

Threatened species of the Northern Territory

Brush-tailed rabbit-rat

Conilurus penicillatus

Conservation status

Australia: Vulnerable

Environment Protection and Biodiversity Conservation Act 1999

Northern Territory: Endangered

Territory Parks and Wildlife Conservation Act 1976

Description

The Brush-tailed Rabbit-rat is a moderately large (about 150 g) partially arboreal rat, with a long brush-tipped tail and long ears. The fur is grizzled grey to golden brown above with a rufous patch on the neck, and white to cream below. The tail is blackish-brown with a black or white brush. The species is distinctly smaller than the tree-rats *Mesembriomys* spp. Two subspecies are recognised: *Conilurus penicillatus melibius* from the Tiwi Islands, which has a darker belly and smaller ears and hindfeet, and *C. p. penicillatus* from the mainland and islands of north-eastern Northern Territory¹.

Distribution

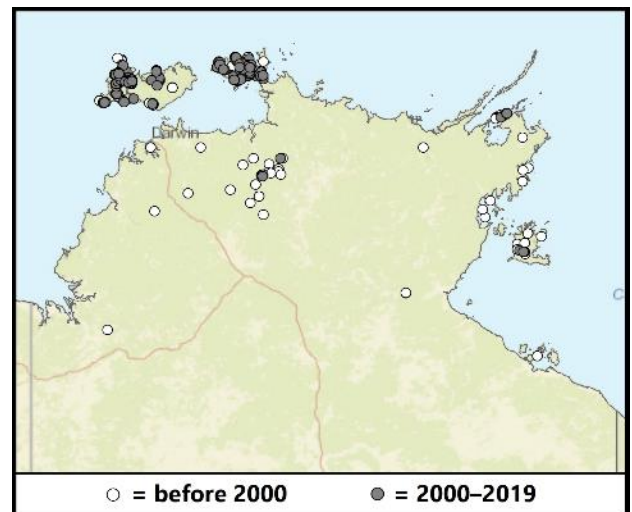
The Brush-tailed Rabbit-rat has a disjunct distribution in the northern Kimberley, the Top End of the Northern Territory (NT), Bentinck Island in Queensland and southern New Guinea. In the NT, the species rat has been recorded from near-coastal areas from the Pellew Islands in the east to near the Victoria River in the west, including Bathurst, Melville, Inglis and Centre Islands and Groote Eylandt¹⁻².



Credit: K. Brennan

However, there are no recent records from much of this range: the species is currently known to persist in the NT only on the Cobourg Peninsula, Groote Eylandt and Bathurst, Melville and Inglis Islands.

NT conservation reserves where reported: Garig Gunak Barlu National Park and Kakadu National Park.



Caption: Known localities of the Brush-tailed Rabbit-rat in the NT (nrmmaps.nt.gov.au)

Ecology and life-history

The Brush-tailed Rabbit-rat prefers tall open eucalypt forests³, but at least on Cobourg Peninsula it also occurs in coastal grasslands with scattered large Coastal She-oak *Casuarina*

equisetifolia trees and in stunted eucalypt woodlands on stony slopes⁴⁻⁵.

Individuals shelter in tree hollows, hollow logs and occasionally in the crowns of pandanus or sand-palms. The diet comprises mainly seeds, especially those of grasses, with some fruits, invertebrates, leaves and grass. Individuals forage mostly on the ground, but will also venture into trees to find food.

Threatening processes

The cause of the decline of the Brush-tailed Rabbit-rat on the mainland is poorly understood. Predation by feral Cats *Felis catus* probably played a significant role. Broad-scale habitat modification may have also contributed to the decline. Altered fire regimes, weeds and grazing by livestock and feral animals may have changed the availability of preferred or critical food resources (e.g. seeds or stems from particular grass species). More frequent and intense fires may have also reduced the availability of hollow logs, tree hollows and tall fruit-bearing understorey shrubs, and unfavourably changed the composition of grass species⁶⁻⁷. The Brush-tailed Rabbit-rat population on the Tiwi Islands has been substantially reduced by the clearing for plantation forestry of about 30,000 ha of its preferred habitat³.

Conservation objectives and management

Conservation management priorities for the Brush-tailed Rabbit-rat are to: i) increase awareness of the conservation significance of the species in areas where remnant populations occur and it is not well known; ii) establish whether species persists in areas where it was historically reported; iii) establish and maintain monitoring programs for key localities; iv) enhance control of feral Cats including quarantine procedures to keep islands cat free; v) manage fire for the benefit of the species; vi) include assessments of impacts on this species in development proposals; and vii) consider the feasibility of reintroductions.

References

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- ² Woinarski, J.C.Z., 2000. The conservation status of rodents in the Top End of the Northern Territory. *Wildl. Res.* 27, 421–435.
- ³ Firth, R.S.C., Woinarski, J.C.Z., Brennan, K.G., Hempel, C., 2006. Environmental relationships of the Brush-tailed Rabbit-rat *Conilurus penicillatus* and other small mammals on the Tiwi Islands, northern Australia. *J. Biogeogr.* 33, 1820–1837.
- ⁴ PWCNT, 2001. Studies of the Brush-tailed Rabbit-rat *Conilurus penicillatus* in Gurig National Park. PWCNT, Darwin.
- ⁵ Frith, H.J., Calaby, J.H., 1974. Fauna survey of the Port Essington district, Cobourg Peninsula, Northern Territory of Australia. Technical Paper no. 28. CSIRO Wildlife Research, Canberra.
- ⁶ Woinarski, J.C.Z., Armstrong, M., Price, O., McCartney, J., Griffiths, T., Fisher, A., 2004. The terrestrial vertebrate fauna of Litchfield National Park, Northern Territory: monitoring over a 6-year period, and response to fire history. *Wildl. Res.* 31, 1–10.
- ⁷ Firth, R.S.C., Brook, B.W., Woinarski, J.C.Z., Fordham, D.A., 2010. Decline and likely extinction of a northern Australian native rodent, the Brush-tailed Rabbit-rat *Conilurus penicillatus*. *Biol. Conserv.* 143, 1193–1201.