



Kakadu Research News

April 2013

How big a problem are cats for wildlife?

That is what one of our research projects is going to find out. There are fewer and fewer small mammals across our tropical savannas every year. Cats, changed fire, weeds, cane toads and diseases could all be part of the problem.

Even though they are hard to see, we think that cats eat large numbers of small animals across Kakadu every night and are a big part of the problem, but because cats are difficult and expensive to control we need to be sure.

Our researchers are doing experiments in Kakadu and other areas to measure just how much impact cats have on small mammals.



Within Kakadu park staff and our researchers have been talking to Traditional Owners in the Kapalga area about doing some of the research there. It will involve fencing some land at Kapalga with a cat proof fence and removing any cats from inside.

Over the next couple of years the team will compare the number of mammals in the fenced 'cat free' area with mammal numbers in other areas.



We are working with Kakadu staff and local Indigenous people in Kakadu to monitor cat numbers and test different cat control methods

What bush tucker places are important to you?

Despite on-going control work, weeds like para grass are already making bush tucker harder to find and affecting cultural values on some Kakadu floodplains. These weeds can also spread to other areas. Sea levels are also expected to rise and this will bring salt water onto some freshwater floodplains changing the plants and animals there.

Knowing which areas in Kakadu could be at risk from weeds and salt water in future will help the community and the Park to manage these areas.

One of our research projects is looking at these issues. This has involved mapping water on floodplains, studying weeds like para grass and olive hymenachne and collecting information about which floodplain areas and bush tucker resources are important to Traditional Owners.

This dry season NERP researchers Kelly Scheepers and Emma Ligtermoet will be interviewing Traditional Owners about:

- What floodplain places are important to you for hunting and fishing?
- Have these places changed much in your lifetime?
- Are there changes to floodplain country that you are concerned about?
- Have salt water or weeds caused you problems for hunting or fishing?

If you are interested in being interviewed, please contact Kelly Scheepers on 8944 8412 or kelly.scheepers@csiro.au



Kelly Scheepers



Emma Ligtermoet

What lives in floodplain soil?

Increasing sea levels can bring saltwater into freshwater wetlands which will change the plants and animals of the wetland.

This project is looking at the small animals and bacteria in floodplain soil because they can tell us a lot about the health of floodplains. They can even tell us when saltwater from the ocean or river is starting to affect an area before we see changes to the plants and animals above the surface.



Researchers will be collecting soil samples to tell us what lives under the surface of South Alligator River floodplains.

Because many Kakadu wetlands may be affected by rising sea water in the future, we are building up an understanding of what lives in the soil of the floodplains. Using genetic methods we have identified over ten thousand different types of bacteria and other tiny animals in soil collected from the South Alligator River floodplains.

NERP researchers will be coming back to the South Alligator rivers region in June to collect more soil samples. They only take about a handful from each location.

If you are a Traditional Owner and would like to join us on the field trip, please contact Anne O'Dea in the Kakadu National Park office.



Monitoring water and tides in the Alligator Rivers

Big tides, lots of water and mud make the Alligator Rivers what they are. If sea levels rise, tide levels and flows will change. This is going to change things for a lot of plants and animals too.

David Williams is studying the water and mud flowing in the East and South Alligator Rivers and making a model to help explain what is happening now and what might happen when sea levels go up. The model will help us understand which freshwater Kakadu floodplain areas could be affected by sea water when sea levels rise.

To make this model David will be coming to the Alligator Rivers many times this year to collect information. He is interested in how much mud is being carried by the water, how much water is flowing and how high the tides are. David will use equipment, like tide gauges, to measure these things. He needs to come back many times over the year because things keep changing through the seasons.

If you are Traditional Owner from the Alligator Rivers area and are interested in joining one of David's field trips, please contact Anne O'Dea in the Kakadu National Park Office.



Researchers use a lot of equipment to collect information about how much mud is being carried by the water, how much water is flowing and what the tides are doing.

River sharks and sawfish in Kakadu



River sharks can live in salt and fresh water.

This project is looking at sawfish and river sharks in the South Alligator River. These are rare species in Australia, but Kakadu has some of the best remaining populations.

Large-tooth sawfish live in freshwater, in rivers, estuaries and wetlands, for the first four to five years of their life. Researcher, Peter Kyne, would like to hear from anyone who sees this sawfish in Kakadu. Thank you to the Traditional Owners and rangers who have already told him about sightings. This has been really helpful.



Sawfish (Photo: Kate Buckley, Territory Wildlife Park)

Peter will be coming to tidal areas of the South Alligator River every month for the next year to catch and study these animals. Traditional owners who would like to participate can contact Anne O'Dea at Kakadu National Park.

On the study trips he will use gill nets to catch the sharks and sawfish. Once caught they are measured, tagged and released unharmed.

The tags are important because Peter can tell if a sawfish has been caught before.

Peter will also snip off a small piece of fin about the size of a fingernail. The piece of fin can help him work out how many sawfish and river sharks there are in the South Alligator River and the NT. Researchers do this with genetics which tells them about the family relationships between the fish.

Sawfish and river sharks are protected under Australian law. This research will improve how we manage sawfish and river sharks, and help them survive for future generations.

This project is happening in partnership between the NERP Marine Hub and the NERP Northern Australia Hub. For more information on this project please contact: peter.kyne@cdu.edu.au or visit: www.nerpmarine.edu.au/sawfish

Is Boss Croc the boss of Kakadu's food chain?

Help researchers find out who's at the top of Kakadu's food chain, where the animals are moving and feeding and which areas are important for conservation!



Where does the food this crocodile eats come from?

Researcher Dominic Valdez has come to Kakadu many times to study the fish. When he returns at the end of the wet season he will be collecting samples of things that eat and can be eaten: fish, algae, plants and aquatic insects.

There are many big animals that the researchers can't catch, like file snakes, turtles, magpie geese, crocodiles and wallabies. If you are a Kakadu Traditional Owner who hunts, you can help this research by giving us a small piece of your catch.

A piece of muscle and liver the size of a fingernail is enough. Please tell us what it is, where it came from and where you caught it. It needs to be raw and kept frozen. Please give the samples to Anne O'Dea at the National Park's Office (Bowali Visitor Centre), or call Dominic on 07 3735 4370.



Na-wandak
(file snake)



Bamurru
(magpie geese)



Al-mangiyi
(long-necked Turtle)



Gumugen
(freshwater crocodile)

Are you a Kakadu Traditional Owner who hunts or fishes? Help the research by giving us a small piece of your catch.

The muscle and liver of big animals can tell us a lot about where the energy is coming from in the food web, what they eat and where they have been feeding.

Knowing what these animals eat and how much they move around to eat will help us understand which areas are the most important for supporting the life in our rivers, floodplains and wetlands. This information will help will help Kakadu protect these important places and better understand how a change in the park's floodplains might affect the animals and the landscapes that are important to the local community.

If you are a traditional owner and would like to go on the field trip, please contact Anne O'Dea in the Kakadu National Park office.

Who is the NERP Northern Australia Hub?

The Northern Australia Hub is a research group funded by the Australian Government's National Environmental Research Program (NERP).

The aim of our hub is to improve biodiversity conservation in Northern Australia's tropical savannas and the region's wetlands, waterways and estuaries.

Our hub works with many partners to carry out our research. The projects happening in Kakadu involve researchers from:

- Charles Darwin University
- Griffith University
- CSIRO
- Australian Institute of Marine Science
- NT Government DLRM
- University of Western Australia
- *eriss*

Thanks to Kakadu National Park staff who have also supported and participated in our research.

We greatly value the input of traditional owners to research happening on their country. Sometimes there are paid work opportunities for Kakadu Traditional Owners to help researchers do field work. If you want to be involved or want to know more about any of the projects please contact:

- Jaana Dielenberg (NERP, Darwin)
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Jaana.dielenberg@cdu.edu.au or
- Anne O'Dea (Kakadu National Park, Jabiru)
8938 1155
Anne.odea@environment.gov.au



Jaana Dielenberg
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For more Information:

www.nerpnorthern.edu.au