

# Threatened species of the Northern Territory

## Arnhem rock-rat

### *Zyzomys maini*

#### Conservation status

##### Australia: Vulnerable

Environment Protection and Biodiversity Conservation Act 1999

##### Northern Territory: Vulnerable

Territory Parks and Wildlife Conservation Act 1976

#### Description

The Arnhem Rock-rat is a moderately large (100-150 g) rat distinguished from most other Northern Territory rodents by its large whiskers, typically swollen tail (especially at the base), the long hairs towards the tip of the tail, and a prominent 'Roman' nose. It shares these features with the co-occurring but much smaller (30-70 g) Common Rock-rat *Zyzomys argurus*, from which it can be differentiated by its larger size, colour (typically more grey than brown), and higher density of long hairs on the tail.

Rock-rats have fragile tails and fur, and many individuals may have no or greatly reduced tails, presumably as a consequence of predator attack.

#### Distribution

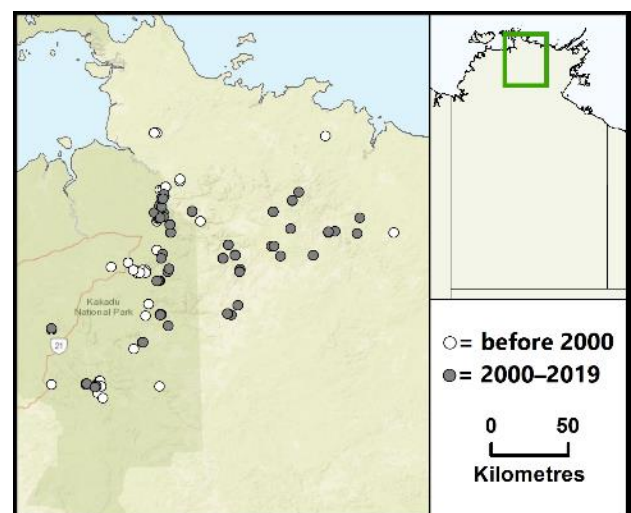
The Arnhem Rock-rat is endemic to the sandstone massif of western Arnhem Land. This area encompasses about 34,000 km<sup>2</sup>, but a very high proportion of this comprises habitat that is unsuitable for this species.

Until recently, the Arnhem Rock-rat was considered conspecific with the Kimberley Rock-rat *Z. woodwardi* from the north Kimberley<sup>1</sup>.



Credit: A. O'Dea

NT conservation reserves where reported:  
Kakadu National Park.



Caption: Known localities of the Arnhem Rock-rat in the NT ([nrmmaps.nt.gov.au](http://nrmmaps.nt.gov.au))

#### Ecology and life-history

The ecology of the Arnhem Rock-rat is relatively well known from research undertaken at Nawurlandja (Little Nourlangie Rock) in Kakadu National Park<sup>2-5</sup>. The species is restricted to areas with large sandstone boulders and escarpments with fissures and cracks, where it is patchily distributed. Arnhem Rock-rats occur

mostly in monsoon rainforest patches, particularly those within gullies, along creeklines and in fire-protected refuges. This is a much narrower range of habitats than that occupied by the Common Rock-rat.

The Arnhem Rock-rat forages exclusively on the ground and is nocturnal. Its diet comprises mainly seeds, fruit and some other vegetable matter. Large seeds may be cached, or at least moved to be eaten at relatively safe sites, resulting in distinctive piles of chewed hard seeds in rock fissures or under large overhangs<sup>2</sup>.

The Arnhem Rock-rat may be unusually fire-sensitive. Following a single fire, a substantial decline in abundance was observed for at least 1–2 years post-fire<sup>3</sup>.

## Threatening processes

The most significant threat to the Arnhem Rock-rat is probably a reduction in habitat quality and/or extent due to an increased frequency of extensive and intense fires late in the dry season. Sandstone monsoon rainforests, the preferred habitat of the Arnhem Rock-rat, are fire-sensitive communities and a high frequency of fire will result in a contraction in the size of rainforest patches<sup>6</sup>.

## Conservation objectives and management

There is no existing recovery plan or management program for the Arnhem Rock-rat.

In the interim, management priorities for the species are to: i) reduce the incidence of extensive and intense fires in the late dry season; and ii) maintain a program for monitoring the status of at least one subpopulation (preferably more), ideally in association with a range of approaches to fire management to inform best-practice for mitigating the threat to the Arnhem Rock-rat of unsuitable fire regimes.

## References

<sup>1</sup> Kitchener, D.J., 1989. Taxonomic appraisal of *Zyomys* (Rodentia, Muridae) with descriptions of two new species

from the Northern Territory, Australia. Rec. West. Aust. Mus. 14, 331–373.

<sup>2</sup> Begg, R.J., Dunlop, C.R., 1980. Security eating, and diet in the large rock-rat, *Zyomys woodwardi* (Rodentia: Muridae). Aust. Wildl. Res. 7, 63–70.

<sup>3</sup> Begg, R.J., 1981. The small mammals of Little Nourlangie Rock, N.T. IV. Ecology of *Zyomys woodwardi*, the large rock-rat, and *Z. argurus*, the common rock-rat (Rodentia: Muridae). Aust. Wildl. Res. 8, 73–85.

<sup>4</sup> Begg, R.J., Martin, K.C., Price, N.F., 1981. The small mammals of Little Nourlangie Rock, N.T. V. The effects of fire. Aust. Wildl. Res. 8, 515–527.

<sup>5</sup> Begg, R.J., and Dunlop, C.R. (1985). Diet of the Large Rock-rat, *Zyomys woodwardi*, and the Common Rock-rat *Z. argurus* (Rodentia: Muridae). Aust. Wildl. Res. 12, 19–24.

<sup>6</sup> Russell-Smith, J., Ryan, P.G., Klessa, D., Waight, G., Harwood, R., 1998. Fire regimes, fire-sensitive vegetation and fire management of the sandstone Arnhem Plateau, monsoonal northern Australia. J. Appl. Ecol. 35, 829–846.