Threatened species of the Northern Territory

Kowari

Dasyuroides byrnei

Conservation status

Australia: Vulnerable
Environment Protection and Biodiversity Conservation Act 1999

Northern Territory: Vulnerable Extinct in the NT
Territory Parks and Wildlife Conservation Act 1976

Credit: K. Johnson

Description

The Kowari is a small, stocky carnivorous marsupial, with a body mass of up to 175 g and a total length of up to 34 cm. The species has large upright ears, a pointed muzzle and conspicuous pale eye-rings. The body is greyish with a whitish underside. The long tail accounts for almost half the total length, is whitish at the base, and has a dense black brush on the distal half.

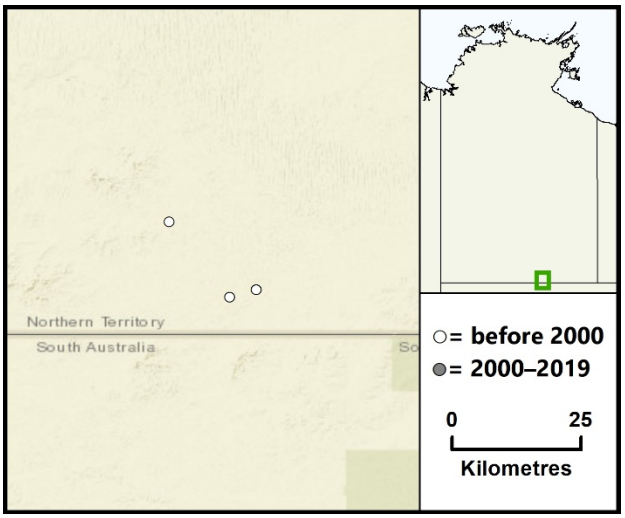
The Kowari can be distinguished from the superficially similar Brush-tailed Mulgara *Dasycercus blythi* and Crest-tailed Mulgara *D. cristicauda* by its uniformly bushy tail and four, instead of five, toes on the hindfoot.

Distribution

The Kowari is restricted to the Lake Eyre Basin. It formerly occurred on the western fringe of the Simpson Desert, on either side of the Northern Territory–South Australia border[1], and was widespread in the eastern part of the Lake Eyre Basin[2]. The Kowari has disappeared from the western part of its range and is now restricted to scattered localities in northeastern South Australia and southwestern Queensland.

Within the Northern Territory (NT), specimens of the Kowari were collected from Charlotte Waters and Illamurta in 1895 and Barrow Creek in 1901. However, suitable habitat does not occur at Illamurta and Barrow Creek, so it is highly likely that the specimens purportedly collected there were incorrectly labelled[1].

NT conservation reserves where reported: None.



Caption: Known localities of the Kowari in the NT (nrmaps.nt.gov.au)

Ecology and life-history

The Kowari inhabits sparsely vegetated gibber (stony) plains between sand dunes, grasslands and braided river channels. Individuals construct burrows in small sand islands, sand mounds and beneath shrubs.

Kowaris are opportunistic predators. They feed primarily on insects and other arthropods, but also hunt small vertebrates, including rodents. The species is nocturnal and rarely ventures out of its burrow during the day, except on cold winter days when individuals may bask in the sun at the burrow entrance.

Kowaris are solitary and breed between April and December, usually only once per year. Females produce litters of up to six young, which are dependent on their mother for less than three months. Environmental conditions driven by rainfall influence the abundance of Kowaris, which may occur in relatively high densities after successive years of above-average rainfall. Generation length is estimated to be 2 years[3].

Threatening processes

The causes of the decline of the Kowari are poorly understood. Trampling of burrows and suitable burrowing microhabitats by livestock is a significant threat to the Kowari on pastoral land. Introduced herbivores, including European Rabbits *Oryctolagus cuniculus*, feral Goats *Capra hircus* and livestock, reduce plant cover and food that is utilised by Kowari prey species. Predation by feral Cats *Felis catus* and (perhaps to a lesser extent) Red Foxes *Vulpes vulpes*, and dietary competition with these introduced predators, may also be significant threats.

Collisions with vehicles and habitat degradation associated with road construction are localised threats to the species. Anthropogenic climate change may have long-term negative impacts on the Kowari, and may lead to further contractions in its range.

Conservation objectives and management

As the Kowari is presumed to be extinct in the NT, there are currently no conservation objectives for the species within the NT. Any reliable potential sightings of the species should be followed-up as soon as possible.

Conservation objectives in Queensland and South Australia include: reducing the negative impacts of domestic livestock on Kowari habitat; controlling feral predators, rabbits and goats; rehabilitating degraded habitat; investigating formal conservation arrangements for private land; and investigating options for reintroductions[3,5].

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] Finlayson, H.H., 1961. On central Australian mammals, Part IV. The distribution and status of central Australian species. Rec. South Aust. Mus. 41, 141–191.

[3] Woinarski, J.C.Z., Burbidge, A., Harrison, P., 2014. The Action Plan for Australian Mammals 2012. CSIRO Publishing, Canberra.

[4] Greenville, A.C., Brandle, R., Canty, P., Dickman, C.R., 2018. Dynamics, habitat use and extinction risk of a carnivorous desert marsupial. J. Zool. 306, 258–267.

[5] Department of the Environment, Water, Heritage and the Arts, 2008. Approved Conservation Advice for *Dasycercus byrnei* (Kowari). Department of the Environment, Water, Heritage and the Arts, Canberra.