

Zoos Victoria's Fighting Extinction Species

NEW HOLLAND MOUSE

Pseudomys novaehollandiae

Endangered/Vulnerable



Photo: David Paul

New Holland Mouse (NHM) populations are declining rapidly in all states, with a 99% reduction in mice in Tasmania, and seven out of 12 known Victorian populations now extinct. However, new populations of this shy native rodent have been found in the past few years, highlighting how little we know about the species and its range. Sadly, remaining populations

of the endangered NHM are declining and are highly unstable due to habitat destruction, inappropriate fire regimes and introduced predators, like cats and foxes. By boosting NHM numbers and the number of populations, and inspiring people to learn and care about them, we can secure a bright future for this sweet and tiny mouse.

ZOOS
VICTORIA
Fighting Extinction

Zoos Victoria is committed to Fighting Extinction

We are focused on working with partners to secure the survival of our priority species before it is too late.

Photo: Phoebe Burns

With its large eyes, big rounded ears and bi-coloured pink and dusky brown tail, the New Holland Mouse is a beautiful rodent native to small areas of the heathlands, woodlands and vegetated sand dunes of south eastern Australia. Sadly, numbers of this precious mouse have declined rapidly and many populations are now extinct. Zoos Victoria is working with partners and PhD students to find the remaining populations and protect them for the future.

KEY PROGRAM OBJECTIVES

- Determine the status and population trends of wild NHMs through long-term targeted surveys and genetic analyses.
- Reintroduce NHMs to safe areas of their former range to increase population numbers and health.
- Restore lost genetic diversity using cryopreserved samples from an extinct population of the NHM.
- Develop appropriate husbandry protocols and a captive insurance program if required
- Protect NHM habitat.
- Increase community awareness of the plight of the NHM and secure support for its conservation.

PROGRAM OUTCOMES

- Completed surveys of all historic and current NHM populations across Victoria and confirmed that 7/12 populations are now extinct.
- Found living populations of NHMs at Wilsons Promontory National Park after 5 years with no sightings.
- Rediscovered the NHM at The Lakes National Park after 20 years with no sightings.
- Discovered a new population at Sperm Whale Head.
- Analysed genetic differences within and between NHM populations.
- Produced live cell cultures and induced pluripotent stem cells from tissue samples from an extinct population that were cryopreserved for over 20 years.
- Produced a full genome sequence for the NHM; a first for any *Pseudomys* species.
- Commenced planning and site inspections for the reintroduction of the NHM to its former range.

THE SPECIES

The New Holland Mouse weighs a tiny 15-25g. It nests communally in underground burrows and emerges at night to forage for seeds, invertebrates, fungi and plant matter. The NHM was rediscovered in 1967 in New South Wales after no sightings for close to a century. As small

mammal research increased, the range of the NHM expanded to include Victoria, south-east Queensland and Tasmania, though no NHMs have been detected in Tasmania for over 10 years. The mice were also found in the ACT, but are believed to be extinct. In Victoria, historical records show NHM populations at 12 distinct locations, but the species now only occurs at 5 locations in East Gippsland. All current populations are fragmented and unstable, and annual monitoring has shown a recent decline across the sites, likely due to drought conditions.

Key threatening processes for NHM include:

- Habitat destruction and fragmentation.
- Genetic isolation of fragmented populations.
- Inappropriate fire regimes and habitat management.
- Die-back of vegetation.
- Cinnamon Fungus and introduced feral predators.

With such small numbers, local events such as bushfires or predation by foxes and cats can swiftly wipe out entire local populations.

THE PLAN

The following critical next steps will enable Zoos Victoria, along with our partners, to protect the NHM and improve the future of this tiny and mighty mouse:

Monitor the New Holland Mouse in the wild.	\$180,000
Reintroduce the New Holland Mouse to the Mornington Peninsula.	\$220,000
Develop a long-term monitoring program.	\$20,000
Restore genetic diversity lost from an extinct population.	\$20,000 p.a
Commence captive breeding (*if required) for reintroduction.	\$80,000
Help people get to know and love the New Holland Mouse.	\$40,000
Investigate sites for New Holland Mouse.	\$60,000
Develop and deliver a community engagement plan.	\$10,000

Raise awareness and facilitate use of boot cleaning stations for mitigation of Cinnamon Fungus.	\$20,000
Total cost over five years	\$730,000

PROGRAM PARTNERS

Australian Frozen Zoo
australianfrozenzoo.com.au

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delwp.vic.gov.au

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How can I help?

We are working hard to support wild populations, improve genetic health and increase the focus on this beautiful native mouse. You can support our Wildlife Conservation Master Plan 2019-2024 by donating at: zoo.org.au/donate