# Arid Zone Monitoring Species Profile

# Malleefowl

Leipoa ocellata

#### Language names

Gabiny, Gnow, Nganamara, Ngarnamarra, Warntu

#### National status: Vulnerable

#### **IUCN Red List: Vulnerable**



Malleefowl.

#### **Animal Description**

The malleefowl is a large bird that lives on the ground. Its feathers are mottled grey, cream and rufous. Its grey head and neck, has a brown throat with a black line like a neck tie. Malleefowl are shy and hard to see.

## Key threats

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

#### Habitat

Malleefowl like dry, open forest and mallee country in arid and semi-arid areas. They need sand and lots of leaf litter to build mounds for breeding. They feed on seeds, flowers, fruit, herbs, insects, tubers and fungi. Malleefowl are sensitive to fire – they don't live in places that have burnt in the last few years. Frequent fire can damage their habitat, take away the leaf litter they need for nesting and their food supplies, and also makes them more prone to being hunted by cats and foxes.

## Malleefowl mounds

Malleefowl build mounds to incubate their eggs. Looking for mounds that are being cared for by the birds is the best way to know if malleefowl are on country. Male birds look after the mounds, which are to 5m in diameter and 1m high, and are made up of sand, leaves bark and twigs. Mounds will have different shapes, depending on whether they are active or not.

Malleefowl will tend to use the same mounds for a few years. Sometimes, they build new mounds, so it is good to check areas for new mounds every 5-10 years.



Malleefowl mound.



Malleefowl mound (with leaf litter).

# Malleefowl tracks

Malleefowl have a three-toed print, usually 10-12cm long.



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



# Animals that might be confused with malleefowl during survey

- Bustards
- Crows

Malleefowl walk like supermodels, with each foot placed directly in front of the other one. Bustards also walk like supermodels, but don't have a back toe print. Malleefowl tracks could be confused with crow tracks, except that malleefowl tracks are larger, with straight toes that are splayed wider apart. The profile on 'birds' has pictures of the tracks from these and other bird species.

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

# Arid Zone Monitoring project findings

# Malleefowl distribution

The maps show the malleefowl detections in the AZM dataset over time. Each blue dot shows a survey site where malleefowl were recorded that decade. The grey dots show all the other sites that were surveyed in that decade, but where malleefowl were not recorded. The information about the overall distribution in the map background is taken from the Australian Faunal Directory<sup>1</sup>. Malleefowl used to occur across most of the southern desert country (all the shaded bioregions on the map). Since European colonisation, they have disappeared from large parts of their range and hang on now in small patches.



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.

# Malleefowl detection rates

Malleefowl were detected at less than 1% of all surveys in the AZM dataset. They were the third most commonly recorded bird species in the dataset.

The map shows the detection rate for malleefowl across all surveys carried out in each bioregion, since the 1980s. Detection rates have been similar from east to west (blue shading is the same).



### Things to think about when surveying for malleefowl

- 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 malleefowl tracks apart from other birds 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.
- If you find active malleefowl mounds on your country, the National Malleefowl Recovery Team would love to hear about it. They can help ranger groups collect information in the same way, to provide good information about population trends.

### Malleefowl habitat suitability

The habitat suitability model can tell us about where malleefowl 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 malleefowl are mostly found in areas of cooler climates (<20 degrees Celsius) where soil has low clay content. These are the red-brown areas of the map in the Great Victoria Desert. The map only shows habitat suitability inside the AZM project boundary, but malleefowl are also found further outside the project area, in the darker shaded regions of the map. The habitat suitability model does not predict well in large areas where there has not been any sampling, for example in the western part of the Great Victoria Desert; getting more survey data from these areas would improve the model.



#### Further information

National Malleefowl Recovery Team: https://www.nationalmalleefowl.com.au/

National Malleefowl Monitoring Manual:

https://www.nationalmalleefowl.com.au/wp-content/uploads/2020/08/Monitoring-Manual-v2020\_1.pdf

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



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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