


Marine and Coastal

National Environmental Science Program

RESEARCH OVERVIEW 1.

Regional planning in northern Australia

Northern Australia is a place of significant economic opportunity and the growth of existing and new industries – agriculture, grazing, mining, energy, and tourism – is linked to community wellbeing.

Economic development requires adopting a comprehensive approach that considers people, culture, the environment and the economy through effective planning, development assessment, management and community engagement.

Research is needed to facilitate such sustainable development in northern Australia. It will provide a knowledge base for decisions based on robust scientific data, relevant information, and community aspirations.

Marine and Coastal Hub research focuses on improving methods for regional planning, development assessment and engagement through:

- improved Indigenous outcomes;
- better governance; and
- comprehensive regional datasets.

IMPROVED INDIGENOUS OUTCOMES

Aboriginal and Torres Strait Islander communities hold legal rights to a large portion of this region. Careful and comprehensive planning and Traditional Owner support for development decisions is important given its cultural and environmental significance.

The hub promotes Indigenous-led biodiversity conservation and environmental management, and respectful incorporation of Indigenous values and knowledge. Hub research builds capacity for Indigenous-led management and economic opportunities on Country.

For example, the proposed development of a National Indigenous Environmental Research Network seeks to facilitate inclusive and relevant engagement and research through coordinated regional governance.

Outcomes for research users

- Coordinated national support for Indigenous-led research and participation.
- A strategy for research to meet Traditional Owner economic and cultural needs.
- Facilitation of Indigenous involvement in blue carbon markets.
- Strategic management of feral pigs to improve turtle hatchling survival and reduce wetland damage.

Phoebe Martin

Kimberley rangers learn drone skills to monitor dugongs

Drone technology offers a solution to the challenge of monitoring dugong populations across the vast, remote Kimberley coastline. Hub researchers demonstrated the use of drones for precise, real-time monitoring of dugongs and their seagrass habitats at a workshop held on Karajarri Country attended by seven Kimberley ranger groups. The researchers learned from the rangers' expert local knowledge of habitats, seasons and dugong movements. Together they built skills and connections for Indigenous-led sea Country monitoring and management.

Jon Hanson, Flickr

Community of practice guides sustainable development

Government, industry, community and Indigenous perspectives are important to effective regional and bio-regional planning. Hub researchers established a community of practice to connect stakeholders representing this range of perspectives across northern Australia. A newsletter distributed to more than 200 participants provides guidance on addressing regional priorities and supporting informed decision-making for sustainable development.

BETTER GOVERNANCE

Hub projects are reviewing planning and development assessment practices and the environmental impacts of developments. They are establishing a strong community of practice to inform policy for future regional planning, at regional, state or Commonwealth scales. This will promote improved integration of environmental decision-making, economic investment, and Indigenous interests.

Outcomes for research users

- A roadmap to improve regional planning for sustainable development.
- A strong regional planning network to enhance communication of best practice and increase capacity.

COMPREHENSIVE REGIONAL DATASETS

The coastline of northern Australia has remarkable biodiversity, including threatened and migratory marine species that require protection (dugongs, marine turtles, sawfish, sea snakes) and globally significant seagrass meadows, mangroves and coral reefs. Reliable estimates of their condition, population size, distribution, status and trends are crucial to protect these species and their habitats effectively.

Hub researchers, in collaboration with Traditional Owners, industry and others, are using innovative approaches to investigate species and habitats across large spatial scales. For example, they are mapping seagrass, coral and rocky reefs, shellfish reefs and dugong distribution across northern Australia. These comprehensive datasets will provide guidance for improved decision-making that minimises environmental impact.

Outcomes for research users

- Comprehensive seagrass distribution mapping for improved regional planning.
- Improved methodology and data for regional planning.
- Indigenous-led dugong monitoring, providing data for regional planning.
- Indigenous-led sawfish monitoring and population data for regional planning
- New methods for accelerated mangrove recovery from climatic events.
- Stakeholder-designed monitoring and species and habitat data for regional planning.

Top images left to right: CSIRO, EU-Copernicus Sentinel-2, CSIRO, Ian Shaw, AdobeStock

Navigating **planning obstacles and opportunities**

Hub researchers analysed planning processes across Queensland, the Northern Territory and Western Australia to identify obstacles and opportunities. Working with the Cooperative Research Centre for Developing Northern Australia they made recommendations based on stakeholder input for refining regional governance. Their synthesis report provided 27 recommendations relevant to the Australian Government's refresh of the *Northern Australian White Paper Action Plan*.

Mapping seagrasses across northern Australia

A hub project compiled historical records of seagrass across northern Australia, many of which previously had been inaccessible. The dataset highlighted gaps in understanding this critical habitat. To address these gaps, researchers partnered with Traditional Owners to conduct boat and aerial surveys in Queensland, the Northern Territory and Western Australia. This extensive public dataset supports development assessment, environmental and carbon accounting, and habitat and species management.

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