

Threatened species of the Northern Territory

Plains mouse

Pseudomys australis

Conservation status

Australia: Vulnerable

Environment Protection and Biodiversity Conservation Act 1999

Northern Territory: Endangered

Territory Parks and Wildlife Conservation Act 1976

Description

The Plains Mouse is a moderately sized rodent, with a stocky build, rounded snout and long ears. It is one of the largest rodents still present in the arid zone with a body mass up to 50 g. It has greyish upperparts, often lustrous in appearance, with paler flanks and cream or white underparts. The tail is also bicoloured being brown or grey above and white underneath. The tail length is usually less than head-body length.

Distribution

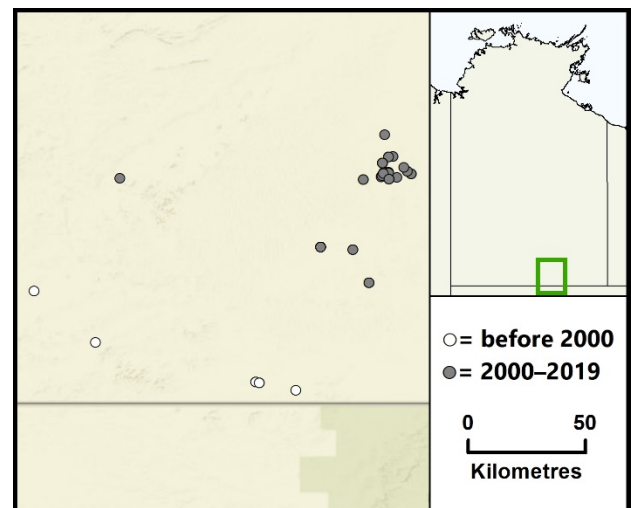
Once widespread across arid and semi-arid Australia, *P. australis* is now known only from the stony deserts of South Australia, the southern Northern Territory (NT)^{1, 2} and was recently recorded in western New South Wales³.

The current range of the species appears to be in a north-south band west of Lake Eyre, extending from Mac Clark (Acacia peuce) Conservation Reserve in the NT, to Pernatty Station (northern SA) in the south, and east to Fowlers Gap in far-western NSW.



Credit: P. Canty

NT conservation reserves where reported: Mac Clark (Acacia peuce) Conservation Reserve (however, this reserve is only occupied during irruptions).



Caption: Known localities of the Plains Mouse in the NT (nrmmaps.nt.gov.au)

Ecology and life-history

The Plains Mouse lives on plains, especially stony plains (gibber), and prefers areas of cracking clay soil associated with minor drainage features. These run-on areas are generally more productive than the surrounding landscape because they receive water and nutrients even after relatively minor rainfall events⁴. It occurs in

colonies that are usually small in size and difficult to locate. However, numbers increase dramatically following rainfall. Rainfall triggers an increase in available resources in the animal's habitat that results in high levels of reproduction. Numbers remain high while conditions are favourable and then decline rapidly. Colony size can decrease by a factor of 80 over a 29 month period⁵. During population irruptions, the Plains Mouse move into areas that are not occupied at other times.

The Plains Mouse is mostly herbivorous, feeding mainly on seeds with some green plant material; a few insects are also taken. It is nocturnal and animals live in burrows. Individual's home range during dry periods averages 1.3 ha⁵.

Threatening processes

No specific threatening process has been identified for the Plains Mouse in the NT. However, the species is likely to be susceptible to habitat degradation, particularly of those refuge habitats into which colonies retract when population size is very low⁶. This issue may be of particular concern in the NT because all but one of the known sites occurs on pastoral leases and the one locality in a reserve appears only to be occupied during population irruptions. Further, several sites of occurrence are in areas of stock concentration around bores which are likely to suffer heavy disturbance.

Predation by introduced and native predators, especially the introduced European Red Fox and Cat, may also threaten populations by increasing the speed of declines during the bust phase of population cycles (C. Pavey unpublished data).

Conservation objectives and management

A National Recovery Plan has been developed for the species⁷. Management priorities are to: i) clarify the current distribution of the Plains Mouse, and habitat use across the species' range; ii) clarify threats at known location; and iii) enter into protective agreements with landowners with Plains Mouse on their properties.

The Alice Springs Desert Park maintains a captive colony and the species is on permanent display.

References

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- ² Brandle, R., Moseby, K.E., Adams, M., 1999. The distribution, habitat requirements and conservation status of the plains rat, *Pseudomys australis* (Rodentia: Muridae). Wildl. Res. 26, 463-477.
- ³ Leggett, K.E., Welaratne, T., Letnic, M., McLeod, S., Dawson, T., 2017. Rediscovery of the plains mouse (*Pseudomys australis*) (Rodentia: Muridae) in New South Wales. Aust. Mammal. 40, 127–130.
- ⁴ Brandle, R., Moseby, K.E., 1999. Comparative ecology of two populations of *Pseudomys australis* in northern South Australia. Wildl. Res. 26, 541- 564.
- ⁵ Young, L.I., Dickman, C.R., Addison, J., Pavey, C.R., 2017. Spatial ecology and shelter resources of a threatened desert rodent (*Pseudomys australis*) in refuge habitat. J. Mammal. 98, 1604–1614.
- ⁶ Pavey, C.R., Addison, J., Brandle, R., Dickman, C.R., McDonald, P.J., Moseby, K.E., Young, L.I., 2017. The role of refuges in the persistence of Australian dryland mammals. Biol. Rev. 92, 647–664.
- ⁷ Moseby, K., 2012. National Recovery Plan for the Plains Mouse *Pseudomys australis*. Department of Environment, Water and Natural Resources, South Australia.