Identifying important areas of biodiversity and bush-tucker for targeted management in Kakadu National Park

Project information

Resilient Landscapes

National Environmental Science Program

The andem, or water lily, is a bush-tucker plant (Image: Gail Hampshire / CC BY 2.0)

One of the priorties for Kakadu National Park is targeted management that achieves the most value for both Traditional Owners and conservation. This project will identify important areas for biodiversity and bush-tucker within Kakadu to inform future management.

Prioritising management in high value areas

To effectively look after a large, National Park like Kakadu, land managers need to be able to priortise their work to focus on important areas. This is called spatial prioritsation. But this is difficult when we have patchy information about the location of important biodiversity and bush-tucker areas in the park.

By developing methods to collate and map this information, we can direct management activities to concentrate on areas that will have the most benefit for Traditional Owners and threatened species.

This is essential for Kakadu, where there has been widespread mammal declines in recent decades, continued threats from grassy-weed invasions (e.g. para grass and gamba grass), and ongoing degradation from feral animals (e.g. pigs, buffalo).

The anmorlak, or Kakadu plum, is a bush-tucker plant (Image: Zig / CC BY 4.0)

Identifying important areas for biodiversity and bush-tucker

To inform the spatial prioritisation of management activities in Kakadu, we will use existing spatial data for relevant species. This data is from survey datasets, reports, and expert elicitation with Traditional Owners and researchers. We will then do field surveys in Kakadu to inform and validate our spatial modelling. During field surveys we will concentrate on important plants and animals (e.g. mammals) areas of high diversity, and under-surveyed areas.

From this, we will develop predictive species-distribution models for relevant species and identify the overlap between high biodiversity and important bush-tucker areas. The maps we create will help to refine future management in areas with high conservation and cultural significance.

Key research goals

To address the challenges associated with prioritising management activities in Kakadu, this project will:

- identify important areas for bush-tucker species, as guided by Indigenous knowledge.
- develop methods to map important areas for biodiversity and bush-tucker that can be updated with new data in the future.
- assess environmental factors contributing to spatial patterns of species diversity and important bush-tucker areas, such as fire history and habitat type.
- make recommendations for managing and monitoring target biota in identified areas.

What is the NESP Resilient Landscapes Hub?

The Australian Government's National Environmental Science Program (NESP) funds environment and climate research. NESP currently supports 4 multi-disciplinary research hubs, each hosted by an Australian research institution. The program:

- provides evidence for the design, delivery and on-ground outcomes for environmental programs
- helps decision-makers, including those from Indigenous communities, build resilience
- supports positive environmental, social and economic outcomes.

This project is funded by the NESP Resilient Landscapes Hub, which is hosted by the University of Western Australia.

The Resilient Landscapes Hub's research supports the management of Australia's terrestrial and freshwater ecosystems and makes them more resilient to extreme events and pervasive pressures.

The andjarduk, or red bush apple, provides both bush-tucker and medicine
(Image: Paul and Jill / CC BY 2.0)

Further information

This project involves researchers and Traditional Owners from the University of Western Australia (UWA), the Bininj/Mungguy Research Committee, Parks Australia, Charles Darwin University, and the University of Newcastle.

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For the project website, visit nesplandscapes.edu.au/projects/nesp-rlh/bush-tucker/

Or scan this code:

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