

National Environmental Science Programme



Outcomes of mankarr monitoring in 2017 and 2018

Survey work carried out by Kanyirninpa Jukurrpa rangers from Parnngurr, Punmu, Jigalong and Kunawaritji

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Kanyirninpa Jukurrpa





Background

This report summarises the outcomes of mankarr surveys that were carried out by Kanyirninpa Jukurrpa (KJ) ranger teams in 2017 and 2018 as part of the mankarr monitoring project. The information was collected by ranger teams from Parnngurr, Punmu, Kunawaritji and Jigalong. Raw data is available in the KJ mankarr database, along with the steps to create the graphs that are included in this report.

This work is part of the KJ plan for monitoring mankarr populations over time.

The project is a collaboration between the traditional owners of the Martu Determination through Kanyirninpa Jukurrpa (KJ) Ranger program and researchers at the University of Melbourne supported by the Australian Government's National Environmental Science Program through the Threatened Species Recovery Hub, BHP, The Nature Conservancy, Department of the Prime Minister and Cabinet, Parks and Wildlife Services, and Rangelands NRM WA.

Learning about mankarr

With the first years of data we get:

- Better information on where mankarr are
- Trial of the method
- Information on fire, bush-foods, feral animals

Over time with several years of surveys, we will get an understanding of:

- Whether mankarr populations are stable, declining or increasing.
- Where feral animals are common, and maybe help with where control should happen
- How burning, bush-foods and feral animals influence where mankarr are.

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Photos on cover page:

"Jigalong women rangers team point out mankarr burrow" "Punmu rangers trying out the mankarr search" "Parnngurr rangers recording data after a mankarr search." "Kunawaritji rangers try out the mankarr search method" Images: A. Skroblin and KJ

Overview of survey work 2017 and 2018

Method trial (2017): In 2017, the four ranger teams carried out 30 surveys as part of trialling and refining the Martu mankarr search method.

Mankarr survey roll-out (2018): In 2018, the new mankarr survey method was used by Punmu and Parnngurr rangers to survey 42 sites. Jigalong and Kunawaritji will join soon.

Between 2 and 17 rangers were involved in carrying out surveys at a site. More rangers participated in surveys at each site during the trial and refinement of the method in 2017, and during training in 2018. On average seven rangers searched at each site.

KJ rangers have carried out 72 mankarr surveys over 2017 and 2018.

A total of 187 ranger hours were used to survey for mankarr by the four communities in 2017 and 2018.



Lots of mankarr sign was found

As part of the monitoring design, ranger teams identify likely mankarr habitat, and set up permanent survey sites in these areas (called monitoring zones).

Mankarr sign was common in the monitoring zones. Sign was found at 73% of sites that were visited as part of trialling the methods in 2017, and 80% of survey sites in when the monitoring program started in 2018.



Mankarr sign was found at 80% of the monitoring sites in 2018.



The mankarr has the highest occurrence at the sites visited by Punmu rangers.



Old and fresh sign were common

At most sites where mankarr were detected, rangers found a mixture of old and fresh sign (49%). There were some sites with only old sign (25%), and a few sites had only fresh sign (4%). Fresh sign is 1 - 3 days, while old sign is more than 3 days. As you would expect, more old sign was detected and recorded than fresh sign.

Finding fresh and old sign at a site suggest that mankarr have been using that area for more than a few days – not just walking through.

Rangers commonly found tracks, diggings and burrows, and less often scats. At some sites, rangers measured the length of track-gait to work out the size of the mankarr which can help us guess their age. In most cases large mankarr, most probably adult males were measured. Some medium sized mankarr tracks, which were either females or small males, were found too. Encouragingly, 25% of tracks that were measured were found to be juvenile size.



Rangers found lots of tracks, scats, diggings and burrows

The number of mankarr sign types (tracks, scats, diggings, or burrows) can be an indication of how well used the site is by mankarr; more types of sign may mean that the area was a core area of mankarr habitat when it was surveyed. The mankarr is walking through (tracks), finding food (diggings and scats), and setting up camp (burrows). If there is only one sign type, for instance just old tracks, the area may not have been a central part of mankarr territory when surveyed.

Punmu sites often had a high level of mankarr activity and different sign types. Punmu rangers often found 3 – 4 different sign types at a site. Parnngurr rangers were more likely to only find one sign type at a site. The two Kunawaritji sites had high activity (four types of sign), while Jigalong had a mix across the eight sites where mankarr sign was found.



The highest mankarr activity was at the Punmu sites.



Predators and feral animals

Feral cat, dingo and camel sign was found by all ranger teams. There were some feral animals that were only found around one area:

- rabbits were only found near Punmu,
- cattle and horses were only found near Jigalong,
- a few donkey tracks were found near Parnngurr.

Feral cat sign was the most common, followed by camel and dingo

Foxes sign was rarely detected, but mainly at Parnngurr and very rarely at Punmu, Kunawaritji and Jigalong sites.





Often, at a site with mankarr sign rangers also found cat and dingo sign. Fox sign was not common. Fox was detected at only 10 sites. Sometimes fox and mankarr sign were found at the same places (6 sites).



Mankarr are still found at sites where there is cat, fox and dingo sign.

Fire histories at survey sites

There is a varied fire history across the sites that were surveyed. Rangers thought that many of the sites were lit by Martu for hunting and other purposes. Sites had a range of fire ages, from fesh burns to dense old spinifex that hadn't burnt for a long time. At many sites there was evidence that Martu had carried out patchy burning, as there was fresh burns and older vegetation together.

When we were designing the method in 2017 we originally had a category for ignition type that was called "Martu". But this could have meant either ranger work or hunting. We updated the datasheets in 2018 to now have the fire categories of hunting, lightning, ranger or none. The sites can have any combination of five fire types: nyurnma/fresh burn, waruwaru/fresh shoots, nyurkura/mature herbs small spinifex, manguu/big spinifex old enough to burn, or dense old spinifex.



Many of the sites had more than one fire age, suggesting that Martu had carried out patchy burning.

Number of fire ages at the site



Most sites had patchy burning with more than one age of fire present.



Bush foods and mankarr food

Rangers found lots of bush foods for mankarr to eat. The most common mankarr food sources were lunki (grubs), as well as seeds from Yakirra and Yuwinji grasses. Jinjiwirrilyi (solanum) was found mainly near Parnngurr.

All ranger teams found a range of food types at their sites. But minyarra (bush onion) was found most by the Punmu rangers,



Number of food plants at site



A range of mankarr food types were found at most sites that were surveyed. It was common for there to be two or three food types at a site.



Habitat types

Most surveys were carried out in parrarra (sand plain), followed by tuwa (dune field) habitat. About a third of the sites were



classified as having warla (salt-lake), rirra (laterite), wintamarra (mulga), linyji (clay) or yapulyukurru (rocky) ground types.

For many of the sites there was more than one type of habitat.

Tracking surface condition

The survey sites generally had excellent surface conditions for tracking. Most sites had very little track disturbance meaning that tracks left by animals over several days would be available.

Most sites had lots of clear ground for tracking and the surface was soft enough for lots of little tracks to be made by small animals.

Tracking conditions were good at most sites, meaning that if mankarr or other animals had visited in the last few days, rangers are more likely to find evidence.



How do the findings of the mankarr monitoring program compare to the KJ surveys from before?

Before 2017, KJ used the cybertracker method to carry-out 2ha track surveys. These surveys aimed to find out what animals occur on the Martu Determination. Using the cybertracker method, mankarr were found at around 15 – 27% of survey sites in most years. In 2014 however, mankarr were found at all the 25 survey sites – the aim of surveys in 2014 must have been looking for mankarr!



Number of sites with mankarr are shown above each column

The KJ mankarr monitoring program (having monitoring zones and using the Martu mankarr survey method) has helped KJ to target places with mankarr populations.

In 2017 and 2018, when the mankarr method was used, rangers found sign at a higher proportion of sites (around 80% of sites). This suggests that mankarr are prevalent in the monitoring zones. The number of mankarr in Martu country probably didn't change, but KJ ranger teams just got better at surveying places where mankarr are.

As rangers re-visit the survey sites again next year, its likely that the proportion with mankarr sign might drop, because the conditions at the site may not be as good as in the year when the rangers set up the site. Maybe the fire changed, or the food resources changed. The habitat conditions may tell the story of why the mankarr is still there, or why it has left. By surveying the sites year after year, the ranger will see if the mankarr returns when conditions become good again.

If the rangers find that the proportion of sites with mankarr keep dropping over the years, this is a sign that the mankarr population may be declining, and a cause for worry.

Rangers can help to keep mankarr habitat suitable by carrying out the right kind of patchy fire in mankarr places, keeping an eye on the prevalence of cats and foxes (thinking about whether to carry out control if they become numerous), and keeping Martu knowledge of mankarr strong.

Further information: http://www.nespthreatenedspecies.edu.au/



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