Arid Zone Monitoring
Species Profile

Emu

Dromaius novaehollandiae

Language names

Ankerre, Arleye, Arrang, Atnhelengkwe, Ilia, Jakipirri, Jebarra, Kalaya/Karlaya, Karnanganja/Karnanganyja, Nyindi, Pijarta, Tjakipiri, Wirnirni (emu chick), Yankirri

National status: Not listed

IUCN Red List: Least concern

Emu with chicks.

Animal Description

Tall flightless bird with long legs and neck, grey shaggy feathers and blue and white skin on the face.

Key threats

Although emus are very common in some parts of their range, in other areas they have become rarer. This could be happening if wrong-way fire is reducing the emu's food, or if fires happen when emus are nesting.

- Habitat being lost and changed
- Too much grazing by feral herbivores (cattle, rabbits and mice)
- Wrong-way fire
- Climate change (changing rainfall, temperature, droughts)
- Fences and roads

Habitat

Emus eat a broad range of plants, grasses, fruits, seeds, flowers, herbs and insects.

Favourite emu food plants include Acacia and Cassia species, the currant bush (*Scaevola spinescens*) and fruit from the quandong (*Santalum spicatum*).

Emu nest.

*Quandong (*Santalum spicatum*).*

*Currant bush (*Scaevola spinescens*).*

*Giant crested grasshopper (*Macrolopholia spp*).*

Emu scat

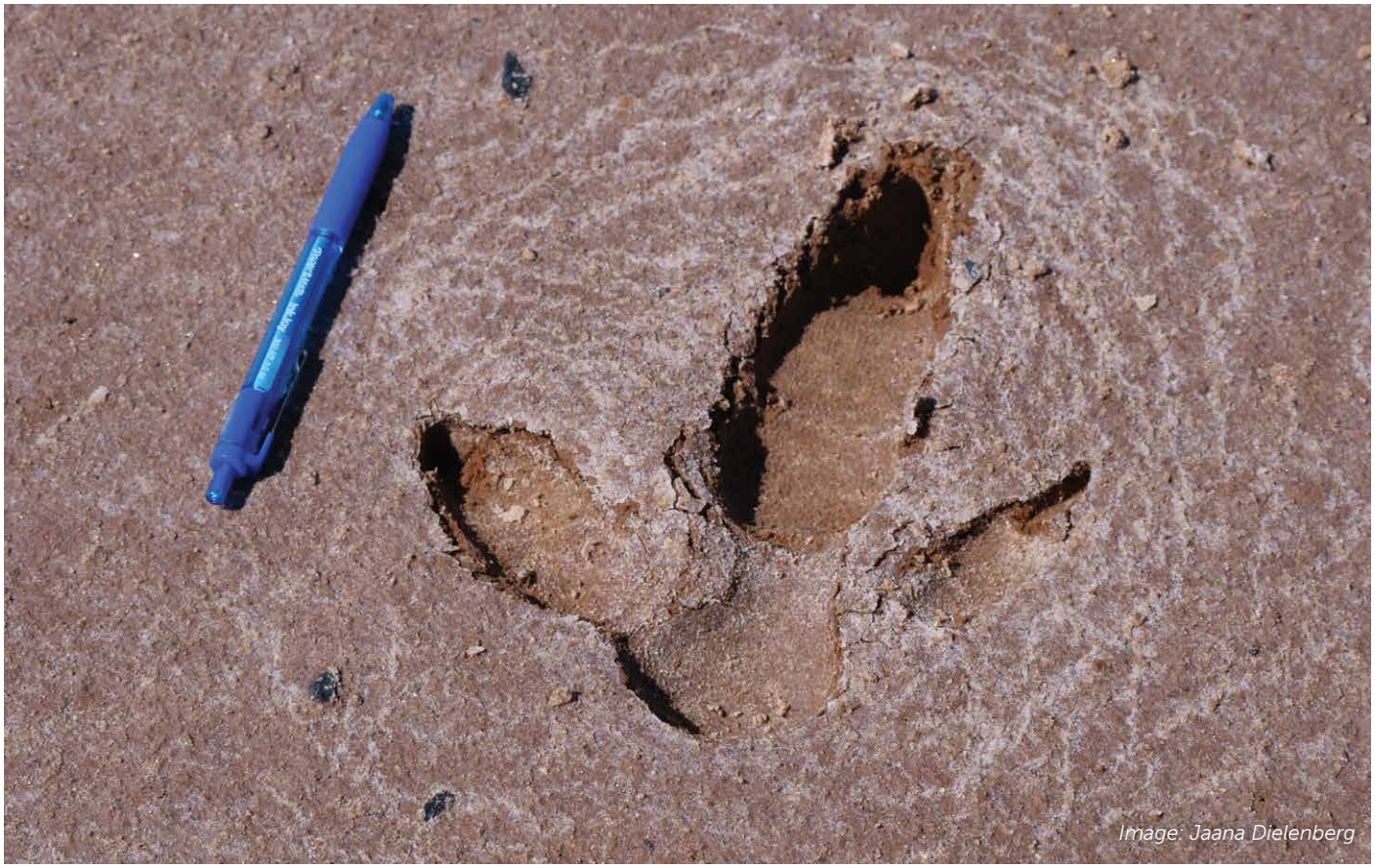
Emu scats can look different depending on what they eat.

Quandong seednuts in emu scat. Quandong is one of the favoured food plants of the emu.

Emu scats look different, depending on what they eat.

Emu tracks

The emu has three broad toes. They leave tracks that are alternating (one print in front of the other) rather than paired (like kangaroo and wallaby).



Emu track. Emus have three toes – the central toe is 14-17cm long and 2-3cm wide.

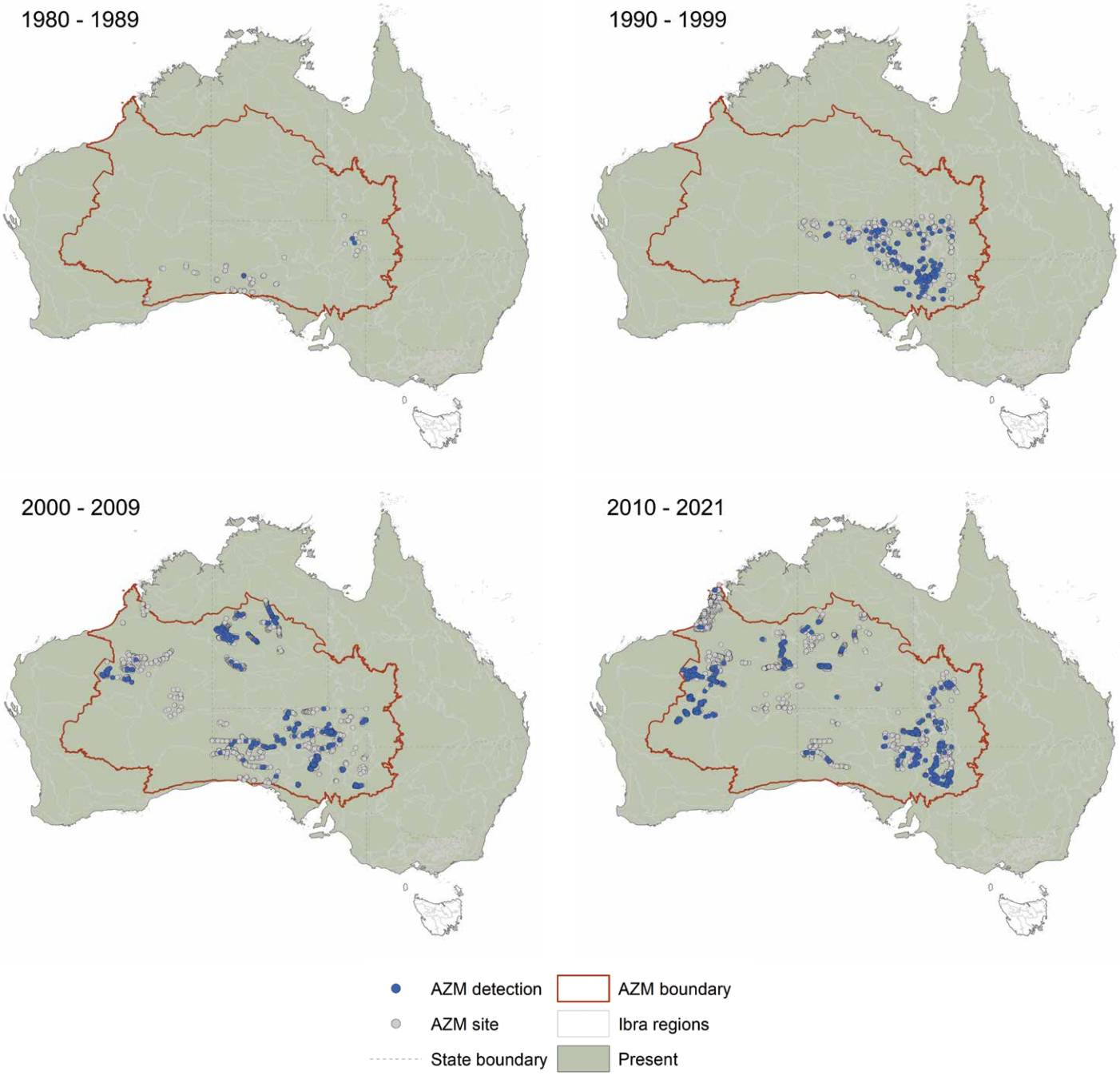
Emu tracks (arrow shows which way it is going).

Emu tracks (arrows shows which way it is going).

Arid Zone Monitoring project findings

Emu distribution

The maps summarise the detections of emus over time in the AZM dataset. They show that emus have been recorded throughout the AZM project area. Each blue dot shows a survey site where emus were recorded in that decade. The grey dots show all the other sites that were surveyed, but where emus were not recorded in that decade. These records were made by Indigenous Ranger groups, land councils, NGOs, government agencies and university researchers. Emus are also found outside the AZM project area, in most parts of Australia (dark shading on map). The information about the overall distribution in the map background is taken from Australian Faunal Directory[1].



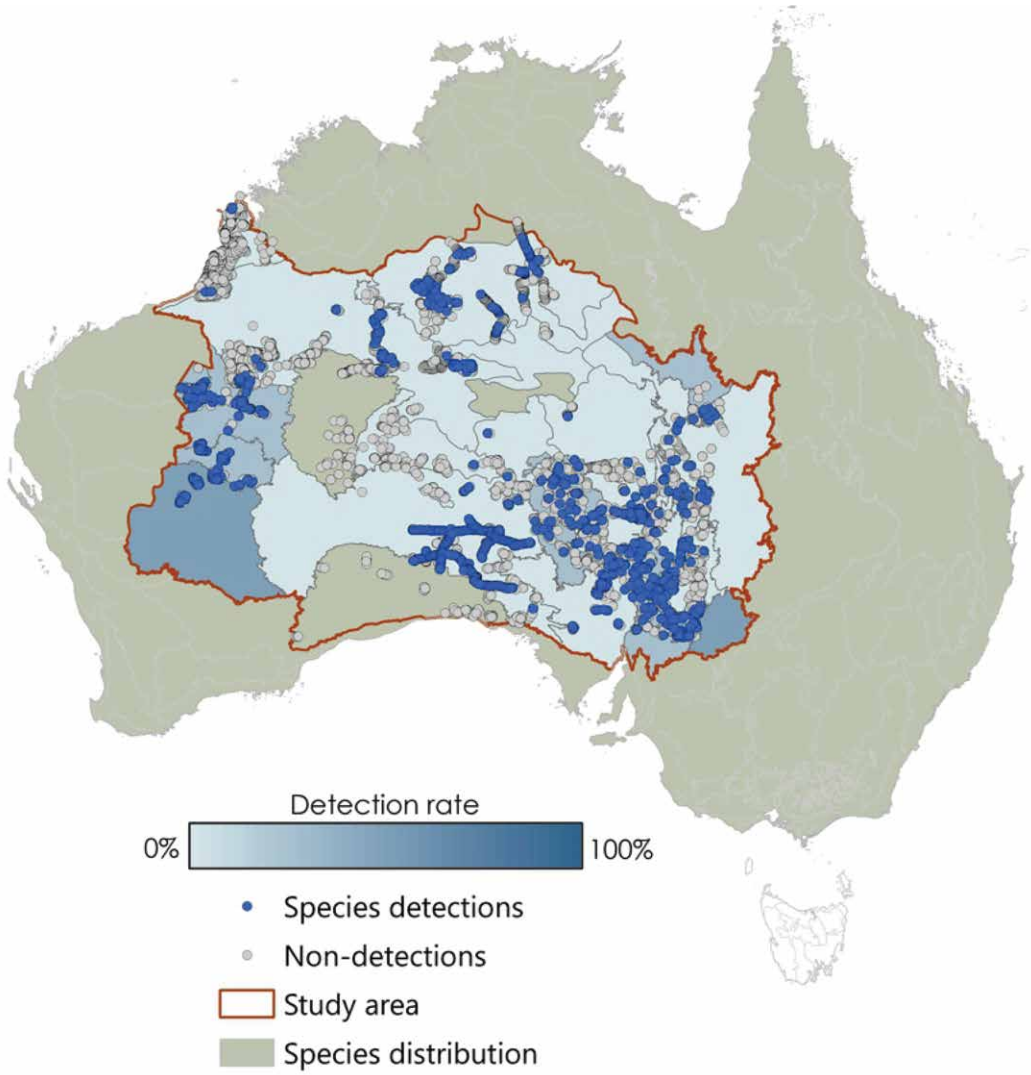
The maps above show data shared by data providers with the AZM project. The data are from track and sign surveys. This method is great for detecting species that live in sandy deserts, but not as good for species that prefer rocky habitats, or species with distributions that are mostly outside the central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

Emu detection rates

Emus were detected at over 9% of all surveys in the AZM database. It was the second most commonly recorded bird species.

The map below shows the average emu detection rate across all surveys carried out in each bioregion, since the 1980s. Detection rates for emus are highest in the southeastern deserts and the southwestern deserts. These bioregions are near agricultural areas, where emus can reach higher densities. A detailed analysis of emu detections at a subset of sites within the AZM dataset that were revisited over five or more years shows that emu detections go up and down over time, but are higher when there is more green vegetation, and are usually higher in longer unburnt vegetation.



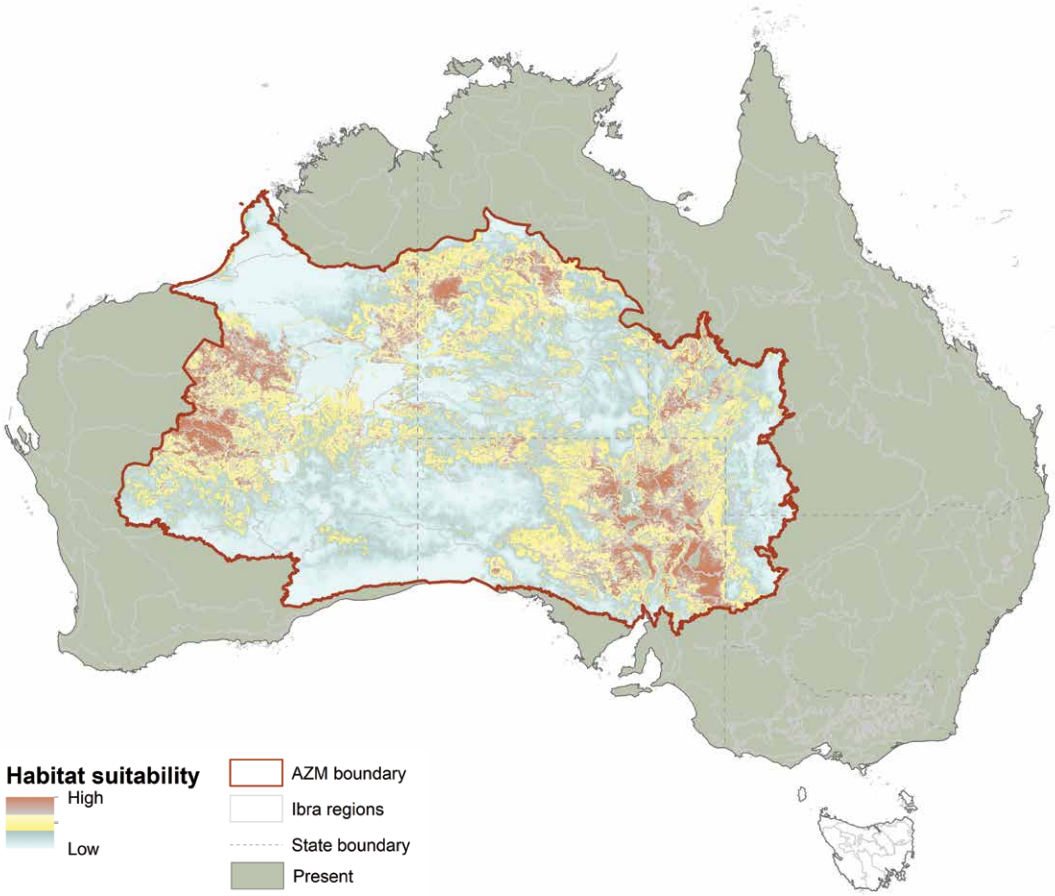
Things to think about when surveying for emus

- 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).
- 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.

Emu habitat suitability

The habitat suitability model can tell us about where emus 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 emus are widespread across a range of climate, landforms, soil types and fire frequencies, except in areas close to the sea. These are the red-brown shaded areas of the map. The map only shows habitat suitability inside the AZM project boundary, but emus are also found throughout most of Australia except in Tasmania. 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 or the Great Victoria 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.

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.

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