

Arid Zone Monitoring Species Profile

Warru, Wiliji (Black-footed rock-wallaby)

Petrogale lateralis

Language names

There are five subspecies of the black-footed rock-wallaby, three of which live within the AZM project area. They each have different language names, but Warru is becoming widely used in central Australia, and Wiliji is used for the West Kimberley subspecies on Nyikina Mangala country. We use the common name Warru in this species profile. The subspecies also have different statuses under the EPBC Act:

- *P. lateralis lateralis* (Endangered)
Kakuya
Pakultarra

- *P.l. kimberleyensis* (Endangered)
Wiliji
- *P. l. centralis* (Vulnerable)
Arrwe
Wakulyarri
Warru
Yukulyarri

The two remaining subspecies live in islands off the southern coast of Australia, and are not recorded in the AZM dataset:

- *P. l. hacketii* (Vulnerable)
- *P. l. pearsonii* (Near Threatened)

IUCN Red List: Vulnerable



Warru

Animal Description

Warru are greyish-brown with a paler belly and chest, and a dark stripe running from its head down the spine. They have a dark tail and feet. Warru have short, thick, woolly fur especially around the base of the tail, rump and flanks

Key threats

- Predation by foxes and cats
- Habitat change from too much grazing (livestock, camels, goats, rabbits)
- Wrong-way fire (too often, too intense, too big)
- Climate change (changing rainfall, temperature, droughts)

Habitat

Warru live in colonies amongst rocks. They come out of shelter at night to forage, sometimes travelling away from the rocks. They like to bask on the rock on sunny days in the cold months.

Warru scat

Warru scats are pellets of different shapes, which are shiny when fresh, and dry to black or dark brown. The pellets have grasses and plant material in them.

Animals that might be confused with the Warru during survey

- Rothschild's rock-wallaby
- Yellow-footed rock-wallaby

Rothschild's rock-wallaby is found only in the Ashburton and Pilbara region and on islands of the Dampier Archipelago, outside the AZM project area. Yellow-footed rock-wallabies are in the south-east of the AZM project area, but their range doesn't overlap with Warru.

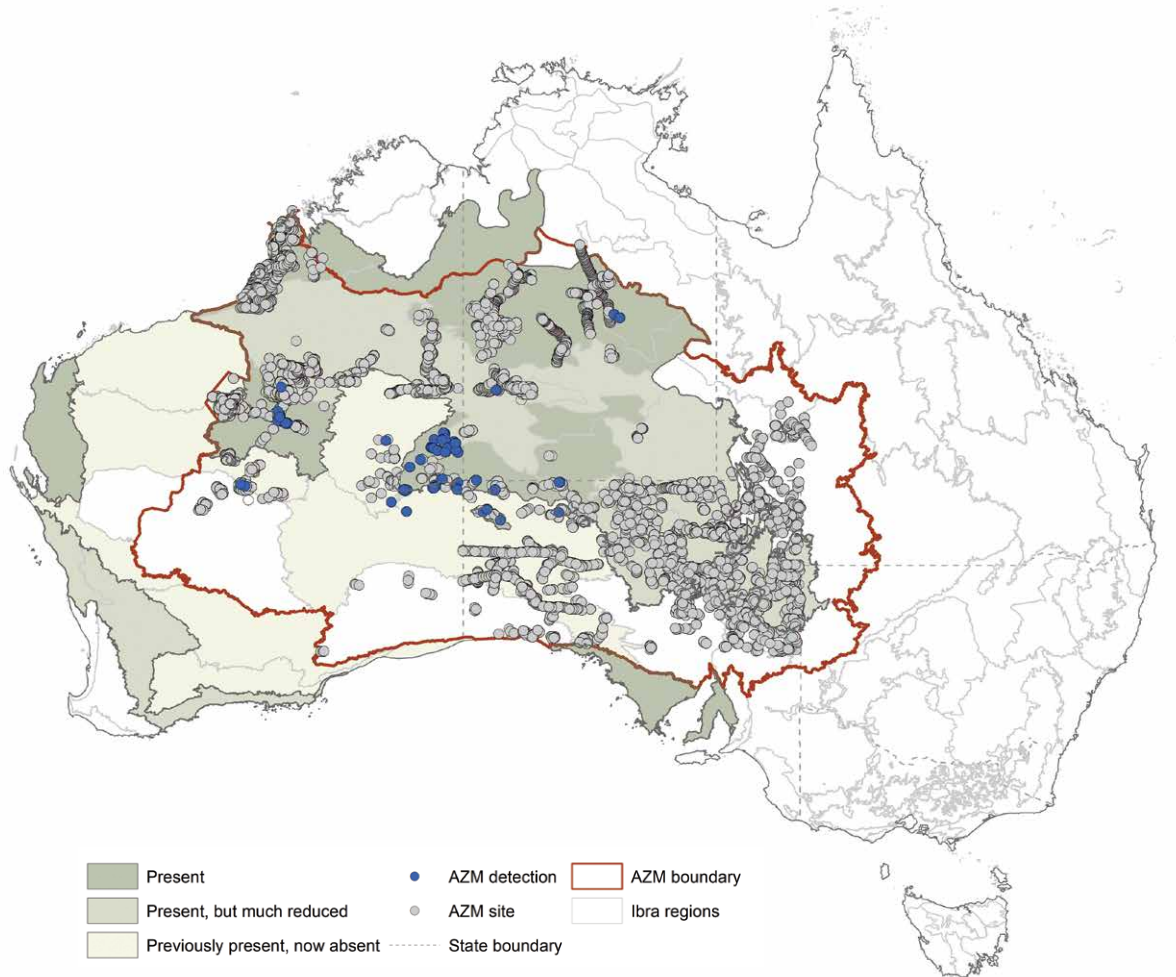


Warru scat

Arid Zone Monitoring project findings

Warru distribution

The map summarises detections of Warru in the AZM dataset. Each blue dot shows a survey site where Warru were recorded. The grey dots show all the other sites that were surveyed, but where Warru were not recorded. The records cover two subspecies of Warru (*P. l. centralis*, *P. l. lateralis*). Some of the records in the western deserts have been made in places where Warru are now very rare (the light beige-coloured bioregions). 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 Plan¹, and includes the range of all five subspecies.

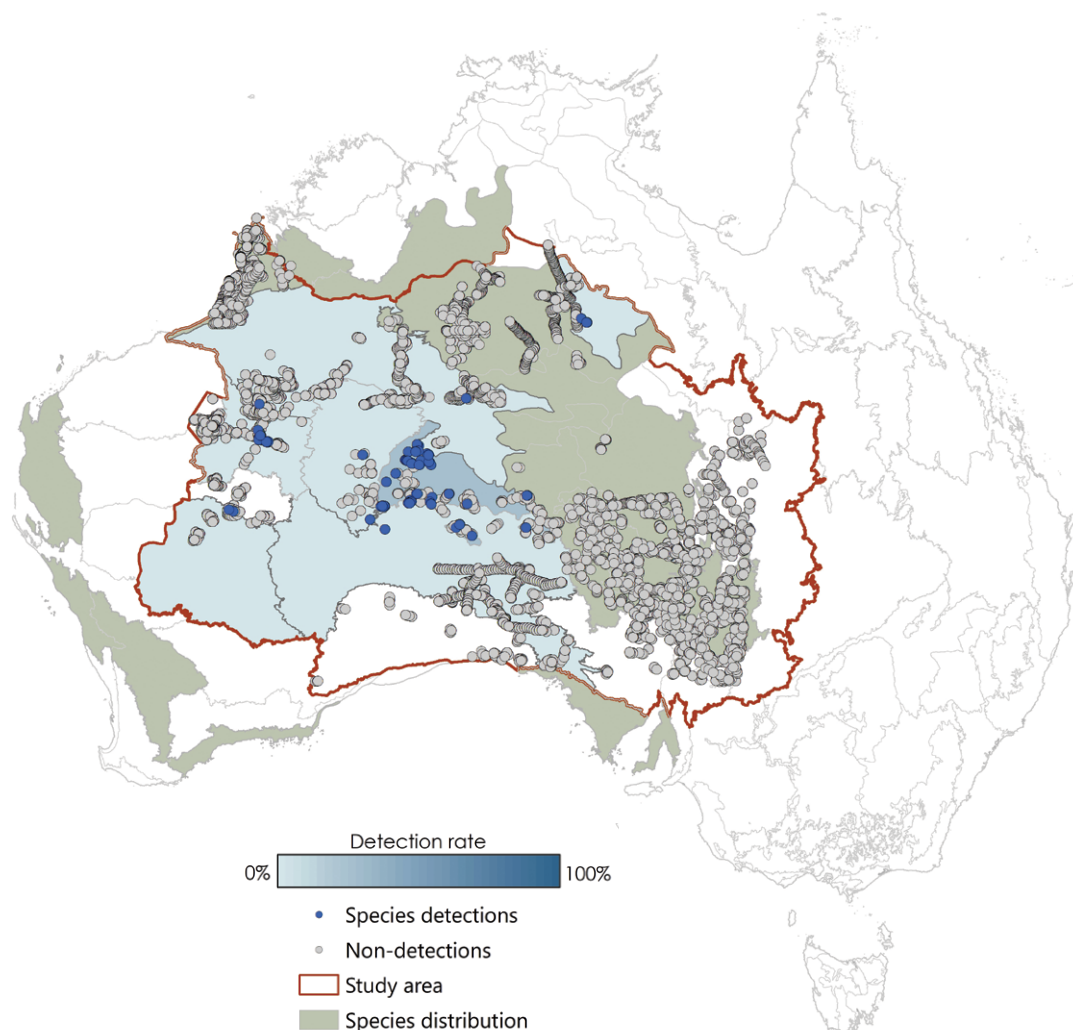


The map above show data shared by data providers with the AZM project. The data are from track and sign surveys. This method is great for detecting species that live in sandy deserts, but not as good for species that prefer rocky habitats, or species with distributions that are mostly outside the central 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 that have not yet been shared. If you see 'gaps' in the maps that you could fill by sharing your data, let us know.

Warru detection rates

Warru were detected rarely, at only 0.23% of all surveys in the AZM dataset. This is not surprising because Warru stick close to their rocky shelters, so surveys will only record them if they are done in or near rocks. The map below shows the detection rate for Warru across all surveys carried out in each bioregion. Detection rates have been highest in Ngaanyatjarra country (darker blue shading), possibly because the rangers carried out targeted surveys for Warru.



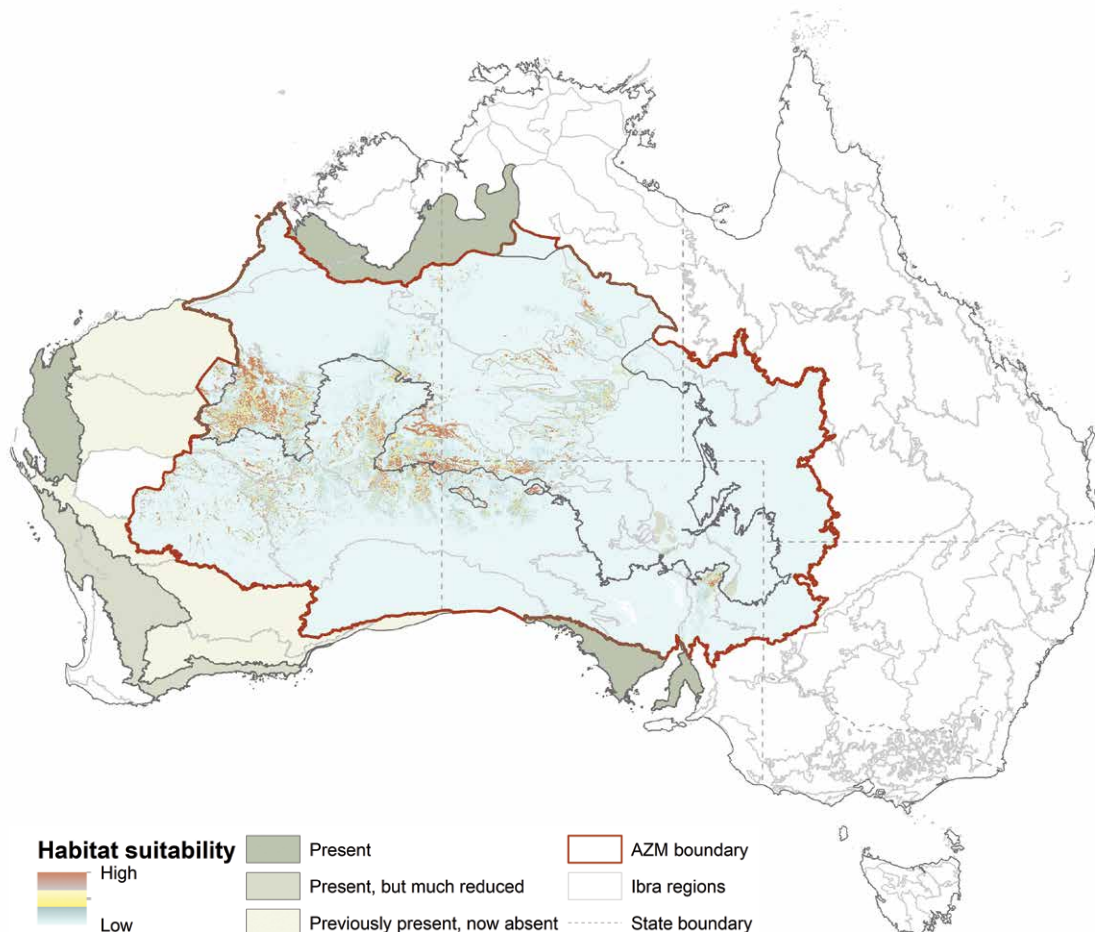
Things to think about when surveying for Warru

- 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).
- There are different ways of monitoring rock-wallabies: scat surveys, trapping and camera-trap surveys, so think about what will work best for you.
- Follow advice of experienced trackers - know how to tell Warru scat apart from euros and red roos 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) are working, you need to sample many different sites, before and after the action. You might need help from a scientist to make the sampling design strong.

Warru habitat suitability

The habitat suitability model can tell us about where Warru are 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 Warru are found in higher areas, in rocky places. These are the red-brown shaded areas of the map. The map only shows habitat suitability inside the AZM project boundary, but Warru are also found outside the project area. The habitat suitability model does not predict well in large areas where there has not been any sampling, and the number of records for Warru in the AZM dataset are small; getting more survey data would improve the model.



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

¹ Woinarski, J.C.Z & Burbidge, A.A. & 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: Warru, Wiliji (Black-footed rock-wallaby), Project 3.2.5 findings factsheet.