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Occurrence of the Southern Heath Monitor (*Varanus rosenbergi*, Mertens 1957) at Balmoral in Wingecarribee Shire, New South Wales, Australia

PRZEMYSŁAW ZDUNEK[1,2,3] & PETER LOCKWOOD[4]

[1]*Association du Refuge des Tortues (A.R.T.), 2920 Route de Paulhac, 31660 Bessières, France*
E-mail: zdunek.komodo@gmail.com

[2]*NATRIX Herpetological Association, ul. Opolska 41/1, 52-010 Wrocław, Poland*

[3] *IUCN SSC Monitor Lizard Specialist Group member*

[4]*Retired lecturer, School of Rural Science and Natural Resources, University of New England, Armidale, N.S.W Australia. 9a William St., Balmoral, N.S.W. 2571, Australia*
E-mail: peter12381@gmail.com

***Abstract* - A sighting of *Varanus rosenbergi* in Wingecarribee Shire, New South Wales, Australia is reported. This locality represents a new record of the known distribution of the species at Balmoral, potentially made possible through habitat loss after the Green Wattle Creek fire in 2019.**

The southern heath monitor, *Varanus rosenbergi* Mertens 1957, is one of 32 monitor lizard species native to Australia. It is listed as "Least Concern" according to the IUCN Red List (Bennett *et al*., 2018; Eidenmüller, 2021) and as "Vulnerable" in New South Wales (NSW Government Office of Environment & Heritage, 2017). The distribution of *V. rosenbergi* is restricted to the southern parts (South and Western Australia, Victoria, coastal areas of New South Wales and the Sydney region) of Australia and two offshore islands (Kangaroo Island and Reevesby Island) (Shea, 1994; Auliya & Koch, 2020; Eidenmüller, 2021). Its natural habitat is sandy areas with heathland vegetation, open woodlands and sclerophyll (King & King, 2004). In 2019, wildfires burned around 5.8 million hectares of mainly temperate broadleaf forest in New South Wales and Victoria and had a major impact on the environment and animal populations, including monitor lizards (Boer *et al*., 2020; Todd & Maurer, 2020; Collins *et al*., 2021).

On 7 October 2021 at 1145 h, an adult *V. rosenbergi* was observed foraging in a grassy area at a property on the eastern outskirts of Balmoral in Wingecarribee Shire (Fig. 1) (34°18'34.55"S; 150°31'48.48E) which is a village (population 426) located 100 km SW of Sydney and within the Burragorang subregion of the Sydney Basin bioregion (Australian Government, 2018) (Figs. 2 & 3). At the time of the observation, it was sunny, the temperature was 18 °C (ranging from 7 to 25 °C over the day), and there was no rain. The lizard was easily identified as *V. rosenbergi* based on its dark grey dorsal coloration and characteristic tail with alternating pale yellow and dark brown bands (Fig. 4). Based on the photo taken, we estimated its snout-vent length (SVL) at ~45 cm. The lizard walked slowly around the area in the presence of a bevy of small birds and then disappeared into the forest less than an hour later. It was seen again briefly the following day, but has not been seen since.

The observed area has been replanted after the fire with native trees and shrubs including *Melia azedarach*, *Hakea salicifolia* and *Melaleuca linariifolia*, and was also colonized by grasses and weeds (*e.g*., *Juncus* sp., *Verbena bonariensis*)

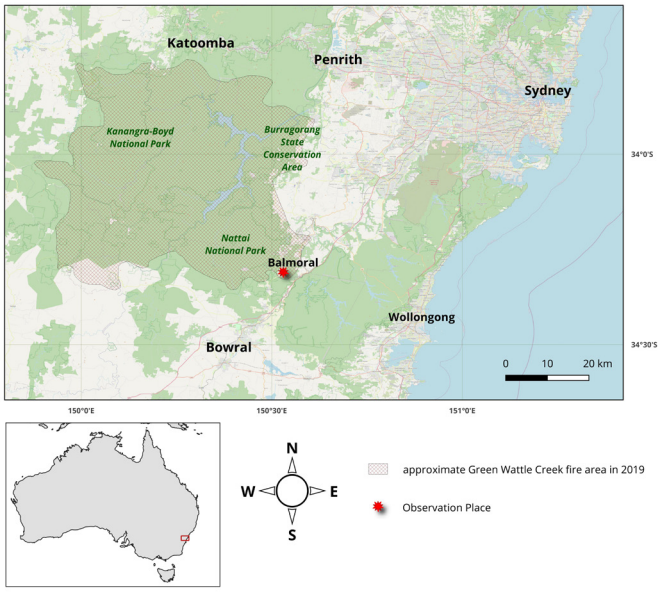

Fig. 1. Map depicting the location where *Varanus rosenbergi* was spotted at Balmoral in Wingecarribee Shire, New South Wales, Australia. Base maps: Open Street Map.

Fig. 2. *Varanus rosenbergi* at Balmoral,Wingecarribee Shire.

Fig. 3. Area of spotted *V. rosenbergi*.

(Fig. 3). Beyond the village the vegetation is predominantly eucalypt woodland with a shrubby understory (Australian Government, 2018), and much of the area falls within state conservation areas and Nattai National Park. The area is mainly underlain by Triassic sandstone and shale which contribute to nutrient-poor soils with sandy A horizons (Australian Government, 2018). The current residents have lived at this property for over 30 years and do not recall having ever seen a varanid there previously (S. Lockwood & C. Todd pers. comm.).

Rainfall across New South Wales during the 2017-2019 drought was the lowest for any three-year period since records began (Bureau of Meteorology, 2020). Driven by exceptionally dry, hot and windy conditions, the Green Wattle Creek fire passed through Balmoral from 19 to 21 December 2019 (Todd & Maurer, 2020). In 2020 and 2021 successive La Niña events produced above average rainfall which facilitated the regrowth of vegetation (Bureau of Meteorology, 2021). Due to a limited number of observations, the actual impact of fires on the distribution of varanid populations remains poorly understood. Bearing in mind the observations presented here for *V. rosenbergi*, we strongly encourage conservators to pay attention to this problem.

Fig. 4. *Varanus rosenbergi* is recognizable by its characteristic tail with alternating pale yellow and dark brown bands.

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