



Giant cave gecko, photo Graeme Gillespie



Northern Australia
Environmental
Resources
Hub

National Environmental Science Programme

Monitoring terrestrial animals in Kakadu

Start-up factsheet

Ecological monitoring priorities change over time

The monitoring needs and priorities of protected areas evolve over time. For example, emerging technologies such as camera traps, song meters, and eDNA are now enabling scientists and managers to tackle management issues with new approaches. In the Northern Territory, a new monitoring framework is being tested in Kakadu, an integral site due to its large size and biodiversity significance. The framework aims to:

- detect biologically meaningful levels of change in species and enable inferences about changes in populations and distributions



This research will be done at a selection of core ecological monitoring sites across major biomes in Kakadu National Park.

- adequately represent natural variability and examine the role of major drivers of change, such as fire – an important management lever
- maintain adequate continuity with previous monitoring and improve cost-effectiveness
- report changes in timeframes relevant to managers and decision-makers.

Overview

This project will:

- provide precise and timely information on biodiversity trends and responses to management and environmental change
- identify monitoring gaps for threatened species and other environmental management issues
- identify options to meet the Kakadu's management and reporting priorities
- improve processes to use monitoring information to review and adjust management actions
- demonstrate best practice in broad-scale ecological long-term monitoring for northern Australia protected area management

Findings will inform improved ecological monitoring across northern Australia

This project is trialling a revised ecological monitoring framework in Kakadu National Park and evaluating its effectiveness for detecting and reporting trends in terrestrial vertebrates and habitat condition. The monitoring undertaken will also inform Park managers on the effectiveness of management actions to address threats to biodiversity including feral cats, other introduced species and fire regimes.

The findings from this project will help further optimise the framework so it suits Kakadu and contributes to an integrated monitoring system across major protected areas in the northern NT. The trial builds on previous work across the NT's protected areas and will help optimise monitoring to maximise cost-effectiveness and to ensure alignment with Park priorities.

The findings will greatly improve our ability to detect and evaluate ecological changes across the region and will lead to better management of national parks and other areas managed for biodiversity.

Project activities

- Consult with Kakadu staff and Traditional Owners to identify monitoring sites across major ecosystems in the Park that build on previous long-term monitoring
- Consult with Parks Australia to define Kakadu National Park monitoring priorities
- Analyse potential drivers of change including fire, feral herbivores and feral cats that can be managed within the Park



Water monitor, photo NTG DENR.

- Complete fauna surveys at 50 approved sites, including camera-trap sites
- Evaluate the utility of the framework for assessing and reporting on threatened species
- Update long-term trends of mammals and other major vertebrate groups in Kakadu
- Evaluate the effectiveness of the program for monitoring and reporting on key threats and management issues
- Evaluate technical and logistical options to optimise future general ecological and targeted (e.g. threatened species) monitoring in the Park.

Anticipated outputs

- Reports and scientific publications
- Summaries and factsheets
- Recommendations for an optimised framework for monitoring Kakadu's animals.



Overlooking Kakadu National Park, photo Kym Brennan.

Who is involved?

This project is being led by Dr Graeme Gillespie from the [Northern Territory Government](#).

Dr Gillespie will be supported by researchers and staff from the NT Department of Environment and Natural Resources as well as [Kakadu National Park](#).

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For further information and project updates, visit the project webpage at www.nespnorthern.edu.au/projects/nesp/monitoring-kakadu-animals



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