

# Arid Zone Monitoring Species Profile

## Crest-tailed mulgara

*Dasymercus cristicauda*

### Language names

Amperte, Ampurta, Papanytji, Talimarlu

National status in the EPBC Act: Vulnerable

IUCN Red List: Least concern



Crest-tailed mulgara.



Brush-tailed mulgara scat (crest-tailed mulgaras have similar scats).



Image: SA Arid Lands Board

Crest-tailed mulgara tracks (arrow shows which way the mulgara is moving).



Image: Judy Dunlop

Brush-tailed mulgara burrow, with scat at entrance (crest-tailed mulgaras have similar burrows).

### Animal Description

The crest-tailed mulgara has sandy coloured fur on the upper body turning into a light grey on the under parts. They have small ears, a short nose and short fat tails. Crest-tailed mulgaras have a 'mohawk' of long black hairs on the end of their tails. Adult males weigh over 100g and females weigh 65g to 120g.

### Key threats

- Predation by cats and foxes
- Habitat change from too much grazing by feral herbivores (livestock, camels, rabbits, mice)
- Wrong-way fire (too often, too intense, too big)

### Habitat

Crest-tailed mulgaras live on sand dunes with not much vegetation, and also in sparse grasslands and herblands, centred on and around the Simpson Desert.

### Crest-tailed mulgara scat

Crest-tailed mulgara scats are 20-30mm long and 5mm wide. They are sometimes curved and can be different shapes and sizes. Their scats usually contain insect, fur and lizard parts.

### Mulgara tracks

Mulgara move by bringing the back feet forward together in front of the front feet. The prints of the back feet are rectangular, and sometimes you can see a ridge between the toes and feet.

### Crest-tailed mulgara diggings and burrows

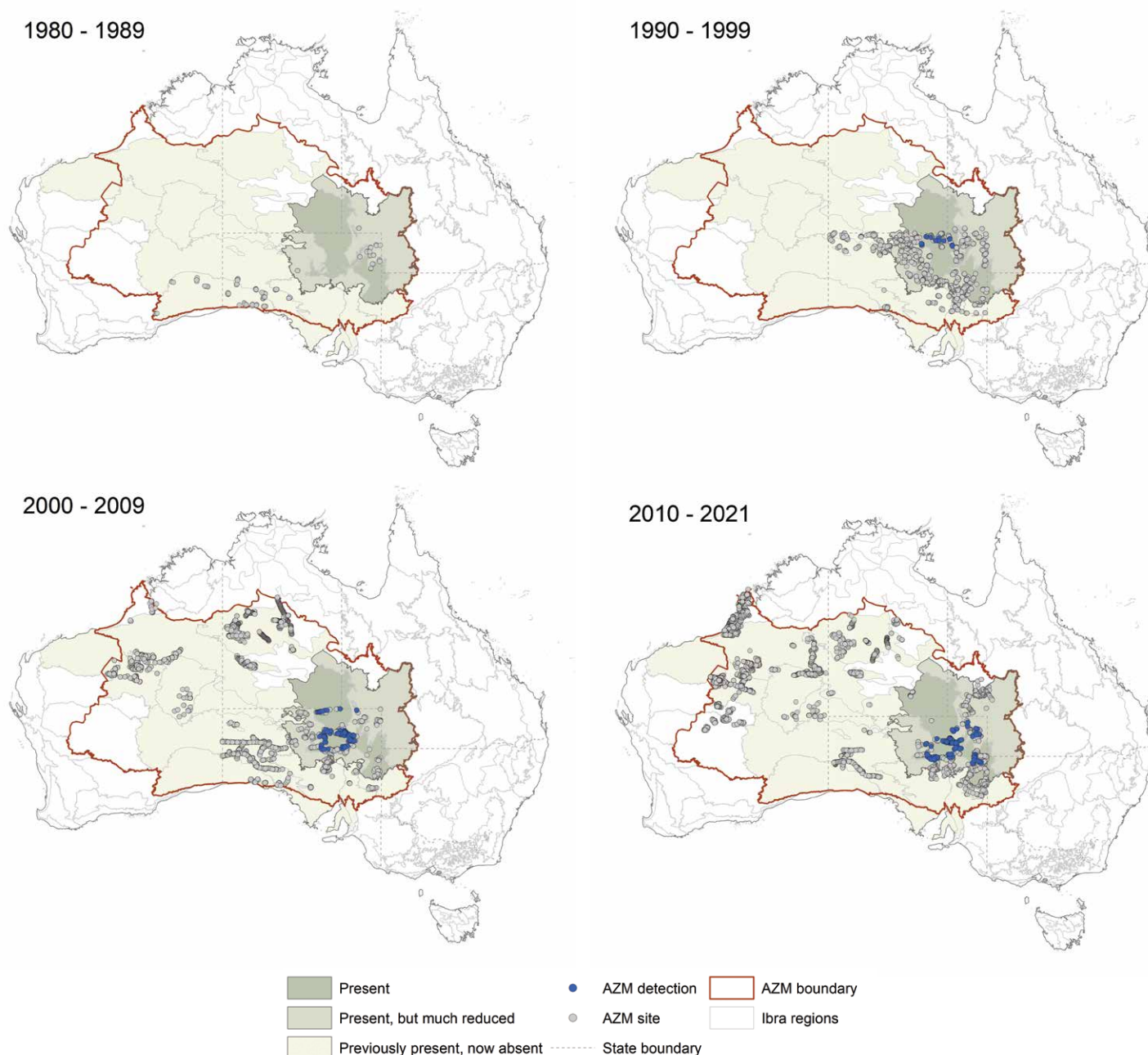
During the day mulgara rest in burrows at the base of grass clumps or bushes. Burrows can have many tunnels, and usually have scats at the entrance. Burrows have a rounded case and are the same size as some reptile burrows (such as small goannas).

## Arid Zone Monitoring project findings

### Crest-tailed mulgara distribution

The maps summarise the detections of crest-tailed mulgara over time in the AZM dataset. They show that crest-tailed mulgaras are found in north-eastern deserts of South Australia. Each blue dot shows a survey site where crest-tailed mulgara were recorded in that decade. The grey dots show all the other sites that were surveyed, but where crest-tailed mulgara were not recorded in that decade. These records were made by Indigenous Ranger groups, land councils, NGOs, government agencies and university researchers. The information about the overall distribution in the map background is taken from the Mammal Action Plan<sup>1</sup>.

It is difficult to tell exactly where the crest-tailed mulgara distribution ends in the west, as there has long been confusion between this species and its close relative species, the brush-tailed mulgara. The distributions of the crest-tailed mulgara and the brush-tailed mulgara overlapped in the past, but it seems that the two species of mulgara now live in different regions: brush-tailed mulgara in the northwestern deserts, and crest-tailed mulgara in the border area of South Australia, Queensland and NSW. They also prefer different habitats: crest-tailed mulgaras like cane grass dunes whilst the brush-tailed mulgara prefers spinifex country.



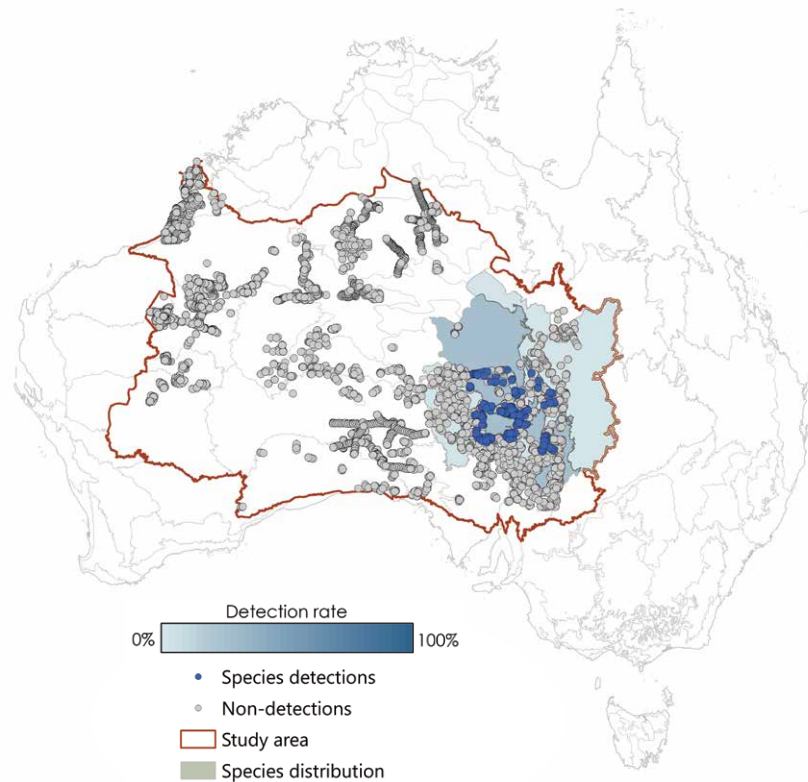
The maps above are based on data shared by data providers with the AZM project. The data are from track and sign surveys. This method is great for detecting species that live in sandy deserts, but not as good for species that prefer rocky habitats, or species with distributions that are mostly outside the central deserts. The method also works best for larger-bodied animals with tracks that are easily identified.

It is possible that extra surveys have been carried out over the past 40 years that have not yet been shared. If you see 'gaps' in the maps that you could fill by sharing your data, let us know.

## Crest-tailed mulgara detection rates

Crest-tailed mulgaras were detected at almost 3% of all surveys in the AZM dataset. It was the 13th most commonly recorded mammal species, and the 8th most commonly recorded native mammal species.

The map shows the average crest-tailed mulgara detection rate across all surveys carried out in each bioregion. Detection rates have been highest in the bioregion at the centre of this species' distribution. Crest-tailed mulgara populations are known to fluctuate in response to seasons and environmental conditions. They often live in small populations scattered around their distribution, so sometimes surveys may miss them. This means that if you want to track changes in the mulgara population, it is good to sample many sites over time.



## Animals that might be confused with the crest-tailed mulgara during survey

- Bilby
- Rabbit

Mulgara tracks look similar to very young rabbit tracks, but unlike crest-tailed mulgara, rabbits do not leave a distinct outline of their foot pads, because rabbits have fluffy feet. Mulgara toe and footprints

are more distinct, and their hind feet tracks are more rectangular. Mulgara tracks are smaller than adult rabbit and bilby tracks.

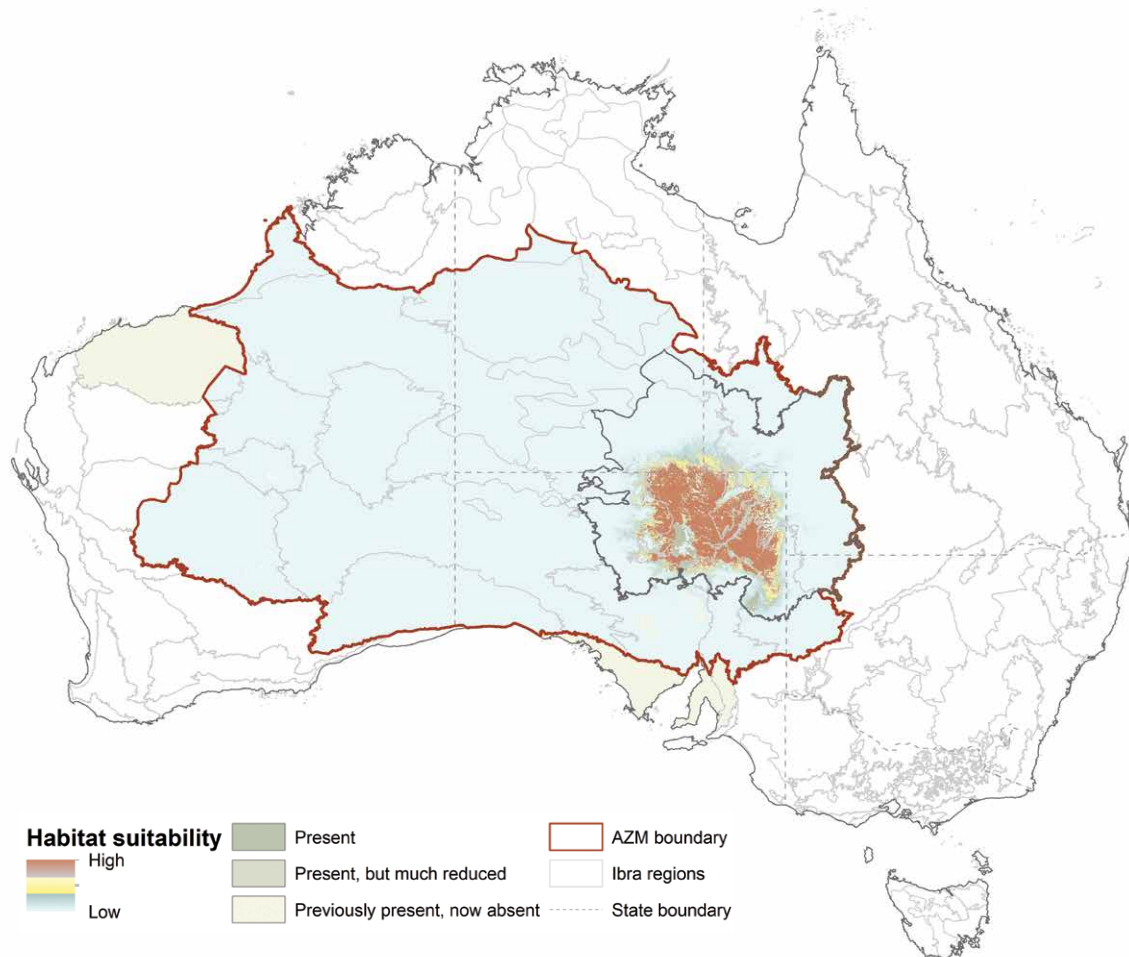
## Things to think about when surveying for crest-tailed mulgara

- Survey during good conditions (in the early morning is best, not too windy or straight after rain).
- Organise to do surveys at regular times every year- for example, before the wet or hot season (October) and in the early dry season or early cool time (April).
- Crest-tailed mulgara sign is more likely in country that they like: dune areas in desert country with cane grass. It is still important to survey in other areas. You might learn more about the types of habitat that mulgara prefer, or that mulgara are rarer when there are plenty of cats, or wrong way-fires.
- Follow advice of experienced trackers - know how to tell crest-tailed mulgara tracks apart from rabbits and others species before you go to survey.
- If you want to see changes over time, you will need to go back to the same areas to sample over several years. If you want to see if management actions (feral animal culling or fire), you need to sample before and after the action. You might need help from a scientist to make the sampling design strong.

## Crest-tailed mulgara habitat suitability

The habitat suitability model can tell us about where the crest-tailed mulgara is most likely to be found. The analysis considered climate factors like annual, seasonal and daily temperature and rainfall; landform factors like elevation and slope; soil factors; and habitat factors like the amount of vegetation (NDVI) and fire frequency.

The model suggests that crest-tailed mulgaras prefer areas of low elevation (under 200 m) with moderate average temperature (less than 24 degrees Celsius). These are the red-brown shaded areas of the map, in north-eastern South Australia.



### Further information

Arid Zone Monitoring project:

<https://www.nespthreatenedspecies.edu.au/projects/arid-zone-monitoring-surveys-for-vertebrates-across-arid-and-semi-arid-zones>

### References

<sup>1</sup> Wonarski J.C.Z., Burbidge A.H., Harrison P.L. (2014). The Action Plan for Australian Mammals 2012. (CSIRO Publishing: Melbourne).



National Environmental Science Programme

This project received support from the Australian Government's National Environmental Science Program.

The Arid Zone Monitoring project is a collaboration between the NESP TSR Hub and over 30 Indigenous ranger groups and Indigenous organisations, 8 NGOs and NRM groups, 5 government agencies institutions, and many individual researchers and consultants. The project has gathered track and sign data from across Australia's deserts, using it to map the distributions of desert species and their threats. The national database includes almost 50,000 species presence records from over 5300 unique sites and almost 15,000 site visits, over the period from 1982 to 2020. The project area was defined by using IBRA subregional boundaries - the project boundary captures Australia's desert subregions where track and sign-based surveys are commonly used. The project showcases the collective work carried out by all groups working across the arid zone, and lays the groundwork for creating ongoing, national-scale monitoring for desert wildlife.

Cite this publication as NESP Threatened Species Recovery Hub, 2021. Arid Zone Monitoring Species Profile: Crest-tailed mulgara, Project 3.2.5 findings factsheet.