Arid Zone Monitoring
Species Profile

Rabbit

Oryctolagus cuniculus

Language names

Jipuku, Kuna-jirrnginjaningi, Kwey-ipert-ipert, Nani, Mula-mulka, Rapete, Rapita, Pintajatanpa, Mujunyku, Yurapiti

Introduced species: Competition and land degradation by rabbits is listed as a Key Threatening Process in national environmental law (the EPBC Act).

Rabbit.

Feral rabbit warren-close up.

Impacts

- Rabbits damage native vegetation, by grazing, browsing and eating seedlings before they can grow
- Rabbits dig up the roots of plants, cause soil erosion and degradation of large areas of country
- Rabbits compete with native wildlife for food and habitat
- Rabbits have caused declines in many native species of plants and animals

Animal Description

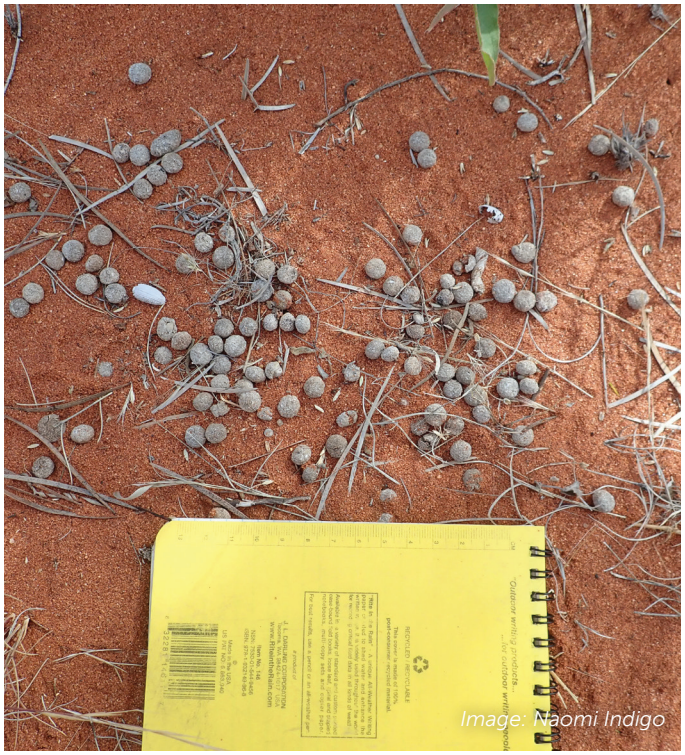
The rabbit is a small mammal with long hind legs, short front legs, short fluffy tail, and long ears. It weighs 1-2.25 kg. Rabbits vary in colour. They are often grey-brown or sandy brown; sometimes they are ginger, black or white.

Habitat

Rabbits are found right across Australia, except the monsoonal tropics. They have permanent populations around reliable water in desert country. Rabbits shelter in burrows, which can be quite deep and be part of a bigger system of burrows, forming a warren. These have many entrances connected by well-worn paths or runs. Sometimes they take over old warrens built by boodies, or burrowing bettongs.

Rabbit diggings and scats

Rabbit scats look like small round pills, often found in feeding areas or on slightly higher ground. Rabbit poo may be found in piles or heaps, they do this to mark their home territories.

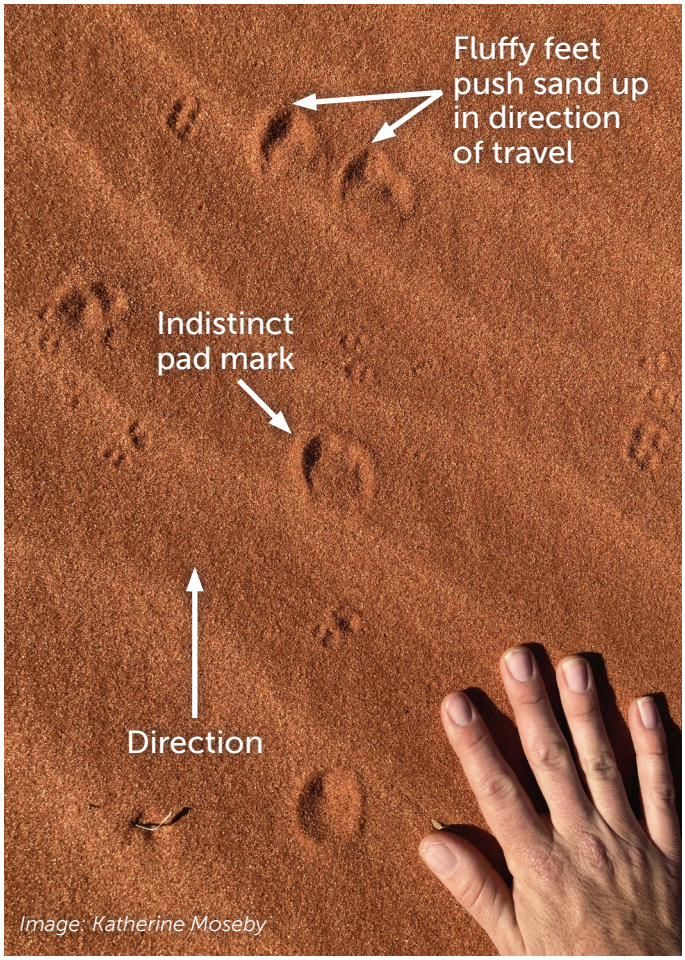


Older rabbit scats.

Fresh rabbit scats.

Rabbit diggings.

Rabbit warrens.



Bounding tracks of a rabbit in sand (arrow shows which way it is going).

Rabbit tracks

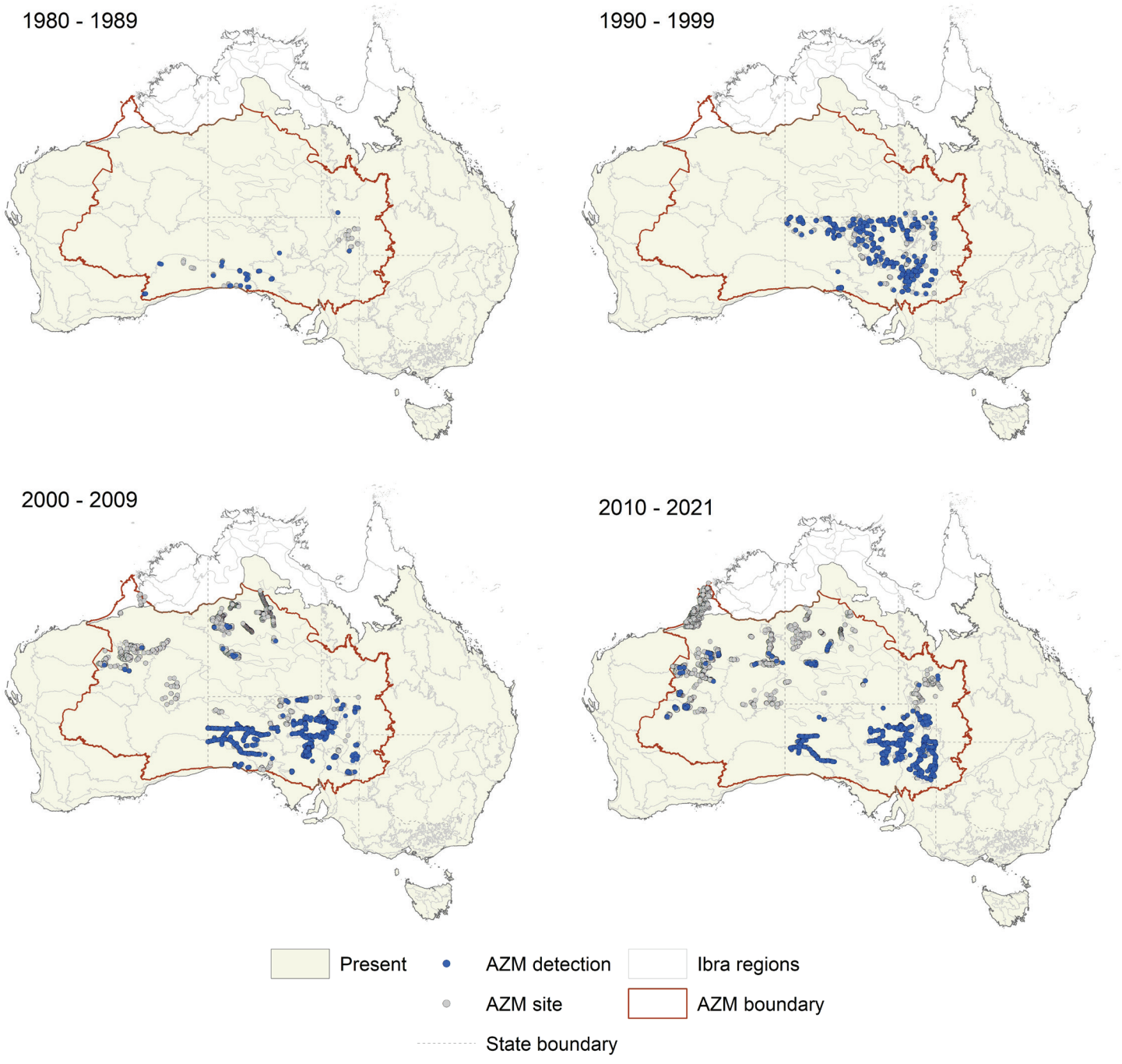
Rabbits have five small, clawed toes on their furry front and back feet. Its usually hard to see any toes and claws in the prints, because the fluffy feet make the edges of the print soft. The bounding gait of a rabbit means that the two large hind footprints (which are almost side by side), land ahead of the two smaller front foot tracks that are behind and almost in a line.

Arid Zone Monitoring project findings

Rabbit distribution

Rabbits were brought to Australia by Europeans. A few animals came on the First Fleet, and were bred for food, but not released. In 1859, some were released for sport shooting in Victoria. They quickly became feral, and after 50 years had crossed the continent, spreading everywhere except the tropics. This is the fastest invasion of a feral animal in the world.

The maps summarise the detections of rabbits over time in the AZM dataset. They show that rabbits are mostly detected in the southern deserts, and there is no clear trend in detections over time. Each blue dot shows a survey site where rabbits were recorded in that decade. The grey dots show all the other sites that were surveyed, but where rabbits 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 Australian Faunal Directory[1].



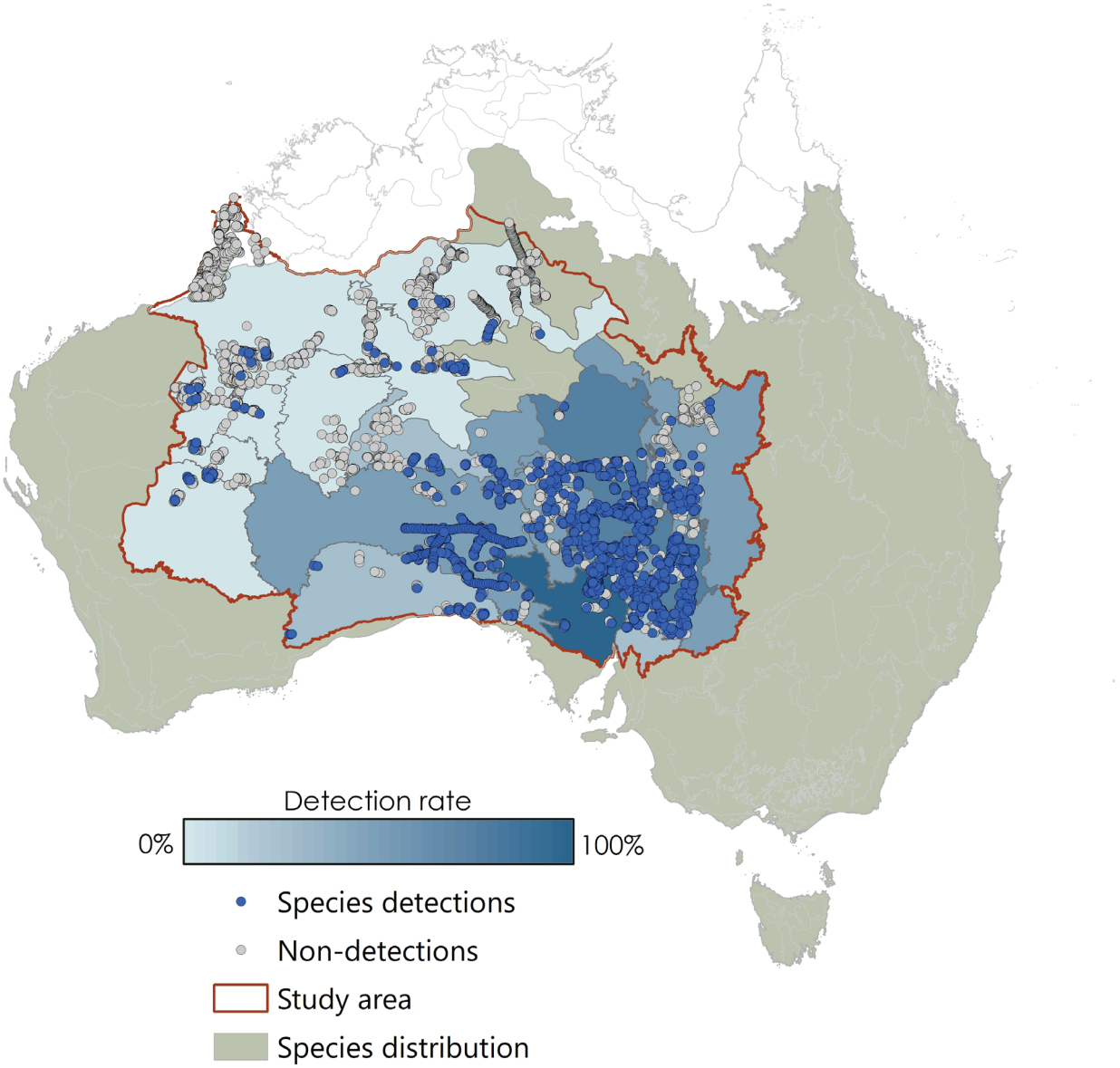
The maps above are based on data shared by data providers with the AZM project. The data are from track and sign surveys. This method is great for detecting species that live in sandy deserts, but not as good for species that prefer rocky habitats, or species with distributions that are mostly outside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

Rabbit detection rates

Rabbits were detected at over 47% of all surveys in the AZM dataset. It was the most commonly recorded species.

The map shows the detection rate of all surveys carried out in each bioregion since the 1980s. Detection rates for rabbits are higher in the southern and eastern deserts (deeper blue shading) compared with elsewhere.



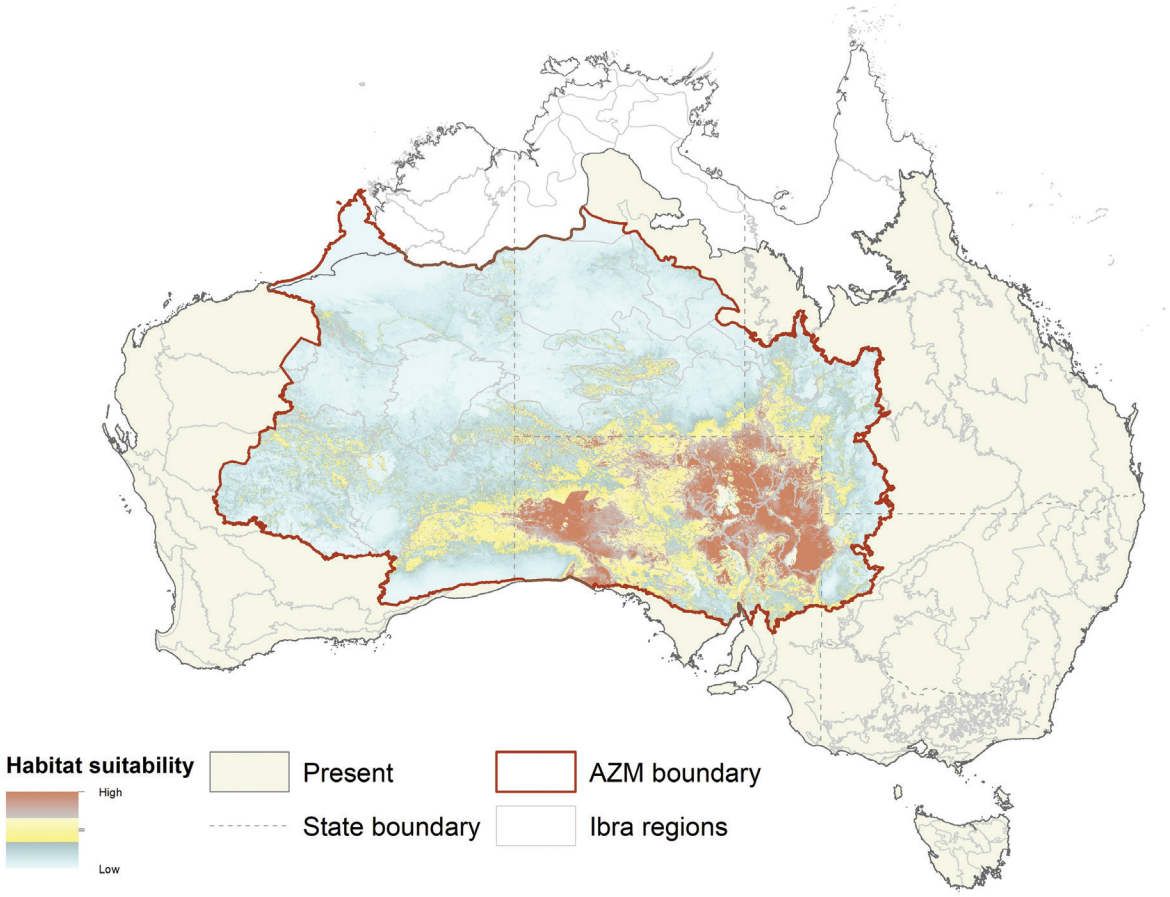
Things to think about when surveying for rabbits

- Survey during good conditions (in the early morning is best, not too windy and not 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).
- Follow advice of experienced trackers - know how to tell rabbit tracks apart from other species like bilbies 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 (such as rabbit culling) 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.

Rabbit habitat suitability

The habitat suitability model can tell us about where rabbits 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 rabbits are more common in areas of moderate temperature (<24 degrees Celsius) and low elevation (not too high above sea-level). The map shows us that we can expect to find rabbits in all parts of the south-eastern deserts, and that they might be especially common in some parts of South Australia, where the map shading is reddish brown. The map only shows habitat suitability inside the AZM project boundary, but rabbits are also found outside the project area, in the pale beige part of the map, and might be common in these places too. The habitat suitability model does not predict well in large areas where there has not been any sampling, for example in parts of the Great Victoria Desert; getting more survey data from these areas would improve the model.



Further information

Summary of options for managing feral rabbits:
https://pestsmart.org.au/wp-content/uploads/sites/3/2021/03/CISS-Glovebox-Guide-Rabbit-web.pdf

Arid Zone Monitoring project:
https://www.nespthreatenedspecies.edu.au/projects/arid-zone-monitoring-surveys-for-vertebrates-across-arid-and-semi-arid-zones

References

[1] ABRS. Australian Faunal Directory. 2021; https://biodiversity.org.au/afd/home. Accessed June, 2021.

Threatened Species Recovery Hub
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: Rabbit, Project 3.2.5 findings factsheet.