



# Supporting Broad-Toothed Rat Conservation at Aussie Ark

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The Society has partnered with Aussie Ark to help prevent the endangered broad-toothed rat (*Mastacomys fuscus*) from becoming extinct. The broad-toothed rat is a medium-sized native murid with a broad face, short tail, and stocky body. Its fur is soft, dense, and brown-tinged, with rufous on the dorsal side merging to grey underneath, and its ears are small and round, with tufts of hair inside. Broad-toothed rats are gentle in demeanour and are very much an Australian native 'guinea pig' in character.

In New South Wales, the broad-toothed rat occurs in two widely separated areas: the wet alpine and subalpine heaths and woodlands in Kosciuszko National Park, adjacent Nature Reserves and State Forest in the south of the State, and on the Barrington Tops. In Victoria, it resides in South Gippsland and the Otway's, and in western Tasmania, it can be found in wet sedges and grasslands at lower elevations.

The broad-toothed rat lives in a complex of runways through the dense vegetation of its wet grass, sedge, or heath environment and under the

snow in winter. Active in the runways underneath the snow during winter, the broad-toothed rat feeds on the stems, leaves and seeds of grasses and sedges. Shrub foliage, fungi, bark, and moss are also eaten. Nests of grass are built in the understorey or under logs, where two or three young are born in summer. In winter, the broad-toothed rats huddle together in nests for warmth.

This species has declined significantly and is currently threatened by habitat loss and fragmentation, predation by foxes and cats, climate change, and catastrophic fire events. Catastrophic fire events and hazard reduction burning can cause localised population extinctions. Grazing by rabbits and hares may also impact suitable vegetation cover and structure, and habitat invasion by exotic weeds, including scotch broom (*Cytisus scoparius*), blackberry (*Rubus* spp.), and willow (*Salix* species), poses a threat. Climate change causes loss of snow cover, resulting in increased exposure to foxes and cats in alpine areas and competition with feral herbivores and native rodent species may also increase.

As part of our broad-toothed rat conservation efforts, Directors of the Society visited the Australian Reptile Park and Aussie Ark to see the sponsored broad-toothed rat conservation project first-hand.

On Friday, 28 October 2022, the Directors made their way to the central coast and stopped at the Australian Reptile Park. We were welcomed and briefed by Tim Faulkner, Director, Owner, and General Manager. We were then taken on a tour of the Aussie Ark facilities by Hayley Shute, Curator and Conservation Manager, and Jo Runciman, the new Director of Partnerships and Sponsorship. We were taken behind the scenes and saw several conservation projects in operation. We were excited to see the broad-toothed rat enclosures where board-toothed rats are set to be temporarily housed before being released to a newly created wetland sanctuary at Aussie Ark.

**Top:** L to R: Tim Faulkner, Megan Fabian, Dr Hayley Stannard, Dr Robin Crisman, Dr Julie Old, Hayley Shute, and Jo Runciman at the Australian Reptile Park. Image: Katie Pasfield.



An endangered greater glider (*Petauroides Volans*) in Barrington Tops National Park. Image: Dr Hayley Stannard.



President, Dr Julie Old, standing in front of the sponsored green and golden bell frog (*Litoria aurea*) sign at Hunter Wetland Centre Australia. Image: Megan Fabian.



L to R: Dr Julie Old, Roz Holme, and Dr Hayley Stannard at Cedar Creek Wombat Rescue Inc. and Hospital. Image: Megan Fabian.

We continued our journey and stopped at Cedar Creek Wombat Rescue Inc. and Hospital to visit Roz and Kev Holme and, of course, the bare-nosed wombats (*Vombatus ursinus*). Roz and Kev were caring for several wombats that had fallen victim to vehicle strikes and dog attacks. We were lucky to see a couple of wombats on the verge of release – a bittersweet part of the wildlife rehabilitator role.

We continued to Aussie Ark, arrived after dark, and settled in for the evening.

The following day, 29 October 2022, a 10 am tour was scheduled with Tyler Gralton, Aussie Ark Supervisor. Tyler provided an introduction and guided us around the Aussie Ark sanctuary. Tyler showed us the Tasmanian devil (*Sarcophilus harrisii*), eastern quoll (*Dasyurus viverrinus*), brush-tailed rock-wallaby (*Petrogale penicillate*), spotted-tailed quoll



The broad-toothed rat (*Mastacomys fuscus*) breeding facility is under construction at Aussie Ark. Image: Aussie Ark.

(*Dasyurus maculatus*), and long-nosed potoroo (*Potorous tridactylus*) enclosures. He also pointed out where the new wetland sanctuary would be located, which would house the broad-toothed rats in the future. We posed for a photograph in front of one of the Tasmanian devil enclosures sponsored by the Society in previous years. Another highlight was the long-nosed potoroo that was keen to greet us all in return for a good scratch.

We went spotlighting that night in Barrington Tops National Park. We were privileged to see two brush-tailed possums (*Trichosurus vulpecula*), each carrying a baby on its back, and ten endangered greater gilders (*Petauroides Volans*) – a very memorable moment!

We checked out at 10 am the following day, 30 October 2022, and returned to Sydney. We stopped at Muswellbrook for a quick break and to see the colony of the grey-headed flying-foxes (*Pteropus poliocephalus*). We then continued to Hunter Wetlands Centre Australia, where we stopped to admire the high diversity of flora and fauna species and took the opportunity to pose for a photograph in front of the green and golden bell frog (*Litoria aurea*) sign, also sponsored by the Society.

Aussie Ark will be the pioneer for learning about the broad-toothed rat, including unknown behavioural traits. The Society has helped fund a captive breeding centre for the species, including constructing intensive breeding facilities, modifying sites for release to the Aussie Ark sanctuary, supplementing the wild population, and aiding research on the species. The information collected will be used to save the species in the wild from



The endangered broad-toothed rat (*Mastacomys fuscus*) is Australia's native murid. Image: Aussie Ark.



The broad-toothed rat (*Mastacomys fuscus*) enclosures where the broad-toothed rats are set to be temporarily housed before being released to a newly created wetland sanctuary at Aussie Ark. Image: Megan Fabian.



L to R: Tyler Gralton, Megan Fabian, Dr Hayley Stannard, Wayne Greenwood, and Dr Julie Old at Aussie Ark. Image: Dr Jeanette Keir.