Arid Zone Monitoring
Species Profile

Perentie

Varanus giganteus

Language names
Atywemp, Dilti, Echunpa, Lirripitji, Yalapara

National status: Not listed

IUCN Red List: Least concern

Perentie.

Animal Description
The perentie is a large, long-necked lizard with strong limbs and long tail. It has dark brown or black, large circular patches with pale centres, in rows across its body. The head, neck and throat are cream with black net-like markings.

Key threats
Foxes may eat young perentie in parts of their range, but the species is not under threat.

Habitat
The perentie shelters in rocky outcrops, in rock crevices or burrows, then comes out to forage in the desert sandplains, dunes and claypans.

Perenties shelter in rocky outcrops, rock crevices or burrows.

Goanna scat (perentie scats are similar).

Perentie scat

Reptile scats contain uric acid and usually have a small white hard section.

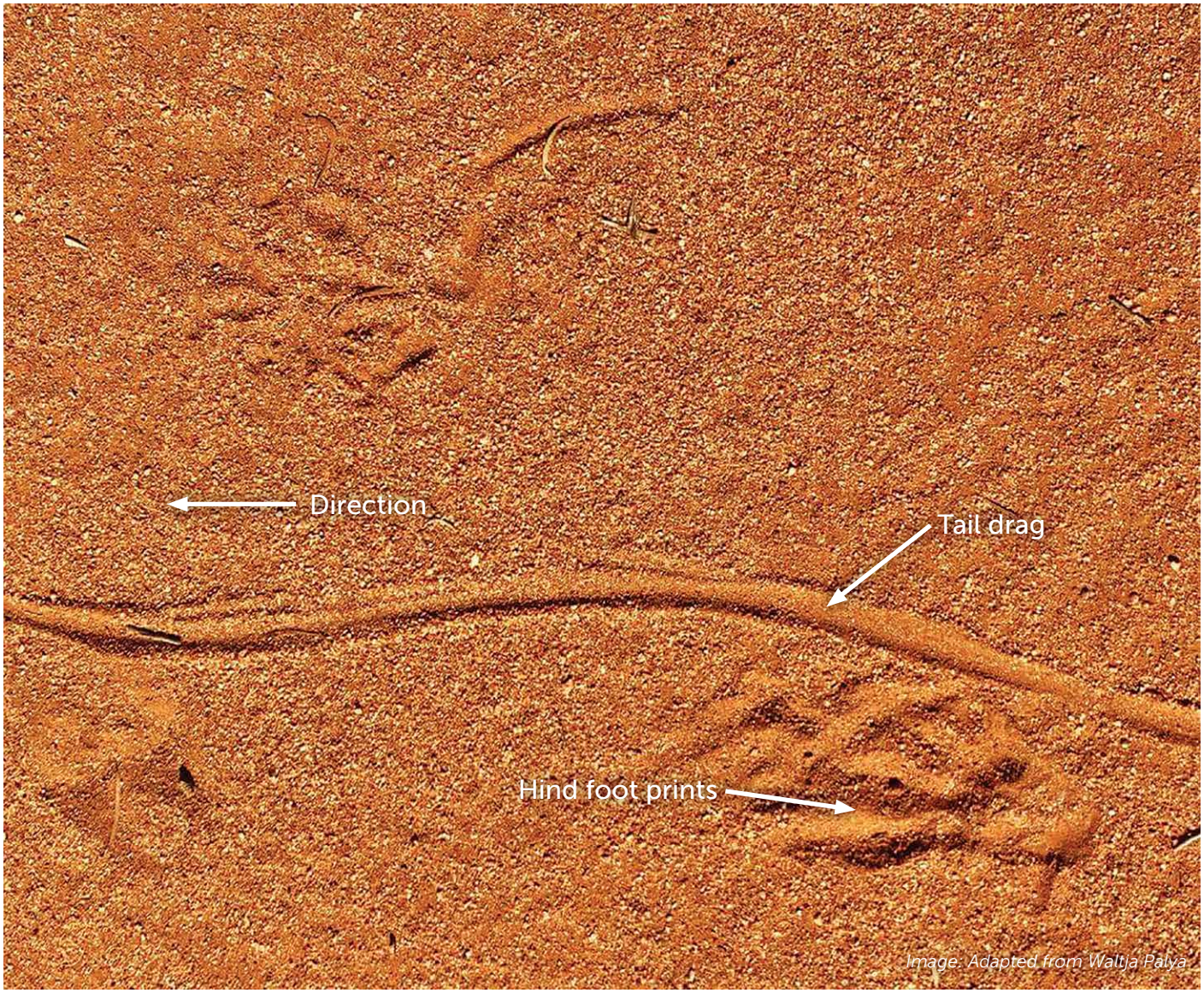
Animals that might be confused with the perentie during survey

- Sand goanna (Gould's goanna)
- Yellow-spotted goanna

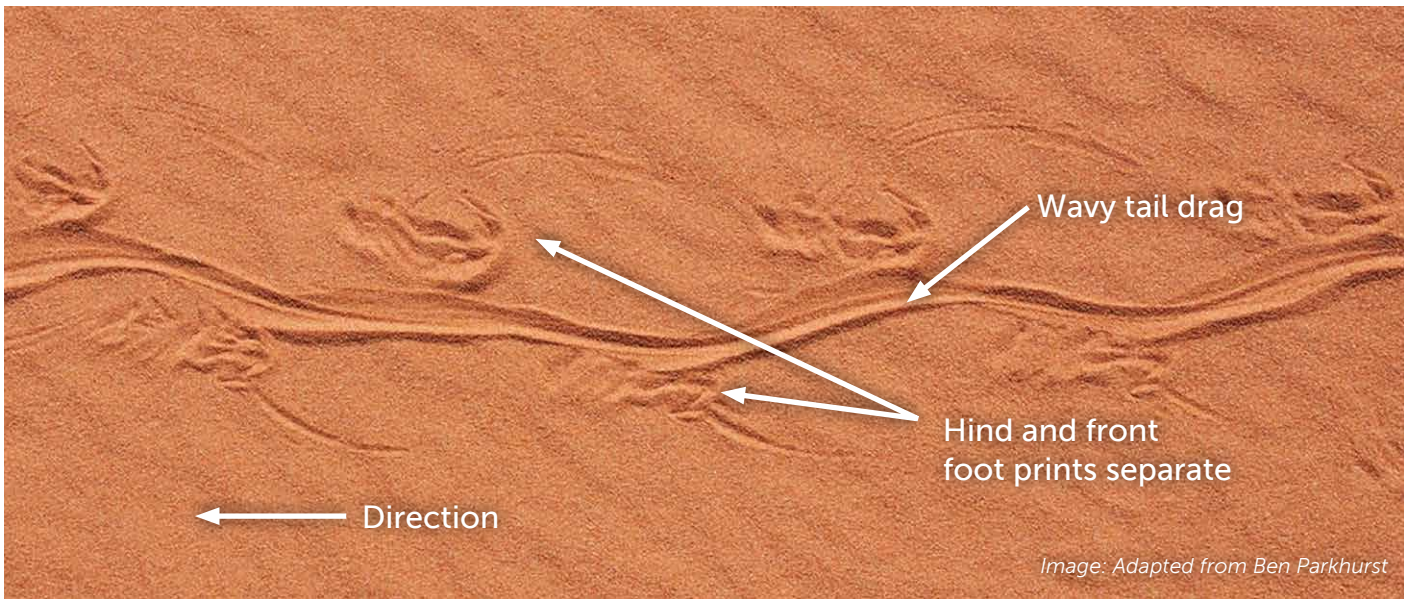
It can be hard to tell these species of large goanna apart from their tracks. Sand goanna (or Gould's goanna) have a wavier tail drag and smaller set of paired front and hind foot prints on each side than Perentie or yellow-spotted goannas.

Perentie tracks

Goannas leave a set of footprints with a tail drag through the middle. Tracks of a fully grown adult perentie are large, and the hind and fore front prints almost overlap.



Perentie track. Notice hind and front prints almost overlap, foot prints large.

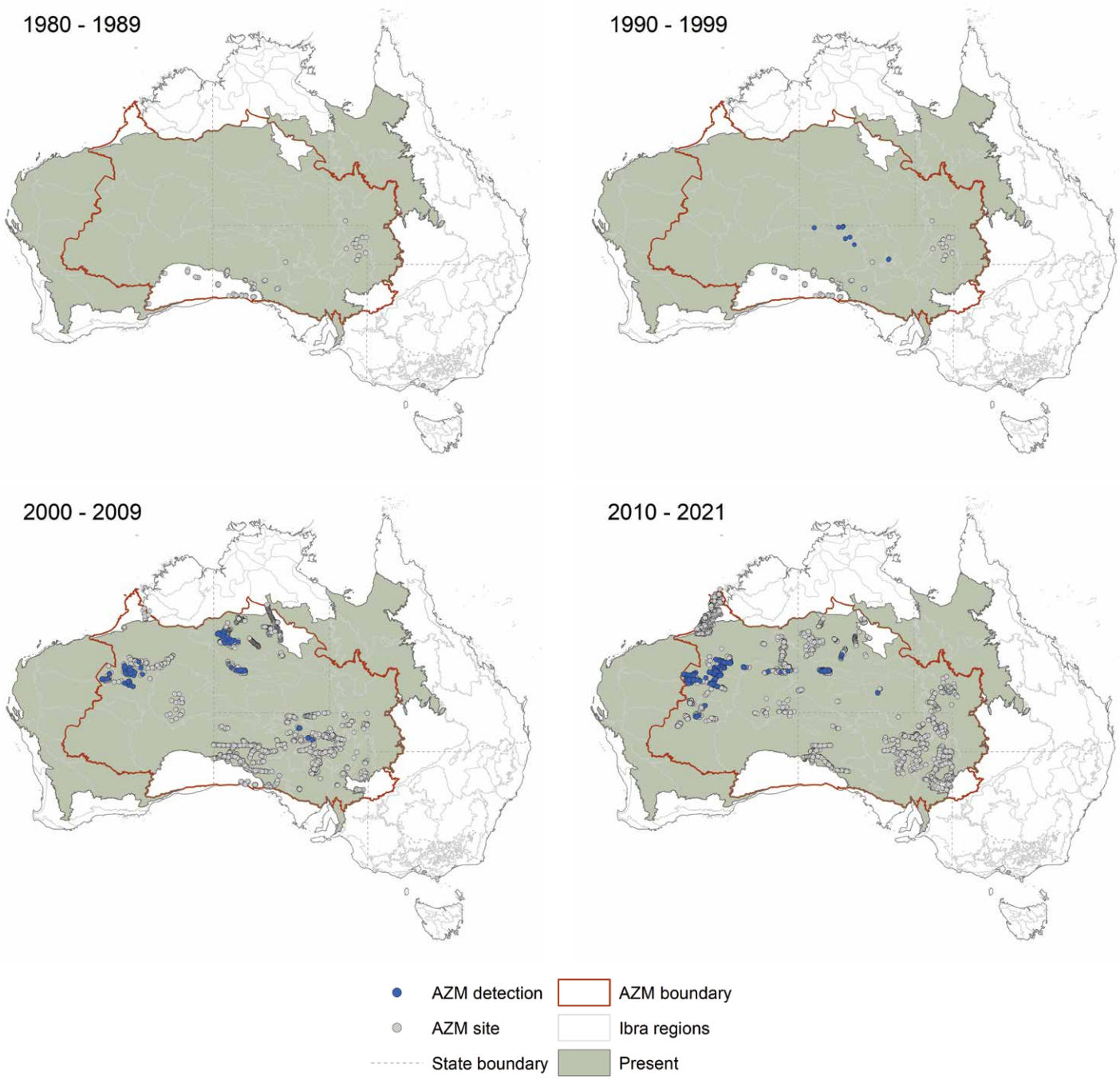


Sand goanna - note the smaller front prints separate and in front of the larger hind prints. Thick white arrow which way it is going.

Arid Zone Monitoring project findings

Perentie distribution

The maps summarise detections of perentie over time in the AZM dataset. Each blue dot shows a survey site where perentie were recorded in that decade. The grey dots show all the other sites that were surveyed, but where perenties 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] and the IUCN[2].



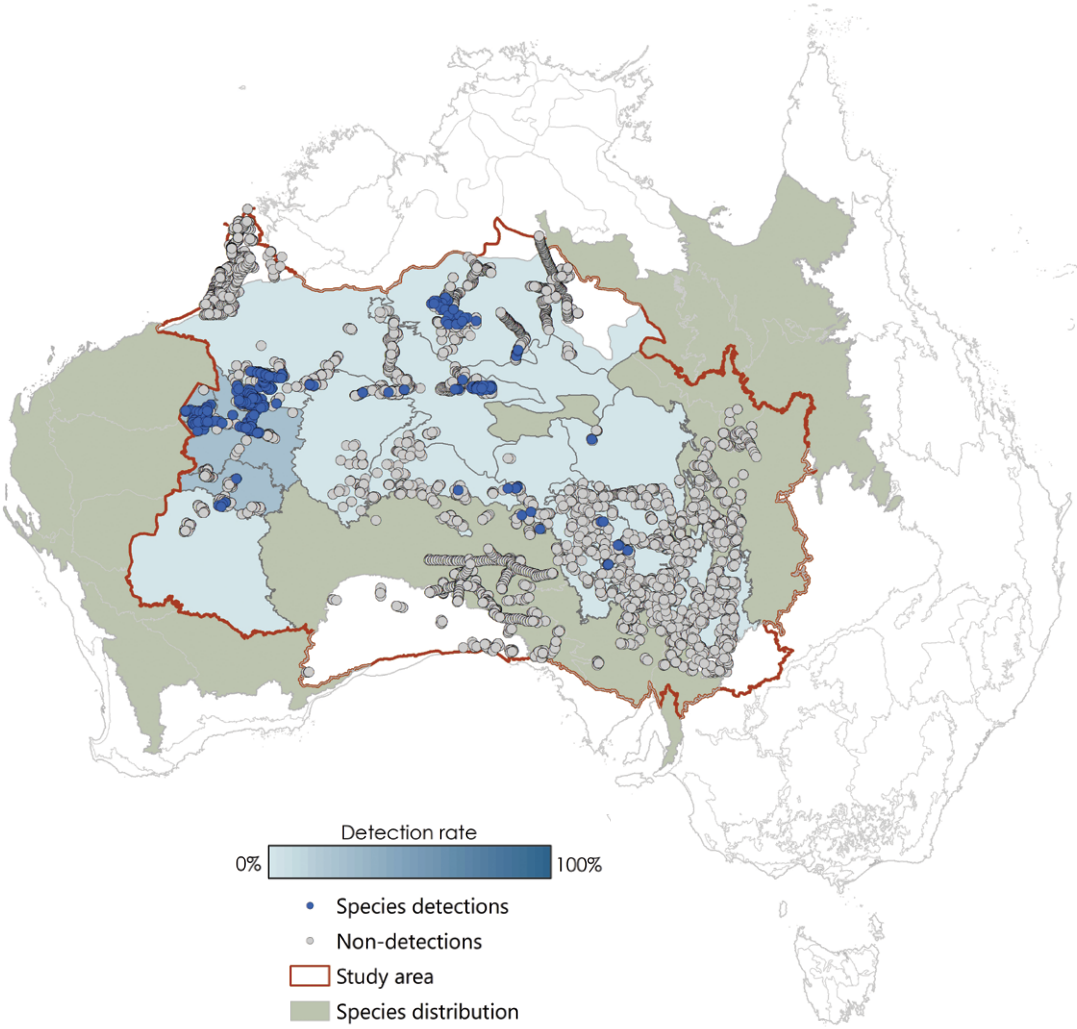
The maps above show data shared by data providers with the AZM project. The data are from track and sign surveys. This method is great for detecting species that live in sandy deserts, but not as good for species that prefer rocky habitats, or species with distributions that are mostly outside the central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

Perentie detection rates

Perenties were detected at over 3% of all surveys in the AZM dataset. It was the second most commonly recorded reptile species, after sand goannas (Gould's goannas). The AZM database includes almost 2000 records of 'goanna' that are not identified to species – some of these may be perentie.

The map below shows the detection rate for perentie across all surveys carried out in each bioregion, since the 1980s. Detection rates have been highest in the western desert (darker blue shading).



Things to think about when surveying for perentie

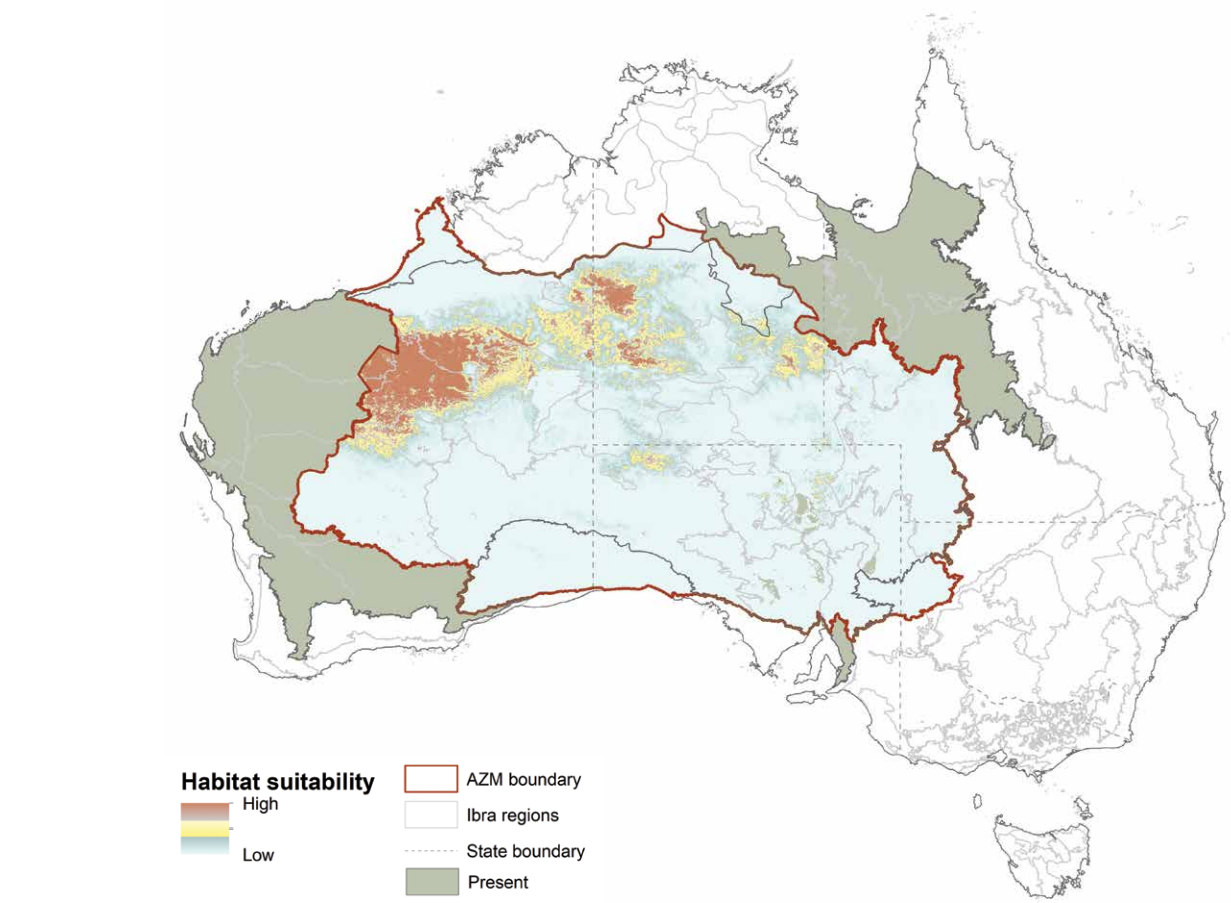
- Survey during good conditions (in the early morning is best, not too windy and not straight after rain).
- Organise to do surveys at regular times every year – for example, before the wet or hot season (October) and in the early dry season or early cool time (April).
- Follow advice of experienced trackers - know how to tell perentie tracks apart from other goannas 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 right-way 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.

Perentie habitat suitability

The habitat suitability model can tell us about where the perentie 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 perenties prefers places of moderate elevation (>200 m above sea level), that are warm on average (>22 degrees), but with large differences between day and night temperatures. These are the red-brown areas of the map in north-western Australia.

The map only shows habitat suitability inside the AZM project boundary, but perentie 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, for example in parts of the Great Sandy Desert; getting more survey data from these areas 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] ABRS. Australian Faunal Directory. 2021; https://biodiversity.org.au/afd/home. Accessed June, 2021.

[2] Species distribution information compiled during a 2017 reptile assessment carried out by IUCN (https://datadryad.org/stash/dataset/doi:10.5061/dryad.83s7k), and updated by expert opinion (R. Tingley).

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: Perentie, Project 3.2.5 findings factsheet.