

## NESP 2 hub research scope overview

### Marine and Coastal Hub

The Marine and Coastal Hub form, function and high-level research requirements are outlined below to assist applicants prepare collaborative consortia that can deliver the objectives of the next phase of the National Environmental Science Program. This document is supplementary to the Grant Opportunity Guidelines and should be read in conjunction with the overarching description of the program.

The 'Marine and Coastal' Hub will deliver:

- applied research to support management of Australia's marine and coastal environments including estuaries, coast, reefs, shelf and deep-water
- targeted biodiversity and taxonomy products to support efficient system monitoring
- environmental monitoring systems and decision support tools
- cross-hub coordination for the 'protected place management' functional mission to support the management of our protected places and heritage including the national park estate and Ramsar sites in both marine and terrestrial environments.

See the high-level research requirements outlined below for a guide to potential research needs.

#### Form

##### Regional Nodes

The national Marine and Coastal Hub must include locally delivered and led regional centres in northern and southern Australia to facilitate place-based research and support local outcomes. Applied national research is built on strong collaboration across stakeholder groups and must be informed by local and traditional knowledge.

Funding within the Marine and Coastal Hub will be split across the research centres on an equitable basis, with the Minister for the Environment to decide on final funding amounts.

If your proposed consortia for the Marine and Coastal Hub does not include northern and southern research centres with significant enduring on ground presence your application will not be competitive.

Applicants are encouraged to provide a 'Diagram of proposed hub organisational structure' (this is an optional attachment referred to under Section 7.1 of the Grant Opportunity Guidelines) to assist with the assessment of collaborative partnerships.

##### Indigenous Participation

Indigenous leadership is embedded throughout the program. The Marine and Coastal Hub must have at least one senior Indigenous Facilitator who will sit on all senior hub leadership committees to build trusted relationships and ensure engagement with Indigenous Australians. The senior Indigenous Facilitator will form part of the cross-hub Indigenous Facilitation Network, which will be supported by the department to drive Indigenous inclusion at the program level.

Appropriate advice and engagement should be sought from traditional owners and Indigenous communities when designing the Marine and Coastal Hub governance structure. This will ensure the cultural safety of the Indigenous Facilitator and other advisors, and culturally appropriate governance processes that meet the research interests and needs of Indigenous people.

Applicants for the Marine and Coastal Hub must be able to demonstrate an ability from the start of the program to establish and maintain long-term, two-way partnerships with traditional owners and Indigenous communities. This means Indigenous knowledge must be treated with respect and

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reciprocated in culturally appropriate ways in the form of shared practical research outcomes for traditional owners, communities and land managers, and capacity building for Indigenous communities. The Marine and Coastal Hub must include mechanisms to nurture the next generation of Indigenous researchers including in remote regions.

Applications for the Marine and Coastal Hub that do not have Indigenous representation and true on-ground partnerships with Indigenous people in both northern and southern Australia will not be competitive.

### Functions

The national Marine and Coastal Hub will deliver applied scientific products and advice to meet end-user requirements as agreed by the department including:

- synthesis reports of current and emerging knowledge for senior decision makers
- applied science research, analysis, process studies and models to support policy makers, program managers and regulators
- integrated management decision tools inclusive of scalable state of the environment monitoring and evaluation systems
- long-term foundational science to support end-users understand and adapt to our climate.

The Marine and Coastal Hub must have a Mission Leader for protected place management research. The Mission Leader should have the expertise in the mission and the capability to lead mission research within and across the hubs. The new mission setup is designed to facilitate cross-hub collaborations and consideration of the environment as an integrated whole. Applicants must also ensure that their consortia have individual specialists and the broad capacity to support the other cross hub missions led by the other national hubs as outlined in the Grant Opportunity Guidelines and summarised below.

<b>Mission</b>	<b>Lead Hub</b>
Protected place management	Marine and Coastal
Threatened and migratory species and ecological communities	Resilient Landscapes
Waste impact management	Sustainable Communities and Waste
Climate adaptation	Climate Systems

### Requirements

The high-level research requirements outlined below provide a guide to potential research needs to assist applicants. However, detailed research plans will be co-designed with successful applicants and end-users at the start of the program and then on an annual basis.

#### Hub Research:

- Applied research to support management of Australia's marine and coastal environments including estuaries, coast, reefs, shelf and deep-water:
  - Threat abatement and recovery actions for estuaries, coasts, reefs, shelf and deep-water
  - Ecosystem recovery after extreme events such as cyclones, storm surge and marine heatwaves
  - Support delivery of the *Reef 2050 Long-Term Sustainability Plan* and Australian Marine Park Management Plans
  - Support management of Ramsar sites to maintain their ecological character
  - Traditional ecological and cultural knowledge built into resource management
  - Indigenous communities able to apply shared knowledge in the management of their lands
  - Social and economic information on processes that influence conservation
- Targeted biodiversity and taxonomy products to support efficient system monitoring:
  - Support environmental offsets policies, management approaches, tools and outcomes
  - Improved monitoring for biodiversity and marine and coastal ecosystem function

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- Protect listed migratory species and reduce impact of human interactions with marine systems
- Support environmental impact assessments, strategic regional planning assessments and cumulative analysis of impacts
- Environmental monitoring systems and decision support tools:
  - Cost-effective marine and coastal monitoring systems, methods and technologies
  - Map the extent and assess the condition of Australia's wetlands
  - Quantification of the economic, social and cultural value of ecosystem functions
  - Improved end-user engagement in co-design and co-delivery of practical science that supports on-ground/sea management

### Mission Research:

The Marine and Coastal Hub will ensure the delivery of **Protected place management Mission** via a focus on:

- Supporting the management of natural, cultural and Indigenous values in protected places, including Australian Marine Parks, Ramsar sites and World Heritage Areas;
- Identifying key drivers of resilient populations and ecosystems across protected areas; and
- Supporting the improvement of governance mechanisms for protected places.

The Marine and Coastal Hub will also provide the following support for the:

**Threatened and migratory species and ecological communities Mission** (coordination led by the Resilient Landscapes Hub)

- Conserve habitat important for priority threatened species, threatened ecological communities and migratory species
- Update the National list of threatened species and migratory species
- Identify and update key biodiversity areas for seabirds
- Improve detection of cryptic, 'difficult' and other data deficient species
- Monitor, analyse and guide the management of species /community recovery post extreme event

**Waste impact management Mission** (coordination led by the Sustainable Communities and Waste Hub)

- Understand the ecological impacts of plastic and fishing waste in the Indo-Pacific region
- Evaluate the impacts of chemicals and pollutants on species and marine ecological communities
- Map waste pathways, including sources and distribution
- Methods to address marine waste issues, including through circular economy solutions

**Climate adaptation Mission** (coordination led by the Climate Systems Hub)

- Model the impacts of passing thresholds for ecosystem transitions or alter species resilience
- Improve adaptation measures including conservation introductions and habitat engineering
- Identify climate adaptation information needs of land managers and communities
- Inform the preservation of the ecological character of Ramsar wetlands under climate change
- Understand the role of marine and coastal wetlands and deep-water habitats in climate change mitigation and adaptation

All research products will be made publicly available and in a form that can be integrated with relevant open information management systems to build knowledge for future stakeholders unless specifically agreed at the start of a research project.

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Applicants must be able to demonstrate flexibility and adaptability to respond to emerging priorities. This should include the ability to rapidly scale output via applied research in regional and urban areas if additional resources are made available – this should include mechanisms to bring in external researchers as required.