the destruction of peripheral sheltering sites<sup>8</sup>
- drought could significantly affect recruitment and prolonged drought may lead to localised extinction of subpopulations in some regions (L. Price *pers. comm.* 2009).

Whilst the Mosquito Fish (*Gambusia holbrooki*) is considered a threat to some native frog species because it preys on frog eggs and tadpoles, it is unlikely to pose a significant threat to the Brown Toadlet, because eggs are laid in a terrestrial nest and the tadpoles develop in temporary pools usually devoid of fish. (L. Price *pers. comm.* 2009)

Many other factors potentially affect frog populations ranging from air and water quality, increased exposure to ultra-violet radiation, pathogens and disease, and climate change.<sup>5,6,8</sup>

Additional current direct threats have been identified and rated for this species. Refer to the main plan accompanying these profiles.

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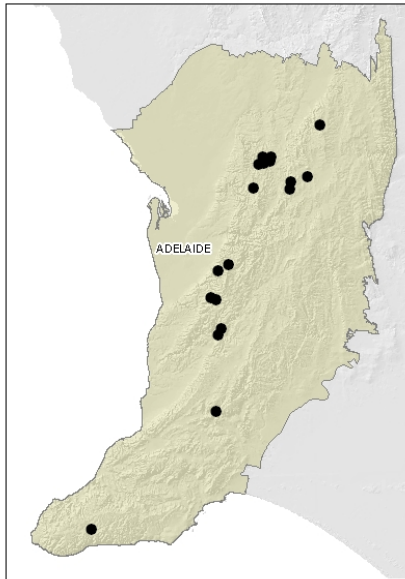


# ADELAIDE AND MOUNT LOFTY RANGES SOUTH AUSTRALIA

Threatened Species Profile

Department  
for Environment  
and Heritage

## Regional Distribution



Map based on filtered post-1983 records.<sup>2</sup> Note, this map does not necessarily represent the actual species' distribution within the AMLR.

7 Turner, M. S. (2001). *Conserving Adelaide's Biodiversity: Resources*. Urban Forest Biodiversity Program, Adelaide.

8 Tyler, M. J. (1997). *The Action Plan for Australian Frogs*. Australian National Parks and Wildlife Service, Canberra.

## References

Note: In some cases original reference sources are not included in this list, however they can be obtained from the reference from which the information has been sourced (the reference cited in superscript).

1 Armstrong, D. M., Croft, S. N. and Foulkes, J. N. (2003). *A Biological Survey of the Southern Mount Lofty Ranges, South Australia, 2000-2001*. Department for Environment and Heritage, South Australia.

2 Department for Environment and Heritage (2007). *Adelaide and Mount Lofty Ranges Regional Recovery Pilot Project Database*. Unpublished data extracted and edited from BDBSA, SA Herbarium (July 2007) and other sources.

3 Environment Protection Authority (2004). *Frog Census: Bibron's Toadlet*. Available from <http://www.epa.sa.gov.au/frogcensus/> (accessed October 2007).

4 Frogs Australia Network (2005). *Australian Frog Database - Pseudophryne bibronii - Bibron's Toadlet*. Available from <http://www.frogsaustralia.net.au> (accessed October 2007).

5 Kahrmanis, M. J., Carruthers, S., Oppermann, A. and Inns, R. (2001). *Biodiversity Plan for the South Australian Murray-Darling Basin*. Department for Environment and Heritage, South Australia.

6 North Central Catchment Management Authority (no date). *Bibron's Toadlet Pseudophryne bibronii Factsheet*. Waterwatch, North Central. Available from <http://www.vic.waterwatch.org.au/> (accessed October 2007).

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