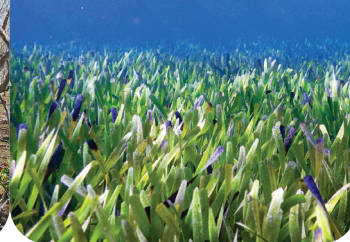




**Marine  
and Coastal**

**National Environmental Science Program**



## RESEARCH OVERVIEW 4.

# Marine and coastal habitat restoration

**Australia's commitment to the United Nations Leaders' Pledge for Nature includes a target to protect and restore 30% of degraded land, freshwater and ocean ecosystems by 2030.**

Australia's *Nature Positive Plan* echoes the need for urgent investment in nature repair, facilitated by coordinated planning. National policy mechanisms introduced to accelerate nature repair include those that leverage the carbon market and encourage investment.

Many nature repair projects are happening across our coastal and marine habitats, but on a limited scale and with limited coordination. Clear guidance and governance are needed to clarify the priorities, risks and opportunities and make nature repair attractive to investors.

Marine and Coastal Hub projects are removing barriers to investment in nature repair through the following areas of research and collaboration.

## SUPPORTING NATIONAL COORDINATION

Hub researchers have been examining the barriers and risks to restoration of marine and coastal ecosystems in collaboration with regulators, engineers, government agencies and Indigenous organisations. Together they are developing the national evidence base and guidance required to scale up nature repair in Australia.

This work includes updating national restoration project databases, documenting successes and risks, and scoping a national framework to guide and coordinate investment across regulators, practitioners and investors.

### *Outcomes for research users*

A consolidated evidence base and guidance on national coordination to scale up nature repair in Australia.

## SUPPORTING FIRST NATIONS LEADERSHIP AND PARTICIPATION

Hub researchers are supporting participation in Australian Carbon Credit Unit Scheme and Nature Repair Market frameworks to enable Indigenous-led feral animal management in northern Australia.

They are also developing integrated pest management of feral pigs for implementation at coastal sites by Indigenous organisations.

### *Outcomes for research users*

- Evidence to develop a carbon abatement mechanism to fund Indigenous-led feral pig control.
- Increased pig control efficiency for improved wetland protection and restoration.



### Lifting green tape

Upscaling marine and coastal restoration in Australia requires permitting pathways that are less costly and cumbersome. Solutions proposed by a hub project included large-scale regulatory reform, smaller-scale law and policy reform, and the development of guidance for permitting. Permitting requirements matched to the level of project risk could be coordinated across Commonwealth, state and local governments. By reducing regulatory barriers, smaller restoration projects would become viable, supporting Australia's endeavour to have priority degraded areas under effective restoration by 2030.



### A pathway to Indigenous-led feral pig management

Feral pigs damage coastal ecosystems and devastate turtle nesting sites. Effective control to protect coastal habitat requires better coordination and engagement with local expertise. Indigenous land and sea managers have deep local knowledge but are underutilised in formal control programs. Indigenous-led hub projects are trialling new feral pig control and monitoring methods. These will underpin an Indigenous-led integrated pest management program for pig control that also supports conservation, cultural values, and regional economies.





## IMPROVING PRACTICES

Hub projects have provided advice on the physiological mechanisms that allow some giant kelp strains to develop at relatively warm temperatures, and the consideration of sediment processes in seagrass restoration.

Pioneering research at Cocos Keeling Island is trialling and assessing measures to help local seagrasses withstand pressure from turtle grazing.

Through all its projects the hub strives to develop and demonstrate best-practice approaches to improving data access and monitoring.

### *Outcomes for research users*

- Local capacity to implement and assess effective marine habitat restoration.
- Better technical guidance for seagrass restoration.
- Guidelines, insights and systematic, coordinated approaches to support effective monitoring.

## MAPPING HABITATS AND THREATS

Hub researchers are working with Traditional Owners and Indigenous ranger groups to map seagrass and shellfish reefs and identify priorities for protection and restoration.

They are surveying seagrass habitat at the Nijinda Durlga (Gangalidda) and Thuwathu/Bujimulla Indigenous Protected Areas (IPA), Kakadu National Park, Carig Barlu National Park and the proposed Tayaritja Milaythina Muka IPA off northern Tasmania

Novel aerial and remote sensing methods are being used to map coral and rocky reefs across northern Australia, with a focus on the Gulf of Carpentaria.

Areas of intertidal habitat in the Gulf of Carpentaria are being prioritised for restoration, and a management response plan is being developed for critical weather conditions.

### *Outcomes for research users*

- Capability for seagrass monitoring and restoration in northern Australia.
- Knowledge and capability to protect the proposed Tayaritja Milaythina Muka IPA off northern Tasmania through Aboriginal-led management.
- A new evidence base for regional planning and sea Country management and restoration in Northern Australia.

Top images from left: Marina Richardson, TropWATER, Jock McKenzie James Curtin University, Rachel Austin, Masa Tatsumi.



## Capturing the value of carbon

Coastal wetlands store carbon, protect shorelines and support biodiversity. To unlock their full potential, policymakers need clear, scientific methods for restoration and carbon crediting. Hub researchers are developing a method focused on feral ungulate control to protect wetlands. The method is one of four chosen (from 39 candidates) by the Australian Carbon Credit Unit Scheme for full development. The project follows hub research on carbon storage from feral ungulate control and identifying sites for restoration.



## Promoting seagrass recovery at Cocos (Keeling) Islands

A pioneering restoration project at Cocos (Keeling) Islands (CKI) aims to revive the region's vital seagrass meadows. A hub project working with CKI community members has installed protection barriers in the CKI Marine Park to help seagrasses recover from heavy grazing by turtles. Early results of this collaborative conservation have been encouraging and offer a beacon of hope for the local seagrasses and iconic marine fauna. The protected areas will supply seeds and seedlings essential for broader restoration efforts across CKI.



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