



Marine  
and Coastal

National Environmental Science Program

## PROJECT 5.1

Mapping Sea Country and exploring conservation and restoration opportunities on the Kakadu NP and Garig Gunak Barlu NP coasts

### The challenge

There is an urgent need for up-to-date biodiversity and habitat data on the coastal regions of Kakadu National Park and Garig Gunak Barlu National Park on the Cobourg Peninsula. These areas face major challenges in planning and management due to limited data availability, combined with a rapidly changing climate. Without this information, protecting and restoring these culturally important areas is difficult, especially as they face threats like rising sea levels and damage from feral animals.

This research focuses on a two-way knowledge transfer process to integrate Western science and Traditional Owners' knowledge to improve baseline information on the extent, condition, and biodiversity of coastal ecosystem habitats under current management and threats. It is essential to include the insights and knowledge of Traditional Owners, who have cared for these lands for over 50,000 years. This knowledge has not been fully incorporated in past research activities and environmental management, complicating sustainable practices.

As Kakadu NP looks to expand and update its practices, Traditional Owners need the information to make informed decisions about managing and restoring their coastal ecosystems, including exploring new opportunities in environmental markets. This approach will improve the resilience of coastal communities and ecosystems under environmental changes and support local livelihoods.

## The approach

This project will:

- i. Collaborate with Traditional Owners to co-design a baseline intertidal and subtidal benthic habitat mapping survey using various methods such as helicopter aerial surveys, towed video, drop cameras and remote sensing approaches (high-resolution satellite imagery).
- ii. Conduct surveys of faunal communities (indicator species) and assess the condition of coastal wetland ecosystems.
- iii. Evaluate the impact of sea-level rise and feral ungulates on the environment using existing spatial data and models, as well as using remote sensing and on-ground verification at accessible locations.
- iv. Ground truth vegetation and assess biodiversity across key taxa, particularly in saltmarsh and supratidal zones.
- v. Produce outputs including co-authored publications, spatial data and visually engaging materials that will be accessible and useful to Traditional Owners.

## Expected outcomes

- Significantly enhance biodiversity and habitat data for the coastal regions of Kakadu NP and Garig Gunak Barlu NP.
- Enabling more effective Sea Country planning and management by Traditional Owners and government partners for the region.
- Recommendations for specific management actions to mitigate threats to biodiversity and cultural values.
- Identification of socio-economic opportunities for Traditional Owners through participation in emerging environmental markets.

## Project leaders

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*FRONT: Aerial view of the Kakadu coast by Rachel Groom. BACK: Aerial view of Van Diemen Gulf Coast, Australia.*

