

Threatened Species of the Northern Territory

GOLDEN-BACKED TREE-RAT

Mesembriomys macrurus

Conservation status

Australia: Vulnerable

Northern Territory: Critically Endangered
(possibly extinct)



Photo: I. Morris

Description

The golden-backed tree-rat is a large rodent (about 300 g), midway in size between the Territory's other two semi-arboreal species, the smaller brush-tailed tree-rat and the larger black-footed tree-rat. Distinctive features include a long slightly brush-tipped tail that is white for at least the distal half, white feet, and a broad chestnut-gold stripe along the back from the crown to the base of tail.

Distribution

In the Northern Territory (NT), the golden-backed tree-rat is known from only three definite records (Parker 1973): at "Balanbrinni" (probably Balbarini) in the upper McArthur in 1901; from Nellie Creek (in the upper Mary) in 1903; and from Deaf Adder Gorge in 1969. The species has not been confirmed elsewhere despite many large surveys across much of the Top End over the last 40 years. Recent targeted surveying of Deaf Adder Gorge and other areas considered potential habitat for this species did not detect any (Palmer 2010).

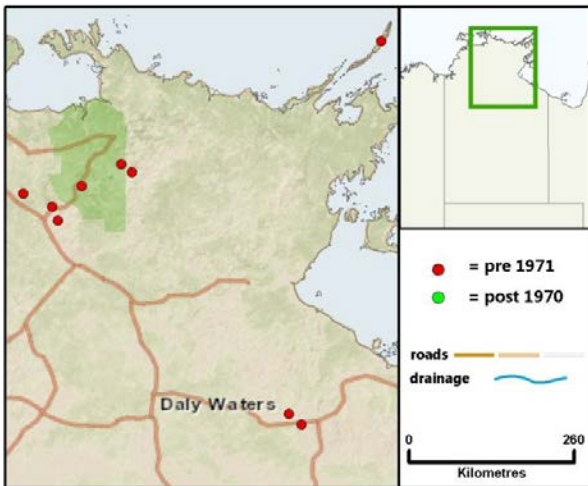
There have been several unconfirmed records based on possible sightings and hair samples (Woinarski 2000), but these remain

unconfirmed and in at least some cases unlikely.

Recent collation of some Indigenous knowledge of this species has indicated persistence in at least one site in the Arnhem Land plateau (M. Ziembicki *pers. comm.*). However, recent targeted surveys in the area did not detect any golden-backed tree-rats.

Beyond the NT, it occurs in some coastal areas of the north Kimberley, and five offshore islands there (Carlia, Conilurus, Hidden, Uwins, and Wollaston) (Abbott and Burbidge 1995; Palmer *et al.* 2003). Its range has declined substantially in Western Australia (WA). It appears to have become regionally extinct from the Pilbara, and in at least the more arid southern margins of the Kimberley (McKenzie 1981). For example, Dahl (1897) reported that "*the houses of settlers (around Broome) are always tennanted by (this species)*", but it has not been reported from there subsequently.

Conservation reserves where reported:
Kakadu National Park.



Known locations of the golden-backed tree -rat

Ecology

There is very little known of the ecology of this species. The only information from the NT is that all three records were from riverine vegetation. In the Kimberley, it has been recorded from a broad range of vegetation types, including eucalypt open forests with tussock grass understorey, rainforest patches on a variety of landforms and soils, eucalypt woodlands with hummock grass understorey, rugged sandstone screes, beaches, and blacksoil plains with pandanus. It roosts in tree hollows or, less commonly, in loosely woven nests under the spiky crown of pandanus. Its diet includes seeds, fruits, invertebrates, grass and leaves, and it forages both on the ground and in trees (Palmer *et al.* 2003).

Conservation assessment

The remarkably few records from the NT provide a poor base for assessing status. A decline can be inferred based on the lack of recent records despite substantial survey effort, but it is not possible to say when the decline occurred, or if it is ongoing. The scarcity of historic records suggests that it was already rare in the NT at the onset of European settlement, or that it declined extremely rapidly thereafter. Historic and ongoing decline in the Territory population

and range can be reasonably inferred from the marked decline evident in the more substantial set of records from north WA.

The status of the golden-backed tree-rat in the NT could be considered Critically Endangered (under criteria B2ab(i,iv,v); C2a(i)) based on:

- Area of occupancy estimated to be less than 10 km²;
- population size estimated to number <250 mature individuals;
- severely fragmented or known to exist at no more than five locations;
- a continuing decline, observed, projected or inferred; and
- no subpopulation estimated to contain more than 50 mature individuals.

There are occasional possible sightings of the species, but recent targeted surveys within the previously known NT range have failed to detect it. As a consequence, the species is listed as **Critically Endangered (possibly extinct)** in the NT.

Threatening processes

No single factor has been demonstrated to have caused the decline of golden-backed tree-rats, but the extent of loss on the mainland and the maintenance of some island populations (in WA) suggests that it is probably not due to land-use factors but rather to either disease or exotic predators. The most likely causal factor is predation by feral cats.

However, it is possible that broad-scale habitat change may have contributed to the apparent decline. Changed fire regimes, weeds and grazing by livestock and feral animals may have changed the availability of preferred or vital food resources (e.g. seeds from particular grass species), and more frequent hot fires may have reduced the

availability of hollow logs, tree hollows and the tall fruit-bearing understorey shrubs.

Conservation objectives and management

A recovery plan (Palmer *et al.* 2003) describes research and management priorities for this species across its range; and its research and management priorities in Kakadu National Park are described in Woinarski (2004).

If the golden-backed tree-rat is found to still be present in NT, further investigations will be required to determine specific management priorities

Complied by

John Woinarski

Carol Palmer

Brydie Hill

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