



Apparent Disappearance of Two Species of Urban-adapted Skinks, *Tiliqua scincoides* and *Eulamprus quoyii*, from a Suburban Area of Sydney, Australia

Matthew Mo

Sydney, New South Wales, Australia (matthew.sk.mo@gmail.com; <https://orcid.org/0000-0003-2099-6020>)

Lizards are among the most successful herpetofauna in human-modified environments (French et al. 2018; Brum et al. 2023). In many of Australia’s populous cities, a number of species of skinks (Scincidae) have continued to occupy areas where settlements have retained garden spaces (Shea 2010). Two in particular are the Eastern Blue-tongued Skink (*Tiliqua scincoides scincoides*) and Eastern Water Skink (*Eulamprus quoyii*) (White and Burgin 2004; Little et al. 2010; Wilson 2012; Mo 2015).

The robust Eastern Blue-tongued Skink (Fig. 1) reaches SVLs of ~30 cm (Cogger 2018). Its adaptability and success in many suburban areas (Shea 2010) is surprising given its relatively slow locomotion and vulnerability to roadkills and attacks from domestic pets (Koenig et al. 2002). The smaller Eastern Water Skink (Fig. 1), which reaches SVLs of ~10 cm (Cogger 2018), is much faster. Also, the latter has natural history traits that are limiting in suburban areas, such as being

tied to water, but still survives in gardens with moist habitats and is prolific in some suburban parks (Shea 2010; Turak et al. 2020). Both species are quite conspicuous where they occur (Lunney 2000; Mo 2015).

Despite the apparent ability to adapt to urban situations, the Eastern Blue-tongued Skink apparently has disappeared from a suburban area of the St. George District of Sydney, Australia. Individuals had been recorded in the author’s garden on separate days 18–21 times per year between 2011 and 2013 (Table 1), usually between September and March. Sightings dwindled to only 14 and 8 times per year in 2014 and 2015, respectively, and no further sightings have been recorded since. The Eastern Water Skink followed a similar pattern. In 2011–2014, these skinks were observed on most warm to hot days, but sightings appeared to diminish during 2015. In 2016, sightings were limited to the first four months of the year, and the species has no longer been observed since.



Figure 1. An Eastern Blue-tongued Skink (*Tiliqua scincoides scincoides*) (left) and an Eastern Water Skink (*Eulamprus quoyii*) (right). Photographs by Matthew Mo.

Table 1. Frequency of sightings of Eastern Blue-tongued Skinks (*Tiliqua scincoides scincoides*) in a suburban area of Sydney, Australia. Never was more than one individual observed on any given day.

Year	Frequency of sightings	Percentage of days (%)
2011	Individuals sighted on 21 days	5.7
2012	Individuals sighted on 18 days	4.9
2013	Individuals sighted on 20 days	5.5
2014	Individuals sighted on 14 days	3.8
2015	Individuals sighted on 8 days	2.2
2016	No individuals sighted	0
2017	No individuals sighted	0
2018	No individuals sighted	0
2019	No individuals sighted	0
2020	No individuals sighted	0
2021	No individuals sighted	0
2022	No individuals sighted	0
2023	No individuals sighted	0

Coinciding with this disappearance was an apparent increase in the number of free-roaming domestic cats (*Felis catus*) in the suburban block. From 2011 to 2013, no cats were recorded. Two cats were observed in 2014 and five in 2015. Based on the damage that free-roaming cats are known to cause to wild species, they likely are the cause of the decline in the Eastern Water Skink. However, because of their long life spans and the fact that cats tend to prey only on juveniles (Koenig et al. 2002), Eastern Blue-tongued Skinks are less likely to be affected by cats (Koenig et al. 2001) and other unnoticed factors likely contributed to the rapid decline in sightings of this or both species.

Literature Cited

- Brum, P.H.R., S.R.A. Gonçalves, C. Strüssmann, and A.L. Teixeira. 2023. A global assessment of research on urban ecology of reptiles: patterns, gaps and future directions. *Animal Conservation* 26: 1–13. <https://doi.org/10.1111/acv.12799>.
- Cogger, H. 2018. *Reptiles and Amphibians of Australia*. Seventh edition. CSIRO Publishing, Collingwood, Victoria, Australia.
- French, S.S., A.C. Webb, S.B. Hudson, and E.E. Virgin. 2018. Town and country reptiles: a review of reptilian responses to urbanization. *Integrative and Comparative Biology* 58: 948–966. <https://doi.org/10.1093/icb/icy052>.
- Koenig, J., R. Shine, and G. Shea. 2001. The ecology of an Australian reptile icon: how do Bluetongue Lizards (*Tiliqua scincoides*) survive in suburbia? *Wildlife Research* 28: 215–227. <https://doi.org/10.1071/WR00068>.
- Koenig, J., R. Shine, and G. Shea. 2002. The dangers of life in the city: patterns of activity, injury and mortality in suburban lizards (*Tiliqua scincoides*). *Journal of Herpetology* 36: 62–68. [https://doi.org/10.1670/0022-1511\(2002\)036\[0062:TDOLIT\]2.0.CO;2](https://doi.org/10.1670/0022-1511(2002)036[0062:TDOLIT]2.0.CO;2).
- Little, D., P. Stevens, G. Gatenby, and V. O'Brien. 2010. Fauna of the Wolli Valley in inner south-west Sydney, pp. 326–331. In: D. Lunney, P. Hutchings, and D. Hochuli (eds.), *The Natural History of Sydney*. Royal Zoological Society of New South Wales, Sydney, Australia. <http://doi.org/10.7882/FS.2010.027>.
- Lunney, D., L. O'Neill, A. Matthews, and D. Coburn. 2000. Contribution of community knowledge of vertebrate fauna to management and planning: a case study on the Illuka Peninsula, north coast New South Wales. *Ecological Management and Restoration* 1: 175–184. <https://doi.org/10.1046/j.1442-8903.2000.00036.x>.
- Mo, M. 2015. Herpetofaunal community of the constructed Lime Kiln Bay Wetland, south Sydney. *Victorian Naturalist* 132: 64–72.
- Shea, G.M. 2010. The suburban terrestrial reptile fauna of Sydney – winners and losers, pp. 154–197. In: D. Lunney, P. Hutchings, and D. Hochuli (eds.), *The Natural History of Sydney*. Royal Zoological Society of New South Wales, Sydney, Australia. <https://doi.org/10.7882/FS.2010.015>.
- Turak, E., A. Bush, J. Dela-Cruz, and M. Powell. 2020. Freshwater reptile persistence and conservation in cities: insights from species occurrence records. *Water* 12: 651. <https://doi.org/10.3390/w12030651>.
- White, A.W. and S. Burgin. 2004. Current status and future prospects of reptiles and frogs in Sydney's urban-impacted bushland reserves, pp. 109–123. In: D. Lunney and S. Burgin (eds.), *Urban Wildlife: More than Meets the Eye*. Royal Zoological Society of New South Wales, Sydney, Australia. <https://doi.org/10.7882/FS.2004.087>.
- Wilson, S.K. 2012. *Australian Lizards: A Natural History*. CSIRO Publishing, Collingwood, Victoria, Australia.