

Threatened species of the Northern Territory

Central rock-rat

Zyzomys pedunculatus

Conservation status

Australia: Critically Endangered

Environment Protection and Biodiversity Conservation Act 1999

Northern Territory: Critically Endangered

Territory Parks and Wildlife Conservation Act 1976



Credit: P. McDonald

Description

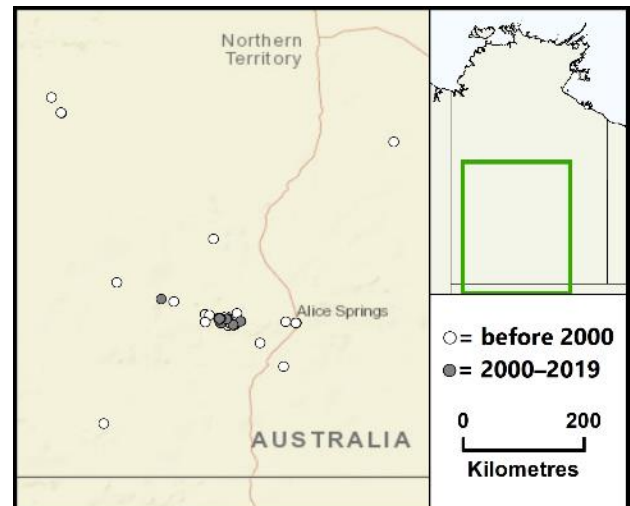
The Central Rock-rat is a medium-sized, stocky rodent with a body mass of 70–150 g. It has thick and soft fur that is yellowish-brown on the upperbody and cream to white below. The tail is thick, densely furred and slightly longer than the combined head and body length.

Distribution

The Central Rock-rat is endemic to the southern Northern Territory (NT); though subfossil and fossil material indicate it was once more widely distributed across central Western Australia and the NT.

From the 1890s to the 1960s, specimens were collected from Illamurta (James Range), Alice Springs, Hugh Creek, Napperby Hills, The Granites (Tanami Desert), Davenport Range and the MacDonnell Ranges (Haasts Bluff)¹. However, it was not until the 1990s that the Central Rock-rat was seen again, when it was found in the West MacDonnell Ranges. Surveys undertaken from the mid-1970s to 2010s failed to find the species at other formerly known sites.

NT conservation reserves where reported:
Tjoritja/West MacDonnell National Park.



Caption: Known localities of the Central Rock-rat in the NT (nrmmaps.nt.gov.au)

Ecology and life-history

The Central Rock-rat occupies a range of habitats within the West MacDonnell Ranges, including tussock and hummock grasslands, low shrublands and low open woodlands. These habitats occur on ridge tops, cliffs, scree slopes, hills and valley floors. Like many other arid-dwelling rodents, Central Rock-rat populations can 'boom' in response to rainfall-driven increases in resources. The population then dwindles and contracts to refuge areas during more typical dry periods. In

these 'bust' phases, the Central Rock-rat is evidently restricted to high-altitude, rugged quartzite ranges and peaks.

The Central Rock-rat is nocturnal. Its diet comprises mostly seeds and leaves, but plant stems and occasionally invertebrates are also consumed. Dietary composition varies seasonally and with environmental conditions. In particular, fire history influences the availability of important food plants, which include both fire-sensitive and fire-encouraged species.

Little is known about the reproductive biology of the Central Rock-rat. In captivity, litter sizes ranged from one to four. In the wild, breeding can probably occur at any time of year depending on environmental conditions. Generation length is estimated to be 1–2 years².

Threatening processes

Although the causes of the decline of the Central Rock-rat are poorly understood, predation by feral Cats *Felis catus* and inappropriate fire regimes have been identified as key threats to the species. Dietary analysis of feral Cat scats has shown that Central Rock-rats are a common prey species of this common introduced predator. An increased frequency of extensive and intense fires can reduce habitat and food resources in the short-term, increase the vulnerability of Central Rock-rats to predation, and alter vegetation dynamics. The invasive Buffel Grass *Cenchrus ciliaris* poses a threat through facilitating more frequent, widespread and/or intense fires. Anthropogenic climate change may have a significant long-term negative impact on the Central Rock-rat.

Conservation objectives and management

Priority conservation objectives and management for the Central Rock-rat include: improving understanding of the impacts of predation by feral Cats and wildfire and mitigating these impacts; investigating the utility of using small-scale fires as a tool to increase habitat quality; investigating aspects of Central Rock-rat ecology and response to management; assessing the risks

and benefits of establishing an insurance population in an introduced-predator-free area(s); formulating and implementing a strategy through translocation and/or captive breeding to establish an insurance population(s) if appropriate; and monitoring Central Rock-rat subpopulations⁵⁻⁶.

References

- ¹ Parker, S.A., 1973. An annotated checklist of the native land mammals of the Northern Territory. Rec. South Aust. Mus. 16, 1–57.
- ² Woinarski, J.C.Z., Burbidge, A.A., Harrison, P.L. (Eds), 2014. The Action Plan for Australian Mammals 2012. CSIRO Publishing, Canberra.
- ³ Edwards, G.P., 2012. Relative abundance of the central rock-rat, the desert mouse and the fat-tailed pseudantechinus at Ormiston Gorge in the West MacDonnell Ranges National Park, Northern Territory. Aust. Mammal. 35, 144–148.
- ⁴ McDonald, P.J., Griffiths, A.D., Nano, C.E.M., Dickman, C. R., Ward, S.J., Luck, G.W. 2015. Landscape-scale factors determine occupancy of the critically endangered central rock-rat in arid Australia: The utility of camera trapping. Biol. Conserv. 191, 93–100.
- ⁵ Threatened Species Scientific Committee. 2018. Conservation Advice *Zygomys pedunculatus* central rock-rat. Department of the Environment and Energy, Canberra.
- ⁶ McDonald, P., Ward, S., Nano, C., Pavey, C., Nano, T. 2018. National Recovery Plan for the Central Rock-rat, *Zygomys pedunculatus*. Northern Territory Department of Environment and Natural Resources, Alice Springs.