

Milerrelerre Biodiversity Survey

A report by the Warddeken Rangers

August 2013

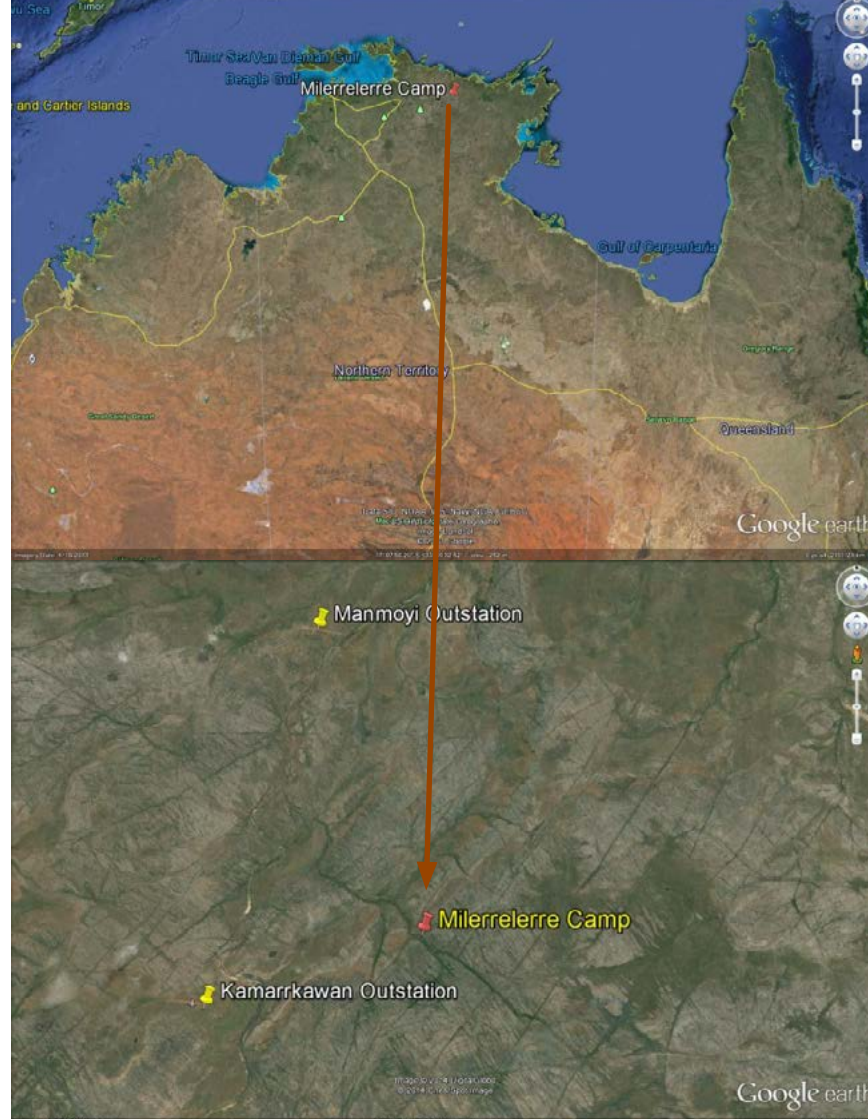


Where and Why?

In August 2013 we had a wildlife survey camp at Milerreleerre, near Karmarrkawan, in the Warddeken Indigenous Protected area. We camped here for 10 days from August 7-12.

The survey was attended by about 30 rangers and traditional owners, two ecologists and a ranger coordinator.

School students and a teacher from Manmoyi Outstation school also camped with us for 3 days. This was a part of the joint scientific research and land management activities between the school and Warddeken as a means of weaving these activities into the school curriculum.



The purpose of the Milerreierre wildlife survey was to revisit sites we first surveyed in the Karmarrkawan survey in 2011. This is part of an ongoing project by Warddeken Rangers to visit the same sites every year to look for animals and to build up a picture of what is happening with the animals over time.

During this survey we used a new camera trap setup. In the past we have used only 1 or 2 camera traps per survey site however for this survey we employed 5 cameras per site. It was hoped that this method would increase the number of mammal species that we can detect as well as being a suitable method that rangers could use without the need for a scientist to be present.

Who was there?

- Rangers and Traditional Owners of the Warddeken IPA from the Manmoyi and Karmarrkawan ranger bases
- Scott Morrison – Warddeken Coordinator
- Scientists Alys Stevens and Terry Mahney from Flora and Fauna Division (NTG)
- Manmoyi Outstation school teacher – Dan McLaren
- School kids from Manmoyi Outstation School



What we did

Animal trapping survey

With the help of Alys and Terry, we did an animal survey putting 5 different kinds of traps (cage, Elliott, pitfall, and funnel traps) in 6 sites. In 2011 we put out traps at 13 sites. This year we put traps at the 6 sites that caught the most animals in 2011.

Camera Traps

In past surveys we have used 2 cameras at each site but for this survey we put out 5 camera traps at each site. We also put 5 camera traps at 6 new sites. So we had a total of 12 sites with cameras. We hoped that by using more cameras we would find more animals.

The cameras were put in places around the site where we saw signs of animals or good places for animals to hang out, like under rock ledges, near hollow logs or at the base of trees with hollows in them. A bait station was placed about 3 m from the camera. The bait station consisted of a short star picket in the ground with a hollow container, filled with peanut butter, rolled oats and honey bait mix, attached to the top.



What we did

Spotlighting

On two nights a 2 to 3 km spotlight walk was conducted with about 10 people with torches and spotlights on each walk. The purpose of this was to see what animals we could find that were out at night that we might not catch in the traps.

The other reason for spotlighting was to look for feral cats. This is part of a project to find out more about what feral cats are doing in Arnhem Land including how many of them there are and where they are.

As well as spotlighting for them on foot, we also spotlight for them from vehicles and do long walks recording where we find feral cat tracks in the sand. This all helps to build up a picture of where cats are, how many of them there is and what they are doing.



What traps we used at each site



Cage trap



Elliot trap



Camera trap



Pitfall trap

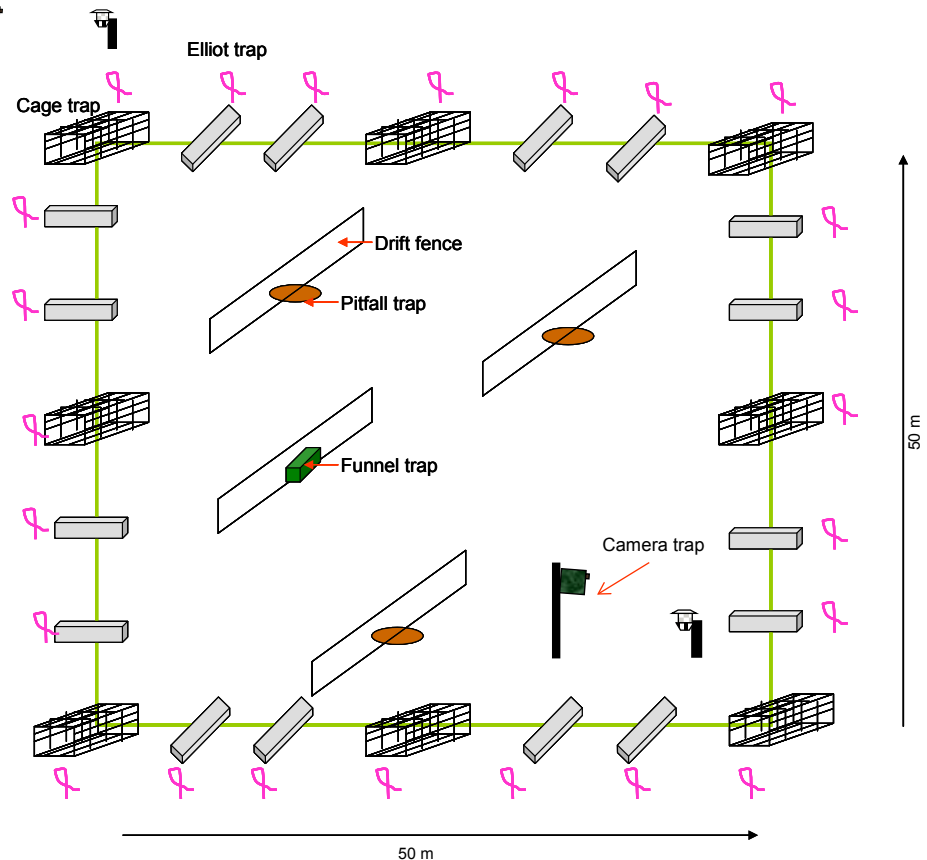


Funnel trap

How we put our traps out

Traps were put out for 4 nights. We check our traps every morning and then close up the cage and Elliot traps. We check our pitfalls throughout the day, and then reopen the cage and Elliot traps in the late afternoon and put fresh peanut butter, rolled oats and honey bait in them.

We put 5 cameras out for 6 weeks. One camera is put near the centre of the site and the rest are spread around the site and outside it. Each camera is put in a place we think is good for animals. The cameras are at least 30 metres from each other but no camera is more than 100 metres from the centre of the site.



How we set up camera traps

Figure 1: Camera trap placement in relation to mammal trapping grid

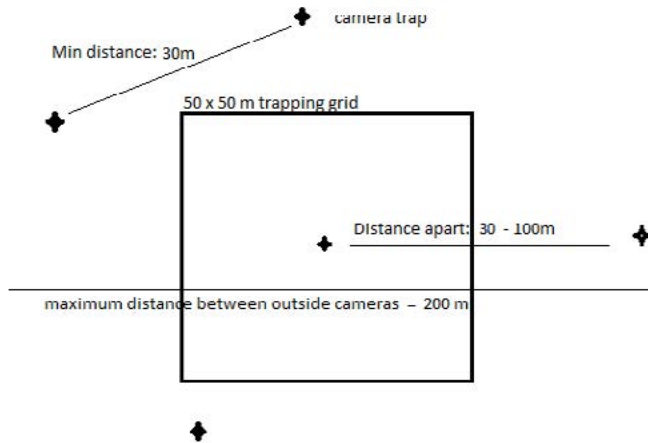
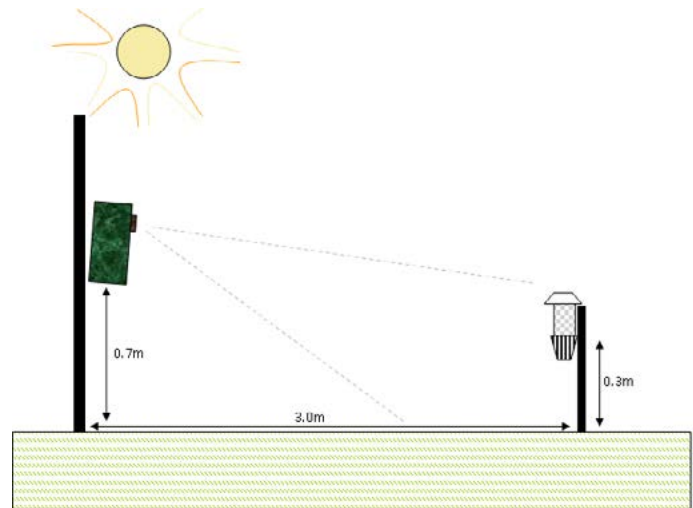


Figure 2: Set-up of camera trap and bait station



Some helpful hints: 0.7m = hip height, 0.3m = knee height, 3.0m = 3 large steps, 30m = 30 large steps, 100m = distance across airstrip

What did we find?

In total we found 5 feral animals species, 9 native mammals species, 5 native frog species and 22 reptile species.

Animal trapping survey and spotlighting

In total we found 3 feral animal species, 4 native mammal species, 5 native frog species and 21 reptile species.

The two native mammal species we saw were *Barrk* - Black Wallaroo, and a *Djirrkinj** - Delicate mouse in an Elliot trap. We also found the tracks and scats of two other mammal species, these were *Yirrkbadj* - Water rat, and *Ngarrbek* – Echidna.

During the spotlighting we saw two brown tree snakes on one night and a large olive python on the other night. We also saw freshwater crocodiles and 3 types of *Belerrk* – Gecko.

A full species list of what we found can be seen at the end of this report.

* *Djirrkinj* is a general name used for several different small mammals

Djirrkinj

Delicate mouse



Kalkkalk

Two-lined dragon





Balmardbarra
Brown tree snake



Modjarrkki track
Freshwater Crocodile



Manjdjurduurk
Olive python



Moloborndok
Velvet gecko

What did we find on cameras?

In total the camera traps recorded 5 feral animal species (including 6 feral cats), 9 native mammal species, 18 bird species and 2 reptile species from 12 sites using 58 cameras.

The highlight of the camera trap survey was finding *Badbong* - Short-eared rock wallaby. This was the first time we have observed them during surveys in the Warddeken Indigenous Protected Area since this project began in 2010. While not listed as a threatened species many traditional owners, Warddeken Rangers and ecologists are concerned that their numbers have declined in recent times.

We found five mammals using camera traps that we did not see during the standard trapping surveys. These were *Ngarrbek* - Echidna, *Kalkberd* – male Euro, *Badbong* - Short-eared rock wallaby, *Yirrkbadj* - Water rat and *Djirrkkinj** - Rock rat.

We found one type of reptile using camera traps that we did not find using the standard trapping. This was the *Bongka* - Black-palmed goanna.

* *Djirrkkinj* is a general name used for several different small mammals



*Ngarrbek
Echidna*



*Badbong
Short-eared rock wallaby*



Djukerre & Barrk
Female and male black wallaroo



Djirrkinj
Rock rat



Bongka
Black-palmed goanna



Feral cat

Species list

This is a list of all the animals we found during the Milerrelerre Survey in 2013. It includes animals caught in traps and cameras, seen during searches or spotlights and animal tracks and droppings. Animals in **red** are feral animals.

GROUP	SPECIES	COMMON NAME
Frog	<i>Crinia bilingua</i>	Bilingual Froglet
	<i>Litoria bicolor</i>	Norther Dwarf Tree-Frog
	<i>Opisthodon ornatus</i>	Ornate Burrowing Frog
	<i>Bufo marinus</i>	Cane toad
	<i>Limnodynastes convexiusculus</i>	Marbled Frog
	<i>Uperoleia arenicola</i>	Jabiru Toadlet
Mammal	<i>Tachyglossus aculeatus</i>	Echidna
	<i>Petrogale brachyotis</i>	Short-eared rock wallaby
	<i>Macropus agilis</i>	Agile wallaby
	<i>Macropus robustus</i>	Euro
	<i>Macropus bernardus</i>	Black Wallaroo
	<i>Hydromys chrysogaster</i>	Water Rat
	<i>Pseudomys delicatulus</i>	Delicate Mouse
	<i>Zyzomys sp.</i>	Rock Rat
	<i>Canus lupis dingo</i>	Dingo
	<i>Felis catus</i>	Feral cat
	<i>Bubalus bubalis</i>	Buffalo
	<i>Sus scrofa</i>	Feral Pig
	<i>Canus familiaris</i>	Dog
Reptile	<i>Gehyra nana</i>	Northern Spotted Rock Dtella
	<i>Heteronotia binoei</i>	Bynoe's Gecko
	<i>Heteronotia planiceps</i>	North-west Prickly Gecko
	<i>Oedura marmorata</i>	Marbled Velvet Gecko

GROUP	SPECIES	COMMON NAME
	<i>Ctenophorus caudicinctus</i>	Ring-tailed Dragon
Reptile	<i>Ctenotus coggeri</i>	Cogger's Ctenotus
	<i>Ctenotus inornatus</i>	Plain Ctenotus
	<i>Carlia amax</i>	Two-Spined Rainbow Skink
	<i>Carlia gracilis</i>	Slender Rainbow Skink
	<i>Carlia munda</i>	Striped Rainbow Skink
	<i>Cryptoblepharus cygnatus</i>	Swanson's Snake-eyed Skink
	<i>Ctenotus quirinus</i>	Arnhem Land Ctenotus
	<i>Ctenotus vertebralis</i>	Scant-Striped Ctenotus
	<i>Lerista karlschmidti</i>	Karl Schmidt's Lerista
	<i>Menetia greyii</i>	Greys' Menetia
	<i>Morethia storri</i>	Storr's Snake-Eyed Skink
	<i>Notoscincus ornatus</i>	Ornate Snake-Eyed Skink
	<i>Diporiphora bilineata</i>	Two-Lined Dragon
	<i>Lophognathus gilberti</i>	Gilbert's Dragon
	<i>Varanus glebopalma</i>	Black-palmed Goanna
	<i>Liasis olivaceus</i>	Olive Python
	<i>Boiga irregularis</i>	Brown tree snake



Our thoughts and what next

Milerrelerre survey camp was a very successful camp with rangers, families and scientists working together to continue to build up a picture of what is happening with animals in Warddeken. We will continue this work in 2014.

We found that the use of 5 camera traps at each site was a simple and useful method of surveying for mammal species. It captured 5 more native species than the standard biodiversity surveys, including the first record of short-eared rock wallaby since this project began in 2010.

It was also a good way of finding out where cats are. During 2013 we had been trying different ways of setting up cameras and baits to get cats and this method was the best so far.

Using camera traps is an easy way for the rangers to do animal surveys without a scientist being present. In 2014 we want to use this method in our surveys to see if it works well in other places and to get more practice at setting up camera traps.



Acknowledgements

A huge thankyou to the landowners of Milerrelerre for allowing us to camp in their country and for camping with us.

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For more information regarding the Warddeken Indigenous Protected Area contact operations@warddeken.org.au

Technical and scientific support for the survey was provided by Alys Stevens and Terry Mahney from the Department of Land Resource Management of the Northern Territory Government. For any further technical information, please contact Alys Stevens on alys.stevens@nt.gov.au or Terry Mahney on terry.mahney@nt.gov.au

Special mention to Rion for providing the acrobatics for the front cover!









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